Application for
Municipal Solid Waste Facility
WST Landfill
Reeves County, Texas

Prepared for
Operator: West Sun Tex, LLC
Application No.: 2431
Revision: 2

Prepared by

DBS&A
a Geo-Logic Company

Texas Registered Engineering Firm F-286
Texas Registered Geoscience Firm No. 50045
12303 Technology Boulevard, Suite 930D
Austin, Texas 78727
www.dbstephens.com
DB20.1166



July 2026

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Table of Contents

Parts I and II Application

Attachment I/II-1: Part I Form and Part I Form I/II-1
Part I Application Form I/II-3
Part II Application Form I/II-21
Attachment I/II-2: Supplemental Technical Report I/II-39
Attachment I/II-3: Legal Property Descriptions I/II-91
Attachment I/II-4: Land Ownership Information I/II-97
Attachment I/II-5: Relevant Maps I/II-103
Attachment I/II-6: Documentation I/II-121
Attachment I/II-7: Plain Language Summary Form I/II-133
Attachment I/II-8: Public Involvement Plan Form I/II-139
Attachment I/II-9: Waste Acceptance Plan Form I/II-145
Attachment I/II-10: Transportation and Airport Safety Plan Form I/II-155
Appendix I/II-10-A: Transportation Technical Memorandum I/II-171
Attachment I/II-11: Environmental and Archaeological Assessments I/II-277
TRC Archaeological Survey I/II-279
Archaeological Survey Correspondence I/II-339
Biological Evaluation I/II-377
Biological Evaluation Correspondence I/II-505
Phase I Environmental Site Assessment I/II-551
Delineation of Waters of the United States and Endangered Species Report I/II-663
U.S. Army Corps of Engineers Correspondence I/II-691
Attachment I/II-12: Seismic Information I/II-711

Part III Application

Attachment III-1: Site Development Plan III-1
Attachment III-2: General Facility Description III-11
Attachment III-3: Surface Water Drainage Report III-21
Appendix III-3-A: Drawings III-69
Appendix III-3-B: Data Sources for Hydrologic and Hydraulic Calculations III-79
Appendix III-3-C: Run-On Management System Calculations III-121
Appendix III-3-D Runoff Management System Calculations III-217
Appendix III-3-E: Landfill Cover Erosion Evaluation Data Sources III-235
Appendix III-3-F: Stormwater Infrastructure Maintenance Log III-277
Attachment III-4: Waste Management Unit Design III-281
Appendix III-4-A: Drawings III-291
Appendix III-4-B: Leachate and Contaminated Water Plan III-315
Appendix III-4-C: Liner Quality Control Plan III-993
Appendix III-4-D: Evaporation Pond Sizing III-1065
Appendix III-4-E: Slope Stability Analysis III-1081
Appendix III-4-F: Liner Equivalency Calculation III-1127
Appendix III-4-G: Waste Generation Calculation III-1145
Attachment III-5: Geology Report III-1155
Appendix III-5-A: Consumer Confidence Reports for Pecos, Texas III-1227
Appendix III-5-B: Soil Boring Plan III-1233
Appendix III-5-C: Boring Logs III-1285
Appendix III-5-D: Soil Properties Laboratory Report III-1323
Appendix III-5-E: Slug Test Results III-1395
Appendix III-5-F: Water Quality Data III-1423
Attachment III-6: Groundwater Sampling and Analysis Plan III-1429
Appendix III-6-A: Proposed Monitor Well Locations and Well Completion Information III-1465
Appendix III-6-B: TCEQ MSW Groundwater Sampling Form (TCEQ-0312) III-1470
Appendix III-6-C: TCEQ Laboratory Review Checklist III-1476
Attachment III-7: Landfill Gas Management Plan III-1485
Appendix III-7-A: Forms III-1507
Appendix III-7-B: Inspection and Routine Maintenance III-1513
Attachment III-8: Closure Plan and Cost Estimate III-1521
Appendix III-8-A: Final Cover Sequence III-1539

Appendix III-8-B: Final Closure Schedule III-1543
Appendix III-8-C: Closure Cost Estimate (Form TCEQ-20721) III-1547
Attachment III-9: Post-Closure Plan and Cost Estimate III-1563
Appendix III-9-A: Post-Closure Care Cost Estimate (TCEQ-20723) III-1583
Attachment III-10: Final Cover Quality Control Plan III-1597
Appendix III-10-A: Final Cover System Details III-1623
Appendix III-10-B: Testing Requirements for System Components III-1627

Part IV Application

Site Operating Plan IV-1
Attachment IV-1: Contingency Plan IV-65
Attachment IV-2: Waste Inspection Form IV-81
Attachment IV-3: Daily Facility Inspection Form IV-85

Parts I and II Application for Municipal Solid Waste Facility WST Landfill

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Table of Contents

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Attachment I/II-1: Part I Form and Part I Form I/II-1
Part I Application Form I/II-3
Part II Application Form I/II-21
Attachment I/II-2: Supplemental Technical Report I/II-39
Attachment I/II-3: Legal Property Descriptions I/II-91
Attachment I/II-4: Land Ownership Information I/II-97
Attachment I/II-5: Relevant Maps I/II-103
Attachment I/II-6: Documentation I/II-121
Attachment I/II-7: Plain Language Summary Form I/II-133
Attachment I/II-8: Public Involvement Plan Form I/II-139
Attachment I/II-9: Waste Acceptance Plan Form I/II-145
Attachment I/II-10: Transportation and Airport Safety Plan Form I/II-155
Appendix I/II-10-A: Transportation Technical Memorandum I/II-171
Attachment I/II-11: Environmental and Archaeological Assessments I/II-277
TRC Archaeological Survey I/II-279
Archaeological Survey Correspondence I/II-339
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Attachment I/II-1

Parts I and II Forms

DBS&A a Geo-Logic Company

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Part I Application Form

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Texas Commission on Environmental Quality

Part I Application Form for New Permit, Permit Amendment, or Registration for a Municipal Solid Waste Facility

Instructions for completing this Part I Application Form are provided in TCEQ 00650-instr[1]. Include a Core Data Form (TCEQ 10400)[2] with the application for the facility owner, and Core Data Forms for the operator and property owner if different from the facility owner. If you have questions, contact the Municipal Solid Waste (MSW) Permits Section by email to [redacted] or by phone at 512-239-2335. Rules cited on this form are in Title 30 Texas Administrative Code (30 TAC) and may be viewed online at www.tceq.texas.gov/goto/view-30tac.

Application Tracking Information

Facility Regulated Entity Name[3]:
WST Landfill

Site Operator (Permittee or Registrant Name)[4]:
West Sun Tex, LLC

MSW Authorization Number: 2431

Initial Submission Date: March 2026

Revision Date: July 2026

Application Data

1. Submission Type	
☐ Initial Submission	☒ Notice of Deficiency (NOD) Response

2. Authorization Type	
☒ Permit	☐ Registration

3. Application Type	
☒ New Permit	
☐ Permit Major Amendment	☐ Permit Limited Scope Major Amendment
☐ New Registration	

[1] www.tceq.texas.gov/downloads/permitting/waste-permits/msw/forms/00650-instr.pdf
[2] www.tceq.texas.gov/goto/coredata
[3] Facility Regulated Entity Name must match the Regulated Entity Name indicated on the TCEQ Core Data Form.
[4] Site Operator is defined in 30 TAC 330.3(148) as the holder of, or the applicant for, an authorization (or license) for a municipal solid waste facility.

4. Application Fee

Amount

☒ $2,050—New Landfill Permits, and Landfill Permit Major Amendments Described in 30 TAC 305.62(j)(1)

☐ $150—Other Permits, Permit Amendments, Limited Scope Major Amendments, and all Registrations

Payment Method

☒ Online through ePay portal www3.tceq.texas.gov/epay/

Enter ePay Trace Number: 582EA000721937

☐ Check (send to TCEQ Financial Administration Division)

Payor Name: _____ Check Number: _____

5. Electronic Versions of Application

TCEQ will publish electronic versions of applications online. Applicants are required to submit complete clean (unmarked) copies of their applications in electronic format once they are administratively complete and technically complete. Additionally, applicants must provide electronic copies of responses to notices of deficiencies for publishing online. (Refer to instructions for this form for how to submit electronically.)

6. Party Responsible for Publishing Notice

Indicate who will be responsible for publishing notice:

☐ Applicant ☐ Agent in Service ☒ Consultant

Contact Name: Gundar Peterson, P.E.

Title: President

Email Address: [redacted]

7. Alternative Language Notice

Use the Alternative Language Checklist on Public Notice Verification Form TCEQ-20244-Waste-NORI, TCEQ-20244-Waste-NAPD, or TCEQ-20244-Waste-NAORPM available at www.tceq.texas.gov/permitting/waste_permits/msw_permits/msw_notice.html to determine if an alternative language notice is required.

Is an alternative language notice required for this application?

☒ Yes ☐ No

Indicate the alternative language: Spanish

8. Public Place for Copy of Application

Name of the Public Place: Reeves County Public Library

Physical Address: 315 S. Oak St.

City: Pecos County: Reeves State: TX Zip Code: 79772

Phone Number: (432) 755-0914

9. Consolidated Permit Processing

Is this submittal part of a consolidated permit processing request, in accordance with 30 TAC Chapter 33?

☐ Yes ■ No

If "Yes", indicate the other TCEQ program authorizations requested:

10. Confidential Documents

Does the application contain confidential documents?

☐ Yes ■ No

If "Yes", reference the confidential documents in the application, but submit the confidential documents as an attachment in a separate binder marked "CONFIDENTIAL."

11. Permits and Construction Approvals

Mark the following table to indicate status of other permits or approvals.

Table 1. Permits and Construction Approvals.

Permit or Approval	Received	Pending	Not Applicable
Hazardous Waste Management Program under Texas Solid Waste Disposal Act			X
Underground Injection Control Program under Texas Injection Well Act			X
National Pollutant Discharge Elimination System Program under Clean Water Act; Waste Discharge Program under Texas Water Code, Chapter 26			X
Prevention of Significant Deterioration Program under Federal Clean Air Act (FCAA); Nonattainment Program under the FCAA			X
National Emission Standards for Hazardous Air Pollutants Preconstruction Approval under the FCAA			X
Ocean Dumping Permits under Marine Protection Research and Sanctuaries Act			X
Dredge or Fill Permits under Clean Water Act			X
Licenses under the Texas Radiation Control Act			X
Other (describe):			
Other (describe):			

12. General Information About the Facility

Facility Regulated Entity Name:
WST Landfill

Contact Name: Tariq Mussani Title: Manager

MSW Authorization Number (if existing): _____

Regulated Entity Reference Number: **RN** 111301834

Physical or Street Address (if available): None

City: _____ County: Reeves State: TX Zip Code: 79772

Phone Number: (575) 605-6716

Latitude (decimal degrees, six decimal places): 31.432389 N

Longitude (decimal degrees, six decimal places): 103.585417 W

Elevation (above mean sea level): 2659.30 feet (benchmark elevation for landfills)

Description of facility location with respect to known or easily identifiable landmarks:

Facility is located at the intersection of County Roads 408 and 415, approximately 5 miles northwest of Pecos, Texas

Access routes from the nearest United States or state highway to the facility:

From Pecos, Texas, the access route is to travel west-southwest on Interstate Highway 20 Business, turn northwest on CR 408 and continue for approximately 1.5 miles, turn left on CR 411 and then immediately right onto CR 408, and continue to the facility entrance road.

Coastal Management Program

Is the facility within the Coastal Management Program boundary?

☐ Yes ■ No

13. Facility Types

Facility types are described in 30 TAC 330.5(a).

Indicate facility type (select all that apply):

■ Type I ☐ Type IV ☐ Type V

☐ Type IAE ☐ Type IVAE ☐ Type VI

14. Activities Conducted at the Facility

■ Storage ■ Processing ■ Disposal

15. Facility Waste Management Units

Check the box for each type of waste management unit proposed.

- [x] Landfill Unit(s)
- [ ] Container(s)
- [ ] Incinerator(s)
- [x] Roll-off Boxes
- [x] Class 1 Landfill Unit(s)
- [x] Surface Impoundment
- [ ] Process Tank(s)
- [ ] Autoclave(s)
- [x] Storage Tank(s)
- [ ] Refrigeration Unit(s)
- [ ] Tipping Floor
- [ ] Mobile Processing Unit(s)
- [x] Storage Area
- [ ] Compost Pile(s) or Vessel(s)
- [ ] Other (specify):

16. Description of Proposed Facility or Changes to Existing Facility

Provide a brief description of the proposed activities if application is for a new facility, or the proposed changes to an existing facility or permit conditions if the application is for an amendment.

New facility will be an MSW landfill. The proposed facility will accept solid waste resulting from municipal commercial, institutional, and recreational activities. The facility will have a citizens' collection station, which will have containers for accepting MSW, white goods, and used tires. It will also have a leachate and contaminated water evaporation pond.

17. Facility Contact Information

Site Operator (Permittee or Registrant)

Name: West Sun Tex, LLC

Customer Reference Number: **CN** 605915081

Contact Name: Tariq Mussani Title: Manager

Mailing Address: 600 N Carroll Avenue, Suite 100

City: Southlake County: Tarrant State: TX Zip Code: 76092

Phone Number: (575) 605-6716

Email Address: [redacted]

Operator (if different from *Site Operator*)

Name: _____

Customer Reference Number: **CN** _____

Contact Name: _____ Title: _____

Mailing Address: _____

City: _____ County: _____ State: ____ Zip Code: _____

Phone Number: _____

Email Address: _____

Consultant (if applicable)

Firm Name: Daniel B. Stephens & Associates, Inc.

Consultant Name: Gundar Peterson, P.E.

Texas Board of Professional Engineers Firm Registration Number: 103091

Contact Name: Gundar Peterson, P.E. Title: President

Mailing Address: 6501 Americas Parkway NE, Suite 200

City: Albuquerque County: Bernalillo State: NM Zip Code: 87110

Phone Number: (505) 822-9400

Email Address [redacted]

Agent in Service (required for out-of-state applicants)

Name: _____

Mailing Address: _____

City: _____ County: _____ State: TX Zip Code: _____

Phone Number: _____

Email Address: _____

18. Facility Supervisor License

Indicate the level of Municipal Solid Waste Facility Supervisor license, as defined in 30 TAC Chapter 30, Occupational Licenses and Registrations, Subchapter F that the individual who supervises or manages the operations will obtain prior to commencing operations.

☒ Class A Supervisor License ☐ Class B Supervisor License

19. Facility Ownership

Facility Owner

Does the Site Operator (Permittee or Registrant) own all the facility units and all the facility property?

☒ Yes ☐ No

If "No", provide the following information for the other owner, and include a Core Data Form for the other owner. Attach supplemental sheet if more than one other owner.

Other Owner Name: _____

What is Owned: ☐ Facility Units ☐ Property

☐ Other (describe): _____

Mailing Address: _____

City: _____ County: _____ State: ____ Zip Code: _____

Phone Number: _____

Email Address: _____

20. Other Government Entities Information

Texas Department of Transportation

District: 6

District Engineer's Name: Eric Lykins, P.E.

Mailing Address: 3901 E. Highway 80

City: Odessa County: Ector State: TX Zip Code: 79761

Phone Number: (432) 498-4697

Email Address: [redacted]

Local Government Authority Responsible for Road Maintenance (if applicable)

Government or Agency Name: Reeves County Road and Bridge Dept.

Contact Person's Name: Gary Rumbaugh (R&B Administrator)

Mailing Address: 31 County Road 201/ P.O. Box 111

City: Pecos County: Reeves State: TX Zip Code: 79772

Phone Number: (432) 755-1147

Email Address: [redacted]

City Mayor Information

City Mayor's Name: Teresa Winkles
Mailing Address: 115 W 3rd St
City: Pecos County: Reeves State: TX Zip Code: 79772
Phone Number: 432-445-2421
Email Address: [redacted]

City Health Authority

Authority Name: Texas Department of State Health Servic
Contact Person's Name: Art Alvarado, R.S., M.P.H.
Contact Person's Title: Deputy Regional Director
Mailing Address: 401 East Franklin Ave, Suite 210, Mail Code 1903
City: El Paso County: El Paso State: TX Zip Code: 79901
Phone Number: (915) 834-7675
Email Address: [redacted]

County Judge Information

County Judge's Name: Leo Hung
Mailing Address: 100 East Fourth Street, Suit 104A
City: Pecos County: Reeves State: TX Zip Code: 79772
Phone Number: (432) 287-0222, ext. 5
Email Address: [redacted]

County Health Authority

Agency Name: Texas Department of State Health Servic
Contact Person's Name: Art Alvarado, R.S., M.P.H.
Contact Person's Title: Deputy Regional Director
Mailing Address: 401 East Franklin Ave, Suite 210, Mail Code 1903
City: El Paso County: El Paso State: TX Zip Code: 79901
Phone Number: (915) 834-7675
Email Address: [redacted]

State Representative Information

House District Number: 74
State Representative's Name: Eddie Morales
District Office Mailing Address: 1915 Veterans Blvd
City: Del Rio County: Val Verde State: TX Zip Code: 78840
Phone Number: (512) 463-0566
Email Address: [redacted]

State Senator Information

District Number: 29

State Senator's Name: César Blanco

District Office Mailing Address: 416 N. Stanton Street, Suite 700

City: El Paso County: El Paso State: TX Zip Code: 79901

Phone Number: (915) 577-0029

Email Address: [redacted]

Council of Governments (COG)

COG Name: Permian Basin Regional Planning Commission (PBRPC)

COG Representative's Name: Virginia Belew

COG Representative's Title: Executive Director

Mailing Address: P.O. Box 60660

City: Midland County: Midland State: TX Zip Code: 79711

Phone Number: (432) 563-1061

Email Address [redacted]

River Basin Authority

Authority Name: GMA3/ Reeves County Groundwater Conservation District

Contact Person's Name: Greg Perrin, General Manager

Watershed Sub-Basin Name: Rio Grande Basin

Mailing Address: 119 South Cedar St.

City: Pecos County: Pecos State: TX Zip Code: 79772

Phone Number: (432) 445-9961

Email Address: [redacted]

Local Drainage or Flood Management Authority

Authority Name: Not applicable - Reeves County does not participate in NFIP

Contact Person's Name: _____

Mailing Address: _____

City: _____ County: _____ State: TX Zip Code: _____

Phone Number: _____

Email Address: _____

U.S. Army Corps of Engineers District

Indicate the U.S. Army Corps of Engineers district in which the facility is located:

☒ Albuquerque, NM ☐ Galveston, TX

☐ Fort Worth, TX ☐ Tulsa, OK

Local Government Jurisdiction

Within City Limits of: Not applicable

Within Extraterritorial Jurisdiction of: Not applicable

Is the facility located in an area in which the governing body of the municipality or county has prohibited the storage, processing, or disposal of municipal or industrial solid waste?

☐ Yes ■ No

If "Yes", provide a copy of the ordinance as an attachment.

Applicant Signature Page

Site Operator (Permittee or Registrant Name) or Authorized Signatory

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: Arif Mussani Title: Manager

Email Address: Andy@Wambsganss.com

Signature: _____ Date: JULY 22, 2026

Authorization by Facility Owner for Operator to Submit Application

To be completed by the facility owner if the application is submitted by an operator who is not the facility owner.

I am the owner of the facility that is the subject of this application, and authorize the operator, _____ to submit this application pursuant to 30 TAC 305.43(c).

Name: _____ Title: _____

Email Address: _____

Signature: _____ Date: _____

Notary

SUBSCRIBED AND SWORN to before me by the said ARIF MUSSANI

On this 22ND day of JULY, 2026.

My commission expires on the 16TH day of September, 2024

_____

Notary Public in and for

TARRANT COUNTY, TEXAS (notary's jurisdiction, including county and state)

Note: Application Must Bear Signature & Seal of Notary Public

ANDREW WAMBSGANSS NOTARY PUBLIC STATE OF TEXAS ID 5839122 EXP. 09-26-2026

Property Owner Affidavit

Property Owner Affidavit for Landfill Facility

I acknowledge in accordance with 30 TAC 330.59(d)(2) that the State of Texas may hold me either jointly or severally responsible for the operation, maintenance, and closure and post-closure care of the facility. For a facility where waste will remain after closure, I acknowledge that I have a responsibility to file with the county deed records an affidavit to the public advising that the land will be used for a solid waste facility prior to the time that the facility actually begins operating as a municipal solid waste landfill facility, and to file a final recording upon completion of disposal operations and closure of the landfill units according to 30 TAC 330.19 (relating to Deed Recordation). I further acknowledge that the facility owner or operator and the State of Texas shall have access to the property during the active life and post-closure care period for the purpose of inspection and maintenance.

Name: Tariq Mussani

Email Address: Andy@Wambsganss.com

Signature: T. Mussa. Date: 4.15.26

Property Owner Affidavit for Processing Facility

I acknowledge in accordance with 30 TAC 330.59(d)(2) that the State of Texas may hold me either jointly or severally responsible for the operation, maintenance, and closure of the facility. I further acknowledge that the facility owner or operator and the State of Texas shall have access to the property during the active life and post-closure care period for the purpose of inspection and maintenance.

Name: _____

Email Address: _____

Signature: _____ Date: _____

Notary

SUBSCRIBED AND SWORN to before me by the said TARRIQ MUSSANI

On this 15TH day of APRIL, 2026.

My commission expires on the 26TH day of SEPTEMBER, 2026.

_____

Notary Public in and for

TARRANT County, TEXAS (notary's jurisdiction, including county and state)

Note: Application Must Bear Signature & Seal of Notary Public

ANDREW WAMBSGANSS NOTARY PUBLIC STATE OF TEXAS ID. 5839122 EXP. 09-26-2026

Part I Attachments

Refer to instruction document TCEQ 00650-instr[5] for professional engineer seal requirements.

Attachments Table 1. Required attachments.

Required Attachments	Attachment Number
Supplementary Technical Report [30 TAC 305.45(a)(8)]	Attachment I/II-2
Property Legal Description [30 TAC 330.59(d)(1)]	Attachments I/II-2 & -3
Property Metes and Bounds Description [30 TAC 330.59(d)(1)]	Attachments I/II-2 & -3
Facility Legal Description [30 TAC 330.59(d)(1)]	Attachments I/II-2 & -3
Facility Metes and Bounds Description [30 TAC 330.59(d)(1)]	Attachments I/II-2 & -3
Metes and Bounds Drawings [30 TAC 330.59(d)(1)]	Attachment I/II-3
On-Site Easements Drawing [30 TAC 330.61(c)(10)]	Attachment I/II-3
Land Ownership Map [30 TAC 330.59(c)(3)]	Attachment I/II-4
Landowners List [30 TAC 330.59(c)(3)]	Attachment I/II-4
Mailing Labels (in electronic file, in Avery 5160 format; see instructions) [30 TAC 281.5(7)]	Attachment I/II-4
General Location Maps [30 TAC 330.59(c)(2)]	Attachment I/II-5
Texas Department of Transportation (TxDOT) County Map [30 TAC 330.59(c)(2)]	Attachment I/II-5
General Topographic Maps [30 TAC 330.61(e)]	Attachment I/II-5
Verification of Legal Status / Legal Authority (certificate of incorporation) [30 TAC 281.5 and 330.59(e)]	Attachment I/II-6
Evidence of Competency [30 TAC 330.59(f)]	Att. I/II-2, Sec. 7
Signatory Authority Documentation [30 TAC 305.44 and 330.59(g)]	Attachment I/II-6
TCEQ Core Data Form(s) TCEQ-10400[6] [30 TAC 281.5(7)]	Concurrent Submittal

[5] www.tceq.texas.gov/downloads/permitting/waste-permits/msw/forms/00650-instr.pdf
[6] www.tceq.texas.gov/permitting/central_registry/guidance.html

Attachments Table 2. Additional attachments as applicable.

Additional Attachments (select all that apply and add others as needed)	Attachment Number
☒ Plain Language Summary Form TCEQ-20947[7] [30 TAC 39.405(k)]	Attachment I/II-7
☒ Public Involvement Plan Form TCEQ-20960[8]	Attachment I/II-8
☒ Fee Payment Receipt	Attachment I/II-6
☐ Confidential Documents	N/A
☐ Waste Storage, Processing and Disposal Ordinances [Texas Health and Safety Code, Section 363.112[9]]	N/A
☐ Final Plat Record of Property Description [30 TAC 330.59(d)(1)(B)]	N/A
Other (describe):	
Other (describe):	
Other (describe):	

[7] www.tceq.texas.gov/downloads/permitting/waste-permits/msw/forms/20947-instr.pdf
[8] www.tceq.texas.gov/downloads/agency/decisions/hearings/environmental-equity/pip-form-tceq-20960.pdf www.tceq.texas.gov/downloads/agency/decisions/hearings/environmental-equity/instructions-for-pip-form-tceq-20960.pdf
[9] statutes.capitol.texas.gov/Docs/HS/htm/HS.363.htm#363.112

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Part II Application Form

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Texas Commission on Environmental Quality
Part II Application Form for New Permit or Permit Amendment for a Municipal Solid Waste Landfill Facility

I. Application Information

1. Facility Name: WST Landfill
2. Permittee Name: West Sun Tex, LLC
3. MSW Authorization #: 2431
4. Initial Submittal Date: March 2026

II. Existing Conditions Summary - 30 TAC §330.61(a)

Provide information to address any site-specific conditions that require special design considerations and possible mitigation of conditions as follows.

1. Provide a summary describing the existing conditions at the site and within the areas surrounding the site, which may include discussions of any additional land-use, environmental, or special issues related to the facility.

WST Landfill is located on a parcel of land that was permitted for an oil and gas waste facility in April 2016 by the Railroad Commission of Texas (RRC). No portion of WST Landfill will be constructed on areas of the property that have been developed through authorization of this RRC permit. The land has been used for agricultural production, but has been out of cultivation for over 20 years. Land use around the site includes undisturbed land, agricultural use, some rural residential, oil and gas facilities, trucking companies, and laydown yards.

2. Provide brief descriptions of all site-specific conditions at the facility that require special design considerations.

There are no site-specific conditions that require special design considerations.

3. Indicate that reports of site-specific conditions that require special design considerations and mitigation of such conditions are provided under Sections VIII – XVI below with regard to (a) facility impacts on surrounding areas; (b)transportation; (c) general geology and soils; (d) groundwater and surface water; (e) existing and abandoned oil and water wells; (f) floodplains and wetlands; (g) endangered or threatened species impacts; and (h) compliance with the Texas Natural Resources Code, Chapter 191 (Texas Antiquities Code).

Reports of site-specific conditions that require special design considerations and mitigation of such conditions are provided in Sections VIII through XVI of this form and are described in more detail in attachments to the Part I/II application.

III. Waste Acceptance Plan - 30 TAC §330.61(b)

1. ☑ If this application is for a Type I or Type IAE MSW landfill facility, attach completed Form No. TCEQ-20873. Attachment No.: Attachment I/II-9
2. ☐ If this application is for a Type IV or Type IVAE MSW landfill facility, attach completed Form No. TCEQ-20890. Attachment No.:

IV. General Location Maps - 30 TAC §330.61(c)

Provide General Location Maps that accurately show the features listed below. Provide all General Location Maps in a single attachment and include the drawing number in the space provided. Include notes on each map, as needed, to describe information pertaining to the map.

1. The prevailing wind direction with a wind rose. Figure I/II-5-2
2. All known water wells within 500 feet of the proposed permit boundary with the state well numbering system designation for Water Development Board "located wells."

Figure I/II-5-8

3. All structures and inhabitable buildings within 500 feet of the proposed facility.

Figure I/II-5-7

4. (i) Schools, (ii) licensed day-care facilities, (iii) churches, (iv) hospitals, (v) cemeteries, (vi) ponds, (vii) lakes, and (viii) residential, (ix) commercial, and (x) recreational areas within one mile of the facility. Figure I/II-5-7
5. The location and surface type of all roads within one mile of the facility that will normally be used by the owner or operator for entering or leaving the facility. Figure I/II-5-7
6. Latitudes and longitudes. Figure I/II-5-11
7. Area streams. Figure I/II-5-5
8. Airports within six miles of the facility. Figure I/II-5-2
9. The property boundary of the facility. Figure I/II-5-11
10. (i) Drainage, (ii) pipeline, and (iii) utility easements within or adjacent to the facility.

Figure I/II-5-6

11. (i) Facility access control features. Figure I/II-5-11
12. (i) Archaeological sites, (ii) historical sites, and (iii) sites with exceptional aesthetic qualities adjacent to the facility. N/A

V. Facility Layout Maps - 30 TAC §330.61(d)

Provide the Facility Layout Map(s) as a single attachment, and include drawing number(s) in the space provided. Include notes on each map, as needed, to describe information on the map.

Provide a map or set of maps of the facility layout showing:

1. The outline of the units; Drawing C-1 (Appendix III-4-A)
2. General locations of main interior facility roadways; Drawing C-1 (Appendix III-4-A)
3. Locations of monitor wells; Drawing C-1 (Appendix III-4-A)
4. Locations of buildings; Drawing C-1 (Appendix III-4-A)

5. Any other graphic representations or marginal explanatory notes necessary to communicate the proposed construction sequence; Attachment III-4
6. Fencing; Drawing C-1 (Appendix III-4-A)
7. Provisions for the maintenance of any natural windbreaks, such as greenbelts, where they will improve the appearance and operation of the facility and, where appropriate, plans for screening the facility from public view; N/A
8. All site entrance roads from public access roads; Drawing C-1 (Appendix III-4-A)
9. General locations of main interior facility roadways that can be used to provide access to fill areas; Drawing C-1 (Appendix III-4-A)
10. Sectors with appropriate notations to communicate the types of wastes to be disposed of in individual sectors; Drawing C-1 (Appendix III-4-A)
11. The general sequence of filling operations; Attachment III-4
12. Sequence of excavations and filling; Attachment III-4
13. Dimensions of cells or trenches; Drawing C-12 (Appendix III-4-A) and
14. Maximum waste elevations and final cover. Drawings C-14, C-15 (Appendix III-4-A)

VI. General Topographic Maps - 30 TAC §330.61(e)

1. Provide general topographic map(s) consisting of United States Geological Survey 7 ½-minute quadrangle sheets or equivalent for the facility.
   Map No(s). Figure I/II-5-3
2. At least one of the general topographic maps provided is at a scale of one-inch equals 2,000 feet.
   ☑ Yes

VII. Aerial Photograph - 30 TAC §330.61(f)

Provide an aerial photograph approximately 9” x 9” with a scale within a range of one-inch equals 1,667 feet to one-inch equals 3,334 feet and showing the area within at least one-mile radius of the site boundaries. Mark the site boundaries and fill areas on the aerial photograph(s). A series of aerial photographs can be used to show growth trends.
Attachment No.(s): Figure I/II-5-11

VIII. Land-Use Map - 30 TAC §330.61(g)

Provide a constructed map of the facility showing the following land-use features (list the map number(s) in the space provided):

1. The boundary of the facility; Figure I/II-5-6
2. Existing zoning on or surrounding the property ; N/A
3. Actual uses (e.g., agricultural, industrial, residential, etc.) both within the facility and within one mile of the facility. Figure I/II-5-6
4. Drainage, pipeline, and utility easements within the facility; Figure I/II-5-6
5. Access roads serving the facility; Figure I/II-5-2

6. Check the following facilities if they are within one mile of the facility boundary and indicate on map. Figure I/II-5-7

   (a) ☑ residences;

   (b) ☑ commercial establishments;

   (c) ☐ schools;

   (d) ☐ licensed day-care facilities;

   (e) ☐ churches;

   (f) ☐ cemeteries;

   (g) ☑ ponds or lakes; and

   (h) ☐ recreational areas.

IX. Impact on Surrounding Area - 30 TAC §330.61(h)

Address the facility's impacts on cities, communities, groups of property owners, or individuals and describe mitigation of conditions as required. Attach additional pages as necessary. If a land use compatibility analysis report prepared by a qualified professional is provided, indicate the location within the application. Attachment No.:

1. **Impacts to Surrounding Areas:**
   (a) Provide information regarding the likely impacts of the facility on cities, communities, groups of property owners, or individuals by analyzing the compatibility of land use, zoning in the vicinity, community growth patterns, and other factors associated with the public interest; and

Populations in Pecos, Texas are projected to grow in the coming years; WST Landfill is likely to support the community and its projected growth trends. The landfill shall have final cover with a shallow slope as to not undesirably impact the aesthetics of the surrounding landscape. No adverse affects to the community, human health, or the environment are anticipated.

   (b) Describe any special design considerations and possible mitigation of potential impacts, as necessary.

No site-specific conditions require special landfill design considerations or mitigation.

Published Zoning Map: If available, provide a published zoning map for the facility and within two miles of the facility for the county or counties in which the facility is or will be located.

N/A

2. **Special or Nonconforming Use Permit:**

   (a) Does the site require approval as a nonconforming use or a special permit from the local government having jurisdiction? ☐ Yes ☑ No

   (b) If yes, provide a copy of such approval. Attachment No.:

3. **Character of Surrounding Land Use:** Describe the character of the surrounding land uses within one mile of the proposed facility.

Land use around WST Landfill is primarily for agriculture, oil and gas development, trucking, industrial yards, rural residences, and undeveloped land.

4. **Growth Trends and Directions of Major Development:**
(a) Provide information about growth trends within five miles of the facility.

The town of Pecos is approximately 5 miles from the site. Pecos is expected to see growth in the coming years due to increases in employment from continuing oil and gas production in the Permian Basin. The town has displayed recent investment in its small businesses, hotels, education infrastructure, and entertainment venues. Growth trends are detailed further in Section 17.2 of Attachment I/II-2.

(b) Describe the directions of major development.

Aerial photographs from 2005 to 2025 display growth and major development extending outward from Pecos in all directions.

5. **Number of and Proximity to Residences and Other Uses:** Indicate the approximate number and proximity of residences and other uses within one mile of the facility as follows. Population density and proximity to residences and other uses may be considered in the assessment.

(a) Number of, distance, and directions to residences:

At least 30 residences are within 1 mile of the facility (shown on Figure I-II-5-7)

(i) Indicate the distance to the nearest residences: 150 feet

(ii) Provide directions to the nearest residences:

One north of the site on the other side of CR 415, and one east of the facility

(b) Number of, distance, and directions to commercial establishments:

At least 31 commercial establishments are within 1 mile of the facility (shown on Figure I-II-5-7)

(i) Indicate the distance to the nearest commercial establishments: 600 feet

(ii) Provide directions to the nearest commercial establishments:

Select Energy Services is northeast of the permit boundary's northeast corner

(c) Number of, distance, and directions to schools:
None

(d) Number of, distance, and directions to churches:
None

(e) Number of, distance, and directions to cemeteries:
None

(f) Number of, distance, and directions to historic structures and sites:
None

(g) Number of, distance, and directions to archaeologically significant sites:

None

(h) Number of, distance, and directions to sites having exceptional aesthetic quality:

None

6. **Known Wells**. Provide information and discussion of all known wells within 500 ft. of the proposed facility. Provide the well information using Table VIII-1 below. If site has more than 5 wells within the radius, include wells information as an attachment.

There are at least 6 wells within 500 feet of the facility; discussed in Section 17.5 of Attachment I/II-2

Table IX-1. Well Information

Wells Within 500 ft. Radius of the Proposed Facility							
Well Locator	Well ID No.	Depth (ft.)	Completion Date	Completion Formation	Well Use	Longitude	Latitude

X. Transportation and Airport Safety - 30 TAC §330.61(i) and §330.545

1. **Transportation:** Attach completed Transportation Data and Coordination Report Form for Municipal Solid Waste Type I Landfills, TCEQ-20719. Attachment No.: Attachment I/II-10
2. **Airport Safety:**

(a) Is the facility located, or will be located, within 10,000 feet of any airport runway end used by turbojet aircraft? ☐ Yes ☑ No

(b) Is the facility located, or will be located, within 5,000 feet of any airport runway end used by only piston-type aircraft? ☐ Yes ☑ No

(i) If the answer is "Yes" to either (a) or (b) above, indicate the distance of the facility from the nearest airport runway end used by only turbojet aircraft: feet or piston-type aircraft: feet; and

(ii) Provide required demonstration to show that the municipal solid waste facility units are or will be designed and operated so as not to pose a bird hazard to aircraft.
Section 18.2 of Attachment I/II-2

(c) Is the facility located, or will be located, within a six-mile radius of any small general service airport runway end used by turbojet or piston-type aircraft? ☑ Yes ☐ No

(d) Is the facility located, or will be located, within a five-mile radius of any large general public airport runway end used by turbojet or piston-type aircraft? ☐ Yes ☑ No

(i) If the answer to either of subsection (c) or (d) above is "Yes," has the applicant notified the affected airport as required?
☑ Yes ☐No. Explain: See Attachment I/II-10

(ii) Also, has the applicant notified the Federal Aviation Administration as required?
☑ Yes ☐No. Explain: See Attachment I/II-10

(iii) Provide copies of the notifications to the affected airport and to FAA.
See Attachment I/II-10

(iv) All landfill facilities within a six-mile radius of any small general service airport runway or within a five-mile radius of any large general public commercial airport runway shall be critically evaluated to determine if an incompatibility exists. Include any coordination received from the affected airport and from the FAA concerning compatibility.
No incompatibility identified (see Attachment I/II-10)

(e) Will the subject landfill accept waste streams that include putrescible waste?
☑ Yes ☐ No.

(i) If the answer to subsection (e) is "Yes," address the potential for the facility to attract birds and cause significant hazards to low-flying aircraft. Guidelines regarding location of landfills near airports can be found in Federal Aviation Administration Order 5200.5(A), January 31, 1990 (or the replacement active orders, notices, and advisory circular guidelines from the FAA can be used). Section 18.2 of Attachment I/II-2

XI. General Geology and Soils Statement and Location Restrictions - 30 TAC §330.61(j) and §§ 330.555 - 330.559

1. Discuss in general terms the geology and soils of the proposed site.

Based on field explorations, the site's subsurface is mostly composed of interbedded gravel, silt, sand, and clay, with mixtures of each present in various locations. No evidence of geologic or geomorphologic features that would cause unstable areas to exist in the site soils were found. See Section 19 of Attachment I/II-2 and Attachment III-5 for more detail.

2. Fault Areas

(a) Will the municipal solid waste landfill units at the facility or a lateral expansion of the facility be located within 200 feet of a fault that has had displacement in Holocene time?
☐Yes ☑No
If the answer is "Yes," provide demonstration to show that an alternative setback distance of less than 200 feet will prevent damage to the structural integrity of the landfill unit and will be protective of human health and the environment. Attachment No.:

(b) Is the facility located within areas that may be subject to differential subsidence or active geological faulting? ☐Yes ☑No
If the answer is "Yes," provide a detailed fault study. Attachment No.:

(c) Is an active fault known to exist within 1/2 mile of the site? ☐Yes ☑No
If the answer is "Yes," investigate the site for unknown faults and discuss its results. Attachment No.:

(d) Is the facility located in areas experiencing withdrawal of crude oil, natural gas, sulfur, etc., or significant amounts of groundwater? ☐Yes ☑No
If the answer is "Yes," investigate the site in detail for the possibility of differential subsidence or faulting that could adversely affect the integrity of landfill liners and discuss the site investigation and its results. Attachment No.:

(e) If conducted, were the studies of differential subsidence or faulting conducted under the direct supervision of a licensed professional engineer experienced in geotechnical engineering or a licensed professional geoscientist qualified to evaluate conditions of differential subsidence or faulting? ☐Yes ☑No. Explain
N/A

(f) If conducted, do the studies of differential subsidence or faulting establish the limits (both upthrown and downthrown) of the zones of influence of all active faulted areas within the site vicinity? ☐Yes ☐No. Explain N/A

(g) If conducted, do the studies of differential subsidence include information or data addressing the following shown below, as applicable:

Table XI-1. Information included in Fault Area Studies

Information to be included, as applicable:	Yes	Not Applicable
(i) structural damage to constructed facilities (roadways, railways, and buildings);	☐	☑
(ii) scarps in natural ground;	☐	☑
(iii) presence of surface depressions (sag ponds and ponded water);	☐	☑
(iv) lineation's noted on aerial maps and topographic sheets;	☐	☑
(v) structural control of natural streams;	☐	☑
(vi) vegetation changes;	☐	☑
(vii) crude oil and natural gas accumulations;	☐	☑
(viii) electrical spontaneous potential and resistivity logs (correlation of subsurface strata to check for stratigraphic offsets);	☐	☑
(ix) earth electrical resistivity surveys (indications of anomalies that may represent fault planes);	☐	☑
(x) open cell excavations (visual examinations to detect changes in subsoil texturing and/or weathering indicating stratigraphic offsets);	☐	☑
(xi) changes in elevations of established benchmarks; and	☐	☑
(xii) references to published geological literature pertaining to area conditions.	☐	☑

(h) If the site is or will be located within a zone of influence of active geological faulting or differential subsidence, does the application provide substantial evidence that the zone of influence will not affect the site?
☐Yes ☑No Attachment No.: Attachment III-5

Address the following statement:

3. ☑ No solid waste disposal shall be accomplished within a zone of influence of active geological faulting or differential subsidence because active faulting results in slippage along failure planes, thus creating preferred seepage paths for liquids.

4. Seismic Impact Zones

(a) Is the proposed facility located in a seismic impact zone, as defined in 30 TAC §330.557?
☐Yes ☑No
Provide information to support response. Attachment No.: Attachment I/II-12

(b) For facilities located in a seismic impact zone, provide a detailed demonstration showing that all containment structures, including liners, leachate collection systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site. Attachment No.: N/A

5. Unstable Areas

(a) Is the facility located in an unstable area, as defined in 30 TAC §330.559?
☐Yes ☑No Explain: Section 19.5 of Attachment I/II-2

(b) If the facility is located in an unstable area, provide a demonstration that engineering measures have been incorporated into the landfill unit's design to ensure that the integrity of the structural components of the landfill unit will not be disrupted.
Attachment No.:
The demonstration considered at least the following factors:

(i) on-site or local soil conditions that may result in significant differential settling;
☐Yes ☐No

(ii) on-site or local geologic or geomorphologic features; ☐Yes ☐No and

(iii) on-site or local human-made features or events (both surface and subsurface).
☐Yes ☐No

XII. Groundwater and Surface Water - 30 TAC §330.61(k) and §330.549

1. Groundwater

Provide an attachment containing data about the site-specific groundwater conditions at and near the site, from published and open-file sources, including:

- Aquifer names and their association with geologic units described in the General Geology and Soils Statement;
- Groundwater quality, including, if available, typical values or value ranges for total dissolved solids content; and
- Present use(s) of groundwater withdrawn from aquifers at and near the site, if available.

Attachment No.: Attachment III-5

Address the following as applicable:

(a) Is the facility located over the Edwards Aquifer recharge zone, as defined in 30 TAC §330.549? ☐Yes ☑No.
If yes, discuss how the facility will comply with the applicable requirements in 30 TAC Chapter 213 (relating to Edwards Aquifer).

(b) A Type I or Type IAE landfill is prohibited on the recharge zone of the Edwards Aquifer; the applicant will not locate a Type I or Type IAE landfill on the recharge zone of the Edwards Aquifer. Select either statement that applies:

☑ (i) The facility is not or will not be located over the Edwards Aquifer Recharge Zone.

☐ (ii) The facility is not a Type I or Type IAE landfill.

(c) A new landfill cell or an aerial expansion of an existing landfill cell managing Class 1 non-hazardous industrial solid waste may not be located in areas described in 30 TAC § 335.584(b)(1) and (2) (relating to Location Restrictions), unless the Executive Director (ED) approves an engineered design that the applicant has demonstrated will provide equal or greater protection to human health and the environment:

(i) Does the application propose Class 1 nonhazardous industrial solid waste cells or units at the subject facility? ☑Yes ☐No

(ii) If yes, discuss how the facility would comply with the location restriction requirements under 30 TAC §335.584(b)(1) and (2). Include any applicable equivalency demonstration that would provide equivalent or greater protection to human health and the environment. Attachment No.: Attachment III-4

2. Surface Water

(a) Provide data on surface water at and near the site (including lakes, ponds, creeks, streams, rivers, or similar water bodies).

Attachment Nos.: Section 20.2 of Attachment I/II-2

(b) Provide information demonstrating how the municipal solid waste facility will comply with applicable Texas Pollutant Discharge Elimination System (TPDES) storm water permitting requirements and the Clean Water Act, §402, as amended Section 20.3 of Att. I/II-2

(i) The facility has obtained TPDES permit coverage under the following individual wastewater permit(s) (list permit number(s)): N/A . A copy of the permit(s) is provided in Attachment No.: N/A , or

(ii) A certification statement indicating that the applicant will obtain the appropriate TPDES permit coverage when required.
☑Yes ☐No. Explain Section 20.3 of Attachment I/II-2

XIII. Abandoned Oil and Water Wells - 30 TAC §330.61(l)

1. Water Wells

(a) Are there any existing or abandoned water wells within the facility? ☐Yes ☑No

(i) If no, move to Item No. 2 below.

(ii) If yes, address the following:

(1) Provide a map showing the water well locations, identity, status, and use. Attachment No.: Figure I-II-5-8

(2) Will all the water wells be capped, plugged, and closed prior to construction at the facility? ☐Yes ☑No.

(3) If yes, provide written certification that all such wells will be capped, plugged, and closed in accordance with all applicable rules and regulations of TCEQ or other state agency within 30 days prior to construction at the facility. Attachment No.:

(4) If no, identify and describe the water wells that will be capped, plugged, and closed in accordance with all applicable rules and regulations of TCEQ or other state agency. Attachment No.: N/A

(5) Also, identify the wells necessary for use, and that will remain in use, for supply for operations at the facility. Attachment No.: N/A

(6) Are the water wells that will remain in use for supply for operations at the facility located outside of the groundwater monitoring well network and not subject to impact from landfill operations? ☑Yes ☐No. If no, explain Supply well located on the edge of the network; outside permit boundary and the area subject to impact

(7) The water wells that will remain in use for supply for operations at the facility and that are located inside of the groundwater monitoring network, but outside the landfill unit boundary, are identified in Attachment No.: N/A for ED approval.

2. Oil and Gas Wells

(a) Are there any existing or abandoned on-site crude oil, natural gas, or other wells associated with mineral recovery under the jurisdiction of the Railroad Commission of Texas?
☐Yes ☑No

(i) If yes, address the following items:

(1) Provide a map showing well locations, identity, type, and status.
Attachment No.:

(2) Identify and annotate the oil or natural gas wells that are producing and will remain in their current state, provided such wells do not affect or hamper landfill operations.

(3) Provide written certification that all the oil and natural gas wells, other than the producing wells approved for retention, have been properly capped, plugged, and closed at the time of application in accordance with all applicable rules and regulations of the Railroad Commission of Texas.
Attachment No.:

XIV. Floodplains - 30 TAC §330.61(m)(1) and §330.547

1. Describe the location of the facility with respect to floodplains.

This area has not been mapped by FEMA. TWDB state-wide floodplain modeling indicates low-lying areas on-site that hold runoff from the site. This water will be managed as described in Attachment III-3.

2. Provide a copy of the Federal Emergency Management Administration (FEMA) flood map for the area to show the facility boundary and to illustrate the information described in Section 1 above. Attachment No.: Figure I/II-5-4; shows this area is not mapped
3. For construction of levees or other improvements associated with flood control on the proposed facility, provide data on floodplains in accordance with 30 TAC Chapter 301 Subchapter C (relating to Approval of Levees and Other Improvements). N/A - Attachment III-3
4. Address the following requirements with regard to the location of the facility:

(a) Provisions to ensure that no solid waste disposal operation is conducted within the facility in areas that are located in a 100-year floodway as defined by FEMA.

N/A; discussed in Attachment III-3

(b) Designs that demonstrate that municipal solid waste management units, including storage and processing facilities, located in 100-year floodplains will not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human health and the environment.

N/A - discussed in Attachment III-3

(c) Demonstrate MSW storage and processing facilities shall be located outside of the 100-year floodplain unless the owner or operator demonstrates that the facility is designed and will operate to prevent washout during a 100-year storm event, or obtains a conditional letter of map amendment from FEMA. N/A - discussed in Attachment III-3

(d) If applicable, provide a copy of the conditional letter of map amendment (or other applicable FEMA approval) from the FEMA administrator for development within a floodplain.

N/A

(e) References to provisions, designs, and narratives regarding floodplains in Part III of the application. Attachment III-3

XV. Wetlands - 30 TAC §330.61(m)(2) and §330.553

1. Provide a wetlands determination under applicable federal, state, and local laws and discuss wetlands in accordance with 30 TAC §330.553. Demonstration can be made by providing evidence that the facility has a Corps of Engineers permit for the use of any wetlands area. Attachment No.: Attachment I/II-11

   (a) If applicable, provide a copy of any Corps of Engineers permit issued to the applicant for the use of any wetlands area within the facility. Attachment No.: N/A

2. Identify wetlands located within the facility boundary, attach necessary maps and drawings.

   No wetlands - Section 3.7 of Attachment I/II-2 and Attachment I/II-11

3. Where new municipal solid waste landfill units, lateral expansions, material recovery operations from a landfill, and storage or processing units are to be located in wetlands, discuss the identified wetlands considering the following:

   (a) Locating the landfill units, lateral expansions, material recovery operation from a landfill, and storage or processing units away from the identified wetlands. N/A

   (b) Steps taken to avoid impacts to wetlands to the maximum extent practicable to achieve no net loss of wetlands (as defined by acreage and function).

   N/A

   (c) For unavoidable impacts:

      (i) Clearly rebut the presumption that a practicable alternative to the proposed facility or recovery operation is available that does not involve wetlands.

      N/A

      (ii) Demonstrate that the construction and operation of the municipal solid waste landfill unit, material recovery operation from a landfill, and storage or processing units will not:

         (1) cause or contribute to violations of any applicable state water quality standard;

         Attachment I/II-11

         (2) violate any applicable toxic effluent standard or prohibition under the Clean Water

         Attachment I/II-11

         (3) jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat, protected under the Endangered Species Act of 1973; or

         Attachment I/II-11

         (4) violate any requirement under the Marine Protection, Research, and Sanctuaries Act of 1972 for the protection of a marine sanctuary.

         N/A

(iii) Demonstrate the integrity of the landfill unit and its ability to protect ecological resources by addressing the following factors showing that the municipal solid waste landfill unit or recovery operation will not cause or contribute to significant degradation of wetlands:
N/A

(1) erosion, stability, and migration potential of native wetland soils, muds, and deposits used to support the landfill unit; N/A

(2) erosion, stability, and migration potential of dredged and fill materials used to support the landfill unit; N/A

(3) the volume and chemical nature of the waste managed in the landfill unit; N/A

(4) impacts on fish, wildlife, and other aquatic resources and their habitat from release of the solid waste; N/A

(5) the potential effects of catastrophic release of waste to the wetland and the resulting impacts on the environment; and N/A

(6) any additional factors, as necessary, to demonstrate that ecological resources in the wetland are sufficiently protected. N/A

(iv) Demonstrate steps taken to minimize unavoidable impacts to wetlands to the maximum extent practicable. N/A

(v) Demonstrate offsetting of remaining unavoidable wetland impacts through all appropriate and practicable compensatory mitigation actions (e.g., restoration of existing degraded wetlands or creation of man-made wetlands). N/A

XVI. Endangered or Threatened Species - 30 TAC §330.61(n) and §330.551

1. Provide Endangered Species Act compliance demonstrations as required under applicable state and federal laws. Attachment No.: Attachment I/II-11
2. Determine and discuss whether the facility is in the range of endangered or threatened species.
   12 species are identified by the USFWS IPaC report to be federally threatened or endangered species having the potential to preside in habitats near the project site.
3. If the facility is located in the range of endangered or threatened species, provide a biological assessment prepared by a qualified biologist in accordance with standard procedures of the United States Fish and Wildlife Service (USFW) and the Texas Parks and Wildlife Department (TPWD) to determine the effect of the facility on the endangered or threatened species. Where a previous biological assessment has been made for another project in the general vicinity, a copy of that assessment may be submitted for evaluation. Attachment No.: Att I/II-11
4. Provide coordination correspondence with and responses from the USFW and the TPWD concerning locations and specific data relating to endangered and threatened species in Texas.
   Attachment I/II-11

5. Describe how the facility will comply with recommendations from the TPWD and USFW regarding protection of endangered and threatened species.

WST Landfill will train personnel on identification of protected species, avoid the removal of native vegetation where feasible, perform wildlife surveys prior to construction activities, erect wildlife exclusion fencing, and follow other measures as described in Section 19 of Part IV.

6. Discuss the impact of the solid waste disposal facility upon endangered or threatened species:

If endangered or threatened species are encountered, WST Landfill will consult a qualified biologist to relocate the animals at the minimum distance possible, no greater than 1 mile, and ideally within 100 to 200 yards of the initial encounter. Otherwise, no impacts are anticipated.

7. Describe how the facility design, construction, and operation will not result in the destruction or adverse modification of the critical habitat of endangered or threatened species, or cause or contribute to the taking of any endangered or threatened species.

There is no designated or proposed critical habitat in the project area. WST Landfill will not allow the catching, killing, injuring, pursuance, or possession of any threatened or endangered species. Personnel will follow a no-kill policy to avoid harming animals of any protection status.

XVII. Texas Historical Commission Review 30 TAC §330.61(o)

1. Provide correspondence to and a review letter from the Texas Historical Commission documenting compliance with the Natural Resources Code, Chapter 191, Texas Antiquities Code.
   Attachment No.: Attachment I/II-11

XVIII. Council of Governments 30 TAC §330.61(p)

1. Provide documentation that Parts I and II of the application were submitted to the applicable council of governments for compliance with regional solid waste plans. Also provide a review letter if received from the applicable council of governments.
   Attachment No.: Attachment I/II-2
2. Provide documentation that a review letter was requested from any local governments as appropriate for compliance with local solid waste plans.
   Attachment No.: Local government (Reeves County) does not have soild waste plans or regulations.

XIX. Easement Protections 30 TAC §330.543(a)

1. Will the applicant design and operate the facility such that no solid waste unloading, storage, disposal, or processing operations will occur within any easement, buffer zone, or right-of-way that crosses the facility? ☑Yes
2. Will the applicant design and operate the facility such that no solid waste disposal shall occur within 25 feet of the center line of any utility line or pipeline easement but no closer than the easement? ☑Yes
3. Will the applicant clearly mark all pipeline and utility easements with posts that extend at least six feet above ground level, spaced at intervals no greater than 300 feet?
   ☑Yes

XX. Buffer Zones 30 TAC §330.543(b)

1. Provide the buffer zone distance (i.e. 50 feet for Arid Exempt and Type IV landfills, 125 feet for Type I landfills) at the facility to demonstrate compliance with 30 TAC §330.543(b).

≥125 feet

2. Provide references for the application drawings and maps that clearly show the buffer zones around the facility. Attachment(s) No.: Drawing C-1 (Appendix III-4-A)

XXI. Coastal Areas 30 TAC §330.561

1. A new landfill cell or an aerial expansion of an existing landfill cell managing Class 1 industrial solid waste (other than waste which is Class 1 because of asbestos content) may not be located in areas:

   (a) On a barrier island or peninsula.

   (b) Within 1,000 feet of an area subject to active coastal shoreline erosion, if the area is protected by a barrier island or peninsula, except as allowed under 30 TAC §335.584(b)(4).

   (c) Within 5,000 feet of coastal shorelines that are subject to active shoreline erosion and which are unprotected by a barrier island or peninsula, except as allowed under 30 TAC §335.584(b)(4).

2. Describe the location of the facility with regard to distance to coastal shoreline subject to active shoreline erosion.

N/A - Facility is not located near a coastline.

XXII. Type I and Type IV Landfill Permit Issuance Prohibited – 30 TAC §330.563

Address the following statements.

1. The commission may not issue a permit for a Type IV landfill that is subject to the conditions specified in Texas Health and Safety Code, §361.122, Denial of Certain Landfill Permits. Is the proposed facility a Type IV landfill located in the area subject to the referenced statute?
   ☐Yes ☑No Explain WST Landfill is a Type I Landfill

2. The commission may not issue a permit for a Type I or Type IV landfill that is subject to the conditions specified in Texas Health and Safety Code, §361.123, Limitation on Locations of Municipal Solid Waste Landfills. Is the proposed facility a Type I or Type IV landfill located in the area subject to the referenced statute?
   ☐Yes ☑ No Explain Section 4 of Attachment III-1

Attachments

Table Att-1. Required Attachments

Attachments	Attachment No.
Existing Conditions Summary	Att I/II-2
Waste Acceptance Plan Form	Att I/II-9
General Location Maps	Att I/II-5
Facility Layout Maps	Appx III-4-A
General Topographic Maps	Att I/II-5
Aerial Photographs	Att I/II-5
Land Use Map	Att I/II-5
Transportation and Airport Safety Form	Att I/II-10
Federal Aviation Administration Coordination Letters, if applicable	Att I/II-10
Entity Exercising Maintenance Resp. of Public Roadway, if applicable	Att I/II-2
Fault Lines, if applicable	Att I/II-5
Seismic Impact Zones, if applicable	Att I/II-12
Unstable areas, if applicable	Appx III-4-E
Site Specific Groundwater Conditions	Att III-5
Site Specific Surface Water Conditions	Att I/II-2
Texas Pollutant Discharge Elimination System (TPDES)	Att I/II-2
Abandoned Oil and Water Wells, if applicable	N/A
FEMA Map	Att I/II-5
Facility Design Demonstration for Flood Map, or Conditional Letter of Map Amendment from FEMA, if applicable	Att III-3
Wetland Documentation, if applicable	Att I/II-11
Endangered or Threatened Species Documents, if applicable	Att I/II-11
Texas Historical Commission Letter(s)	Att I/II-11
Council of Governments/Local Governments Review Request Coordination Letter(s)	Att I/II-11
Buffer Zones	Att III-1
Others (describe):	
Others (describe):	
Others (describe):	
Confidential Documents, if applicable	

Attachment I/II-2

Supplementary Technical Report

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Supplemental Technical Report
WST Landfill
Reeves County, Texas

Prepared for
West Sun Tex, LLC

Prepared by

DBS&A
a Geo-Logic Company

Texas Registered Engineering Firm F-286
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July 2026

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Table of Contents

1. Introduction 1

2. General Information [30 TAC 330.59(a)] 2
   2.1 Project Overview 2

3. Facility Location [30 TAC 330.59(b)] 3
   3.1 Location Description 3
   3.2 Facility Access 3
   3.3 Geographic Coordinates 3

4. Maps [30 TAC 330.59(c)] 4
   4.1 General Location Maps 4
   4.2 Land Ownership Map and Landowner List 4
      4.2.1 Property Owners for Property Located within ¼ mile 4
      4.2.2 Mineral and Oil Rights Ownership 4

5. Property Owner Information [30 TAC 330.59(d)] 4
   5.1 Legal Description 4
   5.2 Easements 5
   5.3 Property Owner Affidavit 5

6. Legal Authority [30 TAC 330.59(e)] 5

7. Evidence of Competency [30 TAC 330.59(f)] 6
   7.1 Texas Solid Waste Site Operation 6
   7.2 All Solid Waste Sites Owned, Operated, or With Financial Interest 6
   7.3 Employment of a Licensed Solid Waste Facility Supervisor 7
   7.4 WST Principals and Supervisors 7
   7.5 Landfilling and Earthmoving Experience 7
   7.6 Key Personnel 7
   7.7 Equipment to be Dedicated to the Landfill 8
   7.8 Mobile Liquid Waste Processing 8

8. Appointments [30 TAC 330.59(g)] 9

9. Application Fees 9

10. Existing Conditions Summary [30 TAC 330.61(a)] 9
   10.1 Topography and Vegetation 9
   10.2 Design Considerations 9

11. Waste Acceptance Plan [30 TAC 330.61(b)] 10
11.1 Waste Properties and Characteristics 10
11.2 Waste Acceptance Rate 10
12. General Location Maps [30 TAC 330.61(c)] 11
13. Facility Layout Maps [30 TAC 330.61(d)] 11
14. General Topographic Map [30 TAC 330.61(e)] 11
15. Aerial Photograph [30 TAC 330.61(f)] 11
16. Land Use [30 TAC 330.61(g)] 12
16.1 Land Use at the Facility and Surrounding Area 12
16.2 Zoning 13
17. Impact on Surrounding Area [30 TAC 330.61(h)] 13
17.1 Land Use and Zoning 13
17.2 Growth Trends 14
17.3 Human Health Impact 16
17.4 Environmental Impact 17
17.5 Area Wells 17
17.6 Compatibility with Surrounding Area 18
18. Transportation [30 TAC 330.61(i)] 18
18.1 Traffic 18
18.1.1 Texas Department of Transportation 19
18.1.2 Reeves County Road and Bridge Department 19
18.2 Airports 19
18.2.1 Federal Aviation Administration 20
18.2.2 Pecos Municipal Airport 20
19. General Geology and Soils [30 TAC 330.61(j)] 20
19.1 Facility Geology 20
19.2 Facility Soils 21
19.3 Faults 21
19.4 Seismic Impact Zones 21
19.5 Unstable Areas 22
20. Groundwater and Surface Water [30 TAC 330.61(k)] 22
20.1 Regional Groundwater 22
20.1.1 Site Groundwater Conditions, Perched Zone 23
20.1.2 Pecos, Texas Groundwater Supply 24
20.1.3 Reeves County Groundwater Supply 24
20.2 Surface Water 25

20.3 Texas Pollutant Discharge Elimination System Permit 25
21. Abandoned Oil and Water Wells [30 TAC 330.61(l)] 26
21.1 Abandoned Water Wells 26
21.2 Nearby Wells 26
21.3 Abandoned Oil Wells 26
21.4 Oil and Gas Wells Located within 1 mile 27
22. Floodplains and Wetlands [30 TAC 330.61(m)] 27
22.1 Floodplains 27
22.2 Wetlands 30
22.2.1 U.S. Army Corps of Engineers 31
23. Endangered and Threatened Species [30 TAC 330.61(n)] 31
23.1.1 Texas Parks and Wildlife Department 32
23.1.2 U.S. Fish and Wildlife Service 32
24. Texas Historical Commission [30 TAC 330.61(o)] 33
25. Local Government Review [30 TAC 330.61(p)] 34
25.1.1 Regional Planning Agencies 34
25.1.2 Local Governments 35
26. Special Appointments 35
References 37

List of Tables

I/II-2-1. Projected Maximum Waste Acceptance, WST Landfill 11
I/II-2-2. Precipitation Data for Texas Water Development Board Quadrangle 604 28
I/II-2-3. Gross Evaporation Data for Texas Water Development Board Quadrangle 604 29
I/II-2-4. 24-Hour Storm Intensity by Interval 30

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1. Introduction

Daniel B. Stephens & Associates, Inc. (DBS&A) has prepared this application on behalf of West Sun Tex, LLC (WST) for a 239.1-acre Type I municipal solid waste (MSW) facility, called the WST Landfill. The application is presented in four parts as required by 30 Texas Administrative Code (TAC) 330.57:

- Part I contains general information regarding the site and applicant (30 TAC 330.59).
- Part II describes the existing conditions and character of the facility and surrounding area (30 TAC 330.61).
- Part III contains design information, investigative reports, and plans for the facility (30 TAC 330.63).
- Part IV presents the Site Operating Plan (SOP) for the facility and provides requirements for daily operations (30 TAC 330.65).

This supplemental technical report has been prepared to cover Parts I and II of the application for WST Landfill. Part I/II and attachments contain the information required by 30 TAC 330.59, 330.61, 305.45, and 281.5. The site was previously known as the West Sun Texas Landfill, or the WST Permian Landfill. Some correspondence included with this application uses those names for facility identification.

The requirements of 30 TAC 281.5(a)(1)-(4) are presented in the Part I form located in Attachment I/II-1. The Part I form includes a listing of other permits and authorizations required of the facility. Technical reports and supporting data required by 30 TAC 281.5(a)(5) are included in this Supplemental Technical Report. A map showing potentially affected landowners, along with their addresses as required by 30 TAC 281.5(a)(6), are included in Attachment I/II-4.

The requirements of 30 TAC 305.45(a)(1)-(5) and (7) are also presented in the Part I form (Attachment I/II-1). Maps required by 30 TAC 305.45(a)(6) are provided in Attachment I/II-5.

The information required by 30 TAC 330.59 and 330.61 is provided in the following sections.

2. General Information [30 TAC 330.59(a)]

The WST Landfill site is located in north-central Reeves County at the intersection of County Road (CR) 408 and CR 415, as shown on the facility location map (Figure I/II-5-1) provided in Attachment I/II-5. The facility is located in Section 46, Block 4, H. & G.N. RR Co. Survey in an area with flat topography that slopes gently to the east, dominated by desert scrub and grass vegetation. The property owned by WST includes 440 acres, located approximately 5 miles west-northwest of Pecos, Texas. Some correspondence reflects the entire 440-acre site. The revised permit boundary of 239 acres is completely within the 440-acre property owned by WST.

The facility has been designed to meet or exceed the Texas Commission on Environmental Quality (TCEQ) requirements as detailed in 30 TAC 330, and will be protective of public health and safety. The project design includes the landfill liner, leachate collection system, gas monitoring network, stormwater management system, groundwater monitoring network, and final cover.

2.1 Project Overview

WST plans to construct and operate a Type I MSW facility, called WST Landfill, in north-central Reeves County. The permit will encompass approximately 239 acres with a disposal footprint of approximately 120.9 acres. Disposal will be by the area fill method with both belowground and aerial fill components.

WST currently holds an Oil and Gas Waste disposal permit (STF-0112, R9 08-1601) for the property issued by the Railroad Commission of Texas (RRC), renewed in 2025. However, WST plans to use approximately half of the property for MSW disposal. Upon approval of the MSW permit, the RRC permit will be modified to reflect the MSW facility to prevent an overlap of the permit boundaries.

The facility is owned by and will be operated by WST. The MSW facility will accept waste from municipalities, residents, businesses, and industries in Reeves County, as well as surrounding counties.

3. Facility Location [30 TAC 330.59(b)]

3.1 Location Description

WST Landfill is located approximately 5 miles north by northwest of the Town of Pecos (Pecos) in an unincorporated portion of Reeves County, Texas. The location is at the intersection of CR 4087 and CR 415, in Section 46, Block 4, H. & G.N. RR Co. Survey. The site is not in the extraterritorial jurisdiction of any city.

3.2 Facility Access

Access to the site from Pecos is west-southwest on Interstate 20 (I-20) Business, turn northwest on CR 408 and continue for approximately 1.5 miles, turn left on CR 411 and then immediately right onto CR 408 (also labeled as CR 4087 for the length of this section), and continue to the facility entrance near CR 415. Figure I/II-5-7 (Attachment I/II-5) shows the location of the facility in relation to surrounding roads. While there are two lockable access control gates outside the permit boundary, there are also four lockable access control gates located within the permit boundary, in accordance with 30 TAC 330.3(52), at the following locations: (1) north of stormwater retention pond 1, (2)south of stormwater retention pond one, (3) south of stormwater retention pond 3, and (4) north of the scale house. The facility entrance road and two access gates outside the permit boundary will serve facilities for both the oil and gas permit and the MSW permit. As the permits do not overlap, the appurtenances are located outside the MSW permit boundary. The facility entrance road and access gates will remain under the control of the permittee and will be accessible to TCEQ personnel for inspection. The permittee will operate and maintain these items in accordance with applicable permit and regulatory requirements.

3.3 Geographic Coordinates

The geographic coordinates of the site's benchmark are:

- Latitude: N 31° 26′ 23.66762″
- Longitude: W 103° 34′ 50.57074″
- Elevation: 2,659.30 feet above mean sea level (feet msl) (NAVD 88)

This benchmark is located near the northeast corner of the site boundary.

The State Plane coordinates of the benchmark are:

- Northing: 10502211.55
- Easting: 1284004.91

4. Maps [30 TAC 330.59(c)]

4.1 General Location Maps

Maps required under 30 TAC 305.45, 330.59(c), and 330.61(c) are provided in Attachment I/II-5. The base map for each is the most recent version available.

4.2 Land Ownership Map and Landowner List

4.2.1 Property Owners for Property Located within ¼ mile

In accordance with 30 TAC 330.59, information regarding property owned by adjacent and potentially affected landowners is provided in Attachment I/II-4. The information includes a map showing the landowners within ¼ mile of the proposed facility (Figure I/II-4-1) and a table summarizing the landowner information (Table I/II-4-1). There are 20 other properties and 26 property owners located within ¼ mile of the proposed facility.

The list of potentially affected landowners is keyed to the landownership map and gives each property owner's name and mailing address as shown on the real property appraisal records of Reeves County. The list will be provided to TCEQ in electronic format.

4.2.2 Mineral and Oil Rights Ownership

The mineral (oil and gas) rights under the facility are owned by two companies on the northern 220 acres of the subject property, two companies under the northwestern 220 acres of Section 46, and two companies for 220 acres of Section 46. KEW Drilling and PDC Permian, Inc. are each leasing the mineral rights beneath 220 acres of the subject property (Table I/II-4-2).

5. Property Owner Information [30 TAC 330.59(d)]

5.1 Legal Description

The MSW permit lies entirely within 440 acres owned by WST. The legal description for the 440-acre property is AB 1391 BLK 4 SEC 46 H&GN N/440 AC, in Reeves County, Texas. The deed

date is December 8, 2014, deed volume 1128, deed page 690, and deed number 14-11441. The entirety of the 239-acre MSW permit is within the legal description given above. The metes and bounds survey of the permit boundary, signed and sealed by a registered professional land surveyor is provided in Attachment I/II-3.

5.2 Easements

Existing easements located on the permit property are provided in Attachment I/II-3. The northern permit/property boundary extends to the center of CR 415. No documentation of a formal right-of-way (ROW) easement for CR 415 has been found; however, an approximately 30-foot road plus approximately 10 feet of shoulder on either side exists, for a total road corridor width of 50 feet. The easements identified by the surveyor are immediately adjacent to the property boundary, so they are located within the road corridor. All waste processing facilities are at least 125 feet from these utilities. The easements do not conflict with any planned landfill infrastructure.

5.3 Property Owner Affidavit

The property owner affidavit is provided as part of the Part I form (Attachment I/II-1).

Per 30 TAC 330.59(d)(2)(A), WST acknowledges that the State of Texas may hold the property owner of record either jointly or severally responsible for operation, maintenance, closure, and post-closure care of the facility.

In accordance with 30 TAC 330.59(d)(2)(B), WST acknowledges that they will file with county deed records, an affidavit to the public advising the land will be used for a solid waste facility before the facility begins operating as an MSW landfill facility. Additionally, WST will file a final recording in the deed records upon completion of disposal operations and closure of landfill units in accordance with 30 TAC 330.19.

6. Legal Authority [30 TAC 330.59(e)]

Attachment I/II-6 provides the certificate of incorporation issued by the secretary of state as verification of the land owner's legal status, as required by 30 TAC 281.5 and 30 TAC 330.59(e).

7. Evidence of Competency [30 TAC 330.59(f)]

7.1 Texas Solid Waste Site Operation

WST has not owned any other Texas solid waste sites in the last 10 years, but has owned solid waste sites in New Mexico within this time period.

7.2 All Solid Waste Sites Owned, Operated, or With Financial Interest

WST is the owner and operator of two oil and gas solid waste disposal sites, and both are located in New Mexico. The site type, location, operating dates, regulatory agency and address, and the name under which the sites are operated follow below for these two facilities.

- Sundance Services, Inc.
  - Permit NM1-3
  - Lea County, New Mexico
  - Solid waste disposal facility: 1999 to present
  - State of New Mexico
    Energy, Minerals and Natural Resources Department
    Oil Conservation Division
    1220 South St. Francis Drive
    Santa Fe, NM 87505
- Sundance Services West, Inc.
  - Permit NM1-62
  - Lea County, New Mexico
  - Solid waste disposal facility: 2017 to present
  - State of New Mexico
    Energy, Minerals and Natural Resources Department
    Oil Conservation Division
    1220 South St. Francis Drive
    Santa Fe, NM 87505

7.3 Employment of a Licensed Solid Waste Facility Supervisor

A solid waste facility supervisor will be employed for the WST Landfill, as required, before commencing facility operation. This supervisor will be retained or be replaced with another TCEQ licensed operator prior to commencing operation and during operation.

7.4 WST Principals and Supervisors

The names of the principals and supervisors that will oversee operations of WST Landfill and who have all been affiliated with Sundance Services, Inc. and Sundance Services West, Inc. are provided below. None of these individuals have any previous affiliations with other organizations engaged in solid waste activities in the State of Texas. All of these principals have operated other disposal facilities in the State of New Mexico.

- Sue Mussani
- Tariq Mussani
- Arif Mussani
- Joe Carrillo
- Michael Carrillo

7.5 Landfilling and Earthmoving Experience

Key personnel for the WST Landfill will include Joe Carrillo and Michael Carrillo. Both Joe Carillo and Michael Carillo have landfilling and earthmoving experience at the Sundance Services disposal facilities in New Mexico.

7.6 Key Personnel

Key personnel for the WST Landfill will include Joe Carrillo and Michael Carrillo. Michael Carrillo will be the licensed solid waste facility supervisor, and he will apply for a preliminary license during the proposed facility's construction. After construction is complete, he will apply for a Class A or B license. Both Joe Carillo and Michael Carillo have at least 10 years of landfilling and earthmoving experience.

7.7 Equipment to be Dedicated to the Landfill

Equipment dedicated to the WST Landfill may include the following:

- Dozer, track type: Cat D8 or equivalent for moving cover, cover placement, waste placement, grading, and fire protection
- Compactor: Cat 826 or equivalent for soil and waste compaction
- Water truck: 1,000 gallons or larger for dust control, soil compaction assistance, fire control, and other construction activities
- Off-road truck: Caterpillar 750 or equivalent for soil hauling, fire protection, and site maintenance
- Excavator: Cat 330 or equivalent for moving loose waste, soil cover, and fire protection
- Wheel tractor, scraper: Caterpillar 623 or equivalent for excavating and hauling cover material and miscellaneous soil borrow
- One utility trucks: ½-ton or larger for use by landfill operator(s) that are able to navigate site in inclement weather and pull smaller trailer-mounted equipment, when necessary, for general maintenance and litter control

A discussion of the number and types of equipment to be provided can be found in the Site Operating Plan (SOP) (Part IV). Some equipment may be rented, leased, or borrowed as needed. The number and type may change depending on a varying incoming waste amount, ongoing construction activities, and other requirements.

7.8 Mobile Liquid Waste Processing

The facility will not be a mobile liquid waste processing unit; therefore, the provisions of 30 TAC 330.59(f)(6) are not applicable.

WST, Sundance Services, Inc., and Sundance Services West, Inc. have not had any final enforcement orders, court judgments, consent decrees, or criminal convictions in Texas or with the federal government within the last five years, relating to the handling of solid or liquid waste requirements under the jurisdiction of TCEQ or the U.S. Environmental Protection Agency (EPA).

8. Appointments [30 TAC 330.59(g)]

Tariq Mussani is signing the application, and he meets the requirements of signatories to applications as outlined in 30 TAC 305.44. The certificate of amendment documenting that he is a manager of the company is provided in Attachment I/II-6.

9. Application Fees

WST's receipt for payment of the $2,050 permit application fee to the MSW Permits Section is provided in Attachment I/II-6.

10. Existing Conditions Summary [30 TAC 330.61(a)]

Existing conditions for the WST Landfill are discussed in the following subsections.

10.1 Topography and Vegetation

In Reeves County, the land surface ranges from about 2,500 feet msl along the Pecos River in the eastern part of the county to 4,500 feet msl in the foothills of the Davis Mountains in the southwestern part of the county. The elevation of the proposed facility ranges from 2,650 feet msl to 2670 feet msl, in an area dominated by flat topography that slopes gently to the east. The project site grade decreases toward the east by about 6 foot vertically for every 1,000 feet horizontally (Figure I/II-5-3).

A recent aerial photograph with a scale of 1 inch = 2,000 feet is provided as Figure I/II-5-11. This figure shows the permit boundary, as well as a 1-mile area around the entire property boundary.

Vegetative species commonly found in the study area include creosote bush (*Larrea tridentate*), tarbush (*Flourensia cernua*), fourwing saltbush (*Atripex canescens*), mesquite (*Prosopis* sp.), gyp grama (*Bouteloua breviseta*), and alkali sacaton (*Sporoblus airoides*) (Attachment I/II-11]).

10.2 Design Considerations

No site-specific conditions require special landfill design considerations or mitigation.

11. Waste Acceptance Plan [30 TAC 330.61(b)]

11.1 Waste Properties and Characteristics

The WST Landfill will be a Type I MSW facility. Waste types accepted will include solid waste resulting from municipal, commercial, industrial, institutional, and recreational activities, including (1) garbage, construction and demolition waste, brush, rubbish, and all other solid waste, (2) Class 1, 2, and 3 nonhazardous industrial waste, (3) petroleum-contaminated soil, (4) wastewater treatment facility sludge, and (5) special waste as defined by 30 TAC 330.3. Hazardous waste will not be accepted. Other waste may be accepted based on waste-specific approvals, as authorized by 30 TAC 330.171.

11.2 Waste Acceptance Rate

The anticipated area to be served by the WST Landfill includes an area within approximately 50 miles of the facility. This area includes portions of six counties, including Culberson, Jeff Davis, Loving, Pecos, Reeves, and Ward Counties. The total 2027 population of the six counties is 42,421 (Texas Demographic Center, 2025). The locations of these counties and the towns located within 50 miles of the proposed facility are shown on Figure I/II-5-1 (Attachment I/II-5).

Given the 2027 population estimate and based on a waste generation assumption of 15 acre-feet per year per 10,000 people, the maximum amount of waste that will be received during the first year of operation is estimated to be approximately 61,600 tons. Assuming 281 days of operation, this is approximately 217 tons per day. The amount of waste to be accepted annually is expected to increase in subsequent years; however, that will depend on a number of factors. Table I/II-2-1 provides the projected maximum annual waste acceptance rate for the facility's first five years of operation based on projected population increases by Texas Demographic Center as outlined in the waste generation calculation (Appendix III-4-G).

WST Landfill will not recover materials from the incoming waste; however, tires and white goods brought to the site will not be buried. They will be placed in a designated area for future management, as discussed in the SOP (Part IV).

No waste constituent or characteristic is expected to be a limiting parameter that would impact the design and operation of the facility.

Table I/II-2-1. Projected Maximum Waste Acceptance, WST Landfill

Year	Percent Increase	Maximum Waste Acceptance (tons)
2027	—	61,600
2028	0.48%	61,900
2029	0.48%	62,200
2030	0.48%	62,500
2031	0.32%	62,700

Note: Increase taken from Texas Demographic Center estimated population increases (2025)

12. General Location Maps [30 TAC 330.61(c)]

General location maps meeting the requirements of 30 TAC 330.61(c) are provided in Attachment I/II-5. These maps accurately show the proximity of the facility to surrounding features. In cases where the requirement for the map involved showing items of interest within a mile of the facility, the property boundary (which is larger) was used to define the 1-mile search radius due to the simplicity of that boundary versus the permit boundary. This approach is more conservative, as it results in a larger area being reported.

13. Facility Layout Maps [30 TAC 330.61(d)]

Facility layout maps are provided in Attachment I/II-5. These maps show the items required by 30 TAC 330.61(d).

14. General Topographic Map [30 TAC 330.61(e)]

A general topographic map is provided as Figure I/II-5-3 (Attachment I/II-5). The topographic map shown is from the U.S. Geological Survey (USGS) 7.5-minute quadrangle dated 2022. The scale of the map is 1 inch = 2,000 feet.

15. Aerial Photograph [30 TAC 330.61(f)]

An aerial photograph (photocopy) of the facility and surrounding area is provided in Figure I/II-5-11 (Attachment I/II-5). The scale of the photograph is 1 inch = 2,000 feet, meeting

the requirements of 30 TAC 330.61(f)(10). The photograph includes the area within 1 mile of the property boundary. The site property boundary, permit boundary, and area to be used for disposal are marked on the photocopy.

16. Land Use [30 TAC 330.61(g)]

The requirements of 30 TAC 330.61(g) are provided in two figures (Figures 1/11-5-6 and I/II-5-7) to enhance readability. Figure I/II-5-6 (Attachment I/II-5) shows the boundary of the facility and actual uses of the land (e.g., agricultural, industrial, residential, etc.) both within the facility and within 1 mile of the property boundary. Utility easements within the permit boundary are also shown; there are no pipeline or drainage easements within the facility.

The location of residences and commercial establishments are included on Figure I/II-5-7 (Attachment I/II-5). There are no schools, licensed day-care facilities, churches, cemeteries, ponds or lakes, or recreational areas within the property or within 1 mile of the facility boundary.

16.1 Land Use at the Facility and Surrounding Area

Land use in the vicinity of the site is for agriculture and oil and gas development, trucking companies, industrial yards, rural residences, and undeveloped land (Figure I/II-5-6). The facility property has been used for agricultural production in the past, but has been out of cultivation for more than 20 years.

Reeves County is in the heart of the oil and gas development area of west Texas, and exploration in this area is expected to remain steady (Freese and Nichols, 2020). In June 2020, Reeves County ranked first in the list of Texas counties for natural gas and condensate production and third for crude oil production (RRC, 2020b). In June 2020, approximate production in Reeves County was as follows: natural gas (79,600,000 thousand cubic feet [mcf], or 0.08 trillion cubic feet), crude oil (7.0 million barrels), and condensate (5.4 million barrels) (RRC, 2020b).

The area within 1 mile of the property is dominated by undeveloped land, nonspecifically disturbed areas, and cultivated cropland (Figures I/II-5-6 and I/II-5-7).

Within 1 mile of the subject property, there are oil and gas facilities, trucking companies, and industrial yards. There are recreational vehicle (RV) parks located northeast, east, and southeast of the property. There appear to be manufactured houses and numerous outbuildings near the

site, especially north of the property boundary (Figure I/II-5-7). There are at least 29 residences within 1 mile of the site.

16.2 Zoning

Reeves County within 2 miles of the facility is not zoned. The facility is not within the extraterritorial jurisdiction of any city.

17. Impact on Surrounding Area [30 TAC 330.61(h)]

WST is committed to providing a Type I MSW facility that does not adversely impact human health or the environment. Information regarding the likely impacts of the proposed facility on land use, zoning, community growth patterns, and other factors is provided in the following subsections.

17.1 Land Use and Zoning

Land use in the vicinity of the site is for agriculture, oil and gas development, trucking companies, industrial yards, rural residences, and undeveloped land. According to the U.S. Department of Agriculture County Census, in 2017, Reeves County had 224 farms, 8,138 irrigated acres, and a total of 1,063,899 acres in farms (Freese and Nichols, 2020). The area of Reeves County is 2,642 square miles, or approximately 1,690,900 acres. Irrigated acreage accounts for approximately 0.5 percent of the county area, with approximately 63 percent of the land area in farms. None of Reeves County is classified as prime farmland (Freese and Nichols, 2020).

The portion of Reeves County located within 2 miles of the facility is not zoned; therefore, a published zoning map is not available, and no nonconforming use or special permit approval is required.

As mentioned previously, the 440-acre property owned by WST has an oil and gas landfill permit from the RRC. Using a portion of property for an MSW Landfill maintains the existing land use and no impact will result.

17.2 Growth Trends

A Phase I environmental site assessment (ESA) was completed for the subject property in 2014; the Phase I report includes historical aerial photographs back to 1954 (Attachment I/II-11). In the 1954 photograph, the property appears to be undisturbed, but by 1969, site grading and agricultural production are apparent. The WST Landfill property has been out of cultivation for more than 20 years.

The facility is located within the Permian Basin oil and gas producing region of west Texas and southeastern New Mexico. Oil and gas production has increased in this area over the last decade, and the Permian Basin is now the second largest producer of oil and gas shale in the world (Freese and Nichols, 2020). Reeves County is one of the top 10 largest oil producing and top 10 largest natural gas producing counties in Texas (Freese and Nichols, 2020). Reeves County is in the heart of the oil and gas development area of west Texas, and exploration in this area is expected to remain steady (Freese and Nichols, 2020).

Population in Reeves County increased significantly between 1900 and 1960, decreased from 1960 to 2000, and has been increasing since 2000 (Figure I/II-5-12). The county's population is projected to continue to increase through 2070 (Figure I/II-5-12). The average annual Reeves County population growth rate was close to zero from 1980 to 1990, –1.7 percent for 1990 to 2000, approximately 0.5 percent from 2000 to 2010, and approximately 1 percent from 2010 to 2020 (Freese and Nichols, 2020). Work done in 2020 by Freese and Nichols indicates that the Reeves County population is projected to increase at average annual population growth rates of less than 1 percent from 2020 to 2030, approximately 0.5 percent from 2030 to 2040, less than 0.5 percent from 2040 to 2050, approximately 0.25 percent from 2050 to 2060, and less than 0.25 percent from 2060 to 2070 (Freese and Nichols, 2020). This is consistent with information from the Texas Demographics Center (2025). The Permian Basin Regional Planning Commission (PB RPC)'s latest Comprehensive Economic Development Strategy for 2021-2025 included higher anticipated growth rates of 9 to 11 percent in Reeves County.

The Pecos Economic Development Corporation (EDC) describes the Town of Pecos as a regional retail and services hub (Pecos EDC, 2020a). The town has hotels from eleven national franchises (Holiday Inn Express, Hampton Inn, La Quinta, Comfort Suites, Microtel, Fairfield Inn by Marriot, StayBridge Suites, Travelodge by Wyndham, Home2 Suites by Hilton, Red Roof Inn, and Best Western). The town has a 2 percent venue tax, and the revenue from this tax is being used to renovate the Reeves County Rodeo Grounds (Pecos EDC, 2020a). Other recent Pecos, Texas growth includes a small business development center that was opened by Sul Ross State

University, growth in the education and oil and gas sectors, and the addition of entertainment venues (Pecos EDC, 2020a).

In 2019, a Walton Family Foundation funded study ranked the 531 micropolitan areas across the U.S. (micropolitan areas include one or more counties with at least one city with more than 10,000 but less than 50,000 in population), and Pecos, Texas received the top ranking as the most dynamic micropolitan (Walton Family Foundation, 2019). The metrics where Pecos, Texas was top ranked included job growth from 2012 to 2016, average annual pay growth from 2013 to 2017, and the share that firms that had been open for up to 5 years represented of total employment (Walton Family Foundation, 2019). The study report cites Pecos and Reeves County as being at the epicenter of the Permian Basin shale oil exploration boom, and says that local officials estimate that the Pecos official population of 15,300 understates the true population by up to 9,000 (Walton Family Foundation, 2019).

As discussed previously, land use in the vicinity of the site is for agriculture, oil and gas development, trucking companies, industrial yards, rural residences, and undeveloped land. The following facilities are present within 1 mile of the facility (Figure I/II-5-7):

- There are 15 oil and gas facilities adjacent to and within 1 mile of the subject property, including Rolfson Oil Pecos, located just southeast of the property's southwest corner and Waterbridge disposal well to west of the property.
- Fourteen trucking company and industrial yards are located near the subject property. Twin Service Trucking is located approximately 100 feet west of the property's northwest corner, and J & J Transport Services is located approximately 0.4 mile southwest of the northeast corner of the property on CR 415.
- There are three RV parks located northeast, east, and southeast of the site within the 1-mile radius of the property boundary including the following:
    - Duval Estates RV Park (located approximately 0.7 mile north-northeast), Rocker F RV Park (located approximately 1 mile east-northeast), and Desert Pines RV Park (located approximately 0.5 mile east) from the northeast corner of the property
    - Duval Road RV Park (located approximately 0.6 mile east-northeast), Villa RV Park (located approximately 2.5 miles east-southeast), Los Valeriano RV Park (located approximately 1.5 miles and east-southeast) from the southeast corner of the property
- There are numerous manufactured buildings located near the property, especially to the north on the other side of CR 415, and most appear to be offices (e.g., for trucking yards).

- There are four residences within a mile of the property boundary (three within a mile of the permit boundary):
  - On the north side of CR 415 across from the property
  - A house on Mendoza Ranch, located approximately 0.6 mile southwest of the northwest corner of the property on CR 415.
  - On the other side of the east property boundary, south of CR 415
  - Directly across the 415/408 intersection

The archaeology report (Attachment I/II-11) indicates that there are no historic structures or sites, archaeologically significant sites, or sites having exceptional aesthetic quality that would be affected by the proposed facility. Texas Historical Commission has reviewed the work done on the property and concurs that there are no historic properties present or affected by the project as proposed (Attachment I/II-11). There is one structure on the property (but outside the MSW permit footprint), a barn. The barn's construction date is unknown; however, the structure is visible on a 1969 aerial photograph, so it is at least 55 years old. This barn is not planned to be removed by the project. If structurally sound, WST may use it in their operations as the maintenance shop.

The following are not located within 1 mile of the proposed facility:

- There are no schools or day care facilities located within 1 mile of the facility. The Pecos-Barstow-Toyah Independent School District (ISD) schools (and their respective distance from the site) include Bessie Haynes Elementary (8.5 miles), Austin Elementary (7 miles), Crockett Middle (7.2 miles), and Pecos High School (7.2 miles).
- There are no churches located within 1 mile of the facility. The nearest churches (and their respective distance from the site) include Kingdom Hall of Jehovah's Witnesses (6.6 miles), First Baptist Church (7.5 miles), and North Pecos Church (7.6 miles). All three of these churches are located in Pecos, Texas.
- There are no cemeteries located within 1 mile of the facility. The nearest cemetery to the site is East Pecos Cemetery, located approximately 8.3 miles east from the facility's location.

17.3 Human Health Impact

Access to the proposed facility will be controlled by the property's access control perimeter berms and lockable gates, which will protect public safety. The facility entrance gate will be

locked when the landfill is not open and a WST employee is not present. The landfill will be lined, preventing contamination of soil or groundwater beneath the facility, and air pollution resulting from the facility will be controlled through appropriate monitoring and landfill gas control. An air permit and gas collection and control system (GCCS) will be prepared and submitted when required.

17.4 Environmental Impact

The WST Landfill location and surrounding area is largely undeveloped, with a number of existing industrial land uses nearby. Vegetation species commonly found in the area include creosote bush (Larrea tridentate), tarbush (*Flourensia cernua*), fourwing saltbush (*Atripex canescens*), mesquite (*Prosopis sp.*), gyp grama (Bouteloua breviseta), and alkali sacaton (*Sporoblus airoides*) (Attachment I/II-11). Vegetation will be cleared from the area where the landfill cells, access roads and other infrastructure are developed, but minimal changes will be made to the existing vegetation outside of the areas of construction.

A delineation of waters of the U.S., including wetlands, was performed on the property in 2014, and no waters of the U.S. were identified within the study area. As the property does not include any wetlands or waters of the U.S., there will not be any impacts to either. More information is provided below.

The facility will pose no threat to surface or groundwater resources or air quality. The facility's construction and operations will not cause or contribute to violations of state water quality standards, violation of any applicable toxic effluent standard, or prohibition under the Clean Water Act (CWA). Any liquids resulting from facility operation will be disposed of in a manner that ensures that there is no surface water or groundwater contamination. The facility will properly manage all wastewater that results from the waste management activities, as well as from cleaning and washing. Stormwater and wastewater will be managed in compliance with TCEQ regulations, including obtaining coverage under the Texas Pollutant Discharge Elimination System (TPDES) if required.

17.5 Area Wells

Population density in this area is very low, with few rural residences. There is a transient population in the area, serviced by the RV parks. The RV park residents are largely thought to be people who support the oil and gas development in the area.

There are six water wells located within 500 feet of the property, including:

- Two new wells (well numbers 493635 and 493636) listed in the TWDB online database with submitted driller reports, which are both 600-foot-deep irrigation wells owned by Lupe Ortega, located outside of the WST Landfill boundary near the northeastern corner of the property.
- The unnumbered WST-owned non-potable supply well, which is 540 feet deep, located near the northwestern corner of the WST property (not within the boundary of the MSW Landfill property). Two unnumbered WST-owned non-potable old irrigation wells (not in use) are on the same 440 acres as the landfill but outside the MSW landfill permit boundary.
- Well number 4636503, which is a 400-foot-deep stock well owned by L. Schneider, located near the southeastern corner of the property (not within the MSW Landfill boundary).

17.6 Compatibility with Surrounding Area

The WST landfill will be compatible with the surrounding area, where land use is agriculture, oil and gas development, trucking companies, industrial yards, some rural residences, and primarily undeveloped land, including the existing oil and gas waste disposal permit located on the WST property. The development and operations of the WST Landfill is compatible with the existing and assumed future land use in the area.

18. Transportation [30 TAC 330.61(i)]

Agency coordination efforts for WST Landfill related to transportation are summarized in the following subsections, along with information which satisfies TCEQ requirements for transportation infrastructure that will be used to access the facility from Pecos. All agency coordination letters and agency responses are provided in Attachment I/II-10.

18.1 Traffic

WST Landfill is located approximately 5 miles west-northwest of Pecos, Texas at the intersection of CR 415 and CR 408 (also labeled as CR 4087 for the length of the section). There are two anticipated primary access routes to WST Landfill from the nearest major community of Pecos. The first may be traversed by traveling west-southwest on Interstate 20 Business Loop West (I-20 BL) and continuing on to I-20 Service Road, turning northwest on CR 408 and proceeding for approximately 1.5 miles, turning left onto CR 411 and then immediately right onto CR 408,

then continuing to the facility entrance. The alternate access route may traverse I-20 BL, Farm to Market (FM) 2119, and CR 415 prior to accessing CR 408 and continuing to the facility entrance.

Existing traffic volumes and predicted traffic generation from the facility regarding these roadways are addressed in the Transportation Technical Memorandum (Appendix I/II-10-A). Given the low existing volumes of traffic and the minimal anticipated impacts from the operations of WST Landfill, a technical memorandum was prepared in lieu of a formal traffic study. Data pertaining to traffic volumes on the site access roads are obtained from the Texas Department of Transportation (TxDOT), as well as field-conducted studies by DBS&A. Analysis of these data is provided in Attachment I/II-10.

18.1.1 Texas Department of Transportation

A letter was sent to TxDOT for coordination purposes per 30 TAC 330.23(a) and 330.61(i)(4) on April 20, 2021 by certified mail (Attachment I/II-10). The letter was also e-mailed to TxDOT on July 21, 2022. WST Landfill will not be located within 1,000 feet of an interstate or primary highway, so screening or special operating requirements are not required. TxDOT sent a response letter on August 11, 2022 indicating that no action is required to address any of their requirements. WST will coordinate with TxDOT on any improvements required in the future due to traffic to the facility.

18.1.2 Reeves County Road and Bridge Department

The two primary access roads for WST Landfill (CR 408 and 415) are two-lane asphalt-paved roads with low traffic volumes, maintained by the Reeves County Road and Bridge Department. A copy of email communication with the Reeves County Road and Bridge Department is provided in Attachment I/II-10. Based on available information, the existing access roadways are available and adequate to handle the estimated increased traffic volumes associated with the MSW facility. Prior to construction, WST will obtain a Reeves County permit to construct access driveway facilities on Public ROW (to document that any entrance road design complies with Reeves County regulations).

18.2 Airports

The Pecos Municipal Airport (PEQ) is a Level III general aviation airport with two asphalt runways and is owned by the Town of Pecos, Texas. The airport is located approximately 2 miles southwest of the Town of Pecos (See Figure I/II-5-2). The Pecos Municipal Airport is within 6 miles of the WST Landfill.

The landfill units have been designed and will be operated so that the MSW landfill does not pose a bird hazard to aircraft by (1) being located approximately five miles away from the airport per FAA guidance (FFA, 2007), (2) minimizing the working face to minimize the attraction of birds, and (3) covering the waste on a daily basis. In addition, special procedures shall be followed by WST Landfill personnel when the delivery of particularly odorous wastes occurs; these procedures are outlined in the SOP (Part IV). WST Landfill does not anticipate the attraction of birds which would cause significant hazards to low-flying aircraft, as outlined in 30 TAC 330.545.

18.2.1 Federal Aviation Administration

DBS&A submitted requests for aeronautical studies through the Federal Aviation Administration (FAA) OO/AAA website in June 2022. On August 17, 2022, FAA provided "determination of no hazard to air navigation" letters for the site activities. The initial determination expired on February 17, 2024. A new request for determination from FAA was submitted on March 13, 2024, and responses were received in June 2024 affirming the previous "no hazard to air navigation" designation (Attachment I/II-10).

18.2.2 Pecos Municipal Airport

DBS&A mailed a letter to the PEQ manager per 30 TAC 330.545(b) on March 15, 2024 (Attachment I/II-10), even though PEQ is not considered a large airport. A response was received from PEQ on June 5, 2026, indicating that construction of the proposed landfill would have no material negative impact on airport operations.

19. General Geology and Soils [30 TAC 330.61(j)]

The regional geologic setting (Permian Basin-Delaware Basin) is described in detail in the geology report (Attachment III-5).

19.1 Facility Geology

The Pecos Valley alluvium outcrops at the facility location (Attachment III-5). These sediments consist of caliche, clay, silt, sand, gravel, and boulder-sized material and are up to 1,000 feet thick in the area (Meyer et al., 2012). The Pecos Valley alluvium sediments were deposited unconformably on older formations, including the Dockum Group and Rustler Formation (Meyer et al., 2012).

19.2 Facility Soils

Cross sections of the subsurface at the facility are provided in the geology report (Attachment III-5) and show that on-site soils consist primarily of variations of sand (silty sand, clayey sand, sand), gravel, and clay/silty clay, consistent with the regional geology of the Pecos Valley alluvium.

19.3 Faults

An analysis of geologic processes active in the vicinity of the facility were evaluated and are described in the geology report (Attachment III-5). The nearest major faults mapped on the Geologic Atlas of Texas sheets are approximately 65 miles southwest of the site. Additionally, aerial photographs were reviewed, and a search of technical literature found no evidence of faulting in the vicinity of the facility.

19.4 Seismic Impact Zones

DBS&A has evaluated whether the proposed facility is located within a seismic impact zone, which is defined in the TAC as an area with a 10 percent or greater probability that the maximum horizontal acceleration in lithified earth material, expressed as a percentage of the earth's gravitational pull, will exceed 0.10 gravity of earth (g) in 250 years (30 TAC 330.557). Maximum horizontal acceleration is defined in the TAC as the maximum expected horizontal acceleration depicted on a seismic hazard map, with a 90 percent or greater probability that the acceleration will not be exceeded in 250 years (30 TAC 330.557). The definition of maximum horizontal acceleration provided in the TAC is equivalent to peak ground acceleration (PGA) with a 2 percent chance of exceedance in 50 years used in current USGS National Seismic Hazards Maps.

The USGS National Seismic Hazard Mapping Program (NSHMP) Unified Hazard Tool website was used to assess the PGA at the site (USGS, 2020b). Based on the 2014 USGS National Seismic Hazard data and a 2 percent chance of exceedance in 50 years (equivalent to 10 percent in 250 years), the PGA at the site is 0.0713 g (Attachment I/II-12). Because the PGA is less than 0.1 g, the proposed facility is not located in a seismic impact zone, in accordance with 30 TAC 330.557.

19.5 Unstable Areas

The geologic processes active in the vicinity of the facility was reviewed by a professional geologist licensed in the state of Texas, in accordance with 30 TAC 330.559. A review of the Geologic Atlas of Texas (USGS, 2020a) indicates that the site lies in an area composed of Quaternary alluvium hundreds of feet thick. A review of surficial geologic mapping does not reveal any geologic or geomorphologic features that would cause unstable areas to exist in soils at the site, such as surface faulting or collapse features associated with karst.

20. Groundwater and Surface Water [30 TAC 330.61(k)]

Data on groundwater at and near the site is presented in detail in the geology report (Attachment III-5) and summarized below.

In October 2014, HDR completed a groundwater report for WST as part of their pre-purchase activities (Attachment I/II-11). The report cites the Pecos Valley aquifer as the major aquifer at the site, and states that "groundwater flow through the aquifer is influenced by the topography of the underlying geologic units: the Edwards Trinity units, the Rustler Formation, and the Dockum Group." The report states that the water quality is highly variable and typically hard, with concentrations of chloride, sulfate, arsenic, and radionuclides that are above the EPA primary drinking water standards.

20.1 Regional Groundwater

The proposed facility is located in Reeves County, which is not located over the recharge zone of the Edwards Aquifer (Type I and IAE landfills are prohibited over the recharge zone per 30 TAC 213.8(a)(5)). Reeves County is located within Groundwater Management Area (GMA) 3, which includes Reeves, Loving, Ward, Pecos, Winkler, and Crane Counties (TWDB, 2020b). In this area, the Pecos Valley Aquifer overlies portions of the Edwards-Trinity (Plateau), Dockum, Rustler, and Capitan Reef Complex aquifers (Meyer et al., 2012). Additional information about each of these aquifers is provided in the geology report (Attachment III-5). Although the Pecos Valley alluvium occurs at land surface in the vicinity of the site, the top of the Pecos Valley Aquifer is defined by the regional water table. The Pecos Valley Aquifer water table beneath the site has an elevation of about 2,525 feet msl based on a deep site boring (SB-4) completed as part of the

subsurface investigation at the site. This elevation corresponds to a depth to water of approximately 150 to 200 feet below ground surface (bgs) across the site.

The Texas Water Development Board (TWDB) groundwater database (GWDB) well information reports include water quality data for 12 samples collected from the water wells located within 1 mile of the subject property (all of which are completed in the Pecos Valley Aquifer). The sample data include ranges in concentrations for chloride (620 to 1,280 milligrams per liter [mg/L]), nitrate as nitrogen (1.4 to 143 mg/L), sulfate (940 to 1,780 mg/L), and total dissolved solids (TDS) (2,315 to 4,647 mg/L) (Figures I/II-5-8 and III-5-17; TWDB, 2020c).

TDS concentrations in Pecos Valley Aquifer groundwater in the Pecos Trough typically exceed 1,000 mg/L, and TDS concentrations for a substantial portion of groundwater exceed 3,000 mg/L (Freese and Nichols, 2020).

20.1.1 Site Groundwater Conditions, Perched Zone

In addition to the regional aquifer, a perched water zone exists at the site. Given the thickness of this perched zone and its water quality, it is likely that this water is irrigation return water. As this water is the first water encountered, nine monitor wells have been installed in the perched zone on property owned by the owner (four of the wells are within the permit boundary). Water levels in the perched zone vary from 53 to 84 feet bgs based on subsurface investigations at the site, described in detail in the geology report (Attachment III-5). Water level monitoring has been regularly completed, including the installation of pressure transducers in several wells to look for seasonal changes in water levels. Potentiometric surface maps, historical water level measurements, and elevations for the monitored wells are included as part of the geology report (Attachment III-5).

The horizontal hydraulic gradient for the water table represented in Figure III-5-27 ranges from a high of about 0.01 foot per foot (ft/ft) north of monitor well MW-2 to a low of about 2.6×10^{-4} ft/ft between wells MW-2 and GW-11. The hydraulic gradient in the Pecos Valley aquifer is approximately 0.002 ft/ft (Freese and Nichols, 2020).

Groundwater monitoring activities included sampling, measurement of field parameters, quality assurance/quality control (QA/QC), and delivery of samples to the laboratory for analysis. The analytical test methods based on SW-846 employed in the groundwater monitoring events include 6020A for total metals and 8260 for volatile organic compounds (VOCs). Water quality analytical results for the monitoring events are provided in Appendix III-5-F. Baseline water quality sampling performed from April 2021 through July 2024 indicates that nitrate

concentrations in the perched zone monitor wells ranged from 35 to 130 mg/L. As an additional indicator of overall groundwater quality in the perched zone, from April 2021 through July 2024, TDS concentrations ranged from 4,000 mg/L in monitor well GW-3 to 8,000 mg/L in monitor well GW-13.

20.1.2 Pecos, Texas Groundwater Supply

Pecos is the largest town in Reeves County, and is located approximately 5 miles southeast of the facility. Pecos provides water supply for its own population (10,254 in 2018), and also supplies Barstow, Texas (population 380 in 2018) (Freese and Nichols, 2020). In 2020, Pecos was projected to supply 3,035 acre-feet of water; this amount is projected to increase to 3,605 acre-feet per year (ac-ft/yr) by 2070 (Freese and Nichols, 2020).

Pecos has three well fields: South Worsham, North Worsham, and Ward County (Freese and Nichols, 2020). The Worsham well fields are south of Pecos and about 11 to 13 miles south-southeast of the site. The Ward County well field is about 25 miles east-northeast of Pecos near Monahans and is not in the vicinity of the site.

The current regional water plan is considering multiple water management strategies for Pecos, including municipal conservation, advanced water treatment, partnering with Madera Valley Water Supply Corporation (WSC) to expand their well field, direct non-potable reuse, direct potable reuse, and indirect potable reuse with aquifer storage and recovery (ASR) (Freese and Nichols, 2020).

20.1.3 Reeves County Groundwater Supply

In 2016, a total of 60,907 acre-feet of groundwater was pumped in Reeves County. This volume included 44,873 acre-feet from the Pecos Valley, 6,625 acre-feet from the Edwards-Trinity (Plateau), 2,332 acre-feet from the Dockum, 3,014 acre-feet from the Rustler, 372 from the Igneous, and 3,691 acre-feet from other aquifers (Freese and Nichols, 2020).

Water use for mining in Reeves County was projected to be as high as 12,600 acre-feet in 2020, with projected water use for this sector decreasing to approximately 6,200 ac-ft/yr by 2070 (Freese and Nichols, 2020). Current developed mining water supplies are limited, and the current Region F regional water plan is projecting a water shortage for the mining sector in Reeves County by 2020 (Freese and Nichols, 2020). Water management strategies being considered in the current regional water plan for the mining sector in Reeves County include

mining water conservation (water recycling) and development of up to 75 new Pecos Valley aquifer wells to supply up to 10,400 ac-ft/yr of water (Freese and Nichols, 2020).

20.2 Surface Water

The proposed facility is located within the Pecos River Basin, which is a tributary of the Rio Grande. The Pecos River is located approximately 6 miles east of the facility location; there are no major surface water features located in the vicinity of the site (Freese and Nichols, 2020). Due to the absence of any streams near the facility location, structural control of streams is not needed. The only blue lines on the USGS topographic line within a mile of the site are located on the property (Figure I/II-5-8). Inspection of these lines indicates that they are not natural (very straight lines, right angles, etc.). Comparison of the blue lines with on-site features shows that they are old concrete irrigation ditches on the property. Therefore, they are not considered to be representative of actual streams.

There are two Rio Grande Basin surface water reservoirs in Reeves County: (1) Red Bluffs Reservoir on the Pecos River in the far northeastern portion of Reeves County (and northwestern portion of Loving County), approximately 50 miles northwest of the facility's location, and (2) Lake Balmorhea on Toyah Creek in southern Reeves County, approximately 50 miles south-southwest of the facility (Freese and Nichols, 2020). Red Bluffs Reservoir and its water rights are owned by the Red Bluff Water Power Control District. Lake Balmorhea and its water rights are owned by the Reeves County Water Improvement District (WID) No. 1 (Freese and Nichols, 2020). Water quality (salinity) is a concern in the Pecos River Basin; in fact, high salinity limits the full use of the Pecos River water resources, including from Red Bluff Reservoir (Freese and Nichols, 2020).

The facility surface water drainage report addresses run-on, contact water, erosion, and soil loss from water (Attachment III-3).

20.3 Texas Pollutant Discharge Elimination System Permit

The Type I MSW facility has been designed to prevent the discharge of pollutants into waters of the state of Texas or waters of the U.S. WST Landfill will comply with all applicable TPDES stormwater permitting requirements and the CWA Section 402, as amended. WST will file a Notice of Intent (NOI) and obtain the appropriate TPDES permit coverage when required.

21. Abandoned Oil and Water Wells [30 TAC 330.61(l)]

21.1 Abandoned Water Wells

No abandoned water wells have been identified within the permit boundary. In the event that any abandoned water wells are discovered on the landfill, they will be properly abandoned in accordance with all regulations and rules. WST will provide a certification to TCEQ that the wells were properly capped, plugged, and closed a minimum of 30 days prior to construction.

21.2 Nearby Wells

A search of active water wells located within 1 mile of the WST property was conducted using the available TWDB online database, which includes water wells, brackish wells, and submitted drillers reports (TWDB, 2020c). A total of 28 water wells were identified within 1 mile of the subject property (Figure I/II-5-8). Based on the TWDB primary water use category, four of the nine water wells are for irrigation and stock designated uses. All nine water wells located within 1 mile of the subject property are completed in the Pecos Valley alluvium, with total well depths between 215 and 685 feet bgs (TWDB, 2020c). Water well locations, including the TWDB well identification numbers, are provided on Figure I/II-5-8.

When WST purchased the property, a non-potable water well was located near the northwest corner of the property (not within the permit boundary). WST provided that the total depth of this well is 430 feet, and that it has a chloride concentration of over 11,000 mg/L. This well in not currently in operation. DBS&A was unable to locate a TWDB well identification number for this well. Investigation into the permit status of this WST non-potable well will follow; if needed, a permit application will be submitted to the TWDB.

21.3 Abandoned Oil Wells

No abandoned oil and gas wells have been identified on the WST property. If any crude oil, natural gas wells or other wells associated with mineral recovery are located during construction or operation, notice of their location(s) will be provided to the TCEQ and RRC within 30 days of discovery. Oil and gas wells found within the permit boundary that may affect landfill operations will be properly capped, plugged, and closed in accordance with all applicable RRC rules and regulations and written certification will be provided to the TCEQ. Requirements of the RRC will also be followed and documented.

21.4 Oil and Gas Wells Located within 1 mile

A search for crude oil and natural gas wells was performed using the RRC online database (RRC, 2024), and 49 records were identified for wells located within 1 mile (Figure I/II-5-9). Of the oil and gas wells located within 1 mile of the subject property, 9 are oil and gas wells, 23 are horizontal drainhole locations, 2 are injection disposal wells, 5 are dry holes, 1 is shut-in or temporarily plugged, and 9 have been plugged (RRC, 2024). The closest gas well is across the unnamed private road on the northeast side of the landfill (Figure I/II-5-9) (RRC, 2025). No production wells exist on the WST property.

22. Floodplains and Wetlands [30 TAC 330.61(m)]

A discussion of floodplains and wetlands at the site is provided in the following subsections.

22.1 Floodplains

The facility is located is an area that is not mapped by the Federal Emergency Management Agency (FEMA), so no 100-year floodplain information is available. The Pecos River floodplain does not extend this far to the west, as the river is 6 miles away. A full description of the floodplain assessment, including review of Texas-lead statewide floodplain mapping, is provided in the drainage report (Attachment III-3).

In accordance with 30 TAC 330.547, no solid waste disposal operations will be permitted in areas that are located in a 100-year floodway as defined by FEMA unless they do not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human health and the environment.

DBS&A completed an analysis guided by the Texas-lead floodplain data to demonstrate that the run-on infrastructure is capable of managing run-on flow to the property.

Average annual precipitation near the proposed facility is 11.67 inches per year over the 80-year historical record reported for the 604 quadrangle (TWDB, 2020a). Total annual precipitation in this area has ranged from a maximum of 25.34 inches in 1941 to 2.57 inches in 2011—the driest year on record. The average monthly precipitation is 0.97 inch with a range of 0 to 8.77 inches. The majority of precipitation falls in May through September. Precipitation statistics are provided in Table I/II-2-2.

This part of Texas has some of the highest evaporation rates, often exceeding rainfall (Freese and Nichols, 2020). The average annual evaporation is 67.95 inches over the 66-year record from 1954 to 2019. Annual evaporation totals range from 48.37 to 92.81 inches, with the most evaporation in 1999 and the least evaporation in 2015. Average monthly evaporation is 5.66 inches, with a range of 0 to 13.29 inches. Gross evaporation statistics are provided in Table I/II-2-3.

Table I/II-2-2. Precipitation Data for Texas Water Development Board Quadrangle 604

Month	Number of Records	Precipitation (inches)					
		Minimum	Maximum	Mean	Median	10th Percentile	90th Percentile
January	80	0	3.25	0.55	0.33	0.01	1.27
February	80	0	4.18	0.45	0.19	0.02	1.19
March	80	0	2.36	0.39	0.21	0.01	0.99
April	80	0	4.18	0.56	0.34	0.02	1.38
May	80	0	7	1.19	0.93	0.21	2.43
June	80	0.05	4.81	1.28	1.23	0.24	2.18
July	80	0.03	5.41	1.59	1.31	0.34	3.17
August	80	0.13	5.74	1.53	1.16	0.35	3.17
September	80	0.01	8.77	1.93	1.38	0.4	3.93
October	80	0	4.63	1.23	0.7	0.08	2.81
November	80	0	4.18	0.49	0.27	0	1.18
December	79	0	3.62	0.49	0.34	0.01	1.05
Monthly	959	0	8.77	0.97	0.59	0.03	2.46
Annual	80	2.57	25.34	11.67	10.38	7.50	17.81

Source: TWDB, 2020b

Table I/II-2-3. Gross Evaporation Data for Texas Water Development Board Quadrangle 604

Month	Number of Records	Evaporation (inches)					
		Minimum	Maximum	Mean	Median	10th Percentile	90th Percentile
January	66	1.35	5.67	2.7	2.63	1.86	3.62
February	66	1.95	6.3	3.37	3.26	2.34	4.53
March	66	2.73	7.31	5.42	5.53	4.1	6.64
April	66	4.78	10.4	7.08	6.98	5.71	8.69
May	66	4.69	10.99	7.51	7.55	5.71	9.96
June	66	4.12	13.29	8.5	8.52	6.31	10.36
July	66	4.49	12.29	8.44	8.61	6.02	10.91
August	66	3.87	12.91	7.66	7.71	5.28	9.75
September	66	2.83	9.01	5.99	5.78	4.49	8.04
October	66	2.35	7.9	4.89	4.75	3.66	6.38
November	66	1.87	6.53	3.57	3.63	2.34	4.64
December	65	0	5.91	2.79	2.75	1.55	3.98
Monthly	791	0	13.29	5.66	5.52	2.5	9.01
Annual	66	48.37	92.81	67.95	66.95	53.61	83.31

Source: TWDB, 2020b

WST Landfill will be designed, constructed, maintained, and operated to manage run-on and runoff during the peak discharge of a 25-year rainfall event and will prevent the off-site discharge of waste material. Surface water drainage in and around a facility will be controlled to minimize surface water run-on and runoff, with the collection and control of at least the runoff volume resulting from a 24-hour, 25-year storm from the active portion of the landfill. The 24-hour storm intensities for the 5-, 10-, 25-, and 100-year storms are shown on Table I/II-2-4.

Table I/II-2-4. 24-Hour Storm Intensity by Interval

24-Hour Storm Event (Year)	Intensity (inches)
5	2.62
10	3.18
25	3.98
100	5.29

Source: NOAA, 2020

The landfill design will provide effective erosional stability to top dome surfaces and external embankment side slopes, during operation, closure, and post-closure. The existing facility drainage patterns will not be adversely altered as a result of the proposed facility.

The facility surface water drainage report addresses run-on, contact water, erosion, and soil loss from water (Attachment III-3).

WST will properly handle, store, and dispose of any surface or groundwater that becomes contaminated by contact with the working face of the landfill or with leachate. This is discussed further in the leachate and contaminated water plan (LCWP) (Appendix III-4-B).

22.2 Wetlands

A delineation of waters of the U.S., including wetlands, was performed by HDR (HDR, 2014) (Attachment I/II-11). The permit boundary is bordered to the north by CR 415, to the east by an unnamed gravel road; the west and south side are open to property owned by WST. A field survey was conducted on August 26 and 27, 2014 in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual (USACE, 1987) and the Regional Supplement for the Arid West Region (USACE, 2008a) in support of an evaluation of potential permitting requirements of Section 404 of the CWA. Based on HDR's review of topographic maps and aerial photography, areas potentially containing waters of the U.S. (i.e., stream corridors) and wetlands (areas adjacent to streams or with little slope and depressional areas) were evaluated in the field. Th evaluation used routine on-site delineation methods and recorded using a sub-meter global positioning system (GPS) unit (Attachment I/II-11).

HDR identified one drainage feature in the study area that was not considered a water of the U.S.; this feature is characterized as a drainage ditch in uplands, based on guidance from the USACE and EPA (Attachment I/II-11). This feature is identified on the aerial photograph

provided in Appendix B of the pre-purchase wetlands and endangered species report (Attachment I/II-11). Based on the HDR evaluation, no waters of the U.S. were identified within the study area, and the WST Landfill property does not include any wetlands.

Additional documentation regarding the lack of wetlands is provided in the biological evaluation, including information regarding lack of wetland species on-site and lack of high-water marks used to define wetlands (Attachment I/II-11).

22.2.1 U.S. Army Corps of Engineers

DBS&A sent a letter to the U.S. Army Corps of Engineers (USACE), Albuquerque District for coordination purposes, per 30 TAC 330.23(b) on April 20, 2021 by certified mail (Attachment I/II-11). The letter requested USACE review of the findings of the delineation of waters of the U.S., including wetlands, which was performed on the property in 2014 by HDR. The letter also requested a jurisdictional determination from the USACE to determine the need for a permit. No response was received from the April 2021 letter request, so the letter was resent on March 15, 2024 (Attachment I/II-11). In a letter dated May 9, 2024, USACE responded with a determination that a Department of the Army permit is not required because the site consists entirely of uplands (Attachment I/II-11).

23. Endangered and Threatened Species [30 TAC 330.61(n)]

DBS&A conducted a Biological Evaluation (BE) at the project site in January 2022, revised March 2024, which is available in Attachment I/II-11. This BE, in addition to communications with the Texas Parks and Wildlife Department (TPWD) and U.S. Fish and Wildlife Service (USFWS) (discussed below), confidently concluded that WST Landfill and its operations will not result in the destruction or adverse modification of the critical habitat of endangered or threatened species. Additionally, it will not cause or contribute to the taking of any endangered or threatened species. There will be "no effect" to any federally listed threatened or endangered species. Recommendations from TPWD regarding potential state listed species are incorporated into the SOP (Part IV).

23.1.1 Texas Parks and Wildlife Department

Per 30 TAC 330.61(n), DBS&A sent an e-mail to TPWD to request a project review on April 23, 2021 (Attachment I/II-11). A TPWD project review request form, figures showing the topography and aerial photography, and recent site photographs were provided. Current Texas Natural Diversity Database (TXNDD) data on rare, threatened, and endangered species, natural communities, and other significant features of concern to TPWD were also provided. The letter requested an evaluation of the proposed facility's potential impacts to wildlife and habitat, and any concerns regarding the proposed facility.

DBS&A received a comment letter from TPWD in response to the project review request on June 3, 2021. The agency made a series of general construction recommendations, including excluding vegetation-clearing activities during the general bird nesting season of March 15 through September 15 to avoid adverse impacts to breeding birds. They also noted that the project area may provide suitable habitat for the state-listed threatened Texas horned lizard, and provided best management practices (BMPs) to implement to minimize potential impacts to this species (e.g., contractor training, having an on-site biological monitor, speed limits, and covering trenches at night). They also provided recommendations for minimizing any potential impacts to species of greatest conservation need (i.e., species tracked by TPWD that are not listed as threatened or endangered), which in Reeves County include the western box turtle, gray-checkered whiptail (lizard), western rattlesnake, western massasauga (rattlesnake species), black-tailed prairie dog, and western burrowing owl. The response letter from TPWD is provided in Attachment I/II-11. The recommendations that WST will implement are described in the SOP (Part IV).

23.1.2 U.S. Fish and Wildlife Service

DBS&A sent an e-mail to USFWS to request a project review per 30 TAC 330.61(n) on April 21, 2021 (Attachment I/II-11). Figures showing the topography, aerial photography and recent site photographs were provided, in addition to a summary of the USFWS consultation that HDR received on the subject property in 2014. Included in the letter was a list of species included on the USFWS Information for Planning and Consultation (IPaC) resources list in 2020. The letter requested a review of the conclusion that the proposed facility and its operation will not result in the destruction or adverse modification of critical habitat of endangered or threatened species, or cause or contribute to take of any federally listed endangered or threatened species.

In response to this letter, Jacob Ogdee with the USFWS Austin Ecological Services Field Office called DBS&A on May 12, 2021. He said that based on the previous and current use of the

property, USFWS does not expect any Endangered Species Act impacts to result from the proposed project, and that USFWS agrees with the no effect determination (Ogdee, 2021). After this call, a BE was completed at the site, and DBS&A provided the BE to USFWS on July 21, 2022 by e-mail. USFWS sent an e-mail on July 21, 2022 in response to the BA/BE submittal stating that USFWS does not provide written review of non-federal projects.

24. Texas Historical Commission [30 TAC 330.61(o)]

DBS&A sent a letter to the Texas Historical Commission (THC) requesting a project review per 30 TAC 330.61(o) on April 23, 2021 by certified mail. A THC request for the State Historic Preservation Officer (SHPO) consultation form was included with the letter (Attachment I/II-11), and a review letter documenting compliance with the Natural Resources Code, Chapter 191, Texas Antiquities Code was requested. The April 2021 request to the THC included figures showing the topography, and current and historical aerial photography, as well as recent site photographs and the proposed landfill layout.

DBS&A received an e-mail from THC in response to the project review request on May 17, 2021. THC determined that no historic properties are present or affected by the project as proposed; however, an archaeological survey meeting the Texas Archaeological Survey Standards was required. The report must conform to the Secretary of the Interior's Guidelines for Archaeology and Historic Preservation, and be provided to THC for review.

On behalf of WST, DBS&A contracted with TRC Companies, Inc. to complete this requirement. A survey report was completed and provided to the THC. THC sent an approval letter dated December 29, 2021 (Attachment I/II-11) indicating compliance with the Antiquities Code of Texas; the letter also requested a few minor edits to the report. THC comments were addressed, and the final survey report is provided in Attachment I/II-11. An automated receipt response from THC dated January 7, 2022 and an acknowledgment of receipt of paper report copies on July 14, 2022 are also provided in Attachment I/II-11.

25. Local Government Review [30 TAC 330.61(p)]

25.1.1 Regional Planning Agencies

WST Landfill is located within the jurisdiction of the Permian Basin Regional Planning Commission (PBRPC), the Economic Development District that represents 17 counties within the Permian Basin of Northwest Texas. On July 21, 2021, DBS&A sent a coordination letter by certified mail to the PBRPC for coordination purposes per 30 TAC 330.61(p) (Appendix I/II-2-A). This letter informed the PBRPC of the proposed landfill, provided Parts I and II of the facility's permit application for review, and requested a response letter regarding compliance with local solid waste plans.

Prior to sending DBS&A's July 2021 letter to the PBRPC, the planning commission's 2002-2022 Regional Solid Waste Management Plan (RSWMP) was reviewed and confirmed for alignment with the proposed facility's operations. Most notably, WST Landfill was anticipated to satisfy Goal #1 stated in the 2002-2022 plan, which sought provide for adequate landfill capacity across the region, as well as Goal #4, which aimed to encourage communities to develop solid waste disposal and transfer facilities in the region. On September 14, 2021, the PBRPC sent a response letter to DBS&A which asserted WST Landfill's congruence with the Regional Solid Waste Plan and expressed that the commission "recommends that the application moves forward for permitting" (Appendix I/II-2-A).

Since the submittal of DBS&A's July 2021 coordination letter to the PBRPC, the commission's RSWMP has been updated to reflect the region's future long-term solid waste management plans spanning the years 2022-2042. The PBRPC redefines its regional goals and objectives within this updated plan, including two of which WST Landfill particularly anticipates to satisfy Goal #3, which aims to ensure adequate landfills for the future, and Goal #4, which seeks to increase the collection of household hazardous waste (HHW). WST Landfill expects to support these goals as it will serve Pecos and neighboring communities within Culberson, Jeff Davis, Loving, Pecos, Reeves, and Ward Counties for upward of 115 years, and will be permitted to accept municipal hazardous waste produced by Resource Conservation and Recovery Act (RCRA) conditionally exempt small quantity generators (CESQGs) and very small quantity generators (VSQGs) (encompassing most producers of household hazardous waste [HHW]). The proposed landfill by WST is additionally mentioned within the PBRPC's 2022-2042 RSWMP, further confirming the facility's alignment to the region's long-term plans for solid waste management.

25.1.2 Local Governments

The site is located outside the city limits and the extraterritorial jurisdiction of the Town of Pecos. A review letter was not requested from Reeves County, as Reeves County does not have a solid waste ordinance or a floodplain administrator. However, coordination has been provided with Reeves County Road and Bridge Department regarding access.

26. Special Appointments

The Notice of Engineer's Appointment follows.

Notice of Appointment

Engineer's Appointment

April 5, 2021

Mr. Toby Baker, MC109
Executive Director, TCEQ
P.O. Box 13087
Austin, TX 78711-3087

Dear Mr. Baker,

This letter is being sent to provide the TCEQ with notice that West Sun Tex, LLC (WST) has duly appointed Daniel B. Stephens & Associates, Inc. (DBS&A) as WST's consulting and design engineers for the purpose of submitting engineering reports and planning materials for the WST Permian Landfill permit application, which is a proposed Type I Municipal Solid Waste landfill to be located in Reeves County, Texas, and acting as agent for WST. DBS&A is an engineering firm that employs professional engineers and professional geoscientists who are in good standing, in accordance with state statutes. The firm has extensive experience designing and overseeing the construction of similar facilities. Mr. Gundar Peterson, P.E., Vice President, is the engineer of record for this application, and he meets the requirements of 30 TAC 305.44.

I authorize TCEQ's review and comment on the engineering reports, planning materials, and data submitted by DBS&A in support of the proposed project.

Sincerely,

T. Mussani

Tariq Mussani
Manager, West Sun Tex, LLC

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Appendix I/II-2-A

Permian Basin Regional Planning Commission Coordination

DBS&A
a Geo-Logic Company

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July 21, 2021

Ms. Virginia Belew
Executive Director
Permian Basin Regional Planning Commission
P.O. Box 60660
Midland, Texas 79711-0660

Re: Proposed Permian Landfill TCEQ Permit Application, Reeves County, Texas

Dear Ms. Belew:

On behalf of West Sun Tex, LLC (WST), Daniel B. Stephens & Associates, Inc. (DBS&A) is preparing a permit application to be submitted to the Texas Commission on Environmental Quality (TCEQ) for a proposed Type I municipal solid waste (MSW) facility in north-central Reeves County called the WST Permian Landfill. The facility property is located approximately 5 miles west-northwest of Pecos, Texas, at the intersection of County Road (CR) 408 and CR 415. The site latitude and longitude are 31.432400 and –103.585408. The facility entrance will be off of CR 408. The subject property has already been permitted as an oil and gas waste disposal facility by the Railroad Commission of Texas; however, WST is proposing to permit half of the 440-acre property as an MSW landfill.

This letter is being sent to the Permian Basin Regional Planning Commission (PBRPC) as the appropriate regional council of government, for coordination purposes per 30 TAC 330.61(p). We have reviewed the PBRPC's 2002-2022 Regional Solid Waste Management Plan, and feel that the proposed facility fits with the PBRPC's regional goals, especially Goal #1, providing adequate landfill capacity across the region, and Goal #4, encouraging communities to develop solid waste disposal and transfer facilities in the region. The purpose of this letter is to inform the PBRPC of the proposed facility, and to provide you with Parts I and II of the landfill application, for review. We request a review letter, regarding compliance with local solid waste plans.

Please contact me at (505) 822-9400 if you have any questions about the attached information.

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES, INC.

Gundar Peterson, P.E.
Vice President

AE/rpf
Attachments (2 copies of Parts I and II of the Permian Landfill permit application)

Daniel B. Stephens & Associates, Inc.
6020 Academy NE, Suite 100 505-822-9400
Albuquerque, NM 87109 FAX 505-822-8877

Permian Basin Regional Planning Commission
P.O. BOX 60660 • 2910 LAFORCE BOULEVARD • MIDLAND, TEXAS 79711-0660 • (432) 563-1061 • FAX (432) 563-1728

VIRGINIA BELEW
Executive Director

September 14, 2021

Gundar Peterson, Principal Engineer
Daniel B Stephens & Associates
6020 Academy Rd, NE, Suite 100,
Albuquerque, New Mexico, 87109

Re: West Sun Tex, LLC Type 1 MSW Landfill Project, Reeves County

Dear Mr. Peterson:

The Permian Basin Regional Planning Commission, Solid Waste department received the landfill application for a Type 1 MSW landfill in Reeves County. The application and assorted documents were sent out to the Permian Basin Solid Waste Advisory Committee members for review and comment. The responses received were favorable, as the Solid Waste Advisory Committee recognized the benefit of the landfill to the community and therefore, the region. The project is consistent with the regional solid waste plan and is planned to benefit the quality of life of the community and region's citizens.

The PBRPC and Solid Waste Advisory Committee agrees that there are no concerns and recommends that the application moves forward for permitting.

If you have any questions or require further information, please contact me at (432) 563-1061.

Sincerely,

Hridoy Haq
Permian Basin Regional Planning Commission
Regional Services Program Manager

Cc Rex Thee, Permian Basin Solid Waste Advisory Chairman

Attachment I/II-3

Legal Property Descriptions

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2 Wire Powerline

Buried "Medera Valley Water Supply Corp." Line

Buried "Contel" Phone Line

N

0 375 750 ft

Explanation

- Buried "Contel" Phone Line
- Buried "Medera Valley Water Supply Corp." Line
- 2 Wire Powerline
- Permit boundary
- Landfill footprint

Aerial image: Maxar, Vivid 2/11/2022, ESRI Inc..

STATE OF TEXAS
GUNDAR PETERSON
103091
LICENSED
PROFESSIONAL ENGINEER
7/22/2026

DBS&A
a Geo-Logic Company

3/24/2026 DB20.1166

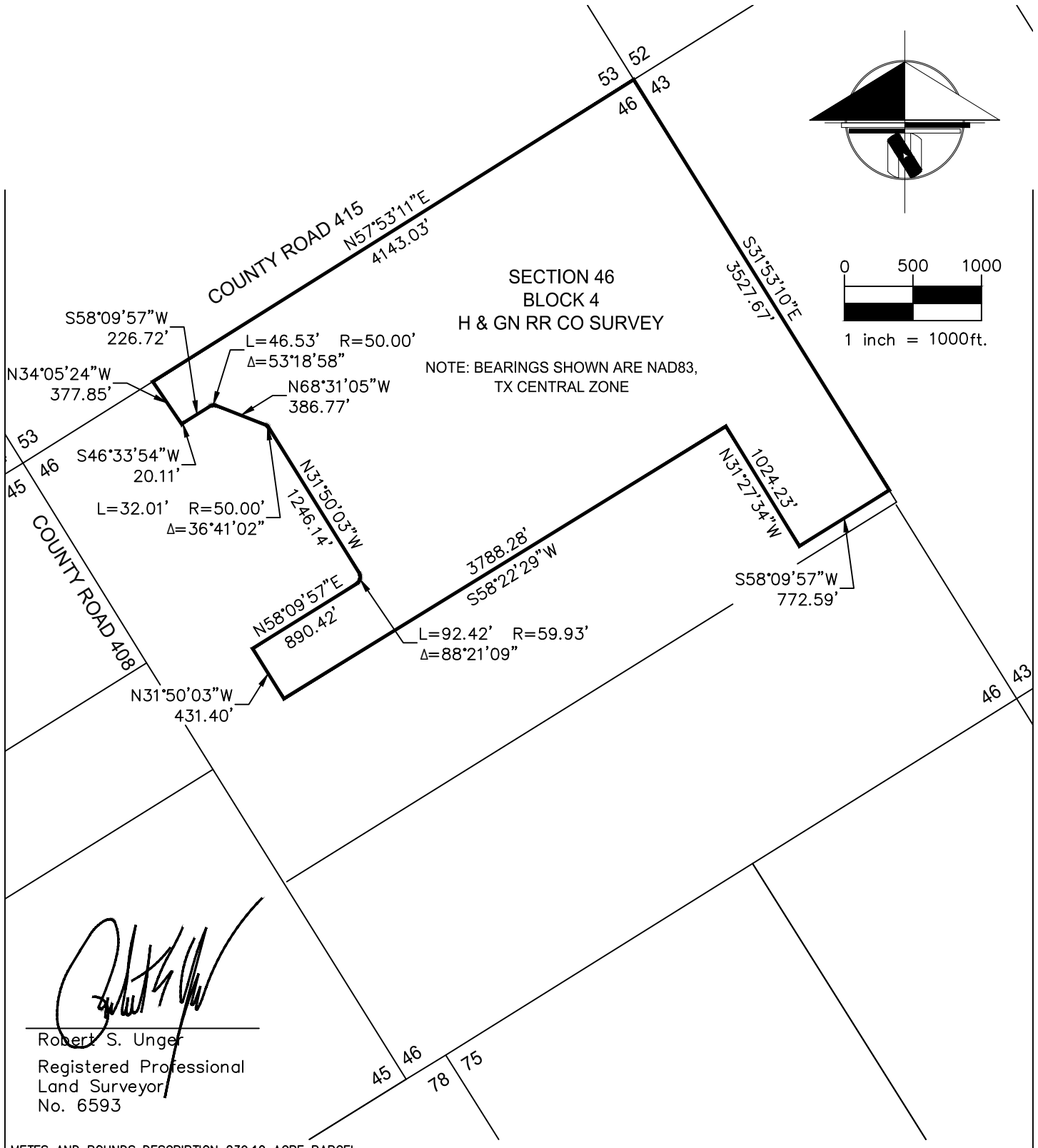
WST LANDFILL

Survey Easements Section Lines and Facility Location

Figure I/II-3-1

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Robert S. Unger
Registered Professional
Land Surveyor
No. 6593

METES AND BOUNDS DESCRIPTION 239.10 ACRE PARCEL

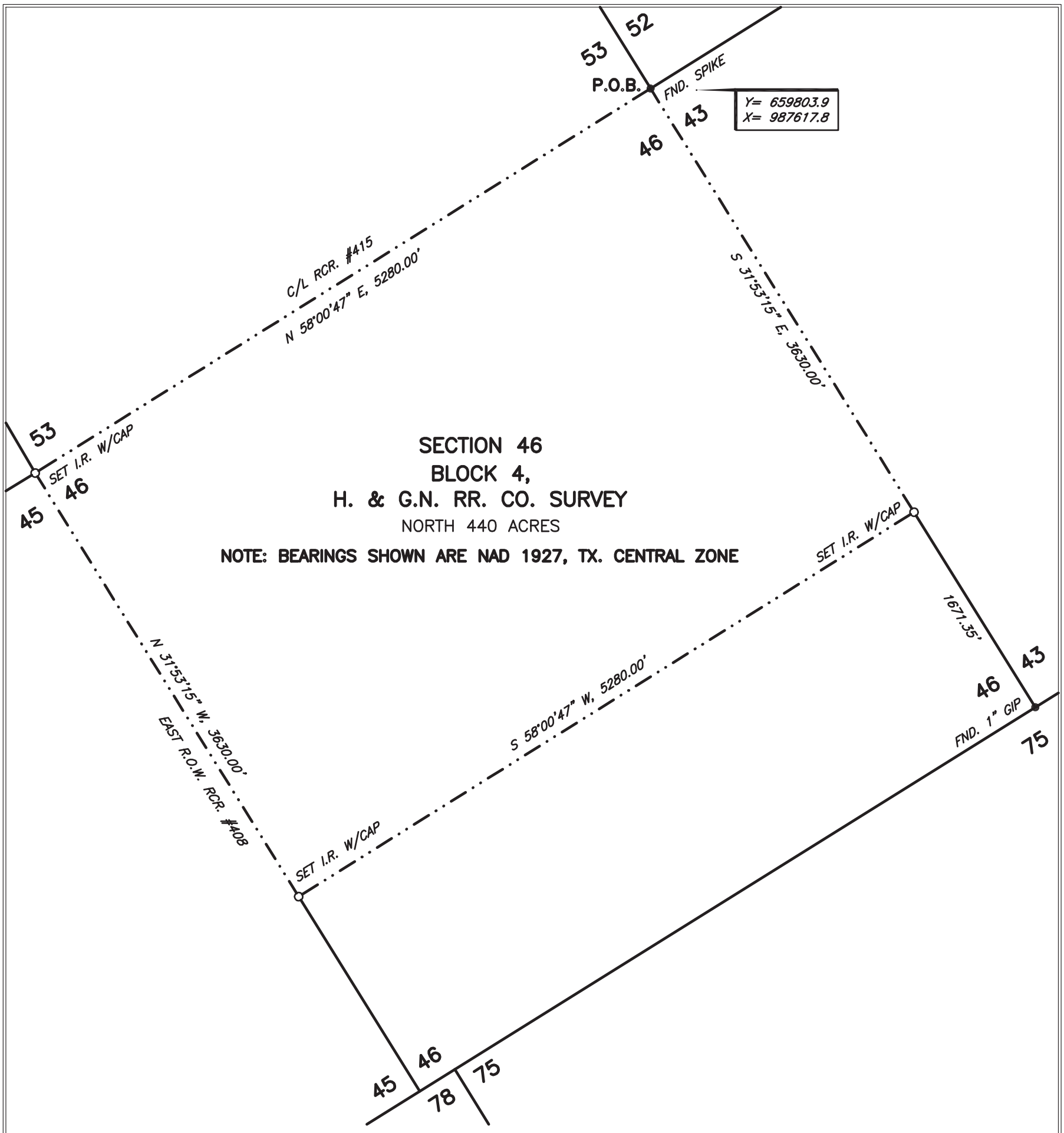
BEING a proposed boundary situated in ABSTRACT NO. 403, SECTION 46, BLOCK 4, H&GN R.R. CO SURVEY, Reeves County, Texas. Said boundary being more particularly described as follows:

BEGINNING at the Northeast corner of said SECTION 46, from which the calculated Northwest corner of said SECTION 46 bears S58°19'16"W, a distance of 5280.00 feet;
THENCE S31°53'10"E, along the East line of said SECTION 46, a distance of 3527.67 feet;
THENCE leaving said East line, S58°09'57"W, a distance of 772.59 feet to a set 1/2" rebar with cap;
THENCE N31°27'34"W, a distance of 1024.23 feet to a set 1/2" rebar with cap;
THENCE S58°22'29"W, a distance of 3788.28 feet to a set 1/2" rebar with cap;
THENCE N31°50'03"W, a distance of 431.40 feet to a set 1/2" rebar with cap;
THENCE N58°09'57"E, a distance of 890.42 feet to a set 1/2" rebar with cap and the beginning of a tangent curve to the left;
THENCE Northeasterly, along said curve to the left, having a radius of 59.93 feet, a central angle of 88°21'09", an arc length of 92.42 feet to said curve's end and a set 1/2" rebar with cap;
THENCE N31°50'03"W, a distance of 1246.14 feet to a set 1/2" rebar with cap and the beginning of a tangent curve to the left;
THENCE Northwesterly, along said curve to the left, having a radius of 50.00 feet, a central angle of 36°41'02", an arc length of 32.01 feet to said curve's end and a set 1/2" rebar with cap;
THENCE N68°31'05"W, a distance of 386.77 feet to a set 1/2" rebar with cap and the beginning of a tangent curve to the left;
THENCE Northwesterly, along said curve to the left, having a radius of 50.00 feet, a central angle of 53°18'58", an arc length of 46.53 feet to said curve's end and a set 1/2" rebar with cap;
THENCE S58°09'57"W, a distance of 226.72 feet to a set 1/2" rebar with cap;
THENCE S46°33'54"W, a distance of 20.11 feet to a set 1/2" rebar with cap;
THENCE N34°05'24"W, a distance of 377.85 feet to the North line of said SECTION 46 and a set 1/2" rebar with cap;
THENCE N57°53'11"E, along said North line, a distance of 4143.03 feet to the POINT OF BEGINNING.

STATE OF TEXAS
REGISTERED
ROBERT S. UNGER
6593
PROFESSIONAL
LAND SURVEYOR

TITLE:	TCEQ
DATE:	03/15/26
DESC:	PERMIT BOUNDARY

SYNERGY GEOMATICS
2125 E. 5th STREET, #101
TEMPE, AZ 85281
PH: (480) 406-3648
EMAIL: [redacted]



DESCRIPTION

Description of a 440 acre tract of land described as the Northwest 440 acres in Volume 822, Page 509 of the Deed Records of Reeves County, Section 46, Block 4, H. & G.N. RR. Co. Survey, Reeves County, Texas:

Beginning at a spike nail found for the common Northeast corner of this and said Section 46 in the center of RCR #415 from whence a 1 1/2" G.I.P found for the Northeast corner of Section 43 bears N 57°59'25" E, 5279.52 feet;

Thence S 31°53'15" E, 3630.00 feet to a 1/2" iron rebar with cap set for the Southeast corner of this from whence a 1" iron pipe found for the Southeast corner of said Section 46 bears S 31°53'15" E, 1671.35 feet;

Thence S 58°00'47" W, 5280.00 feet to a 1/2" iron rebar with cap set for the Southwest corner of this in the east right of way of RCR #408:

Thence N 31°53'15" W, 3630.00 feet to a 1/2" iron rebar with cap set for the common Northwest corner of this and said Section 46 in the center of RCR #415;

Thence N 58°00'47" E, 5280.00 feet to the place of beginning.

STATE OF TEXAS
REGISTERED
JEFFREY D. SUITER
4650
PROFESSIONAL
LAND SURVEYOR

Note: For survey construction, corner descriptions and records references, see supporting documents in file.

Jeffrey D. Suiter
Registered Professional Land Surveyor No. 4650

PROFESSIONAL LAND SURVEYORS
Well Locations
Pipelines
LUCHINI & MERTZ
Boundary Surveys

June 4, 2014
Job# 140604NS

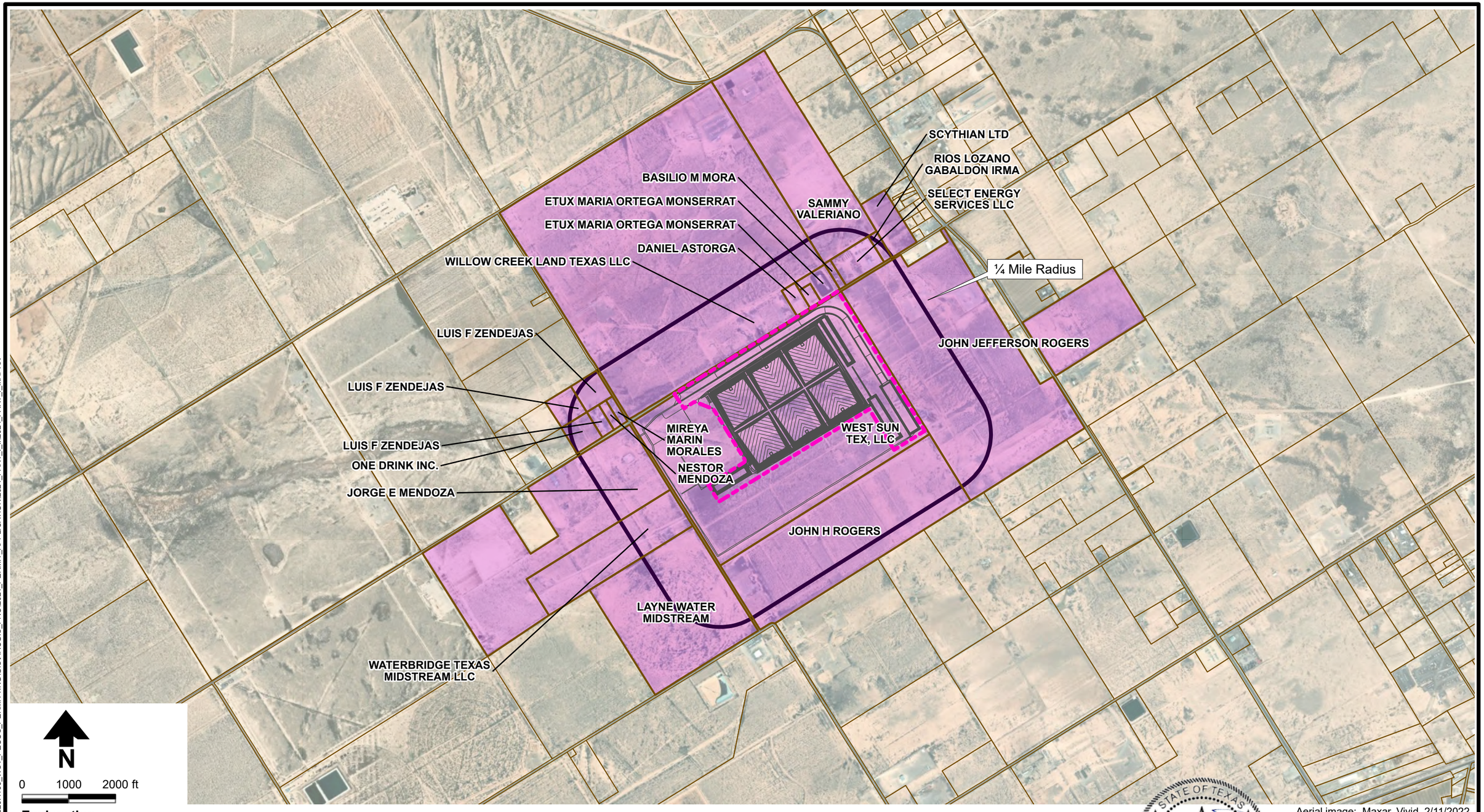
P. O. Box 1963 Midland, Texas 79702 (432) 684-6728 Firm# 10086500

N
W E
S
SCALE: 1" = 1000'
0' 500' 1000'

Attachment I/II-4

Land Ownership Information

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Notes:
1. Parcel delineations and land ownership retrieved from the Reeves County Appraisal District (March 2026).
2. A targeted property search provides landowners within the 1/4 mile radius of the facility which were not able to be located geospatially; these entities have been included in the land ownership list which corresponds to this map. These include: Danny A. Raspberry, Alan I & Margarita Suchil, Roy Hurd Manahan, JVIZ Inc., Ernest F. Smith III, and Jamie Caso Calderon.

Aerial image: Maxar, Vivid 2/11/2022

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WST LANDFILL
Land Ownership Map

Figure I/II-4-1

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Table I/II-4-1. Owner Information for Property Located within ¼ mile of Proposed Facility

Property ID	Property Description	Legal Acreage	Owner Name	Mailing Address				Deed Date
				Address	City	State	Zip Code	
4632	AB 1391 BLK 4 SEC 46 H&GN N/440 AC	440.0	West Sun Tex, LLC	P.O. Box 1737	Eunice	NM	88231-1737	12/08/2014
16438	AB 1391 BLK 4 SEC 46 H&GN SE/200 AC	198.80	John H. Rogers	P.O. Box 2186	Pecos	TX	79772-2186	12/13/1995
3193	AB 1391 BLK 4 SEC 46 H&GN	1.20	Texas New Mexico Power Company	Alvarado Square MS 2708	Albuquerque	NM	87158-0001	N/A
5460	AB 403 BLK 4 SEC 45 H&GN OUT N/2	2.0	Jorge E. Mendoza	P.O. Box 10	Pecos	TX	79772-0010	11/15/2005
5461	AB 403 BLK 4 SEC 45 H&GN (OUT OF N/2)	18.0	Jorge E. Mendoza	P.O. Box 10	Pecos	TX	79772-0010	11/15/2005
7575	AB 403 BLK 4 SEC 45 H&GN OUT N/2	222.59	Jorge E. Mendoza	P.O. Box 10	Pecos	TX	79772-0010	06/28/2007
13992	AB 403 BLK 4 SEC 45 H&GN SE/4 FDIC ASSET #351061013	160.0	Layne Water Midstream	1780 Hughes Landing Blvd., Ste 800	Spring	TX	77380-4014	12/12/2018
33596	AB 403 BLK 4 SEC 45 H&GN OUT N/2	77.41	Waterbridge Texas Midstream, LLC	840 Gessner Rd., Ste 100	Houston	TX	77024-4143	02/07/2019
25444	AB 1729 BLK 4 SEC 54 H&GN SW/4 SE/4 SE/4	10.0	One Drink, Inc.	P.O. Box 1908	Pecos	TX	79772-1908	08/08/2016
5502	AB 1729 BLK 4 SEC 54 H&GN NE/4 SE/4 SE/4	10.0	Luis F. Zendejas	P.O. Box 270	Pecos	TX	79772-0270	12/14/2018
25340	AB 1729 BLK 4 SEC 54 H&GN SE/4 SE/4 SE/4	4.01	Luis F. Zendejas	P.O. Box 270	Pecos	TX	79772-0270	12/14/2016
25633	AB 1729 BLK 4 SEC 54 H&GN NW/4 SE/4 SE/4	10.0	Luis F. Zendejas	P.O. Box 270	Pecos	TX	79772-0270	04/06/2017
29360	AB 1729 BLK 4 SEC 54 H&GN SE/4 SE/4 SE/4	2.0	Nestor Mendoza	P.O. Box 10	Pecos	TX	79772-0010	11/19/2013
31043	AB 1729 BLK 4 SEC 54 H&GN SE/4 SE/4 SE/4	3.0	Mireya Marin Morales	P.O. Box 885	Pecos	TX	79772-0885	06/19/2015
16349	AB 407 BLK 4 SEC 53 H&GN S/2 & NE/4	440.0	Willow Creek Land Texas, LLC	4189 N 900 W	Pleasant Grove	UT	84062-8752	10/04/2017
6250	AB 407 BLK 4 SEC 53 H&GN S/PARTS #180256	5.0	Roy Hurd Manahan	P.O. Box 1247	Pecos	TX	79772-1247	11/05/2013
7627	AB 407 BLK 4 SEC 53 H&GN S/2	2.0	Ernest F. Smith III	P.O. Box 643	Pecos	TX	79772-0643	05/15/2006
11842	AB 407 BLK 4 SEC 53 H&GN OUT S/2 S# TX3111333 A & B	5.0	Danny A. Raspberry	P.O. Box 1004	Pecos	TX	79772-1004	08/13/1999
16892	AB 407 BLK 4 SEC 53 H&GN (OUT OF THE SE/PT)	5.0	Alan I & Margarita Suchil	9914 W County Rd. 77	Pecos	TX	79707-1488	08/14/2017
17292	AB 407 BLK 4 SEC 53 H&GN	3.0	JVIZ Inc.	189 SE Loop 388	Odessa	TX	79766	03/03/2025
17754	AB 407 BLK 4 SEC 53 H&GN SW Part	5.0	JVIZ Inc.	189 SE Loop 388	Odessa	TX	79766	03/03/2025
18703	AB 407 BLK 4 SEC 53 H&GN OUT S/2	8.0	Etux Maria Ortega Monserrat	P.O. Box 69	Barstow	TX	79719-0069	12/21/2001
6283	AB 407 BLK 4 SEC 53 H&GN OUT S/2 SER #0C05903543A&B	2.0	Etux Maria Ortega Monserrat	P.O. Box 69	Barstow	TX	79719-0069	12/21/2001
6155	AB 407 BLK 4 SEC 53 H&GN OUT S/2SN #PHO59918A	5.0	Daniel Astorga	11345 W Ranch Ct.	El Paso	TX	79934	10/27/2022
10523	AB 1761 BLK 4 SEC 52 H&GN	14.5	Select Energy Services, LLC	515 Post Oak Blvd., Ste 200	Houston	TX	77027-9437	09/24/2013
16348	AB 1761 BLK 4 SEC 52 H&GNN/140 AC OF W/160 AC	140.0	Sammy Valeriano	2963 S. County Rd. W	Odessa	TX	79766-8846	08/17/2011
1777	AB 1761 BLK 4 SEC 52 H&GN SW/CORNER	3.0	Basilio M. Mora	811 E. 10th St.	Pecos	TX	79772-4513	12/15/2000
18685	AB 1761 BLK 4 SEC 52 H&GN SER #80146564E/PT	2.5	Jamie Caso Calderon	P.O. Box 846	Pecos	TX	79772	03/04/2020
673	AB 402 BLK 4 SEC 43 H&GN NW/2 & W/8.21 AC OF S/2 SE/4	328.2	John Jefferson Rogers	P.O. Box 2186	Pecos	TX	79772-2186	01/08/2021

Source: Reeves County Appraisal Database
NA = Data not included in the Reeves County Appraisal Database

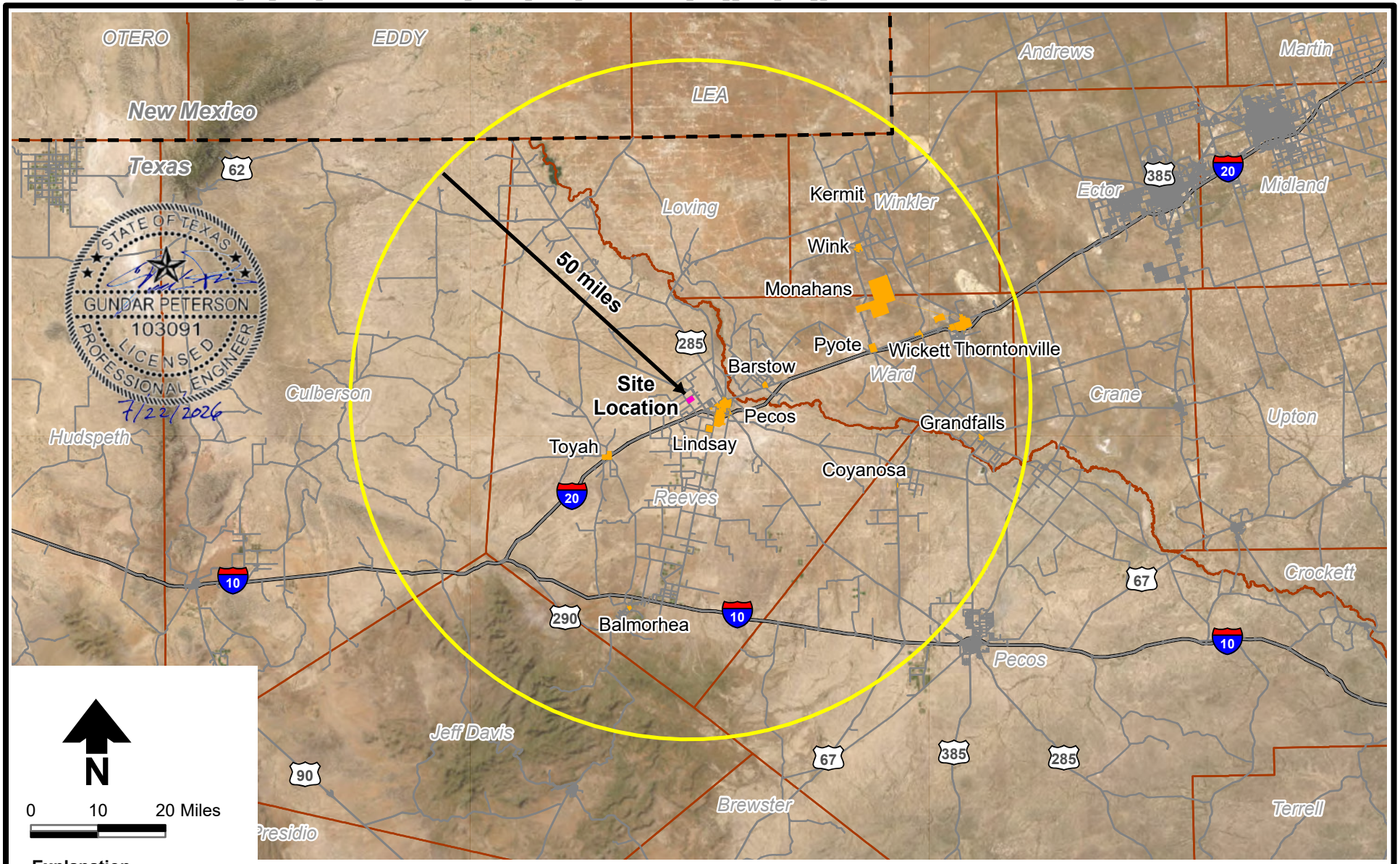
Table I/II-4-2. Owner Information for Mineral Rights Located Under the Proposed Facility

Mineral Rights Property Description	Acreage	Owner	Address	City	State	Zip Code
AB 1391 BLK 4 SEC 46 H&GN S/220 AC OF N/440 AC	220	Alamito Minerals, LP	P.O. Box 3527	Midland	TX	79702-3527
	220	Essman Properties, LLC	P.O. Box 302	Midland	TX	79702-0302
	220 (leasing)	KEW Drilling	4925 Greenville Ave., Suite 500	Dallas	TX	75206
AB 1391 BLK 4 SEC 46 H&GN NW/220 AC	220	Cabrito, Ltd.	P.O. Box 2237	Midland	TX	79702
	220	QPC3, LP	P.O. Box 10004	Midland	TX	79702
	220 (leasing)	KEW Drilling	4925 Greenville Ave., Suite 500	Dallas	TX	75206
AB 1391 BLK 4 SEC 46 H&GN 220 AC	220	White Oak Energy Royalty Partners, LP	16945 Northchase Dr., Suite 1700	Houston	TX	77060
	220 (leasing)	PDC Permian, Inc.	1099 18th St Suite 1500	Denver	CO	80203
AB 1391 BLK 4 SEC 46 H&GN 220 AC	220	Hurley-Texas Royalty Partnership	PO BOX 587	Marlow	OK	73055
	220 (leasing)	PDC Permian, Inc.	1099 18th St Suite 1500	Denver	CO	80203

Attachment I/II-5

Relevant Maps

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Base image source: ESRI et al.

Figure I/II-5-1

WST LANDFILL

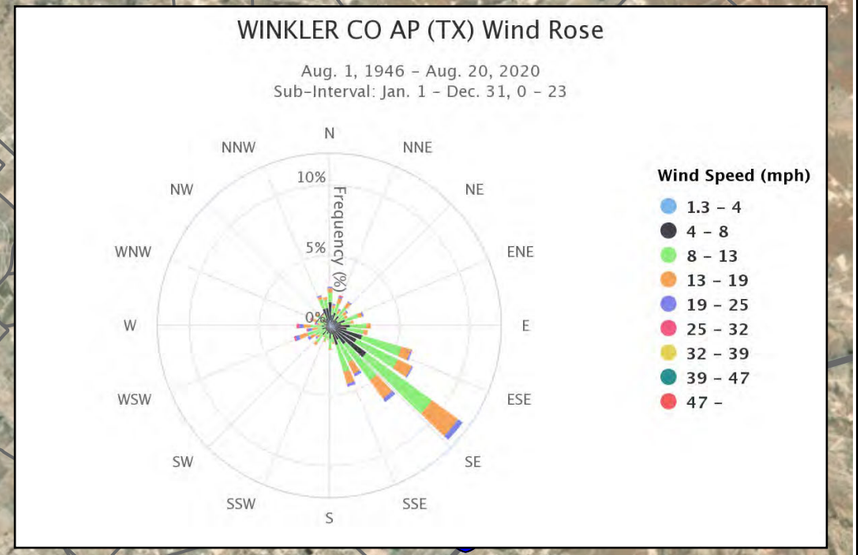
Towns and Counties Located within 50 miles of the Proposed Facility

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6 mile radius

Project Site

Pecos

Pecos Municipal Airport

County Road 419
County Road 415
County Road 410
County Road 404
County Road 409
County Road 411
Business Loop 20 W
N Frontage Interstate 20 W
Bus 20
20
285
17
1450

N

0 1 2 Miles

Explanation

Permit boundary

Texas Department of Transportation road

Aerial image: Maxar, Vivid 2/11/2022

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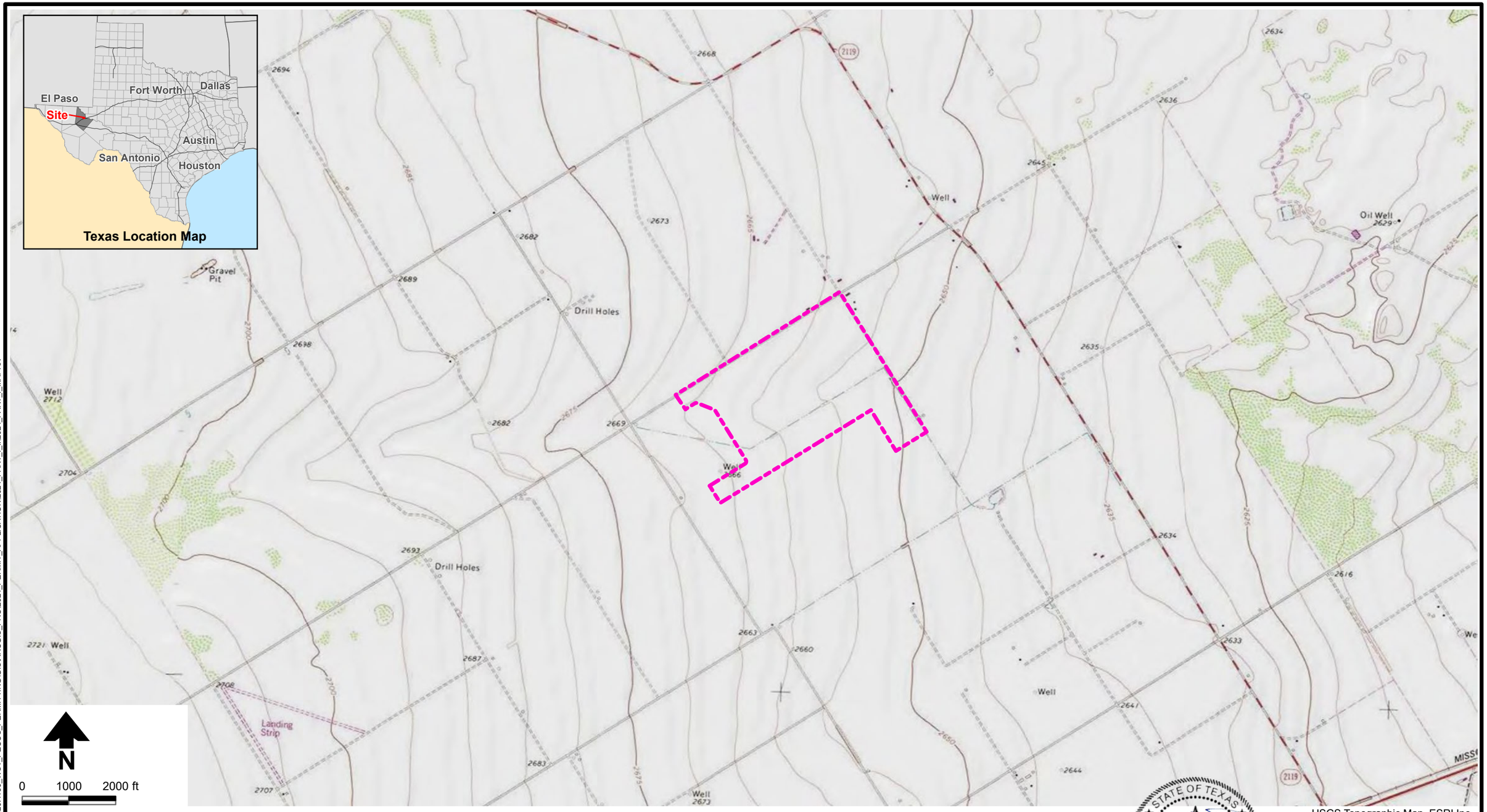
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WST LANDFILL
General Location Map

Figure I/II-5-2

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N

0 1000 2000 ft

Explanation

Permit boundary

USGS Topographic Map, ESRI Inc.

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Rev 2: July 2026 (Rev 0: March 2026)

WST LANDFILL
Topographic Map

Figure I/II-5-3

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FEMA floodplain data: https://fema.maps.arcgis.com/apps/webappviewer/index.html?id=e7a7dc3ebd7f4ad39bb8e485bb64ce44
Accessed: February 6, 2024

N

0 0.5 1 Mile

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WST LANDFILL
FEMA Regional Floodplain Information

Figure I/II-5-4

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N

0 1000 2000
Feet

Explanation

1% annual chance (100-year) flood hazard

Permit boundary

Source: Texas Water Development Board (TWDB), Cursory Floodplain Dataset (2021) — 1% Annual Chance (100-year) Flood Hazard.

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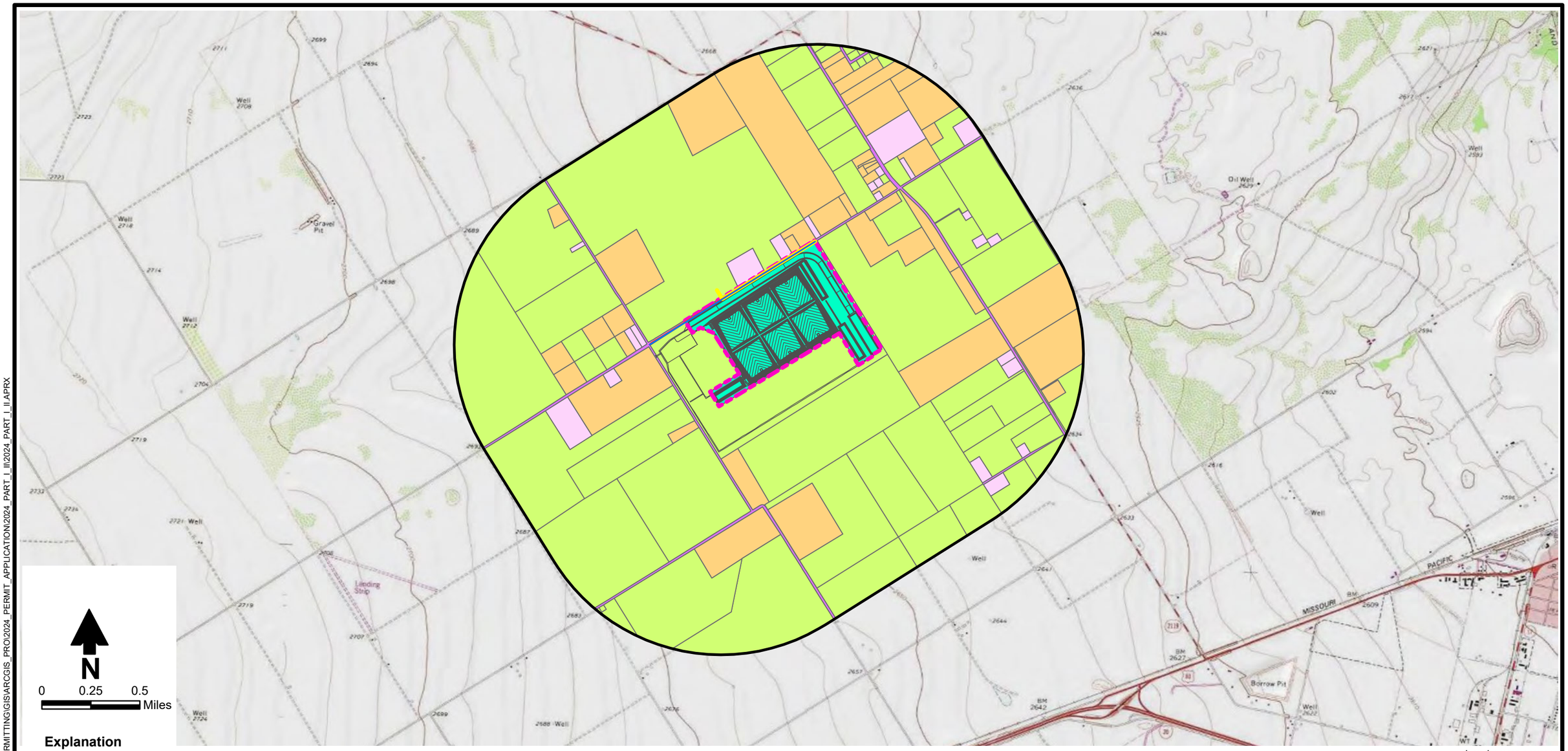
3/19/2026 DB20.1166

WST LANDFILL

Texas Floodplain Information

Figure I/II-5-5

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Explanation

- Permit boundary
- 1 mile radius
- Residential
- Commercial/Industrial
- Agricultural/Open Space (including scattered residences)
- Transportation Corridor
- WST Landfill
- 2 Wire Powerline
- Buried "Contel" Phone Line
- Buried "Medera Valley Water Supply Corp." Line

Land Use within 1 mile of the Proposed Facility	
Residential	2.60%
Commercial/Industrial	19.97%
Agricultural/Open Space (including scattered residences)	71.24%
Transportation Corridor	1.37%
WST Landfill	4.81%
Total	100.00%

Note: 1. Refer to figure I/II-5-7 for location of residences.
2. The portion of Reeves County within 2 miles of the site is not zoned.

Land cover source:
Texas Parks and Wildlife Commission
https://tpwd.texas.gov/gis/team/#
Accessed: October 8, 2024
USGS Topographic Map, ESRI Inc.

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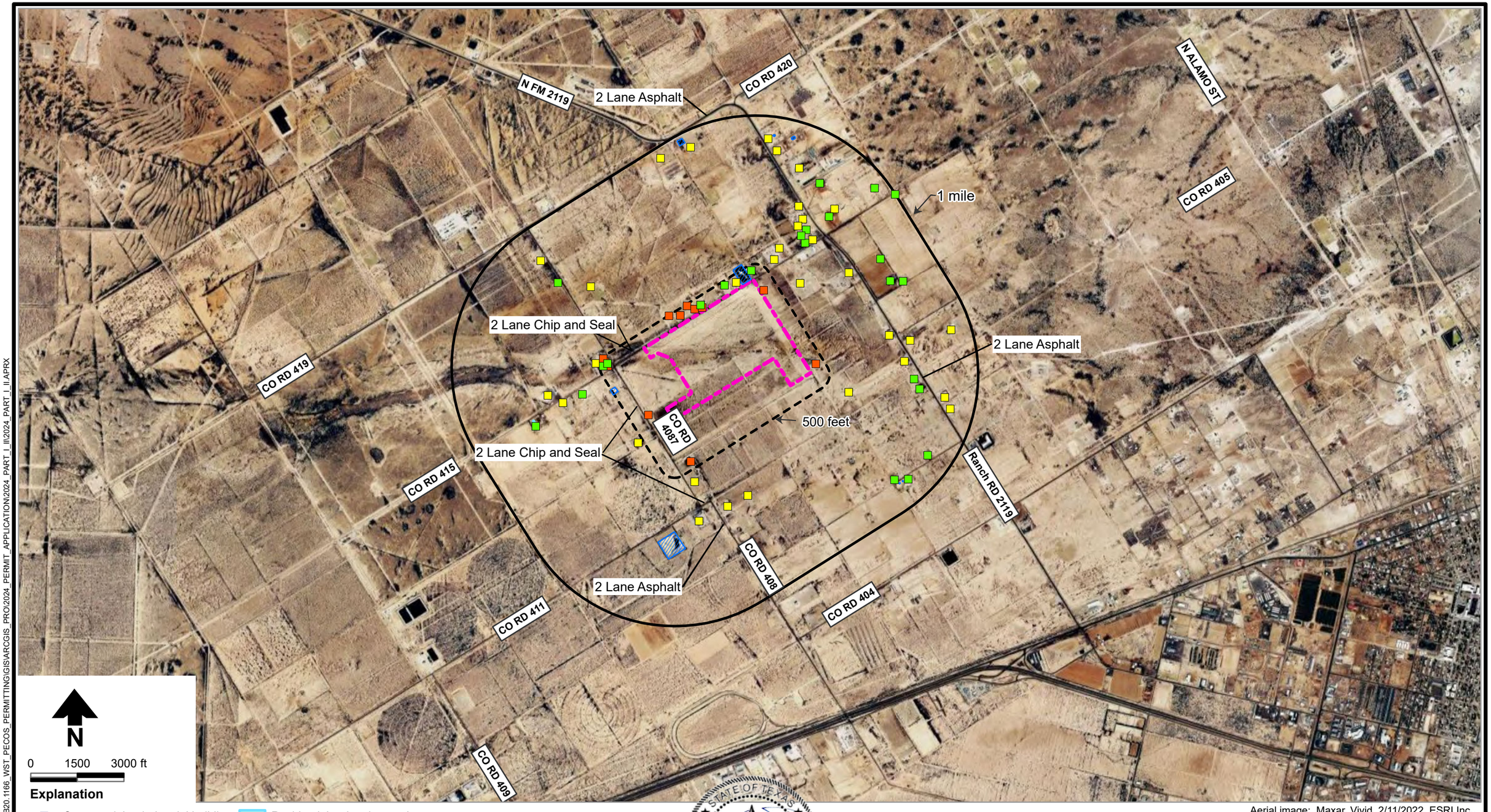
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WST LANDFILL
Land Use

Figure I/II-5-6

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Aerial image: Maxar, Vivid 2/11/2022, ESRI Inc..

Notes:
1 No schools, daycares, hospitals, lakes, churches, parks, or cemeteries were identified within the 1 mile radius of the Site.
2. Buildings and facilities were identified based on aerial photo interpretation, no zoning record was available.

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WST LANDFILL

Structures/Buildings Located within 1 mile of the Proposed Facility

Figure I/II-5-7

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Texas Location Map

1 mile

500 feet

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N

0 1500 3000 Feet

Explanation

- Permit boundary
- 500 foot radius
- One mile radius
- BRACS water well
- Domestic
- Fracking Supply
- Industrial
- Irrigation
- Monitor
- Rig Supply
- Stock
- Unused
- WST non-potable water well

Well data from the Texas Water Development Board (TWDB), August 2020
USGS Topographic Map, ESRI Inc.

DBS&A a Geo-Logic Company

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WST LANDFILL

Topography and Water Wells

Figure I/II-5-8

Rev 2: July 2026 (Rev 0: March 2026)

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1 mile

38933503
38935873
38935873
38935466
38935099
38935099
38935466
38937678
38933503
38933458
38936405
38936412
38937441
38936782*
38935099
38935099
38938112
38938111
38938113
38938115
38938116
38938114
38935133
38935133
38931188
38931809
38931055
38931497
38935692
38931552
389
389
38935445
38939589
38935692
38935046
38935046
38933215
38930239
38930239
38939591
38933174
38939590
38937215
38940241
389
38936751
38936776
38936751
38936776
38939822
38939821
38939820
38939819
38939588
38939585
38939587
38935046
38935046
389
389
38939823
38939824
38930271
38930271

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N
0 1500 3000
Feet

Explanation
- Permit boundary
- One mile radius

- Dry Hole
- Gas Well
- Horizontal Drainhole
- Injection / Disposal
- Injection / Disposal from Oil
- Oil Well
- Oil/Gas Well
- Plugged Gas Well
- Plugged Oil Well
- Shut-In Oil

Well data from the Railroad Commission of Texas (https://gis.rrc.texas.gov/GISViewer/)
Base Map: Esri, et al., 2020

Note: * indicates that well is not within the permit boundary but may appear to due to map scaling.

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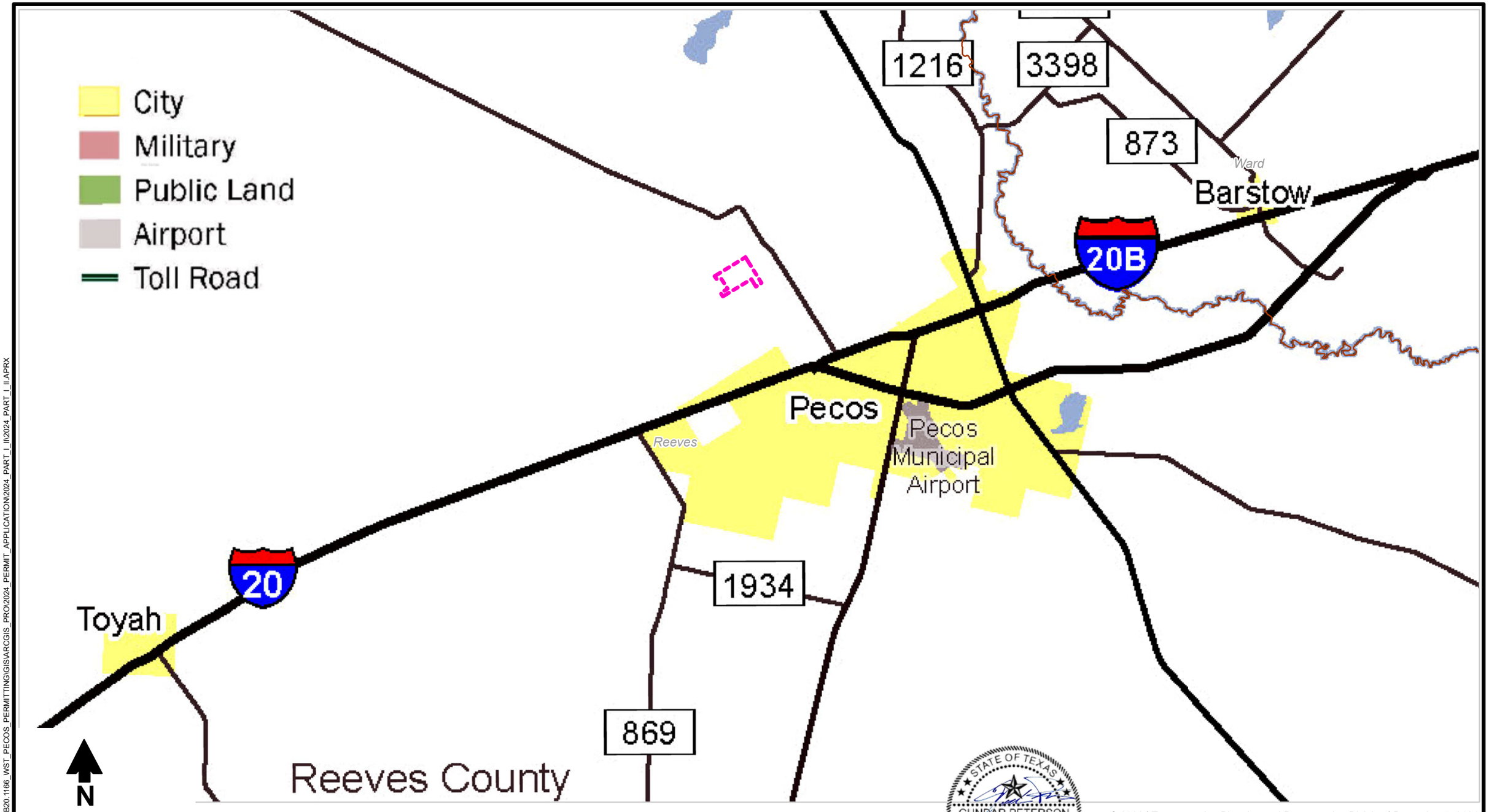
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WST LANDFILL

Oil and Gas Wells within 1 mile of the Proposed Facility

Figure I/II-5-9



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WST LANDFILL

Texas Department of Transportation (TxDOT) County Map

DBS&A a Geo-Logic Company

3/24/2026 DB20.1166

Figure I/II-5-10

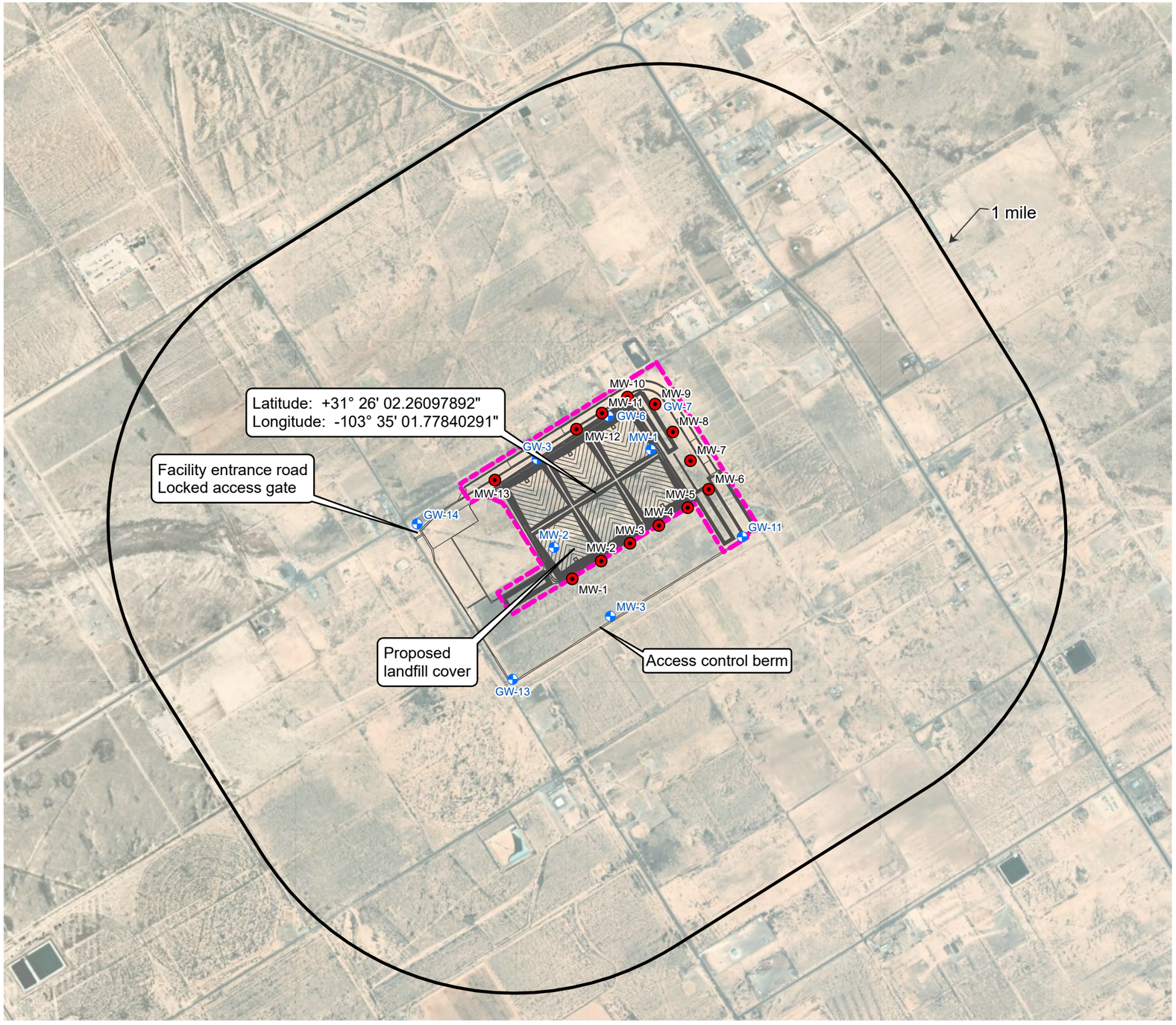
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N

0 1000 2000
Feet

Explanation

- Proposed groundwater monitor well
- Existing monitor well
- Landfill footprint
- 1 Mile radius
- Permit boundary



Aerial image: Maxar, Vivid 2/11/2022

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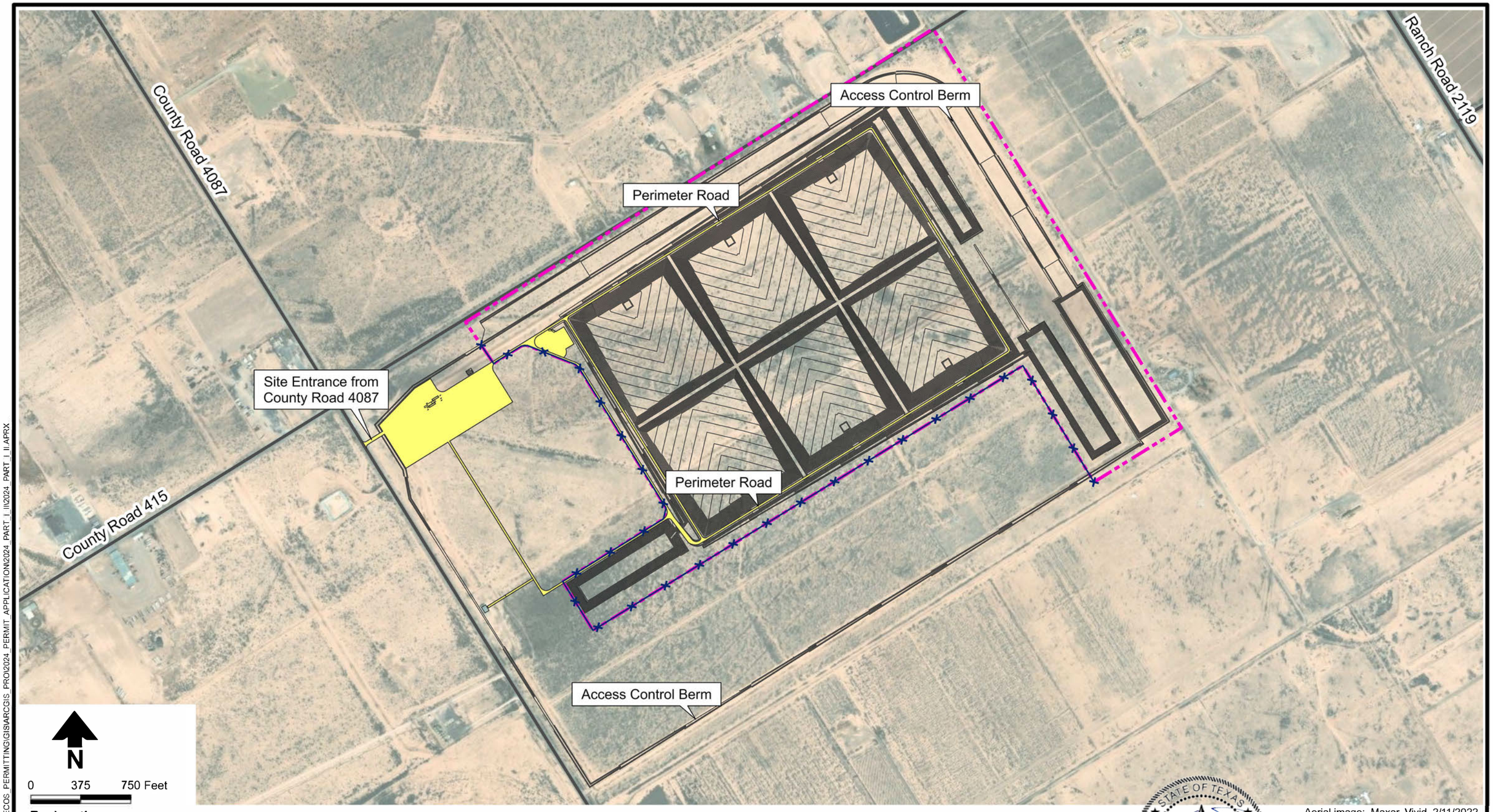
3/24/2026 DB20.1166

Rev 2: July 2026 (Rev 0: March 2026)

WST LANDFILL
Aerial Imagery

Figure I/II-5-11

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Explanation

- Permit boundary
- Texas Department of Transportation road
- 3-strand barbed wire fence
- Paved/surfaced area

Note: Facility perimeter roads may be used to provide access to fill areas. Additional access roads may be constructed as needed for operations.

Aerial image: Maxar, Vivid 2/11/2022

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WST LANDFILL
Faci li ty Acess

Figure I/II-5-12

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Explanation

- Permit boundary
- Texas Department of Transportation road

Aerial image: Maxar, Vivid 2/11/2022

Notes:

1. All cells are designed for Class 1 non-hazardous waste. Cell 4 is designated to receive Class 1 non-hazardous waste and municipal solid waste (MSW). The remaining five cells are designated to receive MSW only. Additional cells may be designated to receive Class 1 non-hazardous waste in the future.
2. Cells 1 and 4 will be excavated and constructed first. Additional cells will be excavated and constructed from west to east. Fill sequencing of the landfill units will occur in the same manner.
3. Maximum waste elevation is 2,788 ft.

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WST LANDFILL

Layout of Landfill Units

Figure I/II-5-13

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2790'
2780'
2770'
2760'
2750'
2740'
2730'
2720'
2710'
2700'
2690'
2680'
2670'

N

0 250 500 Feet

Explanation

Permit boundary

Texas Department of Transportation road

Note: Maximum cover elevation is 2,790 ft.

Aerial image: Maxar, Vivid 2/11/2022

Z:\1XNM\TXIS\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\GIS\ARCGIS_PRO\2024_PERMIT_APPLICATION\2024_PART_I_II\2024_PART_I_IIAPRX

DBS&A a Geo-Logic Company

7/16/2026 DB20.1166

WST LANDFILL

Final Cover

Figure I/II-5-14

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Attachment I/II-6

Documentation

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Form 205
(Revised 12/09)

Submit in duplicate to:
Secretary of State
P.O. Box 13697
Austin, TX 78711-3697
512 463-5555
FAX: 512 463-5709
Filing Fee: $300

Certificate of Formation
Limited Liability Company

This space reserved for office use.

FILED
In the Office of the
Secretary of State of Texas

JUN 16 2010

Corporations Section

Article 1 – Entity Name and Type

The filing entity being formed is a limited liability company. The name of the entity is:

G.P. Suntex, LLC

The name must contain the words "limited liability company," "limited company," or an abbreviation of one of these phrases.

Article 2 – Registered Agent and Registered Office

(See instructions. Select and complete either A or B and complete C.)

☒ A. The initial registered agent is an organization (cannot be entity named above) by the name of:

Corporation Service Company d/b/a CSC-Lawyers Incorporating Service Company

OR

☐ B. The initial registered agent is an individual resident of the state whose name is set forth below:

First Name	*M.I.*	*Last Name*	*Suffix*

C. The business address of the registered agent and the registered office address is:

211 E. 7th Street, Suite 620	Austin	TX	78707
Street Address	*City*	*State*	*Zip Code*

Article 3—Governing Authority

(Select and complete either A or B and provide the name and address of each governing person.)

☒ A. The limited liability company will have managers. The name and address of each initial manager are set forth below.

☐ B. The limited liability company will not have managers. The company will be governed by its members, and the name and address of each initial member are set forth below.

NAME AND ADDRESS OF GOVERNING PERSON (Enter the name of either an individual or an organization, but not both.)

IF INDIVIDUAL

Hanif		Mussani	
First Name	*M.I.*	*Last Name*	*Suffix*

OR

IF ORGANIZATION

Organization Name

P.O. Box 1737	Eunice	NM	USA	88231
Street or Mailing Address	*City*	*State*	*Country*	*Zip Code*

NAME AND ADDRESS OF GOVERNING PERSON (Enter the name of either an individual or an organization, but not both.)

IF INDIVIDUAL

First Name *M.I.* *Last Name* *Suffix*

OR

IF ORGANIZATION

Organization Name

Street or Mailing Address *City* *State* *Country* *Zip Code*

NAME AND ADDRESS OF GOVERNING PERSON (Enter the name of either an individual or an organization, but not both.)

IF INDIVIDUAL

First Name *M.I.* *Last Name* *Suffix*

OR

IF ORGANIZATION

Organization Name

Street or Mailing Address *City* *State* *Country* *Zip Code*

Article 4 – Purpose

The purpose for which the company is formed is for the transaction of any and all lawful purposes for which a limited liability company may be organized under the Texas Business Organizations Code.

Supplemental Provisions/Information

Text Area: [The attached addendum, if any, is incorporated herein by reference.]

Organizer

The name and address of the organizer:

Hanif Mussani
Name

P.O. Box 1737	Eunice	TX	88231
Street or Mailing Address	*City*	*State*	*Zip Code*

Effectiveness of Filing (Select either A, B, or C.)

A. ☒ This document becomes effective when the document is filed by the secretary of state.

B. ☐ This document becomes effective at a later date, which is not more than ninety (90) days from the date of signing. The delayed effective date is: _____

C. ☐ This document takes effect upon the occurrence of the future event or fact, other than the passage of time. The 90th day after the date of signing is: _____

The following event or fact will cause the document to take effect in the manner described below:

Execution

The undersigned affirms that the person designated as registered agent has consented to the appointment. The undersigned signs this document subject to the penalties imposed by law for the submission of a materially false or fraudulent instrument and certifies under penalty of perjury that the undersigned is authorized to execute the filing instrument.

Date: June 14, 2010

Signature of organizer

Hanif Mussani
Printed or typed name of organizer

Form 424
(Revised 05/11)

Submit in duplicate to:
Secretary of State
P.O. Box 13697
Austin, TX 78711-3697
512 463-5555
FAX: 512/463-5709
Filing Fee: See instructions

Certificate of Amendment

This space reserved for office use.

FILED
In the Office of the
Secretary of State of Texas

JUL 11 2014

Corporations Section

Entity Information

The name of the filing entity is:

G.P. Suntex, LLC

State the name of the entity as currently shown in the records of the secretary of state. If the amendment changes the name of the entity, state the old name and not the new name.

The filing entity is a: (Select the appropriate entity type below.)

- ☐ For-profit Corporation
- ☐ Nonprofit Corporation
- ☐ Cooperative Association
- ☑ Limited Liability Company
- ☐ Professional Corporation
- ☐ Professional Limited Liability Company
- ☐ Professional Association
- ☐ Limited Partnership

The file number issued to the filing entity by the secretary of state is: 801282964

The date of formation of the entity is: June 16, 2010

Amendments

1. Amended Name

(If the purpose of the certificate of amendment is to change the name of the entity, use the following statement)

The amendment changes the certificate of formation to change the article or provision that names the filing entity. The article or provision is amended to read as follows:

The name of the filing entity is: (state the new name of the entity below)

West Sun Tex, LLC

The name of the entity must contain an organizational designation or accepted abbreviation of such term, as applicable.

2. Amended Registered Agent/Registered Office

The amendment changes the certificate of formation to change the article or provision stating the name of the registered agent and the registered office address of the filing entity. The article or provision is amended to read as follows:

RECEIVED
JUL 11 2014
Secretary of State

Registered Agent
(Complete either A or B, but not both. Also complete C.)

☐ A. The registered agent is an organization (cannot be entity named above) by the name of:

OR

☑ B. The registered agent is an individual resident of the state whose name is:

David	D	Johnston	
First Name	*M.I.*	*Last Name*	*Suffix*

The person executing this instrument affirms that the person designated as the new registered agent has consented to serve as registered agent.

C. The business address of the registered agent and the registered office address is:

14755 Preston Road, Suite 600	Dallas	TX	75254
Street Address (No P.O. Box)	*City*	*State*	*Zip Code*

3. Other Added, Altered, or Deleted Provisions

Other changes or additions to the certificate of formation may be made in the space provided below. If the space provided is insufficient, incorporate the additional text by providing an attachment to this form. Please read the instructions to this form for further information on format.

Text Area (The attached addendum, if any, is incorporated herein by reference.)

☐ **Add** each of the following provisions to the certificate of formation. The identification or reference of the added provision and the full text are as follows:

☐ **Alter** each of the following provisions of the certificate of formation. The identification or reference of the altered provision and the full text of the provision as amended are as follows:

☐ **Delete** each of the provisions identified below from the certificate of formation.

Statement of Approval

The amendments to the certificate of formation have been approved in the manner required by the Texas Business Organizations Code and by the governing documents of the entity.

Form 424

Effectiveness of Filing (Select either A, B, or C.)

A. ☑ This document becomes effective when the document is filed by the secretary of state.

B. ☐ This document becomes effective at a later date, which is not more than ninety (90) days from the date of signing. The delayed effective date is: _____

C. ☐ This document takes effect upon the occurrence of a future event or fact, other than the passage of time. The 90th day after the date of signing is: _____

The following event or fact will cause the document to take effect in the manner described below:

Execution

The undersigned signs this document subject to the penalties imposed by law for the submission of a materially false or fraudulent instrument and certifies under penalty of perjury that the undersigned is authorized under the provisions of law governing the entity to execute the filing instrument.

Date: July 10, 2014

By: _____

Sue A. Mussani, Manager
Signature of authorized person

Sue A. Mussani, Manager
Printed or typed name of authorized person (see instructions)

Form 424

Form 424
(Revised 05/11)

Submit in duplicate to:
Secretary of State
P.O. Box 13697
Austin, TX 78711-3697
512 463-5555
FAX: 512/463-5709
Filing Fee: See instructions

This space reserved for office use.

Certificate of Amendment

Entity Information

The name of the filing entity is:

West Sun Tex, LLC

State the name of the entity as currently shown in the records of the secretary of state. If the amendment changes the name of the entity, state the old name and not the new name.

The filing entity is a: (Select the appropriate entity type below.)

- ☐ For-profit Corporation
- ☐ Nonprofit Corporation
- ☐ Cooperative Association
- ☑ Limited Liability Company
- ☐ Professional Corporation
- ☐ Professional Limited Liability Company
- ☐ Professional Association
- ☐ Limited Partnership

The file number issued to the filing entity by the secretary of state is: 801282964

The date of formation of the entity is: June 16, 2010

Amendments

1. Amended Name

(If the purpose of the certificate of amendment is to change the name of the entity, use the following statement)

The amendment changes the certificate of formation to change the article or provision that names the filing entity. The article or provision is amended to read as follows:

The name of the filing entity is: (state the new name of the entity below)

The name of the entity must contain an organizational designation or accepted abbreviation of such term, as applicable.

2. Amended Registered Agent/Registered Office

The amendment changes the certificate of formation to change the article or provision stating the name of the registered agent and the registered office address of the filing entity. The article or provision is amended to read as follows:

Registered Agent
(Complete either A or B, but not both. Also complete C.)

☐ A. The registered agent is an organization (cannot be entity named above) by the name of:

OR

☐ B. The registered agent is an individual resident of the state whose name is:

First Name *M.I.* *Last Name* *Suffix*

The person executing this instrument affirms that the person designated as the new registered agent has consented to serve as registered agent.

C. The business address of the registered agent and the registered office address is:

Street Address (No P.O. Box)	*City*	*State*	*Zip Code*
		TX	

3. Other Added, Altered, or Deleted Provisions

Other changes or additions to the certificate of formation may be made in the space provided below. If the space provided is insufficient, incorporate the additional text by providing an attachment to this form. Please read the instructions to this form for further information on format.

Text Area (The attached addendum, if any, is incorporated herein by reference.)

☐ **Add** each of the following provisions to the certificate of formation. The identification or reference of the added provision and the full text are as follows:

☑ **Alter** each of the following provisions of the certificate of formation. The identification or reference of the altered provision and the full text of the provision as amended are as follows:

Article 3 - Governing Authority
The limited liability company will have managers. The name and address of each manager are set forth below.
Tariq Mussani, P.O. Box 1737, Eunice NM 88231
Arif Mussani, P.O. Box 1737, Eunice NM 88231

☐ **Delete** each of the provisions identified below from the certificate of formation.

Statement of Approval

The amendments to the certificate of formation have been approved in the manner required by the Texas Business Organizations Code and by the governing documents of the entity.

Effectiveness of Filing (Select either A, B, or C.)

A. ☑ This document becomes effective when the document is filed by the secretary of state.

B. ☐ This document becomes effective at a later date, which is not more than ninety (90) days from the date of signing. The delayed effective date is: _____

C. ☐ This document takes effect upon the occurrence of a future event or fact, other than the passage of time. The 90th day after the date of signing is: _____

The following event or fact will cause the document to take effect in the manner described below:

Execution

The undersigned signs this document subject to the penalties imposed by law for the submission of a materially false or fraudulent instrument and certifies under penalty of perjury that the undersigned is authorized under the provisions of law governing the entity to execute the filing instrument.

Date: January 8, 2025

By: _____



Signature of authorized person

Tariq Mussani, Manager

Printed or typed name of authorized person (see instructions)

Form 424

Your transaction is complete. Thank you for using TCEQ ePay.

Note: It may take up to 3 working days for this electronic payment to be processed and be reflected in the TCEQ ePay system. Print this receipt and the vouchers for your records. An email receipt has also been sent.

Transaction Information

Trace Number:	582EA000721937
Date:	03/04/2026 01:43 PM
Payment Method:	CC - Authorization 000040223J
ePay Actor:	ANDREW WAMBSGANSS
Actor Email:	andy@wambsganss.com
IP:	47.190.142.7
TCEQ Amount:	$2,050.00
Texas.gov Fee:	$46.38
Texas.gov Price:	$2,096.38*

* This service is provided by Texas.gov, the official website of Texas. The price of this service includes funds that support the ongoing operations and enhancements of Texas.gov, which is provided by a third party in partnership with the State.

Payment Contact Information

Name:	ANDREW WAMBSGANSS
Company:	BROWN PRUITT
Address:	600 N CARROLL AVE SUITE 100, SOUTHLAKE, TX 76092
Phone:	817-203-2000

Cart Items

Click on the voucher number to see the voucher details.

Voucher	Fee Description	AR Number	Amount
819543	NONHAZARDOUS WASTE PERMIT - NEW & AMENDMENTS (INCLUDING LIMITED SCOPE)		$2,000.00
819544	30 TAC 305.53B WASTE NOTIFICATION FEE		$50.00
		TCEQ Amount:	$2,050.00

ePay Again Exit ePay

Note: It may take up to 3 working days for this electronic payment to be processed and be reflected in the TCEQ ePay system. Print this receipt for your records.

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Statewide Links: Texas.gov | Texas Homeland Security | TRAIL Statewide Archive | Texas Veterans Portal

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Attachment I/II-7

Plain Language Summary Form

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Texas Commission on Environmental Quality

Plain Language Summary of Municipal Solid Waste Permit or Permit Amendment Application

Applicants are required by public notice rules in Title 30 Texas Administrative Code, Chapter 39, Section 39.405(k)[1] to provide this summary of an application.

A. Purpose of the Proposed Facility

To serve the 6 counties and 13 main towns located within 50 miles of the proposed facilty

B. Information About the Applicant

Name: West Sun Tex, LLC

Applicant Type: Type I Municipal Solid Waste Permit

Facility Name: WST Landfill

Permit Application Number: 2431

Customer Number (CN): 605915081

Regulated Entity Reference Number (RN): 111301834

C. Location of the Proposed Facility

Facility Address (or description of site location if no address):

WST Landfill will be located in north-central Reeves County at the intersection of County Road (CR) 4087 and CR 415, in Section 46, Block 4, H. & G.N. RR Co. Survey, approximately 5 miles northwest of Pecos, Texas

Link to Map of Facility Location (TCEQ Location Mapper[2]): https://arcg.is/yf1TT

D. Information about Facility Operation

What types of waste would be received?

Solid waste resulting from municipal, commercial, institutional, and recreational activities, including garbage, construction waste, brush, and rubbish; Class 1, 2, and 3 nonhazardous industrial waste; petroleum-contaminated soils; wastewater treatment facility sludge; and special wastes as defined in the facility's permit.

What geographical area would the wastes come from?

The anticipated waste generation area will include the areas in Texas that are within 50 miles of the proposed facility. This area includes portions of six counties (Culberson, Jeff Davis, Loving, Pecos, Reeves, and Ward).

[1] www.tceq.texas.gov/goto/view-30tac
[2] www.tceq.texas.gov/gis/hb-610-viewer

What days and hours would the facility operate?

The anticipated hours of operation at the WST Landfill will be Monday through Friday 7:00 a.m. to 5:00 p.m. and Saturday 8:00 a.m. to 12:00 p.m.

At what rate would wastes be accepted?

The waste volume that will be received during the first year of operation is estimated to be approximately 217 tons per day, or a total of 61,600 tons, assuming 281 days of operation.

How would wastes be managed?

All waste loads will be weighed and recorded on scales at the landfill entrance prior to dumping. The customer drop-off area will allow customers to drop tires in one container, white goods in a different container, and any other waste into containers headed for the landfill. Tires and white goods will be sent off-site for recycling when the containers are full. Containers with landfill waste will be emptied each night. All containers will be covered/tarped each night.

E. Pollution Control Methods

What methods would the facility use for containing wastes and odors, and monitoring for releases?

Daily cover (6 inches of soil material and/or TCEQ-approved alternate daily cover material) will be placed over waste to reduce odors. Special or particularly odorous wastes may require a greater depth of cover. The area of the working face will be confined to the smallest practical area. Interim cover, consisting of a minimum 1 foot of soil, will be placed over areas of waste that are at final grade or that will not receive additional waste for 180 days. The site will be surrounded by a 4-foot berm that will help keep material on-site. Portable litter fence will be used to catch wind-blown litter and debris as needed. Groundwater monitor wells will be installed during site construction to monitor groundwater quality.

What methods would the facility use or require for preventing litter or spills, and for cleanup of litter and spills?

Solid waste haulers will be required to cover their loads with tarps, which will not be removed until the haul vehicle reaches the working face for dumping. Portable litter fences will be used as the disposal operation progresses within a given cell, as needed. Site personnel will be responsible for collecting litter accumulated along the property boundaries on a daily basis.
The landfill is equipped with up to two storage tanks surrounded by an impervious berm area that will provide sufficient secondary containment for the largest tank's volume. In the event of a spill, spill reporting and cleanup will be done following federal and state regulations.

Comisión de Calidad Ambiental de Texas

Resumen en lenguaje sencillo de la solicitud de permiso municipal de residuos sólidos o de modificación del permiso

Los solicitantes están obligados por las normas de notificación pública del Título 30 del Código Administrativo de Texas, Capítulo 39, Sección 39.405(k)[1] a proporcionar este resumen de una solicitud.

A. Objetivo de la instalación propuesta

Para dar servicio a los 6 condados y las 13 ciudades principales ubicados en un radio de 50 millas del vertedero propuesto.

B. Información sobre el solicitante

Nombre: West Sun Tex, LLC

Tipo de solicitante: Vertedero Municipal Tipo I Applicacion

Nombre de la instalación: WST Landfill

Número de solicitud de permiso: 2431

Número de cliente (CN): 605915081

Número de referencia de la entidad regulada (RN): 111301834

C. Ubicación de la instalación propuesta

Dirección del establecimiento (o descripción de la ubicación del sitio si no hay dirección):

El vertedero WST Landill estará ubicado en la zona centro-norte del condado de Reeves, en la intersección de la Carretera del Condado (CR) 4087 y la CR 415, aproximadamente a 5 millas al noroeste de Pecos, Texas

Enlace al mapa de ubicación de las instalaciones en TCEQ Location Mapper[2]:

https://arcg.is/yf1TT

D. Información sobre el funcionamiento de las instalaciones

¿Qué tipos de residuos se recibirían?

Residuos sólidos resultantes de actividades municipales, comerciales, institucionales y recreativas, incluidos la basura, los residuos de construcción, la maleza y los escombros; residuos industriales no peligrosos de Clases 1, 2 y 3; suelos contaminados con petróleo; lodos de plantas de tratamiento de aguas residuales; y residuos especiales, tal como se definen en el permiso del vertedero.

¿De qué zona geográfica procederían los residuos?

El área de generación de residuos prevista incluirá las zonas de Texas situadas a menos de 50 millas del vertedero propuesto. Esta área abarca partes de seis condados (Culberson, Jeff Davis, Loving, Pecos, Reeves y Ward).

[1] www.tceq.texas.gov/goto/view-30tac
[2] www.tceq.texas.gov/gis/hb-610-viewer

¿Qué días y horas funcionará la instalación?

El horario de atención previsto en el WST Landfill será de lunes a viernes, de 07:00 a 17:00, y los sábados, de 08:00 a 12:00.

¿A qué ritmo se aceptarían los residuos?

Se estima que el volumen de residuos que se recibirá durante el primer año de operación será de aproximadamente 217 toneladas diarias, o un total de 61.600 toneladas, suponiendo 281 días de operación.

¿Cómo se gestionarían los residuos?

Todas las cargas de residuos serán pesadas y registradas en una báscula situada en la entrada del vertedero antes de su descarga. Hay una área para depositar los neumáticos en un contenedor, los electrodomésticos en otro contenedor, y cualquier otro residuo en los contenedores destinados al vertedero (vaciados cada noche). Los neumáticos y los electrodomésticos serán enviados fuera del vertedero para ser reciclado. Todos los contenedores serán cubiertos o tapados con lonas cada noche.

E. Métodos de control de la contaminación

¿Qué métodos utilizará la instalación para contener los residuos y los olores, y para controlar las emisiones?

Se colocará una cobertura diaria (6 pulgadas de suelo y/o material de cobertura alternativo aprobado por la TCEQ) sobre los residuos para reducir los olores. Algunos residuos podrían requerir mas cobertura. El área de trabajo se limitará a la área práctica mínima. Se colocará una cobertura provisional (un mínimo de 1 pie de suelo), sobre aquellas áreas que están llenos o que no vayan a recibir más durante de 180 días. El vertedero estará rodeado por un talud perimetral de 4 pies de altura, el cual contribuirá a retener el material dentro del vertedero. Se utilizarán vallas portátiles para recoger la basura arrastrados por el viento si necesario. Se instalarán pozos para vigilar la calidad de las aguas subterráneas.

¿Qué métodos utilizaría o exigiría la instalación para evitar la basura o los derrames, y para la limpieza de la basura y los derrames?

Los transportistas de residuos sólidos deberán cubrir sus cargas con lonas, las cuales no se retirarán hasta que el vehículo llegue al área de trabajo para realizar la descarga. Se utilizarán vallas portátiles para recoger la basura arrastrados por el viento si necesario. El personal del sitio será responsable de recolectar diariamente los residuos dispersos que se acumulen a lo largo de los límites de la propiedad. El vertedero está equipado con hasta dos tanques de almacenamiento rodeados por un terraplén impermeable que proporcionará una contención secundaria suficiente para el volumen del tanque de mayor capacidad. En caso de un vertido, la notificación y la limpieza se llevarán a cabo conforme a las normativas aplicable.

Attachment I/II-8

Public Involvement Plan Form

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Texas Commission on Environmental Quality

Public Involvement Plan Form for Permit and Registration Applications

The Public Involvement Plan is intended to provide applicants and the agency with information about how public outreach will be accomplished for certain types of applications in certain geographical areas of the state. It is intended to apply to new activities; major changes at existing plants, facilities, and processes; and to activities which are likely to have significant interest from the public. This preliminary screening is designed to identify applications that will benefit from an initial assessment of the need for enhanced public outreach.

All applicable sections of this form should be completed and submitted with the permit or registration application. For instructions on how to complete this form, see TCEQ-20960-inst.

Section 1. Preliminary Screening

☒ New Permit or Registration Application

☐ New Activity – modification, registration, amendment, facility, etc. (see instructions)

If neither of the above boxes are checked, completion of the form is not required and does not need to be submitted.

Section 2. Secondary Screening

☒ Requires public notice,

☐ Considered to have significant public interest, **and**

☐ Located within any of the following geographical locations:

- Austin
- Dallas
- Fort Worth
- Houston
- San Antonio
- West Texas
- Texas Panhandle
- Along the Texas/Mexico Border
- Other geographical locations should be decided on a case-by-case basis

If all the above boxes are not checked, a Public Involvement Plan is not necessary. Stop after Section 2 and submit the form.

☐ Public Involvement Plan not applicable to this application. Provide **brief** explanation.

Section 3. Application Information

Type of Application (check all that apply):

Air ☐ Initial ☐ Federal ☐ Amendment ☒ Standard Permit ☐ Title V

Waste ☒ Municipal Solid Waste ☐ Industrial and Hazardous Waste ☐ Scrap Tire
☐ Radioactive Material Licensing ☐ Underground Injection Control

Water Quality

☐ Texas Pollutant Discharge Elimination System (TPDES)

- ☐ Texas Land Application Permit (TLAP)
- ☐ State Only Concentrated Animal Feeding Operation (CAFO)
- ☐ Water Treatment Plant Residuals Disposal Permit

☐ Class B Biosolids Land Application Permit

☐ Domestic Septage Land Application Registration

Water Rights New Permit

☐ New Appropriation of Water

☐ New or existing reservoir

Amendment to an Existing Water Right

☐ Add a New Appropriation of Water

☐ Add a New or Existing Reservoir

☐ Major Amendment that could affect other water rights or the environment

Section 4. Plain Language Summary

Provide a brief description of planned activities.

The proposed facility is a Type I municipal facility that will accept various types of waste, including municipal, commercial, institutional, and recreational solid waste, along with nonhazardous industrial waste, petroleum-contaminated soil, wastewater treatment facility sludge, and special waste. The facility will contain a citizens' collection station with containers for household waste, as well as for white goods and tires that will be hauled off-site for disposal. The estimated volume for the first year of operation is approximately 217 tons per day, or a total of 61,100 tons, assuming 281 days of operation. The facility will serve a population of approximately 45,000 from Reeves County and adjacent counties.
The facility has been designed to meet or exceed TCEQ requirements, and will be protective of public health and safety. The project design includes the landfill liner, leachate collection system, gas monitoring network, stormwater management system, groundwater monitoring network, and final cover.

Section 5. Community and Demographic Information

Community information can be found using EPA's EJ Screen, U.S. Census Bureau information, or generally available demographic tools.

Information gathered in this section can assist with the determination of whether alternative language notice is necessary. Please provide the following information.

Pecos (closest city)

(City)

Reeves

(County)

14,748

(Census Tract)

Please indicate which of these three is the level used for gathering the following information.

☐ City ☒ County ☐ Census Tract

(a) Percent of people over 25 years of age who at least graduated from high school

71.3%

(b) Per capita income for population near the specified location

$24,438

(c) Percent of minority population and percent of population by race within the specified location

Black (1.4%), American Indian and Alaska Native (0.1%), Asian (0.4%), Hispanic or Latino (84.8%), White (12.2%), Some Other Race (1.1%)

(d) Percent of Linguistically Isolated Households by language within the specified location

Information not available

(e) Languages commonly spoken in area by percentage

Language other than English spoken at home, % of persons older than 5 years is 61.5%

(f) Community and/or Stakeholder Groups

Texas Association of Community Action Agencies (TACAA)

(g) Historic public interest or involvement

N/A

Section 6. Planned Public Outreach Activities

(a) Is this application subject to the public participation requirements of Title 30 Texas Administrative Code (30 TAC) Chapter 39?

☒ Yes ☐ No

(b) If yes, do you intend at this time to provide public outreach other than what is required by rule?

☐ Yes ☒ No

If Yes, please describe.

If you answered "yes" that this application is subject to 30 TAC Chapter 39, answering the remaining questions in Section 6 is not required.

(c) Will you provide notice of this application in alternative languages?

☒ Yes ☐ No

Please refer to Section 5. If more than 5% of the population potentially affected by your application is Limited English Proficient, then you are required to provide notice in the alternative language.

If yes, how will you provide notice in alternative languages?

☐ Publish in alternative language newspaper

☑ Posted on Commissioner's Integrated Database Website

☐ Mailed by TCEQ's Office of the Chief Clerk

☐ Other (specify)

(d) Is there an opportunity for some type of public meeting, including after notice?

☐ Yes ☒ No

(e) If a public meeting is held, will a translator be provided if requested?

☒ Yes ☐ No

(f) Hard copies of the application will be available at the following (check all that apply):

☑ TCEQ Regional Office ☑ TCEQ Central Office

☑ Public Place (specify) Reeves County Library

Section 7. Voluntary Submittal

For applicants voluntarily providing this Public Involvement Plan, who are not subject to formal public participation requirements.

Will you provide notice of this application, including notice in alternative languages?

☐ Yes ☐ No

What types of notice will be provided?

☐ Publish in alternative language newspaper

☐ Posted on Commissioner's Integrated Database Website

☐ Mailed by TCEQ's Office of the Chief Clerk

☐ Other (specify)

Attachment I/II-9

Waste Acceptance Plan Form

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Texas Commission on Environmental Quality

Waste Acceptance Plan Form
Type I and Type IAE Landfill Facilities

This form is designed to address the requirements for Waste Acceptance Plans in Part II of an application, as required by Title 30 Texas Administrative Code, Chapter 330, §330.61(b)(1). Rules are from Chapter 330 unless otherwise specified. If more space is needed for a line item or table item, include the information on a separate sheet and reference the line or table item.

A. Applicant Information

1. Facility Name: WST Landfill
2. MSW Permit No.: 2431

B. Waste Generation Areas and Population Estimates

Table 1. Areas contributing waste to the facility and estimate of population or population equivalent served by the facility. Values are estimates, not permit limits.

Waste Generation Area	Estimate of Population or Population Equivalent Served in each Area
The waste generation area will include the County where	Populations in 2027
the landfill is located (Reeves), and adjacent counties	12,296
Culberson	2,251
Jeff Davis	1,701
Loving	64
Pecos	14,675
Ward	11,434

Estimated population or population equivalent served by the facility

42,421

C. General Sources and Types of Waste to be Accepted at the Facility

General sources of waste to be received (household, commercial, industrial, etc.).

Solid waste resulting from municipal, commercial, institutional, and recreational activities, including garbage, construction waste, brush, rubbish, and all other solid waste; Class 1, 2, and 3 nonhazardous industrial waste; petroleum-contaminated soil; wastewater treatment facility sludge; and special waste as defined by §330.3.

2. Types of Waste to be Accepted for Disposal at the Facility

a. Indicate whether the following wastes will be accepted for disposal (check "Yes" for will accept or "No" for will not accept).

i. ☑ Yes ☐ No Municipal solid waste [§330.3(88)]

ii. ☑ Yes ☐ No Construction or demolition waste [§330.3(33)]

iii. ☑ Yes ☐ No Brush [§330.3(18)]

iv. ☑ Yes ☐ No Rubbish [§330.3(130)]

v. ☑ Yes ☐ No Used or scrap tires that have been processed (such as by splitting, shredding, quartering or sidewall removal) in a manner acceptable to the executive director [§330.3(130)]

vi. ☑ Yes ☐ No Class 2 nonhazardous industrial solid waste [§330.3(22), §330.173(i)]

vii. ☑ Yes ☐ No Class 3 nonhazardous industrial solid waste [§330.3(23), §330.173(j)]

b. Indicate whether the following special wastes will be accepted for disposal. These wastes must have been or are to be treated and the treated materials have been tested and are certified to contain no free liquids.

i. ☑ Yes ☐ No Municipal wastewater treatment plant sludge. [§330.3(148)(D), §330.171(c)(7)]

ii. ☑ Yes ☐ No Other types of domestic sewage treatment plant sludge [§330.3(148)(D), §330.171(c)(7)]

iii. ☑ Yes ☐ No Municipal water-supply treatment plant sludge. [§330.3(148)(D), §330.171(c)(7)]

iv. ☑ Yes ☐ No Septic tank pumping waste [§330.171(c)(7)]

v. ☑ Yes ☐ No Grease trap waste. [§330.3(59), §330.171(c)(7)]

vi. ☑ Yes ☐ No Grit trap waste [TAC §330.3(60), §330.171(c)(7)]

vii. ☑ Yes ☐ No Waste from commercial or industrial wastewater treatment plants [§330.3(148)(G), §330.171(b)]

viii. ☐ Yes ☑ No Other liquid waste. Explain _____ [§330.171(c)(7)]

ix. Specify other special wastes to be accepted for disposal that are not listed above and for which free liquids may be an issue.

None

c. Indicate whether the following Special Wastes will be accepted for disposal.

i. ☑ Yes ☐ No Municipal hazardous waste from conditionally exempt small quantity generators [§330.171(c)(6), §330.3(32)].

ii. ☑ Yes ☐ No Class 1 industrial nonhazardous solid waste (excluding waste that is Class 1 only because of asbestos content). May be accepted only at Type I landfills with a Class 1 cell [§330.3(21), §330.171(b), §330.3(148)(B), §330.173]; may not be accepted at arid exempt [AE] landfills [330.173(a)].

iii. ☐ Yes ☑ No Waste that is Class 1 only because of asbestos content [§330.3(21), §330.171(b), §330.3(148)(B), §330.171(c)(3)(I), 30 TAC §330.171(c)(3)]

iv.	☐ Yes ☑ No	Waste from commercial air pollution control devices [§330.171(b), §330.3(148)(G), §330.331(e)]
v.	☐ Yes ☑ No	Tanks, drums, or containers that were used for shipping or storing any material that has been listed as a hazardous constituent in 40 CFR Part 261, Appendix VII but has not been listed as a commercial chemical product in 40 CFR §261.33(e) or (f) [§330.171(b), §330.3(148)(G)]
vi.	☐ Yes ☑ No	Drugs, other than those contained in normal household waste [§330.171(b), §330.3(148)(J)]
vii.	☐ Yes ☑ No	Contaminated foods, other than those contained in normal household waste [§330.171(b), §330.3(148)(J)]
viii.	☐ Yes ☑ No	Contaminated beverages, other than those contained in normal household waste [§330.171(b), §330.3(148)(J)]
ix.	☑ Yes ☐ No	Empty containers that have been used for pesticide, herbicide, fungicide, or rodenticide, that have been triple-rinsed before receipt at the landfill, are rendered unusable before receipt or on arrival, and are covered by the end of the same working day they are received [§330.171(c)(5)(A)]
x.	☑ Yes ☐ No	Empty containers for which triple-rinsing is not feasible or practical (e.g. paper bags, cardboard containers) that are managed as a municipal hazardous waste from a conditionally exempt small quantity generator or in accordance with requirements for disposal of industrial wastes [§330.171(c)(5)(B), §330.171(c)(6), §330.173]
xi.	☐ Yes ☑ No	Regulated asbestos-containing material (RACM) [40 CFR 261, §330.171(c)(3), §330.3(126)]
xii.	☐ Yes ☑ No	Non-regulated asbestos-containing material (non-RACM) [40 CFR 261, §330.171(c)(4), §330.3(93)]
xiii.	☐ Yes ☑ No	Incinerator ash [§330.3(148)(M), §330.171(b)]
xiv.	☑ Yes ☐ No	Soil contaminated by petroleum products, crude oils, or chemicals in concentrations of greater than 1,500 mg/kg total petroleum hydrocarbons; or contaminated by constituents of concern that exceed the concentrations listed in §335.521(a)(1) [§330.3(148)(N), §330.171(b)(4)] (may be accepted at Type I landfills with Class 1 cells. [§330.331(e)] (Excluded from Type I AE. [§330.173(a)])
xv.	☑ Yes ☐ No	Household-generated used oil filters that have been crushed to less than 20% of original volume or processed by a method other than crushing to remove all free-flowing used oil. The processing method may include (1) having the filter separated into component parts and free-flowing used oil removed from the filter element by compression; (2) having a replaceable filter medium that has been compressed to remove free-flowing used oil; **or** (3) having a housing that has been punctured and the filter drained for at least 24 hours. [§330.171(d)].
xvi.	☐ Yes ☑ No	Waste from oil, gas, and geothermal activities subject to regulation by the Railroad Commission of Texas) [§330.171(b), §330.3(148)(P)]

xvii. ☐ Yes ☑ No Waste generated outside the boundaries of Texas that contains any industrial waste; any waste associated with oil, gas, and geothermal exploration; or any of the special wastes that are indicated in §330.3(148) [§330.171(b), §330.3(148)(Q)]

xviii. ☑ Yes ☐ No Dead animals [§330.171(c)(2)]

xix. ☑ Yes ☐ No Slaughterhouse wastes [§330.171(c)(2)]

xx. ☑ Yes ☐ No Treated medical waste from health care-related facilities. [§330.3(85), §326.75(r)]

xxi. Specify other special wastes to be accepted for disposal that are not listed above:

None

D. Waste Prohibited from Disposal

The following wastes are prohibited from disposal.

- Any waste not authorized for disposal above, including those for which "No" has been indicated.
- Untreated medical waste. This prohibition may be superseded by the executive director in writing when disposal of untreated medical waste is required to protect human health and the environment from the effects of a natural or man-made disaster. [§330.171(c)(1), §330.3(85)]
- Lead-acid storage batteries. [§330.15(e)(1)]
- Used motor vehicle oil. [§330.15(e)(2)]
- Used oil filters from internal combustion engines except for used oil filters from households that have been processed as described in §330.171(d). [§330.15(e)(3)]
- Whole used or scrap tires. [§330.15(e)(4)]
- Items containing CFCs that have not been handled in accordance with 40 CFR §82.156(f). [§330.15(e)(5)]
- Bulk or noncontainerized liquid waste unless the waste is household waste other than septic waste and as defined by the Paint Filter Test, EPA Method 9095. [§330.15(e)(6), §330.3(81)]
- Containers holding liquids unless: the container is similar in size to those found in household waste, the container is designated to hold liquids for other than storage, **or** the waste is household waste. [§330.15(e)(6), §330.3(81)]
- Regulated hazardous waste [40 CFR §261.3] that is not excluded from regulation as a hazardous waste [40 CFR §261.4(b)] or that was not generated by a conditionally exempt small-quantity generator. [§330.15(e)(7), §330.3(127)]
- Waste that exhibits the characteristics for hazardous waste [40 CFR §261.3] from oil, gas, and geothermal activities subject to regulation by the Railroad Commission of Texas. [§330.15(e)(7)]
- Polychlorinated biphenyl (PCB) wastes, [40 CFR Part 761] unless authorized by the United States Environmental Protection Agency. [§330.15(e)(8)]
- Radioactive materials, [Chapter 336] except as authorized in Chapter 336 or that are subject to an exemption of the Department of State Health Services. [§330.15(e)(9)]

Specify any other wastes to be prohibited for disposal that are not listed above.

None

E. Material Recovery

Will the facility recover materials from incoming waste? ☑ Yes ☐ No

If yes, provide a descriptive narrative describing the percentage of incoming waste, if applicable, that must be recovered and its intended use.

White goods and tires will be separated at the citizens' collection station and sent for off-site reuse/disposal. Otherwise, there will be no material recovery.

F. Estimated Maximum Annual Waste Acceptance Rate Projected for Five Years [§330.61(b)(1)(C)]

Provide an **estimated** maximum annual waste acceptance rates at the facility, projected for five years. These rates are not permit limitations.

Table 1. Five-Year Projection for Waste Acceptance.

Year	Estimated Maximum Annual Waste Acceptance Rate
2027	61,600 tons
2028	61,900 tons
2029	62,200 tons
2030	62,500 tons
2031	62,700 tons

G. Storage and Processing Units

Indicate units that will store or process waste at the facility. Describe the wastes that will be stored or processed in these units. Provide the final disposition or use (e.g., landfill disposal, composting) of the processed materials. **Waste storage and processing authorized separately (such as a registered transfer station within the permit boundary of a landfill) should not be included on this form.**

Storage and processing units must be illustrated (or locations described) on site layout figures in Part II of the application.

Examples:

1. Unit: liquid stabilization unit, Purpose: process, Waste Type: liquid waste, Disposition: solidified material to be disposed in a properly authorized landfill; or
2. Unit: grease separation and dewatering unit, Purpose: process, Disposition: water to WWTP and grease to composter or Type I landfill.

Table 1. Waste storage and processing units.

Unit	Purpose	Waste Type Stored or Processed	Final Disposition or Use
Storage Tanks	☑Store ☐Process	Leachate and contaminated water	water to wastewater treatment plant or evaporation pond
Evaporation Pond	☑Store ☑Process	Leachate and contaminated water	water to wastewater treatment plant or evaporation
Class 1 Waste Cell(s)	☑Store ☐Process	Class I cells, all waste accepted	Class 1 waste cell
Landfill Cell(s)	☑Store ☐Process	All wastes accepted, except Class 1	Landfill cells
Citizens' Collection Station	☑Store ☐Process	Household waste, white goods, tires	Household waste to landfill, white goods/tires offsite
	☐Store ☐Process		

H. Prohibited from Processing

The following wastes are prohibited from processing:

- Any wastes not authorized for processing above.
- Lead-acid storage batteries may not be incinerated. [§330.15(e)(1)]
- Used motor vehicle oil may not be incinerated. [§330.15(e)(2)]
- Regulated hazardous waste [40 CFR §261.3] that is not excluded from regulation as a hazardous waste [40 CFR §261.4(b)] or that was not generated by a conditionally exempt small-quantity generator. [§330.15(e)(7), §330.3(127)]

Specify any other wastes to be prohibited for storage or processing that are not listed above.

None

I. Special Waste Acceptance Plan [§330.171(b)(2)]

Does this application include an **optional** Special Waste Acceptance Plan?
☐ Yes ☑ No

If yes, please provide its location in the application.

Not applicable

J. Limiting Parameters [§330.61(b)(1)]

1. Regulated Hazardous Waste
   MSW landfills may not accept regulated hazardous waste [§330.3(127)] for processing or disposal. The presence or characteristic of any material meeting the definition of a regulated hazardous waste is a limiting parameter for waste disposal or processing.
2. Free Liquids
   The presence of free liquids, as defined by the Paint Filter Test, EPA Method 9095, in waste, but not household waste and not liquid in containers similar in size to those found in household waste, is a limiting parameter for waste disposal. [§330.15(e)(6), §330.3(81)]
3. PCBs
   The presence of polychlorinated biphenyls (PCB) wastes [40 CFR Part 761] unless authorized by the United States Environmental Protection Agency is a limiting parameter for waste disposal or processing. [§330.15(e)(8)]
4. Radioactive Materials
   The presence of radioactive materials [Chapter 336], except as authorized in Chapter 336 or that are subject to an exemption of the Department of State Health Services, is a limiting parameter for waste disposal or processing. [§330.15(e)(9)]
5. Class 1 Solid Waste

   For all Type I AE landfills and for Type I landfills that do not have a Class 1 cell [330.331(e)] or have chosen to excluded Class 1 industrial nonhazardous solid waste, 1,500 mg/kg TPH and the concentrations in 30 TAC §335.521(a)(1) are limiting parameters for waste disposal.
6. Other limitations:

None

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Attachment I/II-10

Transportation and Airport Safety Plan Form

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Texas Commission on Environmental Quality

Transportation Data and Coordination Report Form for Municipal Solid Waste Type I Landfills

This form is for use by applicants or site operators of Municipal Solid Waste (MSW) Type I landfills to provide data and information to address the availability and adequacy of access roads to a landfill site, the volume of vehicular traffic on and generated by the facility on area roadways, and to provide coordination information as required under 30 TAC §330.61(i). Roadways that provide primary access to a landfill facility must be adequate and possess appropriate design capacity to safely accommodate the additional volumes and weights of traffic generated or expected to be generated by this landfill facility during its active life. Data provided in this form should correspond with data contained in the coordination documents submitted to the Texas Department of Transportation or other agency that has jurisdiction over affected area roads.

If you need assistance in completing this form, please contact the Municipal Solid Waste Permits Section of the Waste Permits Division at (512) 239-2335.

I. General Information

Facility Name: WST Landfill

MSW Permit No.: 2431

Site Operator/Permittee Name and Mailing Address:

West Sun Tex, LLC
600 N Carroll Avenue, Suite 100
Southlake, Texas 76092

II. Documentation of Coordination with the Texas Department of Transportation (TXDOT) for Traffic and Location Restrictions

1. A traffic study document and cover letter was submitted to TXDOT as Coordination for traffic and location restrictions for the subject facility and a copy of the documents submitted to TXDOT is attached herein: ☐ Yes ☒ No

   If you checked "No" , provide explanation:

A full traffic study was not performed due to the rural location of the proposed facility. However, a comprehensive analysis of traffic data in the area is presented in a technical memorandum (Appendix I/II-10-A).

2. Date of submission of the coordination documents to TXDOT: Sent via Certified Mail on April 20, 2021 and by email on July 22, 2021

3. TXDOT's response received? ☒ Yes ☐ No

4. If "No" is checked in response to Item I.3 above, complete Items I.4 and I.5 below only after TxDOT's response is received.

5. Did TxDOT's response include recommendation of improvements to any of the roadways or intersections that lead to the site? ☐ Yes ☒ No

6. If you checked "Yes" in Item I.5 above, proceed to Section III., TxDOT's Recommended Roadway or Intersection Improvements (as applicable).

7. If you checked "No" in Item I.5 above, provide TxDOT's response to the traffic and location restrictions compliance coordination for the subject site:

The TxDOT Odessa District does not propose any roadway improvements, but states that they will monitor traffic at these locations once the facility is operating to ensure the safe accommodation of traffic. This correspondence is attached as part of the technical memorandum (Appendix I/II-10-A).

III. TxDOT Recommended Roadway or Intersection Improvements (as applicable)

Enter TxDOT's recommendations for improvement of roadways or intersections that lead to the site:

1. None

2.

3.

IV. Documentation of Coordination of Improvement Designs of Public Roadways (turning lanes, storage lanes, acceleration/deceleration lanes, etc.) at and Near the Site Entrances with Agencies that Exercise Maintenance Responsibility

1. Complete Table 1 with information regarding documentation of coordination of improvement designs for existing and proposed roads.

Table 1: Public Roadway Improvements Coordination

Existing and Proposed Roads Associated with the Site Entrance(s)	Agency Exercising Maintenance Responsibility	Date of Coordination Correspondence from the Applicant or Site Operator to the Agency Responsible	Date of the Coordination Response Letter from the Agency Responsible	Did the Agency Responsible Require Improvements to the Roadway(s) Associated with the Site Entrance(s) (check Yes or No as applicable)
CR 408	Reeves County	11/11/2021	11/15/2021	☐Yes ☒No
				☐Yes ☐No
				☐Yes ☐No
				☐Yes ☐No

2. If you checked "Yes" in the last column of Table 1, indicating that improvements are required, address the following:

   (a) Briefly describe the improvements proposed for the public roadway(s) associated with the site entrance(s):

   (b) A copy of the proposed improvement design submitted to the agency exercising maintenance responsibility over the roadway is attached herein: ☐Yes ☐No. If you checked "No" please explain:

   (c) A copy of the response letter from the agency exercising maintenance responsibility over the roadway(s) associated with the site entrance(s) approving the improvement design is attached herein: ☐Yes ☐No. If you checked "No" please explain:

V. Facility Location and Operation Information Used in Estimating Transportation Data

1. Facility Location Information

WST Landfill is located approximately 5 miles west-northwest of Pecos, Texas at the intersection of County Road (CR) 415 and CR 408 (also labeled as CR 4087 for the length of the section).

2. Waste Acceptance Rates

(a) Initial Waste Acceptance Rate: 61,595 tons/year

(b) Estimated Maximum Waste Acceptance Rate at any Time During Facility Life: 62,626 tons/year

3. Hours of Operation and Site Life

(c) Operating Hours: Monday-Friday, 7:00 a.m. to 5:00 p.m. and Saturday, 8:00 a.m. to 12:00 p.m.

(d) Waste Acceptance Hours: Monday-Friday, 7:00 a.m. to 5:00 p.m. and Saturday, 8:00 a.m. to 12:00 p.m.

(e) Estimated Site Life: 115 years

4. Other Information Used or Assumed in Estimating Transportation Data:

There are two anticipated primary access routes to WST Landfill from the nearest major community of Pecos, TX. The first may be traversed by traveling west-southwest on Interstate 20 Business Loop West (I-20BL) and continuing on to Interstate 20 Service Road, turning northwest on CR 408 and proceeding for approximately 1.5 miles, turning left onto CR 411 and then immediately right onto CR 408, then continuing to the facility entrance. The alternate access route may traverse I-20BL, Farm to Market (FM) 2119, and CR 415 prior to accessing CR 408 and continuing to the facility entrance. While historical data on these roadways are unavailable for an area within one mile of the facility, representative data from these roadways are retrieved within 2.5 miles of the project location.

VI. Facility Daily Traffic Volume Data

1. Complete Table 2 with estimated existing daily volume of traffic generated by the facility.

Table 2: Estimated Existing Daily Volume of Traffic Generated: N/A - New Facility

Vehicle Type	Traffic Volume to Facility (vehicles per day, vpd)	Traffic Volume from Facility (vpd)
Trucks		
Employee Vehicles		
Visitors Vehicles		
Other Vehicles		
Summation of Daily Volume of Traffic to and from the Facility		
Total Daily Volume of Traffic		

(a) Describe the source(s) of or method(s) used to obtain the existing daily volume of traffic generated by the facility: N/A

(b) Location(s) of traffic counts (if applicable): N/A

2. Complete Table 3 with estimated future daily volume of traffic generated by the facility.

Table 3: Estimated Future Daily Volume of Traffic Generated

Vehicle Type	Traffic Volume to Facility (vpd)	Traffic Volume from Facility (vpd)
Trucks	12	12
Employee Vehicles	3	3
Visitors Vehicles	1	1
Other Vehicles	1	1
Summation of Daily Volume of Traffic to and from the Facility		
Total Daily Volume of Traffic	17	17

3. Describe the method(s) used to obtain the estimated future daily volume of traffic generated by the facility, including dates, traffic growth rates, and sources of the growth rates: As populations across the six adjacent counties are expected to

experience limited population growth, the waste deposition rate from 2031 is considered to be the highest deposition rate. Assuming that the maximum volume of waste the facility accepts in a year is 62,626 tons (provided as a part of the 5-year projection rate in Part III-4-G), traffic volumes can be estimated by dividing the daily volume by the in-truck density standard dump trucks.

4. Maps showing the facility boundary and roads within 1 mile of the facility that provide access to the site are attached herein. Yes ☒ No☐. If you checked "No" please explain:

VII. Availability and Adequacy of Roads

1. Complete Table 4 with information regarding the primary access roadways.

Table 4: Roadway Characteristics of the Primary Access Roadways

List the roads that the owner or operator will use as primary access to the site	Existing Annual Average Daily Traffic on Roadway (vpd)	Expected Annual Average Daily Traffic on Roadway (vpd)	Existing Roadway Capacity	Expected Roadway Capacity	Max Gross Weight Allowed (lbs)	Max/Min Posted Speed Limit (mph)	Min Vertical Clearance (ft)	Surface Type and No. of Lanes	Level of Service	Existing Traffic Generated by the Facility on Each Roadway	Expected Traffic Generated by the Facility on Each Roadway
CR 415	293	336	1,200 vph	1,200 vph	80,000 lbs	30	N/A	Asphalt, 2	B	0	34
CR 408	202	245	1,200 vph	1,200 vph	80,000 lbs	30	N/A	Asphalt, 2	B	0	34

2. Complete Table 5 with information regarding other access roadways within one mile.

Table 5: Roadway Characteristics of Other Access Roadways within One Mile of the Facility Boundary

List other access roadways within 1 mile of the facility	Existing Annual Average Daily Traffic on Roadway	Expected Annual Average Daily Traffic on Roadway	Existing Roadway Capacity	Expected Roadway Capacity	Max Gross Weight Allowed (lbs)	Max/Min Posted Speed Limit (mph)	Min Vertical Clearance (ft)	Surface Type and No. of Lanes	Level of Service	Existing Traffic Generated by the Facility on Each Roadway	Expected Traffic Generated by the Facility on Each Roadway
FM/Ranch Rd 2119	2,008	2,051	1,450 vph	1,450 vph	80,000 lbs	75	N/A	Asphalt, 2	B	0	34
CR 411	202	245	1,200 vph	1,200 vph	80,000 lbs	30	N/A	Asphalt, 2	B	0	34

3. Complete Table 6 with information regarding access roadway intersections within one mile.

Table 6: Roadway Intersection Characteristics

Please list major (signalized) roadway intersections for access roads within 1 mile of facility	Existing Capacity	Existing Level of Service
None		

4. (For applicants that conducted traffic counts) Peak period traffic counts were conducted at critical intersections and roadways in the area: ☐ Yes ☐ No

   If "No" is checked, please explain:

VIII. Conclusions on the availability and adequacy of roads to be used for accessing the facility

Enter conclusions regarding the availability and adequacy of roads to be used for accessing the facility using information obtained from access roadway data; data on the volume of existing and expected vehicular traffic on the access roads within one mile of the facility; and the projection of the volume of traffic expected to be generated by the facility on the access roads:

Based on available information, the existing access roadways are considered to be available and adequate to handle the estimated increased traffic volumes associated with the proposed landfill. Additional conclusions regarding roadway availability and adequacy will be assessed by WST, TxDOT, and the Reeves County Road & Bridge Department as the facility's driveway permit is developed.

IX. Highway Beautification

Enter facility distance from interstate or primary highways and screening information as required by 30 TAC 330.23(a).

5. Distance of Facility from Interstate or Primary Highway: Approximately 2 miles northwest of I-20BL.

6. Type of Facility Screening Provided, if applicable: N/A

X. Analysis of the Impact of the Facility upon Airports

Enter the Part, Appendix, Attachment, Section, and Page Number of the application where analysis of the impact of the facility upon airports is provided:

Section 18.2 of Attachment I/II-2

XI. Documentation of Coordination with the Federal Aviation Administration for Compliance with Airport Location Restrictions

1. Applicant has submitted written information to FAA describing the facility location, maximum height of waste units, type of waste accepted at the facility, and other facility-relevant data and information as required: ☒ Yes ☐ No

   (a) Enter Date of Coordination Letter to FAA: Obstruction Evaluation/Airport Airspace Analysis (OE/AA) forms submitted Friday, May 17, 2024.

   (b) Enter Date of FAA Response: June 6, 2024

2. Indicate FAA Response and Final Action:

   ☒ FAA Acknowledged No Adverse Impact.

   ☐ FAA Recommended Safety Improvements. (*Complete Section XII if you check this item.*)

3. A copy of the Documentation of Coordination with FAA for compliance with airport location restrictions is attached herein. ☒Yes ☐No. If you checked "No" please explain:

XII. FAA Recommended Changes or Improvements for Airport Safety, (as applicable)

Enter FAA's recommended changes or improvements to the facility for airport safety or for compliance with airport location restrictions.

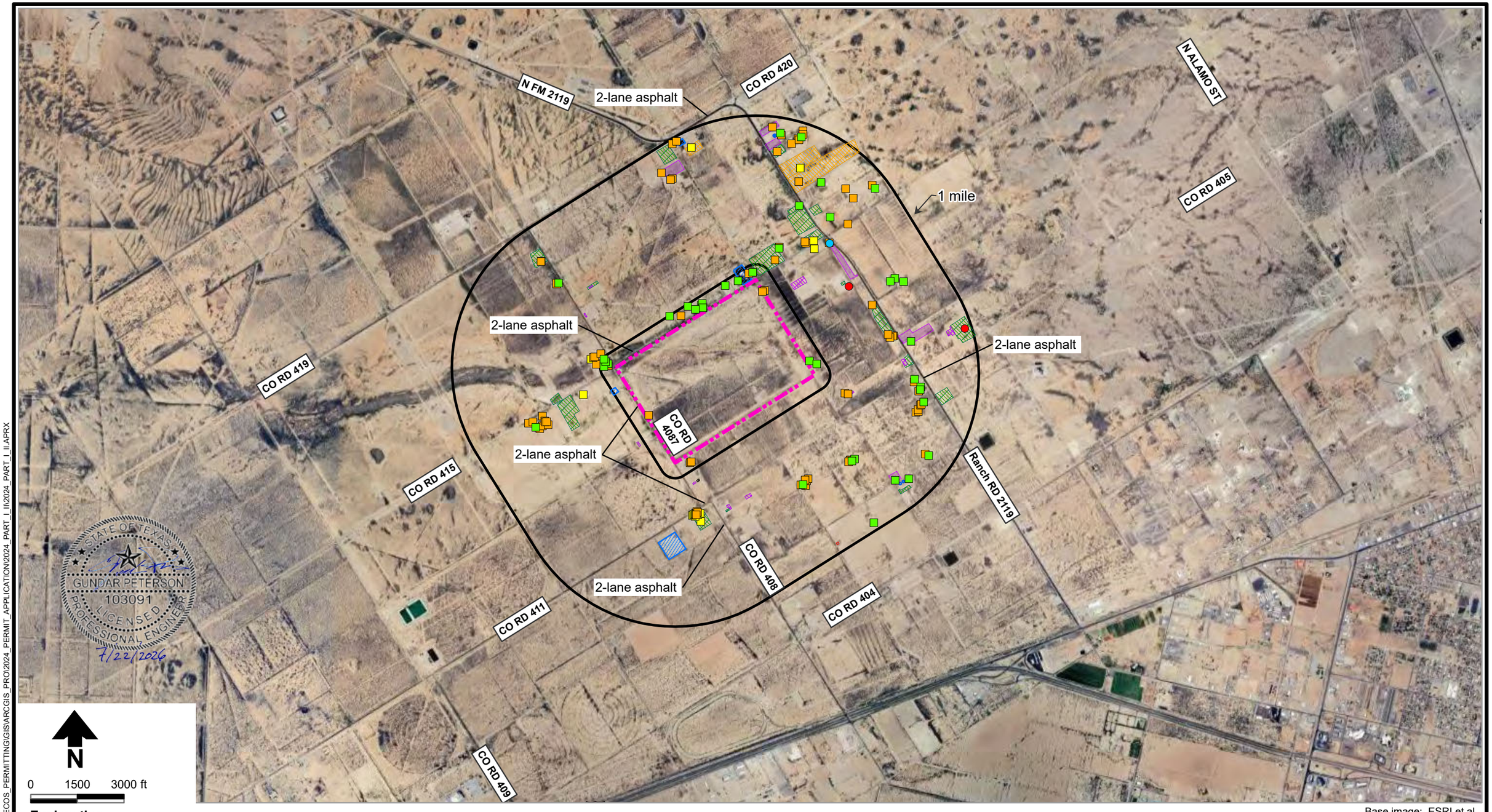
None

XIII. Attachments

- Map showing the facility boundary and roads within 1 mile of the facility (Figure I/II-10-1).
- Documentation of coordination of all designs of proposed public roadway improvements associated with site entrances with the agency exercising maintenance responsibility of the public roadway involved; and the response letter received from the agency, as applicable (Attachment I/II-10-A1).
- Documentation of coordination with the Texas Department of Transportation (TxDOT) for traffic and location restrictions, including any traffic study report, and the response letter received from TxDOT (Attachment I/II-10-A1).
- Documentation of coordination with the Federal Aviation Administration for compliance with airport location restrictions, and the response letter received from FAA (Attachment I/II-10-A1).
- Other documents attached: Coordination letter to Pecos Airport and the response email received (Attachment I/II-10-A1).

Figure

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Explanation

Industrial building	Residential building	Container storage yard	Industrial yard	RV park
Mobile home	Tank	Destroyed/Abandoned	Pond	Tank yard
Out building	Windmill	Evaporation pond	Residential swimming pool	Well field

Base image: ESRI et al.

Notes:
1 No schools, daycares, hospitals, lakes, churches, parks, or cemeteries were identified within the 1-mile radius of the site.
2. Buildings and facilities were identified based on aerial photo interpretation; no zoning record was available.

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WST LANDFILL

Facilities and Roads Located Within 1 Mile of the Proposed Facility

Figure I/II-10-1

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Appendix I/II-10-A

Transportation Technical Memorandum

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Transportation
Technical Memorandum
WST Landfill
Reeves County, Texas

Prepared for
West Sun Tex, LLC
Pecos, Texas

Prepared by

DBS&A
a Geo-Logic Company

Texas Registered Engineering Firm F-286
Texas Registered Geoscience Firm No. 50045
12303 Technology Boulevard, Suite 930D
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DB20.1166



July 2026

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Table of Contents

1. Introduction 1
2. Site Location and Access 2
3. Agency Coordination 3
4. Existing Conditions 3
5. Projected Facility-Generated Traffic 7
6. Expected Traffic During Facility Life 10
7. Conclusions 12

List of Figures

I/II-10-A-1 Anticipated Access Routes to WST Landfill from Pecos, Texas
I/II-10-A-2 TxDOT STARS II Traffic Count Locations
I/II-10-A-3 DBS&A Traffic Count Locations



List of Tables

I/II-10-A-1. TxDOT AADT Projections for CR 408 4
I/II-10-A-2. TxDOT Volume Count Summary for CR 408 4
I/II-10-A-3. TxDOT AADT Projections for FM 2119 5
I/II-10-A-4. TxDOT Volume Count Summary for FM 2119 5
I/II-10-A-5. DBS&A Volume Count Summary for CR 408 6
I/II-10-A-6. DBS&A Volume Count Summary for CR 415 6
I/II-10-A-7. Estimated Populations of Neighboring Counties, 2025 to 2030 8
I/II-10-A-8. Anticipated Trip Generation (per day) on Landfill Access Routes for the Year 2145 10
I/II-10-A-9. Predicted Changes in Traffic Volumes due to Operation of WST Landfill 11

List of Attachments

I/II-10-A1 Agency Coordination
I/II-10-A2 TxDOT STARS II Data, CR 408
I/II-10-A3 TxDOT STARS II Data, FM 2119
I/II-10-A4 DBS&A Traffic Count Data, CR 408
I/II-10-A5 DBS&A Traffic Count Data, CR 415

1. Introduction

This technical memorandum has been prepared by Daniel B. Stephens & Associates, Inc. (DBS&A) to present the estimated impacts of WST Landfill's operations on traffic volumes surrounding the facility. Roadways along the access route within a 1-mile radius of WST Landfill are analyzed using field observation and traffic volume data to provide a qualitative discussion of their availability and adequacy, as well as an evaluation of the projected impacts of the facility's operation on those roadways.

Pursuant to satisfying the requirements of 30 Texas Administration Code (TAC) 330.61(i)(1)-(3), this document shall:

- Provide data on the availability and adequacy of roads that the owner or operator will use to access the site
- Provide data on the volume of vehicular traffic on access roads within 1 mile of the proposed facility, both existing and expected, during the expected life of the proposed facility
- Project the volume of traffic expected to be generated by the facility on the access roads within 1 mile of the proposed facility

This memorandum contains preliminary communication with the Texas Department of Transportation (TxDOT) regarding the impact of WST Landfill's operations on its surrounding transportation infrastructure. It presents traffic volume data collected by TxDOT and field studies. Traffic generation expected during the life of the landfill is evaluated and compared against the existing and projected traffic conditions of the roadways in question. These factors are discussed to provide an overview of WST Landfill's anticipated impact on the roads which will be used for direct access.

This document has been prepared in lieu of a formal traffic impact analysis (TIA) due to the minimal anticipated traffic generation associated with the proposed facility and the low existing traffic volumes on its adjacent roadways. DBS&A and West Sun Tex, LLC (WST) acknowledge that driveway permitting requirements will likely govern whether a formal traffic study is necessary to evaluate roadway adequacy.

2. Site Location and Access

WST Landfill will be a Type I municipal solid waste (MSW) landfill owned and operated by WST in Reeves County, Texas. The facility is located approximately 5 miles west-northwest of Pecos, Texas at the intersection of County Road (CR) 415 and CR 408 (also labeled as CR 4087 for the length of the section). The landfill is located within an unincorporated portion of Reeves County and is located more than 1,000 feet away from an interstate or primary highway. It is expected for the facility to serve Culberson, Jeff Davis, Loving, Pecos, Reeves, and Ward Counties during its operation. WST Landfill is anticipated to operate and accept waste Monday through Friday from 7:00 a.m. to 5:00 p.m., and Saturday from 8:00 a.m. to 12:00 p.m. If this schedule is followed, the facility will be open approximately 5.5 days out of each week, for 52 weeks of the year, and is anticipated to observe approximately 5 holidays each year; this provides a yearly sum of 281 operating days.

There are two anticipated primary access routes to WST Landfill from the nearest major community of Pecos, Texas. The first may be traversed by traveling west-southwest on Interstate 20 Business Loop West (I-20 BL) and continuing on to Interstate 20 Service Road, turning northwest on CR 408 and proceeding for approximately 1.5 miles, turning left onto CR 411 and then immediately right onto CR 408, and then continuing to the facility entrance. The alternate access route may traverse I-20 BL, Farm to Market (FM) 2119, and CR 415 prior to accessing CR 408 and continuing to the facility entrance. The two primary access routes are shown in Figure I/II-10-A-1.

The roads addressed by this memorandum include those along each of the access routes within a 1-mile radius of the facility: FM 2119, CR 408, CR 411, and CR 415. CR 408, CR 411, and CR 415 are functionally classified as local roads with speed limits of 30 miles per hour (mph) that are owned, managed, and maintained by Reeves County. FM 2119 is a major collector with a speed limit of 75 mph that is owned, managed, and maintained by TxDOT. All four roadways are paved, two-lane roads in good condition; at least two of the county roads (CR 408 and CR 415) were recently repaved in December 2025 with chip and seal. These four public roadways will provide continuous access to the site from the nearest major thoroughfare, I-20 BL. The roadways are estimated to have a weight restriction of 80,000 pounds.

3. Agency Coordination

In April 2021, DBS&A established a preliminary line of communication with the TxDOT Odessa District regarding the planned location of WST Landfill. This communication, provided in Attachment I/II-10-A1, stated a traffic generation estimate of 17 trucks per day with a five-year maximum estimate of 25 trucks per day. A response was received from the Odessa District Engineer in August 2022 (Attachment I/II-10-A1). The TxDOT representative indicated that the facility is not located within 1,000 feet of an interstate or primary highway, and also detailed the anticipated access routes on which a high percentage of the facility's traffic will likely travel. It was expressed that the estimate of anticipated traffic provided to TxDOT seemed low for the facility and WST's adjacent oil and gas waste disposal facility, which prompted further investigation from DBS&A into the matter.

Communication regarding the development of WST Landfill was additionally established with the Reeves County Road & Bridge Department in November 2021 (Attachment I/II-10-A1). Within this e-mail chain, it is confirmed that the existing traffic volumes along CR 408 and CR 415 are low. No concerns are raised regarding the availability or adequacy of the roadways.

4. Existing Conditions

To characterize existing traffic volumes within the subject area, traffic volume data were obtained by the following means: (1) publicly available traffic counts published by TxDOT were retrieved for CR 408 and FM 2119 within 2.5 miles of the facility and (2) DBS&A staff conducted field traffic volume counts on lengths of CR 408 and CR 415 directly adjacent to the project site. As no roadway improvements, traffic control devices, or speed limit modifications are proposed for the construction of WST Landfill, standard volume and directional vehicular counts are provided as sufficient data to support this demonstration.

No known historical traffic data exist for roadway segments within 1 mile of the proposed facility. Therefore, data were obtained from the nearest available traffic observation stations along the roadways in question. Data were acquired through TxDOT's Statewide Traffic Analysis and Reporting System (STARS II) in January 2026. Locations of data obtained from TxDOT STARS II are shown in Figure I/II-10-A-2. All reported TxDOT volume counts were performed using an axle/tube method. Where available, quantities derived by TxDOT regarding traffic patterns of the access roadways are reported. These quantities include annual average daily

traffic (AADT, describes daily traffic projections normalized using seasonal and axle-correction factors), design hourly volume (DHV-30, the 30th highest hourly traffic volume anticipated in the design year, typically 20 years from construction), and business/commercial vehicles, FHWA Class 4 and above (BC, expressed as a standard count and percent AADT).

TxDOT traffic volume data for CR 408 were available near the road's intersection with I-20 BL, approximately 2 miles south of the project site (Location ID 195CR13A). Summaries of the available historical data for CR 408 are provided in Tables I/II-10-A-1 and I/II-10-A-2; the complete data records are provided in Attachment I/II-10-A2.

Table I/II-10-A-1. TxDOT AADT Projections for CR 408

Year	AADT	DHV-30	BC
2012	140	—	—
2007	40	—	—
2002	40	—	—
Average	73	—	—

Table I/II-10-A-2. TxDOT Volume Count Summary for CR 408

Start Date and Time	End Date and Time	AM Peak		PM Peak		Total Count	AADT
		Hour	Count	Hour	Count		
Mon 12/18/2017, 09:30	Tue 12/19/2017, 09:30	07:45–08:45	61	17:00–18:00	133	835	935

TxDOT traffic data for FM 2119 were available from two observation points near the project site. Information obtained from Location ID 195H65 characterizes traffic on FM 2119 approximately 2.5 miles northeast of the project site, while data from Location ID 195H66 represent traffic on FM 2119 approximately 1.5 miles southeast of the facility near its intersection with I-20 BL. Historical TxDOT data for FM 2119 are summarized in Tables I/II-10-A-3 and I/II-10-A-4; the complete datasets are provided in Attachment I/II-10-A3. Due to an abundance of data on this roadway, only the seven most recent years of data (2018 to 2024) are reported here.

Table I/II-10-A-3. TxDOT AADT Projections for FM 2119

Year	Location ID	AADT	DHV-30	BC
2024	195H65	3,466	—	2,190 (63%)
	195H66	2,068	—	1,353 (65%)
2023	195H65	3,365	—	2,425 (72%)
	195H66	2,008	185	1,313 (65%)
2022	195H65	3,169	—	2,448 (77%)
	195H66	1,891	174	1,317 (70%)
2021	195H65	3,521	272	1,604 (46%)
	195H66	2,564	217	1,390 (54%)
2020	195H65	4,504	—	1,835 (41%)
	195H66	4,070	—	1,732 (43%)
2019	195H65	5143	573	1,564 (30%)
	195H66	5,017	410	1,537 (31%)
2018	195H65	7,745	673	2,129 (27%)
	195H66	5,442	438	1,629 (30%)
Average		3,855	368	1,748 (51%)

Table I/II-10-A-4. TxDOT Volume Count Summary for FM 2119

Start Date and Time	End Date and Time	Location ID	AM Peak		PM Peak		Total Count	AADT
			Hour	Count	Hour	Count		
Mon 11/13/2023, 20:15	Tue 11/14/2023, 20:15	195H66	06:45–07:45	315	16:00–17:00	275	3,359	2,008
Wed 12/7/2022, 09:45	Thu 12/8/2022, 09:45	195H66	07:00–08:00	237	16:15–17:15	282	2,981	1,891
Sun 12/5/2021, 20:45	Mon 12/6/2021, 20:45	195H66	08:00–09:00	303	15:45–16:45	329	3,697	2,564
Sun 12/5/2021, 21:00	Mon 12/6/2021, 21:00	195H65	07:30–08:30	391	16:00–17:00	405	5,079	3,521
Tue 8/27/2019, 16:30	Wed 8/28/2019, 16:30	195H65	06:00–07:00	573	17:45–18:45	560	8,565	5,143
Tue 8/27/2019, 16:45	Wed 8/28/2019, 16:45	195H66	07:00–08:00	410	16:30–17:30	372	5,507	5,017
Mon 12/17/2018, 08:15	Tue 12/18/2018, 08:15	195H65	06:15–07:00	600	17:45–18:45	685	8,859	7,745
Mon 12/17/2018, 08:15	Tue 12/18/2018, 08:15	195H66	09:30–10:30	420	15:45–16:45	457	6,223	5,442
						Average	5,534	4,166

Auxiliary data regarding the existing traffic volumes on CR 408 and CR 415 were obtained by means of a directional traffic count by DBS&A in December 2025. The study was performed between the days of Monday, December 1, 2025 and Wednesday, December 3, 2025 using StreetLogic Pro countCAM 4 camera-based traffic counter units. These units reported data at

15-minute intervals for 53 consecutive hours and directionally classified traffic movement on the roadways. The deployment locations of the countCAM 4 units are provided in Figure I/II-10-A-3.

This traffic count took place during non-holidays and within typical weekday conditions; no adverse weather events or construction activities occurred during the study that may have influenced traffic patterns. The selected days are considered representative of normal roadway use and reflect typical weekday traffic patterns. The resolution of this data meets TxDOT recommendations for volume studies where no turning-movement counts, signal analyses, or detailed operational studies are required.

Summaries of the traffic counts conducted by DBS&A for CR 408 and CR 415 are provided in Tables I/II-10-A-5 and I/II-10-A-6; the complete data records are provided in Attachments I/II-10-A4 and I/II-10-A5. AADT and DHV-30 are not reported for traffic counts conducted by DBS&A due to a lack of data and accurate seasonal correction factors. BC is not specified due to limitations of the counting equipment.

Table I/II-10-A-5. DBS&A Volume Count Summary for CR 408

Start Date and Time	End Date and Time	AM Peak		PM Peak		Total Count
		Date and Hour	Count	Date and Hour	Count	
Mon 12/1/2025, 13:00	Wed 12/3/2025, 18:15	Wed 12/3/2025, 10:45–11:45	17	Wed 12/3/2025, 12:00 to 13:00	23	446
					Average per 24 hours	202

Table I/II-10-A-6. DBS&A Volume Count Summary for CR 415

Start Date and Time	End Date and Time	AM Peak		PM Peak		Total Count
		Date and Hour	Count	Date and Hour	Count	
Mon 12/1/2025, 13:45	Wed 12/3/2025, 18:45	Mon 12/1/2025, 07:00–08:00	28	Mon 12/1/2025, 19:15–20:15	29	647
					Average per 24 hours	293

When compared to data available from TxDOT, the average 24-hour traffic volume quantified by DBS&A for CR 408 in December 2025 (Table I/II-10-A-5) identifies approximately 600 vehicles fewer than those observed by TxDOT in December 2017 (Table I/II-10-A-2). This disparity may be explained by a similar negative trend seen in the traffic volume counts for FM 2119, where 24-hour traffic volume counts decreased drastically between 2018 and 2023 (Table I/II-10-A-4).

It is assumed that this dissimilarity indicates a change in traffic patterns over time, and does not invalidate the traffic volumes collected by DBS&A.

No traffic volume data are available for CR 411. For the purposes of this demonstration, CR 411 is assumed to display similar traffic patterns as CR 408.

5. Projected Facility-Generated Traffic

Predicted traffic generation volumes resulting from the operations of WST Landfill were calculated using the estimated rate of solid waste deposition and estimated operating life of the landfill, assuming a per capita collection rate advised by the Texas Commission on Environmental Quality (TCEQ) (15 acre-feet solid waste per 10,000 people per year) [30 TAC 330.63(d)(4)(D)]. The calculation used to determine the estimated rate of solid waste deposition and operating life of the facility is provided in Appendix III-4-G.

The actual waste capacity for WST Landfill is approximated at 12,007,634 cubic yards (Appendix III-4-G). This quantity is used in conjunction with population estimates from the Texas Demographic Center to determine an expected landfill life of 115 years. Assuming that WST Landfill may begin accepting waste in the year 2027, the contributing population and maximum waste deposition rate are analyzed to determine the worst-case scenario of trip generation. The procedures used to estimate this traffic generation rate are outlined below.

To determine WST Landfill's estimated trip generation figures, the following assumptions are made:

- The landfill will operate and accept waste 281 days per year.
- Each vehicle contributes two trips (one inbound, one outbound).
- The facility will staff at least three personnel each operating day, resulting in approximately 6 total trips per day.
- Vehicles carrying waste are all commercial trucks (residential deposition is omitted for conservatism).
- One-third of commercial trucks are 30-cubic yard dump trucks carrying 16 tons of solid waste and two-thirds of commercial trucks are 20-cubic yard garbage trucks carrying 9 tons of solid waste.

- Density of waste collected is equal to 0.6 tons per cubic yard.
- Landfill traffic will be distributed evenly between the two anticipated access routes.
- One visitor per day will travel to and from the landfill.
- Miscellaneous service traffic to the landfill will produce two additional total trips per operating day.

To estimate trip generation on each of the access routes for WST Landfill, the maximum estimated rate of solid waste deposition must first be assessed. To do this, the future population to be serviced by the facility is determined.

Population projections for Culberson, Jeff Davis, Loving, Pecos, Reeves, and Ward Counties were used to estimate annual waste acceptance rates between 2027 and 2031. As populations within the six surrounding counties are not expected to increase significantly past 2031, the estimated waste acceptance rate for 2031 is considered to be the maximum tonnage the facility is expected to receive in a year. This information is summarized in Table I/II-10-A-7.

Table I/II-10-A-7. Estimated Waste Acceptance Rate, 2027 to 2031

Year	Estimated Maximum Annual Waste Acceptance Rate (tons)
2027	61,660
2028	61,900
2029	62,200
2030	62,500
2031	62,700

The total deposited tonnage for the year is divided amongst the two access routes, which are assumed to share the facility's traffic evenly:

$$\frac{62{,}700\ tons}{2\ access\ routes} = 31{,}350\ tons\ per\ access\ route$$

Next, the tonnage per route is divided to account for the assumed vehicle mix:

$$\frac{1}{3}\ solid\ waste\ carried\ by\ 30\ yd^3\ dump\ trucks\ * 31{,}350\ \frac{tons}{access\ route}$$
$$= 10{,}450\ tons\ carried\ by\ 30\ yd^3\ dump\ trucks$$

$$\frac{2}{3}\ solid\ waste\ carried\ by\ 20\ yd^3\ dump\ trucks\ *\ 31{,}350\ \frac{tons}{access\ route}$$
$$= 20{,}900\ tons\ carried\ by\ 20\ yd^3\ dump\ trucks$$

The tonnage per vehicle on each route is used to generate a figure for one-way trips to WST Landfill for each operating week in 2142:

$$\frac{10{,}450\ tons\ carried\ by\ 30\ yd^3\ dump\ trucks}{16\ \frac{tons}{trip}} \div 281\ operating\ days$$
$$\approx\ 3\ one\ way\ trips\ traversed\ by\ 30\ yd^3\ dump\ trucks\ per\ day$$

$$\frac{20{,}900\ tons\ carried\ by\ 20\ yd^3\ dump\ trucks}{9\ \frac{tons}{trip}} \div 281\ operating\ days$$
$$\approx\ 9\ one\ way\ trips\ traversed\ by\ 20\ yd^3\ dump\ trucks\ per\ day$$

Each truck that travels to the landfill must also leave; therefore the calculated number of trips per route are doubled to account for this:

$$3\ one\ way\ trips\ traversed\ by\ 30\ yd^3\ dump\ trucks\ per\ day * 2$$
$$= 6\ total\ trips\ traversed\ by\ 30\ yd^3\ dump\ trucks\ per\ day$$

$$9\ one\ way\ trips\ traversed\ by\ 20\ yd^3\ dump\ trucks\ per\ day * 2$$
$$= 18\ total\ trips\ traversed\ by\ 20\ yd^3\ dump\ trucks\ per\ day$$

The total trips traversed by vehicles depositing solid waste per day are summed:

$$6\ total\ trips\ traversed\ by\ 30\ yd^3\ dump\ trucks\ per\ day +$$
$$18\ total\ trips\ traversed\ by\ 20\ yd^3\ dump\ trucks\ per\ day =$$
$$24\ total\ trips\ traversed\ by\ vehicles\ depositing\ solid\ waste\ per\ day$$

Finally, auxiliary trips to account for miscellaneous service and landfill personnel traffic are added:

$$24\ total\ trips\ traversed\ by\ vehicles\ depositing\ solid\ waste\ per\ day$$
$$+ 2\ total\ trips\ traversed\ by\ miscellaneous\ service\ vehicles\ per\ day$$
$$+ 2\ total\ trips\ traverved\ by\ visitors\ per\ day$$
$$+\ 6\ total\ trips\ traversed\ by\ landfill\ personnel\ per\ day$$
$$\approx 34\ total\ trips\ per\ operating\ day$$

This calculation provides WST Landfill with a rough estimate of their worst-case trip generation for each of the access routes. The trips anticipated to be generated by WST Landfill are summarized in Table I/II-10-A-8.

Table I/II-10-A-8. Anticipated Trip Generation (per day) on Landfill Access Routes for the Year 2142

Access Route	Total Trips Generated
I-20BL to CR 408	34
FM 2119 to CR 415	34

These trips generated by the operations of WST Landfill will occur within the operating schedule of the facility, which is expected to be Monday through Friday from 7:00 a.m. to 5:00 p.m. and Saturday from 8:00 a.m. to 12:00 p.m.

6. Expected Traffic During Facility Life

Expected traffic on the roadways in question, regardless of the presence of WST Landfill, are not anticipated to remain steady throughout the life of the landfill due to continued area development and other contributing factors. However, an accurate method of predicting future traffic volumes is not evident. As discussed in Section 4, historical traffic volume counts for FM 2119 show a sharp negative trend in traffic volumes between 2018 and 2023. If a growth rate is deduced from these historical data, traffic on the roadways in question will provide null results for the year 2142.

To provide a faithful representation of the anticipated impacts of WST Landfill's operations on the roadways in question, the most recent traffic volume data for each roadway are used. For CR 408 and CR 411, these are data collected by DBS&A in December 2025 (Table I/II-10-A-5). For CR 415, these are also data collected by DBS&A in December 2025 (Table I/II-10-A-6). For FM 2119, these are data collected by TxDOT in November 2023 (Table I/II-10-A-4); because these data depict AADT, which is less than the actual traffic count, the roadway's AADT is used for conservatism.

It may be noted that CR 408 will receive traffic resulting from vehicles traversing along both access routes, as it will include the location of the facility's main access. However, it is anticipated that the traffic resulting from the route traversing FM 2119 to CR 415 will be

segregated to the northern segment of CR 408 adjacent to the facility, while vehicles traversing the route from I-20BL to CR 408 will be segregated to the southern segment of CR 408 adjacent to the facility. Therefore, the generated trips are separated for the purposes of this demonstration.

Trips generated by WST Landfill are added onto these traffic counts and analyzed for relative change using Equation 1:

$$C = \frac{x_2 - x_1}{x_1} * 100 \quad (1)$$

where C = relative change (%)
x_1 = initial count, recorded 24-hour traffic volume
x_2 = final count, recorded 24-hour traffic volume plus total daily trip generation

An example calculation using Equation 1 is provided below for CR 408:

$$C = \frac{(202+34) - 202}{202} * 100 = +17\%$$

This procedure is repeated for CR 408, CR 411, and CR 415, as summarized in Table I/II-10-A-9.

Table I/II-10-A-9. Predicted Changes in Traffic Volumes due to Operation of WST Landfill

Roadway	Existing Traffic Volume	Predicted Traffic Volume (in 2142)	Relative Change	Existing Volume Data Source
FM 2119	2,008 [a]	2,042	+1.7%	FM 2119, TxDOT (2023)
CR 408	202	236	+17%	CR 408, DBS&A (2025)
CR 411	202	236	+17%	CR 408, DBS&A (2025)
CR 415	293	327	+12%	CR 415, DBS&A (2025)

[a] AADT data used

The roadways that are anticipated to experience the greatest impacts from traffic generation of WST Landfill are identified as CR 408 and CR 411. These roadways showed the lowest existing traffic volumes; therefore, the addition of supplemental vehicular traffic resulted in larger values of relative change. However, the expected relative change in traffic volumes remain below a 25 percent increase for these roadways. It is not anticipated that these increases in volume will negatively impact the availability or adequacy of the roadways along the facility access routes.

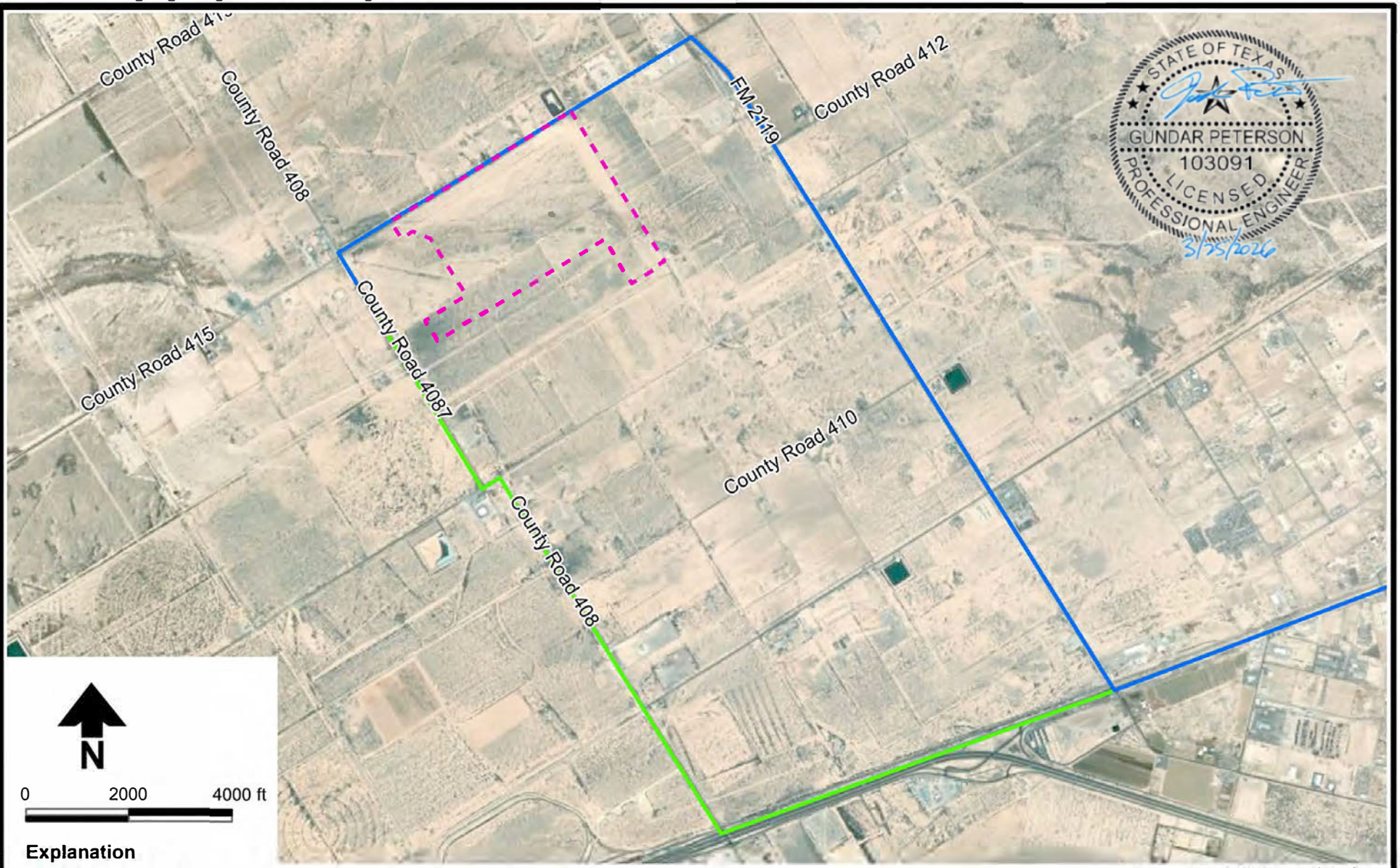
7. Conclusions

The data and discussion provided by this document are pursuant to satisfying the requirements of 30 TAC 330.61(i)(1)-(3) regarding transportation to and from WST Landfill. Preliminary coordination with the local TxDOT district (Odessa) is provided for context. Historical and current data are presented that describe existing traffic volume conditions on the roadways which provide access to the facility. A calculation that conservatively determines trip generation resulting from the operations of WST Landfill for the period at the end of the facility's life (in the year 2142) is given as a worst-case traffic generation scenario. The anticipated increases in traffic volumes are compared with existing conditions to determine the facility's projected impacts on its access roadways.

It is determined that the increase in traffic on WST Landfill's access roadways within 1 mile are small relative to their existing baseline traffic volumes. FM 2119, CR 408, CR 411, and CR 415 are deemed sufficient for their projected usage based on their availability, adequacy, and anticipated impacts from the landfill's operation.

Appendix I/II-10-A Figures

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Aerial image: Vivid, Vantor 3/28/2024

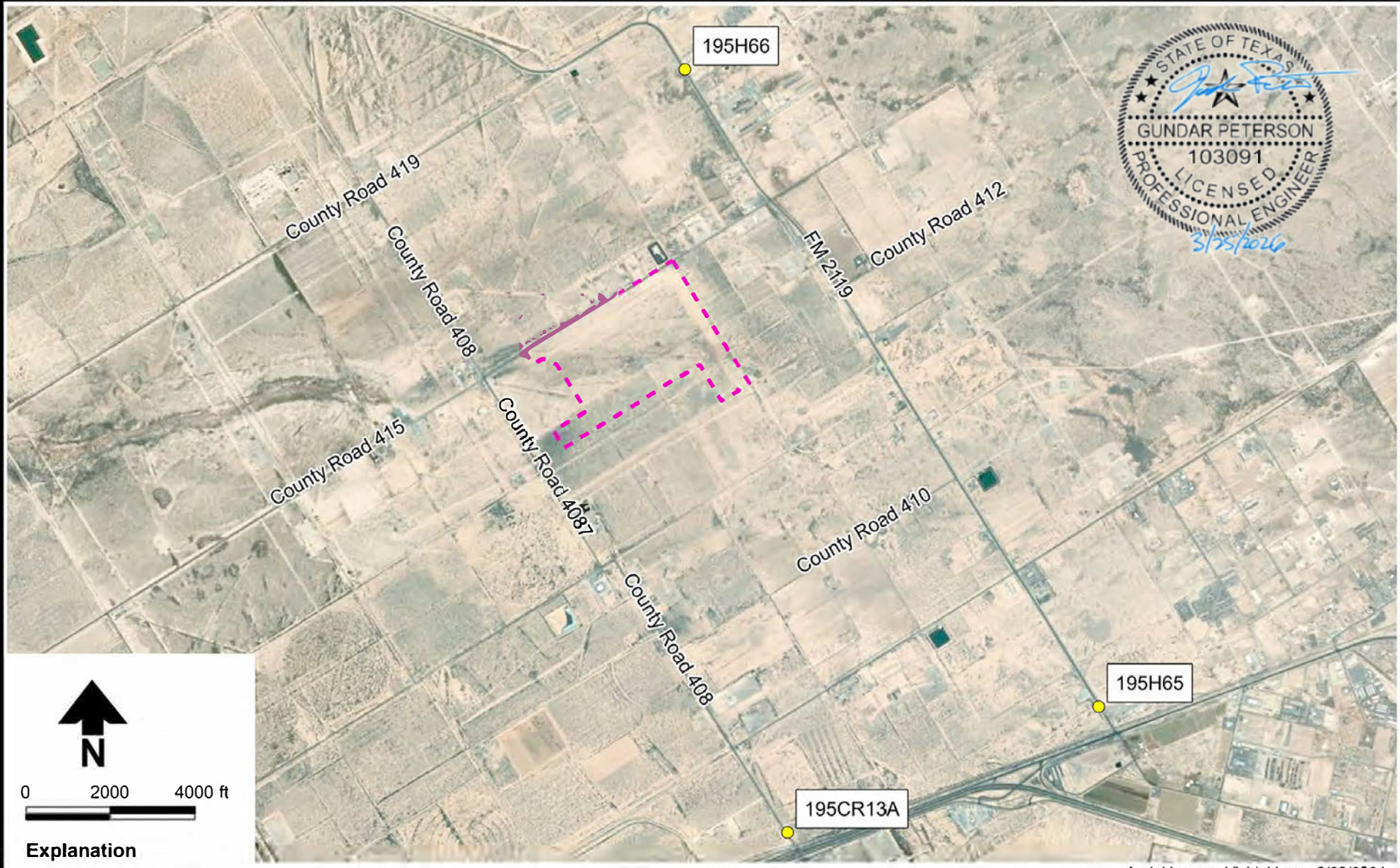
Figure I/II-10-A-1

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WST LANDFILL

Anticipated Access Routes to WST Landfill from Pecos, Texas



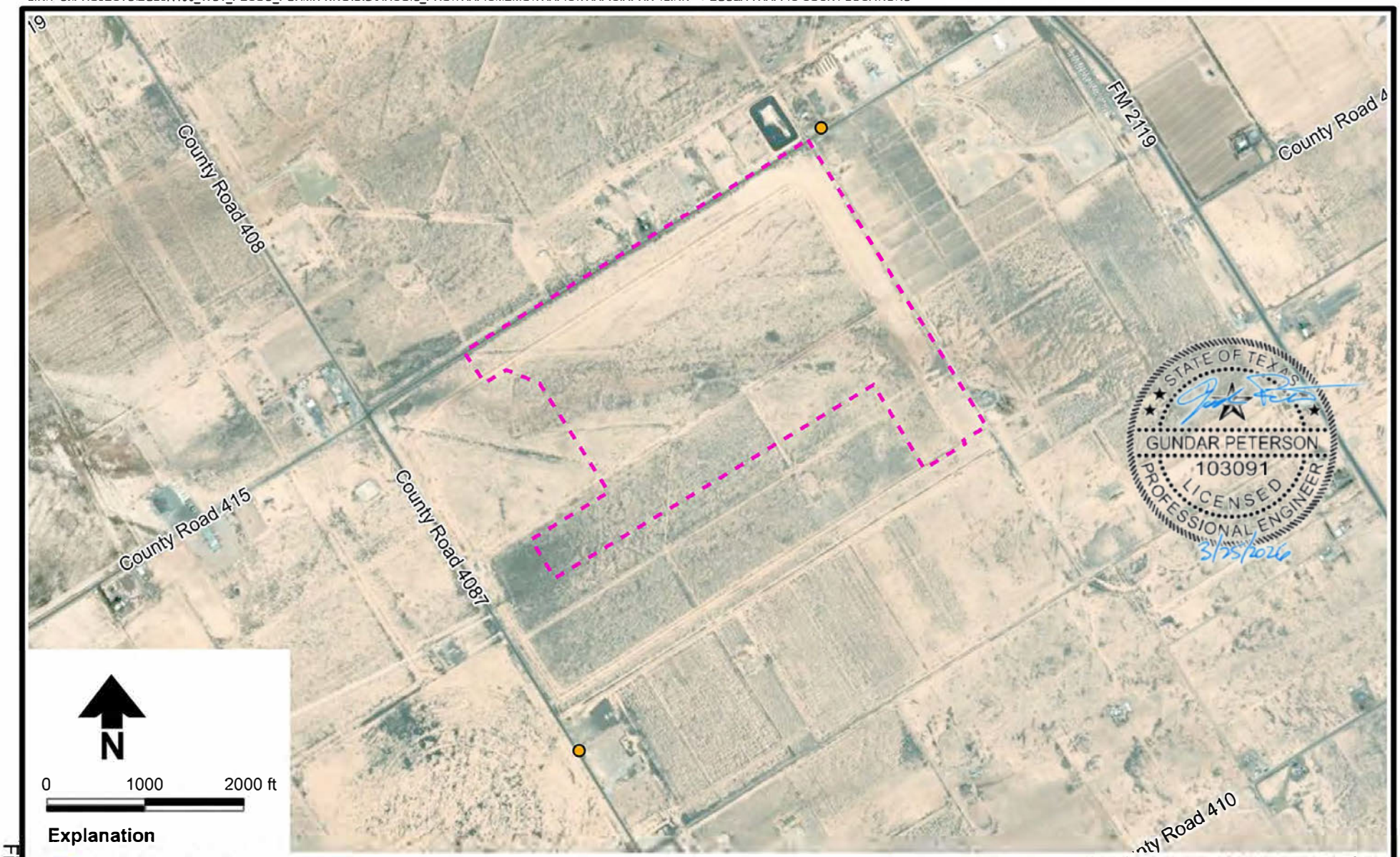
STATE OF TEXAS
GUNDAR PETERSON
103091
LICENSED
PROFESSIONAL ENGINEER
3/25/2026

Aerial image: Vivid, Vantor 3/28/2024

Figure I/II-10-A-2

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WST LANDFILL
TxDOT STARS II Traffic Count Locations



Aerial image: Vivid, Vantor 3/28/2024

Figure I/II-10-A-3

WST LANDFILL

DBS&A Traffic Count Locations

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Attachment I/II-10-A1

Agency Coordination

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TxDOT

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April 20, 2021

Mr. John R. Speed, P.E.
Odessa District Engineer
Texas Department of Transportation
3901 E. Highway 80
Odessa, Texas 79761

Re: Proposed Permian Landfill TCEQ Permit Application, Reeves County, Texas

Dear Mr. Speed:

On behalf of West Sun Tex, LLC (WST), Daniel B. Stephens & Associates, Inc. (DBS&A) is preparing a permit application to be submitted to the Texas Commission on Environmental Quality (TCEQ) for a proposed Type I municipal solid waste (MSW) facility in north-central Reeves County called the WST Permian Landfill. The facility property is located approximately 5 miles west-northwest of Pecos, Texas, at the intersection of County Road (CR) 408 and CR 415. The site latitude and longitude are 31.432400 and –103.585408. The facility entrance will be off of CR 408. The subject property has already been permitted as an oil and gas waste disposal facility by the Railroad Commission of Texas; however, WST is proposing to permit half of the 440-acre property as an MSW landfill.

This letter is being sent to the Texas Department of Transportation for coordination purposes per 30 TAC 330.23(a). The proposed facility is not located within 1,000 feet of an interstate or primary highway, so we do not anticipate that there will be a need for screening or special operating requirements. We have included Figure 1, which shows the location of the proposed facility, proximity to Interstate 20, and a 6-mile radius around the proposed facility. Access to the proposed MSW disposal facility will be off CR 408 (also labeled as CR 4087 for the length of the section). This is a rural two-lane asphalt-paved road with low traffic volumes, maintained by the Reeves County Road and Bridge Department. Based on available information, the existing access roadways are considered to be adequate to handle the estimated increased traffic volumes associated with the proposed MSW facility.

Please contact me at (505) 822-9400 if you have any questions about the attached information.

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES, INC.

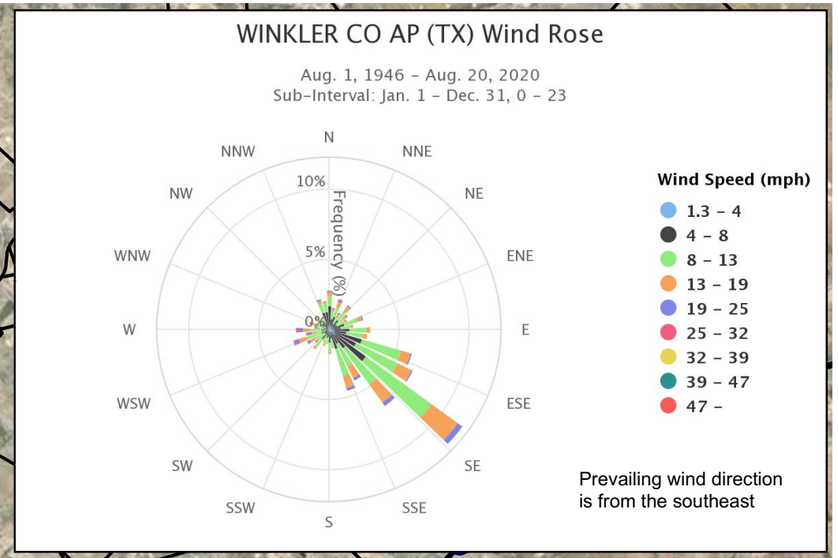
Gundar Peterson, P.E.
Vice President

AE/rpf
Attachment

Daniel B. Stephens & Associates, Inc.
6020 Academy NE, Suite 100 505-822-9400
Albuquerque, NM 87109 FAX 505-822-8877

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6-mile radius

Project Site

Pecos

Pecos Municipal Airport

County Road 419
County Road 415
County Road 411
County Road 410
County Road 404
County Road 409
N Frontage Interstate 20 W
S Buckley Ave
Business Loop 20 W.
285
20
Bus 20
1450
17

N
0 1 2 Miles

Explanation

Site

Texas Department of Transportation road

Image source: Maxar, 3/26/2020
Road source: Texas Department of Transportation (http://gis-txdot.opendata.arcgis.com/)
Wind data: Midwestern Regional Climate Center (MRCC) (https://mrcc.illinois.edu/CLIMATE/)

STATE OF TEXAS
GUNDAR PETERSON
103091
LICENSED
PROFESSIONAL ENGINEER
7/22/2026

Daniel B. Stephens & Associates, Inc.
8/25/2020 JN DB20.1166

WEST SUN TEX PERMIT APPLICATION
General Location Map

Figure 1

S:\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\GIS\MXDS\F01_GENERAL LOCATION MAP_6MI_BUFFER.MXD

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From: Herrmann, Grace
Sent: Monday, August 1, 2022 2:19 PM
To: Amy Hall <[redacted]
Cc: Peterson, Gundar [redacted]
Subject: RE: Response Requested - Proposed Permian Landfill TCEQ Permit Application, Reeves County, Texas

Amy,

The maximum initial increase in vehicle traffic on CR 408 and CR 415 associated with the landfill is estimated to be 17 trucks per day. Over a five-year period, the maximum increase in vehicle traffic is expected to be 25 trucks per day. This may include transfer trucks, collection trucks and small vehicles, as well as landfill employee vehicles. This estimated increase in traffic is dependent on the method of waste transport (i.e., direct haul vs. use of transfer trailers), the use of the landfill by small vehicles, as well as market dynamics of the waste collection and hauling business.

The primary access route to the landfill is expected to be evenly shared between CR 408 and CR 415. These are rural two-lane asphalt-paved roads maintained by the Reeves County Road and Bridge Department. A phone conversation with Reeves County Assistant Engineer Joel Martinez, who is familiar with the location, said that the traffic volume is very low along those roadways.

Please let me know if you need more information.

Thank you,

Grace Herrmann, EI
Staff Engineer

Daniel B. Stephens & Associates, Inc.
Hydrology | Engineering | Geoscience

A Geo-Logic Company

6020 Academy Road NE, Suite 100 | Albuquerque, New Mexico 87109
T (505) 822-9400 | D (505) 353-9051 | M (505) 379-0934 | F (505) 822-8877
www.dbstephens.com

From: Amy Hall <[redacted]
Sent: Monday, August 1, 2022 2:01 PM
To: Herrmann, Grace <[redacted]
Subject: RE: Response Requested - Proposed Permian Landfill TCEQ Permit Application, Reeves County, Texas

Hi Grace,

Please call me at your earliest convenience to discuss.

Thank you,

Amy Hall
432.498.4721

From: Herrmann, Grace [redacted]
Sent: Thursday, July 21, 2022 3:40 PM
To: Amy Hall <[redacted]
Cc: Ewing, Amy <[redacted] Peterson, Gundar [redacted] Jayne, Kelly <[redacted]
Subject: Response Requested - Proposed Permian Landfill TCEQ Permit Application, Reeves County, Texas

Amy,

On behalf of West Sun Tex, LLC (WST), Daniel B. Stephens & Associates, Inc. (DBS&A) is preparing a permit application to be submitted to the Texas Commission on Environmental Quality for a proposed Type I municipal solid waste facility in north-central Reeves County called the WST Permian Landfill. This correspondence is a follow-up to the letter we sent to John Speed last year. I've attached the letter for your review. We're requesting a written response within 30 days. We assume no response in that time indicates concurrence.

Thank you in advance for your time and consideration. Please call if you have questions or concerns.

Regards,

Grace Herrmann, EI
Staff Engineer

Daniel B. Stephens & Associates, Inc.
Hydrology | Engineering | Geoscience

A Geo-Logic Company

Providing solutions for water, natural resources, and the environment

6020 Academy Road NE, Suite 100 | Albuquerque, New Mexico 87109
T (505) 822-9400 | D (505) 353-9051 | M (505) 379-0934 | F (505) 822-8877
www.dbstephens.com

DocuSign Envelope ID: C12A661A-3E4C-46C1-9D9F-67FC6845EAB8

Texas Department of Transportation

3901 E. HIGHWAY 80, ODESSA, TEXAS 79761 | 432.498.4697 | WWW.TXDOT.GOV

August 11, 2022

Gundar Peterson, P.E.
Vice President
Daniel B. Stephens & Associates, Inc.
6020 Academy NE, Suite 100
Albuquerque, NM 87109

Re: Proposed Permian Landfill TCEQ Permit Application, Reeves County, Texas

Dear Peterson,

Thank you for the submittal and anticipated traffic volumes for the proposed landfill located in Reeves County. Although the facility is not within 1000' of an interstate or primary highway, we believe that a high percentage of traffic utilizing this facility will use FM 2119 to get to CR 415 or IH 20 north frontage road to get to CR 408. The projected volumes seem low for a facility that serves both a municipal landfill and an oil and gas waste disposal facility. The Odessa district will monitor traffic at these 2 intersections once the facility is in full operation to determine if any additional mitigation efforts are needed to safely accommodate the traffic.

Please contact Chad Windham at 432.498.4740 if you have questions or need additional information.

Sincerely,

DocuSigned by:
Eric Lykins, PE
9D2D0C440F014A4...

Eric Lykins, P.E.
Odessa District Engineer

cc: Grace Herrmann, EI
Chad Windham, P.E., Director or Operations

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Reeves County

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RE: Traffic Volumes along County Roads 408 and 415

[redacted]

Mon 11/15/2021 8:55 AM

[redacted]

Good morning Joel,
Your response is greatly appreciated! If any further coordination or even information comes out of this that may be useful to you, ill be sure to reach out to you! Have a great day!

Adam Miera, P.E. | Project Manager
[redacted]

[redacted]

Subject: RE: Traffic Volumes along County Roads 408 and 415

Adam,

Good morning, yes according to the area it is considered a low traffic area, only a few residents use the roads mentioned on your letter and to include the oil field companys with locations in that area.

Thanks
Joel

[redacted]

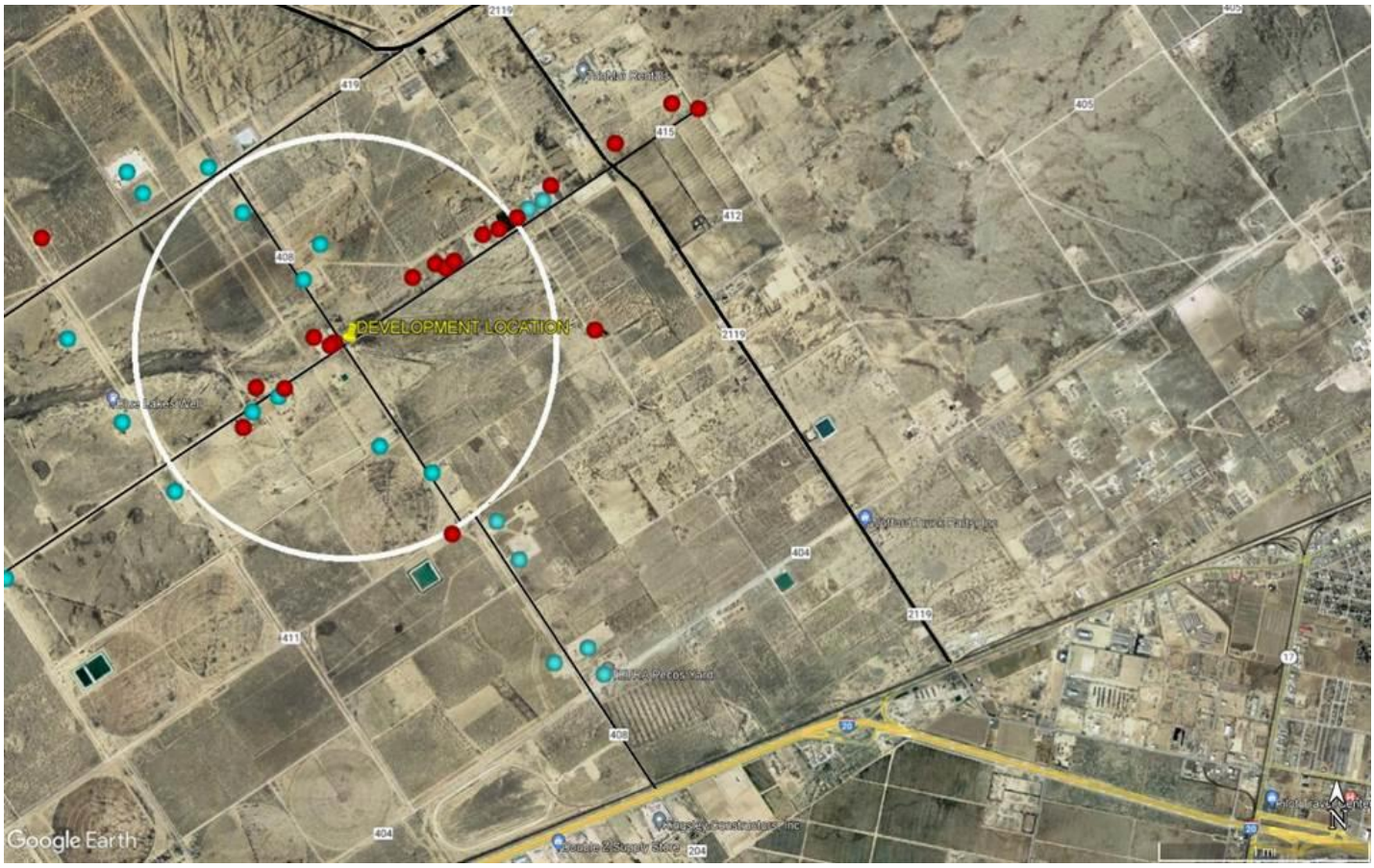
Subject: Traffic Volumes along County Roads 408 and 415

Hello Joel,
This is Adam Miera from WHPacific in New Mexico. Again, I just want to thank you for your time speaking with me yesterday. I'm hoping you could reply with your concurrence to this email that the existing traffic volumes along County Roads 408 and 415 as shown in the image below are low traffic volume roads that most likely will not be impacted by the addition of traffic from the proposed development discussed below. The intent behind this is to help with the permit application for a proposed development at the 408/415 intersection.

Existing Conditions: The red dots on the image below indicate existing residential locations while the blue dots indicate existing commercial locations. Commercial locations include, well houses, truck repair shops, and other miscellaneous uses. There are about 17 residential homes that appear to make use of the two routes, and 22 commercial sites that appear to make use of them as well. Together they equal 39 sites that use the two roadways and provide low traffic volumes on the two roads throughout the day.

Proposed Development: The proposed development to be located at the intersection of 408 and 415 has an estimated 17 truck trips per day that will be added to the traffic volumes along these roadways. After five years it's expected that there would be as many as 25 truck trips per day. There is one proposed access point along 408 and one proposed access point along 415. Proposed truck traffic will be evenly split between the two access points.

If you have any questions or would like additional information, please don't hesitate to let me know. Again this email is only to be used to say that the existing traffic volumes along these roadway are considered low.
Thank you



Adam Miera, P.E. | Project Manager
WHPacific, Inc. - an NV5 company | 6501 Americas Pkwy NE, Ste 400, Albuquerque, NM 87110
Direct 505.348.5259 | Fax 505.242.4845 | Adam.Miera@NV5.com

Enhance Client Satisfaction with Creative, Exceptional Service through Empowered Employees

CAUTION: This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

FAA

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Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-ASW-6719-OE
Prior Study No.
2022-ASW-16431-OE

Issued Date: 11/18/2025

DANIEL B. STEPHENS & ASSOCIATES
GUNDAR PETERSON
6020 Academy Rd NE
Albuquerque, NM 87109

**** Extension ****

A Determination was issued by the Federal Aviation Administration (FAA) concerning:

Structure: New Municipal Solid Waste Landfill WST Landfill
County, State: Reeves, Texas

Collected Point(s):

Label	Latitude	Longitude	SE	DET AGL	AMSL
WST Landfill	31-26-17.44N	103-34-55.21W	2660 Ft	130 Ft	2790 Ft

In response to your request for an extension of the effective period of the determination, the FAA has reviewed the aeronautical study in light of current aeronautical operations in the area of the structure and finds that no significant aeronautical changes have occurred which would alter the determination issued for this structure.

Accordingly, pursuant to the authority delegated to me, the effective period of the determination issued under the above cited aeronautical study number is hereby extended and will expire on 05/18/2027 unless otherwise extended, revised, or terminated by this office. You must adhere to all conditions identified in the original determination.

This extension issued in accordance with 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerns the effect of the structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at 1-817-222-5933, or [redacted] On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-ASW-6719-OE.

Signature Control No: 621942149-684260228 (EXT)

[redacted]
Specialist

Attachment(s)

Case Description for ASN 2024-ASW-6719-OE

West Sun Tex, LLC (WST) is preparing a permit application to be submitted to the Texas Commission on Environmental Quality for a Type I municipal solid waste facility called the WST Landfill.

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-ASW-6720-OE
Prior Study No.
2022-ASW-16432-OE

Issued Date: 11/18/2025

DANIEL B. STEPHENS & ASSOCIATES
GUNDAR PETERSON
6020 Academy Rd NE
Albuquerque, NM 87109

**** Extension ****

A Determination was issued by the Federal Aviation Administration (FAA) concerning:

Structure: New Municipal Solid Waste Landfill WST Landfill
County, State: Reeves, Texas

Collected Point(s):

Label	Latitude	Longitude	SE	DET AGL	AMSL
WST Landfill	31-26-01.65N	103-34-42.83W	2660 Ft	130 Ft	2790 Ft

In response to your request for an extension of the effective period of the determination, the FAA has reviewed the aeronautical study in light of current aeronautical operations in the area of the structure and finds that no significant aeronautical changes have occurred which would alter the determination issued for this structure.

Accordingly, pursuant to the authority delegated to me, the effective period of the determination issued under the above cited aeronautical study number is hereby extended and will expire on 05/18/2027 unless otherwise extended, revised, or terminated by this office. You must adhere to all conditions identified in the original determination.

This extension issued in accordance with 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerns the effect of the structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at 1-817-222-5933, [redacted] On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-ASW-6720-OE.

Signature Control No: 621942649-684260229 (EXT)

[redacted]
Specialist

Attachment(s)

Case Description for ASN 2024-ASW-6720-OE

West Sun Tex, LLC (WST) is preparing a permit application to be submitted to the Texas Commission on Environmental Quality for a Type I municipal solid waste facility called the WST Landfill.

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-ASW-6721-OE
Prior Study No.
2022-ASW-16430-OE

Issued Date: 11/18/2025

DANIEL B. STEPHENS & ASSOCIATES
GUNDAR PETERSON
6020 Academy Rd NE
Albuquerque, NM 87109

**** Extension ****

A Determination was issued by the Federal Aviation Administration (FAA) concerning:

Structure: New Municipal Solid Waste Landfill WST Landfill
County, State: Reeves, Texas

Collected Point(s):

Label	Latitude	Longitude	SE	DET AGL	AMSL
WST Landfill	31-26-03.04N	103-35-20.86W	2660 Ft	130 Ft	2790 Ft

In response to your request for an extension of the effective period of the determination, the FAA has reviewed the aeronautical study in light of current aeronautical operations in the area of the structure and finds that no significant aeronautical changes have occurred which would alter the determination issued for this structure.

Accordingly, pursuant to the authority delegated to me, the effective period of the determination issued under the above cited aeronautical study number is hereby extended and will expire on 05/18/2027 unless otherwise extended, revised, or terminated by this office. You must adhere to all conditions identified in the original determination.

This extension issued in accordance with 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerns the effect of the structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at 1-817-222-5933, or [redacted] On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-ASW-6721-OE.

Signature Control No: 621942662-684260227 (EXT)

[redacted]
Specialist

Attachment(s)

Case Description for ASN 2024-ASW-6721-OE

West Sun Tex, LLC (WST) is preparing a permit application to be submitted to the Texas Commission on Environmental Quality for a Type I municipal solid waste facility called the WST Landfill.

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-ASW-6722-OE
Prior Study No.
2022-ASW-16433-OE

Issued Date: 11/18/2025

DANIEL B. STEPHENS & ASSOCIATES
GUNDAR PETERSON
6020 Academy Rd NE
Albuquerque, NM 87109

**** Extension ****

A Determination was issued by the Federal Aviation Administration (FAA) concerning:

Structure: New Municipal Solid Waste Landfill WST Landfill
County, State: Reeves, Texas

Collected Point(s):

Label	Latitude	Longitude	SE	DET AGL	AMSL
WST Landfill	31-25-47.07N	103-35-08.52W	2660 Ft	130 Ft	2790 Ft

In response to your request for an extension of the effective period of the determination, the FAA has reviewed the aeronautical study in light of current aeronautical operations in the area of the structure and finds that no significant aeronautical changes have occurred which would alter the determination issued for this structure.

Accordingly, pursuant to the authority delegated to me, the effective period of the determination issued under the above cited aeronautical study number is hereby extended and will expire on 05/18/2027 unless otherwise extended, revised, or terminated by this office. You must adhere to all conditions identified in the original determination.

This extension issued in accordance with 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerns the effect of the structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at 1-817-222-5933, or [redacted] On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-ASW-6722-OE.

Signature Control No: 621942688-684260225 (EXT)

[redacted]
Specialist

Attachment(s)

Case Description for ASN 2024-ASW-6722-OE

West Sun Tex, LLC (WST) is preparing a permit application to be submitted to the Texas Commission on Environmental Quality for a Type I municipal solid waste facility called the WST Landfill.

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-ASW-6723-OE
Prior Study No.
2022-ASW-16444-OE

Issued Date: 11/18/2025

DANIEL B. STEPHENS & ASSOCIATES
GUNDAR PETERSON
6020 Academy Rd NE
Albuquerque, NM 87109

**** Extension ****

A Determination was issued by the Federal Aviation Administration (FAA) concerning:

Structure: New Municipal Solid Waste Landfill WST Landfill
County, State: Reeves, Texas

Collected Point(s):

Label	Latitude	Longitude	SE	DET AGL	AMSL
WST Landfill	31-26-02.21N	103-35-01.74W	2660 Ft	130 Ft	2790 Ft

In response to your request for an extension of the effective period of the determination, the FAA has reviewed the aeronautical study in light of current aeronautical operations in the area of the structure and finds that no significant aeronautical changes have occurred which would alter the determination issued for this structure.

Accordingly, pursuant to the authority delegated to me, the effective period of the determination issued under the above cited aeronautical study number is hereby extended and will expire on 05/18/2027 unless otherwise extended, revised, or terminated by this office. You must adhere to all conditions identified in the original determination.

This extension issued in accordance with 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerns the effect of the structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at 1-817-222-5933, [redacted] On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-ASW-6723-OE.

Signature Control No: 621942690-684260226 (EXT)

[redacted]
Specialist

Attachment(s)

Case Description for ASN 2024-ASW-6723-OE

West Sun Tex, LLC (WST) is preparing a permit application to be submitted to the Texas Commission on Environmental Quality for a Type I municipal solid waste facility called the WST Landfill.

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Pecos Municipal Airport

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March 15, 2024

Mr. Coley Means
Manager, Pecos Municipal Airport
3110 Manahan Street
Pecos, TX 79772
[redacted]

Re: Proposed WST Landfill TCEQ Permit Application, Reeves County, Texas
(Additional Submittal)

Dear Mr. Means:

On behalf of West Sun Tex, LLC (WST), Daniel B. Stephens & Associates, Inc. (DBS&A) is preparing a permit application to be submitted to the Texas Commission on Environmental Quality (TCEQ) for a proposed Type I municipal solid waste (MSW) facility in north-central Reeves County called the WST Landfill.

The facility property is located approximately 5 miles west-northwest of Pecos, Texas, at the intersection of County Road (CR) 408 and CR 415. The site latitude and longitude are 31.432400 and –103.585408. The facility entrance will be off of CR 408. The subject property has already been permitted as an oil and gas waste disposal facility by the Railroad Commission of Texas; however, WST is proposing to permit half of the 440-acre property as an MSW landfill.

This Type I MSW landfill will accept solid waste resulting from municipal, commercial, institutional, and recreational activities, including (1) garbage, construction waste, brush, rubbish, and all other solid waste, (2) Class 1, 2, and 3 nonhazardous industrial waste, (3) petroleum-contaminated soil, (4) wastewater treatment facility sludge, and (5) special waste as defined by 30 TAC 330.3. The maximum waste height will be 137 feet from the bottom of the cell, with the bottom of the cell at about 13 feet below grade, making the maximum waste height about 124 feet above existing grade.

This letter is also being sent to the Federal Aviation Administration for coordination purposes per 30 TAC 330.23(c) and 30 TAC 330.545(b). Our review of available records indicates that the nearest airport to the proposed facility is the Pecos Municipal Airport (PEQ) in Pecos, Texas, located in the vicinity of the proposed facility and classified as a general aviation airport. We have included Figure I/II-5-2, which shows the location of the Pecos Municipal Airport, the proposed facility, and a 6-mile radius around the proposed facility. Attachment 1 included copies of additional FAA maps and procedures that were downloaded from the Digital - Terminal Procedures Publication (d-TPP)/Airport Diagrams page on faa.gov. Please confirm that these are the most current versions of this information.

DBS&A provided this information to FAA in a previous submittal for the same site in July 2022, and received five letters of "Determination of no hazard to air navigation" from the FAA with the following signature control numbers:

- 548308984
- 548308985
- 548308986
- 548308987
- 548308988

The approval in these letters expired in February 2024. No changes to the design of the facility have occurred since the original submittal to FAA; this resubmittal is due to a new submittal of the TCEQ permit application. This letter is being provided to you in conjunction with a resubmittal of Form 7460-1 to the FAA.

We are requesting a written response within 30 days. We assume that no response in that time indicates concurrence. Please contact me at (505) 822-9400 if you have any questions about the attached information.

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES, INC.

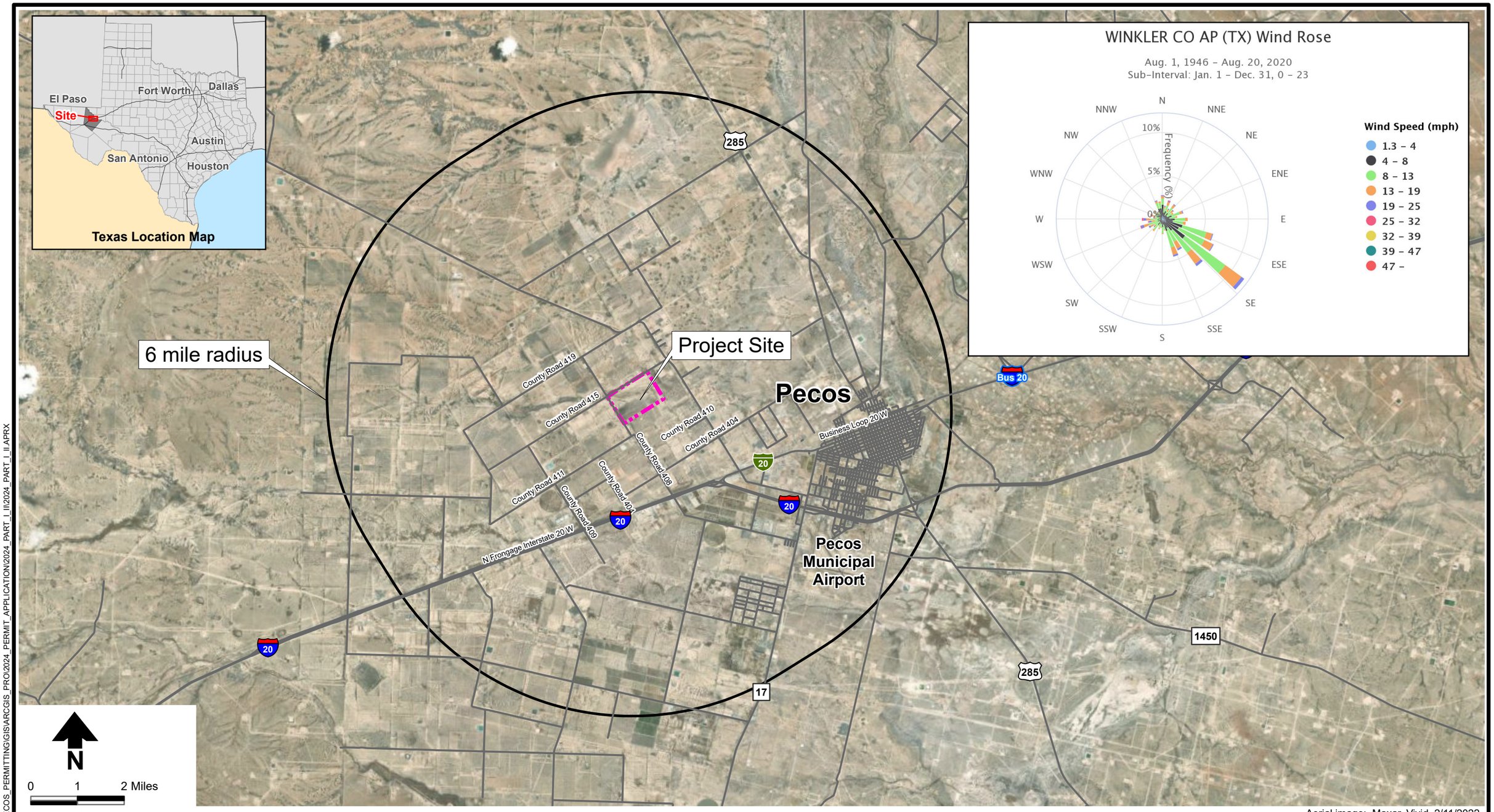
Gundar Peterson, P.E.
Vice President

Kelly Jayne
Project Manager

KJ/rpf
Attachments

Figure

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Aerial image: Maxar, Vivid 2/11/2022

S:\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\GIS\ARCGIS_PRO\2024_PERMIT_APPLICATION\2024_PART_I_II\2024_PART_I_II_APRX

DBS&A a Geo-Logic Company

3/5/2024 DB20.1166

Rev 2: July 2026 (Rev 0: March 2026)

WST LANDFILL

General Location Map

Figure I/II-5-2

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Attachment 1

FAA Procedures and Maps

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PEARSALL, TX

MC KINLEY FLD (T30)

TAKEOFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES

ORIG 17NOV11 (22111) (FAA)

TAKEOFF OBSTACLE NOTES:

Rwy 13, trees beginning abeam DER, 300' left of centerline, up to 40' AGL/605' MSL.
Transmission lines beginning 1777' from DER, across centerline, up to 80' AGL/642' MSL.
Rwy 31, train on track 496' from DER, across centerline, 23' AGL/610' MSL.
Vehicle on road 291' from DER, across centerline, 15' AGL/602' MSL.

PECOS, TX

PECOS MUNI (PEQ)

TAKEOFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES

ORIG 20SEP12 (12264) (FAA)

TAKEOFF OBSTACLE NOTES:

Rwy 14, bush 170' from DER, 252' right of centerline, up to 7' AGL/2607' MSL.
Rwy 32, bush 129' from DER, 348' left of centerline, up to 9' AGL/2614' MSL.

PLEASANTON, TX

PLEASANTON MUNI (PEZ)

TAKEOFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES

AMDT 1 20NOV08 (08325) (FAA)

TAKEOFF OBSTACLE NOTES:

Rwy 16, vehicle on road 108' from DER, 285' left of centerline, 15' AGL/424' MSL.
Fence 135' from DER, 194' left of centerline, 3' AGL/412' MSL.
Fence 235' from DER, 38' right of centerline, 3' AGL/412' MSL.
Trees beginning 246' from DER, 56' left of centerline, up to 100' AGL/529' MSL.
Trees beginning 173' from DER, 154' right of centerline, up to 100' AGL/529' MSL.
Rwy 34, vehicle on road 136' from DER, left to right of centerline, up to 15' AGL/444' MSL.
Fence 191' from DER, 251' left of centerline, 3' AGL/442' MSL.
Trees beginning 210' from DER, 51' left of centerline, up to 100' AGL/539' MSL.
Tree 172' from DER, 74' right of centerline, 100' AGL/529' MSL.

PORT ARANSAS, TX

MUSTANG BEACH (RAS)

TAKEOFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES

AMDT 1 15JAN09 (09015) (FAA)

TAKEOFF OBSTACLE NOTES:

Rwy 12, transmission towers and poles beginning 43' from DER, 28' right of centerline, up to 81' AGL/86' MSL. Building 2435' from DER, 967' right of centerline, 130' AGL/135' MSL.
Transmission towers and poles beginning 1141' from DER, 13' left of centerline, up to 83' AGL/88' MSL.
Rwy 30, boat 1657' from DER, 915' left of centerline, 50' AGL/50' MSL.

PORT ISABEL, TX

PORT ISABEL-CAMERON COUNTY (PIL)

TAKEOFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES

AMDT 2B 19JUL18 (18200) (FAA)

TAKEOFF MINIMUMS:

Rwy 17, std. w/min. climb of 243' per NM to 700 or 900-3 for VCOA.
Rwy 21, 600-3 w/min. climb of 231' per NM to 700 or std. w/min. climb of 312' per NM to 700 or 900-3 for VCOA.

DEPARTURE PROCEDURE:

Rwy 13, climb on heading 130° to 500 before turning right.
Rwy 17, climb on heading 175° to 600 before turning right.

VCOA:

Rwy 17, obtain ATC approval for VCOA when requesting IFR clearance: climb in visual conditions to cross Port Isabel-Cameron County airport at or above 800 before proceeding on course.
Rwy 21, obtain ATC approval for VCOA when requesting IFR clearance: climb in visual conditions to cross Port Isabel-Cameron County airport at or above 800 before proceeding on course.

TAKEOFF OBSTACLE NOTES:

Rwy 3, trees beginning 15' from DER, 5' right of centerline, up to 100' AGL/117' MSL.
Trees beginning 200' from DER, 25' left of centerline, up to 100' AGL/117' MSL.
Rwy 8, trees beginning 141' from DER, 109' right of centerline, up to 100' AGL/117' MSL.
Trees beginning 142' from DER, 183' left of centerline, up to 100' AGL/117' MSL.
Rwy 13, trees beginning 6' from DER, 6' left of centerline, up to 100' AGL/117' MSL.
Trees beginning 26' from DER, 15' right of centerline, up to 100' AGL/117' MSL.
Rwy 17, trees beginning 183' from DER, 84' right of centerline, up to 100' AGL/117' MSL.
Trees beginning 185' from DER, 178' left of centerline, up to 100' AGL/117' MSL.
CON'T

SC-3, 21 MAR 2024 to 16 MAY 2024

NAME	ALTERNATE MINIMUMS

MC ALLEN, TX
MC ALLEN
INTL (MFE)……..**ILS or LOC Rwy 14[1]**
ILS or LOC Rwy 32[1]
RNAV (GPS) Rwy 14[2]
RNAV (GPS) Rwy 32[2]
VOR Rwy 14[2]
VOR Rwy 32[2]
NA when local weather not available.
[1]ILS, Category D, 700-2¼; LOC, Category D, 800-2¼.
[2]Category D, 800-2¼.

MIDLAND, TX
MIDLAND
AIRPARK (MDD)……..**RNAV (GPS) Rwy 25[1]**
RNAV (GPS) Rwy 34
VOR Rwy 25[1]
NA when local weather not available.
[1]Category D, 900-3.

MIDLAND INTL AIR AND SPACE
PORT (MAF)……..**ILS or LOC Rwy 10[12]**
VOR or TACAN Rwy 34L[3]
VOR or TACAN Rwy 16R[3]
[1]ILS, Category D, 700-2; Category E, 800-2½; LOC, Category E, 800-2½.
[2]NA when control tower closed.
[3]Category E, 800-2½.

NEW BRAUNFELS, TX
NEW BRAUNFELS
NTL (BAZ)……..**RNAV (GPS) Rwy 13**
RNAV (GPS) Rwy 17
RNAV (GPS) Rwy 31
RNAV (GPS) Rwy 35
NA when local weather not available.

ODESSA, TX
ODESSA-SCHLEMEYER
FLD (ODO)……..**RNAV (GPS) Rwy 11**
RNAV (GPS) Rwy 20
RNAV (GPS) Rwy 29
VOR-A
NA when local weather not available.

PECOS, TX
PECOS MUNI (PEQ)……**RNAV (GPS) Rwy 14**
RNAV (GPS) Rwy 32
NA when local weather not available.
Category C, 800-2¼; Category D, 800-2½.

PLEASANTON, TX
PLEASANTON
MUNI (PEZ)……**RNAV (GPS) Rwy 34**
NA when local weather not available.

NAME	ALTERNATE

PORT ARANSAS, TX
MUSTANG
BEACH (RAS)……**RNAV (GPS) Rwy 12**
RNAV (GPS) Rwy 30
NA when local weather not available.

PORT ISABEL, TX
PORT ISABEL-CAMERON
COUNTY (PIL)……..**RNAV (GPS) Rwy 13**
NA when local weather not available.

ROBSTOWN, TX
NUECES
COUNTY (RBO)……**RNAV (GPS) Rwy 13**
RNAV (GPS) Rwy 31
NA when local weather not available.

ROCKPORT, TX
ARANSAS
COUNTY (RKP)……**RNAV (GPS) Rwy 14**
RNAV (GPS) Rwy 18
RNAV (GPS) Rwy 32
RNAV (GPS) Rwy 36
VOR or TACAN-A[1]
NA when local weather not available.
[1]Category C, 800-2¼.

ROCKSPRINGS, TX
EDWARDS
COUNTY (ECU)……..**VOR Rwy 14**
NA when local weather not available.

SAN ANGELO, TX
SAN ANGELO RGNL/
MATHIS FLD (SJT)…….....**ILS Y or LOC Y Rwy 3[12]**
NDB Rwy 3[3]
RNAV (GPS) Rwy 3[4]
RNAV (GPS) Rwy 18[4]
RNAV (GPS) Rwy 21[4]
RNAV (GPS) Rwy 36[4]
VOR/DME or TACAN Rwy 3[4]
[1]LOC, Category D, 800-2½; Category E, 800-2¾.
[2]LOC, NA when control tower closed.
[3]NA when control tower closed.
[4]Category D, 800-2½; Category E, 800-2¾.

SC-3, 21 MAR 2024 to 16 MAY 2024

PECOS, TEXAS

AL-186 (FAA)

21364

RNAV (GPS) RWY 14

PECOS MUNI (PEQ)

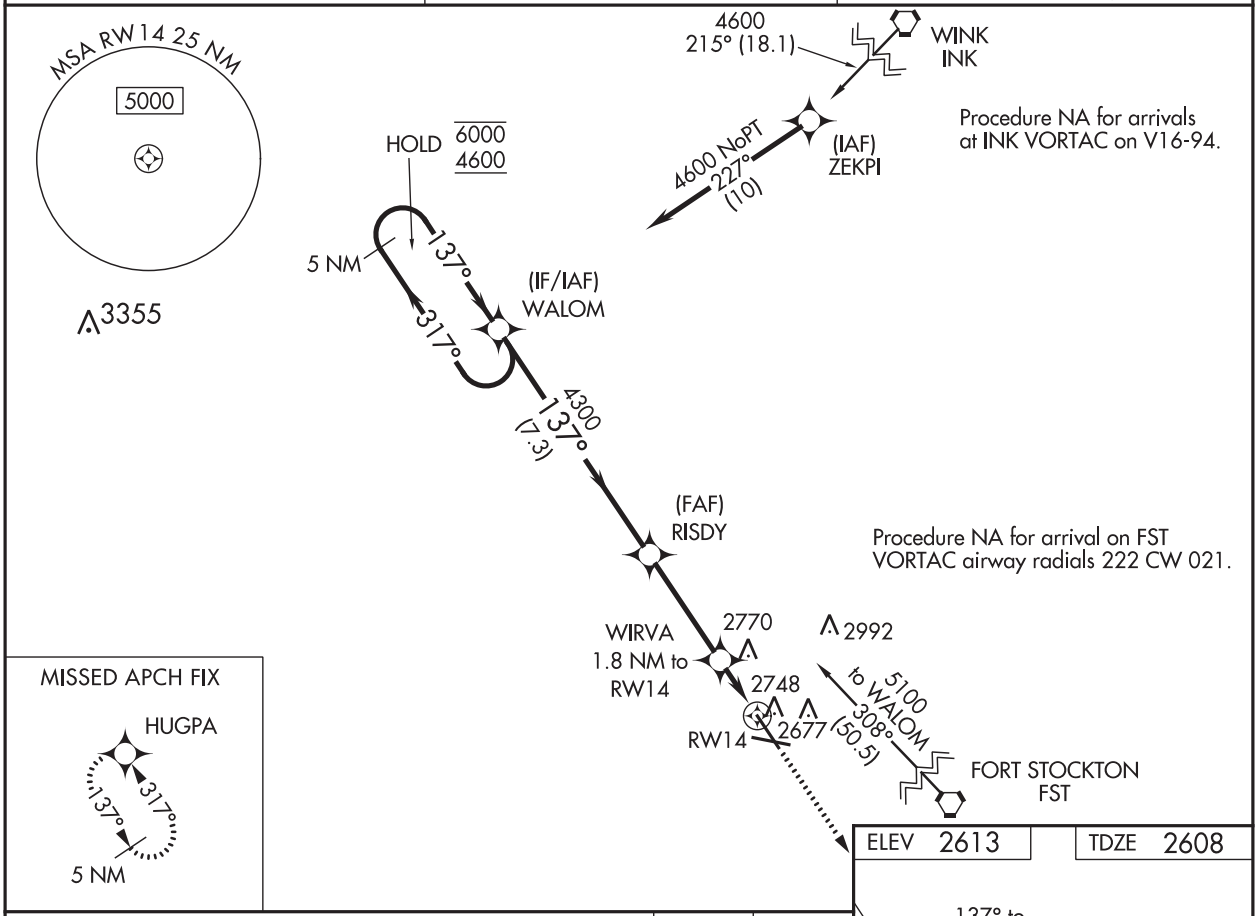
WAAS	APP CRS	Rwy Idg	6236
CH 62830	137°	TDZE	2608
W14A		Apt Elev	2613

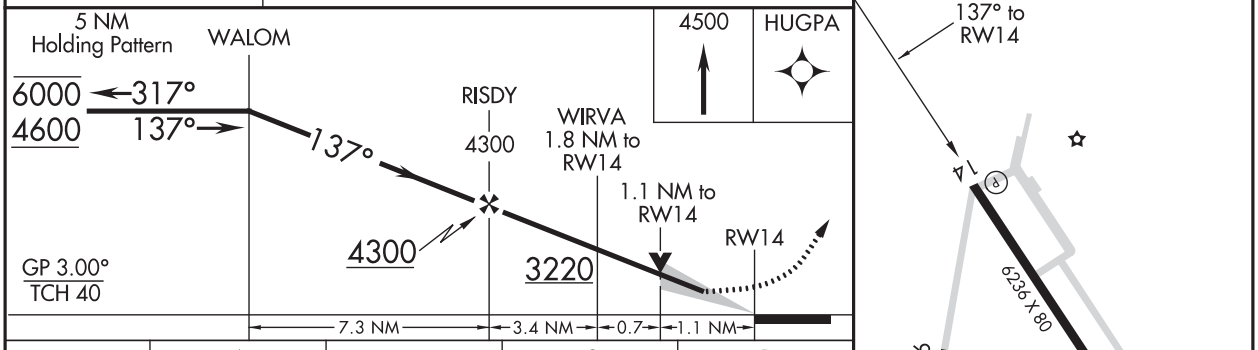
RNP APCH - GPS.

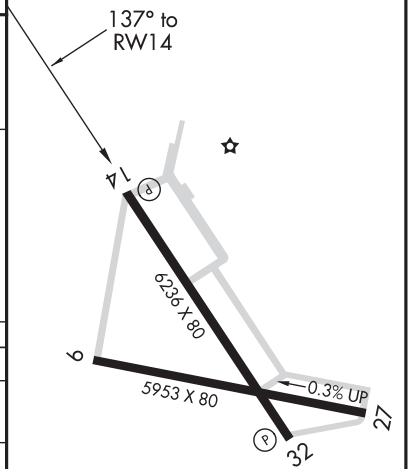
Circling Rwy 9, 27 NA at night. Baro-VNAV and VDP NA when using Wink altimeter setting. For uncompensated Baro-VNAV systems, LNAV/VNAV NA below -20°C or above 54°C. When local altimeter setting not received, use Wink altimeter setting and increase LPV DA to 2903 feet and all visibilities ⅛ SM. Increase LNAV/VNAV DA to 3004 feet and all visibilities ¼ SM. Increase all MDAs 100 feet and LNAV visibility Cat C/D ¼ SM, and Circling visibility Cat C/D ¼ SM.

MISSED APPROACH: Climb to 4500 direct HUGPA and hold.

AWOS-3	ALBUQUERQUE CENTER	UNICOM
118.175	135.875 292.15	122.8 (CTAF) L







CATEGORY	A	B	C	D
LPV DA	2808-¾ 200 (200-¾)			
LNAV/VNAV DA	2909-⅞ 301 (300-⅞)			
LNAV MDA	3000-1 392 (400-1)		3000-1⅛ 392 (400-1⅛)	
C CIRCLING	3060-1 447 (500-1)	3140-1 527 (600-1)	3360-2¼ 747 (800-2¼)	3360-2½ 747 (800-2½)

MIRL Rwys 9-27 and 14-32 L

SC-3, 21 MAR 2024 to 16 MAY 2024

SC-3, 21 MAR 2024 to 16 MAY 2024

PECOS, TEXAS

Orig-B 30DEC21

31°23'N-103°31'W

PECOS MUNI (PEQ)

RNAV (GPS) RWY 14

RNAV (GPS) RWY 32

PECOS MUNI (PEQ)

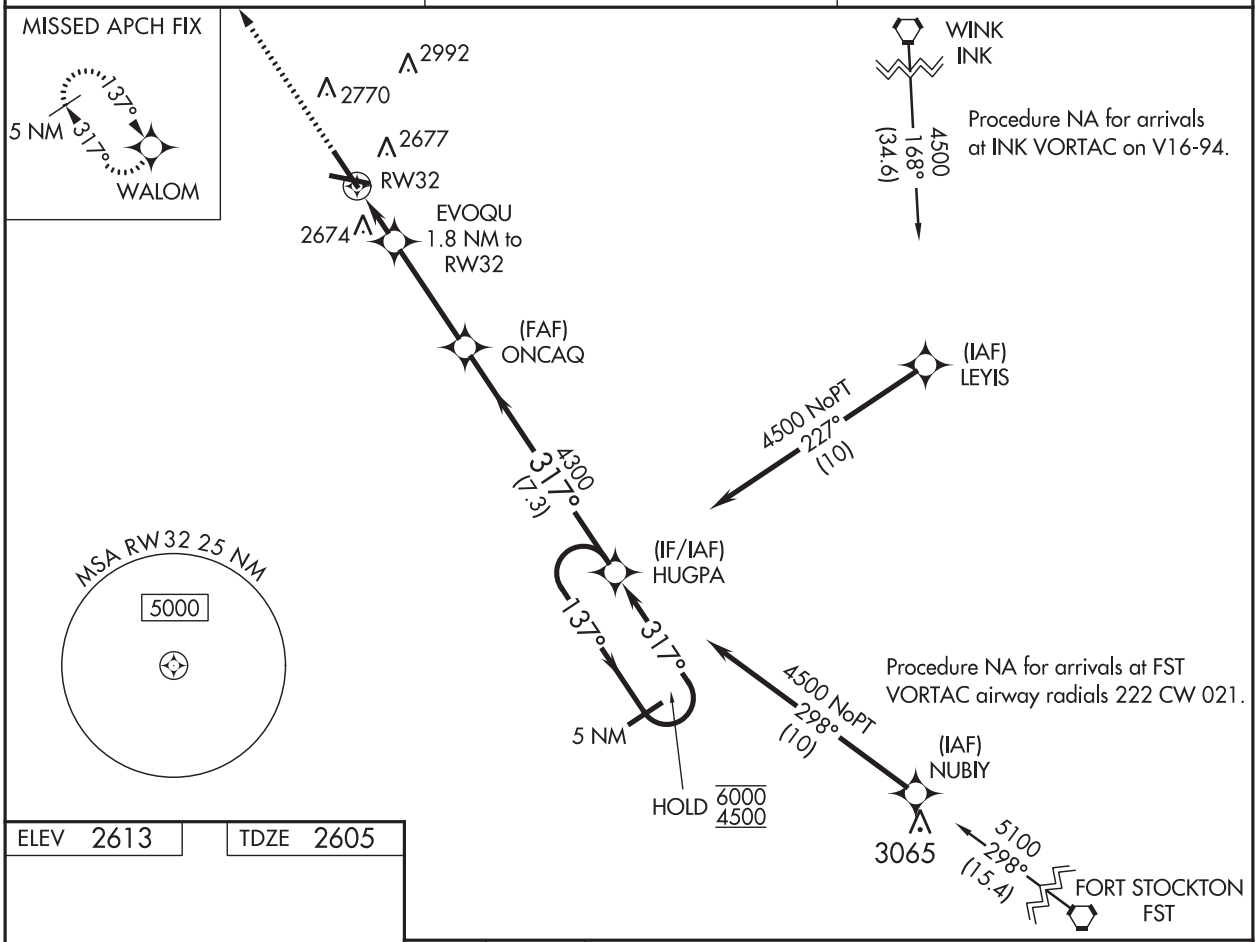
WAAS	APP CRS	Rwy Idg	6236
CH 69629	317°	TDZE	2605
W32A		Apt Elev	2613

RNP APCH - GPS.

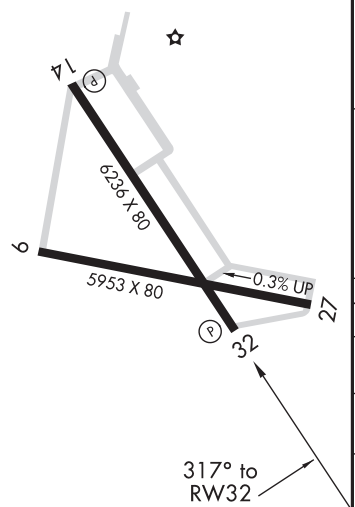
T A Baro-VNAV and VDP NA when using Wink altimeter setting. For uncompensated Baro-VNAV systems, LNAV/VNAV NA below -20°C or above 54°C. When local altimeter setting not received, use Wink altimeter setting: increase LPV DA to 2900 feet, LNAV/VNAV DA to 2950 feet and all visibilities ¼ SM; increase all MDA 100 feet and visibility Cat C and LNAV Cat D ¼ SM. Circling Rwy 9, 27 NA at night.

MISSED APPROACH: Climb to 4600 direct WALOM and hold.

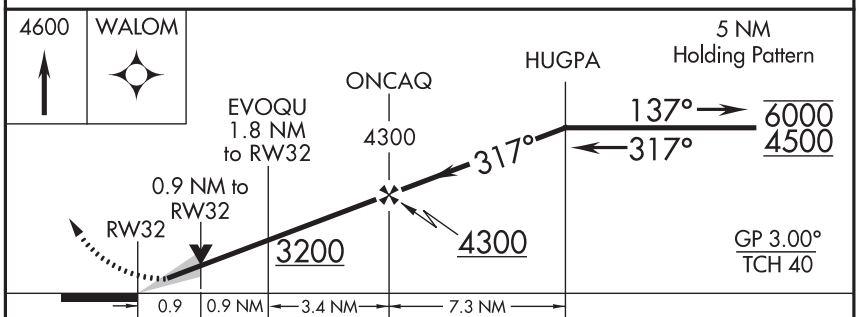
AWOS-3	ALBUQUERQUE CENTER	UNICOM
118.175	135.875 292.15	122.8 (CTAF) L



ELEV 2613 TDZE 2605



MIRL Rwys 9-27 and 14-32 L



CATEGORY	A	B	C	D
LPV DA	2805-¾	200 (200-¾)		
LNAV/VNAV DA	2855-¾	250 (300-¾)		
LNAV MDA	2940-1	335 (400-1)		
C CIRCLING	3060-1 447 (500-1)	3140-1 527 (600-1)	3360-2¼ 747 (800-2¼)	3360-2½ 747 (800-2½)

SC-3, 21 MAR 2024 to 16 MAY 2024
SC-3, 21 MAR 2024 to 16 MAY 2024

Jayne, Kelly

From: Coley Means [redacted]
Sent: Friday, June 5, 2026 12:22 PM
To: Jayne, Kelly
Subject: RE: New MSW landfill application in Reeves County

Ok thanks

From: Jayne, Kelly [redacted]
Sent: Friday, June 5, 2026 1:14 PM
To: Coley Means [redacted]
Subject: RE: New MSW landfill application in Reeves County

Hi Coley,

Thanks for your response. The FAA did issue Determination of No Hazard to Air Navigation letters back in 2024, and we applied for (and received) an extension to those determinations in November 2025.

Thanks,
Kelly

From: Coley Means [redacted]
Sent: Friday, June 5, 2026 11:43 AM
To: Jayne, Kelly [redacted]
Subject: RE: New MSW landfill application in Reeves County

Kelly,

I am sorry for the delay. I recollect this from back in March. I do not see any materially negative impacts from the proposed landfill to the airport. If the FAA clears the airspace studies / impacts, I would have no major concern.

Thanks,
Coley

From: Jayne, Kelly [redacted]
Sent: Friday, June 5, 2026 9:33 AM
To: Coley Means <[redacted] in Reeves County

Mr. Means,

Thanks for taking my call this morning. Attached is the letter we sent back in March regarding a new municipal solid waste landfill application. Could you please provide a written response?

Have a good weekend,
Kelly

Kelly Jayne, PE (NM)
Engineer

Daniel B. Stephens & Associates, Inc.
a Geo-Logic Company

7100 E Belleview Avenue, Suite 125
Greenwood Village, CO 80111
Mobile: (505) 688-4201
[redacted]

www.dbstephens.com | www.geo-logic.com

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Attachment I/II-10-A2

TxDOT STARS II Data, CR 408

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TxDOT AADT Predictions for CR 408 - Location ID 195CR13A

Year	AADT	DHV-30	K %	D %	PA	BC	Src
2012	140						
2007	40						
2002	80						

Retrieved 03/11/2026 from TxDOT STARS II

Volume Count Report

LOCATION INFO	
Location ID	195CR13A
Type	SPOT
Fnct'l Class	7
Located On	-
Direction	2-WAY
County	Reeves
Community	-
MPO ID	
HPMS ID	ASSIGNED
Agency	Texas DOT

COUNT DATA INFO	
Count Status	Accepted
Holiday	No
Start Date	Mon 12/18/2017
End Date	Tue 12/19/2017
Start Time	9:30:00 AM
End Time	9:30:00 AM
Direction	
Station	
Study	
Speed Limit	
Description	
Sensor Type	Axle/Tube
Source	
Latitude,Longitude	31.403256, -103.570548

INTERVAL:15-MIN

Time	15-min Interval 1st	2nd	3rd	4th	Hourly Count
0:00-1:00	0	5	0	5	10
1:00-2:00	2	0	5	0	7
2:00-3:00	0	5	0	2	7
3:00-4:00	3	2	0	2	7
4:00-5:00	7	2	3	5	17
5:00-6:00	3	0	8	6	17
6:00-7:00	11	7	9	24	51
7:00-8:00	12	7	8	26	53
8:00-9:00	2	7	26	7	42
9:00-10:00	3	11	28	12	54
10:00-11:00	5	11	8	9	33
11:00-12:00	15	8	13	11	47
12:00-13:00	5	6	11	8	30
13:00-14:00	0	3	3	8	14
14:00-15:00	8	13	7	13	41
15:00-16:00	13	5	14	11	43
16:00-17:00	13	10	19	8	50
17:00-18:00	44	27	39	23	133
18:00-19:00	27	17	19	13	76
19:00-20:00	25	7	4	9	45
20:00-21:00	5	10	3	2	20
21:00-22:00	1	2	2	3	8
22:00-23:00	4	0	0	9	13
23:00-24:00	3	10	2	2	17

Total					835
AADT					935
AM Peak					07:45-08:45 61
PM Peak					17:00-18:00 133

Attachment I/II-10-A3

TxDOT STARS II Data, FM 2119

DBS&A
a Geo-Logic Company

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TxDOT AADT Predictions for FM 2119 - Location ID 195H65

Year	AADT	DHV-30	K %	D %	PA	BC	Src
2024	3466[3]				1,276 (37%)	2,190 (63%)	Grown from 2023
2023	3365[3]				940 (28%)	2,425 (72%)	PBV
2022	3169[3]				721 (23%)	2,448 (77%)	PBV
2021	3521	272	8		1,917 (54%)	1,604 (46%)	
2020	4504				2,669 (59%)	1,835 (41%)	
2019	5143	573	11		3,579 (70%)	1,564 (30%)	
2018	7745	673	9	57	5,616 (73%)	2,129 (27%)	
2017	8756	716	8		8,514 (97%)	242 (3%)	
2016	2254	333	15		2,188 (97%)	66 (3%)	
2015	2109	249	12	57	2,036 (97%)	73 (3%)	
2014	2244	209	10	57	2,018 (90%)	226 (10%)	
2013	2509	219	9	65			
2012	1100	301	16	87	1,064 (97%)	36 (3%)	
2011	1050						
2010	410						
2009	390						
2008	360						
2007	420						
2006	430						
2005	320						
2004	280						
2003	320						
2002	340						
2001	330						
2000	390						
1999	400						

[3]Grown using Growth Factors

Retrieved 03/11/2026 from TxDOT STARS II

Volume Count Report

LOCATION INFO	
Location ID	195H65
Type	SPOT
Fnct'l Class	5
Located On	FM2119
Loc On Alias	FM2119-KG
Direction	2-WAY
County	Reeves
Community	-
MPO ID	
HPMS ID	ASSIGNED
Agency	Texas DOT

COUNT DATA INFO	
Count Status	Accepted
Holiday	No
Start Date	Mon 12/17/2018
End Date	Tue 12/18/2018
Start Time	8:15:00 AM
End Time	8:15:00 AM
Direction	
Station	
Study	
Speed Limit	
Description	
Sensor Type	Axle/Tube
Source	
Latitude,Longitude	31.412324, -103.547203

INTERVAL:15-MIN

Time	15-min Interval 1st	2nd	3rd	4th	Hourly Count
0:00-1:00	33	21	23	24	101
1:00-2:00	28	18	12	9	67
2:00-3:00	21	20	10	46	97
3:00-4:00	20	21	25	23	89
4:00-5:00	31	34	52	41	158
5:00-6:00	40	83	99	132	354
6:00-7:00	109	146	171	138	564
7:00-8:00	145	142	136	119	542
8:00-9:00	116	123	120	123	482
9:00-10:00	120	121	142	104	487
10:00-11:00	114	119	121	101	455
11:00-12:00	106	85	121	108	420
12:00-13:00	119	123	96	98	436
13:00-14:00	128	103	85	126	442
14:00-15:00	130	108	102	104	444
15:00-16:00	113	101	145	114	473
16:00-17:00	202	175	149	137	663
17:00-18:00	159	160	165	182	666
18:00-19:00	176	150	177	170	673
19:00-20:00	148	108	131	93	480
20:00-21:00	81	63	84	54	282
21:00-22:00	54	68	33	25	180
22:00-23:00	58	45	39	35	177
23:00-24:00	20	48	38	21	127

Total		8,859
AADT		7,745
AM Peak		06:15-07:15 600
PM Peak		17:45-18:45 685

Volume Count Report

LOCATION INFO	
Location ID	195H65
Type	SPOT
Fnct'l Class	5
Located On	FM2119
Loc On Alias	FM2119-KG
Direction	2-WAY
County	Reeves
Community	-
MPO ID	
HPMS ID	ASSIGNED
Agency	Texas DOT

COUNT DATA INFO	
Count Status	Accepted
Holiday	No
Start Date	Tue 8/27/2019
End Date	Wed 8/28/2019
Start Time	4:30:00 PM
End Time	4:30:00 PM
Direction	
Station	
Study	
Speed Limit	
Description	
Sensor Type	Axle/Tube
Source	
Latitude,Longitude	31.412296, -103.547201

INTERVAL:15-MIN

Time	15-min Interval 1st	2nd	3rd	4th	Hourly Count
0:00-1:00	30	18	29	16	93
1:00-2:00	10	27	18	24	79
2:00-3:00	31	23	25	20	99
3:00-4:00	14	13	27	30	84
4:00-5:00	32	45	56	44	177
5:00-6:00	43	67	106	98	314
6:00-7:00	134	139	142	158	573
7:00-8:00	115	126	173	133	547
8:00-9:00	110	111	102	104	427
9:00-10:00	95	106	128	134	463
10:00-11:00	129	142	110	110	491
11:00-12:00	110	175	102	126	513
12:00-13:00	121	88	132	124	465
13:00-14:00	117	117	94	126	454
14:00-15:00	125	111	120	137	493
15:00-16:00	110	92	119	116	437
16:00-17:00	146	131	106	106	489
17:00-18:00	126	139	147	134	546
18:00-19:00	104	148	174	95	521
19:00-20:00	127	85	103	106	421
20:00-21:00	88	94	93	74	349
21:00-22:00	71	73	58	55	257
22:00-23:00	55	41	43	34	173
23:00-24:00	30	24	23	23	100

Total		8,565
AADT		5,143
AM Peak		06:00-07:00 573
PM Peak		17:45-18:45 560

Volume Count Report

LOCATION INFO	
Location ID	195H65
Type	SPOT
Fnct'l Class	5
Located On	FM2119
Loc On Alias	FM2119-KG
Direction	2-WAY
County	Reeves
Community	-
MPO ID	
HPMS ID	ASSIGNED
Agency	Texas DOT

COUNT DATA INFO	
Count Status	Accepted
Holiday	No
Start Date	Sun 12/5/2021
End Date	Mon 12/6/2021
Start Time	9:00:00 PM
End Time	9:00:00 PM
Direction	
Station	
Study	
Speed Limit	
Description	
Sensor Type	Axle/Tube
Source	
Latitude,Longitude	31.412049, -103.547152

INTERVAL:15-MIN

Time	15-min Interval 1st	2nd	3rd	4th	Hourly Count
0:00-1:00	7	3	8	5	23
1:00-2:00	3	4	6	4	17
2:00-3:00	12	3	5	4	24
3:00-4:00	7	6	7	10	30
4:00-5:00	3	9	17	15	44
5:00-6:00	25	37	32	50	144
6:00-7:00	65	65	81	85	296
7:00-8:00	80	87	113	82	362
8:00-9:00	105	91	94	92	382
9:00-10:00	78	64	70	78	290
10:00-11:00	92	77	58	87	314
11:00-12:00	83	76	95	72	326
12:00-13:00	83	77	68	84	312
13:00-14:00	83	74	60	70	287
14:00-15:00	83	78	103	107	371
15:00-16:00	82	80	94	96	352
16:00-17:00	120	88	86	111	405
17:00-18:00	92	80	79	87	338
18:00-19:00	98	91	67	60	316
19:00-20:00	53	63	30	46	192
20:00-21:00	30	27	36	19	112
21:00-22:00	12	18	11	17	58
22:00-23:00	17	11	9	15	52
23:00-24:00	7	10	7	8	32

Total		5,079
AADT		3,521
AM Peak		07:30-08:30 391
PM Peak		16:00-17:00 405

TxDOT AADT Predictions for FM 2119 - Location ID 195H66

Year	AADT	DHV-30	K %	D %	PA	BC	Src
2024	2068[3]				715 (35%)	1,353 (65%)	Grown from 2023
2023	2008	185	9	80	695 (35%)	1,313 (65%)	
2022	1891	174	9		574 (30%)	1,317 (70%)	
2021	2564	217	8		1,174 (46%)	1,390 (54%)	
2020	4070[2]				2,338 (57%)	1,732 (43%)	
2019	5017	410	8		3,480 (69%)	1,537 (31%)	
2018	5442	438	8	57	3,813 (70%)	1,629 (30%)	
2017	6466[2]						
2016	1453	163	11		1,409 (97%)	44 (3%)	
2015	1136	110	10	57	1,092 (96%)	44 (4%)	
2014	1,342	134	10	57	1,207 (90%)	135 (10%)	
2013	1,801	171	9	65			
2012	420	114	16	87	404 (96%)	16 (4%)	
2011	400	130	19	74	376 (94%)	24 (6%)	
2010	150						
2009	130						
2008	170						
2007	80						
2006	180						
2005	100						
2004	110						
2003	230						
2002	180						
2001	140						
2000	160						
1999	170						

[2]Estimated by Human

[3]Grown using Growth Factors

Retrieved 03/11/2026 from TxDOT STARS II

Volume Count Report

LOCATION INFO	
Location ID	195H66
Type	SPOT
Fnct'l Class	5
Located On	FM2119
Loc On Alias	FM2119-KG
Direction	2-WAY
County	Reeves
Community	-
MPO ID	
HPMS ID	ASSIGNED
Agency	Texas DOT

COUNT DATA INFO	
Count Status	Accepted
Holiday	No
Start Date	Mon 12/17/2018
End Date	Tue 12/18/2018
Start Time	8:15:00 AM
End Time	8:15:00 AM
Direction	
Station	
Study	
Speed Limit	
Description	
Sensor Type	Axle/Tube
Source	
Latitude,Longitude	31.452815, -103.58

INTERVAL:15-MIN

Time	15-min Interval 1st	2nd	3rd	4th	Hourly Count
0:00-1:00	18	4	15	13	50
1:00-2:00	26	9	13	6	54
2:00-3:00	23	6	11	40	80
3:00-4:00	16	21	15	15	67
4:00-5:00	14	24	29	31	98
5:00-6:00	22	44	66	62	194
6:00-7:00	45	81	108	97	331
7:00-8:00	87	110	114	79	390
8:00-9:00	88	93	96	122	399
9:00-10:00	76	110	105	107	398
10:00-11:00	97	111	75	95	378
11:00-12:00	93	92	87	95	367
12:00-13:00	98	76	77	93	344
13:00-14:00	95	92	89	98	374
14:00-15:00	99	99	98	66	362
15:00-16:00	89	87	104	116	396
16:00-17:00	109	119	113	90	431
17:00-18:00	94	122	120	102	438
18:00-19:00	92	102	80	113	387
19:00-20:00	59	72	64	59	254
20:00-21:00	43	40	40	26	149
21:00-22:00	27	35	25	17	104
22:00-23:00	30	20	29	10	89
23:00-24:00	12	24	30	23	89

Total		6,223
AADT		5,442
AM Peak		09:30-10:30 420
PM Peak		15:45-16:45 457

Volume Count Report

LOCATION INFO	
Location ID	195H66
Type	SPOT
Fnct'l Class	5
Located On	FM2119
Loc On Alias	FM2119-KG
Direction	2-WAY
County	Reeves
Community	-
MPO ID	
HPMS ID	ASSIGNED
Agency	Texas DOT

COUNT DATA INFO	
Count Status	Accepted
Holiday	No
Start Date	Tue 8/27/2019
End Date	Wed 8/28/2019
Start Time	4:45:00 PM
End Time	4:45:00 PM
Direction	
Station	
Study	
Speed Limit	
Description	
Sensor Type	Axle/Tube
Source	
Latitude,Longitude	31.452816, -103.58004

INTERVAL:15-MIN

Time	15-min Interval 1st	2nd	3rd	4th	Hourly Count
0:00-1:00	17	15	23	7	62
1:00-2:00	10	13	3	16	42
2:00-3:00	24	12	25	16	77
3:00-4:00	5	17	15	14	51
4:00-5:00	21	23	34	41	119
5:00-6:00	34	36	49	34	153
6:00-7:00	62	88	106	88	344
7:00-8:00	91	85	117	117	410
8:00-9:00	77	65	68	66	276
9:00-10:00	70	100	83	91	344
10:00-11:00	90	104	92	55	341
11:00-12:00	95	117	78	98	388
12:00-13:00	92	77	81	80	330
13:00-14:00	90	77	61	94	322
14:00-15:00	101	56	97	97	351
15:00-16:00	83	64	54	79	280
16:00-17:00	108	82	94	86	370
17:00-18:00	90	102	92	64	348
18:00-19:00	70	72	81	77	300
19:00-20:00	50	48	56	54	208
20:00-21:00	33	33	43	30	139
21:00-22:00	26	41	22	25	114
22:00-23:00	17	19	22	29	87
23:00-24:00	23	5	12	11	51

Total		5,507
AADT		5,017
AM Peak		07:00-08:00 410
PM Peak		16:30-17:30 372

Volume Count Report

LOCATION INFO	
Location ID	195H66
Type	SPOT
Fnct'l Class	5
Located On	FM2119
Loc On Alias	FM2119-KG
Direction	2-WAY
County	Reeves
Community	-
MPO ID	
HPMS ID	ASSIGNED
Agency	Texas DOT

COUNT DATA INFO	
Count Status	Accepted
Holiday	No
Start Date	Sun 12/5/2021
End Date	Mon 12/6/2021
Start Time	8:45:00 PM
End Time	8:45:00 PM
Direction	
Station	
Study	
Speed Limit	
Description	
Sensor Type	Axle/Tube
Source	
Latitude,Longitude	31.452838, -103.580037

INTERVAL:15-MIN

Time	15-min Interval 1st	2nd	3rd	4th	Hourly Count
0:00-1:00	6	0	4	3	13
1:00-2:00	2	0	5	4	11
2:00-3:00	4	3	4	3	14
3:00-4:00	3	4	4	11	22
4:00-5:00	4	9	12	9	34
5:00-6:00	21	24	19	27	91
6:00-7:00	46	37	34	64	181
7:00-8:00	60	78	98	36	272
8:00-9:00	73	85	74	71	303
9:00-10:00	59	61	56	57	233
10:00-11:00	78	52	63	48	241
11:00-12:00	80	83	59	59	281
12:00-13:00	58	50	68	83	259
13:00-14:00	61	52	54	62	229
14:00-15:00	59	56	81	57	253
15:00-16:00	47	64	73	88	272
16:00-17:00	81	65	95	81	322
17:00-18:00	59	76	53	48	236
18:00-19:00	53	65	31	30	179
19:00-20:00	24	37	20	18	99
20:00-21:00	16	16	12	11	55
21:00-22:00	12	18	4	11	45
22:00-23:00	13	2	7	9	31
23:00-24:00	8	6	1	6	21

Total		3,697
AADT		2,564
AM Peak		08:00-09:00 303
PM Peak		15:45-16:45 329

Volume Count Report

LOCATION INFO	
Location ID	195H66
Type	SPOT
Fnct'l Class	5
Located On	FM2119
Loc On Alias	FM2119-KG
Direction	2-WAY
County	Reeves
Community	-
MPO ID	
HPMS ID	ASSIGNED
Agency	Texas DOT

COUNT DATA INFO	
Count Status	Accepted
Holiday	No
Start Date	Wed 12/7/2022
End Date	Thu 12/8/2022
Start Time	9:45:00 AM
End Time	9:45:00 AM
Direction	
Station	
Study	
Speed Limit	
Description	
Sensor Type	Axle/Tube
Source	
Latitude,Longitude	31.453714, -103.580635

INTERVAL:15-MIN

Time	15-min Interval 1st	2nd	3rd	4th	Hourly Count
0:00-1:00	5	2	2	4	13
1:00-2:00	3	1	0	6	10
2:00-3:00	3	9	1	1	14
3:00-4:00	5	1	2	8	16
4:00-5:00	7	7	5	8	27
5:00-6:00	11	17	19	17	64
6:00-7:00	33	44	60	55	192
7:00-8:00	65	52	61	59	237
8:00-9:00	55	32	56	44	187
9:00-10:00	50	57	37	36	180
10:00-11:00	53	35	57	49	194
11:00-12:00	46	46	47	51	190
12:00-13:00	38	43	46	39	166
13:00-14:00	43	51	61	40	195
14:00-15:00	50	51	54	41	196
15:00-16:00	60	49	73	77	259
16:00-17:00	54	59	83	62	258
17:00-18:00	78	48	37	38	201
18:00-19:00	42	36	30	28	136
19:00-20:00	35	24	11	12	82
20:00-21:00	20	17	12	7	56
21:00-22:00	10	6	8	15	39
22:00-23:00	6	6	13	6	31
23:00-24:00	17	4	10	7	38

Total		2,981
AADT		1,891
AM Peak		07:00-08:00 237
PM Peak		16:15-17:15 282

Volume Count Report

LOCATION INFO	
Location ID	195H66
Type	SPOT
Fnct'l Class	5
Located On	FM2119
Loc On Alias	FM2119-KG
Direction	2-WAY
County	Reeves
Community	-
MPO ID	
HPMS ID	ASSIGNED
Agency	Texas DOT

COUNT DATA INFO	
Count Status	Accepted
Holiday	No
Start Date	Mon 11/13/2023
End Date	Tue 11/14/2023
Start Time	8:15:00 PM
End Time	8:15:00 PM
Direction	
Station	
Study	
Speed Limit	
Description	
Sensor Type	Axle/Tube
Source	TCDS_COUNT_IMPORT_COMBINE
Latitude,Longitude	

INTERVAL:15-MIN

Time	15-min Interval 1st	2nd	3rd	4th	Hourly Count
0:00-1:00	1	4	13	6	24
1:00-2:00	9	6	8	6	29
2:00-3:00	11	8	5	6	30
3:00-4:00	5	9	17	7	38
4:00-5:00	5	10	17	24	56
5:00-6:00	15	17	40	28	100
6:00-7:00	28	79	70	87	264
7:00-8:00	65	87	76	68	296
8:00-9:00	58	37	70	59	224
9:00-10:00	51	54	40	44	189
10:00-11:00	39	44	46	51	180
11:00-12:00	38	43	52	52	185
12:00-13:00	47	47	43	43	180
13:00-14:00	51	43	49	46	189
14:00-15:00	42	56	44	67	209
15:00-16:00	52	54	53	56	215
16:00-17:00	61	74	81	59	275
17:00-18:00	55	49	46	56	206
18:00-19:00	52	58	36	43	189
19:00-20:00	31	28	22	18	99
20:00-21:00	18	24	10	5	57
21:00-22:00	14	8	10	10	42
22:00-23:00	15	14	18	9	56
23:00-24:00	15	2	6	4	27

Total		3,359
AADT		2,008
AM Peak		06:45-07:45 315
PM Peak		16:00-17:00 275

Attachment I/II-10-A4

DBS&A Traffic Count Data
CR 408

DBS&A
a Geo-Logic Company

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Location Id:	County Road 408	
Study Start:	12/1/2025 13:00	America/Chicago
Study End:	12/3/2025 18:15	America/Chicago
Duration:	53	hours
Total Vehicles:	446	
Study Location:	31.423094167, -103.5874295	

DATE	TIME America/Chicago	SE Volume	NW Volume	Total
12/1/2025	13:15	8	3	11
12/1/2025	13:30	1	2	3
12/1/2025	13:45	2	1	3
12/1/2025	14:00	3	6	9
12/1/2025	14:15	1	3	4
12/1/2025	14:30	2	0	2
12/1/2025	14:45	1	2	3
12/1/2025	15:00	2	1	3
12/1/2025	15:15	5	0	5
12/1/2025	15:30	0	1	1
12/1/2025	15:45	0	5	5
12/1/2025	16:00	0	2	2
12/1/2025	16:15	0	1	1
12/1/2025	16:30	2	1	3
12/1/2025	16:45	0	3	3
12/1/2025	17:00	0	0	0
12/1/2025	17:15	4	0	4
12/1/2025	17:30	2	0	2
12/1/2025	17:45	2	0	2
12/1/2025	18:00	0	2	2
12/1/2025	18:15	0	0	0
12/1/2025	18:30	0	1	1
12/1/2025	18:45	2	0	2
12/1/2025	19:00	4	0	4
12/1/2025	19:15	2	0	2
12/1/2025	19:30	0	0	0
12/1/2025	19:45	0	1	1
12/1/2025	20:00	0	0	0
12/1/2025	20:15	0	2	2
12/1/2025	20:30	0	0	0
12/1/2025	20:45	2	3	5
12/1/2025	21:00	0	2	2
12/1/2025	21:15	0	0	0
12/1/2025	21:30	0	0	0
12/1/2025	21:45	0	0	0
12/1/2025	22:00	0	0	0
12/1/2025	22:15	0	0	0
12/1/2025	22:30	2	0	2

DATE	TIME America/Chicago	SE Volume	NW Volume	Total
12/1/2025	22:45	2	2	4
12/1/2025	23:00	0	1	1
12/1/2025	23:15	0	0	0
12/1/2025	23:30	0	0	0
12/1/2025	23:45	0	0	0
12/2/2025	0:00	0	0	0
12/2/2025	0:15	0	0	0
12/2/2025	0:30	0	0	0
12/2/2025	0:45	0	0	0
12/2/2025	1:00	0	0	0
12/2/2025	1:15	0	0	0
12/2/2025	1:30	0	0	0
12/2/2025	1:45	0	0	0
12/2/2025	2:00	0	0	0
12/2/2025	2:15	0	0	0
12/2/2025	2:30	0	0	0
12/2/2025	2:45	0	0	0
12/2/2025	3:00	0	0	0
12/2/2025	3:15	0	0	0
12/2/2025	3:30	0	0	0
12/2/2025	3:45	0	0	0
12/2/2025	4:00	0	0	0
12/2/2025	4:15	0	0	0
12/2/2025	4:30	0	0	0
12/2/2025	4:45	0	0	0
12/2/2025	5:00	0	2	2
12/2/2025	5:15	0	1	1
12/2/2025	5:30	0	0	0
12/2/2025	5:45	2	1	3
12/2/2025	6:00	0	2	2
12/2/2025	6:15	2	3	5
12/2/2025	6:30	0	0	0
12/2/2025	6:45	0	1	1
12/2/2025	7:00	0	2	2
12/2/2025	7:15	1	1	2
12/2/2025	7:30	0	0	0
12/2/2025	7:45	0	0	0
12/2/2025	8:00	0	2	2
12/2/2025	8:15	0	2	2
12/2/2025	8:30	1	0	1
12/2/2025	8:45	4	0	4
12/2/2025	9:00	1	1	2
12/2/2025	9:15	1	0	1
12/2/2025	9:30	2	1	3
12/2/2025	9:45	1	0	1

DATE	TIME America/Chicago	SE Volume	NW Volume	Total
12/2/2025	10:00	1	5	6
12/2/2025	10:15	0	2	2
12/2/2025	10:30	2	1	3
12/2/2025	10:45	0	1	1
12/2/2025	11:00	1	1	2
12/2/2025	11:15	0	2	2
12/2/2025	11:30	2	1	3
12/2/2025	11:45	4	0	4
12/2/2025	12:00	2	5	7
12/2/2025	12:15	4	2	6
12/2/2025	12:30	0	5	5
12/2/2025	12:45	1	1	2
12/2/2025	13:00	2	3	5
12/2/2025	13:15	1	4	5
12/2/2025	13:30	1	3	4
12/2/2025	13:45	1	1	2
12/2/2025	14:00	5	3	8
12/2/2025	14:15	0	1	1
12/2/2025	14:30	2	0	2
12/2/2025	14:45	1	1	2
12/2/2025	15:00	0	1	1
12/2/2025	15:15	0	0	0
12/2/2025	15:30	2	5	7
12/2/2025	15:45	4	0	4
12/2/2025	16:00	1	2	3
12/2/2025	16:15	2	1	3
12/2/2025	16:30	1	2	3
12/2/2025	16:45	3	3	6
12/2/2025	17:00	4	3	7
12/2/2025	17:15	2	4	6
12/2/2025	17:30	0	0	0
12/2/2025	17:45	3	1	4
12/2/2025	18:00	1	1	2
12/2/2025	18:15	1	0	1
12/2/2025	18:30	0	2	2
12/2/2025	18:45	0	0	0
12/2/2025	19:00	0	0	0
12/2/2025	19:15	0	0	0
12/2/2025	19:30	0	2	2
12/2/2025	19:45	0	3	3
12/2/2025	20:00	0	0	0
12/2/2025	20:15	0	0	0
12/2/2025	20:30	2	0	2
12/2/2025	20:45	0	1	1
12/2/2025	21:00	0	0	0

DATE	TIME America/Chicago	SE Volume	NW Volume	Total
12/2/2025	21:15	2	0	2
12/2/2025	21:30	2	0	2
12/2/2025	21:45	0	0	0
12/2/2025	22:00	2	0	2
12/2/2025	22:15	0	0	0
12/2/2025	22:30	0	0	0
12/2/2025	22:45	0	0	0
12/2/2025	23:00	0	0	0
12/2/2025	23:15	4	0	4
12/2/2025	23:30	0	2	2
12/2/2025	23:45	0	2	2
12/3/2025	0:00	0	0	0
12/3/2025	0:15	0	0	0
12/3/2025	0:30	0	0	0
12/3/2025	0:45	0	0	0
12/3/2025	1:00	0	0	0
12/3/2025	1:15	0	0	0
12/3/2025	1:30	0	1	1
12/3/2025	1:45	2	0	2
12/3/2025	2:00	0	0	0
12/3/2025	2:15	0	0	0
12/3/2025	2:30	0	0	0
12/3/2025	2:45	0	0	0
12/3/2025	3:00	0	0	0
12/3/2025	3:15	0	0	0
12/3/2025	3:30	0	0	0
12/3/2025	3:45	0	1	1
12/3/2025	4:00	0	0	0
12/3/2025	4:15	0	2	2
12/3/2025	4:30	2	0	2
12/3/2025	4:45	0	0	0
12/3/2025	5:00	0	4	4
12/3/2025	5:15	0	1	1
12/3/2025	5:30	0	5	5
12/3/2025	5:45	0	1	1
12/3/2025	6:00	0	3	3
12/3/2025	6:15	0	1	1
12/3/2025	6:30	2	2	4
12/3/2025	6:45	0	1	1
12/3/2025	7:00	0	1	1
12/3/2025	7:15	3	0	3
12/3/2025	7:30	0	1	1
12/3/2025	7:45	1	5	6
12/3/2025	8:00	0	1	1
12/3/2025	8:15	2	1	3

DATE	TIME America/Chicago	SE Volume	NW Volume	Total
12/3/2025	8:30	1	0	1
12/3/2025	8:45	2	0	2
12/3/2025	9:00	3	1	4
12/3/2025	9:15	0	2	2
12/3/2025	9:30	1	1	2
12/3/2025	9:45	2	1	3
12/3/2025	10:00	1	2	3
12/3/2025	10:15	2	1	3
12/3/2025	10:30	0	1	1
12/3/2025	10:45	2	2	4
12/3/2025	11:00	1	2	3
12/3/2025	11:15	6	0	6
12/3/2025	11:30	2	2	4
12/3/2025	11:45	2	2	4
12/3/2025	12:00	5	3	8
12/3/2025	12:15	1	4	5
12/3/2025	12:30	2	2	4
12/3/2025	12:45	5	1	6
12/3/2025	13:00	1	1	2
12/3/2025	13:15	0	4	4
12/3/2025	13:30	0	0	0
12/3/2025	13:45	4	0	4
12/3/2025	14:00	4	4	8
12/3/2025	14:15	1	2	3
12/3/2025	14:30	4	0	4
12/3/2025	14:45	1	0	1
12/3/2025	15:00	1	3	4
12/3/2025	15:15	5	0	5
12/3/2025	15:30	0	1	1
12/3/2025	15:45	3	0	3
12/3/2025	16:00	0	1	1
12/3/2025	16:15	1	2	3
12/3/2025	16:30	7	0	7
12/3/2025	16:45	1	0	1
12/3/2025	17:00	2	2	4
12/3/2025	17:15	0	2	2
12/3/2025	17:30	1	2	3
12/3/2025	17:45	1	3	4
12/3/2025	18:00	3	0	3
	Total	220	226	446

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Attachment I/II-10-A5

DBS&A Traffic Count Data
CR 415

DBS&A
a Geo-Logic Company

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Location ID:	County Road 415	
Study Start:	12/1/2025 13:45	America/Chicago
Study End:	12/3/2025 18:45	America/Chicago
Duration:	53	hours
Total Vehicles:	647	
Study Location:	31.440716333, -103.5801305	

DATE	TIME America/Chicago	SW Volume	NE Volume	Total
12/1/2025	13:45	1	5	6
12/1/2025	14:00	2	4	6
12/1/2025	14:15	0	3	3
12/1/2025	14:30	5	2	7
12/1/2025	14:45	1	1	2
12/1/2025	15:00	2	2	4
12/1/2025	15:15	1	0	1
12/1/2025	15:30	1	3	4
12/1/2025	15:45	1	1	2
12/1/2025	16:00	0	2	2
12/1/2025	16:15	1	2	3
12/1/2025	16:30	3	2	5
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Attachment I/II-11

Environmental and Archaeological Assessments

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TRC Archaeological Survey

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Archeological Survey of the Proposed West Sun Tex Permian Landfill in Reeves County, Texas

January 6, 2022

Prepared For:

Daniel B. Stephens & Associates, Inc.
6020 Academy Road NE, Suite 100
Albuquerque, New Mexico 87109

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Austin, Texas 78752

Written by:
Steven Sarich M.S. and Josh Haefner, M.A.

Principal Investigator: Josh Haefner, M.A.

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Archeological Survey of the Proposed West Sun Tex Permian Landfill in Reeves County, Texas

By:

Josh Haefner and Steven Sarich

Prepared for:

Daniel B. Stephens & Associates, Inc.
6020 Academy Road NE, Suite 100
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Prepared by:

TRC Environmental Corporation
Austin, Texas

Josh Haefner, Principal Investigator

Antiquities Permit Number 30240

TRC Technical Report No. 445400

January 2022

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Abstract

West Sun Tex, LLC (WST) proposes to construct a Type I municipal solid waste (MSW) facility, the WST Permian Landfill, in Reeves County, Texas (Project). Based on a preliminary review of the current project information, it is anticipated that the proposed project will be permitted under the Texas Commission on Environmental Quality. As a result, the Project must comply with the Antiquities Code of Texas (ACT) (Section 191.0525). To facilitate ACT compliance, Daniel B. Stephens & Associates, Inc., on behalf of WST, contracted with TRC Environmental Corporation (TRC) to conduct an intensive cultural resources survey of the proposed Project under Antiquities Permit Number 30240. The Area of Potential Effect (APE) is a 440-acre property with a disposal footprint of approximately 192 acres. A total of 12 landfill cells are anticipated, and each is planned to measure roughly 390 by 960 feet (118 x 292 meters) with a maximum depth of impact reaching 30 feet (9.1 meters) deep. The survey was conducted on July 26 and from July 29-August 1 by Steven Sarich, Benjamin Johnson, Steven Schooler, and Josh Haefner. During the investigations, a total of 155 shovel tests were excavated, all of which were negative for cultural materials. Additionally, one new multi-component archeological site, 41RV231, a surface scatter of historic and prehistoric artifacts was recorded. This site lacks discernible features and with sparse deposits of limited research potential it is recommended as ineligible for listing as a State Antiquities Landmark (SAL). In addition, a Historic Period irrigation feature was identified within the APE and recorded as archeological site 41RV232. Historic map research does not show this feature in the APE prior to the late 1960s or early 1970s. Shovel tests were excavated within close proximity to the irrigation feature throughout the survey area, and none of these shovel tests were positive for cultural material. The irrigation feature has low potential for research value, as historic map research reveals little data on the feature, and no cultural material within the survey area can be directly associated with it. Also, as a more recent occurrence of typical unremarkable construction this feature is commonplace for Reeves County and well post-dates the advent of widespread agriculture and drainage system implementation for the region with no association with local or state historic event and is recommended as not meeting eligibility criteria for design, setting, materials, workmanship, feeling, or association for entry into the National Register of Historic Places or designation as an SAL within the survey area. Furthermore, as per the April 23, 2021 THC Coordination letter from Daniel B. Stephens & Associates, Inc., “Nothing will be demolished as part of the project’s construction” (Letter Daniel B. Stephens & Associates to Mr. Drew Sitters, Ms. Pamela Opiela, and Ms. Eva Osborne, 2021). As such, impact to the irrigation feature is expected to be minimal. Per curation requirements under ACT Permit No. 30240, the final report, field notes, photographs, shapefiles, and associated paper and electronic records will be permanently housed and curated at the Texas State University-Center for Archeological Studies in San Marcos, Texas. TRC recommends that no further cultural resources investigations are warranted, and the Project may proceed to construction as planned.

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Table of Contents

1.0 INTRODUCTION/MANAGEMENT SUMMARY 1
2.0 PHYSIOGRAPHIC AND ENVIRONMENTAL CONTEXT 3
2.1 Physiography and Climate 3
2.2 Geology and Soils 3
3.0 CULTURAL HISTORY 7
3.1 Archaic Period (8,000–1,500 BP) 8
3.2 Early Archaic (8,000–5,000 BP) 8
3.3 Middle Archaic (5,000–3,200 BP) 9
3.4 Late Archaic (3,200–1,500 BP) 10
3.5 Formative/Late Prehistoric (1,500–500 BP) 11
3.6 Historic Period (A.D. 1500 to 1950) 11
4.0 PREVIOUS INVESTIGATIONS 15
5.0 RESEARCH OBJECTIVES AND FIELD METHODS 17
6.0 RESULTS 18
6.1 Site 41RV232 28
6.2 Site 41RV231 34
7.0 CONCLUSIONS AND RECOMMENDATIONS 38
8.0 REFERENCES 40

APPENDIX A: Shovel Test Results
APPENDIX B: Isolated Find Log

List of Figures

Figure 1-1 Project Location 2
Figure 2-1 Underlying geology of the APE 5
Figure 2-2 Mapped soils within the APE 6
Figure 3-1 Project location relative to the cultural regions of Texas 7
Figure 4-1 Previous investigations and recorded cultural resources within one km of the APE 16
Figure 6-1 Survey results for the southwestern quadrant of the APE 19
Figure 6-2 Survey results for the southeastern quadrant of the APE 20
Figure 6-3 Survey results for the northeastern quadrant of the APE 21
Figure 6-4 Survey results for the northwestern quadrant of the APE 22
Figure 6-5 Overview of APE with berm left quarter of frame, facing northeast from STBJ1 23
Figure 6-6 Overview of APE showing flat terrain and scrub vegetation, facing southwest from STSS 34-001 23

Figure 6-7 Debitage Isolate, facing northwest (SJ99-3) 24
Figure 6-8 Debitage Isolate, facing east (SS4-1) 24
Figure 6-9 Debitage Isolate, facing south (SS15-2) 25
Figure 6-10 Horseshoe Isolate, facing west (SS12-1) 25
Figure 6-11 Fuel Can, facing east (BJ50-2) 26
Figure 6-12 Metal Coupling, facing west (SJ99-1) 26
Figure 6-13 Tobacco Tin, facing east (BJ50-3) 27
Figure 6-14 Metal Can Side View, facing north (BJ50-1) 27
Figure 6-15 Metal Can Top View, facing north (BJ50-1) 28
Figure 6-16 Survey Results for Site 41RV232 29
Figure 6-17 Irrigation Feature Overview, facing southwest 30
Figure 6-18 1921 USGS Topographic Quadrangle showing natural drainage 31
Figure 6-19 1957 USGS Topographic Quadrangle showing natural drainage 32
Figure 6-20 1971 USGS Topographic Quadrangle showing irrigation feature in place of the natural drainage previously depicted 33
Figure 6-21 Survey results for 41RV231 36
Figure 6-22 Example of debitage recorded at 41RV231 36
Figure 6-23 Lithic core recorded at 41RV231 36
Figure 6-24 Ceramic whiteware handle recorded on the surface at 41RV231 37
Figure 6-25 Royal Crown Soda aqua glass fragment with printed lettering at 41RV231 37

1.0 Introduction/Management Summary

West Sun Tex, LLC (WST) proposes to construct a Type I municipal solid waste (MSW) facility, the WST Permian Landfill, in Reeves County, Texas (Project). Based on a preliminary review of the current project information, it is anticipated that the proposed project will be permitted under the Texas Commission on Environmental Quality (TCEQ). As a result, the Project must comply with the Antiquities Code of Texas (ACT) (Section 191.0525). To facilitate ACT compliance, Daniel B. Stephens & Associates, Inc., on behalf of WST, contracted with TRC Environmental Corporation (TRC) to conduct an intensive cultural resources survey of the proposed Project.

The Area of Potential Effect (APE) is a 440-acre property with a disposal footprint of approximately 192 acres approximately five miles west-northwest of Pecos, Texas at the intersection of County Road(CR) 408 and CR 415 (**Figure 1-1**). A total of 12 landfill cells are anticipated, and each is planned to measure roughly 390 by 960 feet (ft; 118 by 292 meters [m]) with a maximum depth of impact reaching 30 ft (9.1 m) deep. No demolition will take place in the scope of the construction.

A cultural resources survey was conducted within the Project APE on July 26 and July 29- August 1, 2021 under Antiquities Permit Number 30240 by Steven Sarich, Josh Haefner, Benjamin Johnson, and Steven Schooler. The field effort included pedestrian survey supplemented with systematic shovel testing within the APE along transects spaced no more than 30 m (32 ft) apart with shovel tests spaced no greater than 400 m (1312 ft) apart. A total of 155 shovel tests were excavated during the survey, all of which were negative for cultural materials. No previously recorded archeological sites were present, but one new multicomponent scatter was observed within the APE boundary. Site 41RV231 is noted as a surficial scatter comprising prehistoric debitage and historic ceramic and glass. This site lacks discernible features and with sparse deposits of limited research potential it is recommended ineligible for listing as a State Antiquities Landmark (SAL) or for listing on the National Register of Historic Places (NRHP). While other historic and prehistoric artifacts were observed on the surface within the APE, they were diffuse enough that these isolated finds did not warrant any site designations. In addition, a historic irrigation feature was identified within the APE and recorded as an archeological site (41RV232). Shovel testing adjacent to this feature did not yield any associated artifacts. Historic map research does not show this feature prior to the late 1960s or early 1970s. Shovel tests were excavated within close proximity to the irrigation feature throughout the survey area, and no shovel tests were positive for cultural material. The irrigation feature seems to have low potential for research value as archival research reveals little data on the feature, and no cultural material within the survey area can be directly associated with it. Also, as a more recent occurrence of typical unremarkable construction, this feature is common place for Reeves County and well post-dates the advent of widespread agriculture and drainage system implementation for the region with no association with local or state historic event and is recommended as not meeting eligibility criteria for design, setting, materials, workmanship, feeling, or association for entry into the National Register of Historic Places or designation as an SAL Furthermore, as per the April 23, 2021 THC Coordination letter from Daniel B. Stephens & Associates, Inc., “Nothing will be demolished as part of the project’s construction” (Letter Daniel B. Stephens & Associates to Mr. Drew Sitters, Ms. Pamela Opiela, and Ms. Eva Osborne, 2021). As such, impact to the irrigation feature is expected to be minimal. TRC recommends that no further cultural resources investigations are warranted, and the Project may proceed to construction as planned.

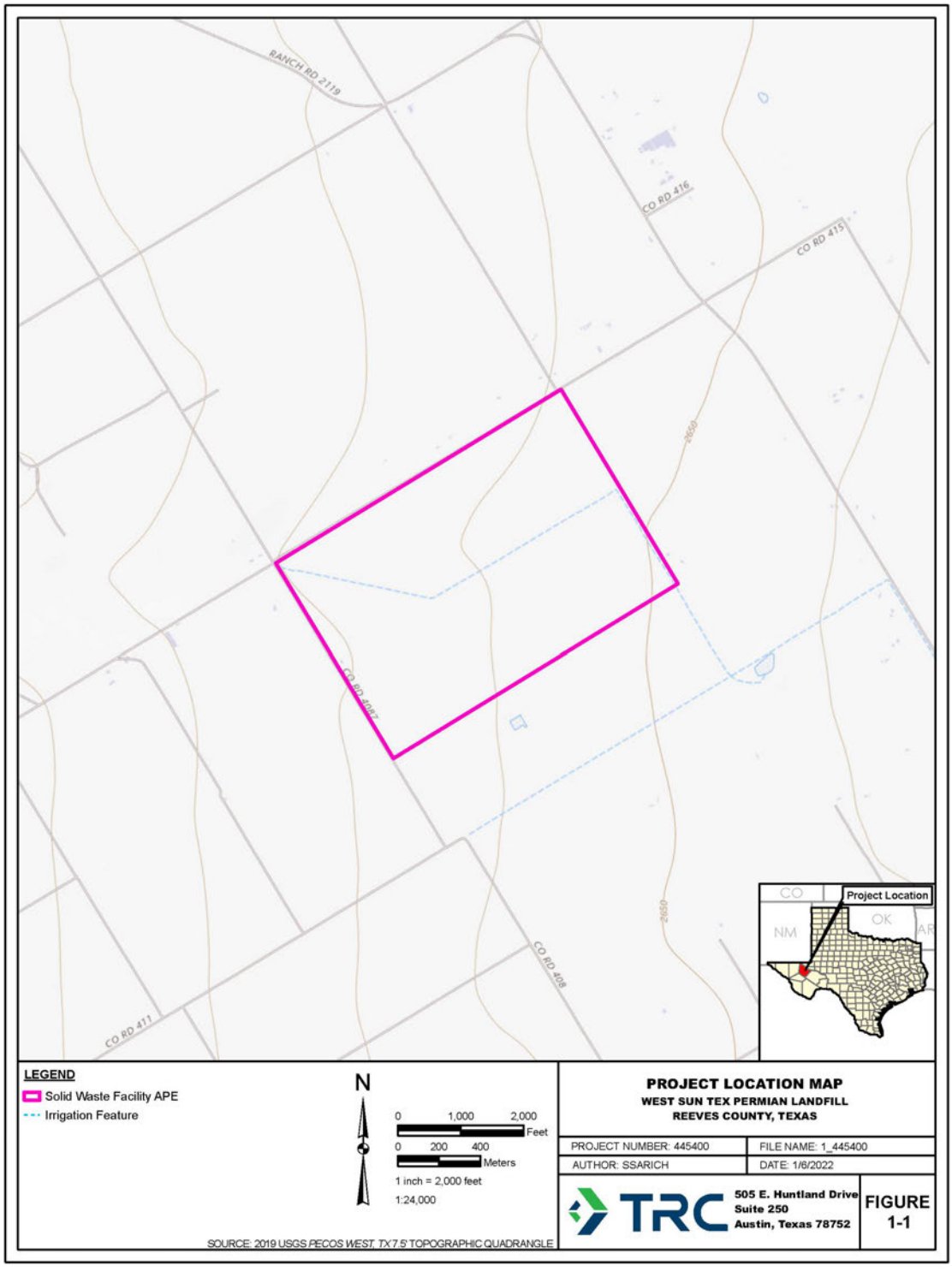


Figure 1-1 Project Location

2.0 Physiographic and Environmental Context

2.1 Physiography and Climate

Reeves County is located at the very southwestern expression of the Southern High Plains Physiographic Region of Texas (Bureau of Economic Geology 2021). This area is characterized as a flat expanse of playas marked with dune fields, generally dipping slightly east and south with an elevation range of 3800 to 2200 feet above mean sea level. The major drainage in the region is the Pecos River, which carries runoff southeast from its headwaters in the Sangre de Cristo Mountains in north-central New Mexico to eventually join the Rio Grande along the United States' border with Mexico (Griffith et al. 2007:8-9). Within Texas, this river serves as a boundary for Ward, Loving, and Reeves counties. The immediate area of the Pecos River Valley is often further characterized as a sub-region known as the Toyah Basin, which is the geological remnants of an old Quaternary sea floor (Texas Almanac 2021). Though its reach through the area is easily traversed today, the Pecos River was much larger centuries ago (Brune 1981). Reeves County climate is humid and subtropical, characterized by hot summers and cool winters (Greenwade 1984). Annual precipitation for Ward County is 13.7 inches with September the rainiest month with an average of 4.9 days of rain and November the driest month with an average of 2.2 rainy days. There are 44.0 rainy days annually in Reeves County, which is one of the least rainy places in Texas. In winter, the mean January low temperature is 34.3 degrees Fahrenheit while the mean July high temperature is 98.6 degrees Fahrenheit.

The APE itself is located within the Pecos River Basin. However, there are no major surface water features located in the vicinity of the location; however, numerous ditches and canals, likely developed and modified during the APE's use for agriculture during the mid-to-late twentieth century, flow through the vicinity and carry surface drainage toward the Pecos River, which is located approximately six miles east of the proposed facility location.

2.2 Geology and Soils

According to the Geologic Atlas of Texas (Pecos Sheet) the single geologic formation underlying the proposed APE is Alluvium (Qal) deposits (**Figure 2-1**). Alluvium consists of Holocene deposits comprising clay, silt, gravel, and fine sand deposited by streams on dry and flooded flats.

The soils within the APE are mapped as Hoban silty clay loam, 0 to 1 percent slopes (16); Hodgins silty clay loam, 0 to 1 percent slopes (18); Orla clay loam, 0 to 1 percent slopes (26); and Reeves clay loam, 0 to 1 percent slopes (34) according to the 2021 United States Department of Agriculture Natural Resources Conservation Service Web Soil Survey (**Figure 2-2**). A brief description from the 2021 Web Soil Survey is provided below:

- The Hoban series comprises alluvial deposits derived from calcareous loamy alluvium formed on basin floors. A typical soil profile consists of 0 to 182 cm of silty clay loam.
- The Hodgins series comprises fine silty alluvium derived from sedimentary rock formed on alluvial flats. A typical soil profile consists of 0 to 152 cm of silty clay loam.

- The Orla series comprises clayey soils and gypsiferous material derived from saline loamy lacustrine deposits formed on concave depressions. A typical soil profile consists of 0 to 38 cm of clay loam and 38 to 152 cm of gypsiferous material.
- The Reeves series comprises loamy alluvium over residuum weathered from gypsum formed on basin floors. A typical soil profile consists of 0 to 84 cm of clay loam and 84 to 152 cm of gypsiferous material.

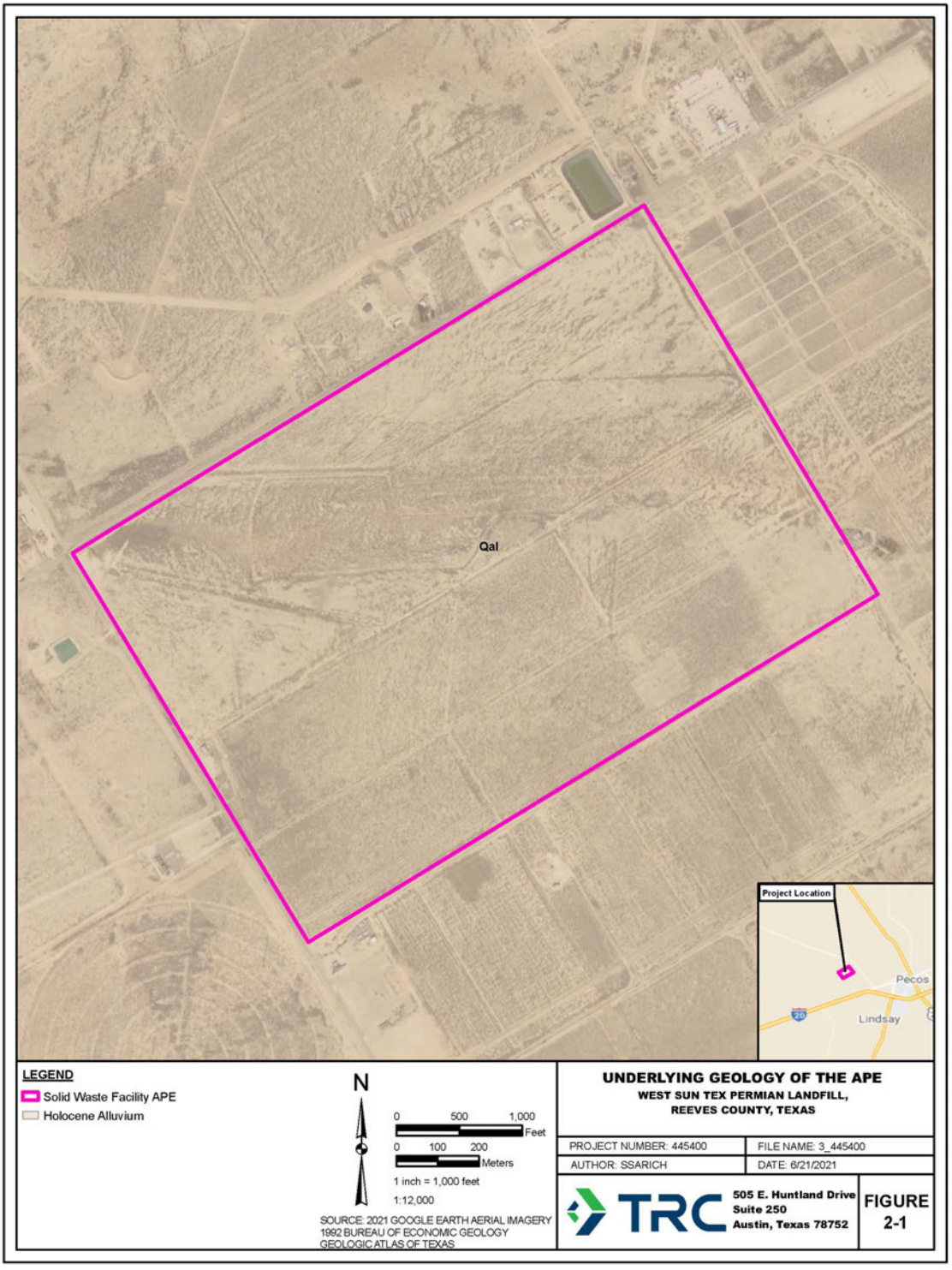


Figure 2-1 Underlying geology of the APE

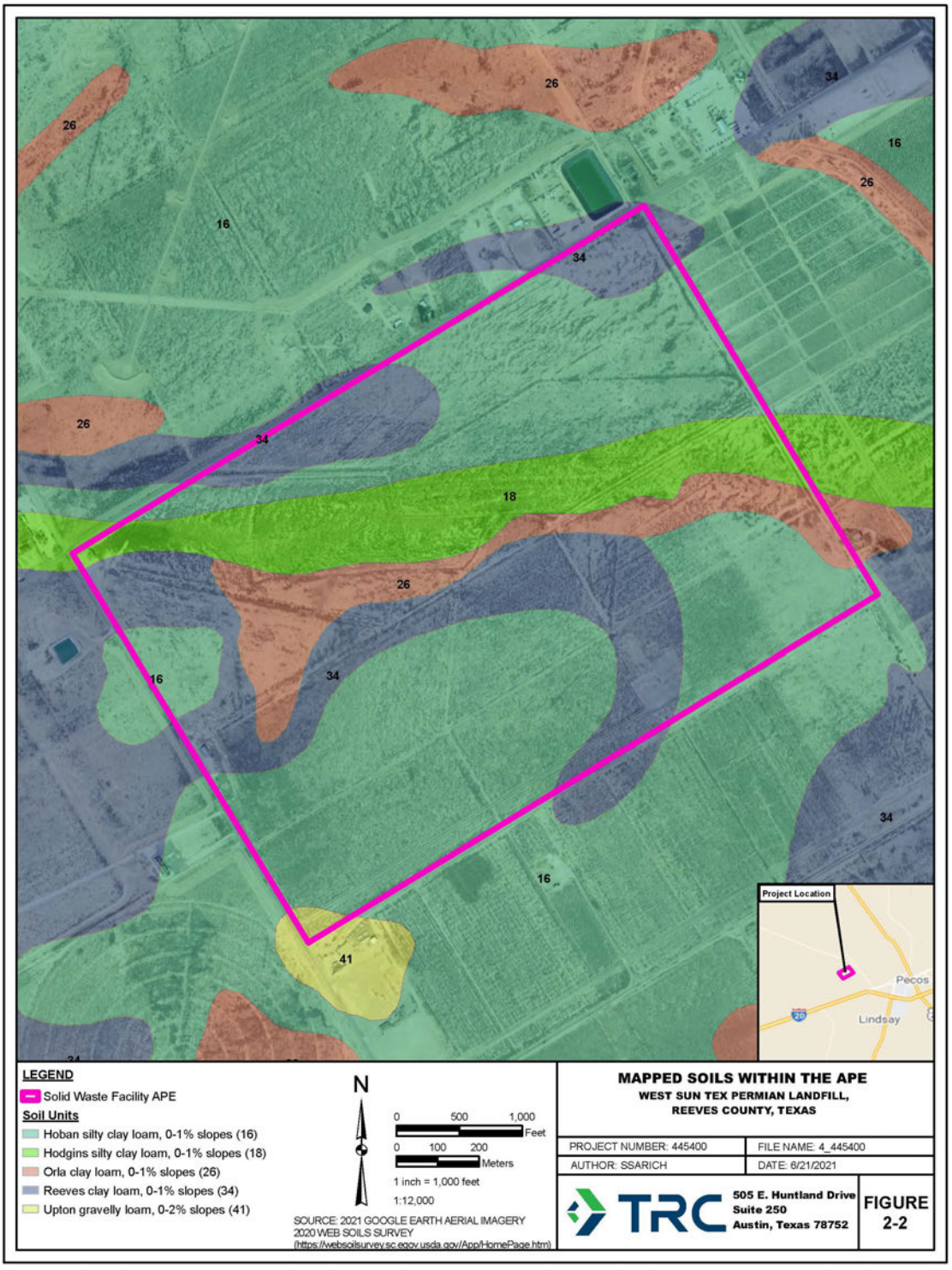


Figure 2-2 Mapped soils within the APE

3.0 Cultural History

The project area is located within a transitional area between the Trans-Pecos and Southern High Plains cultural regions (Collins 2004; Hester 2004; Perttula 2004:7) (**Figure 3-1**) in Reeves County, Texas. Given the Project location, sites in the vicinity may share cultural affinities with both regions. In general, the cultural chronology of the two areas is divided into four broad stages: Paleoindian, Archaic, Late Prehistoric, and Contact/Historic. This discussion focuses on periods and phases established for the eastern Trans-Pecos, with additional information regarding contemporaneous developments in the Southern High Plains.

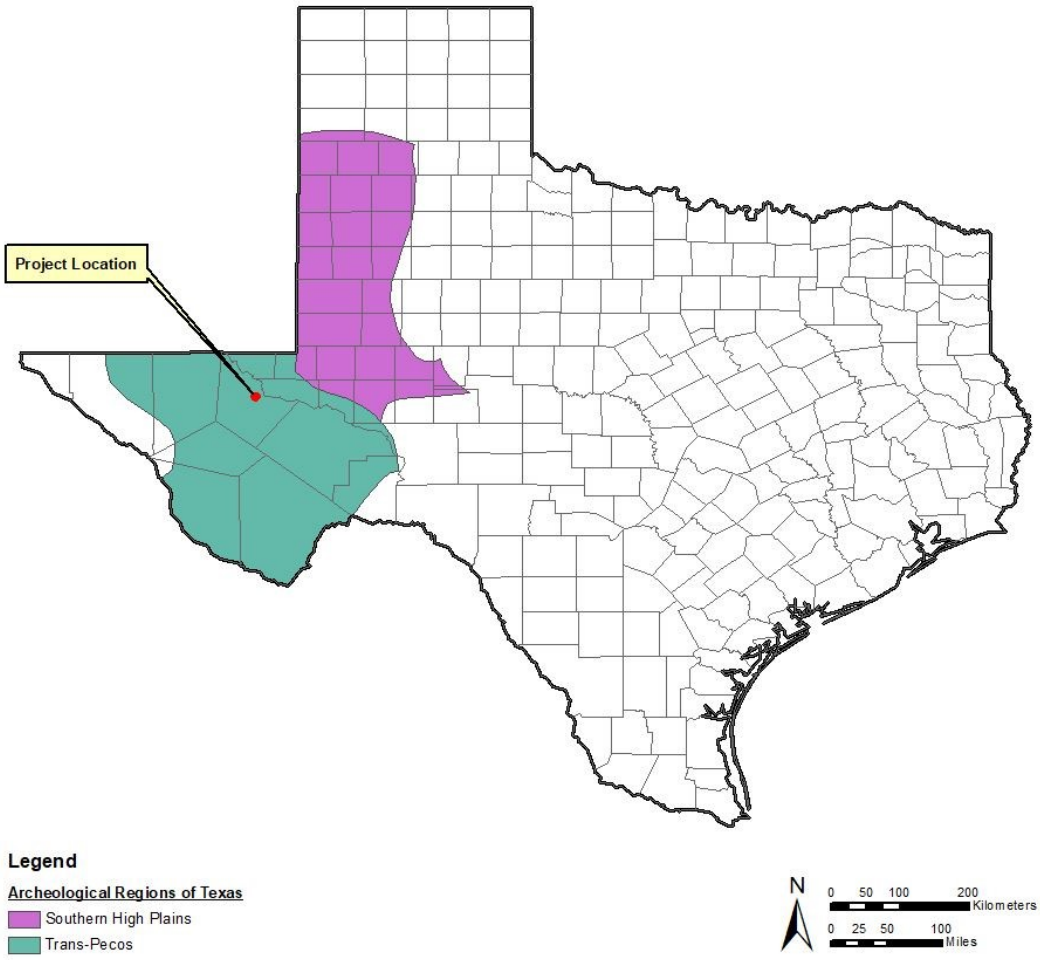


Figure 3-1 Project location relative to the cultural regions of Texas

Early Paleoindian occupation of the region are divided into Clovis and Folsom components, or complexes. Clovis occupation of the area is typically defined by the rare and mostly isolated finds of the fluted lanceolate Clovis projectile point. These points were used to tip the shafts of spears. Generally, the economic reliance was thought to have focused primarily on big game hunting, although more recently a diverse subsistence base has come to light (Johnson 1987). The earliest groups in the Clovis period are thought to have had subsisted on diverse and now extinct big game, but the groups after about 11,000 BP focused on extinct bison as the principal animal resource. Given a mobile food resource such as bison, it is

believed that most Paleoindian populations were constantly on the move following the game animals and, therefore, very nomadic hunters. Folsom components are more plentiful and better defined in the Trans-Pecos archaeological record with a number of data recoveries on well preserved sites along with isolated finds of Folsom (and Midland) projectile points. At Fort Bliss, in the western Trans-Pecos, Folsom components included a number of steeply edged tools (Stuart 1997). In the eastern Trans-Pecos, Folsom sites have been reported in concentration from the Guadalupe Mountains area, the Pecos River Valley, the Marfa Plains, the Big Bend region, and the Stockton Plateau (Miller and Kenmotsu 2004; Sommer 1974).

Following Wheat (1972), the tool traditions associated with Meserve, Golondrina, Angostura, Eden, and Scottsbluff projectile points dating to the Late Paleoindian for the Trans-Pecos archaeological region are collectively known as the Plano and Cody complexes. While these sites are more widespread than Early Paleoindian sites, occupying a wide range of topographic zones, data indicates that most recorded Plano and Cody sites occur in basins near large playas or within the Rio Grande Valley. Mallouf (1981) suggests this site patterning may represent the last vestiges of the Paleoindian big game hunting tradition. Currently very little is known about settlement patterns and mobility for the Paleoindian period. However, based on Cloud and Mallouf ‘s (2011) work from the Big Bend region, it is possible that people may have begun baking desert succulents beginning as early as 10,000 BP. At Baker Cave, a hearth dating to around 8,500 B.P, the Late Paleoindian period, contained remnants of small plants and animals, indicating that at least by this time there may have been a shift from big game hunting strategy to more diversified subsistence (Chadderdon 1983; Hester 1983; Koenig 2012).

3.1 Archaic Period (8,000–1,500 BP)

The Archaic period is divided into Early (8,000–5,000 BP), Middle (5,000–3,200 BP), and Late (3,200–1,500 BP) subperiods (Collins 2004:119) and generally corresponds to the post-Paleoindian Early Holocene continuing to the Late Holocene stabilization of environmental conditions. This period is characterized by a distinct change in projectile point style and the addition of new tool types. A diversification in subsistence patterns occurs with an increased reliance on the hunting of modern species of game, including deer and rabbit. An increased reliance on wild plants also occurs (Gregg et al. 1996). Changes in material culture during the Archaic period are believed to reflect somewhat larger and more localized populations, as well as changes in the methods of food procurement and food processing. In the Trans-Pecos, the Archaic is characterized by the appearance of pithouses and huts (wikiups) and the first evidence of agriculture in the archaeological record, although the structural features are more common in the western Trans-Pecos (Miller and Kenmotsu 2004:218). Throughout the Trans-Pecos, the Archaic period is also characterized by the use of thermal elements (burned rock features) to cook starchy plant foods. Although not as ubiquitous as in central Texas, burned rock features are documented in the region from the Early to Middle Archaic. Also, groundstone tools such as manos and metates first appear in conjunction with thermal features. However, due to the highly erosive nature of the Tran-Pecos environment, intact, dateable surficial features from the Archaic period are relatively scarce. Dateable features are located in deeper alluvial deposits along mountain chain and basin edges (Miller and Kenmotsu 2004).

3.2 Early Archaic (8,000–5,000 BP)

The Early Archaic, tentatively dated from 8,000–5,000 BP for the eastern Trans-Pecos, is not well known due to a paucity of data (Mallouf 1985). For instance, Miller and Kenmotsu (2004:220) in their regional

overview only note one radiocarbon date reported in association with an Early Archaic assemblage. This lack of datable components could represent a lack of intensive habitation of the area or could represent a function of contemporary and past survey techniques wherein isolable and datable components are buried deep into Holocene alluvium. Much of what is known of the Early Archaic is largely based on correlations of site and assemblage patterns through the use of correlating diagnostic projectile points from adjacent regions (Mallouf 1985). Though, as Turpin and Robinson (2003) opine for the western Trans-Pecos versus the eastern Trans-Pecos, the division between the two regions is likely less prevalent prior to about A.D. 200. At the advent of the Archaic, increasing aridity led to an increasingly diversified subsistence strategy. In a recent study, provenience data associated with 66 Late Paleoindian and Early Archaic diagnostic lithic specimens was analyzed to craft an elevation model to predict the location of sites in and around the Davis Mountains (Gray 2013). Preliminary results of this study indicate a high probability cultural elevation zone between 1,223 to 1,623 m above mean sea level where, during this time, springs were present at higher elevations and floral and faunal resources more abundant (Gray 2013). However, additional site and provenience data is required to refine this predictive model.

While rock and caliche thermal features first appear during the Early Archaic, their function(s) remain undefined with scant paleobotanical remains recovered in association. Use of these features in plant processing, however, is indicated by the presence of associated groundstone artifacts. The bulk of these features are typically small in size except when recorded along alluvial fan locales. Here, these features are considerably larger and may be reflective of intensive site use. In addition, a shift occurred from lanceolate projectile point technology to stemmed point types along with a transition to corner-notched projectile points with bifurcated bases. Dart points are identified as an important diagnostic of the Archaic period. Miller and Kenmotsu (2004:221) note that Uvalde, Jay, Bajada, and "Nolan-like" forms are present at this time. Dart points from the Early Archaic were typically made of coarse-grained, less desirable raw materials than the high-quality cherts used in the Paleoindian period, likely reflecting a restriction in mobility during this time. Early Archaic sites are usually small scatters distributed on the landscape along tributary water courses or larger sites deeply buried in floodplain alluvium.

3.3 Middle Archaic (5,000–3,200 BP)

The Middle Archaic Period is considered to be from about 5,000 to 3,200 BP Mallouf (1985) hypothesizes that this period is characterized by population growth evidenced by an increase in datable occupations found throughout the eastern Trans-Pecos. This period is associated with a second period of aridity—the mid-Holocene Altithermal, which is dated between 6,500 and 4,500 BP. During this time, the marked warmer and drier environmental conditions of the Altithermal caused a decrease in vegetative cover and a concomitant increase in eolian sedimentation.

Excavation of wells is noted within adjacent environmental regions (e.g., Southern High Plains) as a Middle Archaic adaptation to the dry conditions (Johnson and Holliday 1986:46). Subsistence was focused on hunting and gathering within river and major creek bottomlands, with a lower relative number of rockshelter occupations documented than in the Early Archaic. The number of thermal features found at Middle Archaic archaeological sites along with associated artifact assemblages are, in most cases, larger in number and discovered in a wider array of ecological settings (Miller and Kenmotsu 2004). Subsistence strategies initially developed during the Early Archaic persist into the Middle Archaic though these strategies are

more refined and further adapted to a predominantly desert environment. Due to this drying trend, sites of this period tend to be found near streams and drainages. For example, the Paradise Site is located along the Paradise Draw forming the headwaters of Terlinguaite Creek. This site provides both insight into the settlement patterns of Middle Archaic groups, as well as additional information regarding the desert-adapted subsistence strategy. Archaeologists uncovered a substantial earth oven and posit that it was used to process otherwise indigestible, semi-succulent, desert plant species (Ohl 2006).

The first evidence of semi-sedentary settlements in the Middle Archaic is noted in the western Trans-Pecos with the appearance of small huts or houses, precursors to the well-known pithouses and pueblos of the area; however, similar structures are not documented in the eastern Trans-Pecos where located. Pecos County is dated as early as the Early and Middle Archaic, but it is unclear whether any of the wickiup rings documented at the site correspond to these periods (Young 1981). Because of the high degree of continuity between Early and Middle Archaic technologies, archaeologists have been reliant on variations in projectile point form to distinguish between the periods (Miller and Kenmotsu 2004). Though contracting and expanding stemmed projectile points are found throughout the Trans-Pecos region during the Middle Archaic, contracting stem points are more commonly discovered in the eastern portion. While point styles varied greatly during this time, Langtry and Jorra point types are commonly found at Middle Archaic sites (Mallouf 1985).

3.4 Late Archaic (3,200–1,500 BP)

The Late Archaic is typically dated between 3,200 BP–1,500 BP. In the eastern Trans-Pecos, the Late Archaic period is marked by several changes in settlement patterns and technology (Miller and Kenmotsu 2004). More modern climatic conditions, beginning around 4,500 B.P, coincide with a change in human adaptation. Late Archaic environmental conditions were moister and cooler than thepreceding Altithermal. The stabilization of climatic conditions led to less sedimentation, thus limiting the potential of burying archaeological deposits. Late Archaic sites with intact stratigraphic contexts are rare (Collins 2004). Use of burned rock middens and exploitation of xeric vegetation continued in the Trans-Pecos, but not at the same intensity seen in the Middle Archaic.

Site location data suggest that during this time all ecological zones were intensively exploited and may indicate a return to moister and more hospitable climes and increased coalescence and interaction between interregional hunting groups up to approximately 2,500 BP (Mallouf 1990). A diversification of settlement patterns is evidenced by a dramatic increase in the recorded presence of Late Archaic assemblages in rock shelters. In the eastern Trans-Pecos, construction and use of burned rock features increase during the Late Archaic both in numbers of recorded features and in size and weight of rock used. This is likely an indication of an intensification of plant processing. Ring middens—circular burned rock features with associated ash, charcoal, and debitage surrounding a central depression—are widespread and found in many ecological zones in the Trans-Pecos. In the eastern Trans-Pecos, Mallouf (1985) posits these are the signatures of widespread use of desert succulents. Bell and Castetter (1941) report similar ring middens as a by-product of Apache sotol and lechuguilla cooking.

Railey (2016) posits that with climatic improvements in the broader Permian Basin region during this time, there was a corresponding increase in available water throughout the region. Railey (2016) argues that this

led to a greater abundance and diversification of resources, meaning that "hunter-gatherers could now forage more efficiently, moving their camps more frequently around the landscape. Archaeologically this would all translate into higher numbers, and a more ubiquitous distribution of, preserved camp remains (such as artifact scatters and cooking pits), relative to previous time periods." The Late Archaic saw the introduction of maize and bean cultivation in the western Trans-Pecos, although the subsistence economy remained diverse. A wide range of flora and fauna are represented in Late Archaic deposits, although various *leporid* (rabbit) species were the predominant game animals (Miller and Kenmotsu 2004:228). In addition, a wide variety of perishable artifacts dating to the Late Archaic have been recovered from rockshelter and cave sites.

During the first half of the Late Archaic, projectile point technology shifts to corner and side-notched types. In the latter half of the Late Archaic, projectile points generally decreased in size, with smaller side- and corner-notched types similar to the Hueco, Paisano, and Van Horn types found in the eastern Trans-Pecos corresponding with the transition to bow-and-arrow technology and developed to boost hunting efficiency (Miller and Kenmotsu 2004; Vierra et al. 2020). It is likely that rabbit sticks were the primary tool for hunting during this time, reflecting both a small game focus in hunting and an increased reliance on local, low-quality raw materials constraining point size. Changes in technology, settlement, and subsistence patterns evident for the Late Archaic persist into the following Formative Period.

3.5 Formative/Late Prehistoric (1,500–500 BP)

The Late Prehistoric Period covers a period from about 1,500 BP to about 500 BP and is marked by the introduction of the bow and arrow as the principal weaponry system and the beginning of pottery making, specifically the appearance of Mogollan ceramics in the Trans-Pecos region (Vierra et al 2020). Agriculture and horticulture are also considered a major innovation during this period (Johnson and Holliday 2004; Pertulla 2004). In the eastern Trans-Pecos, the Late Prehistoric—referred to by some as the Formative period— is divided into three phases: the Livermore (1,000–750 B.P), La Junta (750–600 B.P), and Concepción (600–300 B.P) phases (Miller and Kenmotsu 2004:210–211). The latter phase bridges the Late Prehistoric and Contact-period historical eras. The climate was relatively mild, marked by intervals of moderate to severe drought conditions. In the western Trans-Pecos, major changes to settlement patterns, subsistence, architecture, and material culture occurred throughout these periods. The same patterns are present in some areas of the eastern Trans-Pecos, especially in the La Junta district (southern Presidio and Brewster counties), but most adaptations did not reach the northeastern area of the Trans-Pecos. The Late Prehistoric in the Project vicinity is largely undifferentiated, and additional work is needed to establish a firm chronological sequence for this area. Late Prehistoric sequences elsewhere in the Trans-Pecos are largely defined by changes in residential architecture, following a sequence of developments from huts and pithouses to isolated adobe structures and contiguous room blocks or pueblos (Miller and Kenmotsu 2004:239).

3.6 Historic Period (A.D. 1500 to 1950)

Spanish explorers traveled to the Gulf of Mexico in the early sixteenth century. Alonzo Álvarez de Piñeda may have sailed into the bay in 1519, and Álvar Núnez Cabeza de Vaca visited the area on a disastrous expedition that began in 1528. A map of the Gulf of Mexico from Florida to the Yucatan was created as a result of the Piñeda expedition, and the explorers briefly sailed into the mouth of the Rio de las Palmas, or

Rio Grande (Hansen 1969). Cabeza de Vaca explored the Gulf coast and later wrote a book about his experiences which described his encounters with Native Americans across Texas and Mexico. His expedition likely reached the La Junta region in 1535, where they reported village settlements along the Rio Concho and Rio Grande. In 1540, an expedition from Mexico led by Francisco Vazquez de Coronado reached northern Texas (Weddle 2000). When Coronado returned empty handed, Spain lost interest in much of Texas, but *entradas* into the Trans-Pecos continued throughout the 1560s to 1580s, with varied purposes including missionary expeditions, slave raids, and searches for gold and silver.

The Conchos phase (A.D. 1650–1800) saw the decimation of Native American populations in the Trans-Pecos region as Native inhabitants were killed by violence or disease, enslaved to work in the silver mines of New Spain, forcibly removed, or "acculturated" into the Mission system. While markers of Late Prehistoric Native American lifeways—circular to oval or rectangular wattle-and- daub houses, a few pithouses, and local ceramics—persist in this phase, these are fewer in number and found alongside Spanish Mission diagnostics such as Majolicas, Spanish utility wares, and metal objects (Applegate and Hanselka 1974). Additionally, artifacts related to other indigenous traditions, such as pottery comals like those of central Mexico, are found at Mission sites in the region and likely indicate the presence of Native peoples from a range of groups.

European colonization—and indigenous resistance—increased in the later 1600s, when the Pueblo Revolt (1680), and the Mansos Revolt (1684) led to a massive reorganization and concentration of many Native groups in New Mexico, northern Mexico and west Texas into Mission settlements. Settlements shifted toward the Rio Grande floodplain and terraces, with only a few small indigenous campsites and hunting grounds with Spanish Colonial artifacts recorded (Miller and Kenmotsu 2004:262). Beyond what is known from Mission sites and the brief and sometimes contradictory accounts provided by early European chroniclers, evidence of Native American groups from this period is scarce in the Trans-Pecos. In the Southern High Plains and western-central Texas, European trade goods such as glass beads and horses (including evidence of horses as a game animal) appear alongside Historic-period rock art and Washita arrow points; indigenous occupations are linked to Historic Apache and Comanche groups (Johnson and Holliday 2004:292).

Throughout the eighteenth century, most Spanish settlement in Texas was focused on the region around San Antonio, with the missions of the Trans-Pecos constituting a turbulent frontier region of secondary importance. The Mansos and La Junta missions were the sites of numerous Apache and Comanche raids, as well as local uprisings, with Spanish missionaries and military expeditions leaving and returning multiple times in attempts to establish firm control over the region. These efforts, and the violence surrounding them, further devastated the local population. Spanish efforts to convert the Native American populations of Texas ultimately failed and the missions slowly closed. The Spanish granted sweeping acreages to cattlemen who established the first ranches in southwestern Texas, but the region remained thinly populated into the nineteenth century (Chipman and Joseph 2010).

The first residents of Reeves County inhabited caves and rock shelters in proximity to the Barrilla Hills and built more permanent camps near Phantom Lake, San Solomon Spring, and Toyah Creek, leaving behind artifacts and pictographs. The Jumano Indians irrigated crops consisting of peaches and corn from the San Solomon Spring. Three of the Jumano people encountered Antonio de Espejo near Toyah Lake in 1583 and guided him and the expedition towards La Junta.

In the mid-1800s, farmers of Mexican descent cultivated vegetables and grains irrigated with water sourced from San Solomon Spring. John S. Ford traveled along Toyah Creek in 1849 and noted that the land of the Mescalero Indians was cultivated with corn. By 1871, George B. and Robert E. Lyle began irrigating crops from Toyah Creek, attracting white settlers to the Davis Mountains. Originally part of Pecos County, Reeves County was separated in 1883 and organized in 1884. A three-room school was opened in Pecos in 1883, and a post office was opened shortly after in 1884. In 1885, ranchers began herding cattle in the northern potions of the county, and residents numbered 210. The county reported 1,947 residents as of 1900. In the twentieth century, agriculture and petroleum production were the dominant portions of the Reeves County economy, though manufacturing did have a presence (Smith 2021). According to the United States Department of the Interior in 1902, irrigation works had been constructed near Roswell and reservoirs were constructed near Carlsbad. Though, multiple irrigation canals were constructed near the town of Pecos at the crossing of the Texas and Pacific Road. A canal controlled by the Pecos River Irrigation Company was situated approximately 28 miles south of Pecos, Texas. This ditch, built in 1875 to 1876 and expanded in 1889, was the oldest irrigation ditch from the Pecos River in Texas. In the 1890s, the water supply was short after the Pecos River was dammed in Carlsbad, and at times only 15 feet of was permitted to reach Pecos, Texas. The water level had improved by 1902, but it was noted that the water supply was not adequate to meet the demand. Five ditches were excavated for irrigation from Toyah Creek. These were the Clements or Murphy, measuring nine miles long taken out of Toyah Spring to irrigate approximately 1,500 acres; the Giffin, measuring one mile long taken out of Toyah Creek to irrigate approximately 400 acres; the Saragossa, measuring approximately 2 miles long from six miles south of Toyah Spring to irrigate 1,500 acres including the Clements; the St. Isabella, measuring two miles long from 19 miles south of Toyah Spring to irrigate 700 acres; and the Pruett, which was approximately two miles long from 26 miles south of Toyah Spring to irrigate 300 acres. It is noted that these irrigation channels were very efficient in cultivating corn, wheat, and sweet potatoes. The Murphy ditch was the largest irrigation ditch in the region, and was chartered in 1875, while the others were chartered later in 1875 and 1876 (Taylor 1902).

In 1900, a census recorded 63 farms across the county comprising approximately 900,000 acres of farmland and 51,000 cattle. In 1901 to 1905, school lands in Reeves County were permitted to be sold, and many new residents arrived to buy inexpensive land. By 1910, multiple small municipalities, such as Orla, Panama, Hermosa, Pyle, Mont Clair, and Angeles, began to develop and establish post offices. The 1910 census showed the population had risen to 4,392 residents in the county. The number of farms increased to almost 225, but acreage for farming dropped to less than 600,000 acres and the number of cattle dropped to almost 7,000. Though, chickens and milk cows increased in number. Drought and the Great Depression heavily affected crop production into the 1930s and drove families to leave their farms. Though the number of farms rose to 327, farm tenancy increased substantially. Only 114 farms were operated by their respective owners. Cotton remained a staple crop with approximately 3,200 bales harvested and on nearly 3,000 acres, 7,000 tons of forage was produced. By the 1940s, livestock surpassed agriculture as the major industry in the county with livestock valued at over $1 million and agriculture valuing at $376,031. The 1950s saw agriculture revive as the most profitable segment of the Reeves County economy, with values climbing to approximately $224 million compared to livestock production estimated at $2.5 million. Three hundred twenty-two farms encompassing 1.5 million acres were operated within the county by 1954. Of this land, 81,000 acres were devoted to agricultural production. During the 1960s, the county's population reached

17,644. The number of farms within the county declined to 231 with only 26 percent of operators living on their land, but livestock value rose to approximately $12 million by the end of the decade (Smith 2021).

4.0 Previous Investigations

According to the THC's Archeological Sites Atlas (Atlas) (2021), no archeological sites have been recorded within the footprint of the proposed West Sun Tex Permian Landfill, and it has never been surveyed by a professional archeologist. Review of the Atlas shows no previously recorded cemeteries, NRHP resources, SAL resources, or historical markers within the APE or within one kilometer (km) of the APE (**Figure 4-1**).

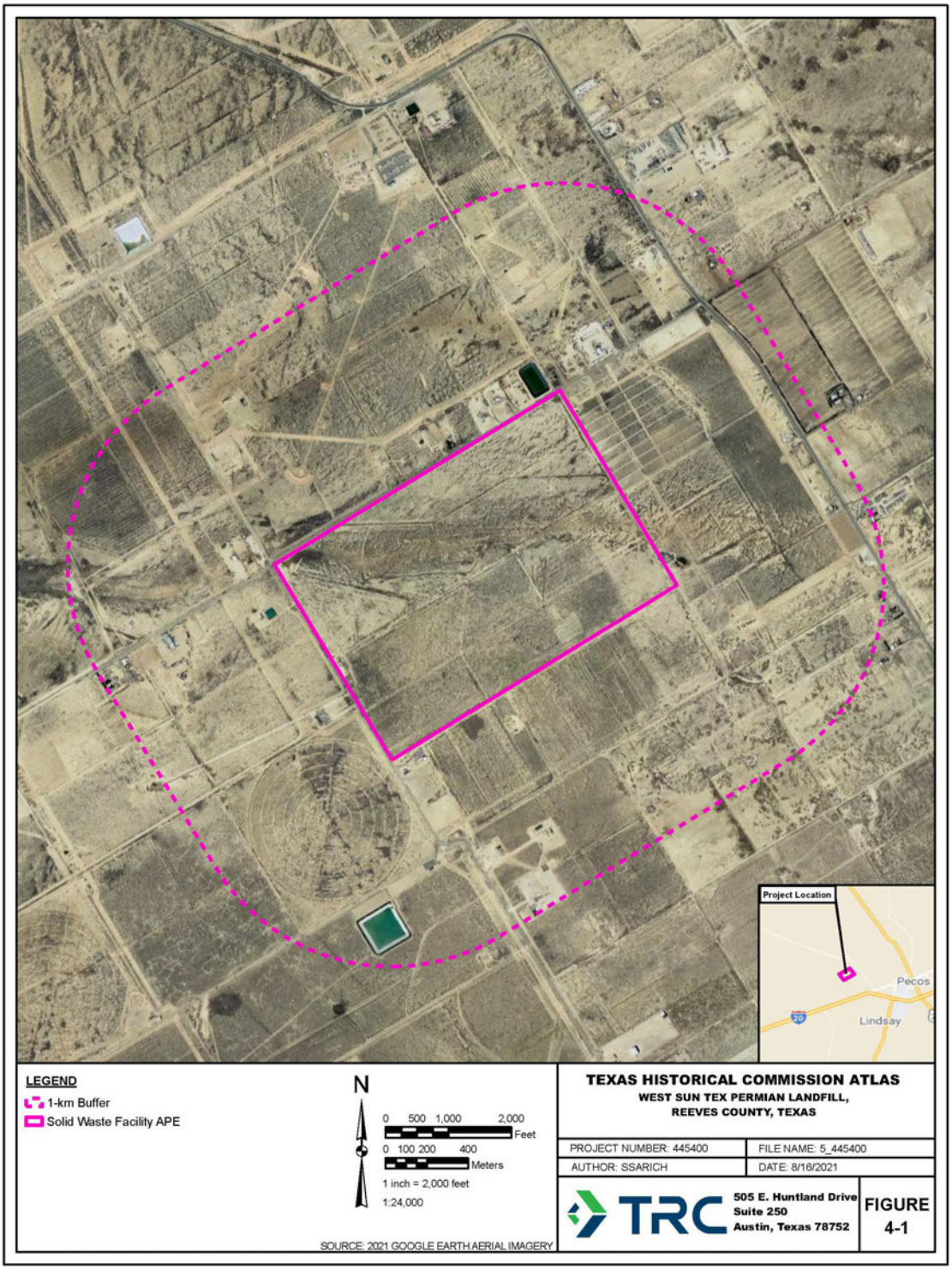


Figure 4-1 Previous investigations and recorded cultural resources within one km of the APE

5.0 Research Objectives and Field Methods

The goals of the cultural resources survey were as follows:

- Determine if cultural materials are present within the APE through pedestrian survey and shovel testing of the APE;
- If archeological deposits are present within the APE, determine their spatial extent;
- If archeological deposits are present within the APE, attempt to determine the general cultural affiliation/age of these deposits; and,
- Document any historic standing structures within the APE.

Fieldwork followed the guidelines and survey standards set forth by the 2020 THC/Council of Texas Archeologists Intensive Terrestrial Survey Guidelines. The survey consisted of a 100 percent pedestrian survey supplemented with shovel testing.. Excavated sediment was screened through 0.6 centimeter- (cm; 0.25 in) wire-mesh screens. Each shovel test measured approximately 30 cm (11.8 in) in diameter. Shovel tests were excavated to the lesser of the bottom of Late Pleistocene/Holocene deposits, subsoil in upland areas, bedrock, or to a minimum depth of 80 cm (32 in) below ground surface (bs). Exceptions to shovel testing may include erosional settings, slopes greater than 20 percent, in settings with significant ground disturbance, or impassable stony soils or bedrock. Each shovel test was recorded in terms of depth, stratigraphy, and the texture and Munsell color of representative sediment(s). Additional shovel testing was conducted in proximity to any isolated finds or artifact scatter to assess the potential for subsurface cultural materials. As no shovel tests were positive for subsurface cultural materials, cruciform shovel testing was not conducted. Upon completion, all shovel tests were backfilled. By necessity, the definition of any site boundary or isolated find was based exclusively on the horizontal distribution of identified surface artifacts.

Field notes were maintained on electronic forms created by TRC with Fulcrum™, a mobile form builder and data collection application (app). The Fulcrum™ app runs on Android or iOS operating systems and allows users to upload their data in real time. The electronic forms note observations regarding terrain, vegetation, soils, landforms, shovel tests, and cultural materials. Standardized shovel test and surface find data was recorded on handheld tablets for each shovel test or surface find. These data include shovel test or surface find location, depth, soil type, and notations on any artifacts encountered during pedestrian survey or within each shovel test excavated. Digital photographs with an associated photo log using the Fulcrum™ application also were completed as appropriate. The location of shovel tests and surface finds was recorded via handheld Global Positioning System (GPS) units utilizing the Universal Transverse Mercator (UTM) coordinate system and the North American Datum of 1983 (NAD 83) map datum. Representative project overview photographs and shovel test photographs were taken throughout the project. No artifacts were collected during these investigations.

6.0 Results

Survey of the entirety of the 440-acre APE was conducted on July 26 and from July 29-August 1 by Steven Sarich, Benjamin Johnson, Steven Schooler, and Josh Haefner. During the investigations, a total of 155 shovel tests were excavated during the survey, all of which were negative for cultural materials (**Figures 6-1 to 6-4**). The survey area was generally flat with sparse areas of mesquite and other scrub vegetation with a built-up berm surrounding the perimeter (**Figures 6-5**). Survey began at the southwestern-most extent of the APE with transects oriented northeast, perpendicular to the APE's boundary along CR 4087. Shovel tests conducted within the southeastern quarter of the APE, noted silty clay loams to clay loam soils that were generally in agreement with shovel tests typically reaching 60-90 cmbs before terminating within thick compact sterile subsoil. While the area has been previously utilized for agriculture and the typical pedon for the Hoban Series, as described by the USDA (2021), notes an Ap horizon above an A horizon, this differentiation was not observed in these shovel tests.

Moving northeast from this area, shovel testing noted soils more in line with the surrounding Orla, Upton, and Reeves series, terminating at depths of 40-60 cmbs in B horizons with noted caliche, gravel, and high calcium carbonate precipitate inclusions. Gravels and caliches became more dominant on the surface towards the northwestern quarter of the APE (**Figure 6-6**). While shovel tests conducted in this area were negative, both prehistoric and historic artifacts were recorded on the surface. Prehistoric artifacts consisted of occurrences of single items of chert and quartzite debitage while historic artifacts included a horseshoe, fuel cans, aqua glass sherds, miscellaneous metal, tobacco tins, a round-top food can, and a church key opened tin (**Figures 6-7 to 6-15**). As recorded, these artifacts were generally isolated finds spaced from 30 to 100 meters from each with two instances of five artifacts being within 30 square meters of each other. Additional shovel testing in proximity to the isolated surface finds were also negative. Based on the 2021 Web Soil Survey data researched prior to fieldwork, in field observations of shovel test stratigraphy, and the fact that all shovel tests were negative in an around these isolated find locations, it was determined that there was little to no potential for additional subsurface deposits. As no shovel tests were positive, cruciform testing was not conducted. Ultimately, because of their dispersed nature, it was determined that they did not as merit site designation. See **Appendix B: Isolated Find Log**.

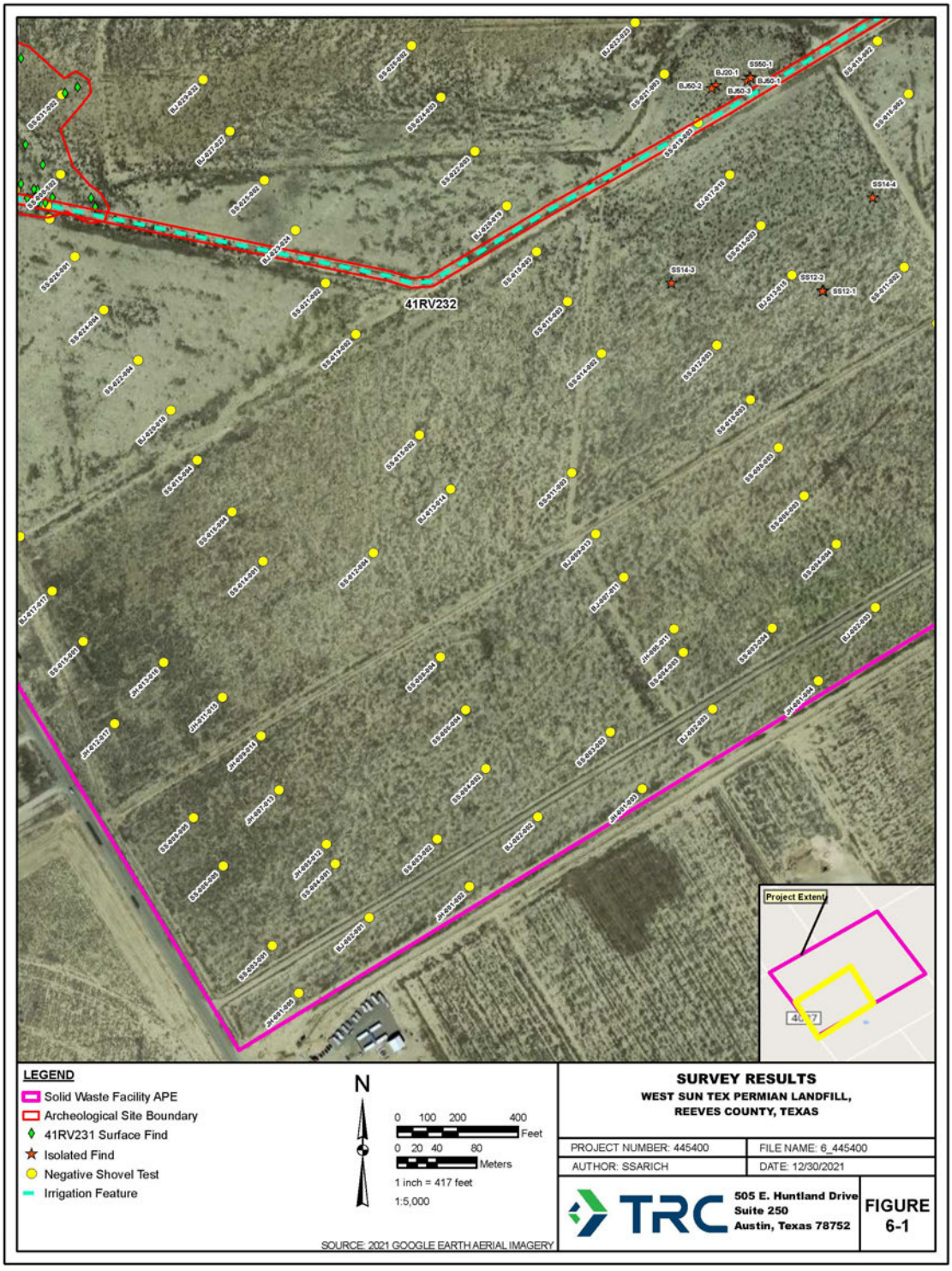


Figure 6-1 Survey results for the southwestern quadrant of the APE

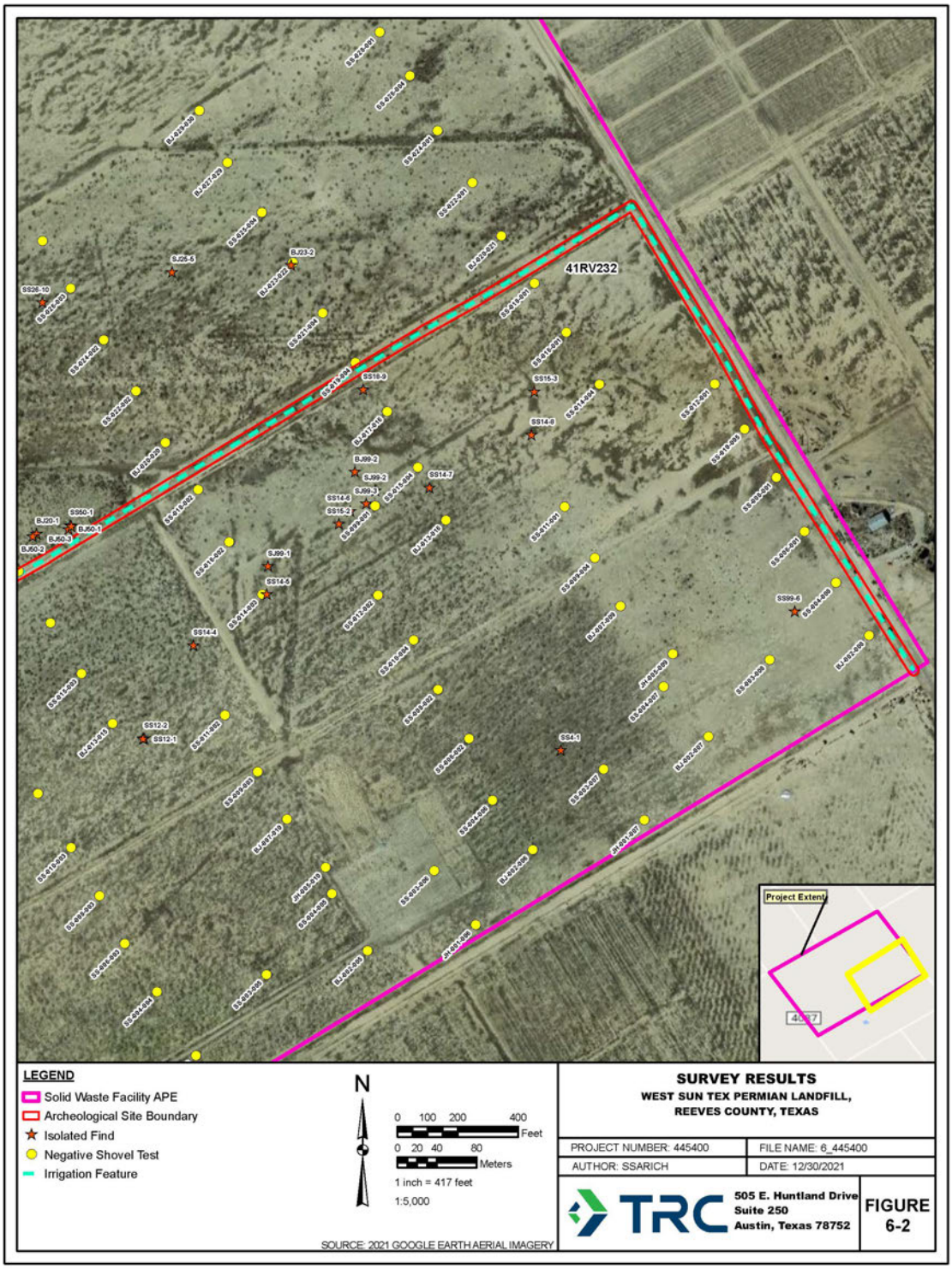


Figure 6-2 Survey results for the southeastern quadrant of the APE

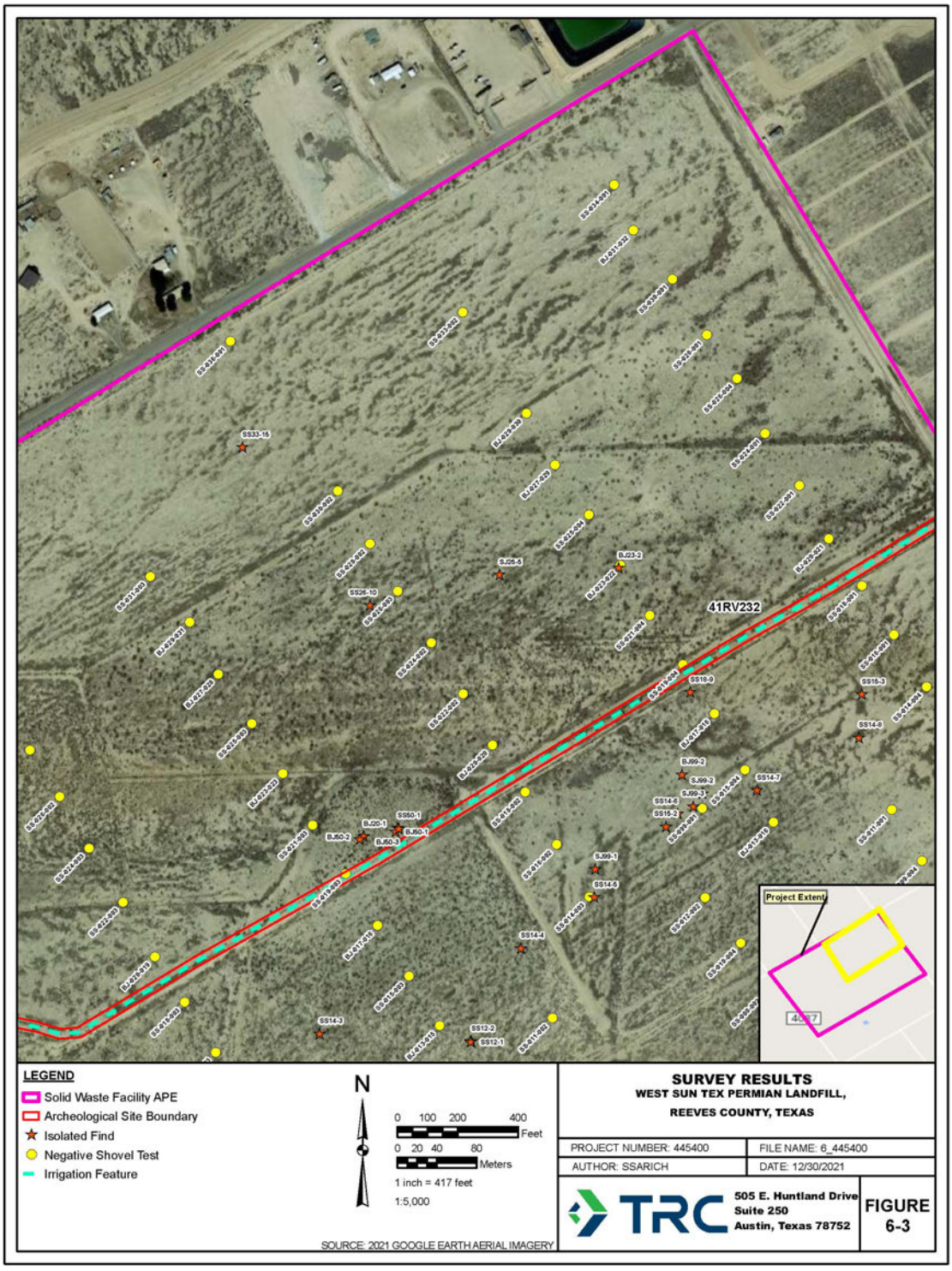


Figure 6-3 Survey results for the northeastern quadrant of the APE

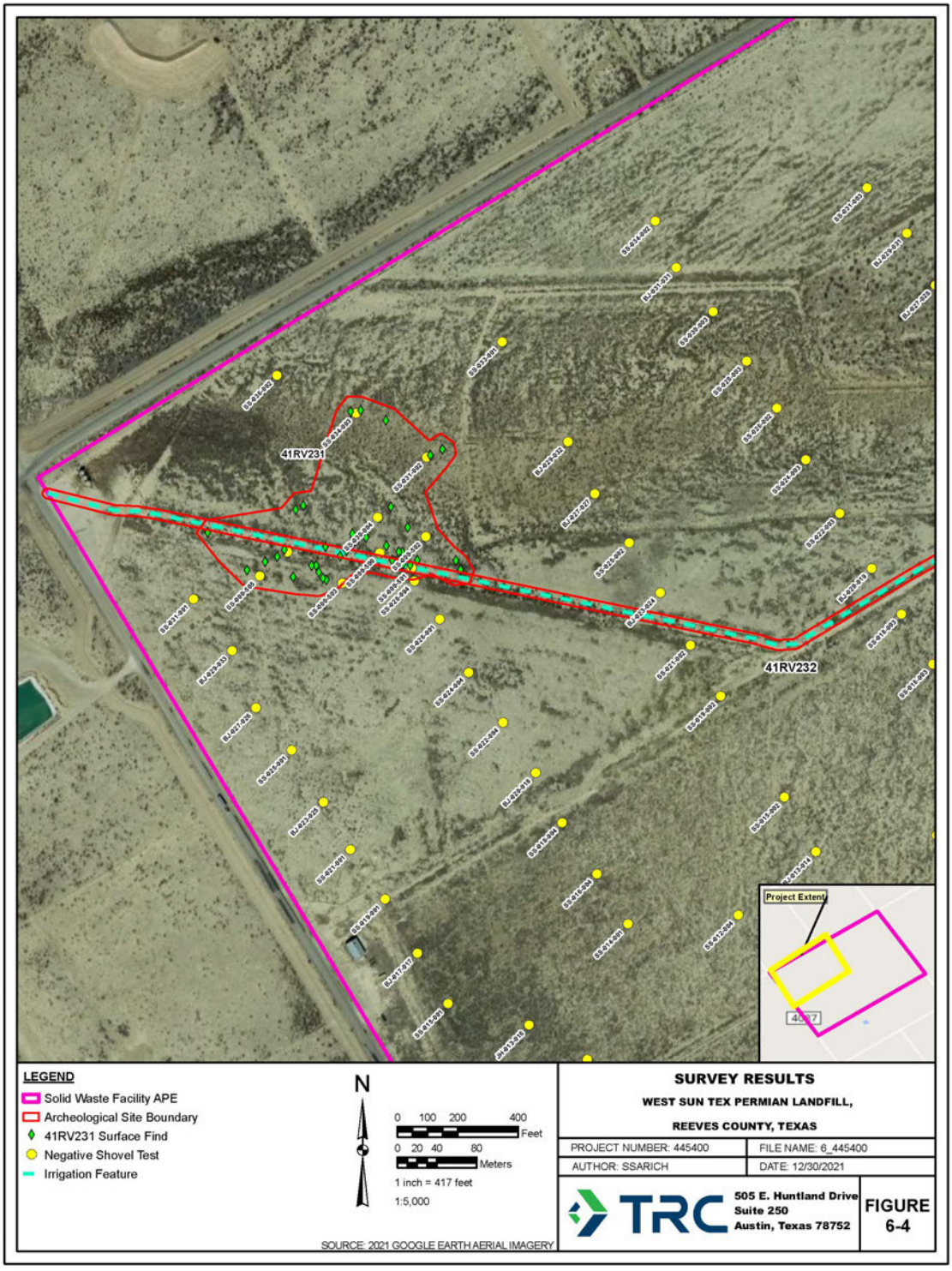


Figure 6-4 Survey results for the northwestern quadrant of the APE



Figure 6-5 Overview of APE with berm left quarter of frame, facing northeast from STBJ1



Figure 6-6 Overview of APE showing flat terrain and scrub vegetation, facing southwest from STSS 34-001



Figure 6-7 Debitage Isolate, facing northwest (SJ99-3)

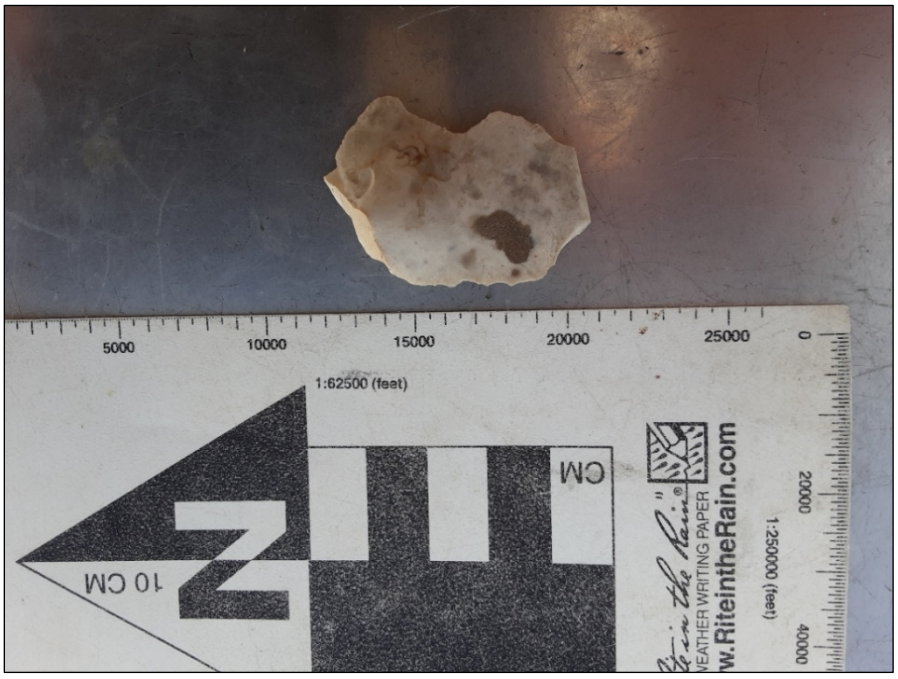


Figure 6-8 Debitage Isolate, facing east (SS4-1)



Figure 6-9 Debitage Isolate, facing south (SS15-2)



Figure 6-10 Horseshoe Isolate, facing west (SS12-1)



Figure 6-11 Fuel Can, facing east (BJ50-2)



Figure 6-12 Metal Coupling, facing west (SJ99-1)



Figure 6-13 Tobacco Tin, facing east (BJ50-3)



Figure 6-14 Metal Can Side View, facing north (BJ50-1)



Figure 6-15 Metal Can Top View, facing north (BJ50-1)

6.1 Site 41RV232

Site 41RV232 is a Historic Period earthen irrigation feature approximately 32 ft (10 m) wide and approximately 1.5 mi (2.4 km) long within the APE, oriented northwest to southeast from the western edge of the survey area towards the center of the survey area at which point it aligns southwest to northeast towards the eastern boundary of the survey area. The irrigation feature is then oriented northwest to southeast along the eastern boundary of the survey area, terminating at the southeastern corner of the survey area. (**Figures 6-16 and 6-17**). The site encompasses approximately 5.8 ac. This irrigation feature appears on the United States Geological Survey (USGS) 1971 *Pecos West*, Texas 7.5' Topographic Quadrangle map, however it is absent from the USGS 1957 Pecos, TX and 1921 *Toyah, TX* Quadrangles (**Figures 6-18 to 6-20**). In these earlier maps it appears as a natural drainage. As it falls into the Historic time period defined as extending from A.D. 1500 to 50 years before present, it was assessed for potential research value and inclusion in the NRHP or as an SAL. The feature appears heavily eroded, with the irrigation berm difficult to discern in some areas. Shovel tests were excavated within close proximity to the irrigation feature throughout the survey area, and no shovel tests were positive for cultural material. Further, no cultural material within the survey area can be directly associated with this feature. As such, site 41RV232 has little potential for research value, and does not meet the criteria for NRHP eligibility or listing as an SAL. While the observed portion of 41RV232 was determined not to be eligible for NRHP inclusion or listing as an SAL, this assessment is only valid within the portion of the irrigation feature within the surveyed area.

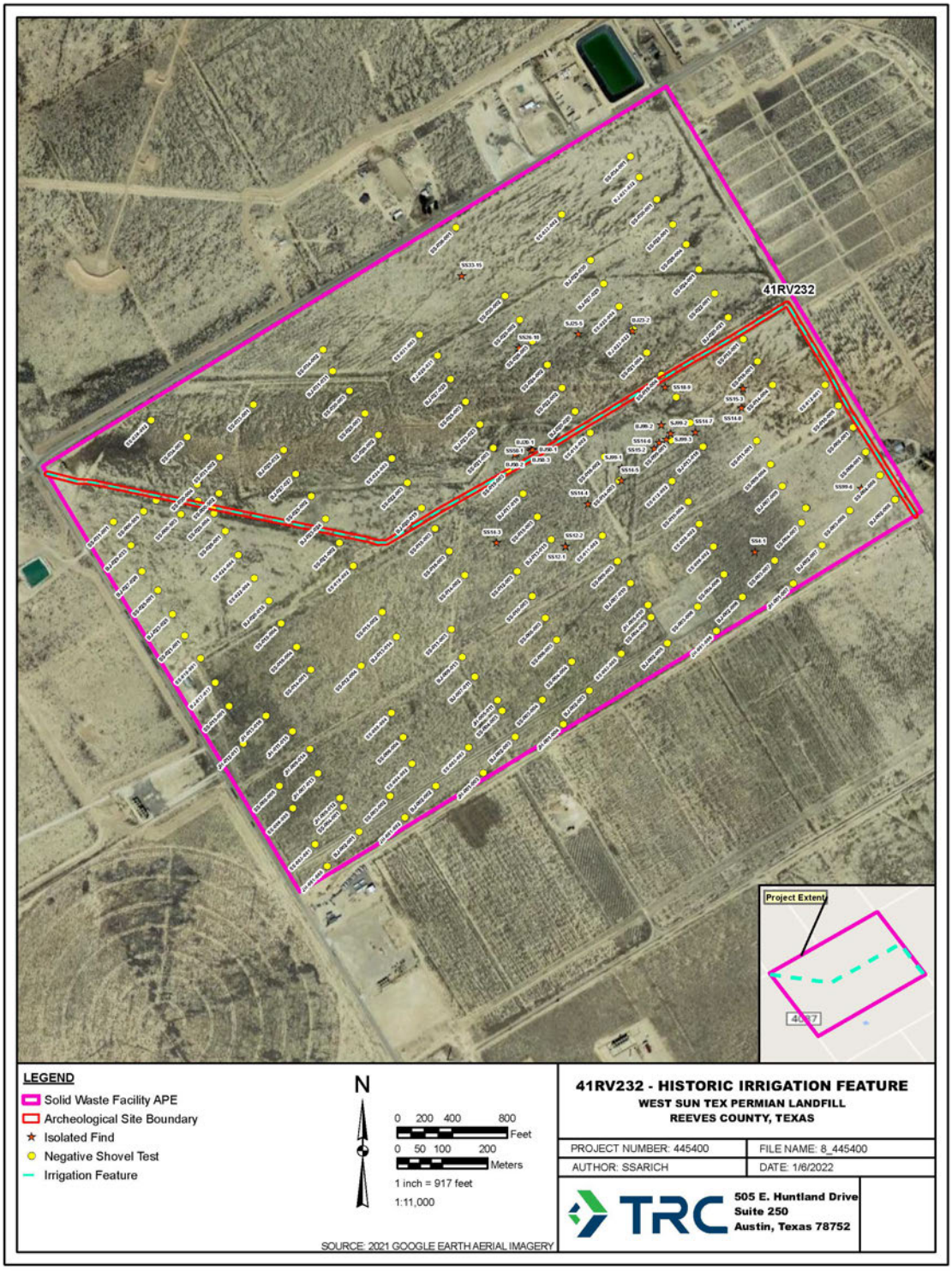


Figure 6-16 Survey Results for Site 41RV232



Figure 6-17 Irrigation Feature Overview, facing southwest

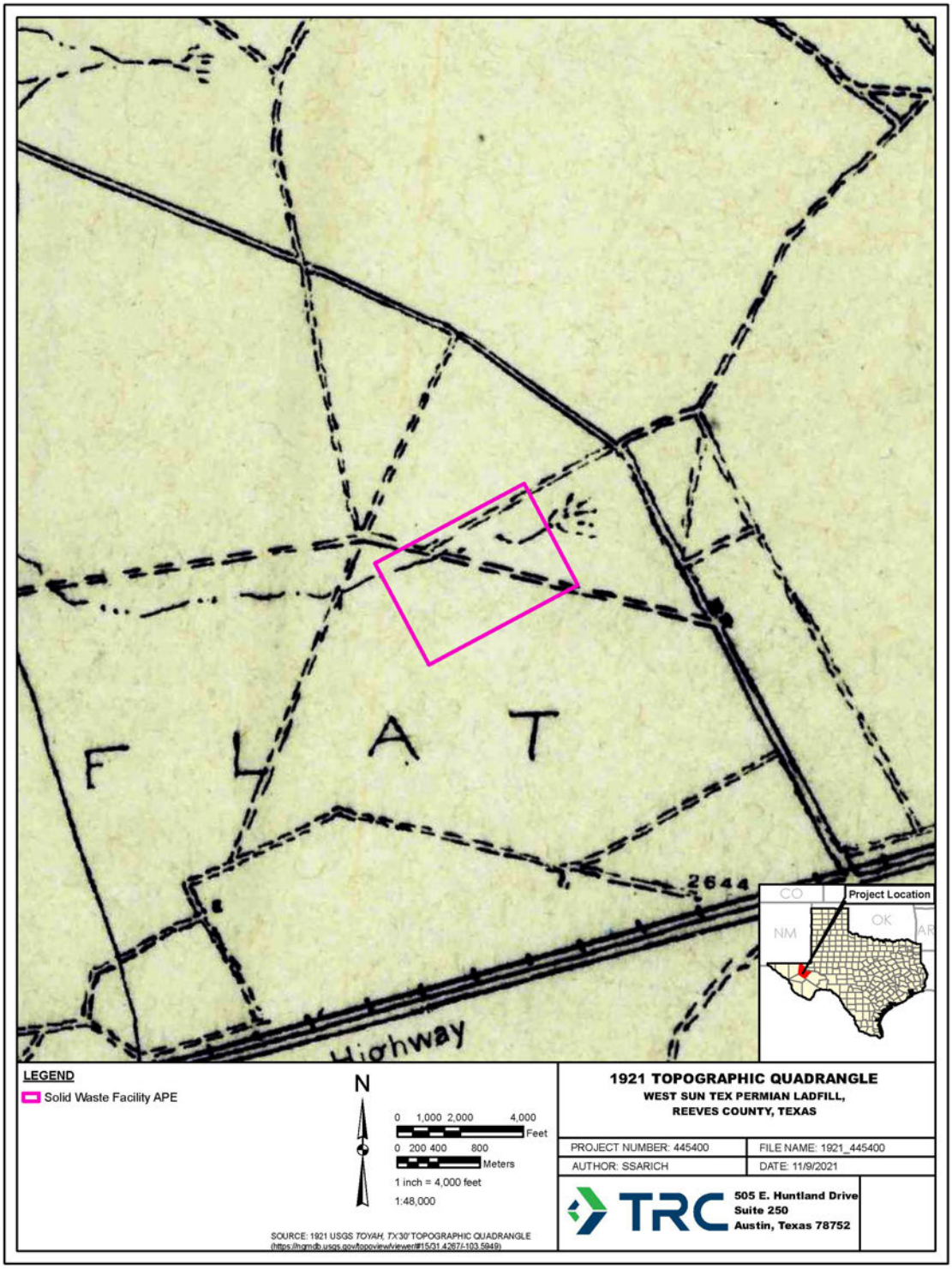


Figure 6-18 1921 USGS Topographic Quadrangle showing natural drainage

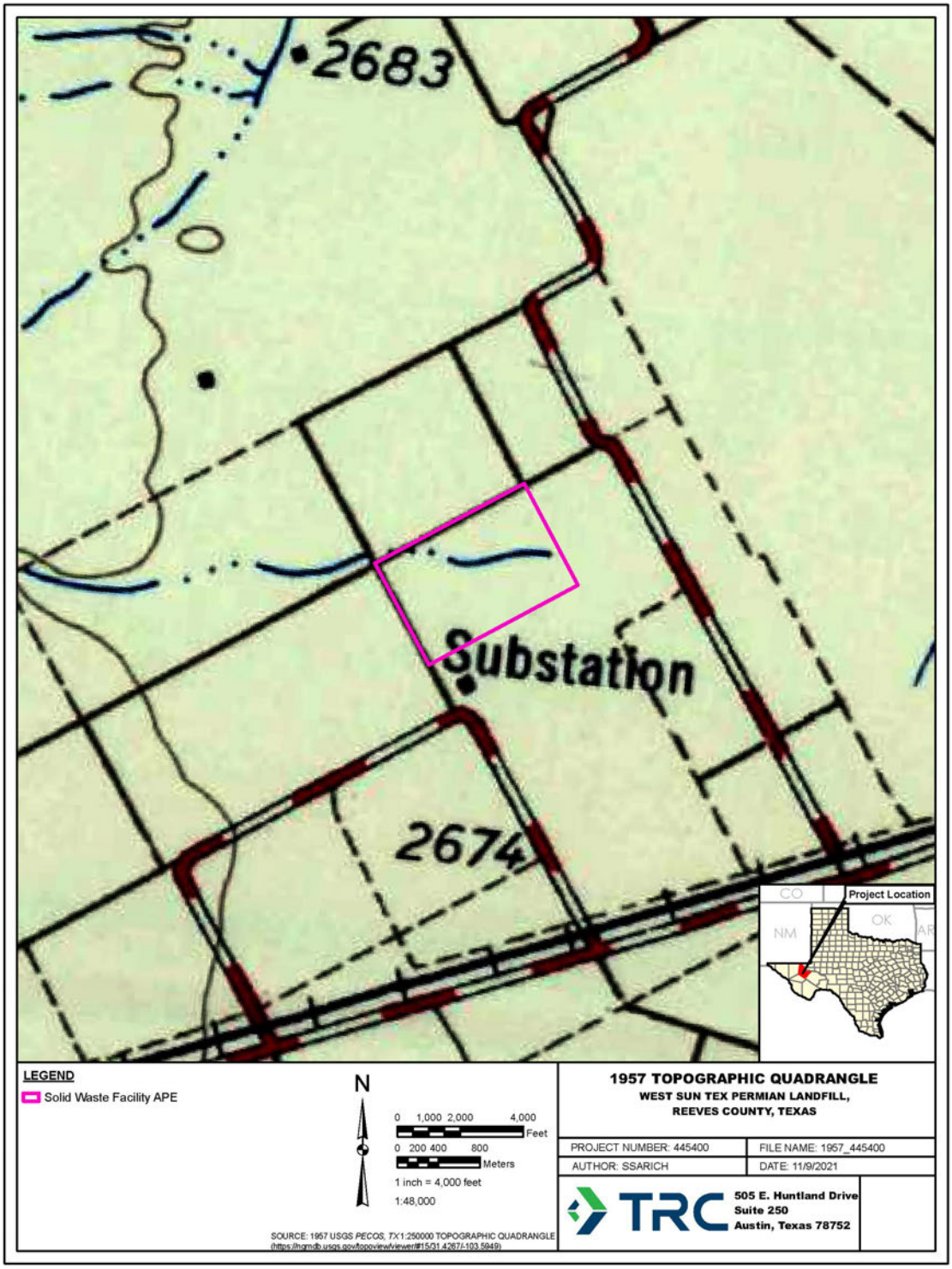


Figure 6-19 1957 USGS Topographic Quadrangle showing natural drainage

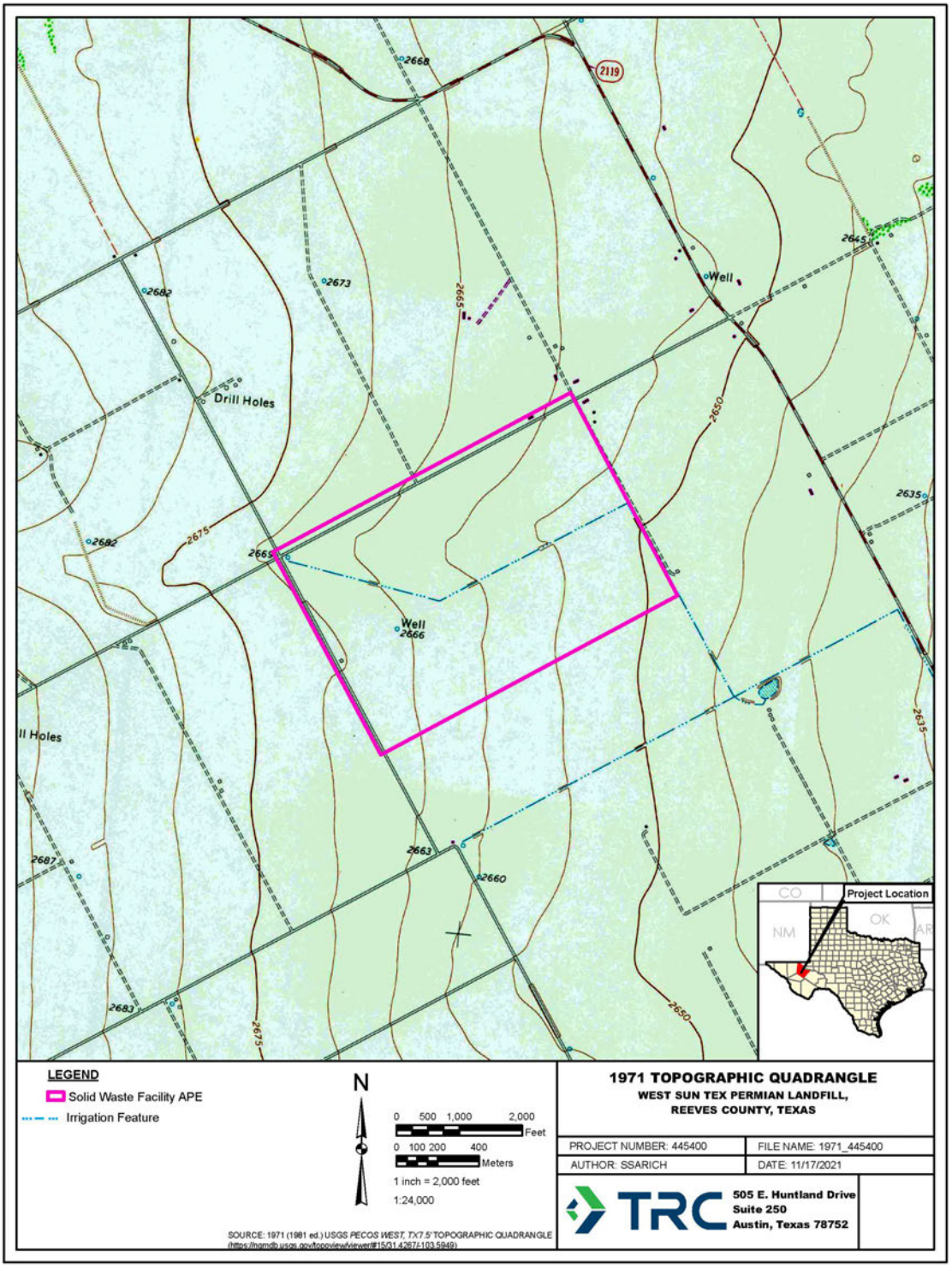


Figure 6-20 1971 USGS Topographic Quadrangle showing irrigation feature in place of the natural drainage previously depicted

6.2 Site 41RV231

Site 41RV231 is a multicomponent site composed of a diffuse scatter of lithic debitage and a small assemblage of historic cultural materials. It is located at the west-northwest corner of the APE with the approximate center of the site, 820 ft northeast of CR 4087 and 710 feet southeast of CR 415 (**Figure 6-21**). The site measures approximately 7.4 ac (4 ha) in area. The prehistoric component includes 28 pieces of chert, a quartzite debitage, and a lithic core (**Figures 6-22 and 6-23**). Much of the prehistoric component occurs in two clusters-one adjacent north of a man-made berm and one adjacent south. The historic component consists of clear (n=1) and aqua (n=2) bottle and jar glass shards, amethyst-colored shards (n=2), whiteware sherds (n=5), a railroad spike (n=1), and a handle from a whiteware vessel (n=1) (**Figure 6-24**). Shovel tests conducted within 41RV231 noted profiles consistent with the Orla, Reeves, and Hodgins Series with shallow A Horizons and B Horizons with high amounts of calcium carbonate precipitate, caliche nodules, and, on occasion, gravel inclusions. Shovel tests conducted within the site boundary and immediately adjacent terminated at depths typically between 35-45 cmbs at compact transitions between A and B horizons.

The lone datable marking on any of these artifacts is from the backside of aqua glass bottle shard; a fragment of a 10-ounce Royal Crown Soda bottle, dating to the 1950's (Lockhart 2010; **Figure 6-25)**. When intact the colored lettering would have read:

"BOTTLE STERILIZED BEFORE FILLING"

CONTENTS 10 FLU. OZS

PROPERTY OF

ROYAL CROWN BREWING COMPANY"

with a plant location just under this lettering (in this case not intact enough to determine location of manufacture/distribution). According to Lockhart (2010), the Nehi-Royal Crown Bottling Company was in operation in El Paso, Texas from 1941 to 1965 and is a likely source for the bottle. Lockhart (2010) also notes that the label design is simplified in the early 1950s, no longer listing the ingredients and limiting the back description to BOTTLE STERILIZED/BEFORE FILLING/CONTENTS XX FLU. OZS/PROPERTY OF [NEHI]-ROYAL CROWN BREWING COMPANY/CITY, STATE OF THE BOTTLING PLANT LOCATION. This simplified back label design matches the label design on the glass fragment found at the site. Along with the remainder of the historic artifacts in conjunction with the diagnostic Royal Crown bottle, the historic component of the site likely dates from the early to mid-20th century.

Shovel testing in the area and in proximity to the main concentration of artifacts did not identify any subsurface artifacts. Running from northwest to southeast is the previously mentioned historic irrigation feature through the approximate center of the site. Additionally, the land has historically been used for the purposes of agriculture and livestock. Along with natural erosion caused by high winds common to the area, and the diffuse, surficial nature of the assemblage, the integrity of the site has been strongly impacted. As no shovel tests were positive, cruciform testing was not conducted and the site boundary was based on the horizontal extent of the surface scatter of prehistoric and historic artifacts.

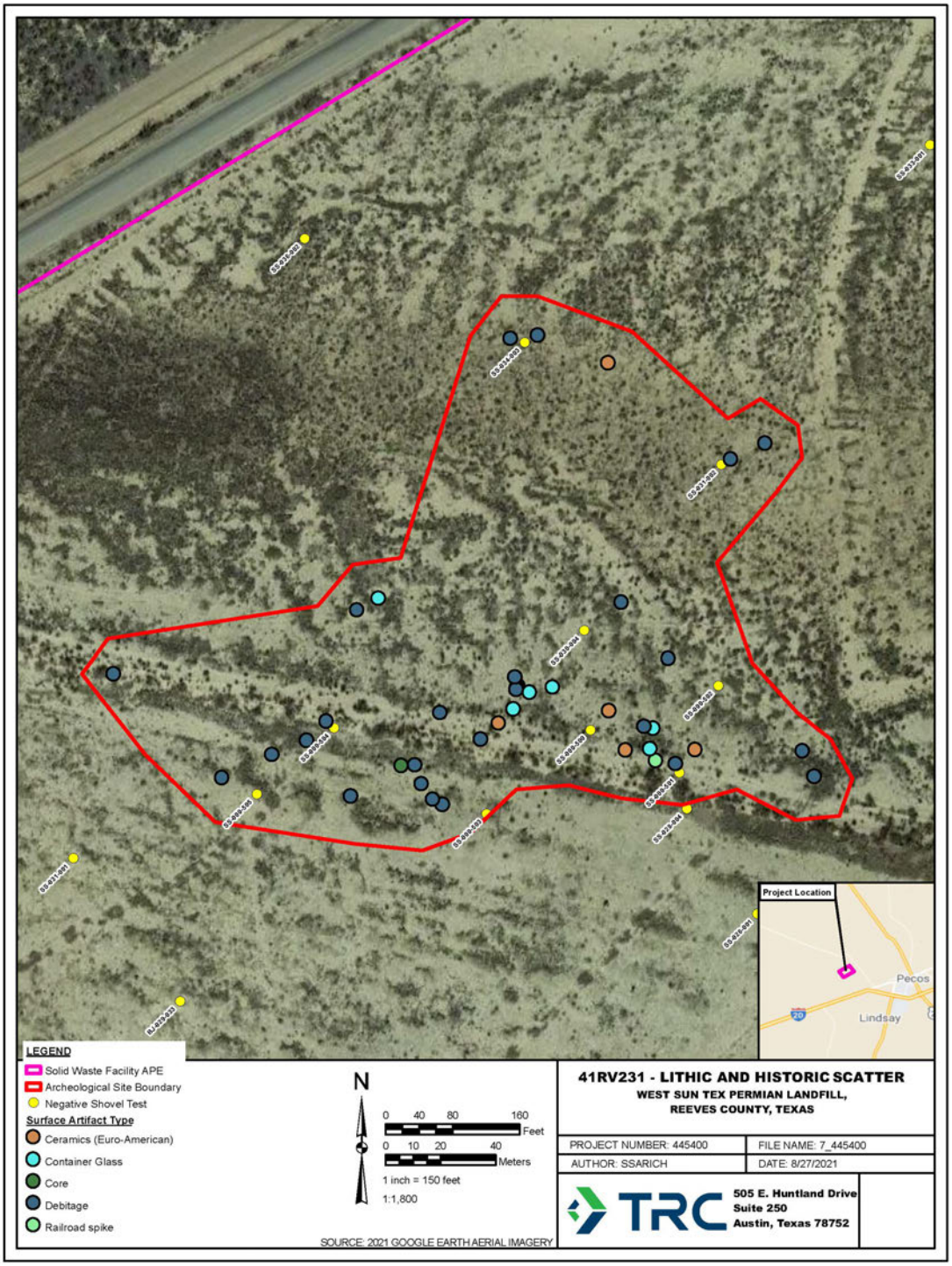


Figure 6-21 Survey results for 41RV231

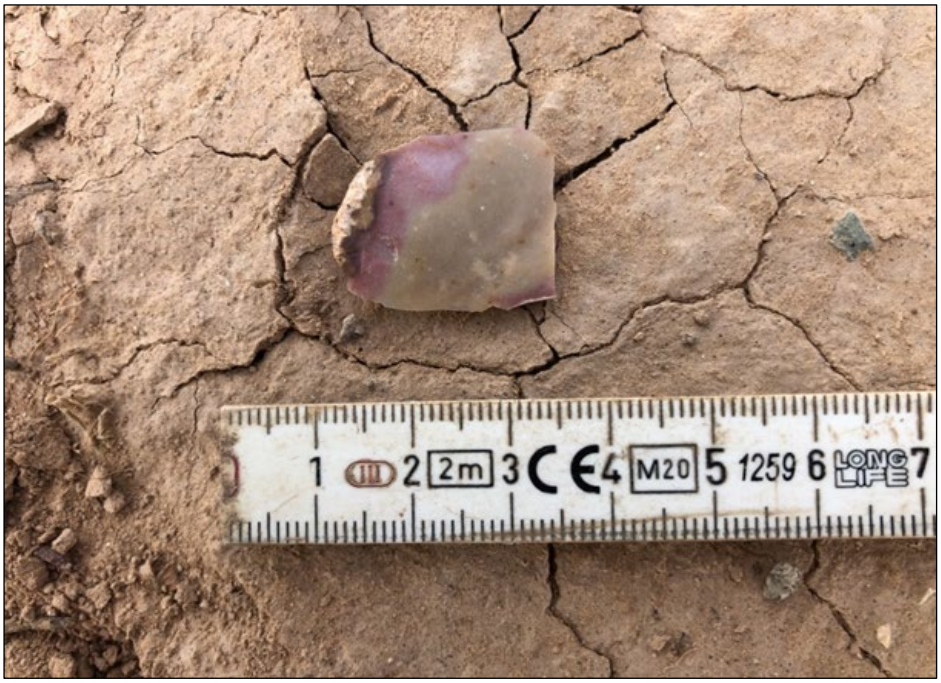


Figure 6-22 Example of debitage recorded at 41RV231



Figure 6-23 Lithic core recorded at 41RV231



Figure 6-24 Ceramic whiteware handle recorded on the surface at 41RV231



Figure 6-25 Royal Crown Soda aqua glass fragment with printed lettering at 41RV231

7.0 Conclusions and Recommendations

WST proposes to construct a Type I MSW facility, the WST Permian Landfill, in Reeves County, Texas (Project). Based on a preliminary review of the current project information, it is anticipated that the proposed project will be permitted under the TCEQ. The APE is a 440-ac property with a disposal footprint of approximately 192 ac. During the investigations, a total of 155 shovel tests were excavated during the survey, all of which were negative for cultural materials.

One new multi-component archeological site, 41RV231, a surface scatter of historic and prehistoric artifacts was recorded. This site lacks discernible features and with sparse deposits of limited research potential it is recommended ineligible for listing as a SAL or for listing on the NRHP. While other historic and prehistoric artifacts were observed on the surface within the APE, they were diffuse enough that these isolated finds did not warrant any site designations. In addition, a Historic Period irrigation feature was identified within the APE and recorded as archeological site 41RV232. Historic map research does not show this feature prior to the late 1960s or early 1970s. Shovel tests were excavated within close proximity to the irrigation feature throughout the survey area, and no shovel tests were positive for cultural material. The irrigation feature seems to have low potential for research value, as historic map research reveals little data on the feature, and no cultural material within the survey area can be directly associated with it. Within the APE, the irrigation feature does not meet criteria for design, setting, materials, workmanship, feeling, or association and is recommended as ineligible for entry into the NRHP or designation as an SAL. As a result, TRC recommends that no further cultural resources investigations are warranted, and the Project may proceed to construction as planned. If cultural materials are encountered during construction or disturbance activities, work should cease in the immediate area; work can continue where no cultural materials are present. Please contact the THC's Archeology Division and TRC to consult on further actions that may be necessary to protect the cultural remains.

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Appendix A:

Shovel Test Results

Date	Plot ID	UTM	Modern Land Use	Vegetation	Ground Surface Visibility	Disturbance Type	Degree of Disturbance	Reason for Termination	Plot Result	Plot Comments	ST Depth	Soil Color	Soil Texture	Strat Status
7/29/2021	ST-JH-001-001	13 N 635269 3478366						Compact soils	Negative		0 to 40 40 to 60	10YR 8/4 7.5R 5/4	Loamy Fine Sand Silty Clay Loam	neg neg
7/29/2021	ST-JH-001-004	13 N 634758 3477859						Max ST Depth	Negative		0 to 40 40 to 80	10YR 8/4 5YR 6/4	Loamy Fine Sand Sandy Clay Loam	neg neg
7/29/2021	ST-JH-001-005	13 N 634252 3477517						Max ST Depth	Negative		0 to 40 40 to 50	10YR 8/4 7.5R 5/4	Loamy Fine Sand Silty Clay Loam	neg neg
7/29/2021	ST-JH-001-006	13 N 635085 3478083						Compact soils	Negative		0 to 40 40 to 60	10YR 8/4 7.5R 5/4	Loamy Fine Sand Silty Clay Loam	neg neg
7/29/2021	ST-JH-001-007	13 N 635249 3478198						Compact soils	Negative		0 to 40 40 to 60	10YR 8/4 7.5R 5/4	Loamy Fine Sand Silty Clay Loam	neg neg
7/29/2021	ST-JH-005-009	13 N 635269 3478366						Max ST Depth	Negative		0 to 40 40 to 80	10YR 8/4 5YR 6/4	Loamy Fine Sand Sandy Clay Loam	neg neg
7/29/2021	ST-JH-005-010	13 N 634931 3478132						Sterile Subsoil	Negative		0 to 20 20 to 50	10YR 8/4 5YR 6/4	Sand Sandy Clay Loam	neg neg
7/29/2021	ST-JH-005-011	13 N 634610 3477904						Sterile Subsoil	Negative		0 to 20 20 to 60	10YR 8/4 5YR 6/4	Sand Sandy Clay Loam	neg neg
7/29/2021	ST-JH-005-012	13 N 634272 3477668						Compact soils	Negative		0 to 5 5 to 35	10YR 8/4 5YR 6/4	Sand Sandy Clay Loam	neg neg
7/29/2021	ST-JH-007-013	13 N 634221 3477720						Compact soils	Negative		0 to 5 5 to 35	10YR 8/4 5YR 6/4	Sand Sandy Clay Loam	neg neg
7/29/2021	ST-JH-009-014	13 N 634200 3477773						Compact soils	Negative		0 to 5 5 to 35	10YR 8/4 5YR 6/4	Sand Sandy Clay Loam	neg neg
7/29/2021	ST-JH-011-015	13 N 634159 3477810						Compact soils	Negative		0 to 5 5 to 35	10YR 8/4 5YR 6/4	Sand Sandy Clay Loam	neg neg
7/29/2021	ST-JH-012-017	13 N 634052 3477777						Compact soils	Negative		0 to 5 5 to 35	10YR 8/4 5YR 6/4	Sand Sandy Clay Loam	neg neg
7/29/2021	ST-JH-013-016	13 N 634098 3477842						Compact soils	Negative		0 to 5 5 to 35	10YR 8/4 5YR 6/4	Sand Sandy Clay Loam	neg neg
7/29/2021	ST-JH-001-002	13 N 634418 3477633						Gravel Matrix	Negative		0 to 40	10YR 7/4	Coarse Sand	neg
7/29/2021	ST-JH-001-003	13 N 634586 3477741						Sterile Subsoil	Negative		0 to 40 40 to 50	10YR 7/4 7.5R 5/4	Coarse Sand Fine Sand	neg neg
7/29/2021	ST-SS-004-001	13 N 634282 3477649						Compact soils	Negative	Very compact silt with caliche streaking	0 to 40	5R 7/4	Silt	neg
7/29/2021	ST-SS-004-002	13 N 634428 3477753						Compact soils	Negative	Looser on top, quickly becoming very compact silt	0 to 55	5YR 7/4	Silt	neg
7/29/2021	ST-SS-004-003	13 N 634620 3477880						Compact soils	Negative	Caliche by 45 -50	0 to 50	5YR 7/4	Silt	neg
7/29/2021	ST-SS-004-004	13 N 634769 3477998						Compact soils	Negative	Fairly loose on top but quickly becoming very compact with caliche streaking.	0 to 45	5YR 7/6	Silt	neg
7/29/2021	ST-SS-004-005	13 N 634939 3478106						Compact soils	Negative	Right on W edge of an area capped with caliche, with very large discard pile of concrete chunks nearby.	0 to 45	5YR 7/6	Silt	neg
7/29/2021	ST-SS-004-006	13 N 635095 3478209						Compact soils	Negative	Very shallow before hitting caliche-streaked compact silt	0 to 30	5YR 7/6	Silt	neg
7/29/2021	ST-SS-004-007	13 N 635261 3478333						Sterile Subsoil	Negative	Lower lying area that apparently holds standing water occasionally. Surface white from caliche wash and cracked. Subsoil moist. Mosquitoes present. Considerable clay content starting around 60 cm.	0 to 75	5YR 6/6	Sandy Clay Loam	neg
7/29/2021	ST-SS-004-008	13 N 635429 3478447						Compact soils	Negative	Just east of very large ditch with numerous small frogs in dried up bottom. On this side of ditch ground may be scraped, disturbed. A small industrial operation of some sort located immediately adjacent.	0 to 45	5YR 7/4	Silt	neg
7/29/2021	ST-SS-006-001	13 N 635394 3478497						Sterile Subsoil	Negative	Near dirt road, area likely disturbed	0 to 25	5YR 6/6	Silt	neg
7/29/2021	ST-SS-006-002	13 N 635068 3478270						Compact soils	Negative		0 to 45	5YR 6/6	Silt	neg
7/29/2021	ST-SS-006-003	13 N 634733 3478045						Compact soils	Negative		0 to 45	5YR 6/6	Silt	neg
7/29/2021	ST-SS-006-004	13 N 634405 3477811						Compact soils	Negative		0 to 40	5YR 6/6	Silt	neg
7/29/2021	ST-SS-006-005	13 N 634170 3477640						Compact soils	Negative	Very shallow before hitting compact caliche-streaked silt	0 to 30	5YR 6/6	Silt	neg
7/29/2021	ST-SS-010-003	13 N 634674 3478138						Compact soils	Negative		0 to 50	5YR 6/6	Silt Loam	neg
7/29/2021	ST-SS-010-004	13 N 635007 3478366						Compact soils	Negative		0 to 45	5YR 6/6	Silt Loam	neg
7/29/2021	ST-SS-012-002	13 N 634969 3478409						Compact soils	Negative		0 to 45	5YR 6/6	Silt Loam	neg
7/29/2021	ST-SS-012-003	13 N 634637 3478191						Compact soils	Negative		0 to 45	5YR 6/6	Silt Loam	neg
7/29/2021	ST-SS-012-004	13 N 634303 3477963						Compact soils	Negative		0 to 45	5YR 6/6	Silt Loam	neg
7/29/2021	ST-SS-010-005	13 N 635329 3478596						Sterile Subsoil	Negative	East of deep ditch, exposed caliche on surface. Area retains water at times. Likely rather disturbed. Caliche streaking throughout.	0 to 45	5YR 6/4	Silt	neg
7/29/2021	ST-SS-012-001	13 N 635296 3478640						Sterile Subsoil	Negative	East of deep ditch, exposed caliche on surface. Area retains water at times. Likely rather disturbed. Caliche streaking throughout.	0 to 45	5YR 6/4	Silt	neg
7/30/2021	ST-SS-015-003	13 N 634675 3478314	Scrub	Scrub	80-90%	Erosion	51-75%	Compact soils	Negative	Relatively flat, sparse mesquite. Heavily compacted, impenetrable silt at 40cmbs. Area predominantly gravel at surface. Desert Pavement.	0 to 40	10YR 6/2	Silt Loam	neg
7/30/2021	ST-SS-016-002	13 N 634816 3478455	Scrub	Scrub	40-50%	Erosion	51-75%	Sterile Subsoil	Negative	Relatively flat, sparse mesquite. Eroded ground surface. Desert Pavement.	0 to 60 60 to 70	10YR 6/2 10YR 7/1	Silt Loam Silt	neg neg
7/30/2021	ST-SS-016-003	13 N 634485 3478227	Scrub	Scrub	40-50%	Erosion	51-75%	Sterile Subsoil	Negative	Relatively flat, sparse mesquite. Eroded ground surface.	0 to 50 50 to 60	10YR 6/2 10YR 7/1	Silt Loam Silt	neg neg
7/30/2021	ST-SS-019-004	13 N 634933 3478642	Scrub,Utility	Scrub	80-90%	Erosion	76-99%	Sterile Subsoil	Negative	Relatively flat, sparse mesquite. Adjacent to buried utility corridor, likely water line.	0 to 40 40 to 50	10YR 6/2 10YR 7/1	Silt Loam Silt Loam	neg neg
7/30/2021	ST-SS-022-001	13 N 635041 3478830	Scrub	Scrub	80-90%	Erosion	51-75%	Sterile Subsoil	Negative	Relatively flat, sparse mesquite and little ground cover vegetation. Impenetrable, compacted silt.	0 to 40	10YR 6/2	Silt Loam	neg
7/30/2021	ST-SS-022-002	13 N 634714 3478602	Scrub	Scrub	70-80%	Erosion	51-75%	Sterile Subsoil	Negative	Relatively flat, sparse mesquite.	0 to 60 60 to 70	7.5YR 5/6 10YR 6/2	Silt Loam Silt	neg neg
7/30/2021	ST-SS-022-003	13 N 634383 3478373	Scrub,Utility	Scrub	80-90%	Erosion	76-99%	Sterile Subsoil	Negative	Relatively flat, sparse mesquite.	0 to 40 40 to 50	10YR 6/2 10YR 7/1	Silt Loam Silt Loam	neg neg
7/30/2021	ST-SS-022-004	13 N 634056 3478144	Scrub	Scrub	80-90%	Erosion	51-75%	Sterile Subsoil	Negative	Relatively flat, sparse mesquite and little ground cover vegetation. Impenetrable, compacted silt.	0 to 40	10YR 6/2	Silt Loam	neg
7/30/2021	ST-SS-025-001	13 N 633845 3478105	Scrub	Scrub	80-90%	Erosion	51-75%	Sterile Subsoil	Negative	Relatively flat, sparse mesquite and little ground cover vegetation. Impenetrable, compacted silt.	0 to 40	10YR 6/2	Silt Loam	neg
7/30/2021	ST-SS-025-002	13 N 634173 3478332	Scrub	Scrub	80-90%	Erosion	51-75%	Sterile Subsoil	Negative	Relatively flat, sparse mesquite and little ground cover vegetation. Impenetrable, compacted silt.	0 to 40	10YR 6/2	Silt Loam	neg
7/30/2021	ST-SS-025-003	13 N 634503 3478560	Scrub	Scrub	80-90%	Erosion	51-75%	Sterile Subsoil	Negative	Relatively flat, sparse mesquite and little ground cover vegetation. Impenetrable, compacted silt.	0 to 40	10YR 6/2	Silt Loam	neg
7/30/2021	ST-SS-025-004	13 N 634831 3478788	Scrub	Scrub	80-90%	Erosion	51-75%	Sterile Subsoil	Negative	Relatively flat, sparse mesquite and little ground cover vegetation. Impenetrable, compacted silt.	0 to 40	10YR 6/2	Silt Loam	neg
7/30/2021	ST-SS-028-001	13 N 634939 3478976	Scrub	Scrub	80-90%	Erosion	51-75%	Sterile Subsoil	Negative	Relatively flat, sparse mesquite and little ground cover vegetation. Impenetrable, compacted silt.	0 to 40	10YR 6/2	Silt Loam	neg
7/30/2021	ST-SS-028-002	13 N 634612 3478747	Scrub	Scrub	80-90%	Erosion	51-75%	Sterile Subsoil	Negative	Relatively flat, sparse mesquite and little ground cover vegetation. Impenetrable, compacted silt.	0 to 40	10YR 6/2	Silt Loam	neg
7/30/2021	ST-SS-028-003	13 N 634281 3478521	Scrub	Scrub	80-90%	Erosion	51-75%	Sterile Subsoil	Negative	Relatively flat, sparse mesquite and little ground cover vegetation. Impenetrable, compacted silt.	0 to 40	10YR 6/2	Silt Loam	neg
7/30/2021	ST-SS-028-004	13 N 633959 3478282	Scrub,Utility	Scrub	80-90%	Erosion	76-99%	Sterile Subsoil	Negative	Relatively flat, sparse mesquite. Adjacent to buried utility corridor, likely water line.	0 to 40 40 to 50	10YR 6/2 10YR 7/1	Silt Loam Silt Loam	neg neg
7/30/2021	ST-SS-031-001	13 N 633738 3478252	Scrub,Utility	Scrub	80-90%	Erosion	76-99%	Sterile Subsoil	Negative	Relatively flat, sparse mesquite. Adjacent to berm.	0 to 40 40 to 50	10YR 6/2 10YR 7/1	Silt Loam Silt Loam	neg neg
7/30/2021	ST-SS-031-002	13 N 633965 3478407	Scrub,Utility	Scrub	80-90%	Erosion	76-99%	Compact soils	Negative	Relatively flat, sparse mesquite. No deposition. Compacted silt at base	0 to 40	10YR 6/2	Silt Loam	neg
7/30/2021	ST-SS-031-003	13 N 634393 3478702	Scrub	Scrub	80-90%	Erosion	51-75%	Compact soils	Negative	Relatively flat, sparse mesquite. No deposition. Compacted silt at base	0 to 40	10YR 6/2	Silt Loam	neg
7/30/2021	ST-SS-034-001	13 N 634838 3479122	Industrial,Scrub	Scrub	90-100%	Industrial	76-99%	Compact soils	Negative	Relatively flat, sparse mesquite. No deposition. Compacted silt at base. 10m southeast of berm. Area pushed and graded.	0 to 30	10YR 6/2	Silt Loam	neg
7/30/2021	ST-SS-034-002	13 N 634181 3478657	Industrial,Scrub	Scrub	90-100%	Industrial	76-99%	Compact soils	Negative	Relatively flat, sparse mesquite. No deposition. Compacted silt at base. 10m southeast of berm. Area pushed and graded.	0 to 30	10YR 6/2	Silt Loam	neg
7/30/2021	ST-SS-034-003	13 N 633891 3478448	Industrial,Scrub	Scrub	90-100%	Industrial	51-75%	Compact soils	Negative	Relatively flat, sparse mesquite. No deposition. Compacted silt at base. 15m southeast of berm.	0 to 50 50 to 60	7.5YR 5/3 10YR 5/2	Silt Loam Silt Loam	neg neg
7/30/2021	ST-SS-099-001	13 N 634961 3478499	Industrial,Scrub	Scrub	90-100%	Industrial	76-99%	Compact soils	Negative	Excavated near surface building material	0 to 30	10YR 6/2	Silt Loam	neg
7/30/2021	ST-SS-014-001	13 N 634193 3477949						Compact soils	Negative		0 to 50	5YR 7/6	Silt	neg
7/30/2021	ST-SS-014-002	13 N 634522 3478177						Compact soils	Negative	Caliche particularly strong on this one, starting about 40 cm.	0 to 50	5YR 7/6	Silt	neg
7/30/2021	ST-SS-014-003	13 N 634852 3478404						Compact soils	Negative		0 to 45	5YR 7/6	Silt	neg
7/30/2021	ST-SS-018-002	13 N 634782 3478506						Compact soils	Negative	Very heavy gravels on surface, shallow.	0 to 30	5YR 7/4	Silt	neg
7/30/2021	ST-SS-018-003	13 N 634451 3478276						Compact soils	Negative		0 to 50	5YR 7/4	Silt	neg
7/30/2021	ST-SS-018-004	13 N 634121 3478047						Compact soils	Negative	Some large gravels, up to about 10cm, rather shallow	0 to 45	5YR 7/4	Silt	neg
7/30/2021	ST-SS-021-001	13 N 633909 3478009						Compact soils	Negative		0 to 45	5YR 7/4	Silt	neg
7/30/2021	ST-SS-021-002	13 N 634240 3478232						Compact soils	Negative		0 to 45	5YR 7/4	Silt	neg
7/30/2021	ST-SS-021-003	13 N 634570 3478461						Compact soils	Negative	Offset slightly due to 2-track road. Fairly heavy gravels.	0 to 45	5YR 7/4	Silt	neg

7/30/2021	ST-SS-021-004	13 N 634897 3478690						Compact soils	Negative	Soil very dry and cloddy.	0 to 45	5YR 7/4	Silt	neg
7/30/2021	ST-SS-024-001	13 N 635003 3478880						Compact soils	Negative		0 to 45	5YR 7/4	Silt	neg
7/30/2021	ST-SS-024-002	13 N 634679 3478651						Compact soils	Negative		0 to 45	5YR 7/4	Silt	neg
7/30/2021	ST-SS-024-003	13 N 634346 3478426						Compact soils	Negative	Soil very dry and cloddy	0 to 45	5YR 7/4	Silt	neg
7/30/2021	ST-SS-024-004	13 N 634018 3478193						Compact soils	Negative	Soil very dry. Abundant gravels on surface and throughout test. Definitel caliche at 45.	0 to 45	5YR 7/4	Silt	neg
7/30/2021	ST-SS-026-001	13 N 633987 3478245						Compact soils	Negative	Soil very dry. Abundant gravels on surface and throughout test.Very shallow here.	0 to 30	5YR 7/4	Silt	neg
7/30/2021	ST-SS-026-002	13 N 634314 3478476						Compact soils	Negative	Soil very dry.	0 to 45	5YR 7/4	Silt	neg
7/30/2021	ST-SS-026-003	13 N 634643 3478701						Compact soils	Negative	Soil very dry.	0 to 45	5YR 7/4	Silt	neg
7/30/2021	ST-SS-026-004	13 N 634972 3478934						Compact soils	Negative	Soil very dry.	0 to 30	5YR 7/4	Silt	neg
7/30/2021	ST-SS-030-001	13 N 634901 3479030						Compact soils	Negative	Soil very dry.	0 to 50	5YR 7/4	Silt	neg
7/30/2021	ST-SS-030-002	13 N 634577 3478799						Compact soils	Negative	Soil very dry.	0 to 45	5YR 7/4	Silt	neg
7/30/2021	ST-SS-030-003	13 N 634244 3478569						Compact soils	Negative	Soil very dry.	0 to 45	5YR 7/4	Silt	neg
7/30/2021	ST-SS-030-004	13 N 633918 3478344						Compact soils	Negative	Soil very dry.	0 to 45	5YR 7/4	Silt	neg
7/30/2021	ST-SS-033-001	13 N 634034 3478527						Compact soils	Negative	Soil very dry.	0 to 45	5YR 7/4	Silt	neg
7/30/2021	ST-SS-033-002	13 N 634693 3478985						Compact soils	Negative	Soil very dry. This one went surprisingly deep before encountering caliche granules. Close to large ditch to N, approx. 45 m,	0 to 75	5YR 7/4	Silt	neg
7/30/2021	ST-SS-036-001	13 N 634460 3478943						Compact soils	Negative		0 to 55	5YR 7/4	Silt	neg
7/30/2021	ST-SS-036-002	13 N 633809 3478481						Compact soils	Negative	Lower lying area, surface clearly shallowly inundated at times with cracked, peeling soil. Soil moister and grading into denser clay with depth, but essentially uncaring in color.	0 to 70	5YR 7/4	Silty Clay Loam	neg
7/30/2021	ST-SS-014-004	13 N 635180 3478634						Compact soils	Negative	Lower lying area, white caliche wash on surface. Getting into moderately dense clay by 60cm.	0 to 60	5YR 5/6	Silt Loam	neg
7/30/2021	ST-SS-018-001	13 N 635109 3478732						Compact soils	Negative	Lower lying area, white caliche wash on surface. Getting into moderately dense clay by 60cm. Soil much drier here and breaking into small, hard granules about 1cm wide	0 to 60	5YR 5/6	Silt Loam	neg
7/30/2021	ST-BJ-020-020	13 N 634746 3478551						Sterile Subsoil	Negative	Heavily compacted bottom strat with caliche.	0 to 30 30 to 40	10YR 4/4 10YR 6/3	Loamy Sand Silty Clay Loam	neg neg
7/30/2021	ST-BJ-023-022	13 N 634865 3478740						Sterile Subsoil	Negative	Hard packed second strat.	0 to 10 10 to 30	10YR 6/3 10YR 7/3	Silt Loam Silty Clay Loam	neg neg
7/30/2021	ST-BJ-023-023	13 N 634537 3478511						Sterile Subsoil	Negative	Hard packed second strat.	0 to 35 35 to 45	10YR 6/3 10YR 7/3	Silt Loam Silty Clay Loam	neg neg
7/30/2021	ST-BJ-023-024	13 N 634207 3478284						Sterile Subsoil	Negative	Hard packed second strat.	0 to 10 10 to 35	10YR 6/3 10YR 7/3	Silt Loam Silty Clay Loam	neg neg
7/30/2021	ST-BJ-023-025	13 N 633880 3478055						Sterile Subsoil	Negative	Hard packed second strat.	0 to 10 10 to 35	10YR 6/3 10YR 7/3	Silt Loam Silty Clay Loam	neg neg
7/30/2021	ST-BJ-027-027	13 N 634136 3478380						Sterile Subsoil	Negative	Hard packed second strat.	0 to 10 10 to 35	10YR 6/3 10YR 7/3	Silt Loam Silty Clay Loam	neg neg
7/30/2021	ST-BJ-027-028	13 N 634467 3478608						Sterile Subsoil	Negative	Compact strat 2.	0 to 20 20 to 30	10YR 6/3 10YR 7/3	Silt Loam Silty Clay Loam	neg neg
7/30/2021	ST-BJ-027-029	13 N 634794 3478837						Sterile Subsoil	Negative	Compact strat two	0 to 20 20 to 30	10YR 6/3 10YR 7/3	Silt Loam Silty Clay Loam	neg neg
7/30/2021	ST-BJ-029-030	13 N 634762 3478887						Sterile Subsoil	Negative	Compact strat two	0 to 20 20 to 30	10YR 6/3 10YR 7/3	Silt Loam Silty Clay Loam	neg neg
7/30/2021	ST-BJ-029-031	13 N 634435 3478659						Sterile Subsoil	Negative	Compact strat two	0 to 20 20 to 30	10YR 6/3 10YR 7/3	Silt Loam Silty Clay Loam	neg neg
7/30/2021	ST-BJ-029-032	13 N 634106 3478430						Sterile Subsoil	Negative	Compact strat two	0 to 30 30 to 40	10YR 5/4 10YR 7/3	Silt Loam Silty Clay Loam	neg neg
7/30/2021	ST-BJ-031-031	13 N 634205 3478611						Sterile Subsoil	Negative	Compact strat two	0 to 20 20 to 30	10YR 6/3 10YR 7/3	Silt Loam Silty Clay Loam	neg neg
7/30/2021	ST-BJ-031-032	13 N 634860 3479077						Sterile Subsoil	Negative	Compact strat two	0 to 15 30 to 30	10YR 6/3 10YR 7/3	Silt Loam Silty Clay Loam	neg neg
7/31/2021	ST-SS-000-500	13 N 633922 3478308						Compact soils	Negative	Site 1	0 to 45	5YR 6/6	Silt	neg
7/31/2021	ST-SS-000-501	13 N 633955 3478295						Compact soils	Negative	Site 1.Very compact.	0 to 35	5YR 6/6	Silt	neg
7/31/2021	ST-SS-000-502	13 N 633968 3478327						Compact soils	Negative	Site 1.Very compact.	0 to 35	5YR 6/6	Silt	neg
7/31/2021	ST-SS-000-503	13 N 633886 3478276						Compact soils	Negative	Site 1	0 to 45	5YR 6/6	Silt	neg
7/31/2021	ST-SS-000-504	13 N 633829 3478304						Compact soils	Negative	Site 1. Soil moister and deeper directly alongside low berm.	0 to 65	5YR 6/6	Silt	neg
7/31/2021	ST-SS-000-505	13 N 633803 3478279						Compact soils	Negative	Site 1. Soil moister and deeper directly alongside low berm.	0 to 65	5YR 6/6	Silt	neg
7/29/2021	ST-BJ-002-001	13 N 634319 3477596						Max ST Depth	Negative	Within 5 m of berm. Surface disturbance present.	0 to 80	10YR 5/3	Sand	neg
7/29/2021	ST-SS-003-001	13 N 634223 3477563	Industrial	Scrub	70-80%	Grading	51-75%	Sterile Subsoil	Negative	Graded property relatively clear of vegetation. Heavily compacted 3rd strat.	0 to 16 16 to 48 48 to 63	7.5YR 6/3 7.5YR 5/4 7.5YR 7/1	Silt Loam Silt Silt	neg neg neg
7/29/2021	ST-SS-003-002	13 N 634383 3477679	Industrial	Scrub	70-80%	Grading	51-75%	Sterile Subsoil	Negative	Graded property relatively clear of vegetation. Heavily compacted 3rd strat. Paralleling berm.	0 to 20 20 to 50 50 to 60	7.5YR 6/3 7.5YR 5/4 7.5YR 7/1	Silt Loam Silt Silt	neg neg neg
7/29/2021	ST-SS-003-003	13 N 634551 3477796	Industrial	Scrub	70-80%	Grading	51-75%	Sterile Subsoil	Negative	Graded property relatively clear of vegetation. Heavily compacted 2nd strat. No apparent topsoil. Paralleling berm.	0 to 40 40 to 50	7.5YR 5/4 7.5YR 7/1	Silt Silt	neg neg
7/29/2021	ST-SS-003-004	13 N 634709 3477910	Industrial	Scrub	70-80%	Grading	51-75%	Sterile Subsoil	Negative	Graded property relatively clear of vegetation. Heavily compacted 2nd strat. No apparent topsoil. Paralleling berm.	0 to 40 40 to 50	7.5YR 5/4 7.5YR 7/1	Silt Silt	neg neg
7/29/2021	ST-SS-003-005	13 N 634878 3478021	Industrial	Scrub	70-80%	Grading	51-75%	Sterile Subsoil	Negative	Graded property relatively clear of vegetation. Appears to be on strat to 95 cmbs. Paralleling berm.	0 to 95	7.5YR 5/6	Silt	neg
7/29/2021	ST-SS-003-006	13 N 635041 3478135	Industrial	Scrub	70-80%	Grading	51-75%	Sterile Subsoil	Negative	Graded property relatively clear of vegetation. Area predominantly gravel at surface down to 15cmbs	0 to 15 15 to 54 54 to 60	10YR 6/2 7.5YR 5/2 7.5YR 4/3	Silt Silt Loam Silt	neg neg neg
7/29/2021	ST-SS-003-007	13 N 635206 3478247	Industrial	Scrub	70-80%	Grading	51-75%	Sterile Subsoil	Negative	Graded property relatively clear of vegetation. Appears to be on strat to 70 cmbs. Paralleling berm.	0 to 70 70 to 85	7.5YR 5/6 10YR 6/2	Silt Silty Clay Loam	neg neg
7/29/2021	ST-SS-003-008	13 N 635366 3478366	Industrial	Scrub	70-80%	Grading	51-75%	Sterile Subsoil	Negative	Graded property relatively clear of vegetation. Appears to be on strat to 70 cmbs. Paralleling berm.	0 to 70 70 to 85	7.5YR 5/6 10YR 6/2	Silt Silty Clay Loam	neg neg
7/29/2021	ST-SS-008-001	13 N 635363 3478550	Industrial	Scrub	70-80%	Grading	51-75%	Sterile Subsoil	Negative	Graded property relatively clear of vegetation.	0 to 60 60 to 75	7.5YR 5/6 10YR 6/2	Silt Silty Clay Loam	neg neg
7/29/2021	ST-SS-008-002	13 N 635034 3478317	Industrial	Scrub	70-80%	Grading	51-75%	Compact soils	Negative	Graded property relatively clear of vegetation.	0 to 30	7.5YR 5/6	Silt	neg
7/29/2021	ST-SS-008-003	13 N 634705 3478091	Industrial	Scrub	70-80%	Grading	51-75%	Compact soils	Negative	Graded property relatively clear of vegetation.	0 to 40 40 to 50	10YR 6/2 7.5YR 7/1	Silt Silt	neg neg
7/29/2021	ST-SS-008-004	13 N 634376 3477863	Industrial	Scrub	70-80%	Grading	51-75%	Compact soils	Negative	Graded property relatively clear of vegetation.	0 to 40	10YR 6/2	Silt	neg
7/29/2021	ST-SS-008-005	13 N 634137 3477687	Industrial	Scrub	70-80%	Grading	51-75%	Sterile Subsoil	Negative	Graded property relatively clear of vegetation.	0 to 60 60 to 70	7.5YR 5/6 10YR 6/2	Silt Silty Clay Loam	neg neg
7/29/2021	ST-SS-009-003	13 N 634858 3478225	Industrial	Scrub	70-80%	Grading	51-75%	Sterile Subsoil	Negative	Graded property relatively clear of vegetation. Adjacent to concrete irrigation channel.	0 to 50 50 to 60	7.5YR 5/6 10YR 6/2	Silt Silty Clay Loam	neg neg
7/29/2021	ST-SS-009-004	13 N 635185 3478458	Industrial	Scrub	70-80%	Grading	51-75%	Compact soils	Negative	Graded property relatively clear of vegetation. Adjacent to concrete irrigation channel.	0 to 50	7.5YR 5/6	Silt	neg
7/29/2021	ST-SS-011-001	13 N 635152 3478508	Industrial	Scrub	70-80%	Grading	51-75%	Compact soils	Negative	Graded property relatively clear of vegetation. Heavily compacted silt.	0 to 50	7.5YR 5/6	Silt	neg
7/29/2021	ST-SS-011-002	13 N 634821 3478280	Industrial	Scrub	70-80%	Grading	51-75%	Compact soils	Negative	Graded property relatively clear of vegetation. Heavily compacted silt. Caliche fragments near terminal depth.	0 to 50	7.5YR 5/6	Silt	neg
7/29/2021	ST-SS-011-003	13 N 634498 3478055	Industrial	Scrub	70-80%	Grading	51-75%	Compact soils	Negative	Graded property relatively clear of vegetation. Heavily compacted silt. Caliche fragments near terminal depth.	0 to 50	7.5YR 5/6	Silt	neg
7/29/2021	ST-BJ-002-002	13 N 634483 3477707						Sterile Subsoil	Negative	Offset to avoid berm. Hoban series soils. No horizon near 40.	0 to 40 40 to 50	10YR 5/3 10YR 7/4	Sand Sandy Clay Loam	neg neg
7/29/2021	ST-BJ-002-003	13 N 634653 3477825						Sterile Subsoil	Negative	Offset to avoid berm. Calcification B horizon at 25 cmbs	0 to 25 25 to 35	10YR 5/4 10YR 7/3	Sand Sandy Clay Loam	neg neg
7/29/2021	ST-BJ-002-003	13 N 634811 3477936						Sterile Subsoil	Negative	Offset to avoid berm	0 to 20 20 to 35	10YR 5/4 10YR 7/3	Sandy Loam Sandy Clay Loam	neg neg
7/29/2021	ST-BJ-002-005	13 N 634978 3478051						Max ST Depth	Negative	Offset from berm. No soil change.	0 to 80	10YR 6/3	Sandy Loam	neg
7/29/2021	ST-BJ-002-006	13 N 635139 3478161						Sterile Subsoil	Negative	Offset to avoid berm. Soil likely disturbed. Be horizon at 60 cmbs.	0 to 60 60 to 70	10YR 6/3 10YR 7/3	Loamy Sand Sandy Clay Loam	neg neg
7/29/2021	ST-BJ-002-007	13 N 635309 3478285						Sterile Subsoil	Negative	Off set to avoid berm. Disturbed. Silty clay loam at surface. Eroded area.	0 to 35 35 to 45	10YR 5/3 10YR 7/3	Sandy Clay Loam Silt Loam	neg neg
7/29/2021	ST-BJ-002-008	13 N 635465 3478396						Heavy Disturbance	Negative	Near installed, unused gas line. Disturbed.	0 to 50	10YR 5/4	Silty Clay Loam	neg
7/29/2021	ST-BJ-007-009	13 N 635213 3478411						Max ST Depth	Negative		0 to 80	10YR 6/3	Silt Loam	neg
7/29/2021	ST-BJ-007-010	13 N 634890 3478179				Grading	Completely Destroyed	Max ST Depth	Negative	On man made berm potentially associated with nearby structure rubble. No cultural materials in STP.	0 to 80	10YR 7/4	Silt	neg
7/29/2021	ST-BJ-007-011	13 N 634557 3477952						Sterile Subsoil	Negative	Disturbed. Mixed soils. Gravel matrix at 45 cmbs.	0 to 45	10YR 5/3	Silt Loam	neg
7/29/2021	ST-BJ-009-013	13 N 634526 3477995						Caliche gravel impasse.	Negative	Within 10 m of trough and berm bisecting the property.	0 to 30	10YR 7/3	Silty Clay Loam	neg
7/30/2021	ST-SS-015-001	13 N 634016 3477858						Sterile Subsoil	Negative	Relatively flat, sparse mesquite. Adjacent to structure	0 to 60 60 to 70	7.5YR 5/6 10YR 6/2	Silt Loam Silt	neg neg
7/30/2021	ST-SS-015-002	13 N 634343 3478085	Scrub	Scrub	80-90%	Erosion	51-75%	Compact soils	Negative	Relatively flat, sparse mesquite. Heavily compacted, impenetrable silt at 40cmbs	0 to 40	10YR 6/2	Silt Loam	neg
7/30/2021	ST-SS-015-004	13 N 635002 3478540	Scrub	Scrub	80-90%	Erosion	51-75%	Compact soils	Negative	Relatively flat, sparse mesquite. Heavily compacted, impenetrable silt at 40cmbs	0 to 40	10YR 6/2	Silt Loam	neg

7/30/2021	ST-SS-016-001	13 N 635144 3478684	Scrub	Scrub	40-50%	Erosion	51-75%	Sterile Subsoil	Negative	Relatively flat, sparse mesquite. More ground cover vegetation.	0 to 60 60 to 70	7.5YR 5/6 10YR 6/2	Silt Loam Silt	neg neg
7/30/2021	ST-SS-016-004	13 N 634159 3477998	Scrub	Scrub	70-80%	Erosion	51-75%	Sterile Subsoil	Negative	Relatively flat, sparse mesquite.	0 to 60 60 to 70	7.5YR 5/6 10YR 6/2	Silt Loam Silt	neg neg
7/30/2021	ST-SS-019-001	13 N 633947 3477960	Industrial,Scrub	Scrub	80-90%	Erosion	51-75%	Compact soils	Negative	Relatively flat, sparse mesquite. Heavily compacted, impenetrable silt at 30cmbs. Adjacent to structure. Area graded. Push piles to northwest.	0 to 30	10YR 6/2	Silt Loam	neg
7/30/2021	ST-SS-019-002	13 N 634273 3478183	Industrial,Scrub	Scrub	80-90%	Erosion	51-75%	Compact soils	Negative	Relatively flat, sparse mesquite. Heavily compacted, impenetrable silt at 30cmbs. Adjacent to partially cleared two track.	0 to 30	10YR 6/2	Silt Loam	neg
7/30/2021	ST-SS-019-003	13 N 634606 3478414	Scrub,Utility	Scrub	80-90%	Erosion	76-99%	Sterile Subsoil	Negative	Relatively flat, sparse mesquite. Adjacent to buried utility corridor, likely water line.	0 to 40 40 to 50	10YR 6/2 10YR 7/1	Silt Loam Silt Loam	neg neg
7/30/2021	ST-BJ-013-014	13 N 634377 3478032						Sterile Subsoil	Negative	Hoban soil series. Surface soil consistent with Bk horizon.	0 to 40	10YR 6/3	Silt Loam	neg
7/30/2021	ST-BJ-013-015	13 N 634709 3478266						Sterile Subsoil	Negative	Hoban soil series.	0 to 20 20 to 35	10YR 6/3 10YR 7/3	Silt Loam Silty Clay Loam	neg neg
7/30/2021	ST-BJ-013-016	13 N 635033 3478489						Sterile Subsoil	Negative	Hoban soil series.	0 to 15 15 to 30	10YR 6/3 10YR 7/3	Silt Loam Silty Clay Loam	neg neg
7/30/2021	ST-BJ-017-016	13 N 634641 3478364						Sterile Subsoil	Negative	Caliche present in soil. Very compact silt. Caliche gravels and cobbles (1-5 cm) on surface.	0 to 10 10 to 30	10YR 6/3 10YR 7/3	Silt Loam Silty Clay Loam	neg neg
7/30/2021	ST-BJ-017-016	13 N 634968 3478595						Compact soils	Negative	Caliche present in soil. Very compact silt.	0 to 45	10YR 6/3	Silt Loam	neg
7/30/2021	ST-BJ-017-017	13 N 633982 3477908						Sterile Subsoil	Negative		0 to 40 40 to 50	7.5YR 5/4 10YR 7/3	Silt Loam Silty Clay Loam	neg neg
7/30/2021	ST-BJ-020-018	13 N 634091 3478096						Sterile Subsoil	Negative		0 to 5 5 to 30	10YR 6/3 10YR 7/3	Silt Silty Clay Loam	neg neg
7/30/2021	ST-BJ-020-019	13 N 634418 3478320						Sterile Subsoil	Negative		0 to 5 5 to 40	10YR 6/3 10YR 7/3	Silt Silty Clay Loam	neg neg
7/30/2021	ST-BJ-020-021	13 N 635073 3478778						Sterile Subsoil	Negative	Heavily compacted bottom strat with caliche.	0 to 20 20 to 40	10YR 6/3 10YR 6/3	Loamy Sand Silty Clay Loam	neg neg
7/30/2021	ST-BJ-027-026	13 N 633806 3478146						Sterile Subsoil	Negative	Hard packed second strat.	0 to 10 10 to 35	10YR 6/3 10YR 7/3	Silt Loam Silty Clay Loam	neg neg
7/30/2021	ST-BJ-029-033	13 N 633779 3478202						Sterile Subsoil	Negative	Compact strat two	0 to 30 30 to 40	10YR 5/4 10YR 7/3	Silt Loam Silty Clay Loam	neg neg

Appendix B:

Isolated Find Log

Isolated Find	Historic/Prehistoric	Artifact Type	Artifact Count	Notes
SS50-1	Historic	Tobacco Can	1	Lid Marked "NET WT, 1 5/8 OZ"
SS99-6	Prehistoric	Lithic	1	Chert Debitage
BJ50-1	Historic	Metal Can	1	Metal Can
BJ20-1	Historic	Historic Scatter	4	Metal Cans mixed with modern material including reflective road markers and ceramic road dots
BJ50-3	Historic	Tobacco Can	1	Rusted Tobacco Tin
BJ50-2	Historic	Miscellaneous Metal	1	Fuel Can
BJ99-2	Prehistoric	Lithic	1	Chert Debitage
SJ99-2	Prehistoric	Lithic	1	Chert Debitage
SJ99-3	Prehistoric	Lithic	1	White Chert Debitage
SJ99-1	Historic	Miscellaneous Metal	1	Metal Coupling
SS33-15	Prehistoric	Lithic	1	Secondary Chert Debitage
SS26-10	Historic	Miscellaneous Metal	1	Fuel Can
SS15-3	Prehistoric	Lithic	1	Chert Debitage
SS15-2	Prehistoric	Lithic	1	Chert Debitage
SJ25-5	Prehistoric	Lithic	1	Quartzite Debitage
BJ23-2	Not Cultural	Not Cultural	NA	Battered Stone
SS18-9	Prehistoric	Lithic	1	Chert Debitage
SS14-8	Prehistoric	Lithic	1	Quartzite Debitage
SS14-7	Prehistoric	Lithic	1	Chert Debitage
SS14-6	Historic	Miscellaneous Metal	1	Unknown Metal
SS14-5	Prehistoric	Lithic	1	Tertiary Chert Debitage
SS14-4	Prehistoric	Lithic	1	Secondary Chert Debitage
SS14-3	Prehistoric	Lithic	1	Secondary Chert Debitage
SS12-2	Historic	Horseshoe	1	Marked with Diamond Brand on Back
SS4-1	Prehistoric	Lithic	1	Secondary Chert Debitage
SS12-1	Historic	Horseshoe	1	Horseshoe

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Archaeological Survey Correspondence

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April 23, 2021

Mr. Drew Sitters
Texas Historical Commission
P.O. Box 12276
Austin, TX 78711
[redacted]

Ms. Pamela Opiela
Texas Historical Commission
P.O. Box 12276
Austin, TX 78711
[redacted]

Ms. Eva Osborne
Texas Historical Commission
P.O. Box 12276
Austin, TX 78711
[redacted]

Re: Proposed Permian Landfill TCEQ Permit Application, Reeves County, Texas

Dear Mr. Sitters, Ms. Opiela, and Ms. Osborne:

On behalf of West Sun Tex, LLC (WST), Daniel B. Stephens & Associates, Inc. (DBS&A) is preparing a permit application to be submitted to the Texas Commission on Environmental Quality (TCEQ) for a proposed Type I municipal solid waste (MSW) facility, called the WST Permian Landfill, in north-central Reeves County. The facility property is located approximately 5 miles west-northwest of Pecos, Texas, at the intersection of County Road (CR) 408 and CR 415. The site latitude and longitude are 31.432400 and –103.585408.

The subject property has already been permitted as an oil and gas waste disposal facility by the Railroad Commission of Texas; however, WST is proposing to permit half of the 440-acre property as an MSW landfill. The disposal footprint will be approximately 192 acres. A total of 12 landfill cells are planned; each will be approximately 390 feet wide by 960 feet long (see enclosed drawings). The maximum excavation depth will be 30 feet. Nothing will be demolished as part of the project's construction.

This letter is being sent to the Texas Historical Commission (THC) to request a project review per 30 TAC 330.61(o). The TCEQ requires that the MSW landfill application include the locations of all archaeological sites, historical sites, and sites with aesthetic quality adjacent to the facility, as well as a Texas Historical Commission review letter documenting compliance with the Natural Resources Code, Chapter 191, Texas Antiquities Code. A THC request for

State Historic Preservation Officer (SHPO) consultation form has been included with this letter (Attachment 1). The proposed project does not have federal involvement, and is on private property.

The proposed facility is located within the Pecos River Basin, which is a tributary of the Rio Grande. There are no major surface water features located in the vicinity of the site; however, numerous ditches and canals flow through the vicinity and carry surface drainage toward the Pecos River, which is located approximately 6 miles east of the proposed facility location. Reeves County is located in the southwestern portion of the broad structural Permian Basin that is present in much of west Texas, eastern New Mexico, and parts of Oklahoma and Kansas. The geologic formations exposed in Reeves County range in age from the Pecos Valley alluvium of Quaternary and Tertiary age to the Rustler formation of late Permian age. The Natural Resources Conservation Service (NRCS) completed a custom soils report in August 2014, which identified five soil units at the project site, including Hoban silty clay loam, Hodgins silty clay loam, Orla clay loam, Reeves clay loam, and Upton gravelly loam.

We have included a general location map (Figure 1) that shows the location of the proposed facility. A topographic map is also provided (Figure 2). The GIS topography coverage used in Figure 2 is the "USGS National Map," which matches the U.S. Geological Survey (USGS) 7.5-minute GeoPDFs. Pecos West is the USGS 7.5-minute quadrangle map that includes the project area. There is one structure on the property, a barn. Three aerial photograph figures are also provided. Figure 3 shows the property, proposed landfill cells, and barn location. Figure 4 zooms in on the area around the barn in the same 2020 image, while Figure 5 shows the same area in April 1969. The barn's construction date is unknown; however, the structure is visible on a 1969 aerial photograph, so it is at least 52 years old. This barn will not be disturbed by the proposed project. Attachment 2 includes a series of photographs taken on the subject property, and the photograph locations and directions are noted on Figure 2.

The area of potential effects (APE) is defined as the geographic area where an undertaking may directly or indirectly cause alterations in the character or use of historic properties. Records on file with the Texas Historic Sites Atlas for Reeves County were reviewed. There were 39 records; none of the associated sites are located in the vicinity of the proposed project. No historic properties have been identified near the subject property; therefore, no alterations in the character or use of historic properties are anticipated to result from the proposed project. To be conservative, an APE of 1 mile has been set around the subject property, as shown on Figure 3.

Per 30 TAC 39.501, public notice of the landfill permit application is required. Once the application has been turned in, TCEQ will mail notice to the state senator and state representative for the area where the facility will be located (Districts 19 and 74, respectively). Once TCEQ determines that the application is administratively complete, notice of receipt of application and intent to obtain permit will be published in the Texas Register, and will be mailed to the county judge and health authority for Reeves County. Public notice will be filed in a newspaper published in the county, and letters will be mailed to the owners of all property located within

¼ mile. A public meeting and/or public hearing may be held depending on the public interest and the comments TCEQ receives on the application. Letters are also being mailed to the Federal Aviation Administration (FAA) and Pecos Municipal Airport, Permian Basin Regional Planning Commission, Texas Department of Transportation, Texas Parks and Wildlife Department, U.S. Fish and Wildlife Service, and U.S. Army Corps of Engineers.

Please contact me at (505) 822-9400 if you have any questions about the attached information.

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES, INC.

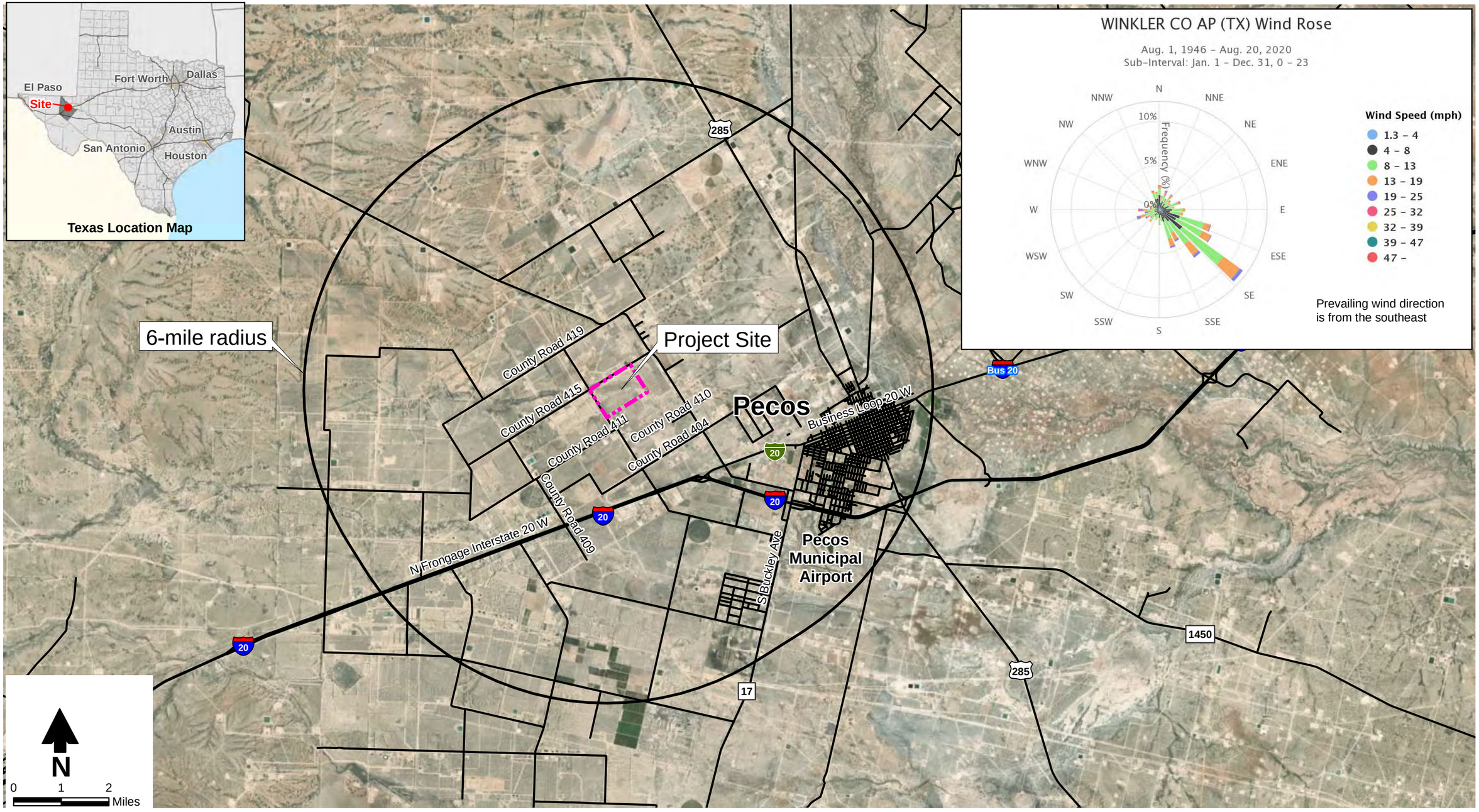
Gundar Peterson, P.E.
Vice President

AE/rpf
Attachments

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Figures

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Explanation

Site

Texas Department of Transportation road

Image source: Maxar, 3/26/2020
Road source: Texas Department of Transportation (http://gis-txdot.opendata.arcgis.com/)
Wind data: Midwestern Regional Climate Center (MRCC) (https://mrcc.illinois.edu/CLIMATE/)

S:\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\GIS\MXDS\F01_GENERAL LOCATION MAP_6MI_BUFFER.MXD

Daniel B. Stephens & Associates, Inc.
8/25/2020 JN DB20.1166

WEST SUN TEX PERMIT APPLICATION

General Location Map

Figure 1



x Photo 2, South

x Photo 1, East

Photo 8, North x

x Photo 3, North and Photo 4, West

x Photo 7, Southwest

Photo 6, North x

x Photo 5, East

TEXAS

CO RD 416
CO RD 415
CO RD 405
CO RD 419
CO RD 415
CO RD 408
CO RD 411
CO RD 404
RANCH RD 2119
HOG RD
WESTERN AVE
EVERGREEN DR
BUS 20
20
2700
2650
2650

N

0 1000 2000 Feet

Explanation

Site

Image source: Esri, et al., 2020

Pecos West is the USGS 7.5 minute quadrangle map that includes the project area.

WEST SUN TEX PERMIT APPLICATION

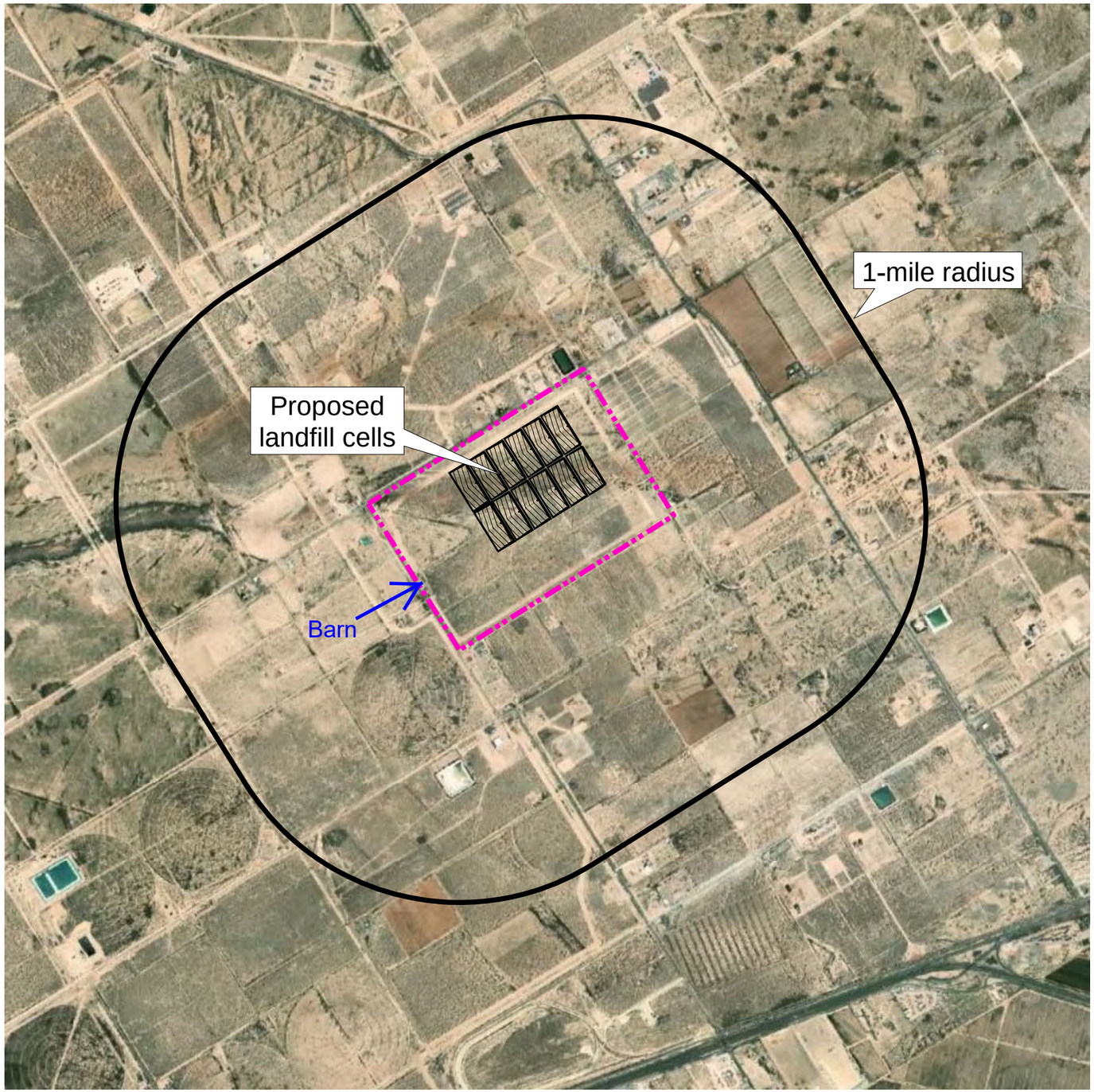
Topographic Map

Figure 2

Daniel B. Stephens & Associates, Inc.

8/25/2020 JN DB20.1166

S:\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\GIS\MXDS\F02_TOPOGRAPHIC_MAP.MXD



The area of potential effect (APE) has been set as within 1-mile of the property.

N

0 1200 2400
Feet

Explanation

Site location

Image source: Maxar, 3/26/2020

S:\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\GIS\MXDS\F04_AERIAL_PHOTOGRAPHY.MXD

Daniel B. Stephens & Associates, Inc.
8/28/2020 JN DB20.1166

WEST SUN TEX PERMIT APPLICATION
Aerial Photography

Figure 3



Image source: Maxar, 3/26/2020

WEST SUN TEX PERMIT APPLICATION

March 26, 2020 Aerial Photography

Daniel B. Stephens & Associates, Inc.

3/3/2021

JN DB20.1166

Figure 4

S:\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\GIS\MXDS\HISTORICAL_AERIAL_PHOTOGRAPHY.MXD

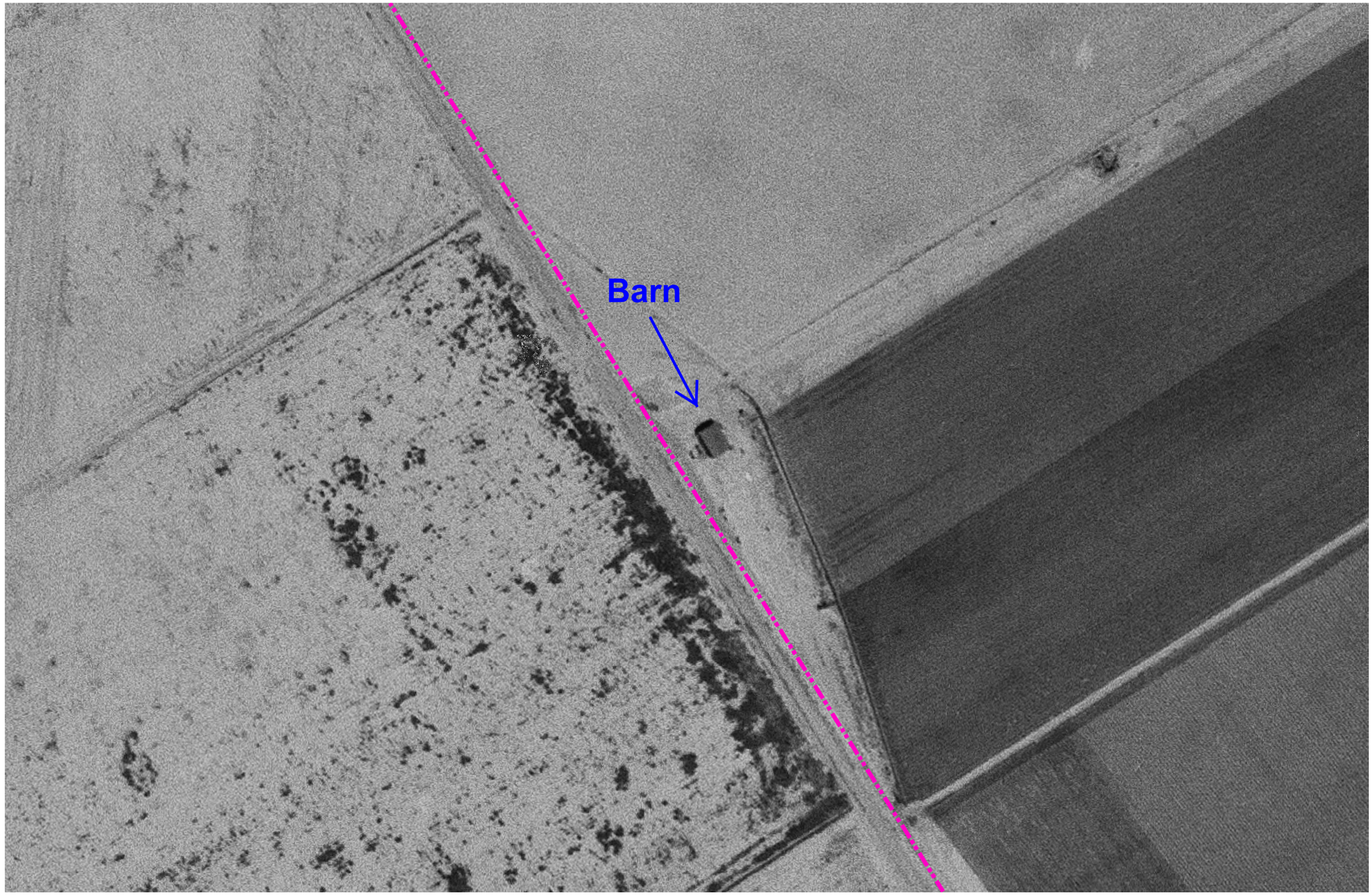


Image source: Maxar, 3/26/2020

S:\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\GIS\MXDS\HISTORICAL_AERIAL_PHOTOGRAPHY.MXD

Daniel B. Stephens & Associates, Inc.
3/3/2021
JN DB20.1166

WEST SUN TEX PERMIT APPLICATION
April 22, 1969 Aerial Photography

Figure 5

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Attachment 1

SHPO Consultation Request Form

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TEXAS HISTORICAL COMMISSION

REQUEST FOR SHPO CONSULTATION:
Section 106 of the National Historic Preservation Act and/or the Antiquities Code of Texas

Please see instructions for completing this form and additional information on Section 106 and Antiquities Code consultation on the Texas Historical Commission website at http://www.thc.state.tx.us/crm/crmsend.shtml.

☒ This is a new submission.

☐ This is additional information relating to THC tracking number(s): _____

Project Information

PROJECT NAME
WST Permian Landfill

PROJECT ADDRESS	PROJECT CITY	PROJECT ZIP CODE(S)
E, NE, and SE of the intersection of CR 408 and CR 415	**Pecos**	**79772**

PROJECT COUNTY OR COUNTIES
Reeves

PROJECT TYPE (Check all that apply)

- ☐ Road/Highway Construction or Improvement
- ☒ Site Excavation
- ☐ Utilities and Infrastructure
- ☒ New Construction
- ☐ Repair, Rehabilitation, or Renovation of Structure(s)
- ☐ Addition to Existing Structure(s)
- ☐ Demolition or Relocation of Existing Structure(s)
- ☐ None of these

BRIEF PROJECT DESCRIPTION: Please explain the project in one or two sentences. More details should be included as an attachment to this form.
A new Type I municipal solid waste facility is proposed, approximately 5 miles west-northwest of Pecos, Texas. TCEQ requires that the landfill permit application include the location of all archaeological sites, historical sites, and sites with aesthetic quality adjacent to the facility, as well as a THC review letter documenting compliance with the Natural Resources Code, Chapter 191, Texas Antiquities Code. The project does not have federal involvement, and is on private property.

Project Contact Information

PROJECT CONTACT NAME	TITLE	ORGANIZATION	
Gundar Peterson, P.E.	**Vice President**	**DBS&A**	
ADDRESS	CITY	STATE	ZIP CODE
6020 Academy Rd. NE, Suite 100	**Albuquerque**	**NM**	**87109**
PHONE	EMAIL		
(505) 822-9400	[redacted]		

Federal Involvement (Section 106 of the National Historic Preservation Act)

Does this project involve approval, funding, permit, or license from a federal agency?

☒ Yes (Please complete this section) ☐ No (Skip to next section)

FEDERAL AGENCY	FEDERAL PROGRAM, FUNDING, OR PERMIT TYPE
Please see project description above re: required review.	
CONTACT PERSON	PHONE
ADDRESS	EMAIL

State Involvement (Antiquities Code of Texas)

Does this project occur on land or property owned by the State of Texas or a political subdivision of the state?

☒ Yes (Please complete this section) ☐ No (Skip to next section)

CURRENT OR FUTURE OWNER OF THE PUBLIC LAND
Please see project description above re: required review.

CONTACT PERSON	PHONE
ADDRESS	EMAIL

Identification of Historic Properties: Archeology

Does this project involve ground-disturbing activity?

☑ Yes (Please complete this section) ☐ No (Skip to next section)

Describe the nature of the ground-disturbing activity, including but not limited to depth, width, and length.

The disposal footprint will be approximately 192 acres. A total of 12 landfill cells are planned; each will be approximately 390 feet wide by 960 feet long. The maximum excavation depth will be 30 feet.

Describe the previous and current land use, conditions, and disturbances.

An oil and gas disposal facility has been permitted on this property by the Railroad Commission of Texas, but no site improvements have been made. Except for a barn, lay-down yard, and water filling station, the site is undeveloped. The property's previous use was for irrigated agriculture, but it has been out of cultivation for over 20 years.

Identification of Historic Properties: Structures

Does the project area or area of potential effects include buildings, structures, or designed landscape features (such as parks or cemeteries) that are 45 years of age or older?

☑ Yes (Please complete this section) ☐ No (Skip to next section)

Is the project area or area of potential effects within or adjacent to a property or district that is listed in or eligible for listing in the National Register of Historic Places?

☐ Yes, name of property or district: ☐ No ☑ Unknown

In the space below or as an attachment, describe each building, structure, or landscape feature within the project area or area of potential effect that is 45 years of age or older.

ADDRESS	DATE OF CONSTRUCTION	SOURCE FOR CONSTRUCTION DATE
Please see photos of barn and cover letter for description	**Pre-1969**	**1969 aerial photograph**
ADDRESS	DATE OF CONSTRUCTION	SOURCE FOR CONSTRUCTION DATE
ADDRESS	DATE OF CONSTRUCTION	SOURCE FOR CONSTRUCTION DATE

Attachments

Please see detailed instructions regarding attachments.

Include the following with each submission:

☑ Project Work Description
☑ Maps
☑ Identification of Historic Properties
☑ Photographs

For Section 106 reviews only, also include:

☐ Consulting Parties/Public Notification
☐ Area of Potential Effects
☐ Determination of Eligibility
☐ Determination of Effect

Submit completed form and attachments to the address below. Faxes and email are not acceptable.

Mark Wolfe
State Historic Preservation Officer
Texas Historical Commission
P.O. Box 12276, Austin, TX 78711-2276 (mail service)
108 W. 16th Street, Austin, TX 78701 (courier service)

For SHPO Use Only

Attachment 2

Photographs

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1. View to east from water fill station, southeast corner of CR 408-CR 415 intersection



2. View to south from CR 415 at eastern property boundary



3. View to north from southeast corner of the property



4. View to west from southeast corner of the property



5. View to east from CR 408 near southern property boundary



6. View to north along CR 408, with corrugated-clad pole barn and fenced laydown yard in middle distance



7. Close-up of the barn (view to southwest)



8. View to north from water filling station pull-off on CR 408, southeast corner of CR 408-CR 415 intersection

[redacted]

Subject: Fwd: Section 106 Submission
Date: Monday, May 17, 2021 8:06:51 AM

From: [redacted]
Sent: Monday, May 17, 2021 8:05 AM
To: Peterson, Gundar; [redacted]
Subject: Section 106 Submission



Re: Project Review under Section 106 of the National Historic Preservation Act and/or the Antiquities Code of Texas
THC Tracking #202108741
Date: 05/17/2021
West Sun Tex Permian Landfill
E, NE and SE of intersection of CR 408 and CR 415
Pecos,TX 79772

Description: proposed new Type I municipal solid waste facility

Dear Client:
Thank you for your submittal regarding the above-referenced project. This response represents the comments of the Executive Director of the Texas Historical Commission (THC), pursuant to review under the Antiquities Code of Texas.

The review staff, led by Caitlin Brashear, Drew Sitters, has completed its review and has made the following determinations based on the information submitted for review:

Above-Ground Resources

- No historic properties are present or affected by the project as proposed. However, if historic properties are discovered or unanticipated effects on historic properties are found, work should cease in the immediate area; work can continue where no historic properties are present. Please contact the THC's History Programs Division at 512-463-5853 to consult on further actions that may be necessary to protect historic properties.

Archeology Comments

- An archeological survey is required. You may obtain lists of archeologists in Texas through the Council of Texas Archeologists and the Register of Professional Archaeologists. Please note that other qualified archeologists not included on these lists may be used. If this work will occur on land owned or controlled by a state agency or political subdivision of the state, a Texas Antiquities Permit must be obtained from this

office prior to initiation of fieldwork. All fieldwork should meet the Archeological Survey Standards for Texas. A report of investigations is required and should be produced in conformance with the Secretary of the Interior's Guidelines for Archaeology and Historic Preservation and submitted to this office for review. Reports for a Texas Antiquities Permit should also meet the Council of Texas Archeologists Guidelines for Cultural Resources Management Reports and the Texas Administrative Code. In addition, any buildings 45 years old or older that are located on or adjacent to the tract should be documented with photographs and included in the report. To facilitate review and make project information available through the Texas Archeological Sites Atlas, we appreciate emailing survey area shapefiles to [redacted] concurrently with submission of the draft report. Please note that this is required for projects conducted under a Texas Antiquities Permit.

We have the following comments: While no archeological sites have been recorded within the footprint of the proposed West Sun Tex Permian Landfill, it has never been surveyed by a professional archeologist. In 1953, the northern two-thirds of the area of potential effect (APE) was devoid of any major ground disturbances. However, by 1969 the entire APE had been developed for irrigated agricultural land use. Despite disturbances associated with plowing (0-30 centimeters below the ground surface [cm bs]), the dominant soil type within the APE, Hoban silty clay loam, is characterized by an A-horizon, where most archeological sites are found, that extends to a depth of at least 46 cm bs. Coupled with a natural drainage that runs through the APE, which may have attracted (pre)historic occupation, the potential for buried, unrecorded archeological sites within the APE is believed to be moderate to high. Furthermore, the irrigation features present within the APE are at least 50 years in age and considered historic. Therefore, a cultural resource survey is warranted prior to breaking ground.

We look forward to further consultation with your office and hope to maintain a partnership that will foster effective historic preservation. Thank you for your cooperation in this review process, and for your efforts to preserve the irreplaceable heritage of Texas. If the project changes, or if new historic properties are found, please contact the review staff. If you have any questions concerning our review or if we can be of further assistance, please email the following reviewers: [redacted]

This response has been sent through the electronic THC review and compliance system (eTRAC). Submitting your project via eTRAC eliminates mailing delays and allows you to check the status of the review, receive an electronic response, and generate reports on your submissions. For more information, visit http://thc.texas.gov/etrac-system.

Sincerely,

for Mark Wolfe, State Historic Preservation Officer
Executive Director, Texas Historical Commission

Please do not respond to this email.

[redacted]

CAUTION: This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Seraj, Farnaz

From: Jayne, Kelly
Sent: Tuesday, May 28, 2024 10:48 AM
To: Seraj, Farnaz
Subject: FW: [EXTERNAL] RE: West Sun Tex Permian Landfill
Attachments: THC Confirmation for Final Report Submission.pdf; Reeves Final Report Transmittal.odt; [EXTERNAL] Project Review under the Antiquities Code of Texas: Permit #30240

From: Haefner, [redacted]
Sent: Friday, May 24, 2024 3:44 PM
To: Jayne, Kelly [redacted]
Subject: RE: [EXTERNAL] RE: West Sun Tex Permian Landfill

Hi Kelly,

Attached is the email from THC confirming final report, transmission letter of revised submission to THC and confirmation from THC of permit obligations are complete. Will this work for your needs?

Josh Haefner

TRC
505 E Huntland Drive, Suite 250, Austin, TX 78752
C 512-608-0369| [redacted]
TRCcompanies.com

From: Jayne, Kelly [redacted]
Sent: Friday, May 24, 2024 3:08 PM
To: Haefner, Josh < [redacted] Landfill

This is an **External** email. Do not click links or open attachments unless you validate the sender and know the content is safe.

ALWAYS hover over the link to preview the actual URL/site and confirm its legitimacy.

Hi Josh,

I sent this email to Polly and it was returned to me, so I called the main office and they said you would be the best person to reach out to. If you could help me with this piece of documentation I would appreciate it!

Thanks,
Kelly

From: Jayne, Kelly
Sent: Friday, May 24, 2024 12:08 PM
To: [redacted]
Subject: FW: [EXTERNAL] RE: West Sun Tex Permian Landfill

Hi Polly,

A few years ago TRC completed an archeological survey report for a proposed new landfill near Pecos, TX on behalf of DBS&A. At the time, TRC primarily corresponded with Amy Ewing. I am taking over the WST permit application from Amy and I am trying to pull together all of our documentation for our permit application. I found this email you sent to Amy with the concurrence letter from THC. I also found an email where you sent Amy the final report addressing THC's comments (referenced in the attached document).

I was wondering if in your records you have a cover letter/email/online form submission acknowledgement demonstrating that you provided the revised report to THC and any response from them regarding that submittal? I know it has been a few years, so I apologize for asking you to dig back in your files, just trying to button up our documentation of regulator communication. If it helps, the report TRC provided for this project was numbered TRC Technical Report No. 445400

If you have any questions, feel free to email or call my cell at 505.688.4201

Thanks for any help you can provide.
Kelly

From: Peterson, Gundar [redacted]
Sent: Friday, May 24, 2024 10:42 AM
To: Jayne, Kelly [redacted]
Subject: Fw: [EXTERNAL] RE: West Sun Tex Permian Landfill

[redacted]ohnson, Benjamin

Thank you very much!

Happy New Year!

Amy

On Dec 29, 2021, at 10:56 AM, Clark, Pollyanna <[redacted] wrote:

Hi Amy,

Please find attached the concurrence letter for the Reeves County landfill project. The project may proceed. We are addressing the minor comments and will upload the final report to the THC. We will also send you a copy of the final report.

Happy New Year!

Polly

Pollyanna Clark, M.A.
Cultural Team Lead/ Principal Investigator

505 E. Huntland Drive, Ste 250, Austin, TX 78752

C 512.230.3515 | **F** 512.329.8750 | [redacted]

LinkedIn | Twitter | Blog | TRCcompanies.com

[redacted]terson, Gundar

Subject: RE: [EXTERNAL] RE: West Sun Tex Permian Landfill

Amy,

That should do the trick!

Thank you,

Benjamin Johnson
Field Archaeologist

505 E. Huntland Drive, Ste 250, Austin, TX 78752

C 512.987.6291 | **F** 512.329.8750 | [redacted]

LinkedIn | Twitter | Blog | TRCcompanies.com

[redacted]

This is an **EXTERNAL** email. Do not click links or open attachments unless you validate the sender and know the content is safe.

Benjamin,

Please see attached and let me know if you need anything else.

Thanks,

Amy

Amy Ewing, P.G.

Hydrogeologist

Daniel B. Stephens & Associates, Inc.

a Geo-Logic Company

6020 Academy Road NE, Suite 100

Albuquerque, New Mexico 87109

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[redacted]

Hi Amy,

In order for us to fulfill our curation requirements for the West Sun Tex Permian Landfill project, we need for our project sponsor to sign a letter of transfer for us. I have attached the form to this email. Would you be able to have this form signed and returned to us? If you have any questions or concerns, please feel free to contact me.

Thank you,

Benjamin Johnson
Field Archaeologist

505 E. Huntland Drive, Ste 250, Austin, TX 78752

C 512.987.6291 | **F** 512.329.8750 [redacted]

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TEXAS HISTORICAL COMMISSION
REAL PLACES TELLING REAL STORIES

P.O. Box 12276
Austin, Texas 78711-2276
512-463-6100
thc.texas.gov

December 29, 2021

Josh Haefner
Principal Investigator
TRC Environmental Corporation
505 East Huntland Drive, Suite 250
Austin, TX 78752

Re: Project review under the Antiquities Code of Texas: *Archeological Survey of the Proposed West Sun Tex Permian Landfill in Reeves County, Texas.* (TAC Permit No. 30240; THC Tracking No. 202204151)

Dear Mr. Haefner:

Thank you for allowing us to review the revised draft report. This letter serves as comment from the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission (THC). As the state agency responsible for administering the Antiquities Code of Texas, these comments also provide recommendations on compliance with state antiquities laws and regulations.

The archeological review staff, led by Drew Sitters, has completed its review of the draft report referenced above. After reviewing the documentation, we concur with your recommendation that site **41RV231** is **ineligible for inclusion in the National Register of Historic Places (NRHP) or for designation as a State Antiquities Landmark (SAL)**. The site lacks chronometric data potential, such as diagnostic tools or charred organic remains. Thus, without a temporal framework the site cannot empirically address research questions. Furthermore, the spatial integrity has been adversely impacted by contemporary land use (e.g., decades of plowing). These disturbances can result in a comingling of discrete occupations. Therefore, the surficial component cannot be confidently associated with one or multiple occupations. Moreover, a lack of intact features coupled with the dispersal of artifacts across the site area limits the potential to establish spatial association, such as hearth-centered activity areas. Finally, subsurface testing failed to identify buried cultural components. As a result, the site lacks research potential, limiting its ability to contribute to a better understanding of the Trans-Pecos archaeological region of Texas.

We also agree that site **41RV232**, a historic-age irrigation feature, is **ineligible for inclusion in the NRHP or for designation as a SAL within the right-of-way**.

While we concur that no additional cultural resource investigations are warranted and that the Project may proceed with respect to the Antiquities Code of Texas, we request that the attached comments be addressed in the final report.

We look forward to further consultation with your office and hope to maintain a partnership that will foster historic preservation. Thank you for your cooperation in this state review process and for your efforts to preserve the irreplaceable heritage of Texas. If you have any questions concerning our review or if we can be of further assistance, please contact **Drew Sitters** at [redacted] or **(512) 463-6252**.

Sincerely,

For
Mark Wolfe
State Historic Preservation Officer
MW/ds

GREG ABBOTT, GOVERNOR | JOHN L. NAU, III, CHAIR | MARK WOLFE, EXECUTIVE DIRECTOR

Editorial

- Please remove the comment by Pollyanna Clark on Page i.
- Please address the formatting error found at the bottom of Page 14.

Substantive

- In the Cultural History section of the report, please include a description of the region's Historic Period with an emphasis on the history of irrigation and farming in Reeves County.
- Please update Figures 6-1 through 6-4 to show 41RV232's boundary.
- Please include a separate site write-up for 41RV232.
    - The site write-up should include photographs of the irrigation feature, a description of its construction (e.g., material, dimensions, etc.), and a site map.
- Since the irrigation feature recorded as 41RV232 extends outside of the Project Area, please note that the eligibility recommendation is for that portion of the site within the right-of-way.
- In the Conclusions and Recommendations, please include a statement regarding unanticipated discoveries.

Sarich, Steven

From: [redacted]
To: Sarich, Steven
Subject: [EXTERNAL] Project Review Submission

This is an **EXTERNAL** email. Do not click links or open attachments unless you validate the sender and know the content is safe.

Thank you for submitting project: Archeological Survey of the Proposed West Sun Tex Permian Landfill in Reeves County, Texas

Tracking Number: 202205358

Due Date: 4/7/2022 12:00:00 AM

TEXAS HISTORICAL COMMISSION

Jayne, Kelly

From: [redacted] 2:33 PM
To: Haefner, Josh
Subject: [EXTERNAL] Project Review under the Antiquities Code of Texas: Permit #30240

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ALWAYS hover over the link to preview the actual URL/site and confirm its legitimacy.

Project review under the Antiquities Code of Texas
Final Report: Proposed Solid Waste Facility near Pecos, Reeves County, Texas
Texas Antiquities Permit #30240
COMPLETED PERMIT

Dear Colleague:

Thank you for your correspondence describing the above referenced project. This letter presents the comments of the Executive Director of the Texas Historical Commission, the state agency responsible for administering the Antiquities Code of Texas.

The Archeology Division is in receipt of one bound and one unbound paper final report, a completed Abstracts in Texas Contract Archeology online form, a shape file of the project area surveyed, a curation form, and complete and redacted tagged PDF copies of the final report for the above referenced permit. The submission of the above items demonstrates completion of your permit requirements under Permit #30240.

Thank you for your cooperation in this state review process, and for your efforts to preserve the irreplaceable heritage of Texas.If you have any questions concerning our review or if we can be of further assistance, please call Laney Fischer at 512/463-5394.

Sincerely,

Brad Jones
Archeology Division Director

Please do not respond to this email.

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Biological Evaluation

DBS&A
a Geo-Logic Company

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Biological Evaluation
WST Landfill
Pecos, Texas

Prepared for

West Sun Tex, LLC
Southlake, Texas

Prepared by

DBS&A
a Geo-Logic Company

6020 Academy NE, Suite 100
Albuquerque, New Mexico 87109
www.dbstephens.com
DB20.1166

January 5, 2022
(Revised March 2024)

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Table of Contents

1. Introduction 1
2. Project Description 2
   2.1 Background 2
   2.2 Project Description 2
3. Environmental Baseline 2
   3.1 Pre-Survey 2
   3.2 Survey 3
   3.3 Soils and Topography 4
   3.4 Groundwater 4
   3.5 Surface Water 4
   3.6 Wetlands 5
   3.7 Vegetation Communities 6
   3.8 Noxious Weeds 7
   3.9 Wildlife 7
      3.9.1 Invertebrates 8
      3.9.2 Fish 8
      3.9.3 Amphibians and Reptiles 8
      3.9.4 Birds 8
      3.9.5 Mammals 8
4. Species/Critical Habitat Considered 9
   4.1 Federal Threatened and Endangered Species 9
      4.1.1 Northern Aplomado Falcon 10
      4.1.2 Monarch Butterfly 11
   4.2 State-Listed Rare Species 12
5. Effects Analysis 13
   5.1 Northern Aplomado Falcon 13
   5.2 Monarch Butterfly 13
   5.3 Wildlife and State-Listed, Rare Species 14
   5.4 Plants 15
   5.5 Cumulative Effects Analysis 15
6. Conservation Measures 15
7. Conclusions 17

8. Contacts Made....18
9. Preparers....18
References....19

List of Figures

1 Location Map
2 Topographic Map
3 Biological Survey Map
4 Vegetation Map
5 Soils Map
6 Texas Natural Diversity Data

List of Tables

1 Plants Observed During Biological Survey
2 Fauna Observed During Biological Survey
3 Federally Listed Species Included in the Analysis and Likelihood of Occurrence in the Project Area
4 State-Listed Species Identified for Project Area and Potential Impacts

List of Appendices

A TPWD Coordination Response Letter
B USFWS IPaC Report
C TPWD Annotated County List of Rare Species
D Photographs
E Texas Natural Diversity Database Species Occurrence List

1. Introduction

Daniel B. Stephens & Associates, Inc. (DBS&A) has prepared this biological evaluation (BE) to assess the potential impacts of the proposed West Sun Tex, LLC (WST) Landfill Project (Proposed Action) on state and federal protected natural resources. The Proposed Action property (Project Area) is located approximately 5 miles west-northwest of Pecos in Reeves County, Texas, at the intersection of County Road (CR) 408 and CR 415 (Figures 1 and 2). The site latitude and longitude are 31.432400 and –103.585408. The Proposed Action is to construct a Type I municipal solid waste (MSW) landfill. The Project Area has already been permitted as an oil and gas waste disposal facility by the Railroad Commission of Texas (RRC); however, WST is now proposing to permit half of the 440-acre property as an MSW landfill.

As part of the application process, a request for coordination was submitted to the Texas Parks and Wildlife Department (TPWD) for the Proposed Action. The response from the TPWD is included in Appendix A; its recommendations are incorporated throughout this document as needed, but primarily in Sections 5 and 6.

There is no federal nexus for the Proposed Action, as no federal agencies are involved in permitting or funding it. Also, none of the Project Area is on federal lands. Thus, Section 7(a)(1) of the Endangered Species Act (ESA), which directs all federal agencies to carry out programs for the conservation of threatened and endangered species, is not applicable here. Under Section 9 of the ESA, however, it is stipulated that no one, public or private, can "take" an endangered species of fish or wildlife. "Take" has been broadly defined to include "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect." This BE documents the potential effects of the Proposed Action on federally listed endangered and threatened species that have the potential to occur in the Project Area, together with critical habitat for any of these species. This BE also documents the potential impacts of the Proposed Action on state threatened or endangered species as listed for Reeves County (TPWD, 2021d). In addition, this document incorporates and/or addresses comments provided by the TPWD (Project #46529) on June 3, 2021 regarding the Proposed Action (Appendix A).

2. Project Description

2.1 Background

The Proposed Action encompasses approximately 440 acres of land owned by WST. The Project Area has been permitted as an oil and gas waste disposal facility by the RRC. WST is proposing to permit half of WST's 440-acre property as an MSW landfill. The Proposed Action was determined to be the entire 440 acres (Figure 3).

2.2 Project Description

The Proposed Action is to construct a Type I MSW facility. A total of 12 landfill cells, each approximately 390 feet wide by 960 feet long, would be constructed in the northeastern portion of the subject property, for a total disposal footprint of approximately 192 acres.

The ground disturbance footprint within the Project Area is assumed to be 440 acres, and would encompass access roads and related MSW facility infrastructure. The subject property currently contains several two-track dirt roads across the site, most of which would be used for access. Existing disturbed and flat areas would be used for construction staging of all equipment and materials.

The schedule for implementation of the Proposed Action has not yet been determined.

3. Environmental Baseline

3.1 Pre-Survey

Prior to the biological field surveys of the proposed Project Area, a request for data regarding threatened and endangered species was submitted to the U.S. Fish and Wildlife Service (USFWS) Information, Planning and Conservation System (IPaC). Based on the IPaC report provided by the USFWS (USFWS, 2021a) (Appendix B), research was then conducted on special-status species that could potentially occur in the area; other relevant documents were reviewed to determine the locations and types of biological resources that have the potential to exist within the Project Area. The USFWS National Wetland Inventory (USFWS, 2021b) was queried for wetland habitats in the Project Area. Maps were accessed of the area showing habitat types within the Project Area with climate, plant and animal species, and physiographic data reviewed for comparison to

field conditions (Brown, 1987; Desmond, 2006; TPWD, 2021c; Elliott, 2016; Texas Almanac, 2021; Griffith et al., 2004). Figure 4 shows the Project Area with the Texas Ecological Systems vegetation type layers (TPWD, 2021c).

The TPWD annotated county lists of rare species (including state-listed species) was accessed for Reeves County (TPWD, 2021b) (Appendix C). The TPWD's response to the project application was reviewed before the survey to help focus on species of concern that may occur within or near the Project Area (TPWD, 2021a). Based on the information generated by the National Wetlands Inventory mapper (USFWS, 2021b), a map was generated showing the proximity of wetlands to the Project Area (Figure 4). Soils of the Project Area were also reviewed prior to the field survey through the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) online mapper (NRCS, 2021) (Figure 5). In addition, potential noxious weed lists for Texas were reviewed (TDA, 2021).

3.2 Survey

On September 16, 2021, two DBS&A biologists conducted a 100 percent pedestrian survey for mapping and documentation of natural resources in the Project Area (Figure 3). The survey was conducted for the Proposed Action encompassing 440 acres. The survey was conducted from 8:45 a.m. to 2:15 p.m. and later from 5:00 p.m. to 8:00 p.m., for a total of 8.5 hours. The later part of the survey was intended to increase the likelihood of detection of crepuscular species. Fieldwork consisted of the following specific tasks:

- Documentation and mapping of noxious weed infestations.
- A general botanical survey with an inventory of important or sensitive plant species or plant communities (e.g., milkweed colonies).
- Documentation of all fauna (including reptiles such as Texas horned lizard [*Phrynosoma cornutum*] and statutory migratory birds and raptors) encountered during fieldwork and/or indirect evidence (e.g., nests, tracks) for the presence of wildlife.
- Evaluation of habitat types to determine the potential for special-status species to occur locally.

Photographs taken during the field survey are provided in Appendix D.

3.3 Soils and Topography

The Project Area is within the basins and playas beyond the Pecos River Valley, located approximately 5 miles to the east. The Project Area is at an elevation of approximately 2,650 feet above mean sea level (feet msl), with very gradual sloping to the east. A natural swale drains across the site from the west-northwest corner to the east. The area soils are primarily silty clay, with some areas composed of a clay loam (USDA, 2021a). The soils are found on loamy, desert grassland with slopes from zero to 2 percent. Parent materials are comprised of calcareous loamy alluvium (classified as Hoban silty clay), fine-silty alluvium derived from sedimentary rock (Hodgens silty clay loam, found within the swale), or saline loamy lacustrine deposits (Orla clay loam, found adjacent to the swale). There are a few areas around the Project Area that are a loamy clay with a parent material composed of loamy alluvium over residuum weathered from gypsum (Reeves clay loam). The Hodgins silty clay soil is classified as farmland of statewide importance if irrigated.

Past farming activities have impacted much of the area, leading to altered flow patterns due to irrigation ditches, and disturbed vegetation and soils. Much of the site has either recovered from previous farming efforts or was not disturbed other than by irrigation ditch construction.

3.4 Groundwater

Groundwater levels in monitor wells installed for the Proposed Action indicate that the depth to groundwater ranges from 67 to 82 feet below the site. Regional groundwater flow is to the southeast toward the Pecos River.

3.5 Surface Water

There are no surface waters shown on the USGS topographic map for the area (USGS, 1971 and 2010). There are straight, dashed blue lines shown on the USGS topographic map indicating that irrigation ditches cross the Project Area. Also shown on the map are two wells, one of which is at the northwestern end of an irrigation ditch. No surface water was observed during the survey within or near the Project Area. There is an ephemeral drainage swale that historically drained from the northwestern corner of the Project Area to the east. Google Earth imagery appears to show this swale as a natural drainage that has been altered across the Project Area by the construction of cement irrigation ditches at some point in the past. Those irrigation ditches were observed during the survey. Not only were they not in use; they were deteriorated to the point that they can no longer carry water. Site observations during the

survey indicated that any stormwater runoff would cross the Project Area as sheet flow, with some areas containing blocked passage by the former irrigation ditch network such that some water may pool unnaturally after a storm. The survey was conducted after seasonal rains had occurred and the surface runoff patterns were clear with no surface stormwater remaining on the site. No perennial surface water is located in the Project Area.

3.6 Wetlands

The USFWS Wetland Mapper (USFWS, 2021b) showed a drainage ditch crossing the Project Area coded as "R5UBFx." The USFWS wetland code description for R5UBFx is a riverine system that is contained within a channel, unknown perennial (lower, upper, or data not available), unconsolidated bottom and excavated by humans. The wetlands classification is shown on Figure 4.

Based on desktop research prior to the field survey and survey observations, no formal wetlands delineation was conducted. The Project Area was evaluated in the field for signs of wetlands, observing conditions for wetlands vegetation, hydrologic conditions and soils. Observed ground conditions may not always agree with the USFWS Wetlands Mapper. The swale was observed to generally cross the Project Area from the west-northwest corner to the east. As described above, the natural drainage pattern of the swale has been altered by irrigation ditches that are no longer in use. The ditches have deteriorated such that they do not carry water and, in some areas, may block any natural flow path. The swale was shallow, varied in width from approximately 50 to 150 feet, and contained no surface water. Vegetation in the swale was observed to be denser than outside of the swale, but no evidence of perennial water or pooling was observed. No wetland vegetation was observed. The USDA wetland plant list was accessed to verify that none of the vegetation observed was a wetland obligate (almost always found in wetlands), facultative wetland (usually but not always found in wetlands), or facultative (found in wetlands and non-wetlands). One species, honey mesquite (*Prosopis glandulosa*), was observed within and near the swale. The honey mesquite is classified as a facultative upland (FACU) species, or a nonhydrophyte species that usually occurs outside of wetlands, but may also be found in wetlands. No other species identified during the survey are classified in the USDA list (USDA, 2021) except for annual sunflower (*Helianthus annuus*), also classified as a FACU species, observed in the roadway bar ditch along the western boundary of the Project Area. The region as a whole therefore appeared to be consistent with the USFWS Wetlands Mapper classification. Soils within the Project Area were observed to be a silty loam to silty clay loam within the swale

and sandy loam beyond. No soils associated with wetlands were observed within the Project Area.

According to the regulatory guidance letter issued by the U.S. Army Corps of Engineers (USACE) for identifying the ordinary high water mark (OHWM), the USACE determines, on a case-by-case basis, the extent of geographic jurisdiction for the purpose of administering its regulatory program. Regarding the Clean Water Act (CWA) Section 404, the lateral limits of jurisdiction over non-tidal water bodies extend to the OHWM in the absence of adjacent wetlands. USACE regulations define the term "ordinary high water mark" for purposes of the CWA lateral jurisdiction at 33 CFR 328.3(e), which states:

> The term ordinary high water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

There was no clear, natural line impressed on a bank, no shelving, no change in the character of soil other than a slightly increased clay texture in soils of the swale, and no destruction of terrestrial vegetation or presence of litter and debris in the swale. The presence of an OHWM was therefore not observed during the survey in any part of the Project Area.

3.7 Vegetation Communities

The general vegetation communities that were present historically have likely been altered due to human disturbance from the installation of a concrete irrigation ditch system and associated crop fields. During the survey, however, it appeared that not all of the 440 acres had been replaced by agricultural fields, as some areas, primarily in the south, appeared to be relatively undisturbed, with the exception of irrigation ditches and farm roads. The north/northeast appeared to be highly disturbed; this was likely from previous farming activity, as vegetation was locally sparse, even following rains that had triggered vegetative growth elsewhere. Vegetation density was higher primarily within the swale that crosses the Project Area. The dominant species across the Project Area were grasses, primarily gyp grama (*Bouteloua breviseta*) and alkali sacaton (*Sporobolus airoides*). The ecological systems classification as outlined in the TPWD mapping appeared to be generally accurate, with slight inaccuracies of the ecosystem boundaries as they were observed during the survey (TPWD, 2021c) (Figure 4).

The primary vegetation community across the Project Area is Trans-Pecos: Loamy Plains Grassland. This grassland occupies "level, deep loams of intermountain basins and is frequently invaded by *Prosopis glandulosa* (honey mesquite), *Larrea tridentata* (creosotebush), and *Flourensia cernua* (tarbush)" (Elliott, 2014:85). The second most prominent vegetative community is Native Invasive: Mesquite - Creosotebush Shrubland. This community is described as "Invasive shrublands dominated by *Prosopis glandulosa* (honey mesquite) and/or Larrea tridentata (creosotebush). Other species such as *Flourensia cernua* (tarbush), *Parthenium incanum* (mariola), *Acacia constricta* (whitethorn acacia), and *Atriplex canescens* (four-wing saltbush) are commonly encountered" (Elliott, 2014:179). There were some patches of land classified as Row Crops and defined as "[including] all cropland where fields are fallow for some portion of the year. Some fields may rotate into and out of cultivation frequently, and year-round cover crops are generally mapped as grassland" (Elliott, 2014:176). Finally, a small area located along a portion of the swale is classified as Trans-Pecos: Desert Wash Shrubland and described as "Shrub dominated desert drainages sometimes with a sporadic emergent overstory of scattered trees" (Elliott, 2014:127).

A list of plants recorded during the biological survey is provided in Table 1. No plants on the USFWS (Appendix B) or TPWD (Appendix C) lists of sensitive species were observed during the site survey.

3.8 Noxious Weeds

The Texas Department of Agriculture (TDA) noxious weed list was reviewed to determine the current status of, and the potential for, noxious weeds to be present in the Project Area (TDA, 2021). No noxious weeds were observed during the biological survey on September 16, 2021.

3.9 Wildlife

The Project Area harbors species adapted to arid environments, as well as the noise and disturbance associated with proximity to scattered residences and industrial development in the area. Table 2 lists all of the species recorded during the September 16, 2021 biological survey.

The following subsections describe species observed either during the field survey or known to be locally present.

3.9.1 Invertebrates

Invertebrates were abundant during the site survey, likely due to recent seasonal rains. Among the invertebrates documented in large numbers during the survey were the rainbow grasshopper (*Dactylotum bicolor*), white-lined sphinx moth caterpillar (*Hyles lineata*), black swallowtail (*Papilio polyxenes*), desert harvester ant (*Pogonomyrmex rugosus*), black and red blister beetle (*Megetra cancellata*), pinacate beetle ("stinkbug") (*Eleodes* sp.), and desert termite (*Gnathamitermes tubiformans*).

3.9.2 Fish

There are no surface waters (and therefore no fish) within the Project Area.

3.9.3 Amphibians and Reptiles

No amphibians were recorded, but lizards were common throughout the Project Area, including the roundtail horned lizard (*Phrynosoma modestum*), and the common side-blotched lizard (*Uta stansburiana*). Three roundtail horned lizards, a species of greatest conservation need, were observed in the same location in the northeastern portion of the Project Area. While no Texas horned lizards (*Phrynosoma cornutum*), also a species of greatest conservation need, were observed directly, numerous desert harvester ant (*Pogonomyrmex rugosus*) colonies, a major food source for horned lizards, were observed throughout the Project Area. Only one snake species was observed in the Project Area: the western coachwhip snake (*Masticophis flagellum testaceus*).

3.9.4 Birds

Birds documented during the survey included numerous mourning doves (*Zenaida macroura*), along with smaller numbers of Cassin's sparrow (*Peucaea cassinii*), lesser goldfinch (*Spinus psaltria*), and, during the early evening survey, scaled quail (*Callipepla squamata*). A barn owl (*Tyto alba*) was observed flying out of a hole in the roof of the metal building located at the west-central boundary of the property. An inactive bird nest was observed in a mesquite tree in the east-central portion of the Project Area.

3.9.5 Mammals

Among mammals, rodents were commonly detected through observations of their burrows. Some of those rodents appeared to be kangaroo rats (*Dipodomys* sp.) and pocket gophers (*Geomys* sp.). Rodent burrows were commonly observed along the abandoned irrigation ditches

and within the area of the swale that crosses the property. A large burrow assumed to belong to an American badger (*Taxidea taxus berlandieri*) was also observed in the area of the swale in the northern portion of the site. Desert cottontail (*Sylvilagus audubonii*) were observed in the Project Area and multiple woodrat (*Neotoma* sp.) nests were observed both in the area of the swale and in some debris that was in a human-disturbed area. Coyote (*Canis latrans*) scat was observed and horse (*Equus caballus*) tracks were documented along a dirt two-track paralleling the project boundary on the west. A domestic (or feral) pig (*Sus domesticus*) skull was found in the northeastern portion of the Project Area.

4. Species/Critical Habitat Considered

This section evaluates the potential for listed species to occur in the Project Area and be affected by the Proposed Action. For federally listed species, the IPaC planning tool from the USFWS (Austin, Texas) was used as the basis of the analysis (USFWS, 2021a) (Appendix B). The state rare species list was obtained for Reeves County from the TPWD (TPWD, 2021b) (Appendix C). In addition, the Texas Natural Diversity Database (TNDD) was contacted for data on species of concern documented both in the Project Area and on the USGS quadrangle map for Pecos West to assist with the evaluation. The response from the TNDD included an Occurrence List for Quads Surrounding the Project Area (Appendix E) and shape file data that are included in Figure 6. No species occurrences are located within the Project Area.

Table 3 lists the federally listed species identified in the IPaC report for the Project Area. Table 4 includes the special-status species (SGCN and Texas State-Ranked species) for Reeves County and their potential for occurrence within the Project Area. The following subsections summarize the results of these queries.

4.1 Federal Threatened and Endangered Species

The IPaC report obtained for this project lists a total of 12 species. Of these, 11 are federal threatened or endangered species, with none of them having designated or proposed critical habitat in the Project Area; 1 additional species is a candidate for federal listing (USFWS, 2021a) (Appendix B).

Of the 12 species, 2 have the potential to occur in the Project Area: (1) the northern aplomado falcon (*Falco femoralis septentrionalis*), listed as endangered, and (2) the monarch butterfly (*Danaus plexippus*), a federal candidate species (i.e., a species that is not yet listed or proposed

for listing as a threatened or endangered species). Table 3 contains habitat descriptions for all 12 federal listed, proposed, or candidate species and a determination on their potential for occurrence in the Project Area. The following subsections provide detailed descriptions of the northern aplomado falcon and the monarch butterfly.

4.1.1 Northern Aplomado Falcon

The northern aplomado falcon was listed as endangered on February 25, 1986, and is listed as endangered in Texas. This colorful, long-winged, long-tailed raptor was once common in dry grasslands of the southwestern U.S. The main reason for its population decline and subsequent listing has been the loss of grassland habitat to farms, towns, intense overgrazing, and other land uses.

The Peregrine Fund and the USFWS began an aplomado falcon reintroduction program in 1985 to augment falcon populations in the northern Chihuahuan Desert (Peregrine Fund, 2021). More than 1,500 captive-raised falcons have been released through the program, resulting in a breeding population once again occurring in the U.S. The reintroduction program has been successful in Texas, but populations are still in decline in other parts of the species range in northern Mexico.

In Texas, aplomado falcons are found in the South Texas and Trans-Pecos regions (TPWD, 2021b). Their geographical distribution extends south to the southern tip of South America. In the U.S., they were found along yucca-covered sand ridges in coastal prairies, riparian woodlands in open grasslands, and desert grasslands with scattered mesquite and yucca. The amount of grass cover at occupied falcon sites varies, but is estimated to be around 40 percent, with an overall vegetation ground cover between 30 and 70 percent. Woody density is estimated to be typically less than 300 plants per hectare at nest sites (Cartron, 2010). Characterization of nesting habitat has been extrapolated from known nesting sites in Chihuahua, Mexico; the areas thought to be suitable habitat for nesting consist of open tobosa (*Pleuraphis mutica*) swale within a desert grassland/shrubland mosaic (Cartron, 2010). Aplomado falcons do not build their own nests, but take over old or even freshly constructed nests of other raptors such as red-tailed hawk (*Buteo jamaicensis*) and Swainson's hawk (*B. swainsoni*), or of corvids such as Chihuahuan raven (*Corvus cryptoleucus*).

There have been research-grade sightings of the northern aplomado falcon southeast and southwest of the Project Area. The location of the nearest sighting is approximately 50 miles southeast of the Project Area. The location of the other sighting is approximately 69 miles

southwest of the Project Area (iNaturalist, 2021). The Project Area contains Chihuahuan desert grassland with scattered shrubs and denser shrub vegetation along the swale that crosses the area from the north/northwest to the east. The swale contained mesquite trees (*Prosopis glandulosa*) and a very low density of soapweed yucca (*Yucca elata*). The Project Area has no nesting habitat in the form of tabosa swales, but the potential exists for the aplomado falcon to occur within the Project Area as a rare transient.

4.1.2 Monarch Butterfly

The monarch butterfly is considered a candidate for listing under the federal ESA. On December 15, 2020, the USFWS announced that listing the monarch butterfly as endangered or threatened is warranted, but precluded by higher-priority listing actions. There are generally no ESA requirements for candidate species, although the USFWS encourages any opportunity to conserve the species by taking it into consideration during project planning.

Known for its long-distance seasonal migrations, this large butterfly is distributed globally, having spread from North America and South America to other continents where milkweed species (the monarch's larval host plants) are present. In North America, there have been approximately 31 historical populations; of these, 27 are extant and 4 have unknown status. A total of 2 migratory populations remain, and data show that both are facing declining numbers and overall health (USFWS, 2020).

The primary drivers affecting the health of the two North American migratory populations are (1) loss and degradation of habitat (from conversion of grasslands to agriculture), (2) widespread use of herbicides, (3) logging/thinning at overwintering sites in Mexico, (4) incompatible management of overwintering sites, (5) urban development, and (6) drought.

There are two important migration routes in Texas for the monarch butterfly. Monarchs migrate through Texas both in the fall and the spring. During the fall, monarchs use two principal flyways. One is a 300-mile-wide path stretching from Wichita Falls to Eagle Pass. The second flyway is situated along the Texas coast. In spring, monarchs pass through Texas from Mexico, heading north and seeking emerging milkweed species on which to lay eggs (TPWD, 2021b).

The Project Area is outside of the fall migration route of the monarch butterfly. Monarch butterflies move through Texas during spring migration seeking milkweed species. While there are flowering plant species in the Project Area for foraging, no milkweed species were observed during the site survey for the butterfly to lay eggs on. There would therefore be a low potential for the monarch butterfly to occur within the Project Area.

4.2 State-Listed Rare Species

The list of Reeves County's state rare species was obtained from the TPWD (Appendix C), and was also reviewed as part of this evaluation (Table 4). It consists of 12 plants, 9 reptiles, 5 mollusks, 21 mammals, 3 insects, 6 fish, 1 crustacean, 10 birds, and 1 amphibian, for a total of 68 species. Table 4 provides habitat descriptions for these species—including 6 that are also federally listed—as well as the likelihood of their local occurrence and an assessment of the potential impacts from the Proposed Action.

One species, the roundtail horned lizard, a species of greatest conservation need, was observed within the Project Area. Other state-listed rare species, while not detected, nonetheless have the potential to occur within the Project Area. They include the following:

- *Amphibians:* Woodhouse's toad (*Anaxyrus woodhousii*)
- *Reptiles:* Texas horned lizard (*Phrynosoma cornutum*), western box turtle (*Terrapene ornata*) (low potential), western hog-nosed snake (*Heterodon nasicus*) (low potential), western rattlesnake (*Crotalus viridis*), gray-checkered whiptail lizard (*Aspidoscelis dixoni*), and longnosed leopard lizard (*Gambelia wislizenii*)
- *Mammals:* Kit fox (*Vulpes macrotis*) (low potential) and pronghorn (*Antilocapra americana*) (low potential)
- *Insects:* American bumblebee (*Bombus pensylvanicus*)
- *Birds:* Western burrowing owl (*Athene cunicularia hypugaea*), mountain plover (*Charadrius montanus*) (low potential), lark bunting (*Calamospiza melanocorys*) (low potential and only during the non-breeding season), and chestnut-collared larkspur (*Calcarius ornatus*) (also during the non-breeding season)
- *Plants:* Night-blooming cereus (*Peniocereus greggii* var. *greggii*)

Table 1 provides a list of all plant species observed during the biological survey. No plant species of concern were observed during the biological survey on September 16, 2021.

5. Effects Analysis

5.1 Northern Aplomado Falcon

Northern aplomado falcons have been documented in Reeves County, with the nearest location to the Project Area located approximately 50 miles to the southeast. The location of the other documented sighting is approximately 69 miles to the southwest of the Project Area (iNaturalist, 2021). No nesting habitat for the falcon was observed during the site survey. There is a potential for the northern aplomado falcon to occur in the Project Area, but only as a rare transient passing through. As such, any effect on the aplomado falcon, temporary (construction noise) or permanent (increased noise and road traffic from operation of the landfill, some loss of grassland), would be insignificant, especially as no nesting habitat is present and reseeding of native grasses would occur in all disturbed areas that are not used for the landfill facility.

No formal effect determination is provided in this BE, as there is no federal nexus for the Proposed Action and Section 7 consultation is not required. On the basis of the above analysis, the implementation of the Proposed Action will not violate any provisions of the ESA including under Section 9. This was confirmed by the U.S. Fish and Wildlife Service Austin Ecological Services Field Office when outreach was conducted on July 21, 2022. The agency responded that the Service does not provide written correspondence on non-Federal projects (Appendix A). This determination requires written concurrence from the USFWS.

5.2 Monarch Butterfly

There is a low potential for monarch butterflies to occur within the Project Area during spring migration. No effect determination is necessary for a candidate species. However, the USFWS encourages any opportunities for conservation of the species by taking it into consideration during project planning. In its review of the proposed project, the TPWD provided the following specific recommendations to promote conservation of the species in the Project Area (Appendix A):

> Incorporating pollinator conservation and management into the revegetation and maintenance plan for this project, such as promoting growth of native flowering species throughout the growing season. TPWD recommends revegetation efforts include planting or seeding native milkweed (*Asclepias* spp.) and nectar plants as funding and seed availability allow.
>
> Avoiding planting the non-native milkweed species black swallow-wort (*Cynanchum louiseae*) and pale swallow-wort (*C. rossicum*). Monarch butterflies will lay eggs on these plant species, but the

larvae are unable to feed and complete their life cycle. Additionally, these plant species can be highly invasive. TPWD also advises against planting the non-native tropical milkweed (*Asclepias curassavica*), a popular commercial nursery milkweed that can persist year-round in southern states. The year-round persistence of tropical milkweed fosters greater transmission of the protozoan *Ophryocystis elektroscirrha* (OE), increasing the likelihood that monarchs become infected with the debilitating parasite.

5.3 Wildlife and State-Listed, Rare Species

Wildlife observations during the biological survey are listed in Table 2 and state-listed, rare species for Reeves County are described and evaluated in Table 4. Out of the 68 rare species listed by the TPWD for Reeves County (Appendix C), a total of 15 may occur, or are even known to occur in the Project Area.

Short-term direct impacts to wildlife in the Project Area would include noise and ground disturbance during construction. Construction activities would likely result in the direct loss of some smaller, less-mobile species of wildlife, such as small mammals and reptiles, and displacement of more mobile species to adjacent undisturbed habitats. Potential nesting locations would be eliminated. The most common wildlife responses to noise and the presence of construction equipment and human presence are avoidance or accommodation. Avoidance would result in displacement of animals from an area larger than the actual disturbance area. The impacts of noise and disturbance from construction would be direct but short term.

With conservation measures in place, negligible short-term impacts during construction to wildlife would be anticipated.

Long-term, direct impacts to wildlife in the Project Area would include loss of habitat from the landfill cells, noise from operation of the landfill facility, and increased lighting. Additionally, there would be an increase in traffic from solid waste being delivered to the facility, potentially leading to an increase in direct mortality from vehicle collisions. It would be anticipated that the long-term direct impact to wildlife would be detrimental but negligible because most wildlife would be able to avoid the area and relocate to other, nearby habitat. The region currently contains fragmented habitat, as there is industrial, agricultural, and rural residential development in close proximity to the Project Area, mixed with scattered tracts of vacant and undeveloped land. It would be anticipated that species that have adapted to this type of fragmented habitat or smaller species would relocate to other surrounding lands, and that species that are sensitive to developed areas would be present only as casual or transient

occurrences. Therefore, long-term detrimental impacts would be negligible to wildlife, including Texas-listed rare species that are known to or have the potential to occur in the Project Area.

5.4 Plants

One federally endangered plant species and no threatened plant species are listed in the area of the Proposed Action within Reeves County. The federally listed Pecos sunflower (*Helianthus paradoxus*) has very restricted habitat, and was determined to not occur within or near the Project Area. Of the 12 state-listed plants for Reeves County, 1—the night-blooming cereus (*Peniocereus greggii* var. *greggii*)—was determined to have a low potential to occur within the Project Area. The night-blooming cereus is listed as a species of greatest conservation need and is state-ranked as imperiled for Reeves County. The Project Area has only marginal habitat for the night-blooming cereus due to the soil type (Table 4). The biological survey focused especially on areas of shrubs, and the species was not observed. The Proposed Action would therefore have negligible to no impact on the desert night-blooming cereus.

No other state-listed plant species were determined to have the potential to occur in the Project Area.

5.5 Cumulative Effects Analysis

As defined under the ESA, "cumulative effects" encompass only effects of future state or private activities reasonably certain to occur within the Project Area. After completion of the Proposed Action, planned future actions may include activities conducted by others. There are no known future activities beyond the Proposed Action that would be expected to impact local plants and wildlife. No additional actions by WST are planned and no cumulative effects to any listed resources are anticipated.

6. Conservation Measures

Conservation measures for the Proposed Action are provided by the TPWD (Appendix A). These conservation measures should be implemented to minimize any impacts on wildlife and plants of the Project Area. No prairie dog towns were present during the survey conducted on September 16, 2021. Therefore, it is DBS&A's opinion that the conservation measures recommended by the TPWD for the black-tailed prairie dog (*Cynomys ludovicianus*) would not

be necessary. The other measures identified in the TPWD correspondence or recommended by DBS&A should be incorporated as part of the design of the Proposed Action:

- General Conservation Measures
  - Outside of the footprint of the proposed landfill and construction area, the existing two-track roads in the Project Area should be used as primary access for all vehicles. A perimeter road will also be installed to provide access to the landfill cells.
  - Once construction is completed, all disturbed areas that are not used for the landfill facility should be reseeded with native grass and forb species, including milkweed species as outlined in Section 5.2 and by the TPWD (Appendix A).
  - As much as possible, existing disturbed and flat areas should be used for construction staging of all equipment and materials.
- Conservation Measures During Facility Operation
  - If lighting is proposed at the new landfill facility, TPWD recommends committing to dark-sky lighting practices. TPWD recommends minimizing sky glow by focusing light downward, with full cutoff luminaries to avoid light emitting above the horizontal (Appendix A).
- Birds: If possible, construction activities should all take place outside of the migratory bird nesting season. If not, a pre-construction nesting survey of the Project Area should be conducted before construction begins.
- Reptiles: There are several reptiles with the potential to occur in the Project Area, including the roundtail horned lizard (documented during the biological survey) and Texas horned lizard. Conservation measures recommended by the TPWD have been abbreviated below. Full details are provided in Appendix A. DBS&A recommends that these measures be implemented.
  - Texas horned lizard
    - Provide contractor training for protected species.
    - Permitted biological monitor to be onsite during construction activities.
    - Follow horned lizard encounters procedures for avoidance or handling.
  - Recommendations for all reptiles (including Texas horned lizard)
    - Provide exclusion fencing if horned lizards are present on the site.

- Implement reduced speed limits in the Project Area to 15 mph.
- Cold weather work requirements, such as burrow disruption procedures.
- Implement trenching and excavation requirements during construction.
- Implement a no kill wildlife policy, including avoiding injury or harm to any snakes encountered during clearing and construction.
- Implement no-till drilling, hydromulching and/or hydroseeding; if erosion control blankets or mats are used, use materials that do not contain netting.
- Avoid impacts to burrows, if possible.
- Follow avoidance and translocation recommendations.
- Minimize disturbance to trees if possible.
- If possible, schedule construction outside of the spring (April-May) breeding season.

7. Conclusions

The Proposed Action is for the construction of a Type I MSW landfill. Conservation measures have been recommended as part of the project.

A biological survey was conducted on September 16, 2021 to observe field conditions, assess the likelihood of occurrence of special-status (including federal threatened and endangered) species, and evaluate potential impacts.

There is no critical habitat within the Project Area, as noted in the USFWS IPaC report generated for this project (Appendix B). This evaluation finds that the project will have no effect on critical habitat.

One federally listed species, the northern aplomado falcon, was determined to have the potential to occur within the Project Area, but only as a rare transient. As such, any effect on the species (from construction noise, increased noise or traffic during operation of the facility) would be insignificant, especially as no nesting habitat is present and reseeding of native grasses would occur in all disturbed areas that are not used for the landfill facility. No formal effect determination is provided in this BE, as there is no federal nexus for the Proposed Action and Section 7 consultation is not required. Importantly, however, implementation of the Proposed Action will not violate any provisions of the ESA including under Section 9

A total of 7 state-listed animal species were determined to have the potential to occur within the Project Area. With conservation measures (Section 6) implemented as part of the Proposed

Action, negligible to no impacts would be anticipated. One state-listed plant, the night-blooming cereus, was found to have a low potential to occur within the Project Area. However, because the night-blooming cereus was not observed during the biological survey, no impact to the species is anticipated as a result of the project.

The work will disturb vegetation within the Project Area, which in turn may affect local wildlife and habitat. Project impacts to non-listed species would include noise impacts, vegetation removal, and ground disturbance. With conservation measures implemented, these effects would likely be negligible.

8. Contacts Made

TPWD was consulted regarding the Proposed Action. Project (Project #46529) review comments were received on June 3, 2021.

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9. Preparers

This BE documents the findings of a biological survey conducted on September 16, 2021 and potential impacts from the proposed WST Landfill project. This BE was prepared by DBS&A biologists Dr. Jean-Luc Cartron, Julie Kutz, and York Morgan.

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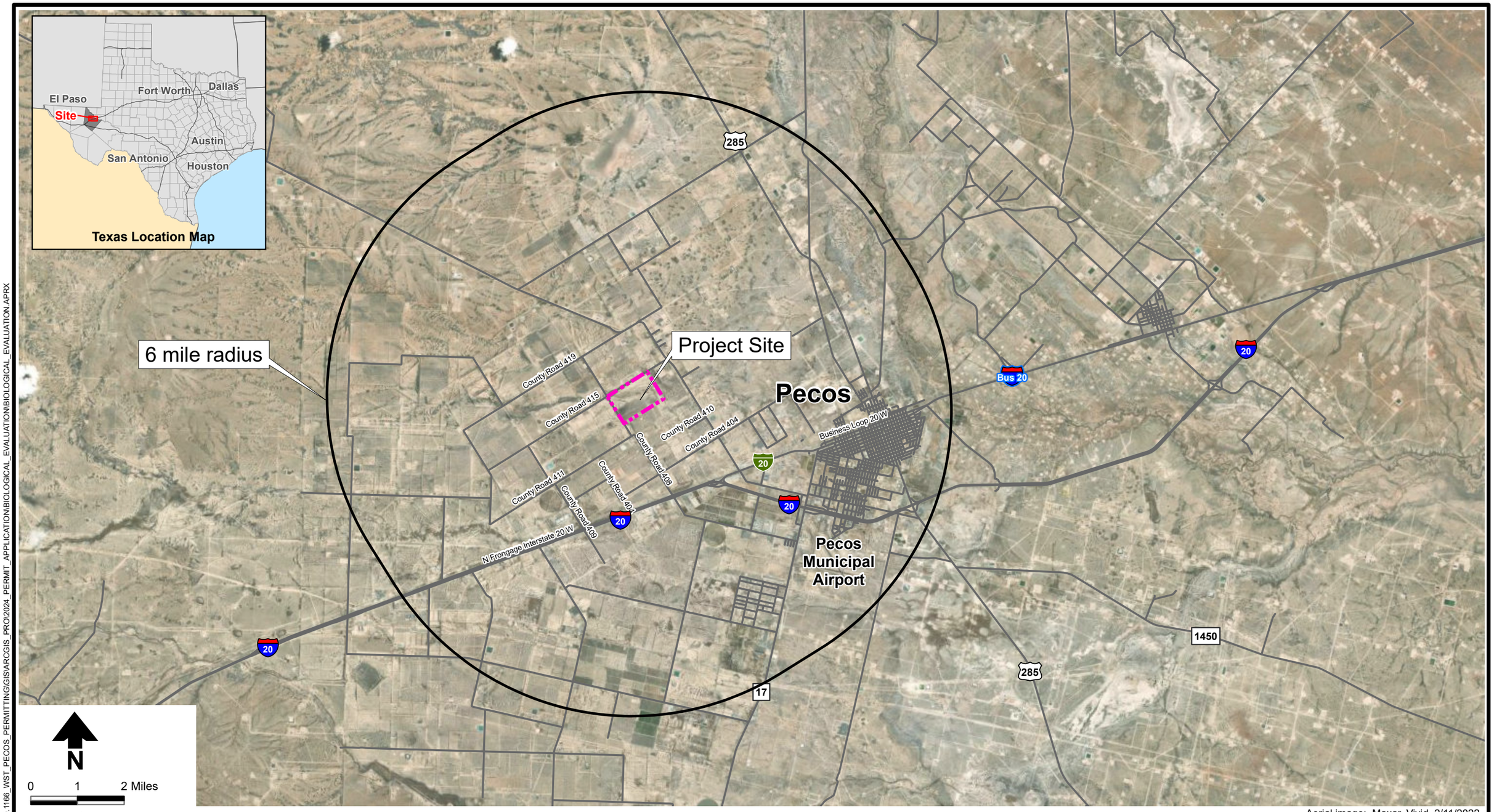
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Figures

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Aerial image: Maxar, Vivid 2/11/2022

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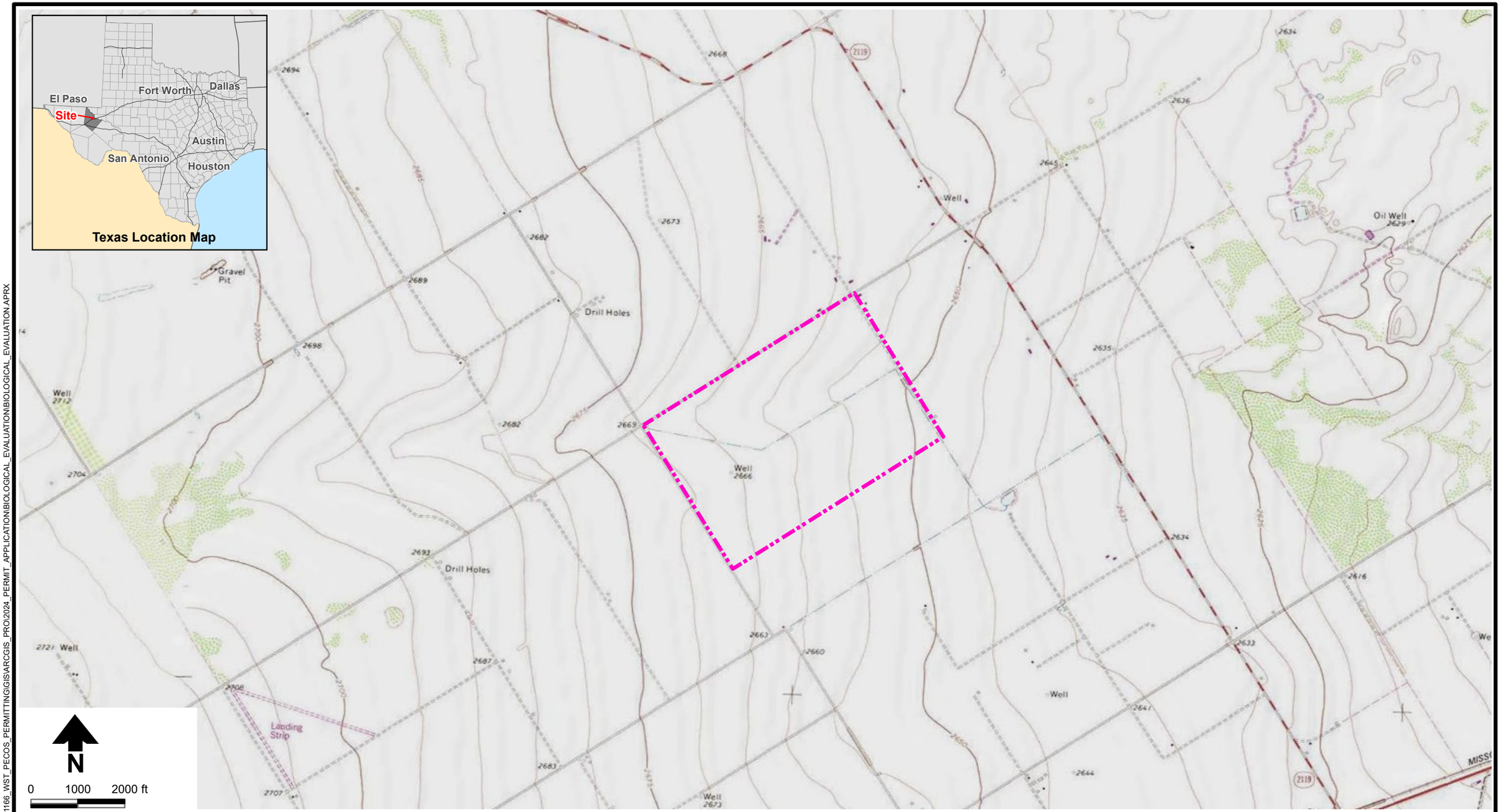
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WST LANDFILL
General Location Map

Figure 1

Rev 2: July 2026 (Rev 0: March 2026)

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Aerial image: Maxar, Vivid 2/11/2022

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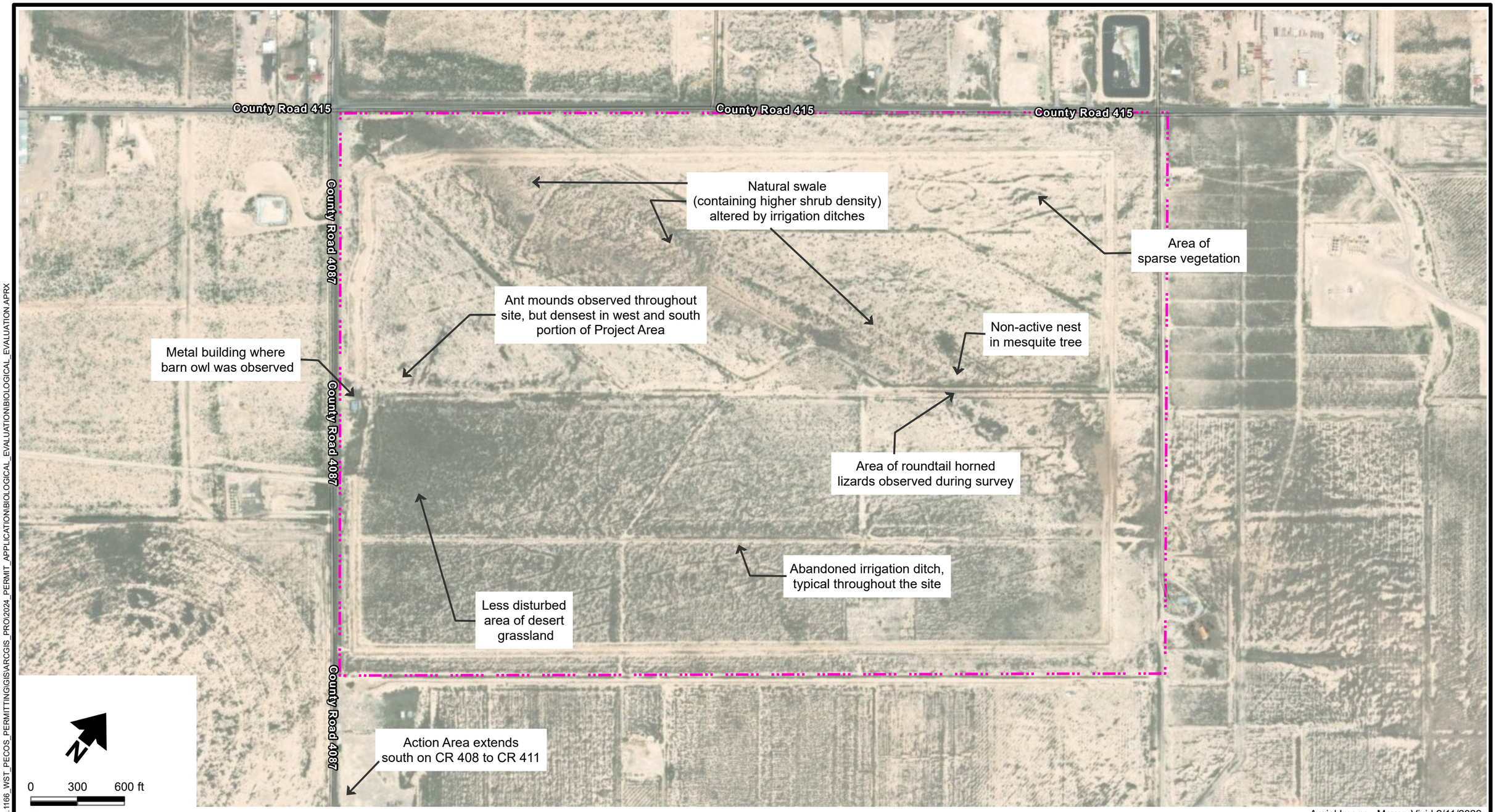
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WST LANDFILL

Topographic Map

Figure 2



Aerial Image: Maxar, Vivid 2/11/2022
Biological survey conducted
September 16, 2021

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WST LANDFILL
Biological Survey Map

Figure 3

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R5UBFx

N

0 500 1000 ft

Explanation

- Site location
- 406, Southwest: Tobosa - Mesquite Grassland
- 407, Southwest: Tobosa Grassland
- 8200, Trans-Pecos: Sparse Creosotebush Scrub
- 8205, Trans-Pecos: Creosotebush Scrub
- 8600, Trans-Pecos: Desert Wash Barren
- 8606, Trans-Pecos: Desert Wash Shrubland
- 8807, Trans-Pecos: Loamy Plains Grassland
- 9000, Barren
- 9186, Native Invasive: Mesquite - Creosotebush Shrubland
- 9307, Row Crops
- 9411, Urban Low Intensity
- 10406, Trans-Pecos: Salty Desert Scrub
- 10407, Trans-Pecos: Salty Desert Grassland
- 11800, Trans-Pecos: Desert Pavement
- R5UBFx

Vegetation: Texas Parks and Wildlife
https://tpwd.texas.gov
Downloaded 20211021
Wetlands: US Fish & Wildlife Service Code: R5UBFx
https://www.fws.gov/
Downloaded on 20211022

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3/25/2024 DB20.1166

WST LANDFILL
Biological Evaluation

Figure 4

N

0 750 1500 ft

Explanation

Site

11 - Dalby clay
16 - Hoban silty clay loam, 0 to 1 percent slopes
18 - Hodgins silty clay loam, 0 to 1 percent slopes
20 - Holloman-Reeves association, gently undulating
26 - Orla clay loam, 0 to 1 percent slopes
27 - Orla association, nearly level
31 - Reakor silty clay loam, 0 to 1 percent slopes
34 - Reeves clay loam, 0 to 1 percent slopes
41 - Upton gravelly loam, 0 to 2 percent slopes

Soil Data: USDA Natural Resources Conservation Service (NRCS)
(SSURGO) Spatial Version 5, July 15, 2020
https://websoilsurvey.sc.egov.usda.gov

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WST LANDFILL
Soils Map

Figure 5

Rev 2: July 2026 (Rev 0: March 2026)

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N

0 2000 4000 ft

Explanation

Site location

Cyprinodon pecosensis, Pecos Pupfish

Perityle cinerea, Gray Rockdaisy

Pseudoclappia arenaria, Trans Pecos False Clappia

Aerial Image: Maxar, Vivid 2/11/2022

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WST LANDFILL

Texas Natural Diversity Data

Figure 6

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Tables

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Table 1. Vegetation Species Observed during the Biological Survey
Page 1 of 2

Scientific Name	Common Name	Wetland Classification Indicator Code [a]	Native (N) or Introduced (I)	Family
Trees				
Prosopis glandulosa	Honey mesquite	FACU	N	Mimosaceae
Shrubs				
Atriplex canescens	Fourwing saltbush	—	N	Amaranthaceae
Gutierrezia sarothrae	Broom snakeweed	—	N	Asteraceae
Flourensia cernua	Tarbush	—	N	Asteraceae
Yucca elata	Soapweed yucca	—	N	Agavaceae
Echinocactus texensis	Horse crippler	—	N	Cactaceae
Opuntia sp.	Prickly pear	—	N	Cactaceae
Larrea tridentata	Creosote bush	—	N	Zygophyllaceae
Graminoids				
Sporobolus airoides	Alakali sacaton	—	N	Poaceae
Bouteloua breviseta	Gypsum grama	—	N	Poaceae
Aristida purpurea	Three-awn grass	—	N	Poaceae
Chloris virgata	Feather finger grass	—	N	Poaceae
Bouteloua hirsuta	Hairy grama	—	N	Poaceae
Bouteloua barbata	Six-weeks grama	—	N	Poaceae
Cynodon dactylon	Bermudagrass	—	I	Poaceae
Forbs				
Kali tragus	Tumbleweed (Russian thistle)	—	I	Amaranthaceae
Helianthus annuus	Annual sunflower	FACU	N	Asteraceae
Zinnia acerosa	Desert zinnia	—	N	Asteraceae
Machaeranthera tanacetifolia	Tansyaster	—	N	Asteraceae
Ratibida columnifera	Prairie coneflower	—	N	Asteraceae
Bahia absinthifolia	Hairyseed bahia	—	N	Asteraceae

Table 1. Vegetation Species Observed during the Biological Survey
Page 2 of 2

Scientific Name	Common Name	Wetland Classification Indicator Code [a]	Native (N) or Introduced (I)	Family
Forbs (cont.)				
Psilostrophe tagetina	Paperflower	—	N	Asteraceae
Lepidium alyssoides	Mesa pepperwort	—	N	Brassicaceae
Nerisyrenia linearifolia	White Sands fanmustard	—	N	Brassicaceae
Acacia angustissima	Acacia	—	N	Fabaceae
Dalea sp.	dalea	—	N	Fabaceae
Sphaeralcea angustifolia	Narrowleaf globe mallow	—	N	Malvaceae
Proboscidea parviflora	Double claw	—	N	Pedaliaceae
Solanum elaeagnifolium	Silver-leaf nightshade	—	N	Solanaceae
Verbena bracteata	verbena	—	N	Verbenaceae

[a] Classification from USDA National Wetland Plant List (Arid West Region)

Indicator definitions:

Indicator Code	*Indicator Status*	*Designation*	*Comment*
OBL	Obligate Wetland	Hydrophyte	Almost always occur in wetlands
FACW	Facultative Wetland	Hydrophyte	Usually occur in wetlands, but may occur in non-wetlands
FAC	Facultative	Hydrophyte	Occur in wetlands and non-wetlands
FACU	Facultative Upland	Nonhydrophyte	Usually occur in non-wetlands, but may occur in wetlands
UPL	Obligate Upland	Nonhydrophyte	Almost never occur in wetlands

Table 2. Fauna Observed during the Biological Survey

Class	Family	Species
Invertebrates	Acrididae	Rainbow grasshopper (*Dactylotum bicolor*)
	Sphingidae	White-lined sphinx moth caterpillar (*Hyles lineata*)
	Nymphalidae	Variegated fritillary (*Euptoieta claudia*)
	Papilionidae	Painted lady butterfly (*Vanessa cardui*)
		Black swallowtail (*Papilio polyxenes*)
	Meloidae	Black and red blister beetle (*Megetra cancellata*)
	Tenebrionidae	Pinacate beetle "stinkbug" (*Eleodes* sp.)
	Phasmatidae	Walkingstick insect (*Diapheromera* sp.)
	Isoptera	Desert termite (*Gnathamitermes tubiformans*)
	Spirostreptidae	Desert millipede (*Orthoporus ornatus*)
	Formicidae	Harvester ant (*Pogonomyrmex barbatus*)
	Buthidae	Striped bark scorpion (*Centruroides vittatus*)
Reptiles	Phrynosomatidae	Southwestern fence lizard (*Sceloporus cowlesi*)
		Roundtail horned lizard (*Phrynosoma modestum*)
		Common side-blotched lizard (*Uta stansburiana*)
	Teiidae	Texas spotted whiptail lizard (*Aspidoscelis gularis*)
	Colubridae	Western coachwhip snake (*Masticophis flagellum testaceus*)
Birds	Tytonidae	Barn owl (*Tyto alba*)
	Columbidae	Mourning dove (*Zenaida macroura*)
	Passerellidae	Cassin's sparrow (*Peucaea cassinii*)
	Fringillidae	Lesser goldfinch (*Spinus psaltria*)
	Odontophoridae	Scaled quail (*Callipepla squamata*)
Mammals	Heteromyidae	Kangaroo rat (*Dipodomys* sp.)
	Canidae	Coyote (*Canis latrans*)
	Suidae	Domestic pig (Sus *domesticus*)
	Equidaea	Horse (*Equus caballus*)
	Mustelidae	American badger (*Taxidea taxus berlandieri*)
	Cricetidae	Woodrat (Neotoma sp.)
	Leporidae	Desert cottontail (Sylvilagus audubonii)
	Geomyidae	Pocket gopher (Geomys sp.)

Table 3. Federally Listed Species Included in the Analysis and Likelihood of Occurrence in the Project Area, Page 1 of 4

Species Category	Species	Status	Habitat Associations	Potential for Presence in Project Area
Birds	Piping plover (*Charadrius melodus*)	FT	Piping plovers use wide, flat, open, sandy beaches with very little grass or other vegetation. Nesting territories often include small creeks or wetlands.	According to the USFWS IPaC report, this species only needs to be considered under the following conditions: Wind Related Projects Within Migratory Route. No Impact.
	Mexican spotted owl (*Strix occidentalis*)	FT	Primarily within shaded, mesic, and cool canyons with steep sides that have mixed conifer, pine-oak, and riparian forest types. Forests used for roosting or nesting often contain moderate to high canopy closure, a wide range of tree sizes suggestive of uneven-age stands, large overstory trees of various species, and high plant species richness with adequate levels of residual plant cover to maintain fruits, seeds, and regeneration to provide for the needs of prey species.	The Project Area does not harbor any shaded, mesic, and cool steep-sided canyon or forest patches with moderate to dense canopy cover. There is no potential for the Mexican spotted owl to be present in the Project Area.
	Red knot (*Calidris canutus rufa*)	FT	The red knot is a shorebird that is one of the longest-distance migrants in the animal kingdom. Biologists have identified six subspecies, three of them living in the Western Hemisphere: C.c. islandica, C.c. roselaari, and C.c. rufa. Thhe red knot known as rufa winters at the tip of South America in Tierra del Fuego, in northern Brazil, throughout the Caribbean, and along the U.S. coasts from Texas to North Carolina. The rufa red knot breeds in the tundra of the central Canadian Arctic from northern Hudson Bay to the southern Queen Elizabeth Islands.	According to the USFWS IPaC report: This species only needs to be considered under the following conditions: Wind Related Projects Within Migratory Route. No Impact.

Table 3. Federally Listed Species Included in the Analysis and Likelihood of Occurrence in the Project Area, Page 2 of 4

Species Category	Species	Status	Habitat Associations	Potential for Presence in Project Area
Birds (cont.)	Northern aplomado falcon (*Falco femoralis septentrionalis*)	FE	In Texas, aplomado falcons are found in the south and in the Trans-Pecos region. Their distribution extends to the southern tip of South America. In the U.S., they are found along yucca-covered sand ridges in coastal prairies, riparian woodlands in open grasslands, and in desert grasslands with scattered mesquite and yucca. Aplomados do not build their own nests, but take over old or even freshly constructed nests of other raptors or corvids such as red-tailed hawk, Swainson's hawk, and Chihuahuan raven. There have been research-grade sightings of the aplomado falcon to the southeast and southwest of the Project Area. The location of the nearest sighting was approximately 50 miles to the southeast of the Project Area. The location of the other siting is approximately 69 miles to the southwest of the Project Area (iNaturalist, 2021).	The Project Area is within desert grassland, and does contain mesquite trees and very few yucca plants. Habitat is fractured in the region, and no nests of other raptors or corvids were observed during the site survey. There is a low potential for the aplomado falcon to occur in the Project Area, likely as a rare transient.
Fish	Comanche Springs pupfish (*Cyprinodon elegans*)	FE	Restricted to a small series of springs and their outflows, and man-made irrigation canals in the area of Balmorhea, Texas, including Phantom Springs (Jeff Davis County), San Solomon Springs, Griffin Springs and Toyah Creek (Reeves County). Originally in Comanche, San Solomon, and Phantom Cave springs, but presently restricted to San Solomon and Phantom Cave and associated springs, and downstream irrigation canals. Prefers fast-flowing water: found in constantly discharging springs and in swift-flowing water of canals and earthen ditches.	The Project Area is not within or near any springs or fresh water habitat. There is therefore no potential for the Comanche Springs pupfish to be present in the Project Area.

Table 3. Federally Listed Species Included in the Analysis and Likelihood of Occurrence in the Project Area, Page 3 of 4

Species Category	Species	Status	Habitat Associations	Potential for Presence in Project Area
Fish (cont.)	Pecos Gambusia (*Gambusia nobilis*)	FE	Endemic to the Pecos River basin in southeastern New Mexico and western Texas. Restricted to two locations in Texas (Balmorhea springs complex and Diamond Y Draw). Habitat consists of stenothermal springs, runs, cienegas, and irrigation canals carrying spring waters.	The Project Area is not within or near any surface water habitat. The Pecos River basin is approximately 6 miles east of the Project Area. There is no potential therefore for the Comanche Springs pupfish to be present in the Project Area.
Snails	Pecos Assiminea snail (*Assiminea pecos*)	FE	A member of the marine snail family, but represents the most inland snail of the genus; semiaquatic, usually found on moist ground or beneath emergent plants within a few centimeters of flowing water. The only known remaining Texas population is found near Fort Stockton, Pecos County; historical to the Pecos River Valley of New Mexico and Texas.	The Project Area does not harbor moist ground or emergent plants within a few centimeters of flowing water, and it is not located near Fort Stockton. Thus, there is no potential for the Pecos Assiminea snail to be present in the Project Area.
	Phantom springsnail (*Pyrgulopsis texana*)	FE	Endemic aquatic snail; known only from three spring systems and their associated outflows in Jeff Davis and Reeves counties. This species is vulnerable to the reduction of springflow, resulting from declining groundwater levels.	The Project Area does not contain any springs and is not located near the three spring systems where the phantom springsnail is found. Thus there is no potential for the phantom springsnail to be present in the Project Area.
	Phantom tryonia (*Tryonia cheatumi*)	FE	Endemic aquatic snail; known only from three spring systems and their associated outflows in Jeff Davis and Reeves counties. This species is vulnerable to the reduction of springflow, resulting from declining groundwater levels.	The Project Area does not contain any springs and is not near the three spring systems where the phantom tryonia is found. Thus there is no potential for the phantom tryonia to be present in the Project Area.

Table 3. Federally Listed Species Included in the Analysis and Likelihood of Occurrence in the Project Area, Page 4 of 4

Species Category	Species	Status	Habitat Associations	Potential for Presence in Project Area
Insects	Monarch butterfly (*Danaus plexippus*)	FC	There are two important migration routes in Texas for the monarch butterfly. Monarchs migrate through Texas both in the fall and the spring. During the fall, monarchs use two principal flyways, one is a 300-mile wide path stretching from Wichita Falls to Eagle Pass. The second flyway is situated along the Texas coast. In spring monarchs pass through Texas from Mexico, heading north and seeking emerging milkweed species to lay eggs on (TPWD, 2021b).	The Project Area is outside of the fall migration route of the monarch butterfly. There is potential for monarch butterflies to occur within the Project Area in the spring, but no milkweed species were observed during the site survey; therefore, there would be a low potential for occurrence of the monarch butterfly in the Project Area.
Crustaceans	Diminutive amphipod (*Gammarus hyalleloides*)	FE	Known only from Phantom Lake Spring; omnivorous; amphipods are active mostly at night and spend daylight hours hiding under vegetation and other cover. This species is vulnerable to reduction of springflow, resulting from declining groundwater levels.	The Project Area does not contain any springs, and is not located near Phantom Lake Spring where the diminutive amphipod is found. Thus there is no potential for the diminutive amphipod to be present in the Project Area.
Plants	Pecos sunflower (*Helianthus paradoxus*)	FT	Restricted to saline, calcareous, heavy-textured soils around cienegas; usually most abundant on perennially wet soils of subirrigated terraces just above the wettest sites. Flowering occurs in August-November.	The Project Area does not contain saline, calcareous, heavy-textured soils around cienegas. There is therefore no potential for the Pecos sunflower to be present in the Project Area.

FE = Federal endangered
FT = Federal threatened
FC = Federal candidate

Table 4. State-Listed Species Evaluated for their Potential Occurrence in the Project Area and for Potential Impacts, Page 1 of 26

Species		Status	Habitat [a]	Potential for Occurrence	Potential Impacts
Amphibians					
Woodhouse's toad	*Anaxyrus woodhousii*	SGCN: Y SR: SU	A wide variety of terrestrial habitats are used by the Woodhouse's toad, including forests, grasslands, and barrier island sand dunes. Aquatic habitats are equally varied. The species can be found in disturbed areas.	The Project Area does not contain forests, grasslands, and barrier island sand dunes or other prime habitat; however, this species occurs in a wide variety of habitats including disturbed areas.	There is a potential for the Woodhouse's toad to occur in the Project Area. With mitigation measures in place as outlined by the TPWD (TPWD, 2021c) (Appendix A) impacts to the toad would be negligible.
Birds					
American peregrine falcon	*Falco peregrinus anatum*	SGCN: Y SR: S2B	The American peregrine falcon is a year-round resident and local breeder in west Texas. It nests in tall cliff eyries; also, it is a migrant across the state from more northern breeding areas in the U.S. and Canada. It winters along the coast and farther south, and occupies a wide range of habitats during migration, including urban areas, coastal range and barrier islands. The species is a low-altitude migrant occurring with stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands.	Unlikely to occur in the Project Area as it does not contain tall cliff eyries, lake shores, coastlines, or barrier islands.	The Proposed Action would have no impact to the American peregrine falcon.

Table 4. State-Listed Species Evaluated for their Potential Occurrence in the Project Area and for Potential Impacts, Page 2 of 26

Species		Status	Habitat [a]	Potential for Occurrence	Potential Impacts
Chestnut-collared longspur	*Calcarius ornatus*	SGCN: Y SR: S3	According to the Partners in Flight's Landbird Conservation Plan (2016), this species has shown a continental decline of 85 percent. The chestnut-collared longspur occurs in open shortgrass settings, especially in patches with some bare ground. It is also found in rangelands and desert grasslands (Cornell Lab, 2021). It also occurs in grain sorghum fields and Conservation Reserve Program lands	The Project Area contains areas of desert grassland and disturbed ground with little vegetation. The range map for the chestnut-collared longspur shows the Project Area to be in the non-breeding range of the species (Cornell Lab, 2021a). It should be noted that because of the scale of the area covered, the range and season of the species is general and not specific to the Project Area or surrounding region.	While the Project Area is likely within the non-breeding range of the chestnut-collared longspur, with mitigation measures in place, as required for the Migratory Bird Treaty Act, that include construction outside of the nesting season, the Proposed Action would have no impact on the chestnut-collared longspur.
Franklin's gull	*Leucophaeus pipixcan*	SGCN: Y SR: S2N	The Franklin's gull is only a spring and fall migrant throughout Texas. It does not breed in or near Texas. Winter records are unusual, consisting only of one or a few individuals at a given site (especially along the Gulf coastline). During migration, Franklin's gulls fly during daylight hours but often come down to wetlands, lake shore, or islands to roost for the night.	Unlikely to occur in the Project Area as it does not contain any wetlands, lake shore, or islands.	The Proposed Action would have no impact on the Franklin's gull.

Table 4. State-Listed Species Evaluated for their Potential Occurrence in the Project Area and for Potential Impacts, Page 3 of 26

Species		Status	Habitat [a]	Potential for Occurrence	Potential Impacts
Lark bunting	*Calamospiza melanocorys*	SGCN: Y SR: S4B	According to Partners in Flight's Landbird Conservation Plan (2016), the lark bunting shows a continental population decline of 86 percent. Overall, it is a generalist in most short grassland settings, including those with some brushy component, plus certain agricultural lands that include grain sorghum. Suitable short grassland species include sideoats and blue gramas, sand dropseed, prairie junegrass (*Koeleria*), buffalograss, also with patches of bluestem and other mid-grass species. The lark bunting will frequent smaller patches of grasse,s or disturbed patches of grasses including rural yards. It also uses weedy fields surrounding playas. The lark bunting avoids urban areas and cotton fields.	While the Project Area is within a desert grassland with short grass with a shrub component, the species of grasses preferred by the lark bunting, such as sideoat and blue grama, were not prevalent in the Project Area. In addition, the range map for the lark bunting show the Project Area to be in the non-breeding range of the species (Cornell Lab, 2021b).	The Project Area does not contain species of grasses preferred by the lark bunting. The Project Area is within the range of the species that is considered non-breeding. There is therefore a low potential for the lark bunting to occur within the Project Area as a transient. Because of the low potential and with mitigation measures in place, as required for the Migratory Bird Treaty Act, that include construction outside of the nesting season, the Proposed Action would have no impact on the lark bunting.
Mountain plover	*Charadrius montanus*	SGCN: Y SR: S2	The mountain plover nests on high plains or shortgrass prairie, on the ground in shallow depressions. It may also nest in grassy semidesert with scattered saltbush, sage, prickly pear, and yucca, at elevations ranging from 2,100 to 10,663 feet (Cornell Lab, 2021c). The nonbreeding habitat consists of shortgrass plains and bare, dirt (plowed) fields. The species is primarily insectivorous.	The Project Area is within desert grasslands containing saltbush and low densities of prickly pear and yucca.	The Project Area contains marginally suitable habitat for the mountain plover. With mitigation measures in place, as required for the Migratory Bird Treaty Act, that include construction outside of the nesting season, the Proposed Action would have no impact on the mountain plover.

Table 4. State-Listed Species Evaluated for their Potential Occurrence in the Project Area and for Potential Impacts, Page 4 of 26

Species		Status	Habitat [a]	Potential for Occurrence	Potential Impacts
Reddish egret	*Egretta rufescens*	SGCN: Y SR: S2B	The reddish egret is a resident of the Texas Gulf Coast. Habitat consists of brackish marshes, shallow salt ponds, and tidal flats. The species nests on the ground or in trees or bushes, and on dry coastal islands in brushy thickets of yucca and prickly pear.	Unlikely to occur in the Project Area, as it is not near the Texas Gulf Coast, has no brackish marshes, salt ponds, or tidal flats.	The Proposed Action would have no impact on the reddish egret.
Western burrowing owl	*Athene cunicularia hypugaea*	SGCN: Y SR: S2 SS: T	The western burrowing owl is found on open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports. The species nests and roosts in abandoned burrows. They are often associated with high densities of burrowing mammals, such as prairie dogs, ground squirrels, and tortoises.	No prairie dog towns were observed within the Project Area. There were burrows of rodents, including ground squirrels, located along some of the abandoned and deteriorated irrigation ditches, and along the swale that crosses the Project Area.	No burrowing owls were observed within the Project Area, however there are abandoned burrows within parts of the area, therefore there is potential for burrowing owls to occur. With mitigation measures in place, as required for the Migratory Bird Treaty Act, that include construction outside of the nesting season, the Proposed Action would have no impact on the burrowing owl.

Table 4. State-Listed Species Evaluated for their Potential Occurrence in the Project Area and for Potential Impacts, Page 5 of 26

Species		Status	Habitat [a]	Potential for Occurrence	Potential Impacts
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	SGCN: Y SR: S4, S5B	The status of the western yellow-billed cuckoo applies only to the western populations beyond the Pecos River drainage to the west. The western yellow-billed cuckoo breeds in riparian habitat and associated drainages; springs, developed wells, and earthen ponds supporting mesic vegetation; deciduous woodlands with cottonwoods and willows. Dense understory foliage is important for nest site selection. The species nests in cottonwood trees, and hackberry; forages in similar riparian woodlands; breeding season is from mid-May-late September.	Unlikely to occur locally, as there is/are no riparian habitat, mesic vegetation, or deciduous woodlands in the Project Area.	The Proposed Action would have no impact on the western yellow-billed cuckoo.
White-faced ibis	*Plegadis chihi*	SGCN: Y SR: S4B SS: T	The white-faced ibis prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; currently confined to near-coastal rookeries in so-called hog-wallow prairies. Nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.	Unlikely to occur in the Project Area, as it has no freshwater marshes, sloughs, or brackish and saltwater habitats.	The Proposed Action would have no impact on the white-faced ibis.

Table 4. State-Listed Species Evaluated for their Potential Occurrence in the Project Area and for Potential Impacts, Page 6 of 26

Species		Status	Habitat [a]	Potential for Occurrence	Potential Impacts
Zone-tailed hawk	*Buteo albonotatus*	SGCN: Y SR: S3B SS: T	The zone-tailed hawk occurs in arid open country, including open deciduous or pine-oak woodland, mesa or mountain country, often near watercourses, and in wooded canyons and along tree-lined rivers along middle-slopes of desert mountains. The species nests in various habitats and sites, ranging from small trees in lower desert, giant cottonwoods in riparian areas, to mature conifers in high mountain regions.	Unlikely to occur in the Project Area, which has no open deciduous or pine-oak woodland, mesa or mountain country, watercourses, or desert mountains.	The Proposed Action would have no impact on the zone-tailed hawk.
Crustaceans					
Diminutive amphipod	*Gammarus hyalelloides*	SGCN: Y SR: S1 SS: E	The diminutive amphipod is known only from Phantom Lake Spring; it is omnivorous. Amphipods are active mostly at night and spend daylight hours hiding under vegetation and other cover. It is vulnerable to reduction of springflow, resulting from declining groundwater levels.	Unlikely to occur in the Project Area, as it is not near Phantom Lake Spring.	The Proposed Action would have no impact on the diminutive amphipod.

Table 4. State-Listed Species Evaluated for their Potential Occurrence in the Project Area and for Potential Impacts, Page 7 of 26

Species		Status	Habitat [a]	Potential for Occurrence	Potential Impacts
Fish					
Comanche Springs pupfish	*Cyprinodon elegans*	SGCN: Y SR: S1 SS: E	The Comanche Springs pupfish is restricted to a small series of springs and their outflows, and man-made irrigation canals in the area of Balmorhea, Texas, including Phantom Springs (Jeff Davis County), San Solomon Springs, Griffin Springs, and Toyah Creek (Reeves County). The species prefers fast-flowing water. It was originally found in Comanche Springs, San Solomon, and Phantom Cave springs (Pecos and Reeves counties), but is presently restricted to San Solomon and Phantom Cave, and associated springs, and downstream irrigation canals; it is found in constantly discharging springs and in swift-flowing water of canals and earthen ditches.	Unlikely to occur in the Project Area, as it has no springs or active man-made irrigation canals.	The Proposed Action would have no impact on the Comanche Springs pupfish.
Headwater catfish	*Ictalurus lupus*	SGCN: Y SR: S1, S2 SS: T	The headwater catfish was originally found throughout streams of the Edwards Plateau and Rio Grande basin, it is currently limited to the Rio Grande watershed, including the Pecos River basin; springs, and sandy and rocky riffles, runs, and pools of clear creeks and small rivers.	Unlikely to occur in the Project Area, as the Pecos River is the closest perennial surface water source, and it is located approximately 5 miles east of the Project Area.	The Proposed Action would have no impact on the headwater catfish.

Table 4. State-Listed Species Evaluated for their Potential Occurrence in the Project Area and for Potential Impacts, Page 8 of 26

Species		Status	Habitat [a]	Potential for Occurrence	Potential Impacts
Pecos gambusia	*Gambusia nobilis*	SGCN: Y SR: S2 SS: E	The Pecos gambusia is endemic to the Pecos River basin in southeastern New Mexico and western Texas. Restricted to two locations in Texas (Balmorhea springs complex and Diamond Y Draw). Habitat consists of stenothermal springs, runs, cienegas and irrigation canals carrying spring waters.	Unlikely to occur in the Project Area, as the Pecos River is the closest perennial water source, and it is located approximately 5 miles east of the Project Area.	The Proposed Action would have no impact on the Pecos gambusia.
Pecos pupfish	*Cyprinodon pecosensis*	SGCN: Y SR: S1 SS: T	The Pecos pupfish was originally found in the Pecos River basin, but presently is restricted to its upper basin only. Shallow margins of clear, vegetated spring waters high in calcium carbonate, as well as in sinkholes represent Pecos pupfish habitats.	Unlikely to occur in the Project Area, as the Pecos River is the closest perennial water source, and it is located approximately 5 miles east of the Project Area.	The Proposed Action would have no impact on the Pecos pupfish.
Roundnose minnow	*Dionda episcopa*	SGCN: Y SR: S1 SS: T	The roundnose minnow is found in the Pecos River and in Limpia Creek, where it is restricted to clear, spring-fed waters having little temperature variation.	Unlikely to occur in the Project Area, as the Pecos River is the closest perennial water source, and it is located approximately 5 miles east of the Project Area.	The Proposed Action would have no impact on the roundnose minnow.
Speckled chub	*Macrhybopsis aestivalis*	SGCN: Y SR: S1, S2 SS: T	The speckled chub is found throughout the Rio Grande and lower Pecos River but occurs most frequently between the Río Conchos confluence and the Pecos River. Habitat consists of flowing water over coarse sand and fine gravel substrates in streams; typically found in raceways and runs.	Unlikely to occur in the Project Area, as the Pecos River is the closest perennial water source, and it is located approximately 5 miles east of the Project Area.	The Proposed Action would have no impact on the speckled chub.

Table 4. State-Listed Species Evaluated for their Potential Occurrence in the Project Area and for Potential Impacts, Page 9 of 26

Species		Status	Habitat [a]	Potential for Occurrence	Potential Impacts
Insects					
American bumblebee	*Bombus pensylvanicus*	SGCN: Y SR: SNR	Populations of American bumblebees have declined across the U.S., due to several factors including pesticide use, habitat loss and climate change. They continue to be widespread across southern states, including Texas. Bumblebees forage among seasonal wildflowers, starting with the queen in the spring, then the offspring of the queen through the remaining seasons until fall.	The Project Area and surrounding region contain seasonal wildflowers.	Because of the large range of habitat for the American bumblebee, there would continue to be foraging habitat outside of the Project Area and with conservation measures including the reseeding with forbs, impacts from the Proposed Action on the American bumblebee would be negligible.
Balmorhea saddle-case caddisfly	*Protoptila balmorhea*	SGCN: Y SR: S1	The larvae of the Balmorhea saddle-case caddisfly make turtle-shaped cases of small pebbles attached to the underside of stones in swift-flowing streams and rivers.	Unlikely to occur in the Project Area, as it has no streams or rivers.	The Proposed Action would have no impact on the Balmorhea saddle-case caddisfly
Fuzzy epitragini	*Epitragosoma arenaria*	SGCN: Y SR: SNR	The fuzzy epitragini are locally abundant in the Llano Estacado area of western Texas on stems of Havard's panicgrass (*Panicum havardii*). Considered a sand-dwelling insect.	There are no Havard's panicgrass species in the Project Area.	The Proposed Action would have no impact on the *Epitragosoma arenaria*.
Mammals					
Big brown bat	*Eptesicus fuscus*	SGCN: Y SR: S5	The big brown bat occurs in any wooded areas or woodlands of Texas, except in the south. The species is found in riparian areas in west Texas.	Unlikely to occur in the Project Area, where there are no woodlands or riparian areas.	The Proposed Action would have no impact on the big brown bat.

Table 4. State-Listed Species Evaluated for their Potential Occurrence in the Project Area and for Potential Impacts, Page 10 of 26

Species		Status	Habitat [a]	Potential for Occurrence	Potential Impacts
Big free-tailed bat	*Nyctinomops macrotis*	SGCN: Y SR: S3	Habitat data for the big free-tailed bat is sparse, but records indicate that the species prefers to roost in crevices and cracks in high canyon walls, yet will also use buildings. Reproduction data are equally sparse, but the species is known to give birth to single offspring in late June-early July; females gather in nursery colonies; winter habits are undetermined, but the species may hibernate in the Trans-Pecos; opportunistic insectivore.	Unlikely to occur in the Project Area, as it has no high canyon walls.	The Proposed Action would have no impact on the big free-tailed bat.
Black bear	*Ursus americanus*	SGCN: Y SR: S3 SS: T	The black bear is a generalist, but it is primarily associated with woodlands and forests. Historically, the species was found throughout Texas. It is found in the Chisos Mountains, where it prefers higher elevations where pinyon-oaks predominate; also occasionally sighted in desert scrub of the Trans-Pecos (Black Gap Wildlife Management Area), and Edwards Plateau in juniper-oak habitat. For the subspecies *luteolus*, bottomland hardwoods, floodplain forests, upland hardwoods with mixed pine, marsh, bottomland hardwoods, and large tracts of inaccessible forested areas are all used.	Unlikely to occur in the Project Area, as it does not contain any woodlands or forests.	The Proposed Action would have no impact on the black bear.

Table 4. State-Listed Species Evaluated for their Potential Occurrence in the Project Area and for Potential Impacts, Page 11 of 26

Species		Status	Habitat [a]	Potential for Occurrence	Potential Impacts
Black-tailed prairie dog	*Cynomys ludovicianus*	SGCN: Y SR: S3	The black-tailed prairie dog is associated with dry, flat, short grasslands with low, relatively sparse vegetation, including areas overgrazed by cattle. The species lives in large family groups.	Unlikely to occur in the Project Area, as no prairie dog towns were observed during the biological survey.	The Proposed Action would have no impact on the black-tailed prairie dog.
Cave myotis bat	*Myotis velifer*	SGCN: Y SR: S2, S3	The cave myotis bat is colonial and cave-dwelling; it also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned cliff swallow (*Hirundo pyrrhonota*) nests. This species roosts in clusters of up to thousands of individuals. It is known to hibernate in limestone caves of the Edwards Plateau and gypsum caves of the Panhandle during winter.	Unlikely to occur in the Project Area, as it has no roosting habitat preferred by the cave myotis.	The Proposed Action would have no impact on the cave myotis bat.
Davis Mountains cottontail	*Sylvilagus robustus*	SGCN: Y SR: S3	The Davis Mountains cottontail is primarily limited to the Davis Mountains in the Trans Pecos. It prefers brushy pastures, brushy edges of cultivated fields, and well-drained streamsides. It is active mostly at twilight and at night, where it may forage in a variety of habitats, including open pastures, meadows, or even lawns; resting during daytime in thickets or in underground burrows and small culverts; feeding on grasses, forbs, twigs and bark. It is not sociable and is seldom seen feeding in groups.	Unlikely to occur in the Project Area, as it is not within or near the Davis Mountains.	The Proposed Action would have no impact on the Davis Mountains cottontail.

Table 4. State-Listed Species Evaluated for their Potential Occurrence in the Project Area and for Potential Impacts, Page 12 of 26

Species		Status	Habitat [a]	Potential for Occurrence	Potential Impacts
Eastern red bat	*Lasiurus borealis*	SGCN: Y SR: S4	Red bats are migratory bats that are common across Texas. They are most common in the eastern and central parts of the state, due to their requirement of forests for foliage roosting. West Texas specimens are associated with forested areas (cottonwoods). Also common along the coastline. These bats are highly mobile, seasonally migratory, and practice a type of "wandering migration". Likely associated with any forested area in east, central, and north Texas but can occur statewide.	Unlikely to occur in the Project Area, as it has no forested land or coastline.	The Proposed Action would have no impact on the eastern red bat.
Gray-footed chipmunk	*Tamias canipes*	SGCN: Y SR: S2, S3	The gray-footed chipmunk is a high elevation (5,900 to 8,200 feet) forest-dwelling chipmunk occurring in dense stands of mixed timber, and on brushy hillsides with rock crevices or downed logs along forest edges. The species occurs in Texas only in the Sierra Diablo and Guadalupe Mountains in the Trans-Pecos, where its favorite habitat is downed logs near edges of clearings. It also occurs in dense stands of mixed timber (oaks, pines, firs) and on brushy hillsides, especially with rock crevices.	Unlikely to occur in the Project Area, as it has no high-elevation forest.	The Proposed Action would have no impact on the gray-footed chipmunk.

Table 4. State-Listed Species Evaluated for their Potential Occurrence in the Project Area and for Potential Impacts, Page 13 of 26

Species		Status	Habitat [a]	Potential for Occurrence	Potential Impacts
Hoary bat	*Lasiurus cinereus*	SGCN: Y SR: S4	Hoary bats are highly migratory, high-flying bats that have been documented throughout the state. Females are known to migrate to Mexico in the winter, males tend to remain farther north and may stay in Texas year-round. Commonly associated with forests (foliage roosting species), but are also found in unforested parts of the state and in lowland deserts. Tend to be captured over water and large, open flyways.	Unlikely to occur in the Project Area, as it has no forested land or water. The Project Area is within lowland deserts, but the hoary bat would likely only occur as a transient as there is no roosting habitat.	The Proposed Action would have no impact on the hoary bat.
Hooded skunk	*Mephitis macroura*	SGCN: Y SR: S1, S2	The hooded skunk is found in rocky canyons and in damp riparian corridors at low elevations, rarely reaching 6,000 feet. It avoids man-made habitations. The species is only known from the Trans-Pecos regions along the Rio Grande.	Unlikely to occur in the Project Area, as it has no canyons or riparian corridors.	The Proposed Action would have no impact on the hooded skunk.
Kit fox	*Vulpes macrotis*	SGCN: Y SR: S1, S2	The kit fox is found in open desert grassland, avoiding rugged, rocky terrain and wooded areas.	The Project Area is within open desert grassland. However, habitat would be marginal as there is development, including houses with dogs and industrial development, in nearby proximity.	There is a potential for the kit fox to occur in the Project Area; however, because of the proximity of development, it would be unlikely to den in the Project Area. The Proposed Action would have no impact on the kit fox.

Table 4. State-Listed Species Evaluated for their Potential Occurrence in the Project Area and for Potential Impacts, Page 14 of 26

Species		Status	Habitat [a]	Potential for Occurrence	Potential Impacts
Long-legged myotis bat	*Myotis volans*	SGCN: Y SR: S1, S2	The long-legged myotis bat is found in pine-oak woodland to grassland ecotone, in the higher elevations of the Trans-Pecos. Habitat also includes high, open woods and mountainous terrain; nursery colonies (which may contain several hundred individuals) form in summer in buildings, crevices, and hollow trees. The species does not use caves as day roosts, but may use such sites at night; single offspring is born in June-July.	Unlikely to occur in the Project Area, as it does not contain pine-oak woodland to grassland ecotone, and is not within the higher elevations of the Trans-Pecos region.	The Proposed Action would have no impact on the long-legged myotis bat.
Long-tailed weasel	*Mustela frenata*	SGCN: Y SR: S5	Habitat for the long-tailed weasel includes brushlands, fence rows, upland woods and bottomland hardwoods, forest edges and rocky desert scrub. This weasel usually lives close to water.	Unlikely to occur in the Project Area, as it does not contain brushlands, fence rows, upland woods and bottomland hardwoods, forest edges, or rocky desert scrub.	The Proposed Action would have no impact on the long-tailed weasel.
Mountain lion	*Puma concolor*	SGCN: Y SR: S2, S3	The mountain lion, a generalist species, is found in a wide range of habitats statewide. It is found most frequently in rugged mountains and riparian zones. The mountain lion generally avoids extensive grasslands.	Unlikely to occur in the Project Area, as it is not within rugged mountains or riparian zones. As the mountain lion is a generalist, there is a low potential for it to occur as a transient.	The Proposed Action would likely have no impact on the mountain lion.

Table 4. State-Listed Species Evaluated for their Potential Occurrence in the Project Area and for Potential Impacts, Page 15 of 26

Species		Status	Habitat [a]	Potential for Occurrence	Potential Impacts
Muskrat	*Ondatra zibethicus*	SGCN: Y SR: S5	The muskrat is found in fresh or brackish marshes, lakes, ponds, swamps, and other bodies of slow-moving water. It is most abundant in areas with cattails (*Typha* sp.). The muskrat dens in bank burrows or conical houses of vegetation in shallow vegetated water. It is primarily found in the Rio Grande near El Paso, and in southeastern Texas in the Houston area.	Unlikely to occur in the Project Area, as it has no surface water.	The Proposed Action would have no impact on the muskrat.
Pronghorn	*Antilocapra americana*	SGCN: Y SR: S5	The pronghorn prefers hilly and plateau areas of open grassland, desert-grassland, and desert-scrub, where it frequents south-facing slopes and other sheltered areas.	There is desert-grassland in the Project Area, but no hill or plateau areas. The Project Area vicinity contains fragmented habitat, as it is developed with industrial, residential, and road development.	While the Project Area is within desert grassland, the region is highly fragmented. Therefore, there is potential for the pronghorn to occur, but only as a transient occurrence. The Proposed Action would therefore likely have no impact on the pronghorn.
Rock mouse	*Peromyscus nasutus*	SGCN: Y SR: S4	The rock mouse is associated with rocky areas and talus slopes above 6,000 feet. General vegetation associations of the species include madrone, oak, maple, juniper, pinyon and ponderosa pine.	Unlikely to occur in the Project Area, as it is not within rocky areas or talus slopes above 6,000-foot elevation.	The Proposed Action would have no impact on the rock mouse.

Table 4. State-Listed Species Evaluated for their Potential Occurrence in the Project Area and for Potential Impacts, Page 16 of 26

Species		Status	Habitat [a]	Potential for Occurrence	Potential Impacts
Townsend's big-eared bat	*Corynorhinus townsendii*	SGCN: Y SR: S3	In Texas, habitat for the Townsend's big-eared bat ranges from desert scrub to pinyon-juniper woodland, consistently in areas with canyons or cliffs. The species roosts in caves, crevasses, trees, and buildings in the Panhandle and Trans-Pecos.	Unlikely to occur in the Project Area, as it has no canyons, caves, trees, or cliffs for roosting habitat.	The Proposed Action would have no impact on the Townsend's big-eared bat.
Western hog-nosed skunk	*Conepatus leuconotus*	SGCN: Y SR: S4	Habitats of the western hog-nosed skunk include woodlands, grasslands and damp areas, as well as deserts, to an elevation of 7,200 feet. Most common in rugged, rocky canyon country.	Unlikely to occur in the Project Area, as it does not have any canyons.	The Proposed Action would have no impact on the western hog-nose skunk.
Western small-footed myotis bat	*Myotis ciliolabrum*	SGCN: Y SR: S3	The western small-footed myotis bat occurs in mountain ranges of the Trans-Pecos, usually in wooded areas. The species is also found in grassland and desert scrub habitats where it roosts beneath slabs of rock, and behind loose tree bark. It is also found in buildings. The maternity colonies are often small and located in abandoned houses, barns, and other similar structures. The species occurs in Texas only during spring and summer months.	Unlikely to occur in the Project Area, as it is not within the mountainous regions of the Trans-Pecos.	The Proposed Action would have no impact on the western small-footed myotis bat.

Table 4. State-Listed Species Evaluated for their Potential Occurrence in the Project Area and for Potential Impacts, Page 17 of 26

Species		Status	Habitat [a]	Potential for Occurrence	Potential Impacts
Western spotted skunk	*Spilogale gracilis*	SGCN: Y SR: S5	The western spotted skunk is found in brushy canyons, rocky outcrops (rimrock) on hillsides, and walls of canyons. It occurs in semi-arid brushlands in the U.S., and in wet tropical forests in Mexico. When inactive or bearing young, the species occupies dens in rocks, burrows, hollow logs, brush piles, or under buildings.	Unlikely to occur in the Project Area, as it does not contain any canyons, rocky outcrops, or brushland.	The Proposed Action would have no impact on the western spotted skunk.
Mollusks					
Brune's tryonia	*Tryonia brunei*	SGCN: Y SR: S1	Brune's tryonia is an endemic freshwater snail and is benthic. It currently is only found in modified waters Phantom Lake Spring. The species is abundant on firm substratum and in soft mud before modification, and is vulnerable to declining groundwater levels resulting in the reduction of springflow.	Unlikely to occur in the Project Area, as it is not near the Phantom Lake Spring or any other springs.	The Proposed Action would have no impact on the Brune's tryonia.
Pecos assiminea snail	*Assiminea pecos*	SGCN: Y SR: S1 SS: E	A member of the marine snail family, the Pecos assiminea snail represents the most inland snail of the genus. It is semiaquatic, usually found on moist ground or beneath emergent plants, within a few centimeters of flowing water. The only known remaining Texas population is near Fort Stockton, Pecos County. The species is historical to the Pecos River Valley of New Mexico and Texas.	Unlikely to occur in the Project Area, as it has no moist soils and no water source.	The Proposed Action would have no impact on the Pecos assiminea snail.

Table 4. State-Listed Species Evaluated for their Potential Occurrence in the Project Area and for Potential Impacts, Page 18 of 26

Species		Status	Habitat [a]	Potential for Occurrence	Potential Impacts
Phantom springsnail	*Pyrgulopsis texana*	SGCN: Y SR: S1 SS: E	The phantom springsnail is an endemic aquatic snail that is known only from three spring systems and associated outflows in Jeff Davis and Reeves counties. It is vulnerable to reduction of springflow resulting from declining groundwater levels.	Unlikely to occur in the Project Area, as it has no springs.	The Proposed Action would have no impact on the phantom springsnail.
Phantom tryonia	*Tryonia cheatumi*	SGCN: Y SR: S1 SS: E	The phantom tryonia is an endemic aquatic snail; known only from three spring systems and associated outflows in Jeff Davis and Reeves counties. It is vulnerable to reduction of springflow resulting from declining groundwater levels.	Unlikely to occur in the Project Area, as it has no springs.	The Proposed Action would have no impact on the phantom tryonia.
Texas hornshell	*Popenaias popeii*	SGCN: Y SR: S1 SS: E	The Texas hornshell occurs in small streams to large rivers in slow to moderate current, often residing in rock crevices, travertine shelves, and under large boulders, where small-grained material, such as clay, silt, or sand gathers. The species can also occur in riffles that are clean swept of soft silt. It is not known to occur in reservoirs.	Unlikely to occur in the Project Area, as it has no streams or rivers.	The Proposed Action would have no impact on the Texas hornshell.

Table 4. State-Listed Species Evaluated for their Potential Occurrence in the Project Area and for Potential Impacts, Page 19 of 26

Species		Status	Habitat [a]	Potential for Occurrence	Potential Impacts
Reptiles					
Gray-checkered whiptail	*Aspidoscelis dixoni*	SGCN: Y SR: S2	The gray-checkered whiptail is a terrestrial species found in rocky plains, dry washes, canyon bottoms, and desert scrub (ocotillo, creosotebush, opuntia). It is generally found on rocky soils of desert shrublands and degraded grasslands on alluvial benches, canyon bottoms, and lower, southwestern mountain slopes. The species is fast-moving and heat/drought tolerant, and can occur in a wide-variety of dry habitats covering large areas. There are research grade sightings in the region to the northeast and east of the Project Area, with the closest recorded sighting approximately 14 miles from the Project Area (iNaturalist, 2021).	The Project Area does not contain prime habitat; however, this species occurs in a wide variety of habitats and there are research-grade sightings documented within 20 miles (iNaturalist, 2021). There is a potential for the gray-checkered whiptail to occur in the Project Area.	With mitigation measures in place, as outlined by the TPWD (Appendix A), impacts would be negligible.
Longnose Leopard Lizard	*Gambelia wislizenii*	SGCN: Y SR: S5	The longnose leopard lizard occurs in open gravelly or sandy habitats that are sparsely vegetated with scattered brush. When threatened, this lizard will retreat to brush piles and rodent burrows to escape.	The Project Area contains sandy habitat with areas of sparse vegetation and scattered brush, so there is potential for the longnose leopard lizard to occur in the Project Area.	With mitigation measures in place, as outlined by the TPWD (Appendix A), impacts to the longnosed leopard lizard would be negligible.

Table 4. State-Listed Species Evaluated for their Potential Occurrence in the Project Area and for Potential Impacts, Page 20 of 26

Species		Status	Habitat [a]	Potential for Occurrence	Potential Impacts
Rio Grande river cooter	*Pseudemys gorzugi*	SGCN: Y SR: S2	The Rio Grande river cooter is an aquatic species found in rivers, spring-fed tributary streams, beaver ponds, and stock tanks. Occupied waters may have a muddy, sandy, or rocky bottom, and may or may not contain aquatic vegetation.	Unlikely to occur in the Project Area, as it has no aquatic habitat.	The Proposed Action would have no impact on the Rio Grande river cooter.
Roundtail Horned Lizard	*Phrynosoma modestum*	SGCN: Y SR: S5	The roundtail horned lizard seems to prefer rocky or gravelly substrates in open areas that are sparsely vegetated.	Three roundtail horned lizards (of different generations) were observed during the site survey in the northeastern portion of the Project Area.	The roundtail horned lizard was documented as occurring within the Project Area. With mitigation measures in place, as outlined by the TPWD (Appendix A), impacts to the roundtail horned lizard would be negligible.

Table 4. State-Listed Species Evaluated for their Potential Occurrence in the Project Area and for Potential Impacts, Page 21 of 26

Species		Status	Habitat [a]	Potential for Occurrence	Potential Impacts
Texas horned lizard	*Phrynosoma cornutum*	SGCN: Y SR: S3 SS: T	The Texas horned lizard is a terrestrial species occupying open habitats with sparse vegetation, including grass, prairie, cactus, scattered brush or scrubby trees. Soil may vary in texture from sandy to rocky, where the species burrows into soil. The species enters rodent burrows, or hides under rocks when inactive, and occurs at elevations of up to 6,000 feet, but is largely limited below the pinyon-juniper zone on mountains in the Big Bend area. The Texas horned lizard is often associated with harvester ant (*Pogonomyrmex barbatus*) mounds.	There is open habitat with sparse vegetation, prairie, scattered brush and trees in the Project Area, as well as harvester ant colonies. There is potential for the Texas horned lizard to occur within the Project Area. There is one documented sighting from the TNDD occurrence listing (TNDD, 2021), and one research grade iNaturalist sighting was documented approximately 2 miles southeast of the Project Area (iNaturalist, 2021).	With mitigation measures in place, as outlined in the TPWD coordination letter (Appendix A), impacts to the Texas horned lizard from the Proposed Action would be negligible.
Western box turtle	*Terrapene ornata*	SGCN: Y SR: S3	Ornate or western box turtles inhabit prairie grassland, pasture, fields, sandhills, and open woodland. They are essentially terrestrial but sometimes enter slow, shallow streams and creek pools. For shelter, they burrow into soil (e.g., under plants such as yucca), or enter burrows made by other species.	The Project Area is within desert grasslands, but not prairie grassland. Habitat would be very marginally suitable for western box turtle. The Project Area does not contain open woodland. Surface water exists only after storm events.	With the proposed mitigation measures in place, the Proposed Action would have no impact on the western box turtle.

Table 4. State-Listed Species Evaluated for their Potential Occurrence in the Project Area and for Potential Impacts, Page 22 of 26

Species		Status	Habitat [a]	Potential for Occurrence	Potential Impacts
Western hognose snake	*Heterodon nasicus*	SGCN: Y SR: S4	The western hognose snake is a terrestrial species found in shortgrass or mixed grass prairie, with gravely or sandy soils. It is often found associated with draws, floodplains, and more mesic habitats within the arid landscape. Frequently occurs in shrub encroached grasslands.	Unlikely to occur in the Project Area. There is/are desert grassland and sandy soils within the Project Area; however, there is no mesic habitat or mixed grass prairie and very little shrub encroached grassland. Habitat would be marginally suitable for the western hognose snake.	With the proposed mitigation measures in place, the Proposed Action would have no impact on the western hognose snake.
Western massasauga	*Sistrurus tergeminus*	SGCN: Y SR: S3, S4	The western massasauga is a terrestrial species found in shortgrass or mixed grass prairie, with gravel or sandy soils. The species is found in draws, floodplains, and more mesic habitats within the arid landscape. It frequently occurs in shrub encroached grasslands. Two research-grade sightings of the western massasauga were documented north and northeast of Pecos, Texas (iNaturalist, 2021). From Google Earth aerial imagery of the area, both locations appear to be in rocky draws that are tributaries to the Pecos River.	Unlikely to occur in the Project Area, as it has no prairie, gravel soils, draws, or mesic habitat or shrub encroached grassland preferred by the species.	The Proposed Action would have no impact on the western massasauga.

Table 4. State-Listed Species Evaluated for their Potential Occurrence in the Project Area and for Potential Impacts, Page 23 of 26

Species		Status	Habitat [a]	Potential for Occurrence	Potential Impacts
Western rattlesnake	*Crotalus viridis*	SGCN: Y SR: S5	The western rattlesnake is a terrestrial species found in dry desert and prairie grasslands, shrub desert rocky hillsides, and edges of arid and semiarid river breaks. There are several research-grade iNaturalist observations for the western rattlesnake located within Reeves County, all to the east of the Pecos River and beyond, and south of I-10 (iNaturalist, 2021).	The Project Area is within the dry desert grasslands, but does not contain rocky hillsides or river breaks. There is potential for the western rattlesnake to occur within the Project Area.	With mitigation measures in place, the Proposed Action would have no impact on the western rattlesnake.
Plants					
Bigelow's desert grass	*Blepharidachne bigelovii*	SGCN: Y SR: S3	Bigelow's desert grass is restricted to xeric limestone or various gypsum-influenced habitats. It is perennial, with flowering and fruiting occurring from March-December. It occurs on rocky slopes in west Texas, adjacent New Mexico and northern Mexico (SW Biodiversity, 2021)	Unlikely to occur in the Project Area, as it is not within limestone or gypsum-influenced habitat on rocky slopes.	The Proposed Action would have no impact on the Bigelow's desert grass.
Cienega false clappia-bush	*Pseudoclappia arenaria*	SGCN: Y SR: S3	The Cienega false clappia-bush is found mostly in alkali sacaton (*Sporobolus airoides*) grasslands on alkaline, gypseous, or saline soils of alluvial flats around cienegas, playa lakes and other desert wetlands. It is perennial, and flowering occurs in spring-summer.	Unlikely to occur in the Project Area, as it is not in alkaline, gypseous or saline soils of alluvial flats around cienegas, playa lakes and other desert wetlands.	The Proposed Action would have no impact on the Cienega false clappia-bush.

Table 4. State-Listed Species Evaluated for their Potential Occurrence in the Project Area and for Potential Impacts, Page 24 of 26

Species		Status	Habitat [a]	Potential for Occurrence	Potential Impacts
Desert night-blooming cereus	*Peniocereus greggii var. greggii*	SGCN: Y SR: S2	The desert night-blooming cereus is found in Chihuahuan Desert shrublands or shrub invaded grasslands in alluvial or gravelly soils at lower elevations of 3,900-4,900 ft, on slopes, benches, arroyos, flats, and washes. Flowering is synchronized over a few nights in early May (more rarely April) to late June, when almost all mature plants bloom. The flowers last only one day and open just after dark. The species is typically found growing through and supported by shrubs, especially *Larrea divaricata* and *Prosopis glandulosa*.	The Project Area is within Chihuahuan desert grassland with some shrubs. The soils are not alluvial or gravelly but a sandy loam to a sandy loam clay. There is a low potential for the desert night-blooming cereus to be present within the Project Area.	The biological survey focused especially on areas of shrubs, and the species was not observed. Because of the low potential for occurrence, the Proposed Action would likely have negligible to no impact on the desert night-blooming cereus.
Grayleaf rock-daisy	*Perityle cinerea*	SGCN: Y SR: S2	The grayleaf rock-daisy is found in crevices in dry limestone caprock or mesas, with flowering occurring from spring-fall.	Unlikely to occur in the Project Area, as it has no limestone caprock or mesas.	The Proposed Action would have no impact to the grayleaf rock-daisy.
Gyp locoweed	*Astragalus gypsodes*	SGCN: Y SR: S2	The gyp locoweed is endemic to the gypsum flats and low-gullied gypseous hills of the Permian-aged Castile Formation. The preferred soils are gypsum or stiff gypseous clay soil on low rolling hills, mostly in low elevations in the middle Pecos River valley. Many of the known locations are on the Castile Formation (Permian). Flowering occurs from March-June.	Unlikely to occur in the Project Area, as it has no gypsum flats or low gullied gypseous hills.	The Proposed Action would have no impact to the gyp locoweed.

Table 4. State-Listed Species Evaluated for their Potential Occurrence in the Project Area and for Potential Impacts, Page 25 of 26

Species		Status	Habitat [a]	Potential for Occurrence	Potential Impacts
Hinckley's spreadwing	*Eurytaenia hinckleyi*	SGCN: Y SR: S3	The Hinckley's spreadwing is found on loose, sandy soils of the Monahans/Kermit Sandhills. It is an annual plant, and flowering/fruiting occurs in May-July.	Unlikely to occur in the Project Area, as it is not within the Monahans/Kermit Sandhills.	The Proposed Action would have no impact to the Hinckley's spreadwing.
Lyreleaf twistflower	*Streptanthus carinatus ssp. carinatus*	SGCN: Y SR: S3	The lyreleaf twistflower occurs on igneous and limestone slopes and alluvial fans.	Unlikely to occur in the Project Area, as it is not located along igneous or limestone slopes or in alluvial fans.	The Proposed Action would have no impact to the lyreleaf twistflower.
Neglected sunflower	*Helianthus neglectus*	SGCN: Y SR: S2	The neglected sunflower is found on deep sands on rolling hills and dunes of Pleistocene sand sheets, often associated with Havard's shin oak dwarf woodlands or mesquite-sand sage woodlands. Flowering occurs in July-September.	Unlikely to occur in the Project Area, as it has no rolling hills or dunes of Pleistocene sand sheets.	The Proposed Action would have no impact on the neglected sunflower.
Pecos sunflower	*Helianthus paradoxus*	SGCN: Y SR: S1 SS: T	The Pecos sunflower is restricted to saline, calcareous, heavy-textured soils around cienegas, and is usually most abundant on perennially wet soils of sub-irrigated terraces just above the wettest sites. Flowering occurs from August-November.	Unlikely to occur in the Project Area, as it is not within any cienegas or other wet habitat.	The Proposed Action would have no impact on the Pecos sunflower.

Table 4. State-Listed Species Evaluated for their Potential Occurrence in the Project Area and for Potential Impacts, Page 26 of 26

Species		Status	Habitat [a]	Potential for Occurrence	Potential Impacts
Texas claret-cup cactus	*Echinocereus coccineus var. paucispinus*	SGCN: Y SR: S3	The Texas claret-cup cactus is found in mountains, hills, and mesas, igneous and limestone, oak-juniper-pinyon woodland, or juniper woodland on limestone mesas, mostly in association with rocky habitats but also in alluvial basins, grasslands, or among mesquite or other shrubs. Flowering occurs in March-April.	The Project Area is not in mountains, hills, mesas, igneous, limestone or other habitat preferred by the Texas claret-cup cactus.	The Proposed Action would have no impact on the Texas claret-cup cactus.
Wright's beardtongue	*Penstemon wrightii*	SGCN: Y SR: S3	The Wright's beardtongue occurs mostly in montane grasslands and woodlands. It is perennial with flowering taking place from April-August and fruiting May-August.	Unlikely to occur in the Project Area, as it is not in montane grasslands and woodlands.	The Proposed Action would have no impact on the Wright's beardtongue.
Wright's trumpets	*Acleisanthes wrightii*	SGCN: Y SR: S2	The Wright's trumpets species occurs in open semi-desert grasslands and shrublands, on shallow stony soils over limestone on low hills and flats. It is perennial with flowering occurring spring-fall, and likely also in response to rains.	Unlikely to occur in the Project Area, as it is not in low hills of limestone.	The Proposed Action would have no impact on the Wright's trumpets.

[a] Habitat descriptions from the TPWD annotated county list of rare species for Reeves County (TPWD, 2021b) and supplemented as noted with other references.
SGCN: Species of Greatest Conservation Need
State Rank (SR) Definitions: S1 Critically Imperiled; S2 Imperiled; S3 Vulnerable; S4 Apparently Secure; S5 Secure; SH Possibly Extirpated; SNR Unranked; SNA Not Applicable; SU Unrankable; G#G# or S#S# Range Rank—A numeric range rank (e.g., G2G3 or S2S3) is used to indicate the range of uncertainty in the status of a species or community. Ranges cannot skip more than one rank (e.g., GU should be used rather than G1G4).
State Status (SS) Definitions: T Threatened; E Endangered

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Appendix A

TPWD Coordination Response Letter

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Carter P. Smith
Executive Director

June 3, 2021

Mr. Gundar Peterson, P.E.
Vice President
Daniel B. Stephens & Associates, Inc.
6020 Academy Road NE, Suite 100
Albuquerque, NM 87109

RE: Proposed Permian Landfill TCEQ Permit Application, Reeves County, Texas

Dear Mr. Peterson:

Texas Parks and Wildlife Department (TPWD) has received the request for coordination regarding the proposed project referenced above located in Reeves County. TPWD staff has reviewed the information provided and offers the following information, comments, and recommendations concerning this project.

Please be aware that a written response to a TPWD recommendation or informational comment received by a state governmental agency may be required by state law. For further guidance, see the Texas Parks and Wildlife Code, Section 12.0011. For tracking purposes, please refer to TPWD project number 46529 in any return correspondence regarding this project.

Project Description

The information provided included the following project description:

"On behalf of West Sun Tex, LLC (WST), Daniel B. Stephens & Associates, Inc. (DBS&A) is preparing a permit application to be submitted to the Texas Commission on Environmental Quality (TCEQ) for a proposed Type I municipal solid waste (MSW) facility in north-central Reeves County called the WST Permian Landfill. The facility property is located approximately 5 miles west-northwest of Pecos, Texas, at the intersection of County Road (CR) 408 and CR 415. The site latitude and longitude are 31.432400 and –103.585408. The subject property has already been permitted as an oil and gas waste disposal facility by the Railroad Commission of Texas; however, WST is proposing to permit half of the 440-acre property as an MSW landfill."

"The property is largely undeveloped, except for a barn and water filling station, and a new municipal solid waste landfill with a disposal footprint of approximately 192 acres is proposed. Twelve landfill cells have been designed, and each will be approximately 390 feet wide by 960 feet long. The maximum excavation will be 30 feet."

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General Construction Recommendations

TPWD would like to provide the following general construction recommendations to assist in project planning.

Recommendation: TPWD recommends the judicious use and placement of sediment control fence to exclude wildlife from the construction area. In many cases, sediment control fence placement for the purposes of controlling erosion and protecting water quality can be modified minimally to also provide the benefit of excluding wildlife access to construction areas. The exclusion fence should be buried at least six inches and be at least 24 inches high. The exclusion fence should be maintained for the life of the project and only removed after the construction is completed and the disturbed site has been revegetated with site-specific native species. Construction personnel should be encouraged to examine the inside of the exclusion area daily to determine if any wildlife species have been trapped inside the area of impact and provide safe egress opportunities prior to initiation of construction activities. TPWD recommends that any open trenches or excavation areas be covered overnight and/or inspected every morning to ensure no wildlife species have been trapped. For open trenches and excavated pits, install escape ramps at an angle of less than 45 degrees (1:1) in areas left uncovered. Also, inspect excavation areas for trapped wildlife prior to refilling.

Recommendation: For soil stabilization and/or revegetation of disturbed areas within the proposed project area, TPWD recommends erosion and seed/mulch stabilization materials that avoid entanglement hazards to snakes and other wildlife species. Because the mesh found in many erosion control blankets or mats pose an entanglement hazard to wildlife, TPWD recommends the use of no-till drilling, hydromulching and/or hydroseeding due to a reduced risk to wildlife. If erosion control blankets or mats will be used, the product should not contain netting, but if it must contain netting it should contain loosely woven, natural fiber netting in which the mesh design allows the threads to move, therefore allowing expansion of the mesh openings. TPWD recommends avoiding the use of plastic mesh matting.

Impacts to Vegetation/Wildlife Habitat

The information provided states “Vegetation will be cleared from the area where the landfill cells are constructed, but no changes will be made to the existing vegetation outside of the areas of construction” and “Vegetation species found in the area include creosote bush (*Larrea tridentate*), tarbush (*Flourensia cernua*), fourwing saltbush (*Atripex canescens*), mesquite (*Prosopis* sp.), gyp grama (*Bouteloua breviseta*), and alkali sacaton (*Sporoblus airoides*). As shown in the photos, the dominant vegetation type on the property is grass, although small to large shrubs are also present.” TPWD would like to provide the following

vegetation removal, revegetation, and landscaping recommendations to assist in project planning.

Recommendation: TPWD recommends reducing the amount of vegetation proposed for clearing if possible and minimizing clearing of native vegetation, particularly mature native trees, riparian vegetation, and shrubs to the greatest extent practicable. TPWD recommends in-kind on-site replacement/restoration of the native vegetation wherever practicable. Colonization by invasive species, particularly invasive grasses and weeds, should be actively prevented. Vegetation management should include removing invasive species early on while allowing the existing native plants to revegetate the disturbed areas. TPWD recommends referring to the Lady Bird Johnson Wildflower Center Native Plant Database for regionally adapted native species that would be appropriate for landscaping and revegetation.

Landscaping for Monarch Butterflies

In December 2020, the U.S. Fish and Wildlife Service (USFWS) determined that Endangered Species Act (ESA) listing for the monarch butterfly (*Danaus plexippus*) was warranted; however, listing was precluded by higher priority listing actions. Currently, the monarch butterfly is a candidate for listing and USFWS will review the species status annually until a proposal for listing is developed.

Significant declines in the population of migrating monarch butterflies have led to widespread concern about this species and the long-term persistence of the North American monarch migration. As part of an international conservation effort TPWD has developed the *Texas Monarch and Native Pollinator Conservation Plan*, and one of the broad categories of action in this plan is to augment larval feeding and adult nectaring opportunities.

Recommendation: TPWD recommends incorporating pollinator conservation and management into the revegetation and maintenance plan for this project, such as promoting growth of native flowering species throughout the growing season. TPWD recommends revegetation efforts include planting or seeding native milkweed (*Asclepias* spp.) and nectar plants as funding and seed availability allow. Information about monarch biology, migration, and butterfly gardening can be found on the Monarch Watch website.

Recommendation: TPWD advises against planting the non-native milkweed species black swallow-wort (*Cynanchum louiseae*) and pale swallow-wort (*C. rossicum*). Monarch butterflies will lay eggs on these plant species, but the larvae are unable to feed and complete their life cycle. Additionally, these plant species can be highly invasive. TPWD also advises against planting the non-native tropical milkweed (*Asclepias curassavica*), a popular commercial nursery milkweed that can persist year-round in southern states. The year-round persistence of tropical milkweed fosters greater transmission of the

protozoan *Ophryocystis elektroscirrha* (OE), increasing the likelihood that monarchs become infected with the debilitating parasite.

Facility Lighting

Sky glow as a result of light pollution can have negative impacts on wildlife and ecosystems by disrupting natural day and night cycles inherent in managing behaviors such as migration, reproduction, nourishment, sleep, and protection from predators. Wildlife impacts from light pollution is of concern to TPWD.

Recommendation: If lighting is proposed at the new landfill facility, TPWD recommends committing to dark-sky lighting practices. When lighting is added, TPWD recommends minimizing sky glow by focusing light downward, with full cutoff luminaries to avoid light emitting above the horizontal. TPWD recommends using the minimum amount of night-time lighting needed for safety and security and to use dark-sky friendly lighting that is on only when needed, down-shielded, as bright as needed, and minimizing blue light emissions. Appropriate lighting technologies and beneficial management practices (BMPs) can be found on the International Dark-Sky Association website.

Federal Laws

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits direct and affirmative purposeful actions that reduce migratory birds, their eggs, or their nests, by killing or capturing, to human control, except when specifically authorized by the Department of the Interior. This protection applies to most native bird species, including ground nesting species. The USFWS Migratory Bird Office can be contacted at (505) 248-7882 for more information on potential impacts to migratory birds.

Recommendation: TPWD recommends excluding vegetation clearing activities during the general bird nesting season, March 15 through September 15, to avoid adverse impacts to breeding birds. If clearing vegetation during the migratory bird nesting season is unavoidable, TPWD recommends surveying the area proposed for disturbance to ensure that no nests with eggs or young will be disturbed by operations. TPWD recommends performing active bird nest surveys no more than five days prior to planned clearing or construction. TPWD recommends that a minimum 150-foot buffer of vegetation remain around any nests that are observed prior to disturbance. Any vegetation (such as trees, shrubs, and grasses) or other open areas where occupied nests are located should not be disturbed until the eggs have hatched and the young have fledged.

State Laws

Parks and Wildlife Code – Chapter 64, Birds

Texas Parks and Wildlife Code Section 64.002, regarding protection of nongame birds, provides that no person may catch, kill, injure, pursue, or possess a bird that is not a game bird. Texas Parks and Wildlife Code Section 64.003, regarding destroying nests or eggs, provides that, no person may destroy or take the nests, eggs, or young and any wild game bird, wild bird, or wild fowl.

> **Recommendation:** Please review the *Migratory Bird Treaty Act* section above for recommendations as they are also applicable for Chapter 64 of the Texas Parks and Wildlife Code compliance.

Parks and Wildlife Code, Section 68.015 – State-listed Species

Texas Parks and Wildlife Code regulates state-listed threatened and endangered animal species. The capture, trap, take, or killing of state-listed threatened and endangered animal species is unlawful unless expressly authorized under a permit issued by USFWS or TPWD. The *TPWD Guidelines for Protection of State-Listed Species*, which includes a list of penalties for take of species, can be found on the Wildlife Habitat Assessment Program website. State-listed species may only be handled by persons with authorization obtained through TPWD. For more information on this permit, please contact the Wildlife Permits Office at (512) 389-4647.

Texas horned lizard (*Phrynosoma cornutum*)

The project area may provide suitable habitat for the state-listed threatened Texas horned lizard. There is a Texas Natural Diversity Database (TXNDD) record for the Texas horned lizard located approximately 5.0 miles from the project area. TPWD also notes that there are several research-grade iNaturalist (www.inaturalist.org) observations for this species located within the general vicinity of Pecos. The Texas horned lizard inhabits open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees and soil may vary in texture from sandy to rocky.

If present in the project area, the Texas horned lizard could be impacted by ground disturbing activities from construction. A useful indication that the Texas horned lizard may occupy the site is the presence of harvester ant (*Pogonomyrmex barbatus*) mounds since harvester ants are the primary food source of Texas horned lizards. Texas horned lizards may hibernate on-site in loose soils a few inches below ground during the cool months from September/October to March/April. Construction in these areas could harm hibernating lizards. Horned lizards are active above ground when temperatures exceed 75 degrees Fahrenheit. If horned lizards (nesting, gravid females, newborn young, lethargic from cool temperatures

or hibernation) cannot move away from noise and approaching construction equipment in time, they could be affected by construction activities.

Recommendation: TPWD recommends implementing the following BMPs to assist in minimizing potential impacts to the Texas horned lizard. Implementing the following BMPs could also help minimize impacts to a variety of native wildlife species that may inhabit the project area:

Contractor Training for Protected Species – TPWD recommends providing training for project contractors prior to the construction of the proposed project. Wildlife training should consist of identification of Texas horned lizards and their primary food source (harvester ants), and the proper protocol to avoid impact if a Texas horned lizard or other rare or protected species is encountered. TPWD recommends instructing contractors to avoid impacts to harvester ant mounds where feasible. TPWD understands that ant mounds in the direct path of construction would be difficult to avoid, but contractors should be mindful of these areas when deciding where to place project specific locations and other disturbances associated with construction.

Biological Monitor – TPWD recommends that a permitted biologist be on-site during construction activities, especially during site clearing and trenching, to look for protected species, advise the construction crews on appropriate action if horned lizards are observed, and relocate any protected individuals that are in imminent harm. Biologists must be authorized to handle horned lizards and other state-listed species. If a biological monitor cannot be on-site during construction, site personnel should be trained for encounters with protected species and a qualified biologist should be notified of the siting and consulted on appropriate action.

Horned Lizard Encounters – If Texas horned lizards are encountered, they should be avoided and allowed to leave the project area on their own. If a horned lizard must be relocated, TPWD recommends relocating them off-site to an area that is close-by and contains similar habitat. TPWD recommends that any translocations of reptiles be the minimum distance possible no greater than one mile, preferably within 100 to 200 yards from the initial encounter location. After horned lizard removal, the area that will be disturbed during active construction and project specific locations should be fenced off to exclude horned lizards and other reptiles.

The exclusion fence should be constructed and maintained as follows:

- The exclusion fence should be constructed with metal flashing or drift fence material. Rolled erosion control mesh material should not be used.

- The exclusion fence should be buried at least 6 inches deep and be at least 24 inches high.
- The exclusion fence should be maintained for the life of the project and only removed after the construction is completed and the disturbed site has been revegetated with site-specific native species.

Speed Limits – TPWD recommends reducing speed limits in the project area to at least 15 mph to help prevent vehicle-induced mortality of this species.

Work During Cold Weather – If construction activities take place during cold weather, it is recommended that construction personnel stay observant of activities that may harm the Texas horned lizard, such as disruption of burrows. In cold weather, this species will use burrows or pallets near the base of vegetation for shelter. Their slow metabolism in cold weather can reduce movements, restricting their ability to flee from danger.

Trenches – To avoid direct harm to state-listed species and other wildlife that may occur in the project area, TPWD recommends that any open trenches or excavation areas be covered overnight and/or inspected every morning to ensure no Texas horned lizards or other wildlife have been trapped. For open trenches and excavated pits, install escape ramps at an angle of less than 45 degrees (1:1) in areas left uncovered. Also, inspect excavation areas for trapped wildlife prior to refilling. As previously mentioned, if state-listed species are trapped in trenches, they should be removed by personnel permitted by TPWD to handle state-listed species.

No Kill Wildlife Policy – TPWD recommends implementing a "No Kill Wildlife Policy" during the construction and operation of the site. This policy prevents inadvertently killing protected species that may be mistaken for common species.

Species of Greatest Conservation Need

In addition to state and federally-protected species, TPWD tracks Species of Greatest Conservation Need (SGCN) and other special features and natural communities that are not listed as threatened or endangered. These species and communities are tracked in the TXNDD, and TPWD actively promotes their conservation. TPWD considers it important to evaluate and, if necessary, minimize impacts to SGCN and their habitat to reduce the likelihood of endangerment and preclude the need to list as threatened or endangered in the future.

Western box turtle (*Terrapene ornata*)

There are several research-grade iNaturalist observations for the western box turtle located within Reeves County. The western box turtle occurs throughout Texas, typically in open habitats such as prairie grasslands, pastures, fields, sandhills, and open woodlands. Adults have a home-range size of approximately 6 to 14 acres. This species is active spring through fall with courtship and mating occurring primarily in the spring. For shelter, they burrow into soil (e.g., under plants such as yucca) or enter burrows made by other species. Eggs are laid in nests dug in soft well-drained soil in open areas. Western box turtles are threatened by habitat loss and fragmentation, vehicle strikes on roads, and collection for the pet trade and food markets. The project area may provide suitable habitat for this species.

Gray-checkered whiptail (*Aspidoscelis dixoni*)

There are several research-grade iNaturalist observations for the gray-checkered whiptail located within Reeves County. This species inhabits rocky plains, dry washes, canyon bottoms, and desert scrub (ocotillo, creosotebush, opuntia). The project area may provide suitable habitat for this species.

Western rattlesnake (*Crotalus viridis*)

There are several research-grade iNaturalist observations for the western rattlesnake located within Reeves County. The western rattlesnake inhabits grasslands, both desert and prairie, as well as shrub desert rocky hillsides. This species can also be found at the edges of arid and semi-arid river breaks. The project area may provide suitable habitat for this species.

Western massasauga (*Sistrurus tergeminus*)

There is a research-grade iNaturalist observation for the western massasauga located within Reeves County. The western massasauga is common in gently rolling prairies occasionally broken by creek valleys or rocky hillsides. The project area may provide suitable habitat for this species.

Recommendations: TPWD recommends implementing the following BMPs to minimize impacts to the above-listed terrestrial reptile SGCN.

- As previously stated, TPWD recommends the use of no-till drilling, hydromulching and/or hydroseeding due to a reduced risk to wildlife. If erosion control blankets or mats will be used, the product should not contain netting, but if it must contain netting it should contain loosely woven, natural fiber netting in which the mesh design allows the threads to move, therefore allowing expansion of the mesh openings. TPWD recommends avoiding the use of plastic mesh matting.
- As previously stated, for open trenches and excavated pits, install escape ramps at an angle of less than 45 degrees (1:1) in areas left uncovered. Visually inspect excavation areas for trapped wildlife prior to backfilling.

- Identify locations of burrows on the project site and avoid impacts to burrows if feasible.
- TPWD recommends that any translocations of reptiles be the minimum distance possible no greater than one mile, preferably within 100 to 200 yards from the initial encounter location.
- Inform contractors that if reptiles are found on the project site allow species to safely leave the project area.
- Avoid or minimize disturbing or removing downed trees, rotting stumps, and leaf litter where feasible.
- Contractors should be advised of potential occurrence in the project area, and to avoid harming these species if encountered.
- Due to increased activity (mating) of reptiles during the spring, construction activities like clearing or grading should attempt to be scheduled outside of the spring (April-May) season. Also, timing ground disturbing activities before October when reptiles become less active and may be using burrows in the project area is also encouraged.

Recommendation: Because snakes are generally perceived as a threat and killed when encountered, and since the project area contains suitable habitat for the western massasauga and the western rattlesnake, TPWD recommends construction personnel and contractors be advised to avoid injury or harm to all snakes encountered during clearing and construction. Injury to humans usually occurs when the snake becomes agitated following harassment or when someone attempts to handle a recently dead venomous snake that still contains its bite reflex. Therefore, contractors should avoid contact with snakes if encountered and allow all native snakes to safely leave the premises.

Black-tailed Prairie dog (*Cynomys ludovicianus*)

There are several TXNDD records for the black-tailed prairie dog located within Reeves County. Black-tailed prairie dogs inhabit dry, flat, short grasslands with low, relatively sparse vegetation, including areas overgrazed by cattle. The black-tailed prairie dog is a keystone species that provides food and/or shelter for rare species tracked by TPWD such as the ferruginous hawk and the western burrowing owl, as well as many other wildlife species. There may be suitable habitat for this species within the project area.

Recommendation: TPWD recommends avoiding disturbance of prairie dog towns or burrows and species that depend on them. TPWD recommends avoiding these areas during construction and installing exclusion fence to keep prairie dogs from entering the project area. If prairie dog burrows will be disturbed as a result of the proposed project, TPWD recommends non-harmful exclusion methods be used to encourage the animals to vacate the area prior to disturbance and discourage them from returning to the area during construction. If prairie dogs are encountered on the project site, TPWD recommends contacting a prairie dog relocation specialist. If impacting a

portion of a larger colony, time relocation efforts and/or humane removal immediately before construction to discourage recolonization of the project area.

Western burrowing owl (*Athene cunicularia hypugaea*)

There are several eBird (www.ebird.org) observations for the western burrowing owl located within the general vicinity of Pecos. There are also several research-grade iNaturalist observations for this species located within Reeves County. The western burrowing owl is a ground-dwelling owl that uses the burrows of prairie dogs and other fossorial animals for nesting and roosting. When natural burrows are limited, this species will breed in urban habitats which may lead to problems for the owls or their young. The owls opportunistically live and nest in road and railway rights-of-way, parking lots, baseball fields, school yards, golf courses, and airports. They have also been found nesting on campuses, in storm drains, drainage pipes, and cement culverts, on banks, along irrigation canals, under asphalt or wood debris piles, or openings under concrete pilings or asphalt. The burrowing owl is protected under the MBTA, and take of these birds, their nests, and eggs is prohibited. Potential impacts to the burrowing owl could include habitat removal as well as displacement and/or destruction of nests and eggs if ground disturbance occurs during the breeding season. There may be suitable habitat for this species within the project area.

Recommendation: TPWD recommends avoiding disturbance of mammal burrows or other suitable habitat during the construction of the proposed project. As previously mentioned, TPWD recommends conducting project activities outside the breeding season (March 15 to September 15). Nesting areas and burrows should be protected from intensive disturbance during incubation. Excavation of an active nest burrow may destroy eggs, young owls, or even adults and is violation of the MBTA. If nesting owls are found inhabiting the project area, disturbance should be avoided until the eggs have hatched and the young have fledged.

Evaluation of SGCN

TPWD notes that it is the responsibility of the project proponent to evaluate all of the species listed on the TPWD Rare, Threatened, and Endangered Species of Texas by County online application (RTEST or TPWD county list), not just state and federally-listed species, and to determine if those species have habitat within the project area and if those species have the potential to be impacted by the construction of the proposed project.

Recommendation: Please review the TPWD county list for Reeves County because species in addition to those discussed in this letter could be present within the project area depending upon habitat availability. TPWD recommends including a discussion and evaluation of potential impacts to

SGCN (in addition to state-listed and federally-listed species) for all projects coordinated with this office. The USFWS should be contacted for species occurrence data, guidance, permitting, survey protocols, and mitigation for federally-listed species.

Determining the actual presence of a species in a given area depends on many variables including daily and seasonal activity cycles, environmental activity cues, preferred habitat, transiency and population density (both wildlife and human). The absence of a species can be demonstrated only with great difficulty and then only with repeated negative observations, considering all the variable factors contributing to the lack of detectable presence. If encountered during construction, measures should be taken to avoid impacting all wildlife, regardless of listing status.

Texas Natural Diversity Database

The TXNDD is intended to assist users in avoiding harm to rare species or significant ecological features. Given the small proportion of public versus private land in Texas, the TXNDD does not include a representative inventory of rare resources in the state. Absence of information in the database does not imply that a species is absent from that area. Although it is based on the best data available to TPWD regarding rare species, the data from the TXNDD do not provide a definitive statement as to the presence, absence or condition of special species, natural communities, or other significant features within your project area. These data are not inclusive and cannot be used as presence/absence data. They represent species that could potentially be in your project area. This information cannot be substituted for field surveys.

Recommendation: The TXNDD is updated continuously based on new, updated and undigitized records; therefore, TPWD recommends requesting the most recent TXNDD data on a regular basis. For questions regarding a record or to request the most recent data, please contact [redacted]

Recommendation: To aid in the scientific knowledge of a species' status and current range, TPWD encourages project proponents and their contractors report all encounters of SGCN, state-listed, and federally-listed species to the TXNDD according to the data submittal instructions found on the TXNDD website.

TPWD strives to respond to requests for project review within a 45-day comment period. Responses may be delayed due to workload and lack of staff. Failure to meet the 45-day review timeframe does not constitute a concurrence from TPWD that the proposed project will not adversely impact fish and wildlife resources.

TPWD appreciates the opportunity to provide comments and recommendations for this project. If you have any questions, please contact me at (512) 389-8054 or [redacted]

Sincerely,

Jessica Schmerler

Jessica E. Schmerler, CWB
Wildlife Habitat Assessment Program
Wildlife Division

JES:46529

[redacted]

Subject: FW: [EXTERNAL] Response Requested - Proposed Permian Landfill TCEQ Permit Application, Reeves County, Texas
Date: Thursday, July 21, 2022 2:23:37 PM
Attachments: USFWS Follow-Up Coordination Ltr_Permian Landfill_7-21-2022.pdf

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Good Afternoon,

Thank you for your email. I wasn't sure whether the attached document is intended to initiate a section 7 consultation, since a section 7 consultation is between another Federal agency and the U.S Fish and Wildlife Service. I do not see any mention of another Federal agency. In general, the Service does not provide written correspondence on non-Federal projects. If there is another Federal agency involved in the project, then they would need to initiate consultation with us. Here is a link to more details about section 7 consultations: https://www.fws.gov/service/esa-section-7-consultation

Please let me know if I can be of further assistance.

Thank you,

Christina

Christina Williams
Division Supervisor
Consultations and HCPs
U.S. Fish and Wildlife Service
10711 Burnet Road, Suite 200
Austin, Texas 78758
~~Of. 512-490-0057, ext. 235~~
Cell 512-850-0980

From: Yeargan, [redacted]
Sent: Thursday, July 21, 2022 2:59 PM
To: Williams, [redacted]
Subject: Fw: [EXTERNAL] Response Requested - Proposed Permian Landfill TCEQ Permit Application, Reeves County, Texas

FYI

Thanks,
Catherine

[redacted] e,

Subject: [EXTERNAL] Response Requested - Proposed Permian Landfill TCEQ Permit Application, Reeves County, Texas

This email has been received from outside of DOI – Use caution before clicking on links, opening attachments, or responding.

Ms. Yeargan,

On behalf of West Sun Tex, LLC (WST), Daniel B. Stephens & Associates, Inc. (DBS&A) is preparing a permit application to be submitted to the Texas Commission on Environmental Quality for a proposed Type I municipal solid waste facility in north-central Reeves County called the WST Permian Landfill. This correspondence is a follow-up to the letter we sent to Jacob Ogdee last year. I've attached a letter with the biological assessment for your review and we're requesting a written response, as required by the TCEQ, within 30 days.

Thank you in advance for your time and consideration. Please call if you have questions or concerns.

Regards,

Grace Herrmann, EI
Staff Engineer

Daniel B. Stephens & Associates, Inc.
Hydrology¦Engineering¦Geoscience

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Providing solutions for water, natural resources, and the environment

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Appendix B

USFWS IPaC Report

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Austin Ecological Services Field Office
10711 Burnet Road, Suite 200
Austin, TX 78758-4460
Phone: (512) 490-0057 Fax: (512) 490-0974
http://www.fws.gov/southwest/es/AustinTexas/
http://www.fws.gov/southwest/es/EndangeredSpecies/lists/

In Reply Refer To: September 14, 2021
Consultation Code: 02ETAU00-2021-SLI-2118
Event Code: 02ETAU00-2021-E-04386
Project Name: WST Permian Landfill

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that *may* occur within the county of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

Please note that new information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Also note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of federally listed as threatened or endangered species and to determine whether projects may affect these species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

While a Federal agency may designate a non-Federal representative to conduct informal consultation or prepare a biological assessment, the Federal Agency must notify the Service in writing of any such designation. The Federal agency shall also independently review and evaluate the scope and content of a biological assessment prepared by their designated non-Federal representative before that document is submitted to the Service.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by a federally funded, permitted or authorized activity, the agency is required to consult with the Service pursuant to 50 CFR 402. The following definitions are provided to assist you in reaching a determination:

- *No effect* - the proposed action will not affect federally listed species or critical habitat. A “no effect” determination does not require section 7 consultation and no coordination or contact with the Service is necessary. However, if the project changes or additional information on the distribution of listed or proposed species becomes available, the project should be reanalyzed for effects not previously considered.
- *May affect, but is not likely to adversely affect* - the project may affect listed species and/or critical habitat; however, the effects are expected to be discountable, insignificant, or completely beneficial. Certain avoidance and minimization measures may need to be implemented in order to reach this level of effect. The Federal agency or the designated non-Federal representative should consult with the Service to seek written concurrence that adverse effects are not likely. Be sure to include all of the information and documentation used to reach your decision with your request for concurrence. The Service must have this documentation before issuing a concurrence.
- *Is likely to adversely affect* - adverse effects to listed species may occur as a direct or indirect result of the proposed action. For this determination, the effect of the action is neither discountable nor insignificant. If the overall effect of the proposed action is beneficial to the listed species but the action is also likely to cause some adverse effects to individuals of that species, then the proposed action “is likely to adversely affect” the listed species. The analysis should consider all interrelated and interdependent actions. An “is likely to adversely affect” determination requires the Federal action agency to initiate formal section 7 consultation with our office.

Regardless of the determination, the Service recommends that the Federal agency maintain a complete record of the evaluation, including steps leading to the determination of effect, the qualified personnel conducting the evaluation, habitat conditions, site photographs, and any other related information. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered

Species Consultation Handbook" at: http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF.

Migratory Birds

For projects that may affect migratory birds, the Migratory Bird Treaty Act (MBTA) implements various treaties and conventions for the protection of these species. Under the MBTA, taking, killing, or possessing migratory birds is unlawful. Migratory birds may nest in trees, brushy areas, or other areas of suitable habitat. The Service recommends activities requiring vegetation removal or disturbance avoid the peak nesting period of March through August to avoid destruction of individuals, nests, or eggs. If project activities must be conducted during this time, we recommend surveying for nests prior to conducting work. If a nest is found, and if possible, the Service recommends a buffer of vegetation remain around the nest until the young have fledged or the nest is abandoned.

For additional information concerning the MBTA and recommendations to reduce impacts to migratory birds please contact the U.S. Fish and Wildlife Service Migratory Birds Office, 500 Gold Ave. SW, Albuquerque, NM 87102. A list of migratory birds may be viewed at https://www.fws.gov/birds/management/managed-species/migratory-bird-treaty-act-protected-species.php. Guidance for minimizing impacts to migratory birds for projects including communications towers can be found at: https://www.fws.gov/birds/management/project-assessment-tools-and-guidance/guidance-documents/communication-towers.php. Additionally, wind energy projects should follow the wind energy guidelines

https://www.fws.gov/birds/management/project-assessment-tools-and-guidance/guidance-documents/wind-energy.php) for minimizing impacts to migratory birds and bats.

Finally, please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan https://www.fws.gov/birds/management/project-assessment-tools-and-guidance/guidance-documents/eagles.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Austin Ecological Services Field Office
10711 Burnet Road, Suite 200
Austin, TX 78758-4460
(512) 490-0057

Project Summary

Consultation Code: 02ETAU00-2021-SLI-2118
Event Code: Some(02ETAU00-2021-E-04386)
Project Name: WST Permian Landfill
Project Type: LAND - DISPOSAL / TRANSFER
Project Description: Proposed Type I municipal solid waste landfill
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@31.43206775,-103.57851061487686,14z



Counties: Reeves County, Texas

Endangered Species Act Species

There is a total of 12 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 2 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Mexican Spotted Owl *Strix occidentalis lucida* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8196	Threatened
Northern Aplomado Falcon *Falco femoralis septentrionalis* Population: Wherever found, except where listed as an experimental population No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1923	Endangered
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. The location of the critical habitat is not available. This species only needs to be considered under the following conditions: ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. This species only needs to be considered under the following conditions: ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

Fishes

NAME	STATUS
Comanche Springs Pupfish *Cyprinodon elegans* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7282	Endangered
Pecos Gambusia *Gambusia nobilis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/460	Endangered

Snails

NAME	STATUS
Pecos Assiminea Snail *Assiminea pecos* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4519	Endangered
Phantom Springsnail *Pyrgulopsis texana* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/465	Endangered
Phantom Tryonia *Tryonia cheatumi* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4779	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Crustaceans

NAME	STATUS
Diminutive Amphipod *Gammarus hyalleloides* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/224	Endangered

Flowering Plants

NAME	STATUS
Pecos (=puzzle, =paradox) Sunflower *Helianthus paradoxus* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/7211	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

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Appendix C

TPWD Annotated County List of Rare Species

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Last Update: 6/22/2021

REEVES COUNTY

AMPHIBIANS

Woodhouse's toad *Anaxyrus woodhousii*

Terrestrial and aquatic: A wide variety of terrestrial habitats are used by this species, including forests, grasslands, and barrier island sand dunes. Aquatic habitats are equally varied.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: SU

BIRDS

American peregrine falcon *Falco peregrinus anatum*

Year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more northern breeding areas in US and Canada, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4T4	State Rank: S2B

chestnut-collared longspur *Calcarius ornatus*

According to Partners in Flight's Landbird Conservation Plan (2016), this species has a continental decline of 85%. Occurs in open shortgrass settings especially in patches with some bare ground. Also occurs in grain sorghum fields and Conservation Reserve Program lands

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

Franklin's gull *Leucophaeus pipixcan*

This species is only a spring and fall migrant throughout Texas. It does not breed in or near Texas. Winter records are unusual consisting of one or a few individuals at a given site (especially along the Gulf coastline). During migration, these gulls fly during daylight hours but often come down to wetlands, lake shore, or islands to roost for the night.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2N

DISCLAIMER

The information on this web application is provided "as is" without warranty as to the currentness, completeness, or accuracy of a

lark bunting *Calamospiza melanocorys*

According to Partners in Flight's Landbird Conservation Plan (2016), this species has a continental decline of 86%. Overall, it's a generalist in most short grassland settings including ones with some brushy component plus certain agricultural lands that include grain sorghum. Short grasses include sideoats and blue gramas, sand dropseed, prairie junegrass (Koeleria), buffalograss also with patches of bluestem and other mid-grass species. This bunting will frequent smaller patches of grasses or disturbed patches of grasses including rural yards. It also uses weedy fields surrounding playas. This species avoids urban areas and cotton fields.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S4B

mountain plover *Charadrius montanus*

Breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S2

reddish egret *Egretta rufescens*

Resident of the Texas Gulf Coast; brackish marshes and shallow salt ponds and tidal flats; nests on ground or in trees or bushes, on dry coastal islands in brushy thickets of yucca and prickly pear

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S2B

western burrowing owl *Athene cunicularia hypugaea*

Open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4T4	State Rank: S2

western yellow-billed cuckoo *Coccyzus americanus occidentalis*

Status applies only to western population beyond the Pecos River Drainage; breeds in riparian habitat and associated drainages; springs, developed wells, and earthen ponds supporting mesic vegetation; deciduous woodlands with cottonwoods and willows; dense understory foliage is important for nest site selection; nests in willow, mesquite, cottonwood, and hackberry; forages in similar riparian woodlands; breeding season mid-May-late Sept.

Federal Status: LT	State Status:	SGCN: Y
Endemic: N	Global Rank: G5T2T3	State Rank: S4S5B

white-faced ibis *Plegadis chihi*

Prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; currently confined to near-coastal rookeries in so-called hog-wallow prairies. Nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S4B

DISCLAIMER

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zone-tailed hawk *Buteo albonotatus*

Arid open country, including open deciduous or pine-oak woodland, mesa or mountain county, often near watercourses, and wooded canyons and tree-lined rivers along middle-slopes of desert mountains; nests in various habitats and sites, ranging from small trees in lower desert, giant cottonwoods in riparian areas, to mature conifers in high mountain regions

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S3B

CRUSTACEANS

diminutive amphipod *Gammarus hyalelloides*

Known only from Phantom Lake Spring; omnivorous; amphipods are active mostly at night and spend daylight hours hiding under vegetation and other cover; vulnerable to reduction of springflow resulting from declining levels of groundwater

Federal Status: LE	State Status: E	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

FISH

Comanche Springs pupfish *Cyprinodon elegans*

Restricted to small series of springs and their outflows, and man-made irrigation canals in the area of Balmorhea, Texas, including Phantom Springs (Jeff Davis County), San Solomon Springs, Giffin Springs and Toyah Creek (Reeves County). Native range: Comanche, Phantom Cave, San Solomon springs (Pecos and Reeves counties). Prefers fast-flowing water. Originally in Comanche Springs, San Solomon, and Phanton Cave, presently restricted to San Solomon and Phantom Cave and associated springs, and downstream irrigation canals; found in constantly discharging springs and in swift-flowing water of canals and earthen ditches

Federal Status: LE	State Status: E	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

headwater catfish *Ictalurus lupus*

Originally throughout streams of the Edwards Plateau and the Rio Grande basin, currently limited to Rio Grande drainage, including Pecos River basin; springs, and sandy and rocky riffles, runs, and pools of clear creeks and small rivers.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S1S2

Pecos gambusia *Gambusia nobilis*

Endemic to the Pecos River basin in southeastern New Mexico and western Texas. Restricted to two locations in Texas (Balmorhea springs complex and Diamond Y Draw). Stenothermal springs, runs, ciénegas and irrigation canals carrying spring waters.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G2	State Rank: S2

DISCLAIMER

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Pecos pupfish *Cyprinodon pecosensis*

Originally Pecos River basin, presently restricted to upper basin only; shallow margins of clear, vegetated spring waters high in calcium carbonate, as well as in sinkhole habitats

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G2	State Rank: S1

roundnose minnow *Dionda episcopa*

Pecos River and Limpia Creek. Restricted to clear, spring-fed waters having little temperature variation.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S1

speckled chub *Macrhybopsis aestivalis*

Found throughout the Rio Grande and lower Pecos River but occurs most frequently between the Río Conchos confluence and the Pecos River. Flowing water over coarse sand and fine gravel substrates in streams; typically found in raceways and runs.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S1S2

INSECTS

American bumblebee *Bombus pensylvanicus*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G3G4	State Rank: SNR

Balmorhea saddle-case caddisfly *Protoptila balmorhea*

Oviparous; larvae make turtle-shaped cases of small pebbles attached to the underside of stones in swift-flowing streams and rivers

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G1	State Rank: S1

No accepted common name *Epitragosoma arenaria*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: GNR	State Rank: SNR

MAMMALS

big brown bat *Eptesicus fuscus*

Any wooded areas or woodlands except south Texas. Riparian areas in west Texas.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

DISCLAIMER

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big free-tailed bat *Nyctinomops macrotis*

Habitat data sparse but records indicate that species prefers to roost in crevices and cracks in high canyon walls, but will use buildings, as well; reproduction data sparse, gives birth to single offspring late June-early July; females gather in nursery colonies; winter habits undetermined, but may hibernate in the Trans-Pecos; opportunistic insectivore

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

black bear *Ursus americanus*

Generalist. Historically found throughout Texas. In Chisos, prefers higher elevations where pinyon-oaks predominate; also occasionally sighted in desert scrub of Trans-Pecos (Black Gap Wildlife Management Area) and Edwards Plateau in juniper-oak habitat. For ssp. luteolus, bottomland hardwoods, floodplain forests, upland hardwoods with mixed pine; marsh. Bottomland hardwoods and large tracts of inaccessible forested areas.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

black-tailed prairie dog *Cynomys ludovicianus*

Dry, flat, short grasslands with low, relatively sparse vegetation, including areas overgrazed by cattle; live in large family groups

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S3

cave myotis bat *Myotis velifer*

Colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (Hirundo pyrrhonota) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4G5	State Rank: S2S3

Davis Mountains cottontail *Sylvilagus robustus*

Primarily limited to the Davis Mountains in the Trans Pecos . Brushy pastures, brushy edges of cultivated fields, and well-drained streamsides; active mostly at twilight and at night, where they may forage in a variety of habitats, including open pastures, meadows, or even lawns; rest during daytime in thickets or in underground burrows and small culverts; feed on grasses, forbs, twigs and bark; not sociable and seldom seen feeding

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G1G2	State Rank: S3

DISCLAIMER

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eastern red bat *Lasiurus borealis*

Red bats are migratory bats that are common across Texas. They are most common in the eastern and central parts of the state, due to their requirement of forests for foliage roosting. West Texas specimens are associated with forested areas (cottonwoods). Also common along the coastline. These bats are highly mobile, seasonally migratory, and practice a type of "wandering migration". Associations with specific habitat is difficult unless specific migratory stopover sites or wintering grounds are found. Likely associated with any forested area in East, Central, and North Texas but can occur statewide.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S4

gray-footed chipmunk *Tamias canipes*

High elevation (1800-2500 meters) forest-dwelling chipmunk occurring in dense stands of mixed timber and on brushy hillsides with rock crevices or downed logs along forest edges. Occurs in Texas only in the Sierra Diablo and Guadalupe Mountains in the Trans-Pecos; favorite habitat is downed logs near edges of clearings; also occur in dense stands of mixed timber (oaks, pines, firs) and on brushy hillsides, especially with rock

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S2S3

hoary bat *Lasiurus cinereus*

Hoary bats are highly migratory, high-flying bats that have been noted throughout the state. Females are known to migrate to Mexico in the winter, males tend to remain further north and may stay in Texas year-round. Commonly associated with forests (foliage roosting species) but are found in unforested parts of the state and lowland deserts. Tend to be captured over water and large, open flyways.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S4

hooded skunk *Mephitis macroura*

Rocky canyons & riparian corridors at low elevations, rarely to 6000 feet. Avoids man-made habitations. Only known from the Trans-Pecos regions along the Rio Grande.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S1S2

kit fox *Vulpes macrotis*

Open desert grassland; avoids rugged, rocky terrain and wooded areas.

Federal Status:	State Status:	SGCN: N
Endemic: N	Global Rank: G4	State Rank: S1S2

long-legged myotis bat *Myotis volans*

Found in pine-oak woodland to grassland ecotone, higher elevations of Trans-Pecos.High, open woods and mountainous terrain; nursery colonies (which may contain several hundred individuals) form in summer in buildings, crevices, and hollow trees; apparently does not use caves as day roosts, but may use such sites at night; single offspring born June-July.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4G5	State Rank: S1S2

DISCLAIMER

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long-tailed weasel *Mustela frenata*

Includes brushlands, fence rows, upland woods and bottomland hardwoods, forest edges & rocky desert scrub. Usually live close to water.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

mountain lion *Puma concolor*

Generalist; found in a wide range of habitats statewide. Found most frequently in rugged mountains & riparian zones.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2S3

Muskrat *Ondatra zibethicus*

Found in fresh or brackish marshes, lakes, ponds, swamps, and other bodies of slow-moving water. Most abundant in areas with cattail. Dens in bank burrow or conical house of vegetation in shallow vegetated water. It is primarily found in the Rio Grande near El Paso and in SE Texas in the Houston area.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

pronghorn *Antilocapra americana*

Prefers hilly & plateau areas of open grassland, desert-grassland, & desert-scrub, where it frequents south-facing slopes & other sheltered areas.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

rock mouse *Peromyscus nasutus*

Rocky areas and talus slopes above 6000 feet. General vegetation associations include madrone, oak, maple, juniper, pinyon and ponderosa pine.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S4

Townsend's big-eared bat *Corynorhinus townsendii*

In Texas, habitat ranges from desert scrub to pinyon-juniper woodland, consistently in areas with canyons or cliffs (Schmidly 1991). Roosts in caves, crevases, trees, and buildings in the Panhandle and Trans-Pecos.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S3?

western hog-nosed skunk *Conepatus leuconotus*

Habitats include woodlands, grasslands & deserts, to 7200 feet, most common in rugged, rocky canyon country; little is known about the habitat of the ssp. telmalestes

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S4

DISCLAIMER

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western small-footed myotis bat *Myotis ciliolabrum*

Mountainous regions of the Trans-Pecos, usually in wooded areas, also found in grassland and desert scrub habitats; roosts beneath slabs of rock, behind loose tree bark, and in buildings; maternity colonies often small and located in abandoned houses, barns, and other similar structures; apparently occurs in Texas only during spring and summer months; insectivorous

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

western spotted skunk *Spilogale gracilis*

Brushy canyons, rocky outcrops (rimrock) on hillsides and walls of canyons. In semi-arid brushlands in U.S., in wet tropical forests in Mexico. When inactive or bearing young, occupies den in rocks, burrow, hollow log, brush pile, or under building.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

MOLLUSKS

Brune's tryonia *Tryonia brunei*

Endemic freshwater snail; benthic; currently only found in modified waters Phantom Lake Spring; abundant on firm substratum and in soft mud before modification; vulnerable to declining groundwater resulting in reduction of springflow

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

Pecos assiminea snail *Assiminea pecos*

A member of the marine snail family, but represents the most inland snail of the genus; semiaquatic, usually found on moist ground or beneath

Federal Status: LE	State Status: E	SGCN: Y
Endemic:	Global Rank: G1	State Rank: S1

Phantom springsnail *Pyrgulopsis texana*

Endemic aquatic snail; known only from three spring systems and associated outflows in Jeff Davis and Reeves counties; vulnerable to reduction of springflow resulting from declining levels of groundwater

Federal Status: LE	State Status: E	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

phantom tryonia *Tryonia cheatumi*

Endemic aquatic snail; known only from three spring systems and associated outflows in Jeff Davis and Reeves counties; vulnerable to reduction of springflow resulting from declining levels of groundwater

Federal Status: LE	State Status: E	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

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Texas Hornshell *Popenaias popeii*

Occurs in small streams to large rivers in slow to moderate current, often residing in rock crevices, travertine shelves, and under large boulders, where small-grained material, such as clay, silt, or sand gathers. Can also occur in riffles that are clean swept of soft silt; not known from reservoirs (Carman 2007; Inoue et al. 2014; Randklev et al. 2017b; Randklev et al. forthcoming). [Mussels of Texas 2019]

Federal Status: LE | State Status: E | SGCN: Y
Endemic: N | Global Rank: G1 | State Rank: S1

REPTILES

gray-checkered whiptail *Aspidoscelis dixoni*

Terrestrial: The habitat comprises rocky plains, dry washes, canyon bottoms, and desert scrub (ocotillo, creosotebush, opuntia) (Bartlett and Bartlett 1999); generally on rocky soils of desert shrublands and degraded grasslands on alluvial benches, canyon bottoms, and lower southwestern mountain slopes (Scudday 1973, Degenhardt et al. 1996).

Federal Status: | State Status: | SGCN: Y
Endemic: N | Global Rank: G5 | State Rank: S2

Longnose Leopard Lizard *Gambelia wislizenii*

This species occurs in open gravelly or sandy habitats that are sparsely vegetated with scattered brush. When threatened, this lizard will retreat to brush piles and rodent burrows to escape.

Federal Status: | State Status: | SGCN: Y
Endemic: N | Global Rank: G5 | State Rank: S5

Rio Grande river cooter *Pseudemys gorzugi*

Aquatic: Habitat includes rivers and their more permanent spring-fed tributary streams, beaver ponds, and stock tanks (Garrett and Barker 1987). Occupied waters may have a muddy, sandy, or rocky bottom, and may or may not contain aquatic vegetation (Degenhardt et al. 1996).

Federal Status: | State Status: | SGCN: Y
Endemic: N | Global Rank: G3G4 | State Rank: S2

Roundtail Horned Lizard *Phrynosoma modestum*

This species seems to prefer rocky or gravelly substrates in open areas that are sparsely vegetated.

Federal Status: | State Status: | SGCN: Y
Endemic: N | Global Rank: G5 | State Rank: S5

Texas horned lizard *Phrynosoma cornutum*

Terrestrial: Open habitats with sparse vegetation, including grass, prairie, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive. Occurs to 6000 feet, but largely limited below the pinyon-juniper zone on mountains in the Big Bend area.

Federal Status: | State Status: T | SGCN: Y
Endemic: N | Global Rank: G4G5 | State Rank: S3

DISCLAIMER
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western box turtle *Terrapene ornata*

Terrestrial: Ornate or western box trutles inhabit prairie grassland, pasture, fields, sandhills, and open woodland. They are essentially terrestrial but sometimes enter slow, shallow streams and creek pools. For shelter, they burrow into soil (e.g., under plants such as yucca) (Converse et al. 2002) or enter burrows made by other species.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

western hognose snake *Heterodon nasicus*

Terrestrial: Shortgrass or mixed grass prairie, with gravel or sandy soils. Often found associated with draws, floodplains, and more mesic habitats within the arid landscape. Frequently occurs in shrub encroached grasslands.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S4

western massasauga *Sistrurus tergeminus*

Terrestrial: Shortgrass or mixed grass prairie, with gravel or sandy soils. Often found associated with draws, floodplains, and more mesic habitats within the arid landscape. Frequently occurs in shrub encroached grasslands.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S3S4

western rattlesnake *Crotalus viridis*

Terrestrial: Dry desert and prairie grasslands, shrub desert rocky hillsides; edges of arid and semi-arid river breaks.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

PLANTS

Bigelow's desert grass *Blepharidachne bigelovii*

Restricted to xeric limestone or various gypsum-influenced habitats; Perennial; Flowering March-Dec; Fruiting March-Dec

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

cienega false clappia-bush *Pseudoclappia arenaria*

Mostly in alkali sacaton (Sporobolus airoides) grasslands on alkaline, gypseous or saline soils of alluvial flats around cienegas, playa lakes and other desert wetlands; Perennial; Flowering spring-summer

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

DISCLAIMER

The information on this web application is provided "as is" without warranty as to the currentness, completeness, or accuracy of a

desert night-blooming cereus *Peniocereus greggii var. greggii*

Chihuahuan Desert shrublands or shrub invaded grasslands in alluvial or gravelly soils at lower elevations, 1200-1500 m (3900-4900 ft), on slopes, benches, arroyos, flats, and washes; flowering synchronized over a few nights in early May to late June when almost all mature plants bloom, flowers last only one day and open just after dark, may flower as early as April

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4T3	State Rank: S2

grayleaf rock-daisy *Perityle cinerea*

Crevices in dry limestone caprock of mesas; flowering spring-fall

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S2

gyp locoweed *Astragalus gypsodes*

Gypsum or stiff gypseous clay soils on low rolling hills, mostly low elevations in the middle Pecos River valley; many of the known locations are on the Castile Formation (Permian); flowering March-June

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S2

Hinckley's spreadwing *Eurytaenia hinckleyi*

Loose sandy soils of the Monahans/Kermit Sandhills; Annual; Flowering/Fruiting May-July

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

lyreleaf twistflower *Streptanthus carinatus ssp. carinatus*

Occurs on igneous and limestone slopes and alluvial fans (Carr 2015).

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4T3T4	State Rank: S3

neglected sunflower *Helianthus neglectus*

Deep sands on rolling hills and dunes of Pleistocene sand sheets, often associated with Havards shin oak dwarf woodlands or mesquite-sand sage woodlands; flowering July-September

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G2Q	State Rank: S2

Pecos sunflower *Helianthus paradoxus*

Restricted to saline, calcareous, heavy-textured soils around cienegas; usually most abundant on perennially wet soils of subirrigated terraces just above the wettest sites; flowering August-November

Federal Status: LT	State Status: T	SGCN: Y
Endemic: N	Global Rank: G2	State Rank: S1

DISCLAIMER

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Texas claret-cup cactus *Echinocereus coccineus var. paucispinus*

Mountains, hills, and mesas, igneous and limestone, oak-juniper-pinyon woodland or juniper woodland on limestone mesas, mostly rocky habitats but also in alluvial basins, grasslands, or among mesquite or other shrubs. Flowering March - April (Powell and Weedin 2004).

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5T3	State Rank: S3

Wright's beardtongue *Penstemon wrightii*

Occurs mostly in montane grasslands and woodlands; Perennial; Flowering April-Aug; Fruiting May-Aug

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S3

Wright's trumpets *Acleisanthes wrightii*

Open semi-desert grasslands and shrublands on shallow stony soils over limestone on low hills and flats; Perennial; Flowering spring-fall, probably also in response to rains

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G2	State Rank: S2

DISCLAIMER

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Appendix D

Photographs

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1. View from the west-central area to the east-southeast of grasslands



2. Southern portion of site



3. Disturbed area in the central-southeast part of site



4. View to the north from the central-eastern part of the site



5. View of the northeast part of the site



6. View to the south from the northwest part of the site



7. The west-northwest part of the site, with swale shown beyond by denser line of mesquite trees



8. Swale that crosses the site, showing denser ground cover, creosote bush, and mesquite trees



9. Example of denser vegetation in area of the swale that crosses the site from northwest to east-southeast



10. Former irrigation ditch through Chihuahuan desert grassland in southwestern part of site



11. Example of eroded irrigation ditch that could harbor reptiles



12. Metal building near gate and roadway that contained roosting barn owl



13. Example of ant mound near gate entrance



14. Roundtailed horned lizards observed in the central-east portion of the site



15. Vacant nest in mesquite tree in the swale that cuts across the site from northwest to southeast



16. Domestic or feral pig skull observed in northern part of site



17. Badger hole observed in the northwest part of site



18. Pack rat nest located in debris left on site



19. Western coachwhip snake



20. Roundtail horned lizard

Appendix E

Texas Natural Diversity Database Species Occurrence List

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Occurrence List for Quads Surrounding Request Area

Scientific Name:	Common Name:	Occurrence Number:	State Status:	Federal Status:	Eo Id:
Astragalus gypsodes	gyp locoweed	5			3574
Cyprinodon pecosensis	Pecos pupfish	12	T		937
Helianthus paradoxus	Pecos sunflower	6	T	LT	5789
Ictalurus lupus	headwater catfish	27	T		13982
Macrhybopsis aestivalis	speckled chub	30	T		13512
Perityle cinerea	grayleaf rock-daisy	2			4032
Phrynosoma cornutum	Texas horned lizard	68	T		14502
Pseudoclappia arenaria	cienega false clappia-bush	1			5445
Pseudoclappia arenaria	cienega false clappia-bush	2			2381
Pseudoclappia arenaria	cienega false clappia-bush	3			8238

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Biological Evaluation Correspondence

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Texas Parks and Wildlife Department

DBS&A
a Geo-Logic Company

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April 23, 2021

Ms. Jessica Schmerler
Texas Parks & Wildlife Department
Wildlife Habitat Assessment Program
[redacted]

Re: Proposed Permian Landfill TCEQ Permit Application, Reeves County, Texas

Dear Ms. Schmerler:

On behalf of West Sun Tex, LLC (WST), Daniel B. Stephens & Associates, Inc. (DBS&A) is preparing a permit application to be submitted to the Texas Commission on Environmental Quality (TCEQ) for a proposed Type I municipal solid waste (MSW) facility in north-central Reeves County called the WST Permian Landfill. The facility property is located approximately 5 miles west-northwest of Pecos, Texas, at the intersection of County Road (CR) 408 and CR 415. The site latitude and longitude are 31.432400 and –103.585408. The subject property has already been permitted as an oil and gas waste disposal facility by the Railroad Commission of Texas; however, WST is proposing to permit half of the 440-acre property as an MSW landfill.

This letter is being sent to the Texas Parks & Wildlife Department (TPWD) to request a project review per 30 TAC 330.61(n). We have included figures showing the location of the proposed facility (Figure 1), topography and photograph locations (Figure 2), and aerial photography (Figure 3). Site photographs are provided as Attachment 1. Land use in the vicinity of the site is for agriculture, oil and gas development, rural residences, and undeveloped land.

A biological assessment to determine the effect of the facility on endangered or threatened species has not been prepared; however, a TPWD project review request form is included as Attachment 2. Summaries of a 2014 U.S. Fish and Wildlife Service (USFWS) consultation for the subject property, recent review of the rare, threatened, and endangered species of Texas for Reeves County, and current Texas Natural Diversity Database (TXNDD) data for the project and surrounding area are discussed below.

In August 2014, HDR received a consultation from the USFWS on the subject property under consultation tracking number 02ETAU00-2014-SLI-0380 as part of property pre-purchase activities (Attachment 3). This consultation resulted in a list of 12 threatened or endangered species to consider in an effects analysis for a project on this property, including the following:

- *Federal Endangered Species*: Interior least tern (wind energy projects condition), northern aplomado falcon, diminutive amphipod (crustacean), Comanche Springs pupfish, Pecos gambusia (fish), Pecos assiminea snail, phantom springsnail, and phantom Tryonia (snail)

- *Federal Threatened Species:* Mexican spotted owl, piping plover (wind energy projects condition), and Pecos sunflower
- *Federal Proposed Threatened Species:* Red knot (wind energy projects condition)

Based on the USFWS Critical Habitat Mapper, the only critical habitat that has been designated in Reeves County is for the phantom tryonia (snail), and these areas are located in southwestern Reeves County, over 30 miles southwest of the proposed facility location.

The rare, threatened, and endangered species of Texas for Reeves County were reviewed in 2020, during development of the current landfill permit application. Species currently listed as endangered or threatened in Reeves County include the following:

- *Federal Endangered listings:* Diminutive amphipod (crustacean), Comanche Springs pupfish, Pecos gambusia (fish), Pecos assiminea snail, phantom springsnail, phantom tryonia (snail), and Texas hornshell (freshwater mussel)
- *Federal Threatened listings:* Pecos sunflower
- *State Endangered listings:* Diminutive amphipod (crustacean), Comanche Springs pupfish, Pecos gambusia (fish), Pecos assiminea snail, phantom springsnail, phantom tryonia (snail), and Texas hornshell (freshwater mussel)
- *State Threatened listings:* Black bear, American peregrine falcon, reddish egret, white-faced ibis, zone-tailed hawk, headwater catfish, Pecos pupfish, roundnose minnow, speckled chub (fish), Texas horned lizard, and Pecos sunflower

The TXNDD data on rare, threatened, and endangered species, natural communities, and other significant features of concern to the TPWD were obtained on April 2, 2021. The proposed project is located within the Pecos West U.S. Geological Survey (USGS) 7.5-minute quadrangle area. A summary of the TXNDD data follows:

- The element occurrence (EO) list for the USGS 7.5 minute quadrangles surrounding the request area includes 5 species: gyp locoweed (*Astragalus gypsodes*) (no state or federal listing), Pecos sunflower (*Helianthus paradoxus*) (state threatened and federal threatened listings), grayleaf rock-daisy (*Perityle cinerea*) (no state or federal listing), Texas horned lizard (*Phrynosoma cornutum*) (state threatened listing, no federal listing), and cienega false clappia-bush (*Pseudoclappia arenaria*) (no state or federal listing).

- The EO report includes 7 records: 3 for fish (Pecos pupfish [*Cyprinodon pecosensis*], headwater catfish [*Ictalurus lupus*], and speckled chub [*Macrhybopsis aestivalis*]). No surface water features are present near the proposed project's location, and the Pecos River is located approximately 6 miles to the east. The other EO report records are for grayleaf rock-daisy (*Perityle cinerea*) and cienega false clappia-bush (*Pseudoclappia arenaria*). The grayleaf rock-daisy record lists this species as imperiled and very rare both in the state and

globally, and includes 5 historical occurrence records for this species, with no field information. The EO report includes 3 records for the cienega false clappia-bush. This species is listed as rare or uncommon in the state and very rare globally. The EO records for this species include information about a total of 4 occurrences between July 1947 and June 1971 at a location 1 mile north of Pecos, Texas near U.S. Highway 285, 2 occurrences in June 1943 and 196? (no date) 2 miles north of Pecos, Texas near U.S. Highway 285, and 1 occurrence in September 1939 at Toyah Lake located 3.66 miles southeast of Pecos, Texas on U.S. Highway 285.

- The source feature (SF) list for the surrounding area includes one species: Texas horned lizard (*Phrynosoma cornutum*).

Please provide an evaluation of the proposed facility's potential impacts to wildlife and habitat, including rare, threatened, and endangered species, as well as impacts to other significant resources, and any concerns regarding the proposed facility or project area.

Please contact me at (505) 822-9400 if you have any questions about the attached information.

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES, INC.

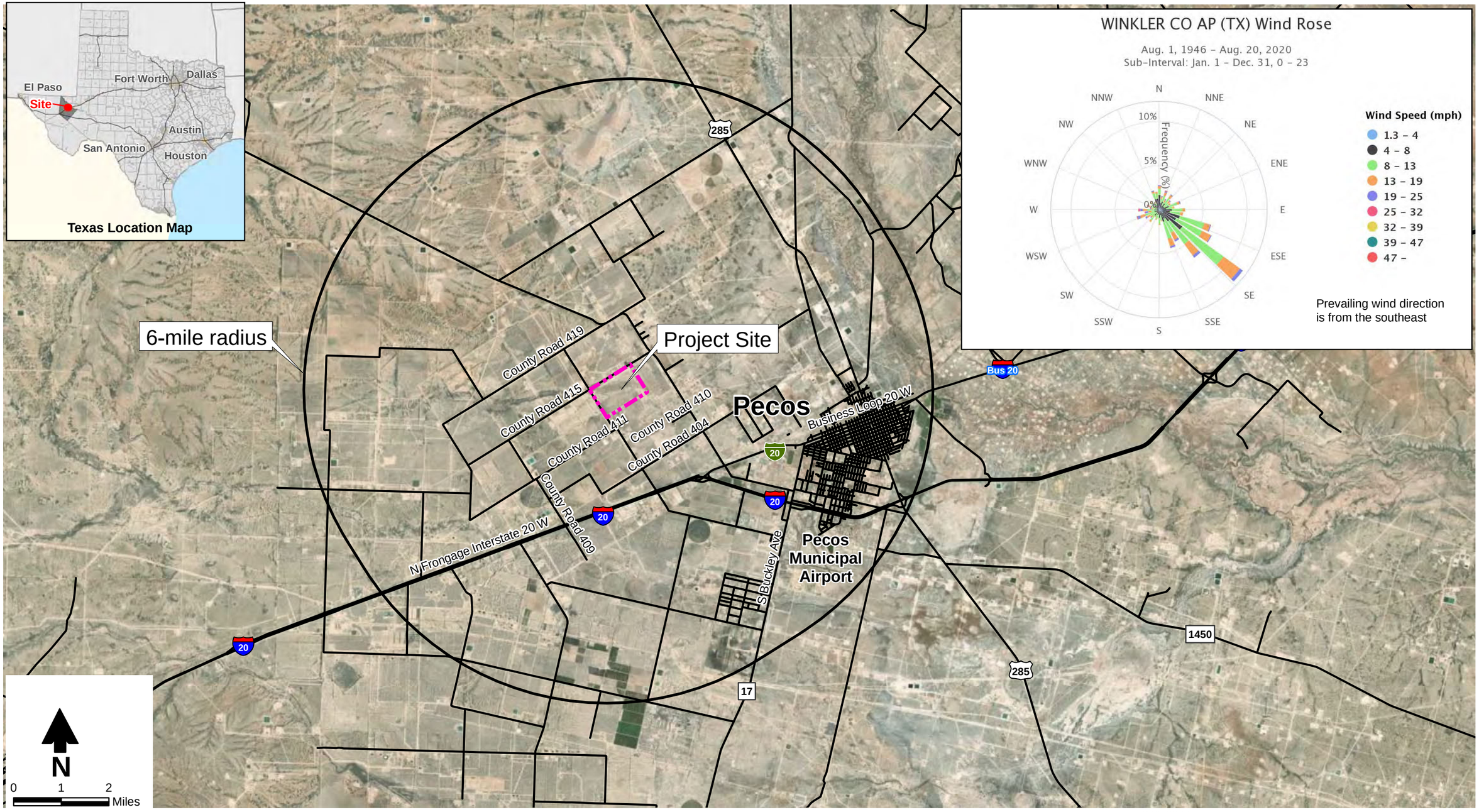
Gundar Peterson, P.E.
Vice President

AE/rpf
Attachments

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Figures

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Explanation

Site

Texas Department of Transportation road

Image source: Maxar, 3/26/2020
Road source: Texas Department of Transportation (http://gis-txdot.opendata.arcgis.com/)
Wind data: Midwestern Regional Climate Center (MRCC) (https://mrcc.illinois.edu/CLIMATE/)

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Daniel B. Stephens & Associates, Inc.
8/25/2020 JN DB20.1166

WEST SUN TEX PERMIT APPLICATION

General Location Map

Figure 1



x Photo 2, South

x Photo 1, East

Photo 8, North x

x Photo 3, North and Photo 4, West

x Photo 7, Southwest

Photo 6, North x

x Photo 5, East

TEXAS

CO RD 416
CO RD 415
CO RD 405
CO RD 419
CO RD 415
CO RD 408
CO RD 411
CO RD 404
RANCH RD 2119
HOG RD
EVERGREEN DR
WESTERN AVE
BUS 20
20
2700
2650

N

0 1000 2000 Feet

Explanation

Site

Image source: Esri, et al., 2020

Pecos West is the USGS 7.5 minute quadrangle map that includes the project area.

WEST SUN TEX PERMIT APPLICATION

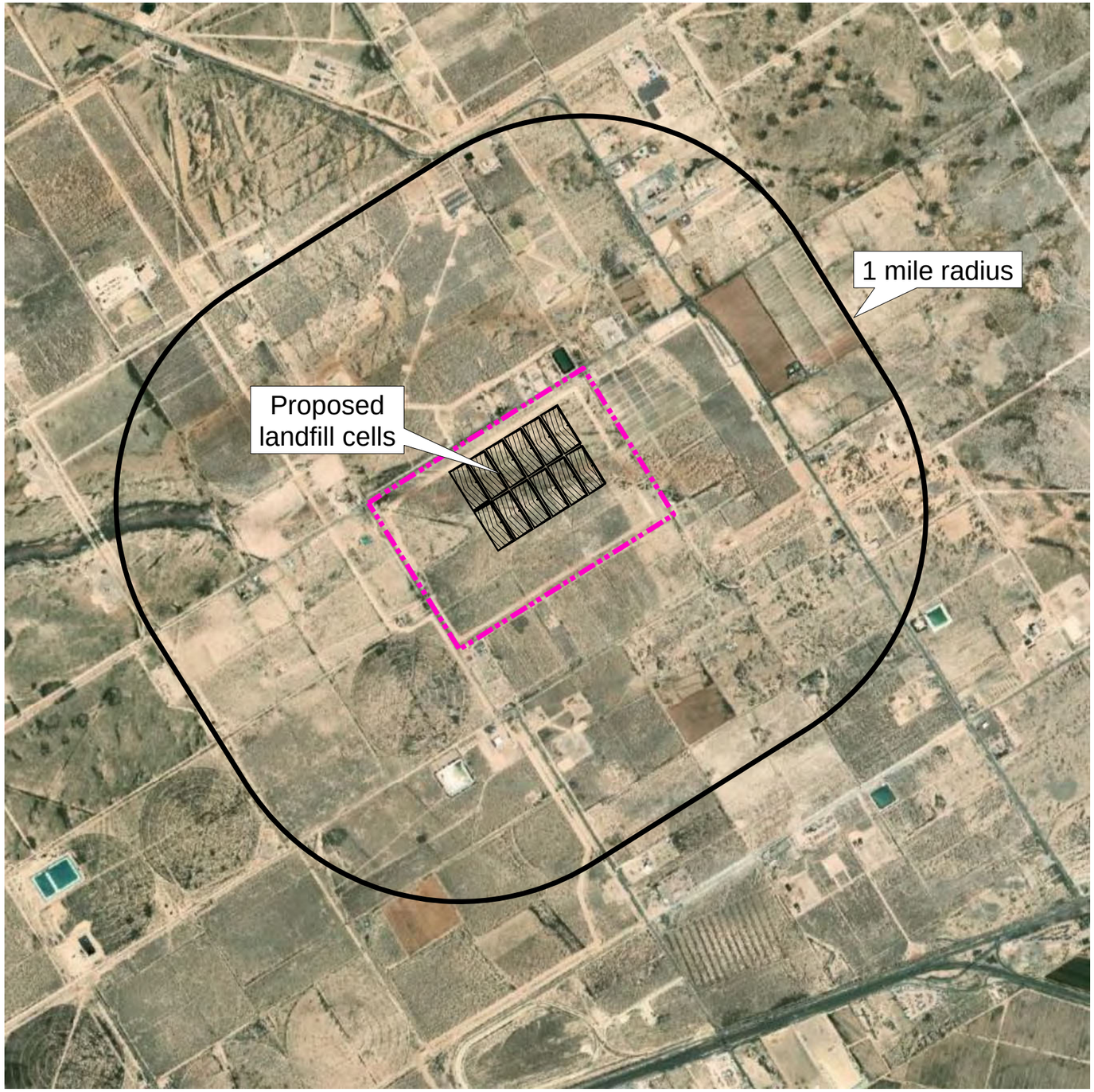
Topographic Map

Figure 2

Daniel B. Stephens & Associates, Inc.

8/25/2020 JN DB20.1166

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N

0 1200 2400
Feet

Explanation

Site location

Image source: Maxar, 3/26/2020

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Daniel B. Stephens & Associates, Inc.
8/28/2020 JN DB20.1166

WEST SUN TEX PERMIT APPLICATION
Aerial Photography

Figure 3

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Attachment 1

Photographs

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1. View to east from water fill station, southeast corner of CR 408-CR 415 intersection



2. View to south from CR 415 at eastern property boundary



3. View to north from southeast corner of the property



4. View to west from southeast corner of the property



5. View to east from CR 408 near southern property boundary



6. View to north along CR 408, with corrugated-clad pole barn and fenced laydown yard in middle distance



7. Close-up of the barn (view to southwest)



8. View to north from water filling station pull-off on CR 408, southeast corner of CR 408-CR 415 intersection

Attachment 2

Project Review Request Form

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Project Coordination and Review Requests

(Including Threatened and Endangered Species)

EARLY PROJECT COORDINATION

If you are in the information gathering phase of project coordination and assessment, ***in lieu of*** submitting a Project Review form or a letter request, you may obtain information from the following Texas Parks and Wildlife Department (TPWD) sources regarding sensitive resource information for use in your analyses. TPWD recommends you use at least the following two sources of information when analyzing for project impacts to sensitive resources, including before submitting a request for TPWD review and recommendations.

RARE, THREATENED, AND ENDANGERED SPECIES OF TEXAS BY COUNTY - This database includes lists of species known to occur and potentially occurring in Texas at the county level. It can be accessed online at: http://www.tpwd.state.tx.us/landwater/land/maps/gis/ris/endangered_species/ or by contacting our administrative staff at (512) 389-4571. Appropriate use and interpretation of the county level lists are the responsibility of the recipient.

TEXAS NATURAL DIVERSITY DATABASE (TXNDD) – The TXNDD is publicly available location specific data on rare, threatened and endangered species, natural communities and other significant features of conservation concern to TPWD. This information can be obtained by submitting a data request to [redacted] Response to a data request will include available TXNDD records, reports, and geographic information system compatible shapefiles of recorded locations for species and other rare resources on the U.S. Geological Survey (USGS) 7.5 minute topographic quadrangle of the project and surrounding area. Responses generally take a maximum of five business days from receipt of the request. Appropriate use and interpretation of TXNDD data are the responsibility of the recipient.

WILDLIFE HABITAT ASSESSMENT (WHAB) PROGRAM REVIEW

PROJECT REVIEW REQUESTS – The WHAB Program can provide a review of your assessment, after your analysis for impacts using the above two data sources. Please complete the WHAB Review Request form (attached; use Word format for fill-in version), or use the form as an outline of information to include with your letter request. The WHAB Program response will provide an evaluation of your environmental assessment for impacts to fish and wildlife and their habitats, including rare, threatened, and endangered species, other significant resources and concerns presently known or potentially occurring in the vicinity of your project. WHAB Program responses generally take 4 to 6 weeks on average from receipt, depending on the size of your request.

The request should include all the information listed on the next two pages and be sent to the address shown on the last page. The more pertinent information you provide, the more customized our review, and the faster our turnaround. Review requests submitted without adequate project detail may cause a delay in our response as we will need to contact you and wait for supplemental information. The potential for adverse impacts to natural resources from project activities varies based on the type of activity; location; season; vegetation; present physical features (both natural and man-made); degree of disturbance; planned avoidance, minimization, mitigation, enhancement, and restoration measures; species-specific tolerance levels; etc. Current color photographs and aerial photographs of the site greatly facilitate the review process. Complete information allows us to more accurately assess the potential for project impacts, as well as, assists us in narrowing the list of rare, threatened, and endangered species and other natural resources that may need to be addressed further.

WILDLIFE HABITAT ASSESSMENT PROGRAM
Review Requests
(Including Threatened and Endangered Species)

Name: **Gundar Peterson, P.E.** Date: **4/23/2021**

Your Company: **Daniel B. Stephens & Associates, Inc.** Phone: (**505**) **822-9400**

Your Company Address: **6020 Academy Rd. NE, Suite 100** Fax: (**505**) **822-8877**

City, State, Zip: **Albuquerque, New Mexico 87109** E-mail: [redacted]

Project Title, Number and Site Location: **WST Permian Landfill, 5 miles NNW of Pecos, TX, at intersection of CR 408 & 415** County(ies): **Reeves**

1. Scope of Project:

(a) What regulations will this review help you to comply with? OR, if not regulatory, why is the review being requested? Who is the project sponsor?

DBS&A is requesting a project review, as required by 30 TAC 330.61(n), in support of an application that is being submitted to the Texas Commission on Environmental Quality for a new municipal solid waste landfill. The property owner is West Sun Tex, LLC (WST), and Daniel B. Stephens & Associates, Inc. (DBS&A) is working on their behalf.

(b) What and where is the project site? What activities will be conducted at the site? (Especially activity types, extent, boundaries, length & width, waterways, vegetation disturbance, and total acreage of site and acreage of the site that will be disturbed)

The site is located in north-central Reeves County, approximately 5 miles west-northwest of Pecos, Texas (see Figures 1 and 2). The full property is the northern 440 acres of Section 46, Block 4, H. & G.N. RR Co. Survey. The site is permitted as an oil and gas disposal facility by the Railroad Commission of Texas, and WST is proposing to permit half of the property as a new municipal solid waste landfill instead.

The property is largely undeveloped, except for a barn and water filling station, and a new municipal solid waste landfill with a disposal footprint of approximately 192 acres is proposed (see Figure 3). Twelve landfill cells have been designed, and each will be approximately 390 feet wide by 960 feet long. The maximum excavation will be 30 feet.

Vegetation will be cleared from the area where the landfill cells are constructed, but no changes will be made to the existing vegetation outside of the areas of construction. The photos provided in Attachment 1 provide documentation of the site's current vegetation. The site does not include any waterways.

(c) If this request is for a site investigation or risk assessment, why is the site being investigated? If applicable, what contaminant pathways are being evaluated?

Not applicable

(d) Schedule of activities – Approximately when (which calendar months, how many years) will the project be active on the site?

Activities at the proposed landfill will be year round, with site closure after 100 years.

2. Vegetation: Species, dominant plants, structure and composition, vegetation layers, height of layers, natural vegetation community types.

Vegetation species found in the area include creosote bush (Larrea tridentate), tarbush (Flourensia cernua), fourwing saltbush (Atripex canescens), mesquite (Prosopis sp.), gyp grama (Bouteloua breviseta), and alkali sacaton (Sporoblus airoides). As shown in the photos, the dominant vegetation type on the property is grass, although small to large shrubs are also present.

3. Other Natural Resources/Physical Features:

(a) Soils, geology, watercourses, aquifers, flood zones, etc.

The Natural Resources Conservation Service (NRCS) completed a custom soils report for Reeves County in August 2014, which identified five soil units at the project site, including Hoban silty clay loam, Hodgins silty clay loam, Orla clay loam, Reeves clay loam, and Upton gravelly loam.

The Pecos Valley alluvium outcrops at the site, and these sediments consist of caliche, clay, silt, sand, gravel, and boulder-sized material. These sediments are up to 1,000 feet thick in this area. The Pecos Valley alluvium sediments were deposited unconformably on older formations, including the Dockum Group and Rustler Formation.

The site does not include any watercourses. A delineation of waters of the U.S., including wetlands, was performed on the subject property in August 2014 by HDR. Based on the review of topographic maps and aerial photography, areas potentially containing waters of the U.S. and wetlands were evaluated in the field. HDR identified one drainage feature in the study area that was not considered a water of the U.S., but was instead characterized as a drainage ditch in uplands. No wetlands were identified on the property.

The Pecos Valley aquifer consists of more than 1,700 feet of Tertiary and Quaternary alluvial sediments that are present in two hydrologically separate, approximately north- to south-trending solution basins known as the Pecos and Monument Draw troughs. Most of Reeves County, including the facility location, is within the Pecos Basin.

The area where the proposed facility is located is unmapped by the Federal Emergency Management Administration (FEMA), so no 100-year floodplain information is available for this area. There are no major surface water features located in the vicinity of the site; however, numerous ditches and canals flow through the vicinity and carry surface drainage toward the Pecos River, which is located approximately 6 miles east of the study area. The Pecos River floodplain does not extend this far to the west.

(b) Habitat, animals, animal assemblages, other sensitive features, etc.

The proposed facility is located in an area with flat topography, dominated by desert scrub and grass vegetation. The subject property was previously cultivated and has been disturbed.

Listed species known to occur in areas near the proposed facility location include the Pecos sunflower (Helianthus paradoxus) (state threatened and federal threatened listings), and Texas horned lizard (Phrynosoma cornutum) (state threatened listing).

The only critical habitat that has been designated in Reeves County is for the phantom tryonia (snail) in areas located in southwestern Reeves County, over 30 miles southwest of the proposed facility location.

4. **Existing Site Development:** Extent of pavement, gravel, shell, or other cover; buildings, landscaped, xeriscaped, drainage system, etc.

The site is undeveloped, with the exception of an old barn located just east of CR 408 on the western edge of the property, and a water filling station in the northwest corner of the property.

5. **Historic Use/Function of Site:** Pasture, forest, urban, row crops, rangeland, wetland, etc. If the request is for a risk assessment, when was, or for how long, has the site been active, inactive? Are cultural resources present on the site or will the project cross or impact state or federal lands, local parklands?

Agriculture, but the property has been out of production for over 20 years. The subject property has been permitted as an oil and gas waste disposal facility by the Railroad Commission of Texas, although this facility has not been constructed yet. WST plans to use approximately half of the property for municipal solid waste disposal instead. There are numerous oil and gas facilities and industrial yards adjacent to and within 1 mile of the subject property.

Regarding cultural resources, a project review request has been sent to the Texas Historical Commission.

The proposed project will not cross or impact state or federal land, or local parklands.

6. **Has a threatened and endangered species survey or assessment,** wetland delineation, or other biological assessment already been performed? (In general, TPWD recommends an on-site habitat assessment be performed.) [x] Yes [ ] No

(a) If yes, provide surveyor name, qualifications, methods or protocols, acreage surveyed, level of effort, weather conditions, time of day, and dates the survey was performed.

See HDR, 2014 (Attachment 3). HDR Engineering, Inc. performed a delineation of waters of the United States, including wetlands, on the subject property (432 acres) in August 2014. The field survey was conducted by HDR staff Brandon Tate and Ben Janik on August 26 and 27, 2014, in accordance with the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual and 2008 Regional Supplement for the Arid West Region. Based on the review of topographic maps and aerial photography, areas potentially containing waters of the United States and wetlands were evaluated using routine on-site delineation methods. The study area was found to include one non-jurisdictional drainage channel, not considered to be a water of the United States, and no wetlands.

The study area was also evaluated for potential occurence of Federal and State listed species and suitable habitats during this survey. The report found that the subject property did not contain suitable habitat for any species listed as Federal or State threatened or endangered.

WILDLIFE HABITAT ASSESSMENT PROGRAM
Review Requests (Continued)
(Including Threatened and Endangered Species)

6. (b) If yes, please provide results and copy of survey/assessment report.

7. **Could current on-site or adjacent habitat support rare species?** ☐ Yes ☒ No
Specifically, explain why or why not.

Pecos sunflower habitat includes permanently wet but infrequently flooded soils associated with cienegas (desert marshes with high salt content), and the subject property does not include suitable habitat for this species. Texas horned lizard habitat includes arid and semiarid open areas with sparse plant cover, and the species is found throughout much of Texas. This species could be present on the subject property, but there is a lot of other undeveloped property similar to the subject property located nearby, so Texas horned lizards are not expected to be impacted by the proposed facility.

8. **Provide a description of potential negative direct and indirect impacts** from proposed project activities or former and current site activities, such as types of habitat and acreage to be degraded or lost, temporarily and permanently. Also, describe cumulative effects that could be anticipated from the project on the natural environment.

The proposed municipal solid waste facility will have a 192 acre disposal footprint, and the facility is expected to remain active for 100 years. This property has already been permitted as an oil and gas disposal facility by the Railroad Commission, so the proposed project will not increase the area of habitat to be degraded or lost over this period.

9. **Provide a description of planned beneficial mitigation and enhancements** or restoration efforts. Be sure to note the avoidance, minimization, and compensatory mitigation measures planned to address the threat of negative impacts (e.g. which erosion control measures will be used, what will site restoration activities encompass, etc.).

Upon landfill closure, a 60-mil HDPE geomembrane final cover will be installed over the waste material, in accordance with §330.457(a)(1). The geomembrane will be overlain with a clay-rich soil cover layer, consisting of a minimum of 18 inches of earthen material with a coefficient of permeability no greater than 1 x 10-5 centimeters/second (cm/sec). A 6-inch deep vegetative layer will be placed on top of the clay-rich fill material, and will serve as the erosion control layer in accordance with §330.457(a)(3).

10. **Include copies of coordination with other agencies** relevant to impacts or enhancements of natural resources for this project, or agency & contact name.

11. **Clearly delineate exact location of site and its boundaries** using an applicable USGS quad (most preferable) as the base layer or best map available. The topographic map citation should include the USGS quad name. The map must contain identifiable features and a scale that allows us to find your site **and** accurately pinpoint your site boundaries. When using internet maps, provide both a location map (zoomed out for highway reference) and a layout map (zoomed in for site features, boundaries, and neighboring street reference)

12. **Originals or color-copy photographs** of site and surrounding area with captions or narratives.

13. **Aerial photographs with pertinent features labeled**. Aerials should show the year photograph was taken.

Send completed form to:

Texas Parks and Wildlife Department
Wildlife Division
Wildlife Habitat Assessment Program

4200 Smith School Road
Austin, Texas 78744-3291
(512) 389-4571 (Phone) (512) 389-4599 (Fax)

Texas Parks and Wildlife Department maintains the information collected through this form. With few exceptions, you are entitled to be informed about the information we collect. Under Sections 552.021 and 552.023 of the Texas Government Code, you are also entitled to receive and review the information. Under Section 559.004, you are also entitled to have this information corrected.

Attachment 3

2014 HDR Report

Complete report provided elsewhere in application; not reproduced here.

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Jayne, Kelly

From: Kutz, Julie
Sent: Wednesday, March 27, 2024 5:26 [redacted]
[redacted]
Cc: Jayne, Kelly; Cartron, Jean-Luc
Subject: (WST) Permian Landfill Project
Attachments: Biological Evaluation_WST Landfill_3-27-2024.pdf

Dear Ms. Schmerler,

The above referenced project is moving toward the final application for a MSW landfill for the City of Pecos. As part of the process, TPWD was consulted regarding the Proposed Action, Project (Project #46529) and review comments were received on June 3, 2021. A final Biological Evaluation has been prepared and the TPWD recommended conservation measures are included in the document. The BE is attached for your information.

We greatly appreciate the TPWD's time for review and input for this project. Please let me know if you have any questions.

Thank you,
Julie

Julie Kutz
Biologist

Daniel B. Stephens & Associates, Inc.
a Geo-Logic Company

6020 Academy NE, Suite 100
Albuquerque, New Mexico 87109-3315
Office: (505) 822-9400 | Direct: (505) 353-9103 | Mobile: (505) 715-9140
[redacted]

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U.S. Fish and Wildlife Service

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April 20, 2021

Ms. Tanya Sommer
U.S. Fish and Wildlife Service
Austin Ecological Services Field Office
[redacted]

Re: Proposed Permian Landfill TCEQ Permit Application, Reeves County, Texas

Dear Ms. Sommer:

On behalf of West Sun Tex, LLC (WST), Daniel B. Stephens & Associates, Inc. (DBS&A) is preparing a permit application to be submitted to the Texas Commission on Environmental Quality (TCEQ) for a proposed Type I municipal solid waste (MSW) facility in north-central Reeves County called the WST Permian Landfill. The facility property is located approximately 5 miles west-northwest of Pecos, Texas, at the intersection of County Road (CR) 408 and CR 415. The site latitude and longitude are 31.432400 and –103.585408. The subject property has already been permitted as an oil and gas waste disposal facility by the Railroad Commission of Texas; however, WST is proposing to permit half of the 440-acre property as an MSW landfill.

This letter is being sent to the U.S. Fish and Wildlife Service (USFWS) to request a project review per 30 TAC 330.61(n). We have included figures showing the location of the proposed facility (Figure 1), topography and photograph locations (Figure 2), and aerial photography (Figure 3). Site photographs are provided as Attachment 1. Land use in the vicinity of the site is for agriculture, oil and gas development, rural residences, and undeveloped land.

A biological assessment to determine the effect of the facility on endangered or threatened species has not been prepared; however, in August 2014, HDR received a consultation from the USFWS on the subject property, under consultation tracking number 02ETAU00-2014-SLI-0380, as part of property pre-purchase activities (Attachment 2). This consultation resulted in a list of 12 threatened or endangered species to consider in an effects analysis for a project on this property, including the following:

- *Federal Endangered Species*: Interior least tern (wind energy projects condition), northern aplomado falcon, diminutive amphipod (crustacean), Comanche Springs pupfish, Pecos gambusia (fish), Pecos assiminea snail, phantom springsnail, and phantom Tryonia (snail)
- *Federal Threatened Species:* Mexican spotted owl, piping plover (wind energy projects condition), and Pecos sunflower
- *Federal Proposed Threatened Species:* Red knot (wind energy projects condition)

A wind energy project is not being proposed for the subject property.

Based on the USFWS Critical Habitat Mapper, the only critical habitat that has been designated in Reeves County is for the phantom tryonia (snail), and these areas are located in southwestern Reeves County, more than 30 miles southwest of the proposed facility location.

The USFWS Information for Planning and Consultation (IPaC) resources list was reviewed in 2020 during development of the current landfill permit application. Species listed as endangered or threatened in Reeves County included the following:

- *Federal Endangered:* Diminutive amphipod (crustacean), Comanche Springs pupfish, Pecos gambusia (fish), Pecos assiminea snail, phantom springsnail, phantom tryonia (snail), and Texas hornshell (freshwater mussel)
- *Federal Threatened:* Pecos sunflower

A biological assessment to determine the effect of the facility on the endangered or threatened species has not been prepared, as we do not anticipate that the proposed facility and its operation will result in the destruction or adverse modification of the critical habitat of endangered or threatened species, and will not cause or contribute to the taking of any endangered or threatened species. We are requesting your review of these conclusions regarding the federally listed species in this area.

Please contact me at (505) 822-9400 if you have any questions about the attached information.

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES, INC.

Gundar Peterson, P.E.
Vice President

AE/rpf
Attachments

Figures

See figures attached to TPWD letter;
not reproduced here.

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Attachment 1

Photographs

See photographs attached to TPWD letter; not reproduced here.

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Attachment 2

2014 HDR Report

Complete report provided elsewhere in application; not reproduced here.

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DBS&A
Daniel B. Stephens & Associates, Inc.
a Geo-Logic Company

July 21, 2022

Ms. Catherine Yeargan
Field Supervisor (Acting)
U.S. Fish and Wildlife Service
Austin Ecological Services Field Office
[redacted]

Re: Proposed Permian Landfill TCEQ Permit Application, Reeves County, Texas

Dear Ms. Yeargan:

On behalf of West Sun Tex, LLC (WST), Daniel B. Stephens & Associates, Inc. (DBS&A) is preparing a permit application to be submitted to the Texas Commission on Environmental Quality (TCEQ) for a proposed Type I municipal solid waste (MSW) facility in north-central Reeves County called the WST Permian Landfill (Proposed Action). The facility property is located approximately 5 miles west-northwest of Pecos, Texas, at the intersection of County Road (CR) 408 and CR 415. The site latitude and longitude are 31.432400 and –103.585408. The subject property has already been permitted as an oil and gas waste disposal facility by the Railroad Commission of Texas; however, WST is proposing to permit half of the 440-acre property as an MSW landfill.

This letter is being sent to the U.S. Fish and Wildlife Service (USFWS) to request a project review per 30 TAC 330.61(n). A previous project review packet was emailed to the USFWS Austin Ecological Services Field Office on April 20, 2021, and one of our staff discussed the proposed project with Jacob Ogdee from the Austin Ecological Services Field Office on May 12, 2021. Since then, a biological assessment was prepared to assess the potential impacts of the Proposed Action on state and federal protected natural resources (Attachment 1). Land use in the vicinity of the site is for agriculture, oil and gas development, rural residences, and undeveloped land.

As discussed in the biological assessment, a biological survey was conducted on September 16, 2021 to observe field conditions, assess the likelihood of occurrence of special-status species, and evaluate potential impacts. There is no critical habitat within the Project Area, as noted in the USFWS IPaC report generated for this project, so the evaluation found that the project will have no effect on critical habitat. One federally listed species, the northern aplomado falcon, was determined to have the potential to occur within the Project Area or Action Area, but only as a rare transient. As such, any effect on the species (from construction noise, increased noise or traffic during operation of the facility) would be insignificant, especially as no nesting habitat is present and reseeding of native grasses would occur in all disturbed areas that are not used for the landfill facility. The biological assessment determined that the Proposed Action may affect, but is not likely

to adversely affect the northern aplomado falcon; however, we understand that this determination requires written concurrence from the USFWS.

A total of 7 state-listed animal species were determined to have the potential to occur within the Project Area. With the implementation of conservation measures that are proposed as part of the Proposed Action, negligible to no impacts to these species are anticipated. One state-listed plant, the night-blooming cereus, was found to have a low potential to occur within the Project Area. However, because the night-blooming cereus was not observed during the biological survey, no impact to the species is anticipated as a result of the project.

The Proposed Action will disturb vegetation within the Project Area, which in turn may affect local wildlife and habitat. Project impacts to non-listed species would include noise impacts, vegetation removal, and ground disturbance. With the implementation of conservation measures, these effects would likely be negligible.

We are requesting your review of these conclusions, as well as a written response to this project review request, as required by TCEQ.

Please contact me at (505) 822-9400 if you have any questions about the attached information.

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES, INC.

Gundar Peterson, P.E.
Vice President

AE/rpf
Attachments

[redacted]

Subject: FW: [EXTERNAL] Response Requested - Proposed Permian Landfill TCEQ Permit Application, Reeves County, Texas
Date: Thursday, July 21, 2022 2:23:37 PM
Attachments: USFWS Follow-Up Coordination Ltr_Permian Landfill_7-21-2022.pdf

---

Good Afternoon,

Thank you for your email. I wasn't sure whether the attached document is intended to initiate a section 7 consultation, since a section 7 consultation is between another Federal agency and the U.S Fish and Wildlife Service. I do not see any mention of another Federal agency. In general, the Service does not provide written correspondence on non-Federal projects. If there is another Federal agency involved in the project, then they would need to initiate consultation with us. Here is a link to more details about section 7 consultations: https://www.fws.gov/service/esa-section-7-consultation

Please let me know if I can be of further assistance.

Thank you,

Christina

Christina Williams
Division Supervisor
Consultations and HCPs
U.S. Fish and Wildlife Service
10711 Burnet Road, Suite 200
Austin, Texas 78758
~~Of. 512-490-0057, ext. 235~~
Cell 512-850-0980

[redacted]

Subject: Fw: [EXTERNAL] Response Requested - Proposed Permian Landfill TCEQ Permit Application, Reeves County, Texas

FYI

Thanks,
Catherine

[redacted]

Subject: [EXTERNAL] Response Requested - Proposed Permian Landfill TCEQ Permit Application, Reeves County, Texas

This email has been received from outside of DOI – Use caution before clicking on links, opening attachments, or responding.

Ms. Yeargan,

On behalf of West Sun Tex, LLC (WST), Daniel B. Stephens & Associates, Inc. (DBS&A) is preparing a permit application to be submitted to the Texas Commission on Environmental Quality for a proposed Type I municipal solid waste facility in north-central Reeves County called the WST Permian Landfill. This correspondence is a follow-up to the letter we sent to Jacob Ogdee last year. I've attached a letter with the biological assessment for your review and we're requesting a written response, as required by the TCEQ, within 30 days.

Thank you in advance for your time and consideration. Please call if you have questions or concerns.

Regards,

Grace Herrmann, EI
Staff Engineer

Daniel B. Stephens & Associates, Inc.
Hydrology¦Engineering¦Geoscience

A Geo-Logic Company

Providing solutions for water, natural resources, and the environment

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Phase I Environmental Site Assessment

DBS&A
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Phase I Environmental Site Assessment

West Sun Tex Property Pre-purchase Activities

Reeves County, Texas

Prepared for:

West Sun Tex, LLC
14755 Preston Road, Suite 600
Dallas, TX 75254

Prepared by:

HDR Inc.
17111 Preston Road, Suite 200
Dallas, Texas 75248

Table of Contents

Executive Summary ..... **iv**

1.0 Introduction **1**

1.1 Purpose 1

1.2 Report Users 2

1.3 ESA Methodology 2

1.4 Scope of Services, Significant Assumptions, and Limitations 2

2.0 Site Description **5**

2.1 Location and Legal Description 5

2.2 Site and Vicinity Characteristics 5

2.3 Description of Structures, Roads, and Other Site Improvements 5

2.4 Area Geology and Hydrogeology 5

3.0 User-Provided Information **7**

4.0 Records Review **8**

4.1 Environmental Records Review 8

4.2 Agency File Review ..... **Error! Bookmark not defined.**

4.3 Historical Use Information 8

4.4 Environmental Liens and Additional Information 9

4.5 Summary of Previous Environmental Investigations **Error! Bookmark not defined.**

4.6 Interviews 10

4.7 Site Reconnaissance 10

4.8 Utilities 10

5.0 Data Gap Analysis **11**

6.0 Findings, Opinions, and Conclusions **12**

6.1 Findings 12

6.2 Opinions 13

6.3 Conclusions 14

7.0 Recommendations **15**

8.0 Qualifications of Environmental Professionals **16**

8.1 Signatures and Qualifications 16

9.0 References **17**

Tables

Table 1—Summary of Environmental Database Search 8
Table 2—Summary of Findings.....13

Appendices

Appendix A—Figures
Appendix B—Governmental Database Search Results
Appendix C—Historical Aerial Photographs
Appendix D—Historical Topographic Maps
Appendix E—Site Photographs

List of Acronyms

AAI	All Appropriate Inquiry
AIRS	Aerometric Information Retrieval System
AMSL	Above Mean Sea Level
AST	aboveground storage tank
ASTM	American Society for Testing and Materials
BGS	Below Ground Surface
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CORRACTS	Corrective Action Report
EPA	Environmental Protection Agency
ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FINDS	Facility Index System
FRDS	Federal Reporting Data System
FUDS	Formerly Used Defense Site
FUIS	Federal Underground Injection Control
HSS	Historic Service Station
IBC	Intermediate Bulk Container
LPST	Leaking Petroleum Storage Tank
LUST	Leaking Underground Storage Tank
MINES	Mines Master Index File
NFRAP	No Further Remedial Action Planned
NPL	National Priority List
NWI	National Wetlands Inventory
RCRA	Resource Conservation and Recovery Act
RCRIS LQG	Resource Conservation and Recovery Information System Large Quantity Generators
RCRIS SQG	Resource Conservation and Recovery Information System Small Quantity Generators
RCRIS TSD	Resource Conservation and Recovery Information System Treatment, Storage, and Disposal
REC	Recognized Environmental Condition
SI	Site Inspection
Spills	Spills Database
SRP	Site Remediation Program
SWF/LF	Solid Waste Facilities/Landfill
TCEQ	Texas Commission on Environmental Quality
TNRCC	Texas Natural Resource Conservation Commission
USACE	U.S. Army Corps of Engineers
USGS	United States Geological Survey
UST	Underground Storage Tank

Note: A more complete acronym list is located in the Governmental Database Report, Appendix B.

EXECUTIVE SUMMARY

HDR has conducted a Phase I Environmental Site Assessment (ESA) for West Sun Tex, LLC, in association with pre-purchase activities for a property located west of Pecos, in Reeves County, Texas. The subject property and one mile buffer zone, referenced herein as the "Study Area", consists of a one mile radius around the approximately 432 acre subject property (Appendix A, Figure 1).

The property and the surrounding area consist of a mix of agricultural and undeveloped land, with interspersed rural residences and oil and gas development. The Study Area (Appendix A, Figure 1) is located north of Interstate Highway 20 (I-20) and west of the town of Pecos near the intersection of County Road 415 and County Road 408. The subject property is bordered to the north by County Road 415 and the west by County Road 408. The south end of the subject property is open to the adjoining property, and the east side is bordered by an unnamed gravel road.

This Phase I ESA identifies Recognized Environmental Conditions (RECs) that may adversely affect the Study Area, and was conducted in accordance with the scope and limitations of the American Society for Testing and Materials (ASTM) Practice E 1527-13. This report includes a summary of the site reconnaissance conducted on August 26 and 27, 2014; a review of environmental databases; a review of historical data sources; and personal interviews. Any exceptions to or deletions from the ASTM-prescribed scope are described later in this report.

The ESA Process resulted in the following findings, opinions, conclusions, and recommendations:

Findings

The Environmental Data Resources (EDR) report identified five listings in the federal, state, local, EDR, or tribal databases for the Study Area.

HDR reviewed the listings identified within the database search area. Listings are described in further detail in section 4. The listings were not determined to be of concern to the Study Area based on factors such as distance, hydraulic gradient, geology, or clean-up status.

General findings of this assessment include the following:

- The Study Area lies within the Delaware Basin in the Southern High Plains Physiographic Province. Topography in the area is characterized by playas and basin floors consisting of salt flats, dunes, and windblown sands. Additional geographic features include the Pecos River, located approximately six miles east of the Study Area. Surface geologic formations located within the Study Area consist primarily of unconsolidated quaternary deposits. Additionally, evaporites such as gypsite are also found in the vicinity of the Study Area. Surface drainage within the Study Area is to the east, toward the Pecos River.
- The predominant land uses in the vicinity of the Study Area are agriculture, rural residences, oil and gas production, and undeveloped. The subject property has been subject to cultivation for crop production in the past, but it has been out of cultivation since the early 1990s. Many facilities associated with oil and gas development are located within the Study Area, including production facilities, lined water storage ponds, and injection facilities.
- The EDR report identified five listings in the federal, state, local, EDR, or tribal databases for the Study Area. Four of those sites are classified as TIER 2 sites and are oil and gas production facilities. The fifth site identified within the Study Area is classified as a Formerly Used Defense Site (FUDS) site.

- An unused well pad with two associated pits was located within the southern border of the subject property. The pad displayed poor maintenance, and no signs of drilling prior to the site visit, on August 26 and 27, 2014.
- An area of uncontrolled dumping (empty 55-gallon drums and other debris) was located on the western border of the subject property. Additionally, numerous empty drums were scattered across the subject property. Two drums displayed labels that indicated the drums at one time contained lubricants and degreasers. Some of the empty drums may have been blown onto the subject property from an equipment yard, located adjacent and to the east of the subject property. The uncontrolled dump site and scattered empty drums showed no signs of releases that cased surface staining.
- An equipment yard containing intermediate bulk containers (IBC) and drums with unknown contents is located adjacent to the east boundary of the subject property. This area is considered a potential source for the drums located on the east side of the subject property.

The following table summarizes the findings of this Phase I ESA:

Map Code (1)	Site Name/Former Name (2)	Location (3)	Site Operations or Use and potential hazmat issues (4)	Data Source(5)	Risk Rank L/ M/ I/ H(6)
A	Donaldson 4-54 1H	-103.6025, 31.4421	TIER 2 Site—oil/gas production facility	R, D, H	L
B	Two Oaks Yost Battery	-103.5823, 31.4256	TIER 2 Site—oil/gas production facility	R, D, H	L
C	Two Oaks Hermosa-1	-103.5755, 31.4239	TIER 2 Site—oil/gas production facility	R, D, H	L
D	Two Oaks Hermosa-2	-103.5837, 31.4156	TIER 2 Site—oil/gas production facility	R, D, H	L
E	Pecos AAF High AUX FLD #1	-103.5916, 31.4340	FUDS Site	R, D, H	L
F	Well Pad and Open Pits	-103.5798, 31.4302	Unused Well Pad and Open Pits	R, H,I	L
G	Uncontrolled dump site	-103.5906, 31.4282	Uncontrolled dump site	R, H	L
H	Drum Sites	-103.5884, 31.4297 -103.5759, 31.4339 -103.5759, 31.4337 -103.5761, 31.4333	Drum Sites	R	L
I	Equipment Yard with Drums and IBC Tanks	-103.5754, 31.4340	Drums and IBC Tanks storage	R, H	L

Note: RECs are shown in bold.
(1) Corresponds to location of site as indicated on Figures
(2) Business/descriptive name
(3) Location of facility in longitude/latitude
(4) Description of site operations / key site use relative to hazmat issues
(5) Indicates primary information sources for listing: R=Reconnaissance, I=Interview, D=Database, H=Historical Documentation
(6) Risk Rank indicates the risk to the project

Opinion

HDR has reviewed the stated data sources, which are part of the ASTM E 1527-13 assessment protocol. Based upon the review of the data, HDR has developed an opinion that the conditions present at the Study Area represent de minimis conditions, and are not considered to be RECs.

Conclusion

Based upon the above-detailed Findings and Opinions, HDR concludes that no RECs have been identified for the Study Area, as described in the Findings section above. The following statement is required by ASTM E 1527-13 as a positive declaration of whether RECs were found:

> *HDR has performed a Phase I ESA in conformance with the scope and limitations of ASTM E 1527-13 of the Study Area in Reeves County, Texas. Any exceptions to or deletions from these practices are described in previous sections of this report. This report revealed no RECs in connection with the Study Area.*

Recommendations

Recommendations included in this report were developed through the investigative procedures described in the Scope of Services, Significant Assumptions, and Limitations sections of this report (See Section 1.4). These findings should be reviewed within the context of the limitations provided in the Limitations section. Based upon the lack of the identification of RECs for the Study Area, HDR makes the following recommendations:

Recommendation 1

In the event that any future contractor encounters previously undiscovered contamination at the subject property, contractors should immediately stop all subsurface activities. If debris is found, an odor is identified, or significantly stained soil is visible, contractors should be instructed to follow all applicable regulations regarding discovery and response for hazardous materials encountered during any proposed construction process.

Recommendation 2

HDR recommends that West Sun Tex consider the “shelf life” of Phase I documents in determining risk. ASTM E 1527-13 states that a conforming “Phase I” report is valid for a period of 180 days, and may be updated during the 180 days to a 1-year timeframe. The report is valid for use in any of the CERCLA defenses ONLY if it is updated within this time frame. If greater than one year passes from the final report date, the Phase I effort would need to be repeated to remain in compliance with ASTM and the “All Appropriate Inquiry” protection.

1.0 INTRODUCTION

1.1 Purpose

The purpose of this Phase I ESA is to document the evaluation of the Study Area for indications of “Recognized Environmental Conditions.”

ASTM Practice E 1527-13 defines the following categories of Recognized Environmental Condition (REC):

REC:

The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions (see definition below).

ASTM E 1527-13 defines “release” as a release of any hazardous substance or petroleum product and shall have the same meaning as the definition of “release” in CERCLA 42 U.S.C. § 9601(22).

Historical REC (HREC):

A past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).

Controlled REC (CREC):

A recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a “no further action” letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).

Additional conditions that are not included under the definitions of a REC, but are defined by ASTM Practice E 1527-13 include:

De minimis:

A condition that generally does not present a threat to human health or the environment, and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be “de minimis conditions” are neither recognized environmental conditions nor are they controlled Recognized Environmental Conditions.

Business Environmental Risk:

A risk which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of a parcel of commercial real estate, not necessarily limited to those environmental issues required to be investigated in this practice.

Consideration of business environmental risk issues may involve addressing one or more non-scope considerations.

1.2 Report Users

HDR received authorization from West Sun Tex, LLC, to conduct a Phase I ESA of the Study Area. The Study Area (Appendix A, Figure 1) is located north of interstate 20 and west of the town of Pecos, near the intersection of County Road 415 and County Road 408, in Reeves County, Texas. This Phase I ESA has been prepared for the West Sun Tex, LLC, and only West Sun Tex, LLC, has the right to rely on the contents of this Phase I ESA without written authorization.

1.3 ESA Methodology

In addition to the ASTM-based "REC" classification of a site, HDR also employs a relative risk ranking system that includes several investigative elements to describe "sites of concern" located within a Study Area. A site of concern is a site that the investigative process has determined to have sufficient possibility of contamination which warrants special attention during the Phase I investigation. A site of concern may or may not ultimately be classified as a REC site as defined by ASTM, yet still may be "of concern" and is therefore highlighted in the report. A site of concern may or may not be carried forward in recommendations for further investigation, depending upon the specific issues associated with the site.

Once the elements of the investigation process were completed, HDR categorized identified sites using a subjective risk ranking system—classifying the sites as low-risk, moderate-risk, high-risk, or (in some instances) indeterminate. The following paragraphs provide general descriptions of each category.

Low-risk sites are those sites that have few indications of potential for release of hazardous materials. In some instances, sites that have had a hazardous materials issue in the past but have been remediated with approval of the local or state environmental agency (or EPA) may qualify as low-risk. Examples of low-risk sites include undeveloped or agricultural property; residential property; or benign commercial properties such as office buildings, warehouses, distribution facilities, or municipal facilities with no listed violation.

Moderate-risk sites are those sites that have some indications of possible hazardous materials issues. A moderate-risk site may appear on a database as having a permit to handle hazardous materials but has recorded no violations to date. Another way that a site could be interpreted as moderate risk would be if the environmental records search indicated no listing but the site is an auto repair facility with visible surface staining. Examples of moderate-risk sites include auto repair garages, welding shops, or manufacturing facilities with minor listings in the environmental database.

High-risk sites are those sites that have a high potential for releasing hazardous materials to the soil or groundwater, or have a recorded release issue. Examples of high-risk sites include current service stations, bulk fueling terminals, sites listed in environmental databases as having had a release, or a known release that has not been remediated.

Indeterminate sites are those which, at the time of report preparation, did not include sufficient information to include a high, medium, or low ranking. Indeterminate sites often require additional file review to determine the details of any related environmental issues at the site.

1.4 Scope of Services, Significant Assumptions, and Limitations

The services provided for this project consisted of the following:

- Provide a description of the Study Area including current land uses (Sections 2.1 and 2.2)
- Provide a general description of the topography, soils, geology, and

groundwater flow (Section 2.4)

- Review reasonably ascertainable and reviewable regulatory information published by federal, state, local, tribal, health, and/or environmental agencies pertaining to the Study Area (Section 4.1).
- Review historical data sources for the Study Area, including aerial photographs, topographic maps, fire insurance maps, city directories, and other readily available development data (Section 4.2)
- Conduct an area reconnaissance and an environmental review—including a visual review of adjoining properties—with a focus on indications of hazardous substances, petroleum products, polychlorinated biphenyls (PCBs), wells, storage tanks, solid waste disposal pits and sumps, and utilities (Section 4.5)
- Interview current owner of the Study Area and interview other persons with knowledge of the development history of the Study Area (Section 4.6).
- Determine data gaps in the information obtained and comment on their significance in identifying RECs for the Study Area (Section 5)
- Prepare a written report of methods, findings, opinions, and conclusions (Section 6).

The goal of this scope of services is to assist the user in identifying conditions in the Study Area that may indicate risks regarding hazardous materials storage, disposal, or other impacts. The resulting report may qualify the user for relief from liabilities as one of three "defenses" identified in the 2002 Brownfields Amendments to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 9607 (All Appropriate Inquiry subsections). These three defenses include:

1. The "innocent landowner" defense to potential liabilities under 42 United States Code [U.S.C.] § 9601
2. The "contiguous project corridor owner" defense pursuant to 42 U.S.C. § 9607q
3. The "bona fide prospective purchaser" defense pursuant to 42 U.S.C. §9607r

Federal regulations at (42 U.S.C §9601(35)(A) & (B),§9607(b)(3), §9607(q); and §9607(r)), promulgated by the United States (U.S.) Environmental Protection Agency (EPA), require that liability release be based (in part) on completion of All Appropriate Inquiries (AAI) prior to purchase of a property. Those inquiries are documented by Phase I reports, or Environmental Site Assessments (ESAs). EPA has agreed that the recently developed ASTM guidance (ASTM Practice E 1527-13:3.2.6) specifies and interprets AAI requirements.

A user is defined by ASTM Practice E 1527-13 as the party seeking to use Practice E 1527 to complete an ESA of the Study Area and may include a potential purchaser of land in the Study Area, a potential tenant of the Study Area, an owner of land in the Study Area, a lender, or a Study Area manager. Investigative areas not included in the standard ASTM ESA scope include: asbestos, lead-based paint, lead in drinking water, radon or urea formaldehyde, wetland issues, regulatory compliance, cultural and historic resources, industrial hygiene, health and safety, ecological resources, endangered species, and high voltage power lines.

Indoor air quality from sources such as mold and asbestos is not included in the ASTM standard except to the extent that indoor air impacts are related to Superfund release and/or caused by releases of hazardous substances into subsurface soil or groundwater (vapor intrusion).

The potential for vapor encroachment or intrusion into structures in the Study Area is considered and identified from onsite or offsite sources based on the experience of the Environmental Professional.

The scope of services for ESA projects also does not include the completion of soil borings, the installation of groundwater monitoring wells, or the collection of soil or groundwater samples. State and national policies and standards relevant to vapor intrusion are in flux and subject to change.

HDR has made certain assumptions in preparing the scope of this assessment:

- Data gathered from public information sources (i.e., libraries or public regulatory agencies) are accurate and reliable.
- Site operations reflect site conditions relative to potential releases, and no intentional concealment of environmental conditions or releases has occurred.
- Interview information is directly reported as gathered by the assessor and is limited by the accuracy of the interviewee's recollection and experience.
- Published geologic information and site observations made by the Environmental Professional are used to estimate likely contaminant migration pathways in the subsurface. These estimates by the Environmental Professional are limited in accuracy and are generally cross-referenced with existing information about similar sites and environmental releases in the area.
- Regulatory information is limited to sites identified after the late 1980s because reliable records were not kept by regulatory agencies prior to that time frame.

The findings and conclusions presented in this report are based on the procedures described in ASTM Practice E 1527-13, informal discussions with various agencies, a review of the available literature cited in this report, conditions noted at the time of this Phase I ESA, and HDR's interpretation of the information obtained as part of this Phase I ESA. The findings and conclusions are limited to the specific project and properties described in this report and by the accuracy and completeness of the information provided by others.

An ESA cannot entirely eliminate uncertainty regarding the potential for RECs. Conducting this assessment is intended to reduce, but not eliminate, uncertainty regarding the potential for RECs in connection with a Study Area within reasonable limits of time and cost. In conducting its services, HDR used a degree of care and skill ordinarily exercised under similar circumstances by reputable members of its profession practicing in the same locality. This Phase I ESA conforms to the level of documentation required in ASTM Practice E 1527-13. However, HDR may omit discussion of certain records, (i.e., sources deemed, in HDR's professional opinion, to be inapplicable, or of limited value, to the specific needs of this client). In accordance with ASTM, however, if the lack of available documentation results in a data gap, this data gap is identified herein, and its significance is discussed.

2.0 SITE DESCRIPTION

2.1 Location and Legal Description

The Study Area consists of a one mile radius around the approximately 432 acre subject property, located in Reeves County, Texas. The Study Area consists of a mix of agricultural and undeveloped land, with interspersed rural residences and oil and gas development. The Study Area (Appendix A, Figure 1) is located north of interstate 20 and west of the town of Pecos, near the intersection of County Road 415 and County Road 408. The subject property is bordered to the north by County Road 415 and the west by County Road 408. The south end of the subject property is open to the adjoining property, and the east side is bordered by an unnamed gravel road.

Please refer to the Project Location and Site Detail Maps (Figures 1 and 2, Appendix A) for further detail.

2.2 Site and Vicinity Characteristics

The United States Geological Survey (USGS) 7.5-minute quadrangle map for Pecos, Texas indicates that the elevation of the Study Area ranges from approximately 2,685 to 2,630 feet above mean sea level (amsl). The topography near the Study Area is characterized by playas and basin floor that consist of salt flats, dunes, and windblown sands. The topography and geographic location related to area hydrologic features suggest that both surface and shallow groundwater flow east toward the Pecos River.

2.3 Description of Structures, Roads, and Other Site Improvements

The Study Area is crisscrossed by paved and unpaved roads, both public and private. Farm and ranch houses with associated outbuildings are scattered throughout the Project Area, as are oil field equipment and processing locations, and active and abandoned well sites.

The subject property has been used for cultivation in the past, but is currently fallow. Site improvements include multiple water wells and a metal barn with a concrete floor on the western side of the subject property.

2.4 Area Geology and Hydrogeology

The Study Area lies within the Delaware Basin in the Southern High Plains Physiographic Province. Surface geologic formations located within the Study Area consist primarily of deep unconsolidated quaternary deposits. Additionally, evaporites such as gypsite are also found in the vicinity of the Study Area.

Surface drainage within the Study Area is east toward the Pecos River. Depth to shallow groundwater in the vicinity of the Study Area is unknown, but it likely varies according to seasonal influences based on the geology present. Regional Groundwater flow in the Pecos Valley Aquifer system is expected to flow to the southwest toward the central portion of the Pecos Trough (Meyer et al., 2012).

3.0 USER-PROVIDED INFORMATION

West Sun Tex, LLC, provided HDR with a map identifying the property proposed for purchase. HDR was not provided with information from the client that indicated that it:

- is unaware of any environmental cleanup liens against the property
- has no specialized knowledge relating to the property or nearby properties
- expressed no opinion as to whether the purchase price being paid for the property reflects fair market value
- has no knowledge of past uses of the property
- has no knowledge of any chemicals that are, or were, present on the property
- has no knowledge of any spills or chemical releases on the property
- has no knowledge of any environmental cleanups that may have taken place on the property
- has no knowledge of the presence of contamination on the property

4.0 RECORDS REVIEW

4.1 Environmental Records Review

Environmental Data Resources, Inc. (EDR) was contracted by HDR to complete a database search of federal, state, and tribal environmental records for the project site. The database search was produced for the project site by EDR on August 19, 2014. The databases searched included federal, state, local, and tribal databases, as defined by ASTM E 1527-13, plus EDR proprietary databases. The results of the database search are summarized in Table 1 and the following paragraphs. A complete copy of the EDR environmental database report is included in Appendix B.

Table 1—Summary of Environmental Database Search

Database	Description	Listings in Search Radius	Listings of Concern to the Study Area
FEDERAL ASTM STANDARD			
FUDS	Formerly Used Defense Sites. The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.	1	0
STATE and LOCAL ASTM STANDARD			
TIER 2	Tier 2 Chemical Inventory Reports. A listing of facilities which store or manufacture hazardous materials and submit a chemical inventory report.	4	0

The EDR report identified five listings in the federal, state, local, EDR, or tribal databases for the Study Area, corresponding to five individual sites.

HDR reviewed the listings identified within the database search area. Listings are described in further detail in the following sections. The five listings were not of concern to the Study Area based on factors such as distance, hydraulic gradient, geology, or clean-up status.

Federal Records

The EDR report identified 1 site within the federal databases. Specific details are as follows:

- The EDR report lists one record from the FUDS database (Pecos AAF High AUX FLD #1). Due to the lack of any noted contamination, this site is not considered to be of concern to the Study Area.

State Records

The EDR report identified four sites within the state databases. Specific details are as follows:

- The EDR report identified four sites in the TIER 2 database. All four sites are oil/gas production facilities, and not considered to be of concern to the Study Area.

4.2 Historical Use Information

The objective of reviewing historical use information is to develop a history of previous land uses at and in the vicinity of the Study Area, and to assess these uses for potential hazardous materials impacts that may affect the Study Area. HDR reviewed those historical sources that

were reasonably ascertainable and likely to provide useful information, as defined by the ASTM standard.

4.2.1 Fire Insurance Maps

Fire insurance maps are produced by private fire insurance companies to indicate uses of the Study Area on specified dates. No map coverage exists for the Study Area.

4.2.2 City Directory Information

City directories were not available for this area.

4.2.3 Historical Aerial Photographs

Historical aerial photographs are valuable for the environmental assessor to review features of the Study Area over a long period of time. HDR reviewed historical aerial photographs (Appendix C) for the following years: 1954, 1969, 1977, 1984, 1996, 2004, 2010, and 2012.

1954: The Study Area consisted mainly of undeveloped and agricultural land, with minimal residential development in the area. The subject property was undeveloped during this time. Only unpaved county roads were present within the Study Area.

1969: The Study Area remained mostly undeveloped/agricultural land. No significant infrastructural changes were noted in the 1969 aerial photograph. By this time, the subject property had undergone agricultural development.

1977: Additional agricultural development was located throughout the Study Area, but the majority of the Study Area remained undeveloped. Larger multi-lane roads had been constructed, and Ranch Rd 2119 was present east of the subject property.

1984: Well pad sites and additional rural residential development were present within the Study Area.

1996: The Study Area was largely unchanged from the 1984 aerial photograph.

2004: The Study Area was largely unchanged from the 1996 aerial photograph.

2010: The unused well pad and associated pits located on the southern border of the subject property were present, and showed no signs of active use.

2012: The Study Area was largely unchanged from the 2010 aerial photograph.

4.2.4 Historical Topographic Maps

Historical topographic maps provide an overview of the area relative to potential previous land uses. HDR reviewed historical topographic maps (Appendix D) of the Subject Property and surrounding area dated 1928, 1971, 1981, and 1986. These maps served to verify the information gathered in the historic aerial photograph review.

4.3 Environmental Liens and Additional Information

No information regarding the chain-of-title ownership history or environmental liens recorded against the project corridor was provided by the user. Environmental lien searches were not conducted as part of the scope of work for this project.

4.4 Interviews

4.4.1 Site Interviews

HDR personnel spoke with Mr. Ysidro Renteria, current owner of the subject property. Mr. Renteria stated that the property has been farmed since before his involvement began in 1978. While operated by Mr. Renteria, the property was used to grow cotton until the early 1990s. The land was later entered into the Conservation Reserve Program. Treflan was used as his primary herbicide, and the property holds very little tailwater accumulation. Mr. Renteria stated that the drilling pad and associated pits were constructed by Chesapeake Energy, but they never drilled a well. Mr. Renteria had no knowledge of the drums located in the central and eastern portion of the subject property and said they were not his. He also was unaware of any trash piles or other waste disposal on the subject property.

4.5 Site Reconnaissance

On August 26 and 27, 2014, HDR conducted a reconnaissance of the Study Area in Reeves County, Texas. The Study Area's boundaries consisted of a one mile radius surrounding the subject property. Access to the subject property was unrestricted, and reconnaissance was conducted on foot. The Study Area consisted of undeveloped agricultural properties, with rural residences and oil and gas operations. The agricultural properties are mainly for private, non-commercial use, and some areas are no longer being used for cultivating crops. Nine active oil and gas production or processing facilities were located within the Study Area.

The subject property has been utilized for cultivation and crop production in the past, but has been out of cultivation for approximately 20 years. An area of uncontrolled dumping containing empty 55-gallon drums and other debris was located on the western border of the subject property directly adjacent to a metal building (see Appendix E). Additionally, numerous empty drums were scattered across the subject property. Two drums displayed labels that indicated the drums at one time contained lubricants and degreasers. Some of the empty drums may have been blown onto the subject property from an equipment yard, located adjacent to the east of the subject property border. This equipment yard contained intermediate bulk containers (IBCs) and drums with unknown contents. This area is considered a potential source for the drums located on the east side of the subject property.

An unused well pad with two associated pits was located within the southern border of the subject property. Indications at the pad included signs of poor maintenance, and no signs of equipment or use. The pits contained salt accumulations in low spots where the liners were still intact.

Photographs taken during the site reconnaissance are located in Appendix E.

4.6 Utilities

HDR identified signs indicating subsurface municipal utilities such as electrical and telecommunications cable. Pole-mounted transformers were noted in a few locations, but no large power substations or step-down transformers were noted. Given the age of the development in some parts of the Study Area, it is possible that PCB-containing transformers could be present. No spills or hazardous materials response events were noted in the governmental database report. Numerous subsurface pipelines are located within the Study Area.

5.0 DATA GAP ANALYSIS

The ASTM E 1527-13 standards require a listing of "data gaps," including data failure, encountered during the investigative process that may affect the validity of the conclusions drawn by the Environmental Professional. The ASTM E 1527-13:12.7 standard also requires that the Environmental Professional estimate the relative importance of the data gaps. Generally, gaps in available data are related to the availability of historical data sources for specific sites of concern. The Environmental Professional uses multiple historical data sources as a method to provide coverage for data gaps. Historical information is collected on a recurring basis, and the passage of time between data sets may or may not constitute a significant gap in data coverage. For this project, the following items may constitute a data gap as defined by ASTM E 1527-13.

Specifically for this Assessment; the following data gaps are noted as

- Absence of Sanborn fire insurance maps
- Absence of city directory information
- Absence of interview information prior to the late 1970s

The inability to obtain and review the Sanborn fire insurance maps, city directory information, and interview information prior to the late 1970s does not present significant data gaps, because of the presence of other supporting historical information.

6.0 FINDINGS, OPINIONS, AND CONCLUSIONS

HDR has conducted a Phase I Environmental Site Assessment (ESA) for West Sun Tex LLC, in association with pre-purchase activities for a property located west of Pecos in Reeves County, Texas.

The Phase I ESA was performed in accordance with the scope and limitations of ASTM Practice E 1527-13. Any exceptions to, or deletions from, this practice are described previously in this report. Included in this Phase I ESA are a summary of the site reconnaissance conducted on August 26 and 27, 2014; a review of the environmental database search report; historical data sources and other records; and interviews with available personnel knowledgeable about the Study Area.

6.1 Findings

The Environmental Data Resources (EDR) report identified five listings in the federal, state, local, EDR, or tribal databases for the Study Area.

HDR reviewed the listings identified within the database search area. Listings are described in further detail in section 4. The listings were not determined to be of concern to the Study Area based on factors such as distance, hydraulic gradient, geology, or clean-up status.

General findings of this assessment include the following:

- The Study Area lies within the Delaware Basin in the Southern High Plains Physiographic Province. Topography in the area is characterized by playas and basin floors consisting of salt flats, dunes, and windblown sands. Additional geographic features include the Pecos River, located approximately six miles east of the Study Area. Surface geologic formations located within the Study Area consist primarily of unconsolidated quaternary deposits. Additionally, evaporites such as gypsite are also found in the vicinity of the Study Area. Surface drainage within the Study Area is to the east, toward the Pecos River.
- The predominant land uses in the vicinity of the Study Area are agriculture, rural residences, oil and gas production, and undeveloped. The subject property has been subject to cultivation for crop production in the past, but it has been out of cultivation since the early 1990s. Many facilities associated with oil and gas development are located within the Study Area, including production facilities, lined water storage ponds, and injection facilities.
- The EDR report identified five listings in the federal, state, local, EDR, or tribal databases for the Study Area. Four of those sites are classified as TIER 2 sites and are oil and gas production facilities. The fifth site identified within the Study Area is classified as a Formerly Used Defense Site (FUDS) site.
- An unused well pad with two associated pits was located within the southern border of the subject property. The pad displayed poor maintenance, and no signs of drilling prior to the site visit, on August 26 and 27, 2014.
- An area of uncontrolled dumping (empty 55-gallon drums and other debris) was located on the western border of the subject property. Additionally, numerous empty drums were scattered across the subject property. Two drums displayed labels that indicated the drums at one time contained lubricants and degreasers. Some of the empty drums may have been blown onto the subject property from an equipment yard, located adjacent to the east of the subject property. The uncontrolled dump site and scattered empty drums showed no signs of releases that cased surface staining.

- An equipment yard containing intermediate bulk containers (IBC) and drums with unknown contents is located adjacent to the east boundary of the subject property. This area is considered a potential source for the drums located on the east side of the subject property.

The following table summarizes the findings of this Phase I ESA:

Table 2—Summary of Findings

Map Code (1)	Site Name/Former Name (2)	Location (3)	Site Operations or Use and potential hazmat issues (4)	Data Source(5)	Risk Rank L/ M/ I/ H(6)
A	Donaldson 4-54 1H	-103.6025, 31.4421	TIER 2 Site—oil/gas production facility	R, D, H	L
B	Two Oaks Yost Battery	-103.5823, 31.4256	TIER 2 Site—oil/gas production facility	R, D, H	L
C	Two Oaks Hermosa-1	-103.5755, 31.4239	TIER 2 Site—oil/gas production facility	R, D, H	L
D	Two Oaks Hermosa-2	-103.5837, 31.4156	TIER 2 Site—oil/gas production facility	R, D, H	L
E	Pecos AAF High AUX FLD #1	-103.5916, 31.4340	FUDS Site	R, D, H	L
F	Well Pad and Open Pits	-103.5798, 31.4302	Unused Well Pad and Open Pits	R, H,I	L
G	Uncontrolled dump site	-103.5906, 31.4282	Uncontrolled dump site	R, H	L
H	Drum Sites	-103.5884, 31.4297 -103.5759, 31.4339 -103.5759, 31.4337 -103.5761, 31.4333	Drum Sites	R	L
I	Equipment Yard with Drums and IBC Tanks	-103.5754, 31.4340	Drums and IBC Tanks storage	R, H	L

Note: RECs are shown in bold.
(1) Corresponds to location of site as indicated on Figures
(2) Business/descriptive name
(3) Location of facility in longitude/latitude
(4) Description of site operations / key site use relative to hazmat issues
(5) Indicates primary information sources for listing: R=Reconnaissance, I=Interview, D=Database, H=Historical Documentation
(6) Risk Rank indicates the risk to the project

6.2 Opinions

HDR has reviewed the stated data sources, which are part of the ASTM E 1527-13 assessment protocol. Based upon the review of the data, HDR has developed an opinion that the conditions present at the Study Area represent de minimis conditions, and are not considered to be RECs.

6.3 Conclusions

Based upon the above-detailed Findings and Opinions, HDR concludes that no RECs have been identified for the Study Area, as described in the Findings section above. The following statement is required by ASTM E 1527-13 as a positive declaration of whether RECs were found:

> *HDR has performed a Phase I ESA in conformance with the scope and limitations of ASTM E 1527-13 of the Study Area in Reeves County, Texas. Any exceptions to or deletions from these practices are described in previous sections of this report. This report revealed no RECs in connection with the Study Area.*

7.0 RECOMMENDATIONS

Recommendations included in this report were developed through the investigative procedures described in the Scope of Services, Significant Assumptions, and Limitations sections of this report (See Section 1.4). These findings should be reviewed within the context of the limitations provided in the Limitations section. Based upon the lack of the identification of RECs for the Study Area, HDR makes the following recommendations:

Recommendation 1

In the event that any future contractor encounters previously undiscovered contamination at the subject property, contractors should immediately stop all subsurface activities. If debris is found, an odor is identified, or significantly stained soil is visible, contractors should be instructed to follow all applicable regulations regarding discovery and response for hazardous materials encountered during any proposed construction process.

Recommendation 2

HDR recommends that West Sun Tex consider the “shelf life” of Phase I documents in determining risk. ASTM E 1527-13 states that a conforming “Phase I” report is valid for a period of 180 days, and may be updated during the 180 days to a 1-year timeframe. The report is valid for use in any of the CERCLA defenses ONLY if it is updated within this time frame. If greater than one year passes from the final report date, the Phase I effort would need to be repeated to remain in compliance with ASTM and the “All Appropriate Inquiry” protection.

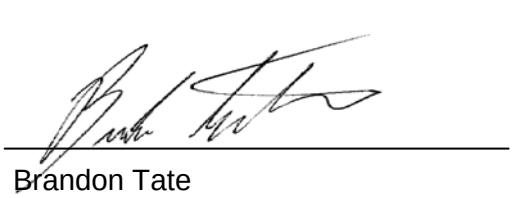
8.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

8.1 Signatures and Qualifications

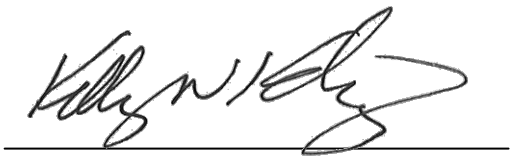
We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in Section 312.10 of 40 Code of Federal Regulations [C.F.R.] Part 312.

We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed all appropriate inquires in conformance with standards and practices set forth in 40 CFR Part 312.

The preceding report has been prepared in general conformance with standard industry practice for performance of ESAs, and includes the applicable portions of the investigation procedures codified in ASTM E 1527-13, *Standard Practice for Environmental Site Assessments: Environmental Site Assessment Process*. The end user of this report may rely on the contents, findings, and conclusions to be accurate within the limitations stated in this report and in the ASTM standard. The report also complies with specific requirements supplied by the client.



Brandon Tate
Environmental Professional



Kelly W. Kading, CPG
Environmental Professional
Senior Professional Associate

8.1.1 Qualifications of Environmental Professionals

This Phase I ESA was performed by the following HDR personnel:

Mr. Brandon Tate has multiple years of experience in geologic and hydrogeologic investigations, the assessment of impacted properties, and compliance with environmental regulations. His areas of expertise include site characterization, environmental permitting, and field sampling techniques. He has prepared numerous permits in support of mining, roadway, rail, and other major infrastructure projects.

Quality Assurance / Quality Control was performed by the following HDR Personnel:

Mr. Kelly W. Kading, CPG, an Environmental Professional as defined by ASTM E 1527-13, has more than 27 years of experience in assessment and remediation of impacted properties and compliance with environmental regulations. He has a B.S. in Geology from Colorado State University and is a Certified Professional Geologist (#9173). He specializes in forensic investigation of hazardous materials-impacted properties for municipal and state agencies, as well as commercial clients. His experience covers assessment of more than 3,000 properties ranging from agricultural land to multigenerational industrial properties in 34 states and 2 foreign countries. He is highly knowledgeable of federal, state, and local environmental regulations and standards and has served on the National Board of Directors of the Academy of Certified Hazardous Materials Managers.

9.0 REFERENCES

ASTM Practice E 1527-13. 2013. Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.

Environmental Data Resources, Inc., Aerial Photo Decade Package. Pecos, TX 79772. Inquiry 4041169.6. August 20, 2014.

Environmental Data Resources, Inc., Report. 2014. West Sun Tex Property Pre-Purchase Activities. EDR DataMap Corridor Study, Inquiry Number 4041169.7s. August 19, 2014.

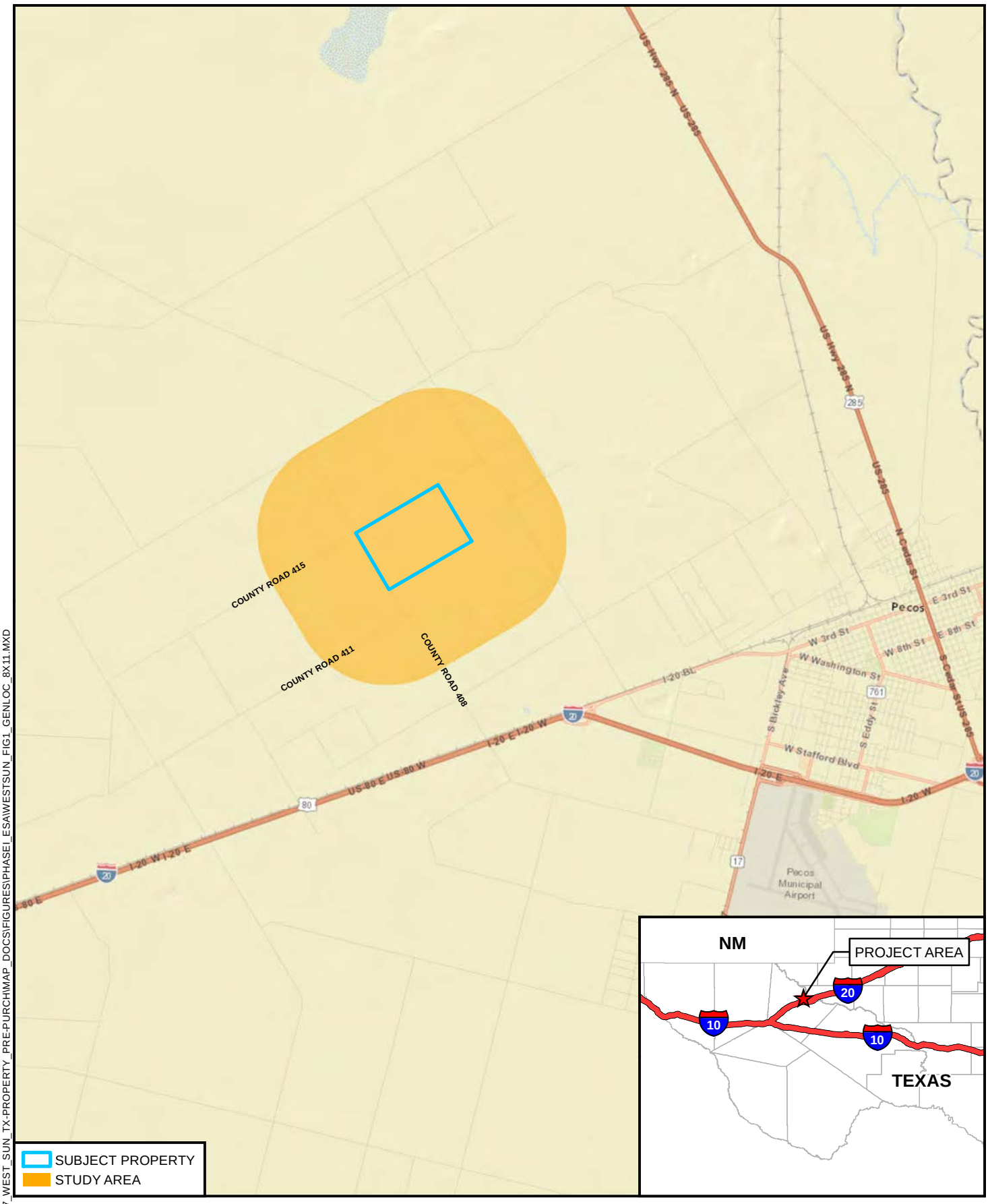
Environmental Data Resources, Inc., Historical Topographic Maps. Pecos, TX 79772. Inquiry 4041169.5. August 19, 2014.

Meyer, J.; M. Wise; and S. Kalaswad, ., 2012, Pecos Valley Aquifer, West Texas: Structure and Brackish Groundwater, Texas Water Development Board, Report 382, 86 p.

U.S. Army Corps of Engineers, Formerly Used Defense Sites Inventory <http://www.usace.army.mil/Missions/Environmental/FormerlyUsedDefenseSites/FUDSInventory.aspx>.

Interview. September 3, 2014. Mr. Ysidro Renteria, Property Owner

Appendix A—Figures

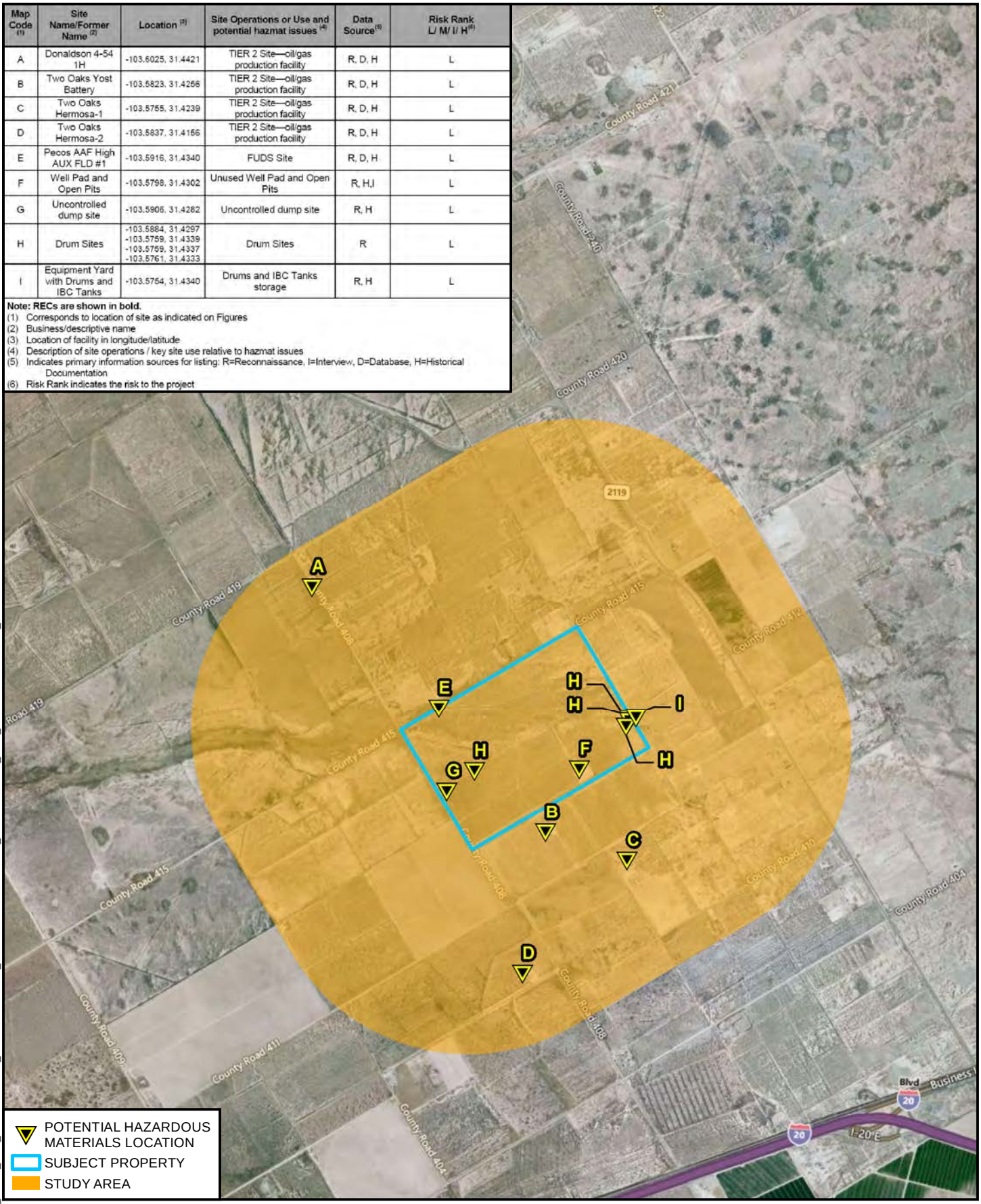


WEST SUN TEX **PROPERTY PRE-PURCHASE** PROJECT LOCATION	N 0 1 2 MILES	**WEST SUN TEX, LLC**	SEPT 2014 | FIGURE 1

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Map Code [1]	Site Name/Former Name [2]	Location [3]	Site Operations or Use and potential hazmat issues [4]	Data Source [5]	Risk Rank L/ M/ I/ H [6]
A	Donaldson 4-54 1H	-103.6025, 31.4421	TIER 2 Site—oil/gas production facility	R, D, H	L
B	Two Oaks Yost Battery	-103.5823, 31.4256	TIER 2 Site—oil/gas production facility	R, D, H	L
C	Two Oaks Hermosa-1	-103.5755, 31.4239	TIER 2 Site—oil/gas production facility	R, D, H	L
D	Two Oaks Hermosa-2	-103.5837, 31.4156	TIER 2 Site—oil/gas production facility	R, D, H	L
E	Pecos AAF High AUX FLD #1	-103.5916, 31.4340	FUDS Site	R, D, H	L
F	Well Pad and Open Pits	-103.5798, 31.4302	Unused Well Pad and Open Pits	R, H,I	L
G	Uncontrolled dump site	-103.5906, 31.4282	Uncontrolled dump site	R, H	L
H	Drum Sites	-103.5884, 31.4297 -103.5759, 31.4339 -103.5759, 31.4337 -103.5761, 31.4333	Drum Sites	R	L
I	Equipment Yard with Drums and IBC Tanks	-103.5754, 31.4340	Drums and IBC Tanks storage	R, H	L

Note: RECs are shown in bold.
(1) Corresponds to location of site as indicated on Figures
(2) Business/descriptive name
(3) Location of facility in longitude/latitude
(4) Description of site operations / key site use relative to hazmat issues
(5) Indicates primary information sources for listing: R=Reconnaissance, I=Interview, D=Database, H=Historical Documentation
(6) Risk Rank indicates the risk to the project



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WEST SUN TEX
PROPERTY PRE-PURCHASE
POTENTIAL HAZARDOUS MATERIALS LOCATIONS

N
0 2,000 4,000
FEET

WEST SUN TEX, LLC

SEPT 2014 | FIGURE 2

Appendix B—EDR Report

West Sun Tex Property Pre-Purchase Activities
Pecos, TX 79772

Inquiry Number: 4041169.7s
August 19, 2014

EDR DataMap™ Area Study

EDR® Environmental Data Resources Inc

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

TARGET PROPERTY INFORMATION

ADDRESS

PECOS, TX 79772
PECOS, TX 79772

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records within the requested search area for the following databases:

FEDERAL RECORDS

NPL	National Priority List
Proposed NPL	Proposed National Priority List Sites
Delisted NPL	National Priority List Deletions
NPL LIENS	Federal Superfund Liens
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP	CERCLIS No Further Remedial Action Planned
LIENS 2	CERCLA Lien Information
CORRACTS	Corrective Action Report
RCRA-TSDF	RCRA - Treatment, Storage and Disposal
RCRA-LQG	RCRA - Large Quantity Generators
RCRA-SQG	RCRA - Small Quantity Generators
RCRA-CESQG	RCRA - Conditionally Exempt Small Quantity Generator
RCRA NonGen / NLR	RCRA - Non Generators / No Longer Regulated
US ENG CONTROLS	Engineering Controls Sites List
US INST CONTROL	Sites with Institutional Controls
ERNS	Emergency Response Notification System
HMIRS	Hazardous Materials Information Reporting System
DOT OPS	Incident and Accident Data
US CDL	Clandestine Drug Labs
US BROWNFIELDS	A Listing of Brownfields Sites
DOD	Department of Defense Sites
LUCIS	Land Use Control Information System
CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
UMTRA	Uranium Mill Tailings Sites
ODI	Open Dump Inventory
DEBRIS REGION 9	Torres Martinez Reservation Illegal Dump Site Locations
US MINES	Mines Master Index File
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
SSTS	Section 7 Tracking Systems
ICIS	Integrated Compliance Information System

PADS ---- PCB Activity Database System
MLTS ---- Material Licensing Tracking System
RADINFO ---- Radiation Information Database
FINDS ---- Facility Index System/Facility Registry System
RAATS ---- RCRA Administrative Action Tracking System
RMP ---- Risk Management Plans
PRP ---- Potentially Responsible Parties
US AIRS ---- Aerometric Information Retrieval System Facility Subsystem
EPA WATCH LIST ---- EPA WATCH LIST
2020 COR ACTION ---- 2020 Corrective Action Program List
LEAD SMELTERS ---- Lead Smelter Sites
US FIN ASSUR ---- Financial Assurance Information
COAL ASH DOE ---- Steam-Electric Plant Operation Data
SCRD DRYCLEANERS ---- State Coalition for Remediation of Drycleaners Listing
US HIST CDL ---- National Clandestine Laboratory Register
FEMA UST ---- Underground Storage Tank Listing
PCB TRANSFORMER ---- PCB Transformer Registration Database
COAL ASH EPA ---- Coal Combustion Residues Surface Impoundments List
FEDERAL FACILITY ---- Federal Facility Site Information listing

STATE AND LOCAL RECORDS

SHWS ---- State Superfund Registry
IOP ---- Innocent Owner/Operator Program
SWF/LF ---- Permitted Solid Waste Facilities
CLI ---- Closed Landfill Inventory
NPDES ---- NPDES Facility List
UIC ---- Underground Injection Wells Database Listing
SWRCY ---- Recycling Facility Listing
WasteMgt ---- Commercial Hazardous & Solid Waste Management Facilities
LPST ---- Leaking Petroleum Storage Tank Listing
UST ---- Petroleum Storage Tank Database
DEL SHWS ---- Deleted Superfund Registry Sites
LIENS ---- Environmental Liens Listing
AST ---- Petroleum Storage Tank Database
SPILLS ---- Spills Database
AUL ---- Sites with Controls
VCP ---- Voluntary Cleanup Program Database
PRIORITYCLEANERS ---- Dry Cleaner Remediation Program Prioritization List
DRYCLEANERS ---- Drycleaner Registration Database Listing
BROWNFIELDS ---- Brownfields Site Assessments
ENF ---- Notice of Violations Listing
Ind. Haz Waste ---- Industrial & Hazardous Waste Database
ED AQUIF ---- Edwards Aquifer Permits
AIRS ---- Current Emission Inventory Data
MSD ---- Municipal Settings Designations Database
RWS ---- Radioactive Waste Sites
HIST LIENS ---- Environmental Liens Listing
IHW CORR ACTION ---- IHW CORR ACTION
COAL ASH ---- Coal Ash Disposal Sites
GCC ---- Groundwater Contamination Cases

TRIBAL RECORDS

INDIAN RESERV ---- Indian Reservations

EXECUTIVE SUMMARY

INDIAN ODI ---------- Report on the Status of Open Dumps on Indian Lands
INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land
INDIAN UST ---------- Underground Storage Tanks on Indian Land
INDIAN VCP ---------- Voluntary Cleanup Priority Listing

EDR PROPRIETARY RECORDS

EDR MGP ---------- EDR Proprietary Manufactured Gas Plants
EDR US Hist Auto Stat ---------- EDR Exclusive Historic Gas Stations
EDR US Hist Cleaners ---------- EDR Exclusive Historic Dry Cleaners
RGA LF ---------- Recovered Government Archive Solid Waste Facilities List
RGA HWS ---------- Recovered Government Archive State Hazardous Waste Facilities List

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

FEDERAL RECORDS

FUDS: The Listing includes locations of Formerly Used Defense Sites Properties where the US Army Corps Of Engineers is actively working or will take necessary cleanup actions.

A review of the FUDS list, as provided by EDR, and dated 12/31/2012 has revealed that there is 1 FUDS site within the searched area.

Site	Address	Map ID	Page
PECOS AAF HIGH AUX FLD #1		2	15

STATE AND LOCAL RECORDS

TIER 2: A listing of facilities which store or manufacture hazardous materials and submit a chemical inventory report.

A review of the TIER 2 list, as provided by EDR, and dated 12/31/2012 has revealed that there are 4 TIER 2 sites within the searched area.

Site	Address	Map ID	Page
DONALDSON 4-54 1H		1	4
TWO OAKS- YOST BATTERY	31.425482N, -103.581858	3	16
TWO OAKS-HERMOSA #1	31.42378N; -103.575047	4	19
TWO OAKS-HERMOSA #2	31.415474; -103.583204	5	22

EXECUTIVE SUMMARY

Please refer to the end of the findings report for unmapped orphan sites due to poor or inadequate address information.

MAP FINDINGS SUMMARY

Database	Total Plotted
FEDERAL RECORDS	
NPL	0
Proposed NPL	0
Delisted NPL	0
NPL LIENS	0
CERCLIS	0
CERC-NFRAP	0
LIENS 2	0
CORRACTS	0
RCRA-TSDF	0
RCRA-LQG	0
RCRA-SQG	0
RCRA-CESQG	0
RCRA NonGen / NLR	0
US ENG CONTROLS	0
US INST CONTROL	0
ERNS	0
HMIRS	0
DOT OPS	0
US CDL	0
US BROWNFIELDS	0
DOD	0
FUDS	1
LUCIS	0
CONSENT	0
ROD	0
UMTRA	0
ODI	0
DEBRIS REGION 9	0
US MINES	0
TRIS	0
TSCA	0
FTTS	0
HIST FTTS	0
SSTS	0
ICIS	0
PADS	0
MLTS	0
RADINFO	0
FINDS	0
RAATS	0
RMP	0
PRP	0
US AIRS	0
EPA WATCH LIST	0
2020 COR ACTION	0
LEAD SMELTERS	0
US FIN ASSUR	0
COAL ASH DOE	0

MAP FINDINGS SUMMARY

Database	Total Plotted
SCRD DRYCLEANERS	0
US HIST CDL	0
FEMA UST	0
PCB TRANSFORMER	0
COAL ASH EPA	0
FEDERAL FACILITY	0

STATE AND LOCAL RECORDS

SHWS	0
IOP	0
SWF/LF	0
CLI	0
NPDES	0
UIC	0
SWRCY	0
WasteMgt	0
LPST	0
UST	0
DEL SHWS	0
LIENS	0
AST	0
SPILLS	0
AUL	0
VCP	0
PRIORITYCLEANERS	0
DRYCLEANERS	0
BROWNFIELDS	0
ENF	0
Ind. Haz Waste	0
ED AQUIF	0
AIRS	0
MSD	0
TIER 2	4
RWS	0
HIST LIENS	0
IHW CORR ACTION	0
COAL ASH	0
GCC	0

TRIBAL RECORDS

INDIAN RESERV	0
INDIAN ODI	0
INDIAN LUST	0
INDIAN UST	0
INDIAN VCP	0

EDR PROPRIETARY RECORDS

EDR MGP	0

MAP FINDINGS SUMMARY

Database	Total Plotted
EDR US Hist Auto Stat	0
EDR US Hist Cleaners	0
RGA LF	0
RGA HWS	0

NOTES:

Sites may be listed in more than one database

1 **DONALDSON 4-54 1H** **TIER 2** **S113697446**
N/A

LAT/LONG, TX 79772

TIER 2:
Facility Id/Name: FATR201294VNCL08X06K/DONALDSON 4-54 1H

Facility Info:
Id Type: NAICS
Description: Crude Petroleum and Natural Gas Extraction
Id: 211111
Last Modified: 3/1/2013
Reporting Year: 2012
Facility Country: USA
Facility Department: Not reported
Facility Date Modified: 5/8/2013
Date Tier 2 Signed: 2-28-2013
Mailing Address: Not reported
Mailing City/State/Country: Not reported
Dikes/Other Safeguard Meas Emp: Not reported
All Chemicals Same As Last Year: Not reported
State Fees Total: Not reported
Number Of Employess On Site: Not reported
Site Map: Not reported
Fire District: Pecos Volunteer Fire Department
Submitted By: Gerald Carrillo
Latitude: 31.442
Longitude: -103.602
Lat/Long Location Desc: CE - Center of Facility
Lat/Long Method: G0 - GPS (Other)

Contact:
Contact Email: [redacted]
Contact Mail Address: 115 W. 3rd St
Contact City/State/Zip: Pecos, TX 79772
Contact Mail Country: USA
Contact Type 1: Emergency Contact
Contact Type 2: Regulatory Point of Contact
Contact Name: Gerald Carrillo
Title: PPU-HSEC Superintendent
Modification Date: 3/9/2013

Contact:
Contact Email: [redacted]
Contact Mail Address: 115 W. 3rd St
Contact City/State/Zip: Pecos, TX 79772
Contact Mail Country: USA
Contact Type 1: Emergency Contact
Contact Name: Brian Downing
Title: Production Superintendent
Modification Date: 3/9/2013

Contact:
Contact Email: Not reported
Contact Mail Address: 1360 Post Oak Blvd., Suite 150

DONALDSON 4-54 1H (Continued) **S113697446**

Contact City/State/Zip:	Houston, TX 77056
Contact Mail Country:	USA
Contact Type 1:	Owner / Operator
Contact Name:	Petrohawk Operating Company - Permian
Title:	Owner/Operator
Modification Date:	3/9/2013

Chemical Inventory:

Facility Id:	FATR201294VNCL08X06K
Chemical Name:	Acrolein
Chemical Inv Record Id:	CVTR201294VNCL0920AP
CAS Number:	107-02-8
Chemical Same As Last Year:	Not reported
Acute Health Risks:	T
Average Daily Amount:	10,000 - 99,999 pounds
Max Daily Amount:	10,000 - 99,999 pounds
Max Amount In Largest Container:	Not reported
Chronic Health Risks:	T
EHS Substance:	T
Last Modified:	3/7/2013
Days On Site:	75
Fire Hazard:	T
Gas:	Not reported
Liquid:	T
Mixture Form:	Not reported
Sudden Release Of Pressure Haz:	Not reported
Pure Form:	T
Reactive Hazard:	T
Solid:	Not reported
Trade Secret:	Not reported
Contact Label:	Not reported
Label Code:	TX2012
Trade Secret:	Not reported

Chemical Inventory Location:

Record Key:	CLTR201294VNCL0930B5
Chemical Inventory Record Id:	CVTR201294VNCL0920AP
Amt Of Sub Stored Or Transported:	Not reported
Amount Units:	pounds
Type Of Storage:	Plastic or non-metallic drum
Number Code/Storage Pressure:	1
Number Code/Storage Temperature:	4
Desc of Loc(Or Transported) Subs:	Near Well Head
Last Modified:	3/7/2013

Facility Id:	FATR201294VNCL08X06K
Chemical Name:	Barite
Chemical Inv Record Id:	CVTR201294VNCM0940F9
CAS Number:	7727-43-7
Chemical Same As Last Year:	Not reported
Acute Health Risks:	T
Average Daily Amount:	10,000 - 99,999 pounds
Max Daily Amount:	10,000 - 99,999 pounds
Max Amount In Largest Container:	Not reported
Chronic Health Risks:	T
EHS Substance:	Not reported

DONALDSON 4-54 1H (Continued) **S113697446**

Last Modified:	3/7/2013
Days On Site:	75
Fire Hazard:	Not reported
Gas:	Not reported
Liquid:	Not reported
Mixture Form:	Not reported
Sudden Release Of Pressure Haz:	Not reported
Pure Form:	T
Reactive Hazard:	T
Solid:	T
Trade Secret:	Not reported
Contact Label:	Not reported
Label Code:	TX2012
Trade Secret:	Not reported

Chemical Inventory Location:

Record Key:	CLTR201294VNCM0950G7
Chemical Inventory Record Id:	CVTR201294VNCM0940F9
Amt Of Sub Stored Or Transported:	Not reported
Amount Units:	pounds
Type Of Storage:	Silo
Number Code/Storage Pressure:	2
Number Code/Storage Temperature:	4
Desc of Loc(Or Transported) Subs:	Near Well Head
Last Modified:	3/7/2013

Facility Id:	FATR201294VNCL08X06K
Chemical Name:	Bentonite
Chemical Inv Record Id:	CVTR201294VNCM0960JH
CAS Number:	1302-78-9
Chemical Same As Last Year:	Not reported
Acute Health Risks:	T
Average Daily Amount:	10,000 - 99,999 pounds
Max Daily Amount:	10,000 - 99,999 pounds
Max Amount In Largest Container:	Not reported
Chronic Health Risks:	T
EHS Substance:	Not reported
Last Modified:	3/7/2013
Days On Site:	75
Fire Hazard:	Not reported
Gas:	Not reported
Liquid:	Not reported
Mixture Form:	Not reported
Sudden Release Of Pressure Haz:	Not reported
Pure Form:	T
Reactive Hazard:	Not reported
Solid:	T
Trade Secret:	Not reported
Contact Label:	Not reported
Label Code:	TX2012
Trade Secret:	Not reported

Chemical Inventory Location:

Record Key:	CLTR201294VNCM0970KE
Chemical Inventory Record Id:	CVTR201294VNCM0960JH
Amt Of Sub Stored Or Transported:	Not reported

DONALDSON 4-54 1H (Continued) **S113697446**

Amount Units:	pounds
Type Of Storage:	Bag
Number Code/Storage Pressure:	1
Number Code/Storage Temperature:	4
Desc of Loc(Or Transported) Subs:	Near Well Head
Last Modified:	3/7/2013
Facility Id:	FATR201294VNCL08X06K
Chemical Name:	Cellulose
Chemical Inv Record Id:	CVTR201294VNCM0980N5
CAS Number:	Not reported
Chemical Same As Last Year:	Not reported
Acute Health Risks:	T
Average Daily Amount:	10,000 - 99,999 pounds
Max Daily Amount:	10,000 - 99,999 pounds
Max Amount In Largest Container:	Not reported
Chronic Health Risks:	T
EHS Substance:	Not reported
Last Modified:	3/7/2013
Days On Site:	75
Fire Hazard:	Not reported
Gas:	Not reported
Liquid:	Not reported
Mixture Form:	T
Sudden Release Of Pressure Haz:	Not reported
Pure Form:	Not reported
Reactive Hazard:	Not reported
Solid:	T
Trade Secret:	Not reported
Contact Label:	Not reported
Label Code:	TX2012
Trade Secret:	Not reported

Chemical Inventory Location:

Record Key:	CLTR201294VNCM0990NM
Chemical Inventory Record Id:	CVTR201294VNCM0980N5
Amt Of Sub Stored Or Transported:	Not reported
Amount Units:	pounds
Type Of Storage:	Bag
Number Code/Storage Pressure:	1
Number Code/Storage Temperature:	4
Desc of Loc(Or Transported) Subs:	Near Well Head
Last Modified:	3/7/2013
Facility Id:	FATR201294VNCL08X06K
Chemical Name:	Crystalline silica, quartz
Chemical Inv Record Id:	CVTR201294VNCM09A0QX
CAS Number:	14808-60-7
Chemical Same As Last Year:	Not reported
Acute Health Risks:	T
Average Daily Amount:	10,000 - 99,999 pounds
Max Daily Amount:	10,000 - 99,999 pounds
Max Amount In Largest Container:	Not reported
Chronic Health Risks:	T
EHS Substance:	Not reported
Last Modified:	3/7/2013
Days On Site:	75

DONALDSON 4-54 1H (Continued) **S113697446**

Fire Hazard:	Not reported
Gas:	Not reported
Liquid:	Not reported
Mixture Form:	T
Sudden Release Of Pressure Haz:	Not reported
Pure Form:	Not reported
Reactive Hazard:	T
Solid:	T
Trade Secret:	Not reported
Contact Label:	Not reported
Label Code:	TX2012
Trade Secret:	Not reported

Chemical Inventory Location:

Record Key:	CLTR201294VNCM09B0RU
Chemical Inventory Record Id:	CVTR201294VNCM09A0QX
Amt Of Sub Stored Or Transported:	Not reported
Amount Units:	pounds
Type Of Storage:	Silo
Number Code/Storage Pressure:	1
Number Code/Storage Temperature:	4
Desc of Loc(Or Transported) Subs:	Near Well Head
Last Modified:	3/7/2013

Facility Id:	FATR201294VNCL08X06K
Chemical Name:	Diesel
Chemical Inv Record Id:	CVTR201294VNCM09C0U4
CAS Number:	68476-34-6
Chemical Same As Last Year:	Not reported
Acute Health Risks:	T
Average Daily Amount:	100,000 - 999,999 pounds
Max Daily Amount:	100,000 - 999,999 pounds
Max Amount In Largest Container:	Not reported
Chronic Health Risks:	T
EHS Substance:	Not reported
Last Modified:	3/7/2013
Days On Site:	75
Fire Hazard:	T
Gas:	Not reported
Liquid:	T
Mixture Form:	T
Sudden Release Of Pressure Haz:	Not reported
Pure Form:	Not reported
Reactive Hazard:	Not reported
Solid:	Not reported
Trade Secret:	Not reported
Contact Label:	Not reported
Label Code:	TX2012
Trade Secret:	Not reported

Chemical Inventory Location:

Record Key:	CLTR201294VNCM09D0V1
Chemical Inventory Record Id:	CVTR201294VNCM09C0U4
Amt Of Sub Stored Or Transported:	Not reported
Amount Units:	pounds
Type Of Storage:	Above ground tank

DONALDSON 4-54 1H (Continued) **S113697446**

Number Code/Storage Pressure: 1
Number Code/Storage Temperature: 4
Desc of Loc(Or Transported) Subs: Near Well Head
Last Modified: 3/7/2013

Facility Id: FATR201294VNCL08X06K
Chemical Name: Fly Ash
Chemical Inv Record Id: CVTR201294VNCM09E0XB
CAS Number: 68131-74-8
Chemical Same As Last Year: Not reported
Acute Health Risks: T
Average Daily Amount: 100,000 - 999,999 pounds
Max Daily Amount: 100,000 - 999,999 pounds
Max Amount In Largest Container: Not reported
Chronic Health Risks: T
EHS Substance: Not reported
Last Modified: 3/7/2013
Days On Site: 75
Fire Hazard: Not reported
Gas: Not reported
Liquid: Not reported
Mixture Form: T
Sudden Release Of Pressure Haz: Not reported
Pure Form: Not reported
Reactive Hazard: Not reported
Solid: T
Trade Secret: Not reported
Contact Label: Not reported
Label Code: TX2012
Trade Secret: Not reported

Chemical Inventory Location:
Record Key: CLTR201294VNCM09F0Y9
Chemical Inventory Record Id: CVTR201294VNCM09E0XB
Amt Of Sub Stored Or Transported: Not reported
Amount Units: pounds
Type Of Storage: Bag
Number Code/Storage Pressure: 1
Number Code/Storage Temperature: 4
Desc of Loc(Or Transported) Subs: Near Well Head
Last Modified: 3/7/2013

Facility Id: FATR201294VNCL08X06K
Chemical Name: Glutaraldehyde
Chemical Inv Record Id: CVTR201294VNCM09G103
CAS Number: 111-30-8
Chemical Same As Last Year: Not reported
Acute Health Risks: T
Average Daily Amount: 10,000 - 99,999 pounds
Max Daily Amount: 10,000 - 99,999 pounds
Max Amount In Largest Container: Not reported
Chronic Health Risks: T
EHS Substance: Not reported
Last Modified: 3/7/2013
Days On Site: 20
Fire Hazard: T
Gas: Not reported

DONALDSON 4-54 1H (Continued) **S113697446**

Liquid:	T
Mixture Form:	T
Sudden Release Of Pressure Haz:	Not reported
Pure Form:	Not reported
Reactive Hazard:	T
Solid:	Not reported
Trade Secret:	Not reported
Contact Label:	Not reported
Label Code:	TX2012
Trade Secret:	Not reported

Chemical Inventory Location:

Record Key:	CLTR201294VNCM09H110
Chemical Inventory Record Id:	CVTR201294VNCM09G103
Amt Of Sub Stored Or Transported:	Not reported
Amount Units:	pounds
Type Of Storage:	Tote bin
Number Code/Storage Pressure:	1
Number Code/Storage Temperature:	4
Desc of Loc(Or Transported) Subs:	Near Well Head
Last Modified:	3/7/2013

Facility Id:	FATR201294VNCL08X06K
Chemical Name:	Lime
Chemical Inv Record Id:	CVTR201294VNCM09J13A
CAS Number:	1305-78-8
Chemical Same As Last Year:	Not reported
Acute Health Risks:	T
Average Daily Amount:	10,000 - 99,999 pounds
Max Daily Amount:	10,000 - 99,999 pounds
Max Amount In Largest Container:	Not reported
Chronic Health Risks:	T
EHS Substance:	Not reported
Last Modified:	3/7/2013
Days On Site:	20
Fire Hazard:	T
Gas:	Not reported
Liquid:	Not reported
Mixture Form:	T
Sudden Release Of Pressure Haz:	Not reported
Pure Form:	Not reported
Reactive Hazard:	T
Solid:	T
Trade Secret:	Not reported
Contact Label:	Not reported
Label Code:	TX2012
Trade Secret:	Not reported

Chemical Inventory Location:

Record Key:	CLTR201294VNCM09K147
Chemical Inventory Record Id:	CVTR201294VNCM09J13A
Amt Of Sub Stored Or Transported:	Not reported
Amount Units:	pounds
Type Of Storage:	Bag
Number Code/Storage Pressure:	1
Number Code/Storage Temperature:	4

DONALDSON 4-54 1H (Continued) **S113697446**

Desc of Loc(Or Transported) Subs:	Near Well Head
Last Modified:	3/7/2013
Facility Id:	FATR201294VNCL08X06K
Chemical Name:	Limestone
Chemical Inv Record Id:	CVTR201294VNCM09L16H
CAS Number:	1317-65-3
Chemical Same As Last Year:	Not reported
Acute Health Risks:	T
Average Daily Amount:	10,000 - 99,999 pounds
Max Daily Amount:	10,000 - 99,999 pounds
Max Amount In Largest Container:	Not reported
Chronic Health Risks:	T
EHS Substance:	Not reported
Last Modified:	3/7/2013
Days On Site:	75
Fire Hazard:	Not reported
Gas:	Not reported
Liquid:	Not reported
Mixture Form:	T
Sudden Release Of Pressure Haz:	Not reported
Pure Form:	Not reported
Reactive Hazard:	Not reported
Solid:	T
Trade Secret:	Not reported
Contact Label:	Not reported
Label Code:	TX2012
Trade Secret:	Not reported

Chemical Inventory Location:

Record Key:	CLTR201294VNCN09M17F
Chemical Inventory Record Id:	CVTR201294VNCM09L16H
Amt Of Sub Stored Or Transported:	Not reported
Amount Units:	pounds
Type Of Storage:	Bag
Number Code/Storage Pressure:	1
Number Code/Storage Temperature:	4
Desc of Loc(Or Transported) Subs:	Near Well Head
Last Modified:	3/7/2013
Facility Id:	FATR201294VNCL08X06K
Chemical Name:	Mica Fine
Chemical Inv Record Id:	CVTR201294VNCN09N19R
CAS Number:	12001-26-2
Chemical Same As Last Year:	Not reported
Acute Health Risks:	T
Average Daily Amount:	10,000 - 99,999 pounds
Max Daily Amount:	10,000 - 99,999 pounds
Max Amount In Largest Container:	Not reported
Chronic Health Risks:	T
EHS Substance:	Not reported
Last Modified:	3/7/2013
Days On Site:	20
Fire Hazard:	Not reported
Gas:	Not reported
Liquid:	Not reported
Mixture Form:	Not reported

DONALDSON 4-54 1H (Continued) **S113697446**

Sudden Release Of Pressure Haz:	Not reported
Pure Form:	T
Reactive Hazard:	Not reported
Solid:	T
Trade Secret:	Not reported
Contact Label:	Not reported
Label Code:	TX2012
Trade Secret:	Not reported

Chemical Inventory Location:

Record Key:	CLTR201294VNCN09P1AN
Chemical Inventory Record Id:	CVTR201294VNCN09N19R
Amt Of Sub Stored Or Transported:	Not reported
Amount Units:	pounds
Type Of Storage:	Bag
Number Code/Storage Pressure:	1
Number Code/Storage Temperature:	4
Desc of Loc(Or Transported) Subs:	Near Well Head
Last Modified:	3/7/2013

Facility Id:	FATR201294VNCL08X06K
Chemical Name:	Modified acrylamide copolymer
Chemical Inv Record Id:	CVTR201294VNCN09Q1CG
CAS Number:	Not reported
Chemical Same As Last Year:	Not reported
Acute Health Risks:	T
Average Daily Amount:	10,000 - 99,999 pounds
Max Daily Amount:	10,000 - 99,999 pounds
Max Amount In Largest Container:	Not reported
Chronic Health Risks:	T
EHS Substance:	Not reported
Last Modified:	3/7/2013
Days On Site:	20
Fire Hazard:	T
Gas:	Not reported
Liquid:	Not reported
Mixture Form:	T
Sudden Release Of Pressure Haz:	Not reported
Pure Form:	Not reported
Reactive Hazard:	Not reported
Solid:	T
Trade Secret:	Not reported
Contact Label:	Not reported
Label Code:	TX2012
Trade Secret:	Not reported

Chemical Inventory Location:

Record Key:	CLTR201294VNCN09R1DD
Chemical Inventory Record Id:	CVTR201294VNCN09Q1CG
Amt Of Sub Stored Or Transported:	Not reported
Amount Units:	pounds
Type Of Storage:	Bag
Number Code/Storage Pressure:	1
Number Code/Storage Temperature:	4
Desc of Loc(Or Transported) Subs:	Near Well Head
Last Modified:	3/7/2013

DONALDSON 4-54 1H (Continued) **S113697446**

Facility Id:	FATR201294VNCL08X06K
Chemical Name:	Portland Cement
Chemical Inv Record Id:	CVTR201294VNCN09S1FP
CAS Number:	65997-15-1
Chemical Same As Last Year:	Not reported
Acute Health Risks:	T
Average Daily Amount:	100,000 - 999,999 pounds
Max Daily Amount:	100,000 - 999,999 pounds
Max Amount In Largest Container:	Not reported
Chronic Health Risks:	T
EHS Substance:	Not reported
Last Modified:	3/7/2013
Days On Site:	20
Fire Hazard:	Not reported
Gas:	Not reported
Liquid:	Not reported
Mixture Form:	T
Sudden Release Of Pressure Haz:	Not reported
Pure Form:	Not reported
Reactive Hazard:	Not reported
Solid:	T
Trade Secret:	Not reported
Contact Label:	Not reported
Label Code:	TX2012
Trade Secret:	Not reported

Chemical Inventory Location:

Record Key:	CLTR201294VNCN09T1GM
Chemical Inventory Record Id:	CVTR201294VNCN09S1FP
Amt Of Sub Stored Or Transported:	Not reported
Amount Units:	pounds
Type Of Storage:	Silo
Number Code/Storage Pressure:	2
Number Code/Storage Temperature:	4
Desc of Loc(Or Transported) Subs:	Near Well Head
Last Modified:	3/7/2013

Facility Id:	FATR201294VNCL08X06K
Chemical Name:	Resin coated sand
Chemical Inv Record Id:	CVTR201294VNCN09U1JX
CAS Number:	Not reported
Chemical Same As Last Year:	Not reported
Acute Health Risks:	T
Average Daily Amount:	1,000,000 - 9,999,999 pounds
Max Daily Amount:	1,000,000 - 9,999,999 pounds
Max Amount In Largest Container:	Not reported
Chronic Health Risks:	T
EHS Substance:	Not reported
Last Modified:	3/7/2013
Days On Site:	20
Fire Hazard:	T
Gas:	Not reported
Liquid:	Not reported
Mixture Form:	T
Sudden Release Of Pressure Haz:	Not reported
Pure Form:	Not reported
Reactive Hazard:	Not reported

DONALDSON 4-54 1H (Continued) **S113697446**

Solid: T
Trade Secret: Not reported
Contact Label: Not reported
Label Code: TX2012
Trade Secret: Not reported

Chemical Inventory Location:
Record Key: CLTR201294VNCN09V1KU
Chemical Inventory Record Id: CVTR201294VNCN09U1JX
Amt Of Sub Stored Or Transported: Not reported
Amount Units: pounds
Type Of Storage: Silo
Number Code/Storage Pressure: 2
Number Code/Storage Temperature: 4
Desc of Loc(Or Transported) Subs: Near Well Head
Last Modified: 3/7/2013

Facility Id: FATR201294VNCL08X06K
Chemical Name: SALT 96%
Chemical Inv Record Id: CVTR201294VNCN09W1N4
CAS Number: 7647-14-5
Chemical Same As Last Year: Not reported
Acute Health Risks: T
Average Daily Amount: 10,000 - 99,999 pounds
Max Daily Amount: 10,000 - 99,999 pounds
Max Amount In Largest Container: Not reported
Chronic Health Risks: T
EHS Substance: Not reported
Last Modified: 3/7/2013
Days On Site: 30
Fire Hazard: T
Gas: Not reported
Liquid: Not reported
Mixture Form: T
Sudden Release Of Pressure Haz: Not reported
Pure Form: Not reported
Reactive Hazard: Not reported
Solid: T
Trade Secret: Not reported
Contact Label: Not reported
Label Code: TX2012
Trade Secret: Not reported

Chemical Inventory Location:
Record Key: CLTR201294VNCN09X1P1
Chemical Inventory Record Id: CVTR201294VNCN09W1N4
Amt Of Sub Stored Or Transported: Not reported
Amount Units: pounds
Type Of Storage: Bag
Number Code/Storage Pressure: 1
Number Code/Storage Temperature: 4
Desc of Loc(Or Transported) Subs: Near Well Head
Last Modified: 3/7/2013

Facility Id: FATR201294VNCL08X06K
Chemical Name: Salt Gel

DONALDSON 4-54 1H (Continued) **S113697446**

Chemical Inv Record Id:	CVTR201294VNCN09Y1QV
CAS Number:	12174-11-7
Chemical Same As Last Year:	Not reported
Acute Health Risks:	T
Average Daily Amount:	10,000 - 99,999 pounds
Max Daily Amount:	10,000 - 99,999 pounds
Max Amount In Largest Container:	Not reported
Chronic Health Risks:	T
EHS Substance:	Not reported
Last Modified:	3/7/2013
Days On Site:	30
Fire Hazard:	T
Gas:	Not reported
Liquid:	Not reported
Mixture Form:	T
Sudden Release Of Pressure Haz:	Not reported
Pure Form:	Not reported
Reactive Hazard:	Not reported
Solid:	T
Trade Secret:	Not reported
Contact Label:	Not reported
Label Code:	TX2012
Trade Secret:	Not reported

Chemical Inventory Location:

Record Key:	CLTR201294VNCN09Z1RT
Chemical Inventory Record Id:	CVTR201294VNCN09Y1QV
Amt Of Sub Stored Or Transported:	Not reported
Amount Units:	pounds
Type Of Storage:	Tote bin
Number Code/Storage Pressure:	1
Number Code/Storage Temperature:	4
Desc of Loc(Or Transported) Subs:	Near Well Head
Last Modified:	3/7/2013

Notes:	Not reported
Validation:	Not reported

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2 **PECOS AAF HIGH AUX FLD #1** **FUDS** **1008196541**
N/A

PECOS, TX

FUDS:

Federal Facility ID:	TX9799F6716
FUDS #:	K06TX0551
INST ID:	61717
Facility Name:	PECOS AAF HIGH AUX FLD #1
City:	PECOS
State:	TX
EPA Region:	06
County:	REEVES
Congressional District:	23
US Army District:	Fort Worth District (SWF)
Fiscal Year:	2012
Telephone:	817-886-1312

PECOS AAF HIGH AUX FLD #1 (Continued) **1008196541**

NPL Status:	Not Listed
RAB:	Not reported
CTC:	93
Current Owner:	Private Sector
Current Prog:	Not reported
Future Prog:	Not reported
Acreage:	Not reported
Description:	643.34 ACRES
History:	USED AS AN AUXILIARY LANDING FIELD
Latitude:	31.433889
Longitude:	-103.591111

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3 **TWO OAKS- YOST BATTERY** **TIER 2** **S113684923**
31.425482N, -103.581858 **N/A**
PECOS, TX 79772

TIER 2:

Facility Id/Name:	FATR20128MM3EV01YPY2/TWO OAKS- YOST BATTERY

Facility Info:

Id Type:	NAICS
Description:	Crude Petroleum and Natural Gas Extraction
Id:	211111
Last Modified:	6/7/2012
Id Type:	SIC
Description:	OIL AND GAS FIELD EXPLORATION
Id:	1382
Last Modified:	6/7/2012
Reporting Year:	2012
Facility Country:	USA
Facility Department:	Not reported
Facility Date Modified:	5/8/2013
Date Tier 2 Signed:	03/08/2013
Mailing Address:	P.O. Box 50272
Mailing City/State/Country:	Midland, TX USA
Dikes/Other Safeguard Meas Emp:	Not reported
All Chemicals Same As Last Year:	T
State Fees Total:	Not reported
Number Of Employess On Site:	Not reported
Site Map:	Not reported
Fire District:	Not reported
Submitted By:	Cindy Delgado
Latitude:	31.425482
Longitude:	-103.581858
Lat/Long Location Desc:	CE - Center of Facility
Lat/Long Method:	G4 - GPS (Precise Positioning Service)

Contact:

Contact Email:	Not reported
Contact Mail Address:	P.O.Box 50272
Contact City/State/Zip:	Midland, TX 79710
Contact Mail Country:	USA
Contact Type 1:	Emergency Contact
Contact Name:	Devin Garner
Title:	Field Supervisor
Modification Date:	3/28/2013

TWO OAKS- YOST BATTERY (Continued) **S113684923**

Contact:
Contact Email: [redacted]
Contact Mail Address: P.O. Box 50272
Contact City/State/Zip: Midland, TX 79710
Contact Mail Country: USA
Contact Type 1: Emergency Contact
Contact Type 2: Owner / Operator
Contact Name: Cleve Thomas
Title: Field Suspervisor
Modification Date: 3/28/2013

Contact:
Contact Email: [redacted]
Contact Mail Address: P.O.Box 50184
Contact City/State/Zip: Midland, TX 79710
Contact Mail Country: USA
Contact Type 1: Owner / Operator
Contact Name: Dave Thomas
Title: Not reported
Modification Date: 3/28/2013

Contact:
Contact Email: [redacted]
Contact Mail Address: Not reported
Contact City/State/Zip: Not reported
Contact Mail Country: USA
Contact Type 1: Emergency Contact
Contact Name: Joe Varela
Title: Not reported
Modification Date: 3/28/2013

Chemical Inventory:
Facility Id: FATR20128MM3EV01YPY2
Chemical Name: Produced Hydrocarbons
Chemical Inv Record Id: CVTR20128MM3YR02B5F8
CAS Number: 8002-05-9
Chemical Same As Last Year: Not reported
Acute Health Risks: T
Average Daily Amount: 10,000 - 99,999 pounds
Max Daily Amount: 10,000 - 99,999 pounds
Max Amount In Largest Container: Not reported
Chronic Health Risks: Not reported
EHS Substance: Not reported
Last Modified: 3/28/2013
Days On Site: 365
Fire Hazard: T
Gas: Not reported
Liquid: T
Mixture Form: Not reported
Sudden Release Of Pressure Haz: T
Pure Form: T
Reactive Hazard: Not reported
Solid: T

TWO OAKS- YOST BATTERY (Continued) **S113684923**

Trade Secret: Not reported
Contact Label: Not reported
Label Code: TX2012
Trade Secret: Not reported

Chemical Inventory Location:
Record Key: CLTR20128MM3ZT02C2ML
Chemical Inventory Record Id: CVTR20128MM3YR02B5F8
Amt Of Sub Stored Or Transported: 300
Amount Units: barrels
Type Of Storage: Above ground tank
Number Code/Storage Pressure: 1
Number Code/Storage Temperature: 4
Desc of Loc(Or Transported) Subs: on site
Last Modified: 3/28/2013

Record Key: CLTR20129575S805SBUX
Chemical Inventory Record Id: CVTR20128MM3YR02B5F8
Amt Of Sub Stored Or Transported: 300
Amount Units: barrels
Type Of Storage: Above ground tank
Number Code/Storage Pressure: 1
Number Code/Storage Temperature: 4
Desc of Loc(Or Transported) Subs: on site
Last Modified: 3/28/2013

Facility Id: FATR20128MM3EV01YPY2
Chemical Name: Produced Water
Chemical Inv Record Id: CVTR20129575SR05TSNQ
CAS Number: 7647-14-5
Chemical Same As Last Year: Not reported
Acute Health Risks: T
Average Daily Amount: 0 - 99 pounds
Max Daily Amount: 0 - 99 pounds
Max Amount In Largest Container: Not reported
Chronic Health Risks: T
EHS Substance: Not reported
Last Modified: 3/28/2013
Days On Site: 365
Fire Hazard: T
Gas: Not reported
Liquid: T
Mixture Form: T
Sudden Release Of Pressure Haz: Not reported
Pure Form: Not reported
Reactive Hazard: T
Solid: Not reported
Trade Secret: Not reported
Contact Label: Not reported
Label Code: TX2012
Trade Secret: Not reported

Chemical Inventory Location:
Record Key: CLTR20129575TX05UTG1
Chemical Inventory Record Id: CVTR20129575SR05TSNQ
Amt Of Sub Stored Or Transported: 500

TWO OAKS- YOST BATTERY (Continued) **S113684923**

Amount Units:	barrels
Type Of Storage:	Above ground tank
Number Code/Storage Pressure:	1
Number Code/Storage Temperature:	4
Desc of Loc(Or Transported) Subs:	on site
Last Modified:	3/28/2013
Notes:	Not reported
Validation:	Not reported

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4 **TWO OAKS-HERMOSA #1** **TIER 2** **S113684927**
31.42378N; -103.575047 **N/A**
PECOS, TX 79772

TIER 2:

Facility Id/Name:	FATR20128MMA2803RN61/TWO OAKS-HERMOSA #1

Facility Info:

Id Type:	SIC
Description:	OIL AND GAS FIELD EXPLORATION
Id:	1382
Last Modified:	6/7/2012
Id Type:	NAICS
Description:	Crude Petroleum and Natural Gas Extraction
Id:	211111
Last Modified:	6/7/2012
Reporting Year:	2012
Facility Country:	USA
Facility Department:	Not reported
Facility Date Modified:	5/8/2013
Date Tier 2 Signed:	03/08/2013
Mailing Address:	P.O. Box 50272
Mailing City/State/Country:	Midland, TX USA
Dikes/Other Safeguard Meas Emp:	Not reported
All Chemicals Same As Last Year:	Not reported
State Fees Total:	Not reported
Number Of Employess On Site:	Not reported
Site Map:	Not reported
Fire District:	Not reported
Submitted By:	Cindy Delgado
Latitude:	31.423783
Longitude:	-103.575047
Lat/Long Location Desc:	CE - Center of Facility
Lat/Long Method:	G4 - GPS (Precise Positioning Service)

Contact:

Contact Email:	[redacted]
Contact Mail Address:	P.O. Box 50272
Contact City/State/Zip:	Midland, TX 79710
Contact Mail Country:	USA
Contact Type 1:	Emergency Contact
Contact Type 2:	Owner / Operator
Contact Name:	Cleve Thomas
Title:	Field Suspervisor
Modification Date:	3/28/2013

TWO OAKS-HERMOSA #1 (Continued) **S113684927**

Contact:
- Contact Email: [redacted]
- Contact Mail Address: P.O.Box 50184
- Contact City/State/Zip: Midland, TX 79710
- Contact Mail Country: USA
- Contact Type 1: Owner / Operator
- Contact Name: Dave Thomas
- Title: Not reported
- Modification Date: 3/28/2013

Contact:
- Contact Email: Not reported
- Contact Mail Address: P.O.Box 50272
- Contact City/State/Zip: Midland, TX 79710
- Contact Mail Country: USA
- Contact Type 1: Emergency Contact
- Contact Name: Devin Garner
- Title: Field Supervisor
- Modification Date: 3/28/2013

Contact:
- Contact Email: [redacted]
- Contact Mail Address: Not reported
- Contact City/State/Zip: Not reported
- Contact Mail Country: USA
- Contact Type 1: Emergency Contact
- Contact Name: Joe Varela
- Title: Not reported
- Modification Date: 3/28/2013

Chemical Inventory:
- Facility Id: FATR20128MMA2803RN61
- Chemical Name: Produced Hydrocarbons
- Chemical Inv Record Id: CVTR20128MMA7Z042LPV
- CAS Number: 8002-05-9
- Chemical Same As Last Year: T
- Acute Health Risks: T
- Average Daily Amount: 10,000 - 99,999 pounds
- Max Daily Amount: 10,000 - 99,999 pounds
- Max Amount In Largest Container: Not reported
- Chronic Health Risks: T
- EHS Substance: Not reported
- Last Modified: 3/28/2013
- Days On Site: 365
- Fire Hazard: T
- Gas: Not reported
- Liquid: T
- Mixture Form: Not reported
- Sudden Release Of Pressure Haz: Not reported
- Pure Form: T
- Reactive Hazard: Not reported
- Solid: T
- Trade Secret: Not reported

TWO OAKS-HERMOSA #1 (Continued) **S113684927**

Contact Label: Not reported
Label Code: TX2012
Trade Secret: Not reported

Chemical Inventory Location:
Record Key: CLTR20128MMA8Y043F52
Chemical Inventory Record Id: CVTR20128MMA7Z042LPV
Amt Of Sub Stored Or Transported: Not reported
Amount Units: pounds
Type Of Storage: Above ground tank
Number Code/Storage Pressure: 1
Number Code/Storage Temperature: 4
Desc of Loc(Or Transported) Subs: on site
Last Modified: 3/28/2013

Facility Id: FATR20128MMA2803RN61
Chemical Name: Produced Water
Chemical Inv Record Id: CVTR20129575VA05V0FY
CAS Number: 7647-14-5
Chemical Same As Last Year: Not reported
Acute Health Risks: T
Average Daily Amount: 0 - 99 pounds
Max Daily Amount: 0 - 99 pounds
Max Amount In Largest Container: Not reported
Chronic Health Risks: T
EHS Substance: Not reported
Last Modified: 3/28/2013
Days On Site: 365
Fire Hazard: T
Gas: Not reported
Liquid: T
Mixture Form: T
Sudden Release Of Pressure Haz: Not reported
Pure Form: Not reported
Reactive Hazard: T
Solid: Not reported
Trade Secret: Not reported
Contact Label: Not reported
Label Code: TX2012
Trade Secret: Not reported

Chemical Inventory Location:
Record Key: CLTR20129575W605WS1W
Chemical Inventory Record Id: CVTR20129575VA05V0FY
Amt Of Sub Stored Or Transported: 210
Amount Units: barrels
Type Of Storage: Above ground tank
Number Code/Storage Pressure: 1
Number Code/Storage Temperature: 4
Desc of Loc(Or Transported) Subs: on site
Last Modified: 3/28/2013

Notes: Not reported
Validation: Not reported

5 **TWO OAKS-HERMOSA #2** **TIER 2** **S113684928**
31.415474; -103.583204 **N/A**
PECOS, TX 79772

TIER 2:
Facility Id/Name: FATR20128MMA9D045U0B/TWO OAKS-HERMOSA #2

Facility Info:
Id Type: NAICS
Description: Crude Petroleum and Natural Gas Extraction
Id: 211111
Last Modified: 6/7/2012
Id Type: SIC
Description: OIL AND GAS FIELD EXPLORATION
Id: 1382
Last Modified: 6/7/2012
Reporting Year: 2012
Facility Country: USA
Facility Department: Not reported
Facility Date Modified: 5/8/2013
Date Tier 2 Signed: 03/08/2013
Mailing Address: P.O. Box 50272
Mailing City/State/Country: Midland, TX USA
Dikes/Other Safeguard Meas Emp: Not reported
All Chemicals Same As Last Year: T
State Fees Total: Not reported
Number Of Employess On Site: Not reported
Site Map: Not reported
Fire District: Not reported
Submitted By: Cindy Delgado
Latitude: 31.415474
Longitude: -103.583201
Lat/Long Location Desc: CE - Center of Facility
Lat/Long Method: G4 - GPS (Precise Positioning Service)

Contact:
Contact Email: Not reported
Contact Mail Address: P.O.Box 50272
Contact City/State/Zip: Midland, TX 79710
Contact Mail Country: USA
Contact Type 1: Emergency Contact
Contact Name: Devin Garner
Title: Field Supervisor
Modification Date: 3/28/2013

Contact:
Contact Email: [redacted]
Contact Mail Address: P.O. Box 50272
Contact City/State/Zip: Midland, TX 79710
Contact Mail Country: USA
Contact Type 1: Emergency Contact
Contact Type 2: Owner / Operator
Contact Name: Cleve Thomas
Title: Field Suspervisor
Modification Date: 3/28/2013

TWO OAKS-HERMOSA #2 (Continued) **S113684928**

Contact:
- Contact Email: [redacted]
- Contact Mail Address: P.O.Box 50184
- Contact City/State/Zip: Midland, TX 79710
- Contact Mail Country: USA
- Contact Type 1: Owner / Operator
- Contact Name: Dave Thomas
- Title: Not reported
- Modification Date: 3/28/2013

Contact:
- Contact Email: [redacted]
- Contact Mail Address: Not reported
- Contact City/State/Zip: Not reported
- Contact Mail Country: USA
- Contact Type 1: Emergency Contact
- Contact Name: Joe Varela
- Title: Not reported
- Modification Date: 3/28/2013

Chemical Inventory:
- Facility Id: FATR20128MMA9D045U0B
- Chemical Name: Produced Hydrocarbons
- Chemical Inv Record Id: CVTR20128MMAEU04GJ72
- CAS Number: 8002-05-9
- Chemical Same As Last Year: T
- Acute Health Risks: T
- Average Daily Amount: 10,000 - 99,999 pounds
- Max Daily Amount: 10,000 - 99,999 pounds
- Max Amount In Largest Container: Not reported
- Chronic Health Risks: T
- EHS Substance: Not reported
- Last Modified: 3/28/2013
- Days On Site: 365
- Fire Hazard: T
- Gas: Not reported
- Liquid: T
- Mixture Form: Not reported
- Sudden Release Of Pressure Haz: Not reported
- Pure Form: T
- Reactive Hazard: Not reported
- Solid: T
- Trade Secret: Not reported
- Contact Label: Not reported
- Label Code: TX2012
- Trade Secret: Not reported

Chemical Inventory Location:
- Record Key: CLTR20128MMAFX04HGA5
- Chemical Inventory Record Id: CVTR20128MMAEU04GJ72
- Amt Of Sub Stored Or Transported: Not reported
- Amount Units: pounds
- Type Of Storage: Above ground tank
- Number Code/Storage Pressure: 1

TWO OAKS-HERMOSA #2 (Continued) **S113684928**

Number Code/Storage Temperature: 4
Desc of Loc(Or Transported) Subs: on site
Last Modified: 3/28/2013

Facility Id: FATR20128MMA9D045U0B
Chemical Name: Produced Water
Chemical Inv Record Id: CVTR201295762K05X9G2
CAS Number: 7647-14-5
Chemical Same As Last Year: Not reported
Acute Health Risks: T
Average Daily Amount: 0 - 99 pounds
Max Daily Amount: 0 - 99 pounds
Max Amount In Largest Container: Not reported
Chronic Health Risks: T
EHS Substance: Not reported
Last Modified: 3/28/2013
Days On Site: 365
Fire Hazard: T
Gas: Not reported
Liquid: T
Mixture Form: T
Sudden Release Of Pressure Haz: Not reported
Pure Form: Not reported
Reactive Hazard: T
Solid: Not reported
Trade Secret: Not reported
Contact Label: Not reported
Label Code: TX2012
Trade Secret: Not reported

Chemical Inventory Location:
Record Key: CLTR201295763C05YZGS
Chemical Inventory Record Id: CVTR201295762K05X9G2
Amt Of Sub Stored Or Transported: 210
Amount Units: gallons
Type Of Storage: Above ground tank
Number Code/Storage Pressure: 1
Number Code/Storage Temperature: 4
Desc of Loc(Or Transported) Subs: on site
Last Modified: 3/28/2013

Record Key: CLTR201295763P05Z96N
Chemical Inventory Record Id: CVTR201295762K05X9G2
Amt Of Sub Stored Or Transported: 210
Amount Units: barrels
Type Of Storage: Above ground tank
Number Code/Storage Pressure: 1
Number Code/Storage Temperature: 4
Desc of Loc(Or Transported) Subs: on site
Last Modified: 3/28/2013

Notes: Not reported
Validation: Not reported

Count: 34 records

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
PECOS	S116696116	WEST TEXAS GAS CO	10TH & CEDAR	79772	LPST
PECOS	S113912948	WEST TEXAS GAS INC	10TH ST		GCC
PECOS	A100120469	BRISCOE FARMS	10900 HWY 17	79772	AST
PECOS	S105836370	INTRATEX GAS CO	HIGHWAY 18	79772	Ind. Haz Waste
PECOS	S102744921	ACID DELINTERS PECOS	HWY 80	79772	Ind. Haz Waste, IHW CORR ACTION
PECOS	1007210805	ACID DELINTERS INC	HIGHWAY 80 1 MI N	79772	CORRACTS, RCRA-TSDF, RCRA Nor / NLR
PECOS	S103602745	M-I DRILLING FLUIDS PECOS	HWY 80 W	79772	Ind. Haz Waste
PECOS	1016170761	PECOS MERCURY SPILL	623 S. ASH STREETSEP*2013	79772	CERCLIS
PECOS	1016258255	W R GRACE & CO	BALMORHEA HIGHWAY		ICIS, FINDS
PECOS	S116698968	WEST TEXAS GAS PECOS WAREHOUSE	2273 BUSINESS LOOP I-20 WEST, WEST OF MONAHANS 1.5 MILES	79772	LPST
PECOS	1003874389	PECOS VALLEY FLY SERVICE	4MI.S.OF CITY ON HWY.17	79772	CERC-NFRAP
PECOS	1004788286	BATTERY RECLAMATION UNIVERSAL WORK SITE	7 COUNTY ROAD 202		RCRA NonGen / NLR, FINDS
PECOS	S107015169	CULBERSON PLANT, 45 MILES NO.WEST OF PECOS, AT FREEPORT SULF	CULBERSON PLANT, 45 MILES NO.WEST OF PECOS, AT FREEPORT SULF		SPILLS
PECOS	S116701666	CULBERSON PROPERTY	END OF FM 2119		LPST
PECOS	S116699814	VARELA SERVICE STATION 1	1304 E HIGHWAY 80	79772	LPST
PECOS	S112002651	CAPITOL AGGREGATES, INC. - HOBAN SAND & GRAVEL	7001 SOUTH HWY 17	79772	TIER 2
PECOS	S111042604	CAPITOL AGGREGATES LTD - HOBAN SAND & GRAVEL	7001 SOUTH HWY 17	79772	TIER 2
PECOS	S113684668	WTG FUELS, INC./PECOS-CATALYST	2800 S. HWY 17	79772	TIER 2
PECOS	S112007357	WTG FUELS, INC./PECOS-MACHEN CONTRACTING, INC.	2800 S. HWY 17	79772	TIER 2
PECOS	S111053697	HOBAN GIN COMPRESSOR STATION	13 MILES SOUTH OF PECOS AT INTERSECTION OF RANCH RD 869 AND	79772	TIER 2
PECOS	1006170013	TRANS PECOS MATERIALS, A DIV CAPITOL	16 MILES S FROM PECOS, TX ON W		FINDS, US AIRS
PECOS	S115127030	PECOS CITY TRANSFER STATION FACILITY	1.8 MILES S OF IH 20 0.4 MILES E OF US HIGHWAY 17		RGA LF
PECOS	1004602731	CAPITOL AGGREGATES HOBAN PLANT	17 MILES SOUTH OF PECOS ON HWY		FINDS, US AIRS
PECOS	S115124448	CITY OF PECOS LANDFILL	1.4 MILES S OF IH 20 849 FEET E OF STATE HIGHWAY 17 SW CORNE		RGA LF
PECOS	1016136737	ANCHOR WEST INC.	200 EAST PALMER STREET		FINDS
PECOS	1011815462	ANCHOR WEST INC.	200 EAST PALMER STREET	79772	RMP
PECOS	S111218210	PROPERTY AT CR 336 E OF CR 332	PROPERTY AT CR 336 E OF CR 332	79772	SPILLS, ENF
PECOS	1003874339	LUKINS FLYING SERVICE	1 MI S OF INT OF HWY 17 & I20	79772	CERC-NFRAP
PECOS	S115120774		1.8 MI. S. OF INTERSTATE HWY-20 & 0.4 MI. E. OF HWY-17		RGA LF
PECOS	S115127036	PECOS TRANSFER STATION	1.8 MI. S. OF INTERSTATE HWY-20 & 0.4 MI. E. OF HWY-17		RGA LF
PECOS	1014202216	BATTERY RECLAMATION, INC.	2110 WESTERN AVE.	79772	CERCLIS, LEAD SMELTERS
REEVES COUNTY	S109978515	BROGADO SITE	TURN NORTH ON STATE HWY 17 AT BROGADO TX ONTO CR 316 GO DOWN		SWF/LF
VERHALEN	S108876840	MADERA VALLEY WATER SUPPLY CORPORATION	7230 HIGHWAY 17	79772	TIER 2
VERHALEN	S108449475	CAPITOL AGGREGATES LTD. -HOBAN SAND AND GRAVEL	17 MILES SOUTH OF PECOS ON HWY 17	79772	TIER 2

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

FEDERAL RECORDS

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 01/28/2014
Number of Days to Update: 78

Source: EPA
Telephone: N/A
Last EDR Contact: 07/08/2014
Next Scheduled EDR Contact: 10/20/2014
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 01/28/2014
Number of Days to Update: 78

Source: EPA
Telephone: N/A
Last EDR Contact: 07/08/2014
Next Scheduled EDR Contact: 10/20/2014
Data Release Frequency: Quarterly

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 01/28/2014
Number of Days to Update: 78

Source: EPA
Telephone: N/A
Last EDR Contact: 07/08/2014
Next Scheduled EDR Contact: 10/20/2014
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 02/13/2014
Number of Days to Update: 94

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 05/29/2014
Next Scheduled EDR Contact: 09/08/2014
Data Release Frequency: Quarterly

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 02/13/2014
Number of Days to Update: 94

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 05/29/2014
Next Scheduled EDR Contact: 09/08/2014
Data Release Frequency: Quarterly

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/11/2014
Date Data Arrived at EDR: 03/13/2014
Date Made Active in Reports: 04/09/2014
Number of Days to Update: 27

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 07/02/2014
Next Scheduled EDR Contact: 10/13/2014
Data Release Frequency: Quarterly

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/11/2014
Date Data Arrived at EDR: 03/13/2014
Date Made Active in Reports: 04/09/2014
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: 214-665-6444
Last EDR Contact: 07/02/2014
Next Scheduled EDR Contact: 10/13/2014
Data Release Frequency: Quarterly

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/11/2014
Date Data Arrived at EDR: 03/13/2014
Date Made Active in Reports: 04/09/2014
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: 214-665-6444
Last EDR Contact: 07/02/2014
Next Scheduled EDR Contact: 10/13/2014
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/11/2014
Date Data Arrived at EDR: 03/13/2014
Date Made Active in Reports: 04/09/2014
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: 214-665-6444
Last EDR Contact: 07/02/2014
Next Scheduled EDR Contact: 10/13/2014
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/11/2014
Date Data Arrived at EDR: 03/13/2014
Date Made Active in Reports: 04/09/2014
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: 214-665-6444
Last EDR Contact: 07/02/2014
Next Scheduled EDR Contact: 10/13/2014
Data Release Frequency: Varies

RCRA NonGen / NLR: RCRA - Non Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/11/2014
Date Data Arrived at EDR: 03/13/2014
Date Made Active in Reports: 04/09/2014
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: 214-665-6444
Last EDR Contact: 07/02/2014
Next Scheduled EDR Contact: 10/13/2014
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 03/19/2014
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 07/15/2014
Number of Days to Update: 116

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 06/05/2014
Next Scheduled EDR Contact: 09/22/2014
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 03/19/2014
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 07/15/2014
Number of Days to Update: 116

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 06/05/2014
Next Scheduled EDR Contact: 09/22/2014
Data Release Frequency: Varies

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/30/2013
Date Data Arrived at EDR: 10/01/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 66

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 07/03/2014
Next Scheduled EDR Contact: 07/14/2014
Data Release Frequency: Annually

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 03/31/2014
Date Data Arrived at EDR: 04/01/2014
Date Made Active in Reports: 07/15/2014
Number of Days to Update: 105

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 07/01/2014
Next Scheduled EDR Contact: 10/13/2014
Data Release Frequency: Annually

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 08/06/2014
Next Scheduled EDR Contact: 11/17/2014
Data Release Frequency: Varies

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 05/28/2014
Date Data Arrived at EDR: 06/20/2014
Date Made Active in Reports: 07/15/2014
Number of Days to Update: 25

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 06/04/2014
Next Scheduled EDR Contact: 09/15/2014
Data Release Frequency: Quarterly

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 07/03/2014
Date Made Active in Reports: 07/28/2014
Number of Days to Update: 25

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 07/03/2014
Next Scheduled EDR Contact: 10/06/2014
Data Release Frequency: Semi-Annually

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 07/18/2014
Next Scheduled EDR Contact: 10/27/2014
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 02/28/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 55

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 06/04/2014
Next Scheduled EDR Contact: 09/22/2014
Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/28/2014
Date Data Arrived at EDR: 05/30/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 18

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 08/14/2014
Next Scheduled EDR Contact: 12/01/2014
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 01/24/2014
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 31

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 06/30/2014
Next Scheduled EDR Contact: 10/13/2014
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 06/10/2014
Next Scheduled EDR Contact: 09/22/2014
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 02/25/2014
Next Scheduled EDR Contact: 06/09/2014
Data Release Frequency: Varies

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 07/25/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 01/30/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 07/15/2014
Number of Days to Update: 132

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 06/06/2014
Next Scheduled EDR Contact: 09/15/2014
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/31/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 44

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 05/30/2014
Next Scheduled EDR Contact: 09/08/2014
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 09/29/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 64

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 06/25/2014
Next Scheduled EDR Contact: 10/06/2014
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 05/22/2014
Next Scheduled EDR Contact: 09/08/2014
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 05/22/2014
Next Scheduled EDR Contact: 09/08/2014
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 05/06/2014
Date Data Arrived at EDR: 05/16/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 10/09/2014
Next Scheduled EDR Contact: 10/27/2014
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 06/01/2013
Date Data Arrived at EDR: 07/17/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 107

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 07/18/2014
Next Scheduled EDR Contact: 10/27/2014
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/22/2013
Date Data Arrived at EDR: 08/02/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 91

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 06/05/2014
Next Scheduled EDR Contact: 09/22/2014
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/07/2014
Date Data Arrived at EDR: 07/10/2014
Date Made Active in Reports: 07/28/2014
Number of Days to Update: 18

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 07/10/2014
Next Scheduled EDR Contact: 10/20/2014
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 11/18/2013
Date Data Arrived at EDR: 02/27/2014
Date Made Active in Reports: 03/12/2014
Number of Days to Update: 13

Source: EPA
Telephone: (214) 665-2200
Last EDR Contact: 06/13/2014
Next Scheduled EDR Contact: 09/22/2014
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 05/23/2014
Date Made Active in Reports: 07/28/2014
Number of Days to Update: 66

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 02/26/2013
Date Made Active in Reports: 04/19/2013
Number of Days to Update: 52

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 05/30/2014
Next Scheduled EDR Contact: 09/08/2014
Data Release Frequency: Biennially

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 06/19/2014
Date Data Arrived at EDR: 06/20/2014
Date Made Active in Reports: 07/28/2014
Number of Days to Update: 38

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 08/14/2014
Next Scheduled EDR Contact: 12/01/2014
Data Release Frequency: Quarterly

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/23/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 30

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 06/25/2014
Next Scheduled EDR Contact: 10/13/2014
Data Release Frequency: Annually

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/23/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 30

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 06/25/2014
Next Scheduled EDR Contact: 10/13/2014
Data Release Frequency: Annually

COAL ASH DOE: Sleam-Electric Plan Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 07/18/2014
Next Scheduled EDR Contact: 10/27/2014
Data Release Frequency: Varies

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 07/25/2014
Next Scheduled EDR Contact: 11/03/2014
Data Release Frequency: Varies

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 05/31/2013
Date Data Arrived at EDR: 07/08/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 151

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 07/08/2014
Next Scheduled EDR Contact: 10/20/2014
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 03/14/2014
Date Data Arrived at EDR: 06/11/2014
Date Made Active in Reports: 07/28/2014
Number of Days to Update: 47

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 06/11/2014
Next Scheduled EDR Contact: 09/22/2014
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 08/01/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 07/08/2014
Next Scheduled EDR Contact: 10/27/2014
Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register
A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 05/28/2014
Date Data Arrived at EDR: 06/20/2014
Date Made Active in Reports: 07/15/2014
Number of Days to Update: 25
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 06/04/2014
Next Scheduled EDR Contact: 09/15/2014
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 04/15/2013
Date Data Arrived at EDR: 07/03/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 72
Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 07/01/2014
Next Scheduled EDR Contact: 10/13/2014
Data Release Frequency: Quarterly

LEAD SMELTER 2: Lead Smelter Sites
A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36
Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EPA WATCH LIST: EPA WATCH LIST
EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 08/15/2014
Next Scheduled EDR Contact: 11/24/2014
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 11/11/2011
Date Data Arrived at EDR: 05/18/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 08/15/2014
Next Scheduled EDR Contact: 11/24/2014
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 06/04/2014
Date Data Arrived at EDR: 06/12/2014
Date Made Active in Reports: 07/28/2014
Number of Days to Update: 46

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 07/01/2014
Next Scheduled EDR Contact: 10/20/2014
Data Release Frequency: Varies

STATE AND LOCAL RECORDS

SHWS: State Superfund Registry

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: 07/03/2014
Date Data Arrived at EDR: 07/03/2014
Date Made Active in Reports: 07/31/2014
Number of Days to Update: 28

Source: Texas Commission on Environmental Quality
Telephone: 512-239-5680
Last EDR Contact: 06/16/2014
Next Scheduled EDR Contact: 09/29/2014
Data Release Frequency: Semi-Annually

IOP: Innocent Owner/Operator Program

Contains information on all sites that are in the IOP. An IOP is an innocent owner or operator whose property is contaminated as a result of a release or migration of contaminants from a source or sources not located on the property, and they did not cause or contribute to the source or sources of contamination.

Date of Government Version: 04/14/2014
Date Data Arrived at EDR: 04/22/2014
Date Made Active in Reports: 05/08/2014
Number of Days to Update: 16

Source: Texas Commission on Environmental Quality
Telephone: 512-239-5894
Last EDR Contact: 07/08/2014
Next Scheduled EDR Contact: 10/20/2014
Data Release Frequency: Quarterly

SWF/LF: Permitted Solid Waste Facilities

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 06/23/2014
Date Data Arrived at EDR: 06/25/2014
Date Made Active in Reports: 07/09/2014
Number of Days to Update: 14

Source: Texas Commission on Environmental Quality
Telephone: 512-239-6706
Last EDR Contact: 07/28/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CLI: Closed Landfill Inventory

Closed and abandoned landfills (permitted as well as unauthorized) across the state of Texas. For current information regarding any of the sites included in this database, contact the appropriate Council of Governments agency.

Date of Government Version: 08/30/1999
Date Data Arrived at EDR: 09/28/2000
Date Made Active in Reports: 10/30/2000
Number of Days to Update: 32

Source: Texas Commission on Environmental Quality
Telephone: N/A
Last EDR Contact: 07/01/2014
Next Scheduled EDR Contact: 10/20/2014
Data Release Frequency: Varies

H-GAC CLI: Houston-Galveston Closed Landfill Inventory

Closed Landfill Inventory for the Houston-Galveston Area Council Region. In 1993, the Texas Legislature passed House Bill (HB) 2537, which required Councils of Governments (COGs) to develop an inventory of closed municipal solid waste landfills for their regional solid waste management plans.

Date of Government Version: 02/12/2014
Date Data Arrived at EDR: 04/24/2014
Date Made Active in Reports: 05/08/2014
Number of Days to Update: 14

Source: Houston-Galveston Area Council
Telephone: 832-681-2518
Last EDR Contact: 07/07/2014
Next Scheduled EDR Contact: 10/20/2014
Data Release Frequency: Varies

UIC: Underground Injection Wells Database Listing

Class V injection wells regulated by the TCEQ. Class V wells are used to inject non-hazardous fluids underground. Most Class V wells are used to dispose of wastes into or above underground sources of drinking water and can pose a threat to ground water quality, if not managed properly.

Date of Government Version: 05/07/2013
Date Data Arrived at EDR: 05/09/2013
Date Made Active in Reports: 07/18/2013
Number of Days to Update: 70

Source: Texas Commission on Environmental Quality
Telephone: 512-239-6627
Last EDR Contact: 07/21/2014
Next Scheduled EDR Contact: 11/03/2014
Data Release Frequency: Varies

CAPCOG LI: Capitol Area Landfill Inventory

Permitted and unpermitted landfills for the CAPCOG region. Serving Bastrop, Blanco, Burnet, Caldwell, Fayette, Hays, Lee, Llano, Travis, and Williamson Counties.

Date of Government Version: 08/02/2007
Date Data Arrived at EDR: 05/02/2013
Date Made Active in Reports: 06/07/2013
Number of Days to Update: 36

Source: Capital Area Council of Governments
Telephone: 512-916-6000
Last EDR Contact: 07/11/2014
Next Scheduled EDR Contact: 10/20/2014
Data Release Frequency: Varies

NCTCOG LI: North Central Landfill Inventory

North Central Texas Council of Governments landfill database.

Date of Government Version: 07/07/2014
Date Data Arrived at EDR: 07/07/2014
Date Made Active in Reports: 08/01/2014
Number of Days to Update: 25

Source: North Central Texas Council of Governments
Telephone: 817-695-9223
Last EDR Contact: 07/07/2014
Next Scheduled EDR Contact: 10/20/2014
Data Release Frequency: Varies

NPDES: NPDES Facility List

Permitted wastewater outfalls.

Date of Government Version: 06/04/2014
Date Data Arrived at EDR: 06/05/2014
Date Made Active in Reports: 07/17/2014
Number of Days to Update: 42

Source: Texas Commission on Environmental Quality
Telephone: 512-239-4591
Last EDR Contact: 06/05/2014
Next Scheduled EDR Contact: 09/01/2014
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SWRCY: Recycling Facility Listing
A listing of recycling facilities in the state.

Date of Government Version: 06/02/2014
Date Data Arrived at EDR: 06/04/2014
Date Made Active in Reports: 06/13/2014
Number of Days to Update: 9
Source: TCEQ
Telephone: 512-239-6700
Last EDR Contact: 08/15/2014
Next Scheduled EDR Contact: 12/01/2014
Data Release Frequency: Varies

WASTEMGT: Commercial Hazardous & Solid Waste Management Facilities
This list contains commercial recycling facilities and facilities permitted or authorized (interim status) by the Texas Natural Resource Conservation Commission.

Date of Government Version: 03/01/2014
Date Data Arrived at EDR: 04/11/2014
Date Made Active in Reports: 05/08/2014
Number of Days to Update: 27
Source: Texas Commission on Environmental Quality
Telephone: 512-239-2920
Last EDR Contact: 07/11/2014
Next Scheduled EDR Contact: 10/20/2014
Data Release Frequency: Varies

LPST: Leaking Petroleum Storage Tank Database
An inventory of reported leaking petroleum storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 07/28/2014
Date Data Arrived at EDR: 07/30/2014
Date Made Active in Reports: 08/01/2014
Number of Days to Update: 2
Source: Texas Commission on Environmental Quality
Telephone: 512-239-2200
Last EDR Contact: 07/30/2014
Next Scheduled EDR Contact: 10/13/2014
Data Release Frequency: Quarterly

UST: Petroleum Storage Tank Database
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 06/02/2014
Date Data Arrived at EDR: 07/02/2014
Date Made Active in Reports: 07/30/2014
Number of Days to Update: 28
Source: Texas Commission on Environmental Quality
Telephone: 512-239-2160
Last EDR Contact: 07/02/2014
Next Scheduled EDR Contact: 10/13/2014
Data Release Frequency: Quarterly

DEL SHWS: Deleted Superfund Registry Sites
Sites have been deleted from the state Superfund registry in accordance with the Act, ?361.189

Date of Government Version: 07/03/2014
Date Data Arrived at EDR: 07/03/2014
Date Made Active in Reports: 07/31/2014
Number of Days to Update: 28
Source: Texas Commission on Environmental Quality
Telephone: 512-239-0666
Last EDR Contact: 06/16/2014
Next Scheduled EDR Contact: 09/29/2014
Data Release Frequency: Quarterly

LIENS: Environmental Liens Listing
The listing covers TCEQ liens placed against either State Superfund sites or Federal Superfund sites to recover cost incurred by TCEQ.

Date of Government Version: 05/28/2014
Date Data Arrived at EDR: 05/30/2014
Date Made Active in Reports: 06/12/2014
Number of Days to Update: 13
Source: Texas Commission on Environmental Quality
Telephone: 512-239-2209
Last EDR Contact: 05/27/2014
Next Scheduled EDR Contact: 09/08/2014
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

AST: Petroleum Storage Tank Database
Registered Aboveground Storage Tanks.

Date of Government Version: 06/02/2014
Date Data Arrived at EDR: 07/02/2014
Date Made Active in Reports: 07/30/2014
Number of Days to Update: 28

Source: Texas Commission on Environmental Quality
Telephone: 512-239-2160
Last EDR Contact: 07/02/2014
Next Scheduled EDR Contact: 10/13/2014
Data Release Frequency: Quarterly

SPILLS: Spills Database
Spills reported to the Emergency Response Division.

Date of Government Version: 05/13/2014
Date Data Arrived at EDR: 05/15/2014
Date Made Active in Reports: 06/12/2014
Number of Days to Update: 28

Source: Texas Commission on Environmental Quality
Telephone: 512-239-2507
Last EDR Contact: 07/21/2014
Next Scheduled EDR Contact: 11/03/2014
Data Release Frequency: Quarterly

AUL: Sites with Controls
Activity and use limitations include both engineering controls and institutional controls.

Date of Government Version: 04/23/2014
Date Data Arrived at EDR: 04/25/2014
Date Made Active in Reports: 05/14/2014
Number of Days to Update: 19

Source: Texas Commission on Environmental Quality
Telephone: 512-239-5891
Last EDR Contact: 07/21/2014
Next Scheduled EDR Contact: 10/20/2014
Data Release Frequency: Varies

VCP TCEQ: Voluntary Cleanup Program Database
The Texas Voluntary Cleanup Program was established to provide administrative, technical, and legal incentives to encourage the cleanup of contaminated sites in Texas.

Date of Government Version: 04/23/2014
Date Data Arrived at EDR: 04/25/2014
Date Made Active in Reports: 05/08/2014
Number of Days to Update: 13

Source: Texas Commission on Environmental Quality
Telephone: 512-239-5891
Last EDR Contact: 07/08/2014
Next Scheduled EDR Contact: 10/20/2014
Data Release Frequency: Quarterly

VCP RRC: Voluntary Cleanup Program Sites
The Voluntary Cleanup Program (RRC-VCP) provides an incentive to remediate Oil & Gas related pollution by participants as long as they did not cause or contribute to the contamination. Applicants to the program receive a release of liability to the state in exchange for a successful cleanup.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 07/10/2014
Date Made Active in Reports: 08/07/2014
Number of Days to Update: 28

Source: Railroad Commission of Texas
Telephone: 512-463-6969
Last EDR Contact: 07/10/2014
Next Scheduled EDR Contact: 10/20/2014
Data Release Frequency: Varies

DRYCLEANERS: Drycleaner Registration Database Listing
A listing of drycleaning facilities.

Date of Government Version: 06/02/2014
Date Data Arrived at EDR: 06/12/2014
Date Made Active in Reports: 07/11/2014
Number of Days to Update: 29

Source: Texas Commission on Environmental Quality
Telephone: 512-239-2160
Last EDR Contact: 06/12/2014
Next Scheduled EDR Contact: 09/22/2014
Data Release Frequency: Varies

PRIORITY CLEANERS: Dry Cleaner Remediation Program Prioritization List
A listing of dry cleaner related contaminated sites.

Date of Government Version: 03/01/2014
Date Data Arrived at EDR: 03/12/2014
Date Made Active in Reports: 04/18/2014
Number of Days to Update: 37

Source: Texas Commisision on Environmenatl Quality
Telephone: 512-239-5658
Last EDR Contact: 06/13/2014
Next Scheduled EDR Contact: 09/22/2014
Data Release Frequency: Varies

BROWNFIELDS: Brownfields Site Assessments

Brownfield site assessments that are being cleaned under EPA grant monies.

Date of Government Version: 02/04/2014
Date Data Arrived at EDR: 04/09/2014
Date Made Active in Reports: 05/14/2014
Number of Days to Update: 35

Source: TCEQ
Telephone: 512-239-5872
Last EDR Contact: 07/08/2014
Next Scheduled EDR Contact: 10/20/2014
Data Release Frequency: Semi-Annually

ENFORCEMENT: Notice of Violations Listing

A listing of permit violations.

Date of Government Version: 07/15/2014
Date Data Arrived at EDR: 07/17/2014
Date Made Active in Reports: 08/07/2014
Number of Days to Update: 21

Source: Texas Commission on Environmental Quality
Telephone: 512-239-6012
Last EDR Contact: 06/09/2014
Next Scheduled EDR Contact: 09/22/2014
Data Release Frequency: Semi-Annually

Ind. Haz Waste: Industrial & Hazardous Waste Database

Summary reports reported by waste handlers, generators and shippers in Texas.

Date of Government Version: 06/02/2014
Date Data Arrived at EDR: 07/10/2014
Date Made Active in Reports: 08/07/2014
Number of Days to Update: 28

Source: Texas Commission on Environmental Quality
Telephone: 512-239-0985
Last EDR Contact: 07/10/2014
Next Scheduled EDR Contact: 10/20/2014
Data Release Frequency: Annually

ED AQUIF: Edwards Aquifer Permits

A listing of permits in the Edwards Aquifer Protection Program database. The information provided is for the counties located in the Austin Region (Hays, Travis, and Williamson counties).

Date of Government Version: 06/30/2014
Date Data Arrived at EDR: 07/11/2014
Date Made Active in Reports: 08/07/2014
Number of Days to Update: 27

Source: Texas Commission on Environmental Quality, Austin Region
Telephone: 512-339-2929
Last EDR Contact: 06/30/2014
Next Scheduled EDR Contact: 10/13/2014
Data Release Frequency: Varies

AIRS: Current Emission Inventory Data

The database lists by company, along with their actual emissions, the TNRCC air accounts that emit EPA criteria pollutants.

Date of Government Version: 05/19/2014
Date Data Arrived at EDR: 05/23/2014
Date Made Active in Reports: 06/20/2014
Number of Days to Update: 28

Source: Texas Commission on Environmental Quality
Telephone: N/A
Last EDR Contact: 06/20/2014
Next Scheduled EDR Contact: 09/29/2014
Data Release Frequency: Semi-Annually

MSD: Municipal Settings Designations Database

An MSD is an official state designation given to property within a municipality or its extraterritorial jurisdiction that certifies that designated groundwater at the property is not use as potable water, and is prohibited from future use as potatable water because that groundwater is contaminated in excess of the applicable potable-water protective concentration level.

Date of Government Version: 06/24/2014
Date Data Arrived at EDR: 07/03/2014
Date Made Active in Reports: 07/31/2014
Number of Days to Update: 28
Source: Texas Commission on Environmental Quality
Telephone: 512-239-4982
Last EDR Contact: 06/23/2014
Next Scheduled EDR Contact: 10/06/2014
Data Release Frequency: Varies

TIER 2: Tier 2 Chemical Inventory Reports
A listing of facilities which store or manufacture hazardous materials and submit a chemical inventory report.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 06/07/2013
Date Made Active in Reports: 07/22/2013
Number of Days to Update: 45
Source: Department of State Health Services
Telephone: 512-834-6603
Last EDR Contact: 06/09/2014
Next Scheduled EDR Contact: 09/08/2014
Data Release Frequency: Annually

HIST LIENS: Environmental Liens Listing
This listing contains information fields that are no longer tracked in the LIENS database.

Date of Government Version: 03/23/2007
Date Data Arrived at EDR: 03/23/2007
Date Made Active in Reports: 05/02/2007
Number of Days to Update: 40
Source: Texas Commission on Environmental Qualilty
Telephone: 512-239-2209
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

RWS: Radioactive Waste Sites
Sites in the State of Texas that have been designated as Radioactive Waste sites.

Date of Government Version: 07/24/2006
Date Data Arrived at EDR: 12/14/2006
Date Made Active in Reports: 01/23/2007
Number of Days to Update: 40
Source: Texas Commission on Environmental Quality
Telephone: 512-239-0859
Last EDR Contact: 05/23/2014
Next Scheduled EDR Contact: 09/01/2014
Data Release Frequency: Semi-Annually

IHW CORR ACTION: IHW CORR ACTION
Industrial hazardous waste facilities with corrective actions.

Date of Government Version: 07/17/2014
Date Data Arrived at EDR: 07/18/2014
Date Made Active in Reports: 08/07/2014
Number of Days to Update: 20
Source: Texas Commission on Environmental Quality
Telephone: 512-239-5872
Last EDR Contact: 07/07/2014
Next Scheduled EDR Contact: 10/20/2014
Data Release Frequency: Varies

GCC: Groundwater Contamination Cases
Texas Water Code, Section 26.406 requires the annual report to describe the current status of groundwater monitoring activities conducted or required by each agency at regulated facilities or associated with regulated activities. The report is required to contain a description of each case of groundwater contamination documented during the previous calendar year. Also to be included, is a description of each case of contamination documented during previous periods for which voluntary clean up action was incomplete at the time the preceding report was issued. The report is also required to indicate the status of enforcement action for each listed case.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 06/23/2014
Date Made Active in Reports: 07/09/2014
Number of Days to Update: 16
Source: Texas Commission on Environmental Quality
Telephone: 512-239-5690
Last EDR Contact: 06/02/2014
Next Scheduled EDR Contact: 09/15/2014
Data Release Frequency: Annually

COAL ASH: Coal Ash Disposal Sites
A listing of facilities that use surface impoundments or landfills to dispose of coal ash.

Date of Government Version: 05/07/2013
Date Data Arrived at EDR: 05/09/2013
Date Made Active in Reports: 07/18/2013
Number of Days to Update: 70

Source: Texas Commission on Environmental Quality
Telephone: 512-239-6624
Last EDR Contact: 08/05/2014
Next Scheduled EDR Contact: 11/17/2014
Data Release Frequency: Varies

TRIBAL RECORDS

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 07/18/2014
Next Scheduled EDR Contact: 10/27/2014
Data Release Frequency: Semi-Annually

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 08/01/2014
Next Scheduled EDR Contact: 11/17/2014
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 04/28/2014
Date Data Arrived at EDR: 05/01/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 47

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 08/27/2012
Date Data Arrived at EDR: 08/28/2012
Date Made Active in Reports: 10/16/2012
Number of Days to Update: 49

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Quarterly

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land

Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 05/12/2014
Date Data Arrived at EDR: 05/12/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 36

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 11/06/2013
Date Data Arrived at EDR: 11/07/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 29

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Quarterly

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 02/01/2013
Date Data Arrived at EDR: 05/01/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 184
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 08/01/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 05/14/2014
Date Data Arrived at EDR: 05/15/2014
Date Made Active in Reports: 07/15/2014
Number of Days to Update: 61
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/20/2014
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 04/24/2014
Date Data Arrived at EDR: 04/25/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 53
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 04/22/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Semi-Annually

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 03/01/2013
Date Data Arrived at EDR: 03/01/2013
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 42
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 05/12/2014
Date Data Arrived at EDR: 05/14/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 34
Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Quarterly

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/14/2014
Date Data Arrived at EDR: 05/15/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 33
Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 05/12/2014
Date Data Arrived at EDR: 05/12/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 36

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 04/24/2014
Date Data Arrived at EDR: 04/25/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 53

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 04/22/2014
Next Scheduled EDR Contact: 08/11/2014
Data Release Frequency: Semi-Annually

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 02/01/2013
Date Data Arrived at EDR: 05/01/2013
Date Made Active in Reports: 01/27/2014
Number of Days to Update: 271

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 08/01/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 05/20/2014
Date Data Arrived at EDR: 06/10/2014
Date Made Active in Reports: 08/15/2014
Number of Days to Update: 66

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Quarterly

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 05/28/2014
Date Data Arrived at EDR: 05/01/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 47

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/28/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 05/07/2014
Date Data Arrived at EDR: 05/09/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 39

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 07/22/2014
Next Scheduled EDR Contact: 11/10/2014
Data Release Frequency: Quarterly

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 05/30/2014
Date Data Arrived at EDR: 07/01/2014
Date Made Active in Reports: 08/15/2014
Number of Days to Update: 45

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 07/01/2014
Next Scheduled EDR Contact: 10/13/2014
Data Release Frequency: Varies

EDR PROPRIETARY RECORDS

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR US Hist Auto Stat: EDR Exclusive Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Cleaners: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List

The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Texas Commission of Environmental Quality in Texas formerly known as Texas Natural Resources Conservation Commission which changed in 2002.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/26/2013
Number of Days to Update: 178

Source: Texas Commission on Environmental Quality
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Texas Commission of Environmental Quality in Texas formerly known as Texas Natural Resources Conservation Commission which changed in 2002.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Texas Commission on Environmental Quality
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

TRAVIS COUNTY:

Historic Tank Records

A listing of historic records from the City of Austin.

Date of Government Version: 06/25/2012
Date Data Arrived at EDR: 06/29/2012
Date Made Active in Reports: 08/23/2012
Number of Days to Update: 55

Source: Department of Planning & Development Review
Telephone: 512-974-2715
Last EDR Contact: 06/09/2014
Next Scheduled EDR Contact: 09/22/2014
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 07/30/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 05/23/2014
Next Scheduled EDR Contact: 09/01/2014
Data Release Frequency: Annually

NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/19/2012
Date Made Active in Reports: 08/28/2012
Number of Days to Update: 40

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 07/17/2014
Next Scheduled EDR Contact: 10/27/2014
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 05/01/2014
Date Data Arrived at EDR: 05/07/2014
Date Made Active in Reports: 06/10/2014
Number of Days to Update: 34

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 08/07/2014
Next Scheduled EDR Contact: 11/17/2014
Data Release Frequency: Annually

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 07/24/2013
Date Made Active in Reports: 08/19/2013
Number of Days to Update: 26

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 07/18/2014
Next Scheduled EDR Contact: 11/03/2014
Data Release Frequency: Annually

RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 07/15/2014
Date Made Active in Reports: 08/13/2014
Number of Days to Update: 29

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 05/27/2014
Next Scheduled EDR Contact: 09/08/2014
Data Release Frequency: Annually

VT MANIFEST: Hazardous Waste Manifest Data

Hazardous waste manifest information.

Date of Government Version: 03/27/2014
Date Data Arrived at EDR: 06/12/2014
Date Made Active in Reports: 07/17/2014
Number of Days to Update: 35

Source: Department of Environmental Conservation
Telephone: 802-241-3443
Last EDR Contact: 07/21/2014
Next Scheduled EDR Contact: 11/03/2014
Data Release Frequency: Annually

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 06/20/2014
Date Made Active in Reports: 08/07/2014
Number of Days to Update: 48

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/16/2014
Next Scheduled EDR Contact: 09/29/2014
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:

Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Child Care Facility List
Source: Department of Protective & Regulatory Services
Telephone: 512-438-3269

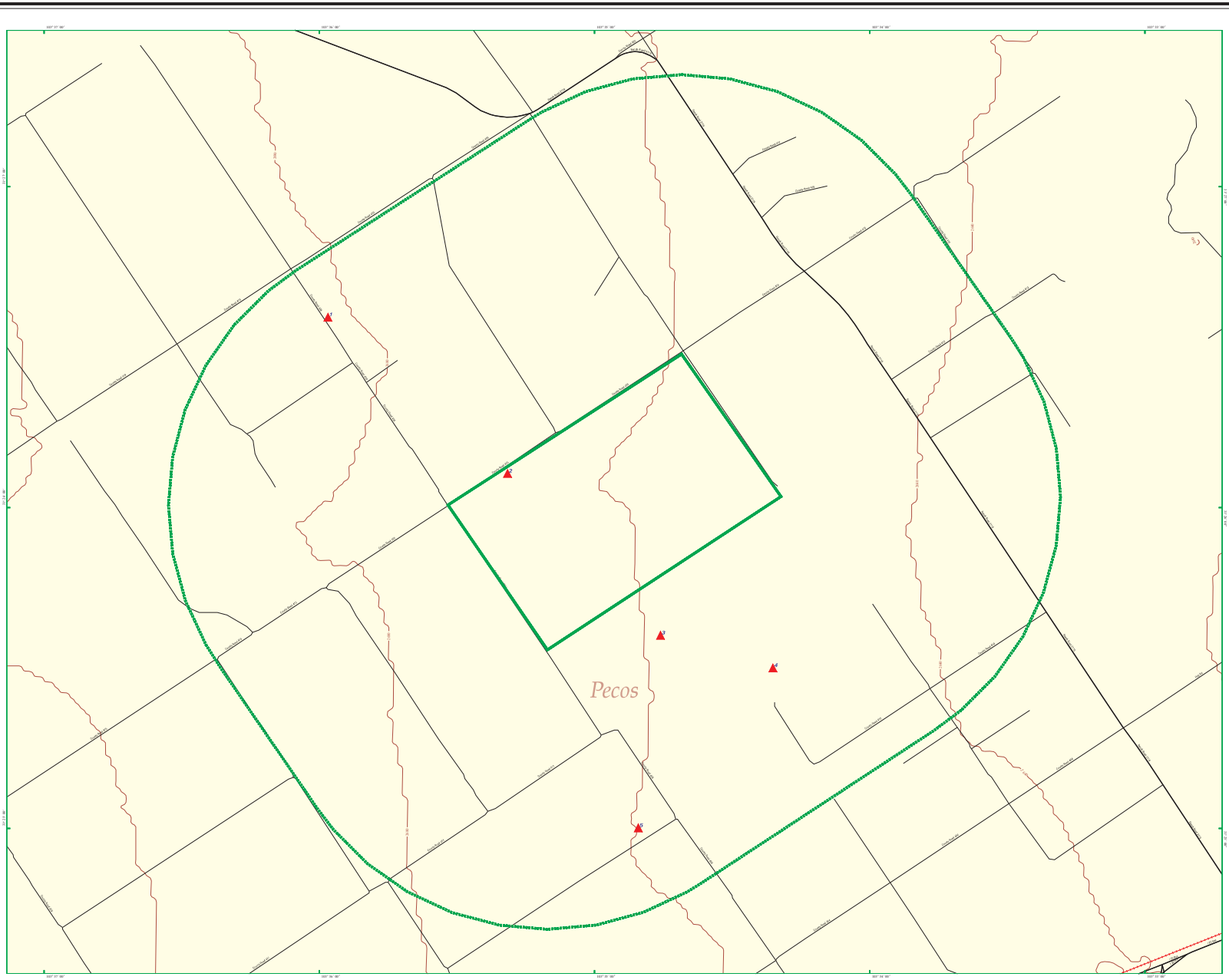
Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

STREET AND ADDRESS INFORMATION

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EDR DataMap® Area Study

West Sun Tex Property
Pre-Purchase Activities

- Listed Sites
- Earthquake Epicenters (Richter 5 or greater)
- Search Boundary
- Roads
- Major Roads
- Waterways
- Railroads
- Contour Lines
- Pipelines
- Fault Lines
- Water
- Superfund Sites
- Federal DOD Sites
- Indian Reservations BIA

N

Pecos, TX

0 1/4 1/2

Scale in Miles

EDR® Environmental Data Resources Inc

Appendix C—Historical Aerial Photographs

West Sun Tex Property Pre-Purchase Activities
West Sun Tex Property Pre-Purchase Activities
Pecos, TX 79772

Inquiry Number: 4041169.6
August 20, 2014

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th Floor
Shelton, Connecticut 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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Date EDR Searched Historical Sources:

Aerial Photography August 20, 2014

Target Property:

West Sun Tex Property Pre-Purchase Activities

Pecos, TX 79772

Year	***Scale***	***Details***	***Source***
1954	Aerial Photograph. Scale: 1"=1500'	Flight Year: 1954 Best Copy Available from original source	AMS
1969	Aerial Photograph. Scale: 1"=500'	Flight Year: 1969	USGS
1977	Aerial Photograph. Scale: 1"=500'	Flight Year: 1977 Best Copy Available from original source	TXDOT
1984	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1984 Best Copy Available from original source	USGS
1996	Aerial Photograph. Scale: 1"=500'	/DOQQ - acquisition dates: 1996	USGS/DOQQ
2004	Aerial Photograph. Scale: 1"=500'	Flight Year: 2004	USDA-CIR
2005	Aerial Photograph. Scale: 1"=500'	Flight Year: 2005	USDA/NAIP
2006	Aerial Photograph. Scale: 1"=500'	Flight Year: 2006	USDA/NAIP
2008	Aerial Photograph. Scale: 1"=500'	Flight Year: 2008	USDA/NAIP
2010	Aerial Photograph. Scale: 1"=500'	Flight Year: 2010	USDA/NAIP
2012	Aerial Photograph. Scale: 1"=500'	Flight Year: 2012	USDA/NAIP


INQUIRY #: 4041169.6
YEAR: 1954
= 1500'
N
EDR


INQUIRY #: 4041169.6
YEAR: 1969
= 500'
N
EDR



INQUIRY #: 4041169.6

YEAR: 1977

= 500'

N

EDR


INQUIRY #: 4041169.6
YEAR: 1984
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EDR


INQUIRY #: 4041169.6
YEAR: 1996
= 500'
N
EDR



INQUIRY #: 4041169.6

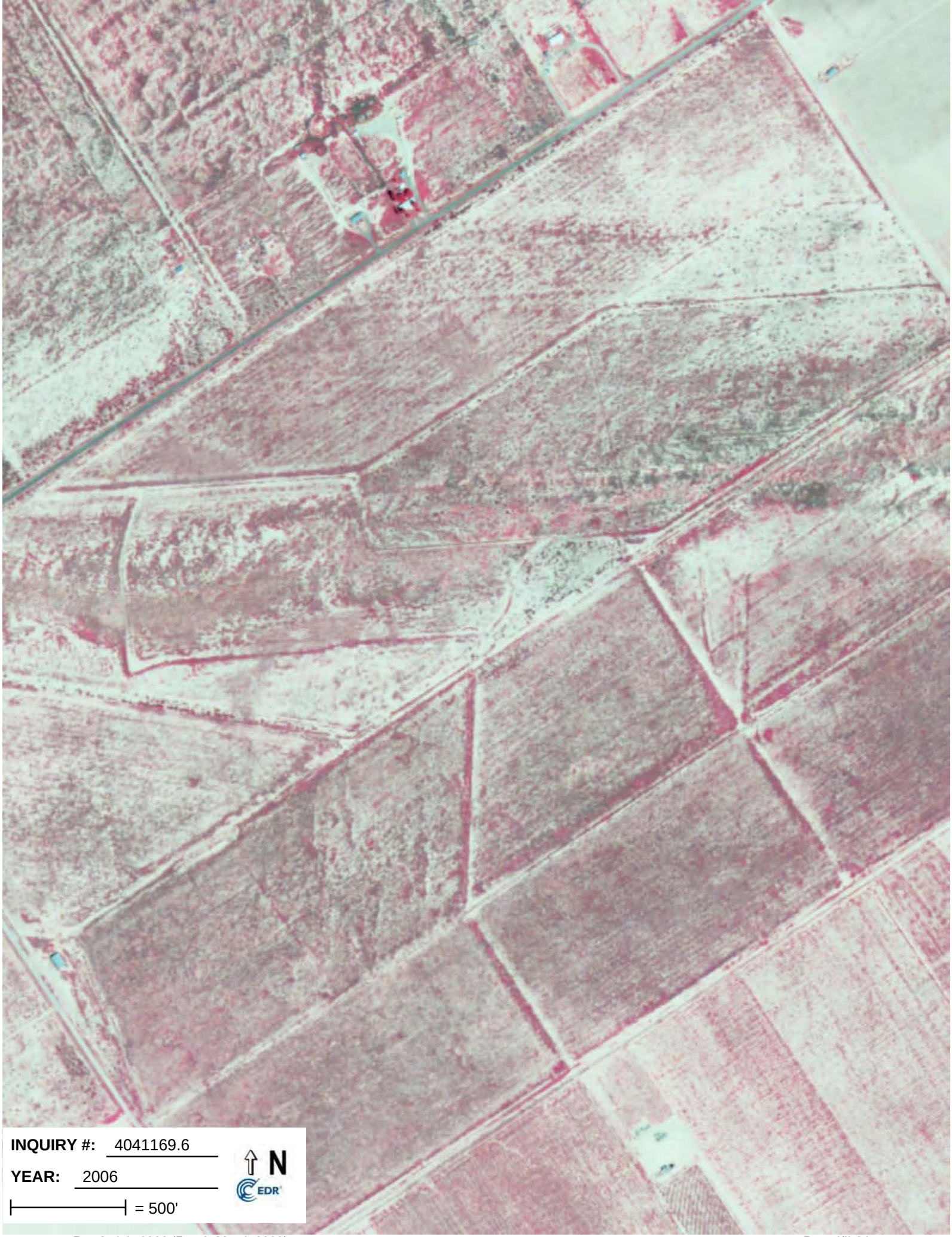
YEAR: 2004

= 500'

N

EDR


INQUIRY #: 4041169.6
YEAR: 2005
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N
EDR


INQUIRY #: 4041169.6
YEAR: 2006
= 500'
N
EDR


INQUIRY #: 4041169.6
YEAR: 2008
= 500'
N
EDR


INQUIRY #: 4041169.6
YEAR: 2010
= 500'
N
EDR


INQUIRY #: 4041169.6
YEAR: 2012
= 500'
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EDR

Appendix D—Historical Topographic Maps

West Sun Tex Property Pre-Purchase Activities

West Sun Tex Property Pre-Purchase Activities

Pecos, TX 79772

Inquiry Number: 4041169.5

August 19, 2014

EDR Historical Topographic Map Report

6 Armstrong Road, 4th Floor
Shelton, Connecticut 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topographic Map Report

Environmental Data Resources, Inc.s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topographic Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the early 1900s.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

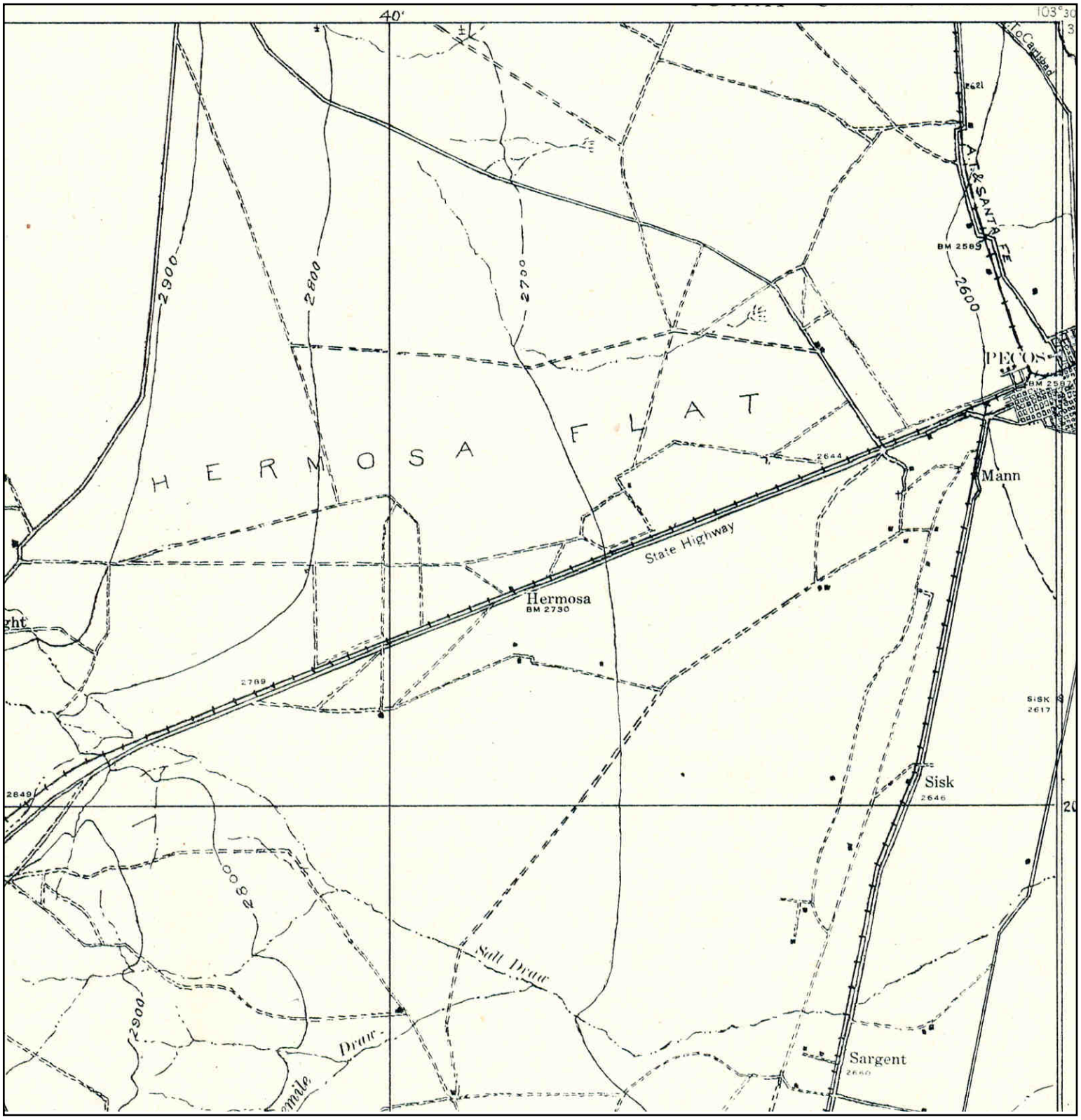
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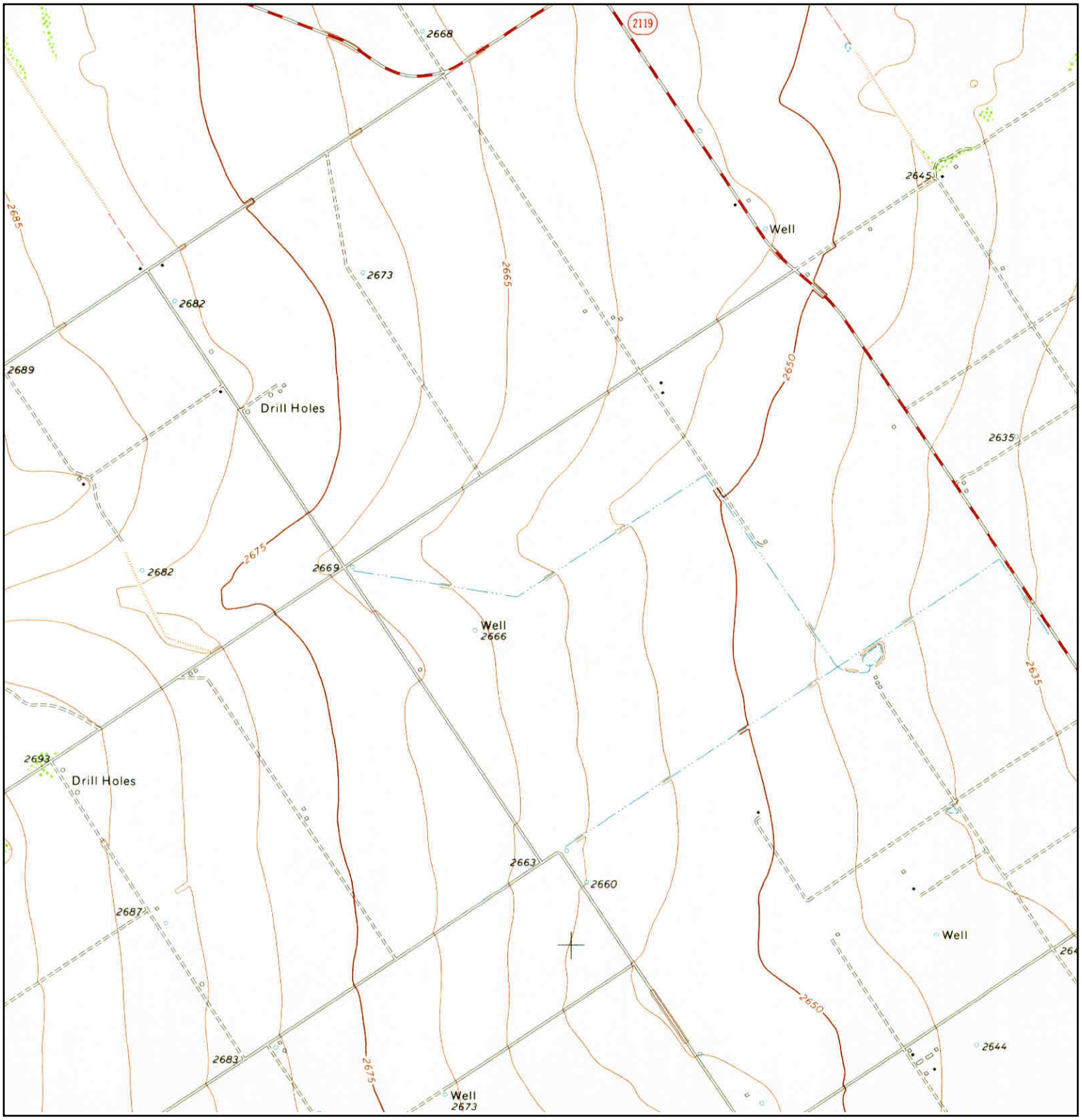
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Historical Topographic Map



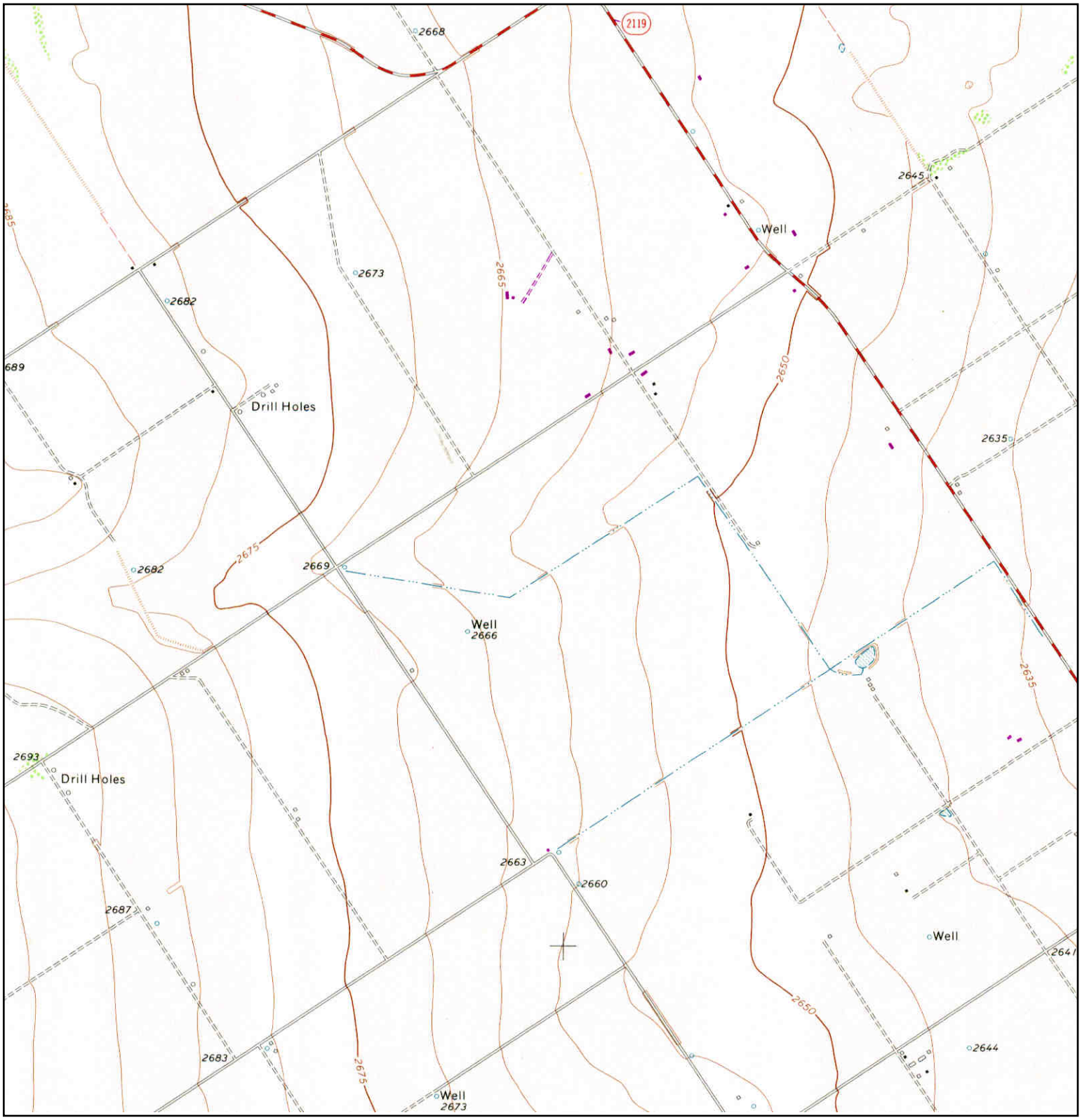
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		ADDRESS:	West Sun Tex Property Pre-Purchase Activities Pecos, TX 79772	CONTACT:	Brandon Tate
		LAT/LONG:	31.4325 / -103.5847	INQUIRY#:	4041169.5
				RESEARCH DATE:	08/19/2014

Historical Topographic Map



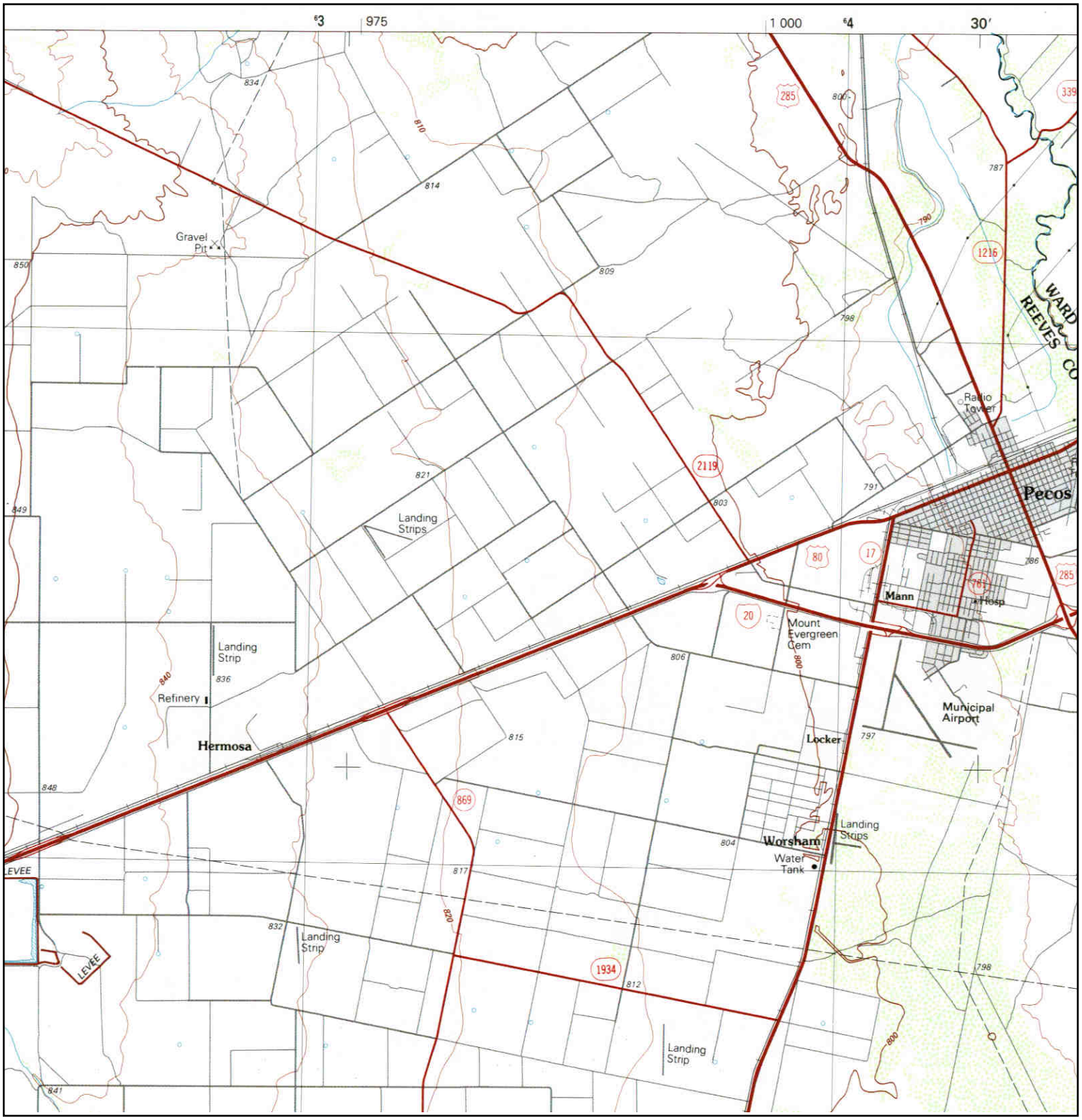
N	TARGET QUAD NAME: PECOS WEST MAP YEAR: 1971 SERIES: 7.5 SCALE: 1:24000	SITE NAME: West Sun Tex Property Pre-Purchase Activities ADDRESS: West Sun Tex Property Pre-Purchase Activities Pecos, TX 79772 LAT/LONG: 31.4325 / -103.5847	CLIENT: HDR Engineering, Inc. CONTACT: Brandon Tate INQUIRY#: 4041169.5 RESEARCH DATE: 08/19/2014	

Historical Topographic Map



N	TARGET QUAD NAME: PECOS WEST MAP YEAR: 1981 PHOTOREVISED FROM :1971 SERIES: 7.5 SCALE: 1:24000	SITE NAME: West Sun Tex Property Pre-Purchase Activities ADDRESS: West Sun Tex Property Pre-Purchase Activities Pecos, TX 79772 LAT/LONG: 31.4325 / -103.5847	CLIENT: HDR Engineering, Inc. CONTACT: Brandon Tate INQUIRY#: 4041169.5 RESEARCH DATE: 08/19/2014

Historical Topographic Map



N	TARGET QUAD NAME: PECOS MAP YEAR: 1986 SERIES: 30 SCALE: 1:100000	SITE NAME:	West Sun Tex Property Pre-Purchase Activities	CLIENT:	HDR Engineering, Inc.
		ADDRESS:	West Sun Tex Property Pre-Purchase Activities Pecos, TX 79772	CONTACT:	Brandon Tate
		LAT/LONG:	31.4325 / -103.5847	INQUIRY#:	4041169.5
				RESEARCH DATE:	08/19/2014

Appendix E—Site Photographs

Representative Site Photographs
Phase I ESA
West Sun Tex Property Pre-Purchase Activities
Photos Taken August 26 and 27, 2014.



Photo 1. Typical topography and vegetation within the subject property.



Photo 2. Donaldson 4-54 1H production facility. Photo taken from public road. Photo corresponds to Map Code A.



Photo 3. Two Oaks Yost Battery production facility. Photo taken from public road. Photo corresponds to Map Code B.



Photo 4. Two Oaks Hermosa-1 production facility. Photo taken from public road. Photo corresponds to Map Code C.



Photo 5. Two Oaks Hermosa-2 production facility. Photo taken from public road. Photo corresponds to Map Code D.



Photo 6. Open pit associated with unused well pad in southern portion of subject property. Photo corresponds to Map Code F.



Photo 7. Open pit associated with unused well pad in southern portion of subject property. Note the salt accumulations on liner. Photo corresponds to Map Code F.



Photo 8. Uncontrolled dump site on west side of subject property. Photo corresponds to Map Code G.



Photo 9. Metal barn adjacent to uncontrolled dump site.



Photo 10. Drum site in western portion of the study area. Photo corresponds to Map Code H.



Photo 11. Drum site in eastern portion of the study area. Photo corresponds to Map Code H.



Photo 12. Drum site in eastern portion of the study area. Photo corresponds to Map Code H.



Photo 13. Drum site in eastern portion of the study area. Photo corresponds to Map Code H.



Photo 14. Equipment yard with drums and IBC tanks. Photo corresponds to Map Code I.

Delineation of Waters of the United States and Endangered Species Report

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a Geo-Logic Company

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Delineation of Waters of the U.S. and Endangered Species Report

West Sun Tex Property
Pre-Purchase Activities

Prepared for:

West Sun Tex, LLC
14755 Preston Road, Suite 600
Dallas, TX 75254

Prepared by:



HDR Engineering, Inc.
17111 Preston Road, Suite 200
Dallas, Texas 75248

September 2014

Table of Contents

1.0 INTRODUCTION 1
2.0 STUDY AREA DESCRIPTION 1
3.0 WATERS OF THE U.S. DELINEATION 1
3.1 Methods 1
3.2 Results 2
4.0 THREATENED AND ENDANGERED SPECIES 2
5.0 SUMMARY 2
5.1 Section 404 Permitting Discussion 2
6.0 REFERENCES 3

List of Appendices

Appendix A: Figures
Appendix B: Site Photographs
Appendix C: USFWS Information, Planning, and Conservation System (IPAC) Letter and Results
TPWD County List

1.0 INTRODUCTION

This report presents the results of a delineation of waters of the United States (U.S.), including wetlands, performed on an approximately 432-acre study area in Reeves County, Texas. The study area is located north of interstate 20 and west of the town of Pecos near the intersection of County Road 415 and County Road 408. The study area is bordered to the north by County Road 415 and the east by County Roads 408. The south end of the property is open to the adjoining property and the east is bordered by an unnamed gravel road.

West Sun Tex is assessing the site in association with Pre-Purchase Activities.

The delineation and proposed jurisdictional determination of waters of the U.S., including wetlands, was conducted by HDR Engineering, Inc. (HDR) for West Sun Tex in support of an evaluation of potential permitting requirements of Section 404 of the Clean Water Act (CWA). A field survey for the following delineation was conducted on August 26 and 27, 2014, in accordance with the 1987 *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987) and the Regional Supplement for the Arid West Region (U.S. Army Corps of Engineers, 2008a). A jurisdictional determination on the findings of this report is subject to the review and regulatory authority of the U.S. Army Corps of Engineers (USACE).

HDR also evaluated the study area for potential occurrence of Federal and State listed (endangered, threatened, special concern) species and suitable habitats potentially used by the listed species of flora and fauna.

2.0 STUDY AREA DESCRIPTION

The study area is located near the city of Pecos in Reeves County, Texas (**Appendix A, Figure 1**). The predominant land uses in the vicinity of the study area are agriculture, rural residences, oil and gas production, and undeveloped. The study area has been subject to cultivation for crop production in the past; however, it appears to have been out of cultivation for some time. The vegetation in the study area has returned to typical desert shrubs and grasses. Some of the species commonly found in the study area are creosote bush (*Larrea tridentate*), tarbush (*Flourensia cernua*), fourwing saltbush (*Atripex canescens*), mesquite (*Prosopis sp*.), gyp grama (*Bouteloua breviseta*), and alkali sacaton (*Sporoblus airoides*).

The study area is dominated by flat topography that gently slopes to the east. Numerous ditches and canals flow through the vicinity and carry surface drainage toward the Pecos River approximately 6 miles east of the study area.

3.0 WATERS OF THE U.S. DELINEATION

3.1 Methods

A recent topographic map of the study area and one-meter resolution digital aerial photography (USDA FSA, 2012) were used to identify potential locations for waters of the U.S. and areas prone to wetland development. Waters of the U.S., including wetlands, were delineated on August 26 and 27, 2014, by HDR staff Brandon Tate and Ben Janik. The survey was conducted in accordance with the USACE 1987 Wetlands Delineation Manual (Environmental Laboratory, 1987) and the Regional Supplement for the Great Plains Arid West Region (USACE, 2008a).

Based on the review of topographic maps and aerial photography, areas potentially containing waters of the U.S. (i.e., stream corridors) and wetlands (areas adjacent to streams or with little slope and depressional areas) were evaluated using routine on-site delineation methods. The delineations in areas with field access were recorded using a sub-meter Geo XT Global Positioning System (GPS) unit and the entire boundary was mapped as a data layer using ArcGIS 10.2.

3.2 Results

3.2.1 Waters of the U.S.

Based on this evaluation, no waters of the U.S. were identified within the study area.

3.2.2 Features that are not Waters of the U.S.

One drainage feature was identified in the study area that is not considered a water of the U.S. The delineation map in **Appendix A (Figure 2)** depicts this non-jurisdictional feature. The non-jurisdictional feature is characterized as a drainage ditch, in uplands, based on the most recently approved guidance from the USACE and EPA (USACE, 2008b). Representative photographs are provided in **Appendix B**.

4.0 THREATENED AND ENDANGERED SPECIES

The study area is located in northeast Reeves County, Texas. The U.S. Fish and Wildlife Service (USFWS) Information, Planning, and Conservation System (IPAC) letter and results, as well as the Texas Parks and Wildlife Department (TPWD) County List, are located in **Appendix C**. The tables in **Appendix C** list wildlife and plant species possibly found within Reeves County that are considered by USFWS and the TPWD to be endangered, threatened, or rare.

There are numerous State and Federally listed species for Reeves County. The IPAC results indicate that there are no known critical habitats within the study area. Also, a search of the Texas Natural Diversity Database (TXNDD) found no occurrences of Federal or State listed species within the vicinity of the study area. Furthermore, the study area consists of previously cultivated land. The previously disturbed nature of the site and lack of habitat preclude the likely presence within the study area of listed species known to occur in Reeves County.

5.0 SUMMARY

The study area contains one non-jurisdictional drainage channel that is not considered a water of the U.S., and does not contain any suitable habitat for Federal and State listed endangered or threatened species.

5.1 Section 404 Permitting Discussion

This delineation and proposed jurisdictional determination of the study area is based on the best professional judgment of HDR's environmental staff, with professional experience with similar resources in the region. However, it does not constitute a final Jurisdictional Determination or significant nexus determination which can only be officially rendered by the USACE Albuquerque District Regulatory Branch and EPA through the formal review process.

6.0 REFERENCES

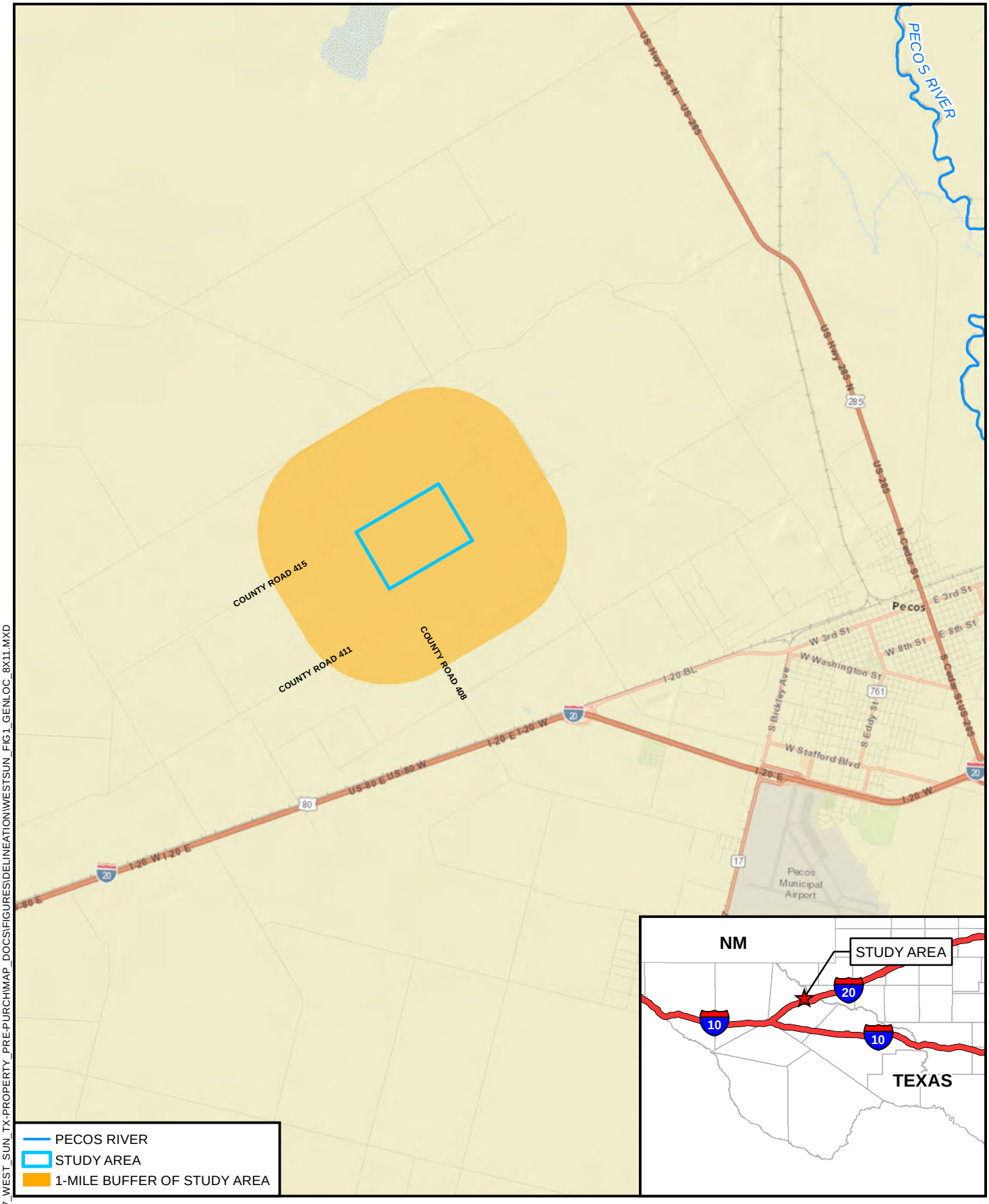
Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1, Department of the Army, Waterways Experiment Station.

United States Army Corps of Engineers (USACE). 2008a. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)*. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

United States Army Corps of Engineers (USACE). 2008b. Clean Water Act jurisdiction following the U.S. Supreme Court's decision in Rapanos v. United States and Carabell v. United States. U.S. Army Corps of Engineers, Washington, D.C., USA.

United States Department of Agriculture Farm Service Agency (USDA FSA). 2012. Digital Aerial Photography. Reeves County. 1m resolution. National Agriculture Imagery Program.

Appendix A:
Figures



FILE: O:\237817_037_WEST_SUN_TX-PROPERTY_PRE-PURCH\MAP_DOCS\FIGURES\DELINEATION\WESTSUN_FIG1_GENLOC_8X11.MXD

WEST SUN TEX **PROPERTY PRE-PURCHASE** PROJECT LOCATION	N 0 1 2 MILES	**WEST SUN TEX, LLC**	SEPT 2014 | FIGURE 1



FILE: O:\237817_037_WEST_SUN_TX-PROPERTY_PRE-PURCH\MAP_DOCS\FIGURES\DELINEATION\WESTSUN_FIG2_WOTUS_8X11.MXD

WEST SUN **PROPERTY PRE-PURCHASE** DELINEATION OF WATERS OF THE U.S.	N 0 500 1,000 FEET	**WEST SUN TEX, LLC**	FDR	
			SEPT 2014	FIGURE 2

Appendix B:
Site Photographs

Representative Site Photographs
Delineation of Waters of the U.S. and Endangered Species Report
West Sun Tex Property Pre-purchase Activities
Photos Taken August 26 and 27, 2014



Photo 1. Typical upland habitat within the study area.



Photo 2. Typical upland habitat within the study area with sparse vegetation.



Photo 3. West end of Non-jurisdictional drainage ditch.



Photo 4. East end of Non-jurisdictional drainage ditch.

Appendix C:
USFWS Information, Planning, and Conservation System (IPAC) Letter and Results
TPWD County List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Austin Ecological Services Field Office
10711 BURNET ROAD, SUITE 200
AUSTIN, TX 78758
PHONE: (512)490-0057 FAX: (512)490-0974
URL: www.fws.gov/southwest/es/AustinTexas/;
www.fws.gov/southwest/es/EndangeredSpecies/lists/

Consultation Tracking Number: 02ETAU00-2014-SLI-0380 August 21, 2014
Project Name: Property Pre-Purchase Activities

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project.

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that *may* occur within the county of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

Please note that new information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Also note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq*.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of federally listed as threatened or endangered species and to determine whether projects may affect these species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

While a Federal agency may designate a non-Federal representative to conduct informal consultation or prepare a biological assessment, the Federal Agency must notify the Service in writing of any such designation. The Federal agency shall also independently review and evaluate the scope and content of a biological assessment prepared by their designated non-Federal representative before that document is submitted to the Service.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by a federally funded, permitted or authorized activity, the agency is required to consult with the Service pursuant to 50 CFR 402. The following definitions are provided to assist you in reaching a determination:

- *No effect* – the proposed action will not affect federally listed species or critical habitat. A “no effect” determination does not require section 7 consultation and no coordination or contact with the Service is necessary. However, if the project changes or additional information on the distribution of listed or proposed species becomes available, the project should be reanalyzed for effects not previously considered.
- *May affect, but is not likely to adversely affect* – the project may affect listed species and/or critical habitat; however, the effects are expected to be discountable, insignificant, or completely beneficial. Certain avoidance and minimization measures may need to be implemented in order to reach this level of effect. The Federal agency or the designated non-Federal representative should consult with the Service to seek written concurrence that adverse effects are not likely. Be sure to include all of the information and documentation used to reach your decision with your request for concurrence. The Service must have this documentation before issuing a concurrence.
- *Is likely to adversely affect* – adverse effects to listed species may occur as a direct or indirect result of the proposed action. For this determination, the effect of the action is neither discountable nor insignificant. If the overall effect of the proposed action is beneficial to the listed species but the action is also likely to cause some adverse effects to individuals of that species, then the proposed action “is likely to adversely affect” the listed species. The analysis should consider all interrelated and interdependent actions. An “is likely to adversely affect” determination requires the Federal action agency to initiate formal section 7 consultation with our office.

Regardless of the determination, the Service recommends that the Federal agency maintain a complete record of the evaluation, including steps leading to the determination of effect, the qualified personnel conducting the evaluation, habitat conditions, site photographs, and any other related information. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:
http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF.

Migratory Birds

For projects that may affect migratory birds, the Migratory Bird Treaty Act (MBTA) implements various treaties and conventions for the protection of these species. Under the MBTA, taking, killing, or possessing migratory birds is unlawful. Migratory birds may nest in trees, brushy areas, or other areas of suitable habitat. The Service recommends activities requiring vegetation removal or disturbance avoid the peak nesting period of March through August to avoid destruction of individuals, nests, or eggs. If project activities must be conducted during this time, we recommend surveying for nests prior to conducting work. If a nest is found, and if possible, the Service recommends a buffer of vegetation remain around the nest until the young have fledged or the nest is abandoned.

For additional information concerning the MBTA and recommendations to reduce impacts to migratory birds please contact the U.S. Fish and Wildlife Service Migratory Birds Office, 500 Gold Ave. SW, Albuquerque, NM 87102. A list of migratory birds may be viewed at http://www.fws.gov/migratorybirds/RegulationsPolicies/mbta/mbtintro.html. Guidance for minimizing impacts to migratory birds for projects including communications towers can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html. Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Finally, please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq*.), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html).

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment

United States Department of Interior
Fish and Wildlife Service

Project name: Property Pre-Purchase Activities

Official Species List

Provided by:

Austin Ecological Services Field Office
10711 BURNET ROAD, SUITE 200
AUSTIN, TX 78758
(512) 490-0057
http://www.fws.gov/southwest/es/AustinTexas/
http://www.fws.gov/southwest/es/EndangeredSpecies/lists/

Consultation Tracking Number: 02ETAU00-2014-SLI-0380
Project Type: Land - Acquisition
Project Description: Property Acquisition in Reeves County, Texas

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-103.5828085 31.4562516, -103.5584695 31.4263192, -103.5861756 31.4103954, -103.6100966 31.4410247, -103.5828085 31.4562516)))

Project Counties: Reeves, TX

Endangered Species Act Species List

There are a total of 12 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 3 of these species should be considered only under certain conditions. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Birds	**Status**	**Has Critical Habitat**	**Condition(s)**
Least tern *(Sterna antillarum)* Population: interior pop.	Endangered		Wind Energy Projects
Mexican Spotted owl *(Strix occidentalis lucida)* Population: Entire	Threatened	Final designated	
northern aplomado falcon *(Falco femoralis septentrionalis)* Population: Entire, except where listed as an experimental population	Endangered		
Piping Plover *(Charadrius melodus)* Population: except Great Lakes watershed	Threatened	Final designated	Wind Energy Projects
Red Knot *(Calidris canutus rufa)*	Proposed Threatened		Wind Energy Projects
Crustaceans			
Diminutive Amphipod *(Gammarus hyalleloides)*	Endangered	Final designated	
Fishes			
Comanche Springs pupfish	Endangered		

(Cyprinodon elegans) Population: Entire			
Pecos gambusia *(Gambusia nobilis)* Population: Entire	Endangered		
Flowering Plants			
Pecos sunflower *(Helianthus paradoxus)*	Threatened	Final designated	
Snails			
Pecos Assiminea snail *(Assiminea pecos)*	Endangered	Final designated	
Phantom Springsnail *(Pyrgulopsis texana)*	Endangered	Final designated	
Phantom Tryonia *(Tryonia cheatumi)*	Endangered	Final designated	

Critical habitats that lie within your project area

There are no critical habitats within your project area.

REEVES COUNTY

BIRDS

		Federal Status	State Status
American Peregrine Falcon	*Falco peregrinus anatum*	DL	T

year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more northern breeding areas in US and Canada, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands.

Arctic Peregrine Falcon	*Falco peregrinus tundrius*	DL	

migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands.

Baird's Sparrow *Ammodramus bairdii*

shortgrass prairie with scattered low bushes and matted vegetation; mostly migratory in western half of State, though winters in Mexico and just across Rio Grande into Texas from Brewster through Hudspeth counties

Ferruginous Hawk *Buteo regalis*

open country, primarily prairies, plains, and badlands; nests in tall trees along streams or on steep slopes, cliff ledges, river-cut banks, hillsides, power line towers; year-round resident in northwestern high plains, wintering elsewhere throughout western 2/3 of Texas

Interior Least Tern	*Sterna antillarum athalassos*	LE	E

subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony

Montezuma Quail *Cyrtonyx montezumae*

open pine-oak or juniper-oak with ground cover of bunch grass on flats and slopes of semi-desert mountains and hills; travels in pairs or small groups; eats succulents, acorns, nuts, and weed seeds, as well as various invertebrates

Mountain Plover *Charadrius montanus*

breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous

Northern Aplomado Falcon	*Falco femoralis septentrionalis*	LE	E

open country, especially savanna and open woodland, and sometimes in very barren areas; grassy plains and valleys with scattered mesquite, yucca, and cactus; nests in old stick nests of other bird species

REEVES COUNTY

BIRDS

		Federal Status	State Status
Peregrine Falcon	*Falco peregrinus*	DL	T

both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (F. p. anatum) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, F.p. tundrius is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat.

Prairie Falcon *Falco mexicanus*

open, mountainous areas, plains and prairie; nests on cliffs

Reddish Egret	*Egretta rufescens*		T

resident of the Texas Gulf Coast; brackish marshes and shallow salt ponds and tidal flats; nests on ground or in trees or bushes, on dry coastal islands in brushy thickets of yucca and prickly pear

Snowy Plover *Charadrius alexandrinus*

formerly an uncommon breeder in the Panhandle; potential migrant; winter along coast

Sprague's Pipit	*Anthus spragueii*	C	

only in Texas during migration and winter, mid September to early April; short to medium distance, diurnal migrant; strongly tied to native upland prairie, can be locally common in coastal grasslands, uncommon to rare further west; sensitive to patch size and avoids edges.

Western Burrowing Owl *Athene cunicularia hypugaea*

open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows

Western Snowy Plover *Charadrius alexandrinus nivosus*

uncommon breeder in the Panhandle; potential migrant; winter along coast

Western Yellow-billed Cuckoo	*Coccyzus americanus occidentalis*	C;NL	

status applies only to western population beyond the Pecos River Drainage; breeds in riparian habitat and associated drainages; springs, developed wells, and earthen ponds supporting mesic vegetation; deciduous woodlands with cottonwoods and willows; dense understory foliage is important for nest site selection; nests in willow, mesquite, cottonwood, and hackberry; forages in similar riparian woodlands; breeding season mid-May-late Sept

Zone-tailed Hawk	*Buteo albonotatus*		T

arid open country, including open deciduous or pine-oak woodland, mesa or mountain county, often near watercourses, and wooded canyons and tree-lined rivers along middle-slopes of desert mountains; nests in various habitats and sites, ranging from small trees in lower desert, giant cottonwoods in riparian areas, to mature conifers in high mountain regions

REEVES COUNTY

CRUSTACEANS		Federal Status	State Status
Pecos amphipod	*Gammarus pecos*	E	

endemic aquatic amphipod; omnivorous; amphipods are active mostly at night and spend daylight hours hiding under vegetation and other cover; vulnerable to reduction of springflow resulting from declining levels of groundwater

FISHES		Federal Status	State Status
Comanche Springs pupfish	*Cyprinodon elegans*	LE	E

originally in Comanche Springs, San Solomon, and Phanton Cave, presently restricted to San Solomon and Phantom Cave and associated springs, and downstream irrigation canals; found in constantly discharging springs and in swift-flowing water of canals and earthen ditches, vulnerable to hybridization with C. variegatus

Headwater catfish *Ictalurus lupus*

originally throughout streams of the Edwards Plateau and the Rio Grande basin, currently limited to Rio Grande drainage, including Pecos River basin; springs, and sandy and rocky riffles, runs, and pools of clear creeks and small rivers

Pecos gambusia	*Gambusia nobilis*	LE	E

Pecos River and tributaries; shallow margins of clear, vegetated spring waters high in calcium carbonate, as well as in sinkhole habitats

Pecos pupfish	*Cyprinodon pecosensis*		T

originally Pecos River basin, presently restricted to upper basin only; shallow margins of clear, vegetated spring waters high in calcium carbonate, as well as in sinkhole habitats

INSECTS		Federal Status	State Status
A tiger beetle	*Cicindela hornii*		

grassland/herbaceous; burrowing in or using soil; dry areas on hillside or mesas where soil is rocky or loamy and covered with grasses, invertivore; diurnal, hibernates/aestivates, active mostly for several days after heavy rains. the life cycle probably takes two years so larvae would always be present in burrows in the soil

Arroyo darner *Aeshna dugesi*

creek, high - moderate gradient; eggs laid in aquatic plants, larvae cling to bottom of pools of streams, adults forage widely in pools in streams, from desert up to pine-oak zone; invertivore, diurnal; larvae overwinter, flight season late June to early September

Balmorhea saddle-case caddisfly *Protoptila balmorhea*

oviparous; larvae make turtle-shaped cases of small pebbles attached to the underside of stones in swift-flowing streams and rivers

Leonora's dancer damselfly *Argia leonorae*

REEVES COUNTY

INSECTS

Federal Status State Status

south central and western Texas; small streams and seepages

MAMMALS

Federal Status State Status

Big free-tailed bat *Nyctinomops macrotis*

habitat data sparse but records indicate that species prefers to roost in crevices and cracks in high canyon walls, but will use buildings, as well; reproduction data sparse, gives birth to single offspring late June-early July; females gather in nursery colonies; winter habits undetermined, but may hibernate in the Trans-Pecos; opportunistic insectivore

Black bear *Ursus americanus* T/SA;NL T

bottomland hardwoods and large tracts of inaccessible forested areas; due to field characteristics similar to Louisiana Black Bear (LT, T), treat all east Texas black bears as federal and state listed Threatened

Black-footed ferret *Mustela nigripes* LE

extirpated; inhabited prairie dog towns in the general area

Black-tailed prairie dog *Cynomys ludovicianus*

dry, flat, short grasslands with low, relatively sparse vegetation, including areas overgrazed by cattle; live in large family groups

Cave myotis bat *Myotis velifer*

colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (Hirundo pyrrhonota) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore

Davis Mountains cottontail *Sylvilagus floridanus robustus*

brushy pastures, brushy edges of cultivated fields, and well-drained streamsides; active mostly at twilight and at night, where they may forage in a variety of habitats, including open pastures, meadows, or even lawns; rest during daytime in thickets or in underground burrows and small culverts; feed on grasses, forbs, twigs and bark; not sociable and seldom seen feeding together

Gray wolf *Canis lupus* LE E

extirpated; formerly known throughout the western two-thirds of the state in forests, brushlands, or grasslands

Pale Townsend's big-eared bat *Corynorhinus townsendii pallescens*

roosts in caves, abandoned mine tunnels, and occasionally old buildings; hibernates in groups during winter; in summer months, males and females separate into solitary roosts and maternity colonies, respectively; single offspring born May-June; opportunistic insectivore

Pecos River muskrat *Ondatra zibethicus ripensis*

creeks, rivers, lakes, drainage ditches, and canals; prefer shallow, fresh water with clumps of marshy vegetation, such as cattails, bulrushes, and sedges; live in dome-shaped lodges constructed of vegetation; diet is mainly vegetation; breed year round

REEVES COUNTY

MAMMALS

		Federal Status	State Status

Pocketed free-tailed bat *Nyctinomops femorosaccus*

semiarid desert grasslands; roosts in caves cliff crevices under building roof tiles; feed on insects; females bear one pup per season Jul - Aug

Yuma myotis bat *Myotis yumanensis*

desert regions; most commonly found in lowland habitats near open water, where forages; roosts in caves, abandoned mine tunnels, and buildings; season of partus is May to early July; usually only one young born to each female

MOLLUSKS

		Federal Status	State Status

Brune's tryonia *Tryonia brunei*

endemic freshwater snail; benthic; currently only found in modified waters Phantom Lake Spring; abundant on firm substratum and in soft mud before modification; vulnerable to declining groundwater resulting in reduction of springflow

False spike mussel *Quadrula mitchelli* T

possibly extirpated in Texas; probably medium to large rivers; substrates varying from mud through mixtures of sand, gravel and cobble; one study indicated water lilies were present at the site; Rio Grande, Brazos, Colorado, and Guadalupe (historic) river basins

Pecos assiminea snail *Assiminea pecos* E E

a member of the marine snail family, but represents the most inland snail of the genus; semiaquatic, usually found on moist ground or beneath emergent plants within a few centimeters of flowing water; only known remaining Texas population at near Fort Stockton, Pecos County; historical to the Pecos River Valley of New Mexico and Texas

Phantom springsnail *Pyrgulopsis texana* E

endemic aquatic snail; known only from three spring systems and associated outflows in Jeff Davis and Reeves counties; vulnerable to reduction of springflow resulting from declining levels of groundwater

Phantom tryonia *Tryonia cheatumi* E

endemic aquatic snail; known only from three spring systems and associated outflows in Jeff Davis and Reeves counties; vulnerable to reduction of springflow resulting from declining levels of groundwater

Texas hornshell *Popenaias popeii* C T

both ends of narrow shallow runs over bedrock, in areas where small-grained materials collect in crevices, along river banks, and at the base of boulders; not known from impoundments; Rio Grande Basin and several rivers in Mexico

REPTILES

		Federal Status	State Status

Texas horned lizard *Phrynosoma cornutum* T

REEVES COUNTY

REPTILES

Federal Status State Status

open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive; breeds March-September

PLANTS

Federal Status State Status

Desert night-blooming cereus *Peniocereus greggii var greggii*

Chihuahuan Desert shrublands or shrub invaded grasslands in alluvial or gravelly soils at lower elevations, 1200-1500 m (3900-4900 ft), on slopes, benches, arroyos, flats, and washes; flowering synchronized over a few nights in early May to late June when almost all mature plants bloom, flowers last only one day and open just after dark, may flower as early as April

Grayleaf rock-daisy *Perityle cinerea*

Texas endemic; crevices in dry limestone caprock of mesas; flowering spring-fall

Gyp locoweed *Astragalus gypsodes*

gypsum or stiff gypseous clay soils on low rolling hills, mostly low elevations in the middle Pecos River valley; many of the known locations are on the Castile Formation (Permian); flowering March-June

Pecos/Puzzle sunflower *Helianthus paradoxus* LT T

restricted to saline, calcareous, heavy-textured soils around cienegas; usually most abundant on perennially wet soils of subirrigated terraces just above the wettest sites; flowering August-November

Wright's trumpets *Acleisanthes wrightii*

open semi-desert grasslands and shrublands on shallow stony soils over limestone on low hills and flats; flowering spring-fall, probably also in response to rains

U.S. Army Corps of Engineers Correspondence

DBS&A
a Geo-Logic Company

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March 15, 2024

Lt. Col. Jerre V. Hansbrough, Albuquerque District Commander, and
Mr. Jacob Pauley, Deputy District Engineer for Programs and Project Management
U.S. Army Corps of Engineers
Albuquerque, NM District
4101 Jefferson Plaza, NE
Albuquerque, NM 87109

Re: Proposed WST Landfill TCEQ Permit Application, Reeves County, Texas

Dear Lt. Col. Hansbrough and Mr. Pauley:

On behalf of West Sun Tex, LLC (WST), Daniel B. Stephens & Associates, Inc. (DBS&A) is preparing a permit application to be submitted to the Texas Commission on Environmental Quality (TCEQ) for a proposed Type I municipal solid waste (MSW) facility in north-central Reeves County called the WST Landfill. The facility property is located approximately 5 miles west-northwest of Pecos, Texas, at the intersection of County Road (CR) 408 and CR 415. The site latitude and longitude are 31.432400 and –103.585408. The facility entrance will be off of CR 408. The subject property has already been permitted as an oil and gas waste disposal facility by the Railroad Commission of Texas; however, WST is proposing to permit half of the 440-acre property as an MSW landfill.

This letter is being sent to the U.S. Army Corps of Engineers (USACE), Albuquerque District for coordination purposes per 30 TAC 330.23(b) to determine the need for a permit from USACE. We have included Figure I/II-5-2, which shows the location of the proposed facility and a 6-mile radius around the proposed facility. The property is bordered to the north by CR 415, to the west by CR 408 (also labeled as CR 4087 for the length of the section), and to the east by an unnamed gravel road, and the southern end is open to the adjoining property.

A delineation of waters of the U.S., including wetlands, was performed on the subject property in 2014 by HDR (Attachment 1). A field survey was conducted on August 26 and 27, 2014 in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual and the 2008 Regional Supplement for the Arid West Region, in support of an evaluation of potential permitting requirements of Section 404 of the Clean Water Act. Based on the review of topographic maps and aerial photography, areas potentially containing waters of the U.S. and wetlands were evaluated in the field. HDR identified one drainage feature in the study area that was not considered a water of the U.S., but was instead characterized as a drainage ditch in uplands. Based on the HDR evaluation (Attachment 1), no waters of the U.S. were identified within the study area, and the subject property does not include any wetlands.

We understand that a jurisdictional determination on the findings of this report is subject to the review and regulatory authority of the USACE. Please review the attached report regarding the proposed facility, whether it may affect waters of the U.S., and whether a permit from the U.S. Army Corps of Engineers will be required.

This document was provided in April 2021 to USACE for review and comment. This submittal is being provided as part of a new permit application submittal.

We are requesting a written response within 30 days. We assume that no response in that time indicates concurrence. Please contact me at (505) 822-9400 if you have any questions about the attached information.

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES, INC.

Gundar Peterson, P.E.
Vice President

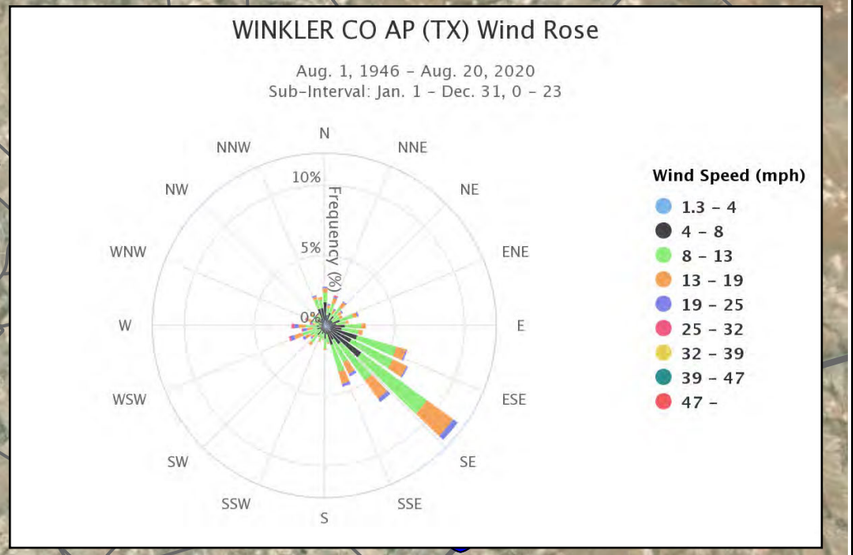
Kelly Jayne
Project Manager

KJ/rpf
Attachments

Figure

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6 mile radius

Project Site

Pecos

Pecos Municipal Airport

County Road 419
County Road 415
County Road 410
County Road 404
County Road 409
County Road 411
Business Loop 20 W
N Frongage Interstate 20 W
285
20
Bus 20
1450
17

N

0 1 2 Miles

Explanation

Site

Texas Department of Transportation road

Aerial image: Maxar, Vivid 2/11/2022

S:\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\GIS\ARCGIS_PRO\2024_PERMIT_APPLICATION\2024_PART_I_II\2024_PART_I_II_APRX

DBS&A a Geo-Logic Company

3/5/2024 DB20.1166

Rev 2: July 2026 (Rev 0: March 2026)

WST LANDFILL

General Location Map

Figure I/II-5-2

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Attachment 1

2014 HDR Report

Provided in full elsewhere in application; not reproduced here.

DBS&A a Geo-Logic Company

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DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS ALBUQUERQUE DISTRICT REGULATORY DIVISION
NEW MEXICO & NW TEXAS BRANCH, ALBUQUERQUE OFFICE
4101 JEFFERSON PLAZA NE
ALBUQUERQUE, NEW MEXICO 87109-3435

May 9, 2024

Regulatory Division

SUBJECT: No Permit Required – (SPA-2024-00121)

Daniel B. Stephens & Associates, Inc.
Attn: Gundar Peterson
6020 Academy Rd NE
Suite 100
Albuquerque, NM 87109
[redacted]

Dear Mr. Peterson:

We are responding to your request for a determination of Department of the Army permit requirements for the proposed DBS&A WST Landfill, Reeves County located at approximately latitude 31.4324, longitude -103.585408, in Reeves County, Texas. The work, as described in your submission, will consist of construction of a Municipal Solid Waste facility. We have assigned Action No. SPA-2024-00121 to this project. Please reference this number in all future correspondence concerning the project.

Based on the information provided, we have determined that a Department of the Army permit is not required since the site consists entirely of uplands. However, it is incumbent upon you to remain informed of any changes in the U.S. Army Corps of Engineers (Corps) Regulatory Program regulations and policy as they relate to your project. If your plans change such that waters of the United States could be impacted by the proposed project, please contact our office for a reevaluation of permit requirements.

We have determined that the unnamed drainage ditch found on the property is not waters of the United States because it does not meet the definition of a Tributary having relatively permanent, standing or continuously flowing bodies of water and therefore is excluded from regulation as Ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water ((b)(3)).

We are enclosing a copy of the Approved Jurisdictional Determination Form(s) for your review area (Enclosure 2). A copy of this JD is also available at http://www.spa.usace.army.mil/reg/JD. This approved JD is valid for 5 years from the date of this letter unless new information warrants revision of the determination before the expiration date. If you intend to conduct work that could result in a discharge of dredged or fill material into waters of the United States, please contact this office for a determination of Department of the Army permit requirement.

The delineation included herein has been conducted to identify the location and extent of the aquatic resources for purposes of the Clean Water Act for the particular site identified in this request. This delineation may not be valid for the Wetland Conservation Provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should discuss the applicability of an NRCS Certified Wetland Determination with the local USDA service center, prior to starting work.

You may accept or appeal this approved JD or provide new information in accordance with the attached Notification of Administration Appeal Options and Process and Request for Appeal (Enclosure 3). If you elect to appeal this approved JD, you must complete Section II of the form and return it to the Army Engineer Division, South Pacific, CESPD-PDS-O, Attn: Travis Morse, Administrative Appeal Review Officer, by email at [redacted] within 60 days of the date of this notice. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety and waive all rights to appeal the approved JD.

Please refer to identification number SPA-2024-00121 in any correspondence concerning this project. If you have any questions, please contact me by email at [redacted] or telephone at 505-290-7079.

Sincerely,



Sarrah C. Kubinec
Project Manager
New Mexico/ Texas Branch

Enclosures

cc: Kelly Jayne, Daniel B. Stephens [redacted]

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, ALBUQUERQUE DISTRICT
4101 JEFFERSON PLAZA NE
ALBUQUERQUE, NM 87109

May 9, 2024

CESPA-RDS

MEMORANDUM FOR RECORD

SUBJECT: US Army Corps of Engineers (Corps) Approved Jurisdictional Determination in accordance with the "Revised Definition of 'Waters of the United States'"; (88 FR 3004 (January 18, 2023) as amended by the "Revised Definition of 'Waters of the United States'; Conforming" (8 September 2023) ,[1] SPA-2024-00121[2].

BACKGROUND. An Approved Jurisdictional Determination (AJD) is a Corps document stating the presence or absence of waters of the United States on a parcel or a written statement and map identifying the limits of waters of the United States on a parcel. AJDs are clearly designated appealable actions and will include a basis of JD with the document.[3] AJDs are case-specific and are typically made in response to a request. AJDs are valid for a period of five years unless new information warrants revision of the determination before the expiration date or a District Engineer has identified, after public notice and comment, that specific geographic areas with rapidly changing environmental conditions merit re-verification on a more frequent basis.[4]

On January 18, 2023, the Environmental Protection Agency (EPA) and the Department of the Army ("the agencies") published the "Revised Definition of 'Waters of the United States,'" 88 FR 3004 (January 18, 2023) ("2023 Rule"). On September 8, 2023, the agencies published the "Revised Definition of 'Waters of the United States'; Conforming", which amended the 2023 Rule to conform to the 2023 Supreme Court decision in *Sackett v. EPA*, 598 U.S., 143 S. Ct. 1322 (2023) ("*Sackett*").

This Memorandum for Record (MFR) constitutes the basis of jurisdiction for a Corps AJD as defined in 33 CFR §331.2. For the purposes of this AJD, we have relied on Section 10 of the Rivers and Harbors Act of 1899 (RHA),[5] the 2023 Rule as amended,

[1] While the Revised Definition of "Waters of the United States"; Conforming had no effect on some categories of waters covered under the CWA, and no effect on any waters covered under RHA, all categories are included in this Memorandum for Record for efficiency.
[2] When documenting aquatic resources within the review area that are jurisdictional under the Clean Water Act (CWA), use an additional MFR and group the aquatic resources on each MFR based on the TNW, the territorial seas, or interstate water that they are connected to. Be sure to provide an identifier to indicate when there are multiple MFRs associated with a single AJD request (i.e., number them 1, 2, 3, etc.).
[3] 33 CFR 331.2.
[4] Regulatory Guidance Letter 05-02.
[5] USACE has authority under both Section 9 and Section 10 of the Rivers and Harbors Act of 1899 but for convenience, in this MFR, jurisdiction under RHA will be referred to as Section 10.

as well as other applicable guidance, relevant case law, and longstanding practice in evaluating jurisdiction.

1. SUMMARY OF CONCLUSIONS.

    a. Provide a list of each individual feature within the review area and the jurisdictional status of each one (i.e., identify whether each feature is/is not a water of the United States and/or a navigable water of the United States).

        i. The upland drainage ditch identified in the submitted delineation, is not a water of the United States

2. REFERENCES.

    a. "Revised Definition of 'Waters of the United States,'" 88 FR 3004 (January 18, 2023) ("2023 Rule")

    b. "Revised Definition of 'Waters of the United States'; Conforming" 88 FR 61964 (September 8, 2023))

    c. *Sackett v. EPA*, 598 U.S. _, 143 S. Ct. 1322 (2023)

3. REVIEW AREA. The review area consists of a 440-acre parcel located approximately 5 miles west-northwest of Pecos, Texas, at the intersection of County Road (CR) 408 and CR 415 at approximately Latitude 31.4324, Longitude -103.585408 in Reeves County. The applicant has requested the review of one (1) aquatic resource located within the review area (i.e., an unnamed, upland drainage ditch).

4. NEAREST TRADITIONAL NAVIGABLE WATER (TNW), THE TERRITORIAL SEAS, OR INTERSTATE WATER TO WHICH THE AQUATIC RESOURCE IS CONNECTED. The ditch was built wholly in uplands. The aquatic resources within the review area have no connection to a TNW, territorial sea, or interstate water.

5. FLOWPATH FROM THE SUBJECT AQUATIC RESOURCES TO A TNW, THE TERRITORIAL SEAS, OR INTERSTATE WATER. The ditch was built wholly in uplands. The aquatic resources onsite do not have a surface water connection to a TNW. There were no flow paths identified between the aquatic resources within the review area and the Pecos River, approximately 6 miles to the east.

6. SECTION 10 JURISDICTIONAL WATERS[6]: Describe aquatic resources or other features within the review area determined to be jurisdictional in accordance with Section 10 of the Rivers and Harbors Act of 1899. Include the size of each aquatic resource or other feature within the review area and how it was determined to be jurisdictional in accordance with Section 10.[7] N/A

7. SECTION 404 JURISDICTIONAL WATERS: Describe the aquatic resources within the review area that were found to meet the definition of waters of the United States in accordance with the 2023 Rule as amended, consistent with the Supreme Court's decision in *Sackett*. List each aquatic resource separately, by name, consistent with the naming convention used in section 1, above. Include a rationale for each aquatic resource, supporting that the aquatic resource meets the relevant category of "waters of the United States" in the 2023 Rule as amended. The rationale should also include a written description of, or reference to a map in the administrative record that shows, the lateral limits of jurisdiction for each aquatic resource, including how that limit was determined, and incorporate relevant references used. Include the size of each aquatic resource in acres or linear feet and attach and reference related figures as needed.

    a. Traditional Navigable Waters (TNWs) (a)(1)(i): N/A

    b. The Territorial Seas (a)(1)(ii): N/A

    c. Interstate Waters (a)(1)(iii): N/A

    d. Impoundments (a)(2): N/A

    e. Tributaries (a)(3): N/A

    f. Adjacent Wetlands (a)(4): N/A

    g. Additional Waters (a)(5): N/A

8. NON-JURISDICTIONAL AQUATIC RESOURCES AND FEATURES

[6] 33 CFR 329.9(a) A waterbody which was navigable in its natural or improved state, or which was susceptible of reasonable improvement (as discussed in § 329.8(b) of this part) retains its character as "navigable in law" even though it is not presently used for commerce or is presently incapable of such use because of changed conditions or the presence of obstructions.
[7] This MFR is not to be used to make a report of findings to support a determination that the water is a navigable water of the United States. The district must follow the procedures outlined in 33 CFR part 329.14 to make a determination that water is a navigable water of the United States subject to Section 10 of the RHA.

a. Describe aquatic resources and other features within the review area identified in the 2023 Rule as amended as not "waters of the United States" even where they otherwise meet the terms of paragraphs (a)(2) through (5). Include the type of excluded aquatic resource or feature, the size of the aquatic resource or feature within the review area and describe how it was determined to meet one of the exclusions listed in 33 CFR 328.3(b).[8]

b. Describe aquatic resources and features within the review area that were determined to be non-jurisdictional because they do not meet one or more categories of waters of the United States under the 2023 Rule as amended (e.g., tributaries that are non-relatively permanent waters; non-tidal wetlands that do not have a continuous surface connection to a jurisdictional water).

   The drainage ditch passes through the entire parcel, starting at the northwest corner and exiting on the east side at an unnamed dirt road. The ditch is located in uplands and has no connection to other waters. The delineation study determined that the ditch may have been an irrigation ditch in the past when agriculture was active in the parcel vicinity. The area appears to have been out of cultivation for more than 10 years and there is no evidence of regular flows or an ordinary high-water mark. The vegetation has reverted to typical desert shrubs and grasses and the existing ditch appears to only carry flow in response to precipitation events, therefore, the drainage ditch is non-jurisdictional.

9. DATA SOURCES. List sources of data/information used in making determination. Include titles and dates of sources used and ensure that information referenced is available in the administrative record.

   a. Google Earth imagery (04/2023, 04/2020, 02/2019, 04/2013, 05/2011, 09/2008, 10/2005)

   b. National Wetlands Inventory Mapper

   c. National Regulatory Viewer

      a. Topo Quad Index
      b. CWA Canals

   d. USGS National Hydrography Dataset (Accessed 4/22/2024)

[8] 88 FR 3004 (January 18, 2023)

e. USGS Topo Map Pecos West, TX 2022

10. OTHER SUPPORTING INFORMATION. Aquatic resource delineation submitted by the applicant titled *Delineation of Waters of the U.S. and Endangered Species Report, West Sun Tex Property* dated September 2014. Based on the information provided, the Corps has determined that the site is comprised entirely of uplands.

11. NOTE: The structure and format of this MFR were developed in coordination with the EPA and Department of the Army. The MFR's structure and format may be subject to future modification or may be rescinded as needed to implement additional guidance from the agencies; however, the approved jurisdictional determination described herein is a final agency action.

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: DBS & Associates, Inc., Attn: Mr. Peterson	File Number: SPA-2024-00121	Date: May 9, 2024
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL WITHOUT PREJUDICE	C
	PERMIT DENIAL WITH PREJUDICE	D
	APPROVED JURISDICTIONAL DETERMINATION	E
	PRELIMINARY JURISDICTIONAL DETERMINATION	F

SECTION I

The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at https://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/appeals/ or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C. PERMIT DENIAL WITHOUT PREJUDICE: Not appealable
You received a permit denial without prejudice because a required Federal, state, and/or local authorization and/or certification has been denied for activities which also require a Department of the Army permit before final action has been taken on the Army permit application. The permit denial without prejudice is not appealable. There is no prejudice to the right of the applicant to reinstate processing of the Army permit application if subsequent approval is received from the appropriate Federal, state, and/or local agency on a previously denied authorization and/or certification.

D: PERMIT DENIAL WITH PREJUDICE: You may appeal the permit denial
You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information for reconsideration

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety and waive all rights to appeal the approved JD.

- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

- RECONSIDERATION: You may request that the district engineer reconsider the approved JD by submitting new information or data to the district engineer within 60 days of the date of this notice. The district will determine whether the information submitted qualifies as new information or data that justifies reconsideration of the approved JD. A reconsideration request does not initiate the appeal process. You may submit a request for appeal to the division engineer to preserve your appeal rights while the district is determining whether the submitted information qualifies for a reconsideration.

F: PRELIMINARY JURISDICTIONAL DETERMINATION: Not appealable
You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also, you may provide new information for further consideration by the Corps to reevaluate the JD.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision you may contact:

Sarrah C. Kubinec
Project Manager
New Mexico/ Texas Branch

U.S. Army Corps of Engineers
New Mexico/Texas Branch
Phone: 505-290-7079,
[redacted]

If you have questions regarding the appeal process, or to submit your request for appeal, you may contact:

Travis Morse
Administrative Appeal Review Officer
U.S. Army Corps of Engineers
South Pacific Division
450 Golden Gate Avenue,
San Francisco, CA 941021455
Phone: 213-452-3146
Email: [redacted]

SECTION II – REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. Use additional pages as necessary. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15-day notice of any site investigation and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:
Email address of appellant and/or agent:	Telephone number:

Attachment I/II-12

Seismic Information

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U.S. Geological Survey - Earthquake Hazards Program

Unified Hazard Tool

Please do not use this tool to obtain ground motion parameter values for the design code reference documents covered by the U.S. Seismic Design Maps web tools (e.g., the International Building Code and the ASCE 7 or 41 Standard). The values returned by the two applications are not identical.

Input

Edition

Conterminous U.S. 2014 (v4.0.x)

Spectral Period

Peak Ground Acceleration

Latitude

Decimal degrees

31.4324

Time Horizon

Return period in years

2475

Longitude

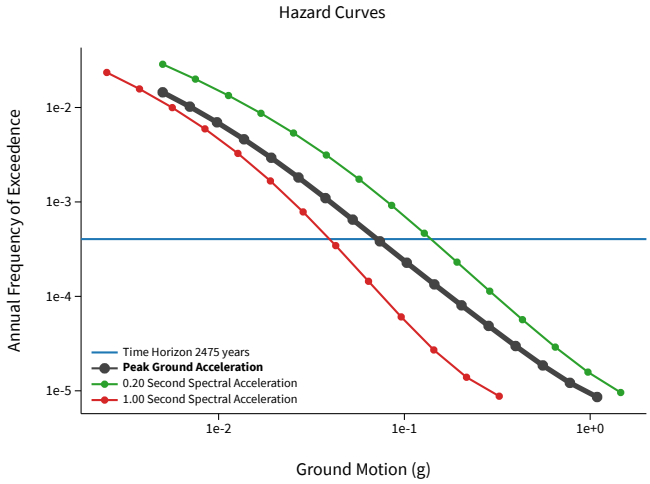
Decimal degrees, negative values for western longitudes

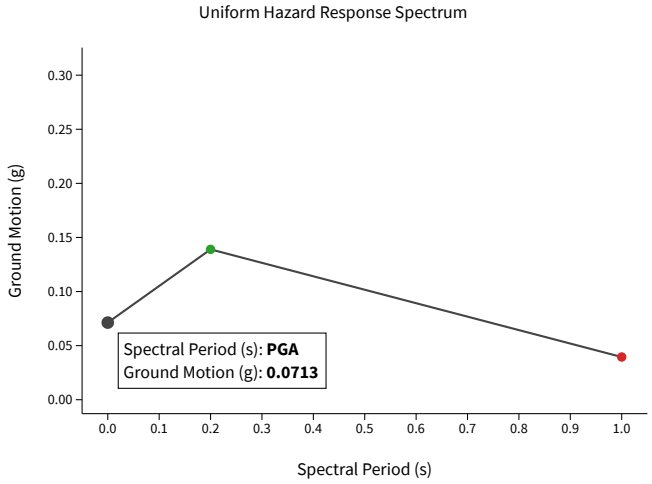
-103.585408

Site Class

760 m/s (B/C boundary)

Hazard Curve





View Raw Data

Part III Application for Municipal Solid Waste Facility WST Landfill

Reeves County, Texas

Prepared for
Operator: West Sun Tex, LLC
Application No.: 2431
Revision: 2

Prepared by

DBS&A
a Geo-Logic Company

Texas Registered Engineering Firm F-286
Texas Registered Geoscience Firm No. 50045
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July 2026

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Table of Contents

Part III Application

Attachment III-1: Site Development Plan III-1

Attachment III-2: General Facility Description III-11

Attachment III-3: Surface Water Drainage Report III-21
- Appendix III-3-A: Drawings III-69
- Appendix III-3-B: Data Sources for Hydrologic and Hydraulic Calculations III-79
- Appendix III-3-C: Run-On Management System Calculations III-121
- Appendix III-3-D Runoff Management System Calculations III-217
- Appendix III-3-E: Landfill Cover Erosion Evaluation Data Sources III-235
- Appendix III-3-F: Stormwater Infrastructure Maintenance Log III-277

Attachment III-4: Waste Management Unit Design III-281
- Appendix III-4-A: Drawings III-291
- Appendix III-4-B: Leachate and Contaminated Water Plan III-315
- Appendix III-4-C: Liner Quality Control Plan III-993
- Appendix III-4-D: Evaporation Pond Sizing III-1065
- Appendix III-4-E: Slope Stability Analysis III-1081
- Appendix III-4-F: Liner Equivalency Calculation III-1127
- Appendix III-4-G: Waste Generation Calculation III-1145

Attachment III-5: Geology Report III-1155
- Appendix III-5-A: Consumer Confidence Reports for Pecos, Texas III-1227
- Appendix III-5-B: Soil Boring Plan III-1233
- Appendix III-5-C: Boring Logs III-1285
- Appendix III-5-D: Soil Properties Laboratory Report III-1323
- Appendix III-5-E: Slug Test Results III-1395
- Appendix III-5-F: Water Quality Data III-1423

Attachment III-6: Groundwater Sampling and Analysis Plan III-1429
- Appendix III-6-A: Proposed Monitor Well Locations and Well Completion Information III-1465
- Appendix III-6-B: TCEQ MSW Groundwater Sampling Form (TCEQ-0312) III-1470
- Appendix III-6-C: TCEQ Laboratory Review Checklist III-1476

Attachment III-7: Landfill Gas Management Plan III-1485
Appendix III-7-A: Forms III-1507
Appendix III-7-B: Inspection and Routine Maintenance III-1513
Attachment III-8: Closure Plan and Cost Estimate III-1521
Appendix III-8-A: Final Cover Sequence III-1539
Appendix III-8-B: Final Closure Schedule III-1543
Appendix III-8-C: Closure Cost Estimate (Form TCEQ-20721) III-1547
Attachment III-9: Post-Closure Plan and Cost Estimate III-1563
Appendix III-9-A: Post-Closure Care Cost Estimate (TCEQ-20723) III-1583
Attachment III-10: Final Cover Quality Control Plan III-1597
Appendix III-10-A: Final Cover System Details III-1623
Appendix III-10-B: Testing Requirements for System Components III-1627

Attachment III-1

Site Development Plan

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Site Development Plan
WST Landfill
Reeves County, Texas

Prepared for
West Sun Tex, LLC
Pecos, Texas

Prepared by

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a Geo-Logic Company

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Table of Contents

1. Introduction 1
2. Site Development Plan [30 TAC 330.63(a)] 1
   2.1 Geology and Soil Conditions 2
   2.2 Drainage 2
   2.3 Land Use and Zoning 2
   2.4 Adequacy of Access Roads and Highways 3
3. Easements and Buffer Zones 4
4. Location Restrictions on Municipal Solid Waste Landfills 5



1. Introduction

West Sun Tex, LLC (WST) is applying for a new Type I municipal solid waste (MSW) permit for a new facility called the WST Landfill (the landfill), to be located in north-central Reeves County, Texas. The location is at the intersection of County Road (CR) 408 and CR 415, in Section 46, Block 4, H. & G.N. RR Co. Survey. The facility is in an area with flat topography that slopes gently to the east, and is dominated by desert scrub and grass vegetation.

In April 2016, WST obtained a permit to receive, store, handle, and treat certain nonhazardous oil and gas wastes from the Railroad Commission of Texas (RRC) on a 440-acre parcel of land. The property owned by WST includes 440 acres, located approximately 5 miles west-northwest of Pecos, Texas. This facility, named the Reeves County Commercial Disposal and Reclamation Facility, will be reduced in footprint and replaced in part by the WST Landfill. From Pecos, Texas, the access route to this site is to travel west-southwest on Interstate Highway 20 (I-20) Business, turn northwest on CR 408 and continue for approximately 1.5 miles, turn left on CR 411 and then immediately right onto CR 408, and continue to the facility entrance road. Land use in the vicinity of the site is for agriculture and oil and gas development, rural residences, and undeveloped land. The subject property has been used for agricultural production in the past, but has been out of cultivation for over 20 years.

WST Landfill is designed to meet and/or exceed TCEQ requirements as detailed in Title 30 Texas Administrative Code (TAC) Chapter 330.63 and protect public health and safety. The facility design includes its landfill composite liner system, leachate collection system, gas monitoring network, stormwater management system, groundwater monitoring network, and final cover.

2. Site Development Plan [30 TAC 330.63(a)]

The site development plan includes design criteria that will safeguard the health, welfare, and physical property of the people and the environment. Design criteria considered include geology, soil conditions, drainage, land use, zoning, and adequacy of access roads and highways. The site development plan design criteria are summarized in the following subsections.

2.1 Geology and Soil Conditions

A review of surficial geologic mapping does not reveal any geologic or geomorphologic features that would cause unstable areas to exist in soils at the site, such as surface faulting or collapse features associated with karst. Both the regional aquifer and the localized perched water are at least 30 feet below the lowest proposed excavation of the cells. The facility is not seeking an arid exemption. After conducting standard penetration tests and laboratory analyses, the geology in the area of the proposed facility was found to be suitable for operation of an MSW landfill. A more detailed analysis of regional geology, regional hydrogeology, and subsurface conditions are provided in the geology report (Attachment III-5).

A Natural Resources Conservation Service (NRCS) custom soils report was obtained in August 2014, which identified five soil units at the project site, including Hoban silty clay loam, Hodgins silty clay loam, Orla clay loam, Reeves clay loam, and Upton gravelly loam. A site map and descriptions of these soils are provided in the NRCS report (Attachment III-3).

2.2 Drainage

As the Federal Emergency Management Agency (FEMA) has not yet evaluated the proposed landfill location, the landfill site is not within a FEMA-designated floodplain. The nearest waterbody is the Pecos River, which is approximately 6 miles away. The landfill site is in an area with flat topography that slopes gently to the east, eventually reaching the Pecos River.

To satisfy requirements of 30 TAC 330.303 (relating to Surface Water Drainage for Municipal Solid Waste Facilities), a surface water drainage report has been prepared (Attachment III-3). The Texas Water Development Board (TWDB) has completed floodplain modeling across Texas. In the Cursory 100 dataset released in 2024, there are low-lying areas where water accumulates on the property. The drainage report describes how this water will be managed using stormwater channels, retention ponds, and the site perimeter berm.

2.3 Land Use and Zoning

Land use in the vicinity of the facility is for agriculture, commercial, oil and gas development, rural residential, and undeveloped land, as discussed in more detail in Attachment I/II-2.

Within 1 mile of the subject property, there are oil and gas facilities, trucking companies, and industrial yards. There are recreational vehicle (RV) parks located northeast, east, and southeast of the property. There appear to be manufactured houses and numerous outbuildings near the

site, especially north of the property boundary (Figure I/II-5-7). There are at least four residences within a mile of the site: one on the north side of CR 415, one on the opposite corner of the CR 415/CR 408 intersection, one on Mendoza Ranch located approximately 0.6 mile west-southwest of the site, and one off the eastern property boundary.

The portion of Reeves County located within 2 miles of the facility is not zoned; therefore, a published zoning map is not available, and no nonconforming use or special permit approval is required. The development and operations of the WST Landfill are compatible with the existing and proposed future land use in the area.

2.4 Adequacy of Access Roads and Highways

The facility property is located approximately 5 miles west-northwest of Pecos, Texas. From Pecos, Texas, the access route is to travel west-southwest on I-20 Business, turn northwest on CR 408 and continue for approximately 1.5 miles, turn left on CR 411 and then immediately right onto CR 408, and continue to the facility entrance road. The proposed facility will use an existing entrance located off of CR 408 (also labeled as CR 4087 for the length of the section), approximately 80 feet south of the intersection with CR 415.

Traffic research was conducted in support of this permit application, but no existing published traffic volume data were available for the roadways within a 1-mile radius of the proposed facility. The roads within 1 mile consists of CR 415, 408, CR 419, CR 411, and FM/Ranch Rd 2119. Due to the limitations of the traffic study conducted and the available Texas Department of Transportation (TxDOT) data, TxDOT data for CR 408 (ID-195CR13A) were used to represent the traffic of CR 419, CR 411, and CR 410 because these roads also have two lanes, little to no shoulder, and posted 30 mile per hour (mph) speed limits. The TxDOT Statewide Traffic Analysis and Reporting System (STARS II) was used to find publicly available traffic count data (Attachment I/II-10).

The primary access route to the landfill is expected to be evenly shared between CR 408 and CR 415. These are rural two-lane paved roads (formerly asphalt, repaved in December 2025 with chip and seal) maintained by the Reeves County Road and Bridge Department. Reeves County Assistant Engineer, Joel Martinez, who is familiar with the location, said that the traffic volume is very low along these roadways, and that the anticipated increase in traffic is not a concern (Attachment I/II-10).

The maximum initial increase in vehicle traffic on CR 408 and CR 415 associated with the landfill is estimated to be 25 vehicles per day based on anticipated waste volumes. These vehicles may include transfer trucks, collection trucks, and small vehicles, as well as landfill employee vehicles. This estimated increase in traffic is dependent on the method of waste transport (i.e., direct haul or use of transfer trailers), use of the landfill by small vehicles, and market dynamics of the waste collection and hauling business.

Based on available information, the existing access roadways are considered to be adequate to handle the estimated increased traffic volumes associated with the proposed landfill.

3. Easements and Buffer Zones

As required by 30 TAC 330.543, no solid waste unloading, storage, disposal, or processing operations may occur within any easement, buffer zone, or right-of-way that crosses the facility. Survey documentation for the entire 440-acre property and its associated easements is provided as Attachment I/II-3. Figure I/II-3-1 shows the easements in relation to the permit boundary and MSW landfill and shows that there are no conflicts.

No solid waste disposal will occur within 25 feet of the center line of any utility line or pipeline easement and no closer than the edge of easement. All pipeline and utility easements will be clearly marked with posts that extend at least 6 feet above ground level, spaced at intervals no greater than 300 feet. However, there are no easements within the WST landfill area (most are outside the perimeter berm), so marker posts will not be necessary unless a future easement is granted.

WST will establish and maintain 125-foot buffer zones, as prescribed by the rules. All buffer zones will be within the facility boundary on property owned by WST. No recycling or material recovery is planned, but if that plan changes WST will maintain a minimum 50-foot separation between final product storage areas and landfill units within the facility boundary. Safe passage for fire-fighting and other emergency vehicles will be provided around the entire site, including between final product storage areas and landfill units. The buffer zones will not be narrower than necessary to provide for safe passage for fire-fighting and other emergency vehicles.

4. Location Restrictions on Municipal Solid Waste Landfills

WST understands that TCEQ may not issue a permit for a Type I landfill that is subject to the conditions specified in Texas Health and Safety Code, 5 TAC 361.123, Limitation on Location of Municipal Solid Waste Landfills. The limitation outlined in this rule indicates that TCEQ may not issue a permit for a new Type I MSW landfill if the proposed site for the new landfill is located in a county that is adjacent to a county with a population of more than 3.3 million and inside the boundaries of a national forest, as designated by the U.S. Forest Service (USFS), on public or private land. The Texas Demographic Center provides 2025 population estimates for Reeves County (12,088) and surrounding Texas counties including Culberson (2,251), Jeff Davis (1,753), Loving (64), Pecos (14,719), and Ward (11,182). None of the populations of the adjacent counties exceeds 3.3 million people, and the proposed facility is not located inside the boundaries of a national forest; therefore, this limitation on MSW landfills does not apply.

Per 30 TAC 330.549, the TCEQ is not allowed to issue a permit for a landfill with cells managing Class 1 industrial solid waste in areas underlying soil units have a hydraulic conductivity greater than 1 x 10-5 centimeters per second (cm/s). The soil borings in the geology report indicate that the site consists primarily of sandy soils with hydraulic conductivity values that exceed the rule requirements (Attachment III-5). The proposed landfill meets the exception to this limitation, as the average annual evaporation in Pecos, Texas exceeds average annual rainfall by 56.28 inches, which exceeds the minimum requirement of 40 inches. Additionally, the proposed landfill does not overlie a regional aquifer, is not located on a barrier island or peninsula, and is not present in an area subject to coastal erosion. The proposed landfill meets all the requirements regarding Class I cell restrictions.

Attachment III-2

General Facility Description

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General Facility Description
WST Landfill
Reeves County, Texas

Prepared for
West Sun Tex, LLC
Pecos, Texas

Prepared by

DBS&A
a Geo-Logic Company

Texas Registered Engineering Firm F-286
Texas Registered Geoscience Firm No. 50045
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Table of Contents

1. General Facility Design [30 TAC 330.63(b)] 1
1.1 Facility Access [30 TAC 330.63 (b).1] 1
1.2 Waste Movement [30 TAC 330.63 (b).2] 1
1.2.1 Odor Control 2
1.3 Sanitation [30 TAC 330.63 (b).3] 3
1.4 Water Pollution Control [30 TAC 330.63 (b).4] 3
1.4.1 Storage and Processing Facilities 3
1.4.2 Landfill Cells 3
1.5 Endangered Species Protection [30 TAC 330.63 (b).5] 4
2. Initial Construction 4
References 5



1. General Facility Design [30 TAC 330.63(b)]

1.1 Facility Access [30 TAC 330.63 (b).1]

Site access will be controlled by a berm that will surround the entire property (both the municipal solid waste [MSW] landfill and the Railroad Commission of Texas [RRC] landfill). In addition, a barbed-wire fence with three strands of barbed wire will be installed around the interior permit boundary, south and west of the landfill cells. That fence will be tied into the perimeter access control berm. There will be one access point toward the northwest corner of the property near the intersection of County Road (CR) 408 and CR 415. This entrance will have a fence and gate that can be locked to prohibit entrance to the facility when the facility is closed. A cattle guard will be installed at the gate to mitigate the potential for cattle intrusion to the site. Additional gates will be installed near stormwater retention ponds 1 and 3 near the south and southwest permit boundaries as shown on Drawing C-1 (Appendix III-4-A).

1.2 Waste Movement [30 TAC 330.63 (b).2]

Upon entrance to the facility, the customer will drive over the scales and have their load weighed, documented, and discussed with the attendant.

If the waste is oil and gas waste, it will be directed to the oil and gas disposal facility. If the waste is MSW, once the weight is recorded, random inspections of MSW waste will be completed as described in the Site Operating Plan (SOP) (Part IV). If an inspection occurs and the waste is accepted, it will continue into the site as material acceptable for the facility. If material is not MSW, it will be removed by the hauler; this can be the case for material that is randomly inspected or material that is not randomly inspected.

If the waste is accepted, after possible random inspection, large items and white goods/whole tires will be directed to the storage area at the Citizens' Collection Station (CCS). If it is Class I waste and the facility has an acceptable waste profile on it, it will be sent to the Class I waste disposal cell. If there is not an acceptable waste profile, the waste will be removed by the hauler. If the waste is Class II or III with an accepted waste profile, not liquid, and not prohibited by the facility, it will be disposed of at the working face of any landfill cell. If this waste is classified as authorized special waste, it will be disposed of at the working face and will be subject to applicable restrictions if the facility has an acceptable waste profile on the special waste. If it is

not classified as authorized special waste and is not prohibited, it will be disposed of at the working face of any landfill cell.

Appendix III-4-A includes the following information:

- Flow diagram indicating storage, processing, and disposal sequence for the various wastes received
- Schematic view drawings showing the location of the CCS, landfill units, and the contact stormwater/contaminated water pond
- Generalized construction details of the CCS, landfill units, and evaporation pond

Grease, oil, and sludge will not be separated at the landfill and will be disposed of directly on the working face. Any water generated at the CCS will be treated as contaminated and will be disposed of in accordance with the Leachate and Contaminated Water Plan (LCWP) (Appendix III-4-B).

1.2.1 Odor Control

1.2.1.1 Landfill Cells

Once layers of waste have been placed and properly compacted in the landfill, soil cover should be placed over all the waste the same day and progressively throughout the day. The placement of daily cover reduces rainfall infiltration that may enhance the gas production process within the landfill. In addition, the daily cover soil serves to adsorb odors through oxidizing landfill gas and its components. Intermediate and final cover soil placement further reduces any odors produced by maximizing runoff. Per the SOP (Part IV) the working face will be maintained at the smallest size possible and will not exceed a maximum area of 6,000 square feet (120 feet by 50 feet); however, it will often be smaller. The limited size will minimize the surface area from which fugitive refuse odors can escape. Leachate can also be a significant source of odor at a landfill due to decomposing organic material and landfill gas dissolved in the leachate. Minimizing the leachate head over the bottom liner of the landfill and removing leachate routinely as it accumulates is an important control to minimize odor. Landfill staff will be trained to identify any items that produce strong odors such as septage, sludges, and dead animals that would require a prompt response such as tarping.

1.2.1.2 Citizen's Collection Station (CCS)

Per the SOP (Part IV), the CCS area will be continuously monitored by landfill personnel and covered with a tarp to prevent the accumulation of rainfall. Containers will be cleaned as

needed and spilled waste will be cleaned up daily. The surfaces will be cleaned with water weekly and wash water will be contained and treated as contaminated water.

1.2.1.3 Contact Stormwater/Contaminated Water Pond

The LCWP provides a complete list of best management practices (BMPs) to prevent ponding and minimize leachate generation at the facility. Management of odors from the contaminated water pond is addressed in the SOP (Part IV). Odor management for the contact stormwater/leachate pond includes its large size, which will encourage fast evaporation and chemical addition to reduce odors. The contaminated water pond will be continuously monitored to help address any strong odors.

1.3 Sanitation [30 TAC 330.63 (b).3]

The only facility likely to undergo cleaning is the CCS, which will be surfaced with a material capable of being washed. Grading around the CCS will be completed to prevent run-on of stormwater onto the CCS, and a six-inch curb will encircle the CCS to contain precipitation and wash water as needed.

1.4 Water Pollution Control [30 TAC 330.63 (b).4]

1.4.1 Storage and Processing Facilities

Water pollution control related to processing facilities will only apply to the CCS. As discussed in the SOP, the CCS will have a 6-inch curb around it to maintain precipitation/washwater within the CCS. It will then be pumped to either leachate storage tanks (pictured in Drawing C-1 [Appendix III-4-A]), or the evaporation/contaminated water pond in accordance with the LCWP. Generalized construction details of leachate storage tanks are provided in Drawing C-17 (Appendix III-4-A). Generalized construction details of the contaminated water pond are provided in Drawing C-11 (Appendix III-4-A). Generalized construction details of the run-on pond are provided in Drawing C-4 (Appendix III-4-A).

1.4.2 Landfill Cells

When waste placement is lower than the cell berm, contact stormwater will remain in the cell and will be handled by the leachate collection system or pumped to the evaporation pond. Where possible, soil berms may be used to keep stormwater out of the waste mass and stormwater will be pumped or allowed to evaporate. When waste placement is above the cell berm, the active area will always be graded so that contact stormwater will be kept within the

cell and handled by the leachate collection system. In either scenario, both leachate and contact stormwater will be collected and controlled so that they cannot travel off-site or infiltrate to groundwater. Any handling, storage, treatment, and/or disposal of contaminated water will comply with 30 TAC 330.207 (relating to contaminated water management).

1.5 Endangered Species Protection [30 TAC 330.63 (b).5]

Species currently listed as endangered or threatened in Reeves County (TPWD, 2020) include the following:

- *Federal Endangered listings:* Diminutive amphipod (crustacean), Comanche Springs pupfish, Pecos Gambusia (fish), Pecos Assiminea snail, phantom springsnail, phantom tryonia (snail), and Texas hornshell (freshwater mussel)
- *Federal Threatened listings:* Pecos sunflower
- *State Endangered listings:* Diminutive amphipod (crustacean), Comanche Springs pupfish, Pecos Gambusia (fish), Pecos Assiminea snail, phantom springsnail, phantom tryonia (snail), and Texas hornshell (freshwater mussel)
- *State Threatened listings:* Black bear, American peregrine falcon, reddish egret, white-faced ibis, zone-tailed hawk, headwater catfish, Pecos pupfish, roundnose minnow, speckled chub (fish), Texas horned lizard, and Pecos sunflower

Endangered and threatened species that could be found near the proposed facility are discussed in detail in the biological evaluation (BE) completed for the site. The BE also discusses which species were found at the site (DBS&A, 2024) (Attachment I/II-11).

WST understands that the construction and operation of the proposed facility may not result in the destruction or adverse modification of critical habitat or cause or contribute to the taking of endangered or threatened species. Conservation measures that will be followed at the site, including recommendations from Texas Parks and Wildlife Department, are outlined in the SOP (Part IV), and will be followed to minimize impacts to wildlife.

2. Initial Construction

As required by 30 TAC 330.73, a preconstruction conference including the Executive Director and owner's representatives, including the engineer, the geotechnical consultant, the contractor,

and the facility's manager, shall be held no more than 90 days prior to the date of commencement of physical construction of WST Landfill. All aspects of the permit, inspections, and construction activities shall be discussed.

Upon completion of all initial construction activities for the opening of WST Landfill, the owner or operator shall obtain and submit certification by a professional engineer licensed in the state of Texas that the facility has been constructed as designed in accordance with regulations and the issued permit. The owner or operator shall maintain that certification on-site for inspection. Additionally, the owner or operator shall contact the Texas Commission on Environmental Quality (TCEQ) and the regional TCEQ office in writing to request a pre-opening inspection. This inspection shall be conducted by TCEQ, accompanied by representatives of the owner or operator and the engineer, within 14 days of notification that all construction activities have been completed. Within 14 days of completion of this inspection, the Executive Director shall confirm in writing that all applicable submissions required by the permit and 30 TAC 330 have been received and found to be acceptable, and that construction of the facility is in compliance with the permit and the approved site development plan. If the Executive Director does not provide a written or verbal approval within 14 days of the pre-opening inspection, the facility shall be considered approved for the acceptance of waste.

References

Daniel B. Stephens & Associates, Inc. (DBS&A). 2024. *Biological evaluation, WST Landfill, Pecos, Texas*. Prepared for West Sun Tex, LLC, Southlake, Texas. Revised March 2024.

Texas Parks & Wildlife Department (TPWD). 2020. Rare, threatened, and endangered species of Texas. <https://tpwd.texas.gov/gis/rtest/>. Accessed on August 17, 2020.

Attachment III-3

Surface Water Drainage Report

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Surface Water Drainage Report
WST Landfill
Reeves County, Texas

Prepared for
West Sun Tex, LLC
Pecos, Texas

Prepared by

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July 2026

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Table of Contents

1. Background 1
1.1 Site Compliance 1
1.2 Site Description 1
1.3 Sources of Data and References 2
2. Floodplain Determination 2
2.1 FEMA Flood Mapping 2
2.2 Local Flood Mapping 2
2.3 Texas Flood Mapping 3
2.3.1 Limitations of TWDB Modeling 4
2.3.2 Evaluation of TWDB Modeling at and Adjacent to WST Landfill 5
2.4 USGS Topographic Map Blue Line 6
2.5 Floodplain Determination 6
3. Drainage Analysis 6
3.1 Defining Existing Drainage Patterns 7
3.2 Demonstration of No Adverse Impact 7
3.3 Climate and Design Storm 8
3.4 Run-On Control System Design 8
3.4.1 Study Area and Watershed Delineation 8
3.4.2 Curve Number 9
3.4.3 Time of Concentration 9
3.4.4 Channel Model Inputs 10
3.4.5 Storage and Evaporation 11
3.4.6 Run-On Channel 12
3.4.7 Run-On Control Pond 13
3.5 Runoff Control System Design 14
3.5.1 Study Area and Watershed Delineation 15
3.5.2 Curve Number 15
3.5.3 Time of Concentration 16
3.5.4 Runoff Channel Sizing 16
3.5.5 Runoff Stormwater Pond Sizing 18
4. Final Cover Erosion and Soil Loss 20
4.1 Model Description and Requirements 20
4.1.1 Model Assumptions 20
4.1.2 Model Inputs 21

4.1.3 Solution 22
4.1.4 Stabilization Measures 23
5. Stormwater Management System Maintenance 23
References 24

List of Figures

III-3-1 TWDB 100-Year Fluvial Floodplain Data, Larger Watershed
III-3-2 Aerial Imagery
III-3-3 TWDB 100-Year Fluvial Floodplain Data, Site Location
III-3-4 TWDB Fluvial Floodplain Western Property Boundary
III-3-5 TWDB Fluvial Floodplain Eastern Permit/Property Boundary Discontinuity
III-3-6 USGS Topographic Map
III-3-7 Run-On Drainage Contributing Watershed Area
III-3-8 Land Use
III-3-9 Soil Type

List of Tables

III-3-1 25-year, 24-hour Rainfall Data 8
III-3-2 Subbasin Characteristics 10
III-3-3 Reach Characteristics 11
III-3-4 Storage Characteristics 12
III-3-5 Run-On Control Channel Characteristics 12
III-3-6 Run-On Retention Pond Depth-Storage Characteristics 14
III-3-7 Runoff Watersheds Characteristics 16
III-3-8 Channel Characteristics 17
III-3-9 Culvert Characteristics 17
III-3-10 Pond 1 Retention Pond Depth-Storage Characteristics 18
III-3-11 Pond 2 Retention Pond Depth-Storage Characteristics 19

III-3-12 Pond 3 Retention Pond Depth-Storage Characteristics 19
III-3-13 Soil Erodibility Factor for Five Soil Types in WST Landfill 21
III-3-14 Soil Loss Analysis Results 22
III-3-15 Inspection for Drainage System Components 23
III-3-16 Scheduled Maintenance and Anticipated Repairs 24

List of Appendices

III-3-A Drawings
III-3-B Data Sources for Hydrologic and Hydraulic Calculations
- III-3-B1 TP-40 Precipitation Maps
- III-3-B2 Selected Pages from TR-55
- III-3-B3 NRCS Soil Report

III-3-C Run-On Management System Calculations
III-3-D Runoff Management System Calculations
- III-3-D1 Non-Contact Runoff Model Results
- III-3-D2 Non-Contact Runoff Model Channel and Culvert Sizing Results

III-3-E Landfill Cover Erosion Evaluation Data Sources
- III-3-E1 NRCS Custom Soil Resource Report for Reeves County, Texas
- III-3-E2 Soil Erodibility Factor (K)
- III-3-E3 Erosivity Factor (R) Map
- III-3-E4 Topographic Factor (LS)
- III-3-E5 Cover Management Factor (C)

III-3-F Stormwater Infrastructure Maintenance Log

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1. Background

Daniel B. Stephens & Associates, Inc. (DBS&A) has prepared this surface water drainage report in support of the permit application for the proposed West Sun Tex, LLC (WST) Landfill (the site), a Type I municipal solid waste (MSW) landfill. This drainage report provides information about the existing drainage patterns on and near the site, floodplain considerations, and the proposed stormwater infrastructure as required in Title 30 of the Texas Administrative Code (TAC), Part 1, Chapter 330 Rule 330.63(c) [30 TAC 330.63(c)]. Drainage report drawings are provided in Appendix III-3-A.

1.1 Site Compliance

In accordance with 30 TAC 330.63(c), the WST Landfill facility design complies with all applicable requirements of 30 TAC 330.303 and 330.305 relating to surface water drainage for MSW facilities. Together, the permit-level drawings (Appendix III-4-A) and this surface water drainage report meet all requirements of 30 TAC 330.63(c). In addition, this surface water drainage report has been prepared in accordance with Texas Commission on Environmental Quality (TCEQ) document number RG-417 *Surface Water Drainage and Erosional Stability Guidelines for a MSW Facility*, hereafter referred to as RG-417.

1.2 Site Description

The site is located at the intersection of County Road 408 (CR 408) and CR 415, approximately 5 miles northwest of Pecos, Texas. Prior to acquisition by the current owners, concrete agricultural conveyance ditches were installed across the property (based on the condition of the concrete, they appear very old). The ditches were served by two agricultural wells. At least one oil and gas well has been drilled on the property (it is not in the landfill footprint); it is no longer in service. The site is currently mostly undeveloped. There are three water tanks in a dirt parking lot in the northwestern corner of the property. The property is flat, with typically 2 percent or lower slope, which is consistent with adjacent properties; the whole area is very flat with little topographic relief.

1.3 Sources of Data and References

The following sources of data and references were used in preparing this report:

- Texas Water Development Board (TWDB) Cursory Floodplain Rasters: Generated by the First Street Foundation Flood Model (FSF-FM) and Fathom Group, updated specifically for Texas. The development and intended uses of this data are described in the following documents:
  - TWDB *Cursory Floodplain Data Overview:* Describes the nature of the data and appropriate uses
  - *First Street Foundation Flood Model Technical Methodology Document:* Documents the initial FSF-FM model development
- Soil Conservation Service (SCS) Technical Report (TR) 55, *Urban Hydrology for Small Watersheds*
- Texas Department of Transportation (TxDOT) Hydraulic Design Manual 2019
- National Oceanic and Atmospheric Administration (NOAA) Precipitation Atlas 14
- National Resource Conservation Service (NRCS) soil maps

2. Floodplain Determination

2.1 FEMA Flood Mapping

The proposed landfill location has not been assessed by the Federal Emergency Management Agency (FEMA) to determine flood hazard (this area is unmapped) (Figure I/II-5-4).

2.2 Local Flood Mapping

In addition to there being no FEMA map for this area, there is no local or regional flood agency in this area; therefore, there is no local flood information or mapping available. Reeves County does not participate in the National Flood Insurance Program and has no Certified Floodplain Manager. The nearby town of Pecos, Texas has been mapped, but the map coverage does not extend to the site.

2.3 Texas Flood Mapping

To address the major gaps in flood mapping across the state and expedite the production of flood data, TWDB is currently undergoing a state-led, state-wide flood mapping effort to provide planning level data. This effort includes plans for several stages of flood modeling and mapping. In 2021, TWDB completed the first step in the process, where they worked with an existing model that had been developed to provide high level flood modeling for the U.S. (developed by First Street Foundation and Fathom Group). TWDB worked with First Street Foundation/Fathom Group to update the model specifically for Texas.

The Fathom model is a proprietary two-dimensional (2D) hydrodynamic model. 3-meter light detection and ranging (LiDAR) data were used as base information for the terrain data of the model. To improve simulation time, the 3-meter LiDAR data were processed to generate a 30-meter ground surface grid that was used in the modeling. Therefore, the water surfaces were also generated at a 30-meter grid, and then Fathom deployed a downscaling algorithm to reproject the simulated water surfaces onto the 3-meter native terrain grid (AECOM/Fathom 2025). The underlying model and many assumptions are not available to the public.

The study completed by Fathom supplements outdated, unreliable, and missing data by generating a predictive model based on empirical data collected from analogue sites with statistical correlations. Fathom's model combines data collected from pluvial events and seasonal fluvial parameters to predict flood hazard areas for future storm events. The combination of the pluvial and fluvial models provides a probabilistic outcome for hazardous flooding events that could occur in the region of the site. Due to the upscaling/downscaling of the topography data and the high-level flood modeling being completed, TWDB decided to remove from the floodplain data water depths less than 0.4 foot. This means that if the model generated a cell with less than 0.4 foot of flooding, TWDB had Fathom set the flooding value to zero. Conversely, any water depth greater than 0.4 foot is shown as "flooding."

In 2025, TWDB released updated versions of the 2021 flood mapping products. In the vicinity of the site, the updates primarily included the use of LiDAR data for updating the digital elevation model (DEM), improvements in calculating channel depths, and spatially varying Manning's roughness for more realistic overland routing of floodwaters. The results were provided in several data formats, including raster data with water depth information for each grid cell and polygon data showing the anticipated flood hazard area (https://twdb-flood-planning-resources-twdb.hub.arcgis.com/pages/cursory-floodplain-data-2025). TWDB notes that there are minor differences between polygon and raster extents due to the processing methodology.

The model covered various scenarios, including existing conditions and several future conditions scenarios that make varying assumptions regarding land use and climate variability. The data presented in this report are for the existing conditions model.

2.3.1 Limitations of TWDB Modeling

Acknowledging the necessary constraints of state-wide floodplain modeling (computational time, level of detailed input possible), there are limitations of the floodplain data in this area that bear consideration. The TWDB floodplain results are shown on Figure III-3-1 for areas around the site.

The existing topography in this area is very flat (calculated slopes around the site range from 0.1 to 2 percent). In addition, historical drainage features appear to be shallow (further discussion below). This is supported by the lack of blue flow lines on U.S. Geological Survey (USGS) topographic maps in the area upstream of the site. The shallow regional slope is also illustrated by the lack of culverts in roads upstream and downstream of the site. There simply is not enough elevation or well-defined channels—either natural or man-made—to warrant culvert installation. A 30-meter DEM (as is used in the modeling) is not well suited to capture these types of flow conditions, and this limitation of the terrain upscaling should be considered in interpretation of the results.

TWDB published the 3-meter DEM that was used to generate the 30-meter ground surface used in the modeling when they published the modeling results. However, when standard geographic information system (GIS) based hydrology tools are applied to the terrain, the surface flow path network that is generated does not agree with the floodplain modeling results in many locations. Some flow paths go in different directions than indicated by the cursory floodplain, while others join one another at locations differing from the cursory floodplain shapefile. This is likely a result of the upscaling of terrain data for modeling purposes.

A 3-meter DEM (each grid cell is approximately 10 feet per side) is typically a reasonably good topographic resolution for surface water modeling. Especially considering the cost of obtaining higher-resolution data that would likely have limited benefit, this terrain resolution is reasonable. However, due to the very flat slopes in this area and lack of defined channels, every human disturbance makes an impact in flow patterns that will be difficult to discern on a 3-meter DEM. Upstream of the site, the historical drainage has been crossed by roads (which do not have culverts) more than 10 times. It has also been modified by agricultural development at several locations before it reaches the site; the construction of the agricultural fields graded out

the historical drainage. These human disturbances reduce the likelihood of water actually reaching the site, essentially cutting off the drainage in a number of locations.

Additionally, the TWDB modeling does not reflect the filling and leveling of the historical drainage immediately upstream of the intersection of CR 415 and CR 408. Four different property owners have graded/leveled the flow path of the historical drainage and built structures including manufactured homes, sheds, and commercial buildings. These areas are also being used for truck parking and material storage (Figure III-3-2). This development directly affects the ability of any upstream water to make it to the property boundary.

These issues are not highlighted to say that the entire modeling in this area should be disregarded, only that additional scrutiny is warranted in interpretation of results.

2.3.2 Evaluation of TWDB Modeling at and Adjacent to WST Landfill

Inspection of aerial imagery indicates that an historical drainage likely ran through the site, passing through the current intersection at the northwest corner of the site and exiting about midway along the eastern site boundary. The topographic data used by TWDB in their modeling (the best topographic data available for this area) indicate that the historical channel was wide and shallow—approximately 200 to 300 feet wide and 1 foot or less deep. This historical channel left an area on the site that is the lowest point of the site—a wide, shallow, low-lying area. CR 415, CR 408, and the private road on the east side are all slightly higher in elevation than this low-lying area.

The TWDB flood polygon and raster files were both used to evaluate the floodplain data at and near the site. Figure III-3-3 shows the floodplain raster information (water depth) and the Cursory Floodplain shapefile (extent). The shapefile does connect or enclose some areas that are disconnected in the raster data. As illustrated in Figure III-3-3, the TWDB flood data do show "floodplain" in this topographic low spot on the site. However, the "floodplain" on the site and adjacent properties is typically 1 foot in depth or less despite being 470 to 980 feet wide within the permit boundary (Figure III-3-3), which is more indicative of a low-lying area ponding water than a flowing water feature. Supporting this concept are the breaks in the floodplain data at the upstream and downstream boundaries of the property. At the upstream corner, while there is some interconnectedness of the "floodplain" in the raster over the intersection, there are gaps demonstrating how those two roads serve to restrict flow to the site (Figure III-3-4). On the downstream permit/property boundary, there is a clean break in the floodplain data, both in the raster data and the cursory polygon, suggesting that flow does not

leave the site (Figure III-3-5). There are similar breaks in the floodplain data in both the raster and cursory polygon in the areas upstream of this site that are consistent with the "floodplain" in these areas being closer to low-lying areas that collect and pond water from adjacent areas rather than a coherent, connected conveyance feature through the area.

2.4 USGS Topographic Map Blue Line

It should be noted that the current USGS National Map has a dashed blue line on-site, which in USGS maps typically indicates the presence of a stream. This blue line is recorded as starting at the northwest corner of the permit boundary running at about a 45-degree angle southeast toward the centerline of the parcel, where it abruptly turns about 135 degrees heading toward the midpoint of the eastern property line. At the property line, it makes a 90-degree turn to the south (Figure III-3-6). The location of the blue line corresponds to an old concrete irrigation channel that no longer transmits flow; the channel will be removed during landfill construction. Consequently, the USGS map blue line was disregarded during the drainage analyses for the MSW landfill site.

2.5 Floodplain Determination

Given the reasons outlined above, we believe that the low-lying area on the site does not qualify as a floodplain for the purposes of TAC regulations, and the floodplain constraints and regulations are not incorporated. The water that normally pools in this area will be managed with site channels, ponds, and the site perimeter berm. Any run-on will be managed by the run-on control system.

3. Drainage Analysis

For the purposes of the drainage analysis, the entire property owned by the owner is considered. This area incorporates the footprint of the Railroad Commission of Texas (RRC) permit and the MSW permit, as both permit areas will be within the site perimeter berm. Therefore, "upstream" drainage points here are not defined at the permit boundary, but rather the property boundary (e.g., CR 408 and CR 415). The on-site stormwater ponds are sized to handle the entire area inside the perimeter berm to be conservative; all ponds will be non-contact stormwater ponds.

3.1 Defining Existing Drainage Patterns

In addition to consideration of floodplain data, the topography on adjacent properties and visual inspection of adjacent property boundaries were reviewed to identify any additional run-on locations; none were identified. On the property to the east, an interior road restricts flow from leaving that property. On the property to the north, approximately 3,000 feet along CR 415 would have contributed to the historical channel according to the USGS topographic data (Figure III-3-6). East of this location, the flow would have traveled east of the site. In this location, the property owner has installed a berm along the southern property boundary that restricts flow from leaving that property. All of the features that restrict flow from adjacent properties are visible in aerial imagery (Figure III-3-2), and driving by on CR 415 and CR 408.

There is only one run-on point source at the northwest corner of the property boundary, at the location of the intersection of CR 415 and CR 408 where the historical drainage enters the property (Figure III-3-4). There is a single discharge location along the eastern property boundary where the historical drainage exited the boundary. The floodplain gap in the current floodplain mapping for the 100-year storm (Figure III-3-5) suggests that water does not leave the property at the 100-year storm; therefore, no water is assumed to leave for the 25-year, 24-hour storm.

3.2 Demonstration of No Adverse Impact

The run-on management system has been designed to handle flows that may flow onto the site from the 25-year, 24-hour storm. The run-on management system will capture run-on, route it around the parcel, and retain run-on flows on-site in the run-on pond. These findings are consistent with 30 TAC 330.305(a) requirements for landfills.

Site runoff will be managed on-site through conveyance draindowns, channels, culverts, and ponds that capture and retain stormwater on-site in a separate set of stormwater retention ponds. The run-on and runoff systems are separated by the site perimeter berm. This design adheres to the existing drainage pattern concerning discharge, where no stormwater crosses the permit boundary as discharge. These findings are consistent with 30 TAC 330.305(a) requirements for landfills.

Therefore, the final drainage condition will be the same as the exiting conditions. Stormwater peak discharge, velocity, and volume that are zero pre-development will remain zero post-development.

3.3 Climate and Design Storm

For both the run-on and runoff models, the rainfall depths were derived from the Atlas of Depth-Duration-Frequency Precipitation Annual Maxima for Texas (USGS, 2004) (TxDOT Implementation Report 5-1301-01-1), as reported in Table III-3-1. The rainfall depth and duration values provided in Table III-3-1 were directly used to generate the HMS meteorological model.

Table III-3-1. 25-year, 24-hour Rainfall Data

Duration (hours)	Depth (inches)
0.25	1.4
0.5	1.87
1	2.4
2	2.8
3	2.9
6	3
12	3.3
24	4.0

From SCS TR-55 Figure B-2, it was determined that the SCS Type II rainfall distribution is appropriate for Pecos, Texas (SCS, 1986) (Appendix III-3-B2). Autodesk's Storm and Sanitary Analysis (SSA) program was used to run the U.S. Army Corps of Engineers (USACE) HEC-1 model. HEC-1 was used to create the design rainfall distribution by applying the 25-year, 24-hour precipitation depth to the Type II distribution using 6-minute intervals.

3.4 Run-On Control System Design

A run-on control system has been designed in accordance with 30 TAC 330.305(b) to mitigate the 25-year, 24-hour intensity peak discharge from contacting the active landfill face. The Hydrologic Engineering Center Hydrologic Modeling System (HEC-HMS) was used to model the run-on contributing area.

3.4.1 Study Area and Watershed Delineation

The hydrologic study area encompasses approximately 3,751 acres located west of WST Landfill, representing the upstream portion of the watershed that could potentially contribute runoff to the landfill. Hydrologic and spatial analysis were performed using HEC-HMS and ArcGIS Pro.

The study area was initially delineated in HEC-HMS using a DEM (USGS, 2024) to define preliminary subbasins and flow paths. These subbasins were then refined in ArcGIS Pro using aerial imagery and TWDB cursory floodplain data to ensure accurate representation of contributing areas and topographic divides. After refinement, 13 subbasins were retained for hydrologic analysis, with hydraulically isolated or non-contributing areas excluded. Figure III-3-7 shows the contributing area considered in the model. Topography within the study area is generally flat, with slopes along the longest flow paths ranging from 0.003 to 0.005 foot per foot (ft/ft).

3.4.2 Curve Number

Curve numbers (CNs) were assigned based on soil type and land cover using TR-55 guidance (SCS, 1986). Land cover was characterized using the National Land Cover Database (NLCD) (USGS, 2024). Land cover in the watershed is largely undeveloped, dominated by desert shrubland, with minor agricultural areas and sparse roads (Figure III-3-8). Soils were evaluated using the SSURGO dataset (NRCS, 2024). Soils in the study area are predominantly Hydrologic Soil Groups B and C, with a small portion of Group D in the western part of the watershed (Figure III-3-9). A CN raster joining land use, soils, and CN from TR-55 was generated in ArcGIS Pro and imported into HEC-HMS, where area-weighted average CN values were calculated for each subbasin. Area-weighted CN values range from 68 to 79, reflecting the predominantly pervious nature of the watershed. Percent impervious was derived from the fractional impervious surface dataset (USGS, 2024) and averaged per subbasin in HEC-HMS. The impervious areas ranged from 0.02 to 1.41 percent. Figure III-3-7 summarizes each subbasin's name, area, and area-weighted CN.

3.4.3 Time of Concentration

The time of concentration (Tc) for each subbasin was calculated using the Natural Resources Conservation Service (NRCS) method, in accordance with TxDOT guidance (TxDOT, 2019). Tc was determined by evaluating both shallow concentrated flow and channelized flow along the primary flow path within each subbasin.

Flow lengths and slopes used in the analysis were obtained from the HEC-HMS delineation and verified in ArcGIS Pro. Hydraulic parameters for Tc calculations were selected based on TxDOT guidance for unpaved conditions, including a K value of 16.13 (shallow concentrated flow) and a Manning's roughness coefficient (n) of 0.1. The Manning roughness coefficient (taken from TxDOT, 2019) was selected to reflect the following existing conditions: lack of clear defined flow

path for much of the watershed (a lot of flow is overland in shrub or agriculture fields), road and pipelines disturbances crossing flow paths and causing obstructions, intermittent agricultural fields with rows that are cross-slope to the larger flow path, and observation of small berms on almost every property boundary in the area. Tc was converted to lag time following TxDOT guidance for use in HMS.

Subbasin areas, weighted CN, and lag time values are summarized in Table III-3-2.

Table III-3-2. Subbasin Characteristics

Subbasin Name	Area (acres)	CN	Lag Time (minutes)
SB1	293	70	120
SB2	360	74	108
SB3	311	72	223
SB4	164	68	93
SB5	331	68	188
SB6	241	68	110
SB7	157	69	104
SB8	176	68	60
SB9	160	68	103
SB10	440	79	111
SB11	268	71	128
SB12	621	68	174
SB13	229	74	163
SB14	36	99	38

3.4.4 Channel Model Inputs

Seven primary channel reaches are modeled. Reach lengths (680 to 12,373 feet) and slopes (0.002 to 0.004 ft/ft) were calculated in HEC-HMS. The Muskingum-Cunge method was applied for flow routing using a Manning's roughness coefficient of 0.1 as discussed above.

Infiltration along the reaches was estimated using percolation rates derived from SSURGO soil data (NRCS, 2024) ranging from 1.285 to 1.478 cubic feet per second (cfs) per acre. These reach parameters, including slope, length, percolation, and roughness, were used in HEC-HMS to simulate flow propagation and losses along the channels. This approach ensures that runoff

contributions are appropriately routed and attenuated within the modeled drainage network. Reach hydraulic properties used in the analysis are summarized in Table III-3-3.

Table III-3-3. Reach Characteristics

Reach	Length (feet)	Slope (ft/ft)	Percolation Rate (cfs/acre)
Reach-1	12,373	0.003	1.4
Reach-2	6,296	0.004	1.3
Reach-3	6,568	0.002	1.5
Reach-4	817	0.003	1.3
Reach-5	5,365	0.002	1.4
Reach-6	7,014	0.002	1.3
Reach-7	4,327	0.003	1.4
Reach-8	6865	0.003	1.3

3.4.5 Storage and Evaporation

A storage element was included in the HEC-HMS model to represent temporary detention and attenuation of runoff from the delineated watershed. This location is approximately 2,500 feet upstream of the site where a road was constructed and ponds were possibly excavated on the west side. The floodplain mapping indicates that flow is mostly cut off in this location (Figure III-3-1). The storage element was modeled using the Elevation–Storage–Area method, with characteristics such as elevation, storage area, and volume derived from contours generated from the LiDAR 3-meter DEM. Properties are summarized in Table III-3-4.

Evaporation from the storage surface was incorporated using average monthly precipitation data obtained from the Texas Water Development Board for quadrangle 604D, collected from June 1995 to June 2025 (Attachment I/II-2). Monthly averages were applied in HEC-HMS to account for water losses and provide a realistic simulation of runoff timing and peak flow response.

Table III-3-4. Storage Characteristics

Elevation (feet msl)	Area (acres)	Volume (acre-feet)
2,680.00	2.52	0.00
2,681.00	5.93	4.11
2,682.00	10.84	12.37
2,683.00	20.02	27.56
2,684.00	20.61	47.88
2,685.00	27.60	71.90
2,686.00	33.95	102.62
2,687.00	37.54	138.35
2,688.00	44.67	179.40
2,689.00	50.93	227.16

msl = Above mean sea level

3.4.6 Run-On Channel

The run-on channel was modeled in HEC-HMS. Like the other reaches in the model, this channel was also modeled with the Muskingum-Cunge routing method and sized as shown on the drawings (Appendix III-3-A). Much of the upstream watershed modeled does not make it to the run-on channel; it is infiltrated or captured by the storage area before it can reach the site. The Manning n used for the channel was 0.03 to represent a straight, constructed, vegetated channel. The channel is designed to be wide to minimize flow velocities and flow depths. Channel design is summarized in Table III-3-5. As the channel travels around the site, the depth and width remain constant but the channel slope changes to accommodate existing grade.

Table III-3-5. Run-On Control Channel Characteristics

SSA ID	Slope	Manning n	Depth (feet)	Bottom Width (feet)	Side Slope	Maximum Velocity (ft/s)	Maximum Flow Depth (feet)	Maximum Shear Stress (psf)
RunOn Channel-a	0.11%	0.03	3.5	120	3H:1V	1.12	0.60	0.04
Runon Channel-b	0.20%	0.03	3.5	120	3H:1V	1.38	0.5	0.06
Runon Channel-c	0.41%	0.03	3.5	120	3H:1V	1.75	0.4	0.10
Runon Channel-d	0.44%	0.03	3.5	120	3H:1V	1.75	0.4	0.11

ft/s = Feet per second
psf = Pounds per square foot

In addition to the hydraulic calculations conducted in SSA, an analysis of shear stress conditions along the channel bottom was conducted for the run-on channel. The analysis was conducted in accordance with TxDOT (2019). Maximum shear stress within each channel reach is represented as follows:

$$\tau_d = \gamma d S \quad (1)$$

where τ_d = maximum shear stress (pounds per square foot [psf])
γ = unit weight of water (62.4 pounds per cubic foot [pcf])
d = maximum flow depth (feet)
S = channel slope (ft/ft)

Per TxDOT (2019), the permissible shear stress in a channel is related to the channel lining and its associated retardance class. For the purpose of this analysis, the lining is assumed to be a grass-legume mixture (good stand, uncut, 4 to 5 inches). The associated retardance class is D. The permissible shear stress for Retardance Class D vegetation is 0.60 psf. The calculated maximum shear stress for each run-on channel section is listed in Table III-3-5; permissible shear stress is not exceeded in any reach of the channel.

While the run-on channel and pond handle potential run-on, they also provide the stormwater management and retention for portions of the property that are outside the perimeter berm (36 acres).

The run-on control system will be constructed at the beginning of site development. The run-on channel and retention pond, along with the site perimeter berm, will prevent run-on stormwater from contacting the active landfill (Appendix III-3-C).

3.4.7 Run-On Control Pond

The run-on control pond was modeled in HMS. Table III-3-6 provides the basis for design of the retention basin. The total inflow volume to the pond is approximately 754,000 cubic feet. As a factor of safety, 10 percent of the runoff volume (75,400 cubic feet) is added to the required storage to account for sediment (0.5 foot of depth in the pond). This brings the total required storage volume to 829,400 cubic yards (3.5 feet of depth in the pond). As the pond is 8 feet deep, this leaves 4.5 feet of freeboard in the pond below grade. Above grade, a minimum 2-foot berm surrounds the pond, providing an additional 2 feet of freeboard (Table III-3-6).

Table III-3-6. Run-On Retention Pond Depth-Storage Characteristics

Elevation (feet msl)	Depth (feet)	Storage Volume (cubic feet)	Notes
2,641	0	0	Top of sediment storage: 2,641.5 feet msl
2,642	1	195,750	
2,643	2	423,522	
2,644	3	659,448	Sediment storage plus 25-year 24-hour storm: WSE at 2,644.5 feet msl (3.5 ft)
2,645	4	903,582	
2,646	5	1,155,978	
2,647	6	1,416,717	
2,648	7	1,685,880	
2,649	8	1,963,548	Existing grade/base of above grade berm
2,653	12		Top of berm

msl = Above mean sea level

3.5 Runoff Control System Design

In accordance with 30 TAC 330.305(c), the site will provide and maintain a runoff management system to collect and control runoff from a 25-year, 24-hour storm, as described in the following subsections. The sizing calculations for the non-contact runoff system were completed for full landfill closure (when runoff is anticipated to be highest), but the main stormwater channels and ponds will be constructed at the beginning of site development to manage runoff during landfill operations. As described above, water does not currently leave the site. Therefore, the non-contact runoff system is designed to retain runoff from the 25-year 24-hour storm on-site in retention ponds.

The proposed management system uses four conveyance channels and three retention ponds for on-site stormwater. Culverts and low flow crossings are used to convey water into the main channels from the landfill cover. Additionally, site grading outside the landfill footprint will convey water by sheet flow to the channels.

Stormwater on the landfill surface is designed to travel by sheet flow into sets of drainage swales, which convey water to a lined downdrain at the center of each of the four faces. Water is carried from the base of the landfill cover across the access road through low-flow crossings

and culverts, which discharge into one of three main channels. There are three main stormwater channels. The West Channel originates at the northwest corner of the landfill and conveys water south, discharging into a retention pond near the southwest corner of the landfill (Pond 1). The North Channel also originates at the northwest corner of the landfill, but conveys water northeast along the landfill to discharge into a retention pond (Pond 2) on the northeast side of the landfill. The South Channel originates at the southwest corner of the landfill, traveling northeast to a pond southeast of the landfill (Pond 3). There is a small channel on the east side of the landfill (East Channel) that does not receive water from the landfill cover; it is there to manage stormwater runoff between Pond 2 and Pond 3. This channel discharges into Pond 3.

All four channels and three ponds will be constructed at the beginning of construction. As landfill cells are completed and final cover is placed, the final cover stormwater infrastructure will be installed on that cell to convey water off the slopes and into the channels.

In RG-471, TCEQ has identified acceptable hydrologic analysis methods. For this report, HEC-1 modeling was selected. Autodesk's SSA software program is a combined hydrology and hydraulics analysis program frequently used in the design of culverts and channels for stormwater management systems. SSA includes many different hydrologic calculations methods; it was used to run the HEC-1 modeling methodology. The required inputs for HEC-1 include the watershed area, curve number, watershed lag time, and impervious area.

3.5.1 Study Area and Watershed Delineation

The non-contact stormwater analysis inputs and generated outputs are provided in Appendix III-3-D1. The non-contact runoff model is divided into 29 subbasins based on the stormwater infrastructure designed around the site and on the final cover. The design rainfall used is described in Section 3.3. As with the run-on control modeling, the watershed lag time was calculated using the method outlined in Chapter 3 of TR-55 for each subbasin.

3.5.2 Curve Number

Because on-site soil will be used for closure, the hydrologic soil group is assumed to be Group B. For final cover areas, the CN was set to 85 per RG-417. For areas within the perimeter berm that are not the final cover (therefore, slopes are in the 1 to 2 percent range), a CN of 77 was used to reflect final conditions. For watersheds that have a pond within them, the footprint of the pond is considered to be impervious. The composite CN (area-weighted average) for each basin was calculated (Table III-3-7).

Table III-3-7. Runoff Watersheds Characteristics

Pond	Model Subbasin (SSA ID)	Subbasin Area (acres)	Pond Footprint (acres)	Percentage Impervious	Effective CN
Pond 1	SB2	37.39	5.1	14%	80
Pond 2	SB-Pond2	10.8	5.3	49%	88
Pond 3	SB-Pond3	8.76	5.3	60%	91

3.5.3 Time of Concentration

The Tc for each subbasin was calculated using the NRCS method in accordance with TxDOT guidance (TxDOT, 2019), as with the run-on model. Tc was input to the SSA model, and SSA calculated the required lag time.

3.5.4 Runoff Channel Sizing

SSA was used to size the channels using the Manning equation. Muskingham-Cunge routing was specified in the model for conveying flow between channel sections. Given the short flow times of the on-site model and to be conservative in channel sizing, no percolation from the on-site channels is considered. The main channels will be earthen with natural vegetation. The relatively shallow channel slopes (Table III-3-8) provide for low velocities and minimize erosion within the channels. Channels provide a minimum of 12 inches of freeboard above the peak discharge in the channel (see channel profiles in Appendix III-3-A for illustrated flow depth along the channel). The peak discharges exiting each of the main channels are summarized in Table III-3-8. The shear stress for each channel was calculated as described in Section 3.4. Consistent with the run-on channel, the lining is assumed to be a grass-legume mixture (good stand, uncut, 4 to 5 inches). The associated retardance class is D. The permissible shear stress for Retardance Class D Vegetation is 0.60 psf; permissible shear stress is not exceeded in the channels.

Table III-3-8. Channel Characteristics

Channel	SSA ID	Slope	Depth (feet)	Bottom Width (feet)	Side Slope	Peak Discharge (cfs)	Peak Flow Depth (feet)	Peak Flow Velocity (ft/s)	Maximum Shear Stress (psf)
West	West-a to West-d	0.5%	2.5–9	5	3H:1V	77.71	1.9	4.2	0.53
North	North-a to North-g	0.5%	3–9.5	6	3H:1V	82.63	1.7	4.3	0.59
South	South-a to South-g	0.5%	3–6.2	5	3H:1V	77.44	1.8	4.0	0.56
East	East-a	0.4%	3–3.5	5	3H:1V	8.70	0.63	2.10	0.15

cfs = Cubic feet per second
ft/s = Feet per second
psf = Pounds per square foot

Several culverts will be provided to manage flow under access roads, either as the flow enters the retention ponds or as it flows from downdrains into the main channels (Table III-3-9). Summary reports for sizing of the channels and culverts are provided in Appendix III-3-D2.

Table III-3-9. Culvert Characteristics

SSA Culvert ID	Length (feet)	Slope (%)	Diameter (feet)	Number of Barrels	Peak Discharge (cfs)	Maximum Flow Depth (feet)
West-Culv-a	89	0.5	3	3	85.6	1.8
West-Culv-b	57	13.6	2	2	49.4	0.8
North-Culv-a	50	10.8	1.5	2	12.4	0.4
North-Culv-b	32	30.2	1.5	2	8.4	0.3
North-Culv-c	41	24.1	2	2	49.9	0.7
North-Culv-d	41	34.2	1.5	2	8.4	0.3
North-Culv-e	78	19.2	1.5	2	12.0	0.4
South-Culv-a	60	14.0	1.5	2	8.2	0.3
South-Culv-b	65	19.4	1.5	2	8.4	0.3
South-Culv-c	72	20.7	2	2	47.5	0.7
South-Culv-d	79	21.8	1.5	2	8.4	0.3
South-Culv-e	86	22.5	1.5	2	10.0	0.3
Downdrain-2-Cul-a	160	10.3	2	2	49.4	0.8

cfs = Cubic feet per second

3.5.5 Runoff Stormwater Pond Sizing

The volume of stormwater entering each pond is provided in Appendix III-3-D1. Between the three retention ponds, there is enough storage to retain the 25-year, 24-hour runoff volume within the property perimeter boundary on-site. 10 percent of the calculated runoff water volume is added to the required storage to account for accumulated sediment over time (as was done for the run-on control system). Depth and storage relationships for the ponds are provided in Tables III-3-10 through III-3-12.

Table III-3-10. Pond 1 Retention Pond Depth-Storage Characteristics

Elevation (feet msl)	Depth (feet)	Storage Volume (cubic feet)	Notes
2,650	0	0	Top of sediment storage = 2,650.5 feet msl (0.5 foot)
2,651	1	101,393	
2,652	2	208,207	
2,653	3	320,534	
2,654	4	438,427	Sediment storage plus 25-year, 24-hour storm WSE = 2,654.7 feet msl (4.7 feet)
2,655	5	561,499	
2,656	6		Channel invert elevation
2,667	17		Existing grade
2,670	20		Top of berm

msl = Above mean sea level

Table III-3-11. Pond 2 Retention Pond Depth-Storage Characteristics

Elevation (feet msl)	Depth (feet)	Storage Volume (cubic feet)	Notes
2,642	0	0	Top of sediment storage = 2,642.5 feet msl (0.5 foot)
2,643	1	91,545	
2,644	2	190,235	
2,645	3	296,137	Sediment storage plus 25-year, 24-hour storm WSE = 2,645.7 feet msl (3.7 feet)
2,646	4	409,319	
2,647	5	529,850	
2,648	6	657,797	Channel invert elevation
2,655.5	15.5		Existing grade
2,658.5	17.5		Top of berm

msl = Above mean sea level

Table III-3-12. Pond 3 Retention Pond Depth-Storage Characteristics

Elevation (feet msl)	Depth (feet)	Storage Volume (cubic feet)	Notes
2,640	0	0	Top of sediment storage = 2,640.3 feet msl (0.3 foot)
2,641	1	129,055	
2,642	2	264,842	Sediment storage plus 25-year, 24-hour storm WSE = 2,642.0 feet msl (2.0 feet)
2,643	3	407,434	
2,644	4	556,902	
2,645	5	713,319	
2,646	6	876,756	Channel invert elevation
2,651	11		Existing grade
2,654	14		Top of berm

msl = Above mean sea level

4. Final Cover Erosion and Soil Loss

In accordance with 30 TAC 330.305(d), the site will provide erosion control on the top deck and external embankment slopes of the landfill, as described in the following subsections. 30 TAC 330.305(d)(2) requires that top surfaces and external embankment slopes be designed to minimize erosion and soil loss through the use of appropriate side slopes, vegetation, and other controls, as necessary. Soil erosion loss in tons per acre is to be calculated using the SCS Universal Soil Loss Equation (USLE). Potential soil loss should not exceed permissible soil loss.

4.1 Model Description and Requirements

USLE was used to evaluate soil loss and erosion for this study. USLE is a mathematical model developed by the U.S. Department of Agriculture (USDA) for the purpose of estimating average annual rill and inter-rill erosion where mineral soil is exposed to the erosive forces of rain drops and surface runoff produced by Hortonian overland flow (USDA, 2013).

Average annual erosion rate is calculated using the empirical USLE:

$$A = RKLSCP \quad (2)$$

where A = average annual erosion rate (mass/area/year) for the slope length
R = erosivity factor (erosivity unit/area)
K = soil erodibility factor (mass/erosivity unit)
L = slope length factor (dimensionless)
S = slope steepness factor (dimensionless)
C = cover management factor (dimensionless)
P = support practice factor (dimensionless)

4.1.1 Model Assumptions

The following assumptions apply to the use of the USLE mathematical model:

- Daily values of temperature and precipitation vary linearly.
- Rainfall intensity is uniform.
- Slope steepness is uniform.
- Rill erosion varies linearly with steepness.

- Inter-rill erosion and deposition in rill areas occur simultaneously.
- Detachment and deposition by flow in rill areas cannot occur simultaneously.

4.1.2 Model Inputs

The erosivity for a given location is dependent on the long-term averages of the intensity and distribution of rainfall at a specific location. Climate erosivity factor (R) for this site was determined following USDA (1997). Based on the isoerodent map (included in Appendix III-3-E), the value was found to be 41 hundreds of ton-in/acre-yr).

An NRCS custom soil resource report was completed in 2014 (Appendix III-3-E), which documents the presence of the following five soil types:

- Hoban silty clay loam
- Hodgins silty clay loam
- Orla clay loam
- Reeves clay loam
- Upton gravelly loam

Parameters for the soil types identified in the NRCS study are included in Appendix III-3-E. Soil erodibility factors are summarized in Table III-3-13.

Table III-3-13. Soil Erodibility Factor for Five Soil Types in WST Landfill

Map Unit Symbol	Map Unit Name	Soil Erodibility Factor (K)
16	Hoban silty clay loam, 0 to 1 percent slopes	0.28
18	Hodgins silty clay loam, 0 to 1 percent slopes	0.37
26	Orla clay loam, 0 to 1 percent slopes	0.32
34	Reeves clay loam, 0 to 1 percent slopes	0.28
41	Upton gravelly loam, 0 to 2 percent slopes	0.20

The topographic factor, LS, is a function of the steepness and length of the slope. Based on the percent slope (15 percent) and the maximum slope length (300 feet) and following USDA (1997), the LS was found to be 4.52 and 5.63 for long-term and active construction soil loss, respectively. The reference tables are included in Appendix III-3-E.

Cover management factor C was determined using USDA (1978). Assuming the vegetative canopy to be tall weeds or short bush with average drop fall height of 20 inches and 50 percent cover, and ground cover 40 and 80 percent for intermediate and final condition of the vegetation, respectively, the determined values are 0.07 and 0.012, respectively.

Support practice system (P) was determined to be 0.9 based on the steepness of the slope, the slope length and the cover type.

The site topography included in this analysis was taken directly from the final surface grading as shown on Drawing C-14 (Appendix III-4-A). The final cover surface design includes 15 percent slopes that are broken up by drainage swales to manage stormwater and control erosion. Spacing between swales is 300 feet, which represents the slope length used in the model.

4.1.3 Solution

An analysis was completed using these data to determine the average annual erosion for the surface barrier for each of the soil types. The results of these analyses are summarized in Table III-3-14.

Table III-3-14. Soil Loss Analysis Results

	Soil Loss Analysis Results (tons per acre per year)			
	Landfill Side Slopes (15%)		Landfill Top Deck (2%)	External Embankment (3H:1V)
Soil Type	Intermediate Cover	Final Cover	Final Cover	Final Cover
Hoban silty clay loam	1.37	1.10	0.05	0.39
Hodgins silty clay loam	1.81	1.45	0.07	0.52
Orla clay loam	1.56	1.25	0.06	0.45
Reeves clay loam	1.37	1.10	0.05	0.39
Upton gravelly loam	0.98	0.78	0.04	0.28

The calculated annual erosion of the final cover phase ranges from 0.04 to 0.74 ton per acre per year (ton/ac/yr), and soil loss during intermediate phase ranges between 2.91 and 5.38 ton/ac/yr, which is below the 3 ton/ac/yr and 50 ton/ac/yr guidance, respectively, following TCEQ (2018). As the soil loss due to erosion is within the limit of the applicable standard for all the soil present in the target area, the erosion condition will meet the standard regardless of the soil type used in the future as cover material.

4.1.4 Stabilization Measures

Site stormwater channels and all ponds will be installed during initial construction as described above. These channels will manage run-on and runoff throughout the landfill life. During landfill operations, silt fences, grading, and erosion repair will be used to manage erosion losses as needed. Silt fences or straw waddles will be placed around the site soil stockpile as needed. Due to the site berm surrounding the entire site, off-site movement of soil is restricted.

Stabilization measures on the final cover will be installed in stages as cells are closed. During interim conditions (between placement of final waste/intermediate cover and installation of final cover), landfill staff will monitor erosion and repair slopes as needed. As cells are closed, the final cover, including the runoff system described in Section 2.1.3, will be installed. The design drawings (Appendix III-4-A) show the planned phases of cell closure. Vegetation on the final cover will be installed per the closure plan (Attachment III-8). The only planned temporary erosion control measures are around soil stockpiles. At closure, if soil stockpiles remain, they will either be graded to minimize erosion and seeded or relocated off-site.

5. Stormwater Management System Maintenance

Table III-3-15 provides an inspection schedule for the drainage system.

Table III-3-15. Inspection for Drainage System Components

Drainage System Component	Inspection Schedule
Vegetated areas	Annually (early spring) and after heavy rains
Cover downdrains	Semiannually (early spring and late fall) and after heavy rains
Stormwater benches, channels, and pond emergency spillways	Semiannually (early spring and late fall) and after heavy rains
Stormwater ponds	Annually (late fall) and after heavy rains

Maintenance activities are listed in Table III-3-16. Staff training on inspections and repair is covered in the Site Operating Plan (SOP) (Part IV). Those conducting maintenance on the drainage system will fill out the inspection and maintenance log (Appendix III-3-F). The log will document failing structures, and will record the component inspected, corrective actions taken, the date of inspection, and the condition of the facility. The log will be signed.

This log will be used to determine future maintenance intervals of structures. The log will also be used to determine drainage system problems and evaluate required corrective measures.

Table III-3-16. Scheduled Maintenance and Anticipated Repairs

Drainage System Component	Maintenance and Repairs
Vegetated areas	▪ Inspect all slopes and embankments and replant areas of bare soil or with sparse growth ▪ Armor rill erosion areas with riprap or divert the runoff to a stable area ▪ Inspect and repair downslope of all spreaders and turnouts for erosion ▪ Mow vegetation as needed
Stormwater channels	▪ Remove obstructions, sediment, or debris from stormwater ditches and open channels ▪ Reseed large unvegetated areas ▪ Repair riprap where underlying fabric or gravel is showing or if stones have dislodged
Stormwater ponds	▪ Inspect the embankment for settlement, slope erosion, piping, and slumping ▪ Mow the embankment to control woody vegetation as needed ▪ Remove and dispose of sediments and debris ▪ Repair any slumping side slopes

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Figures

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N

0 1500 3000 ft

Explanation

- Permit boundary
- Cursory boundary
- Landfill footprint

100-year fluvial floodplain depth (feet)

- 0.49 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- 2.0 - 2.5
- 2.5 - 3.0
- 3.0 - 5.0
- ≥ 5.0

Base image: March 6, 2025, ESRI et al.

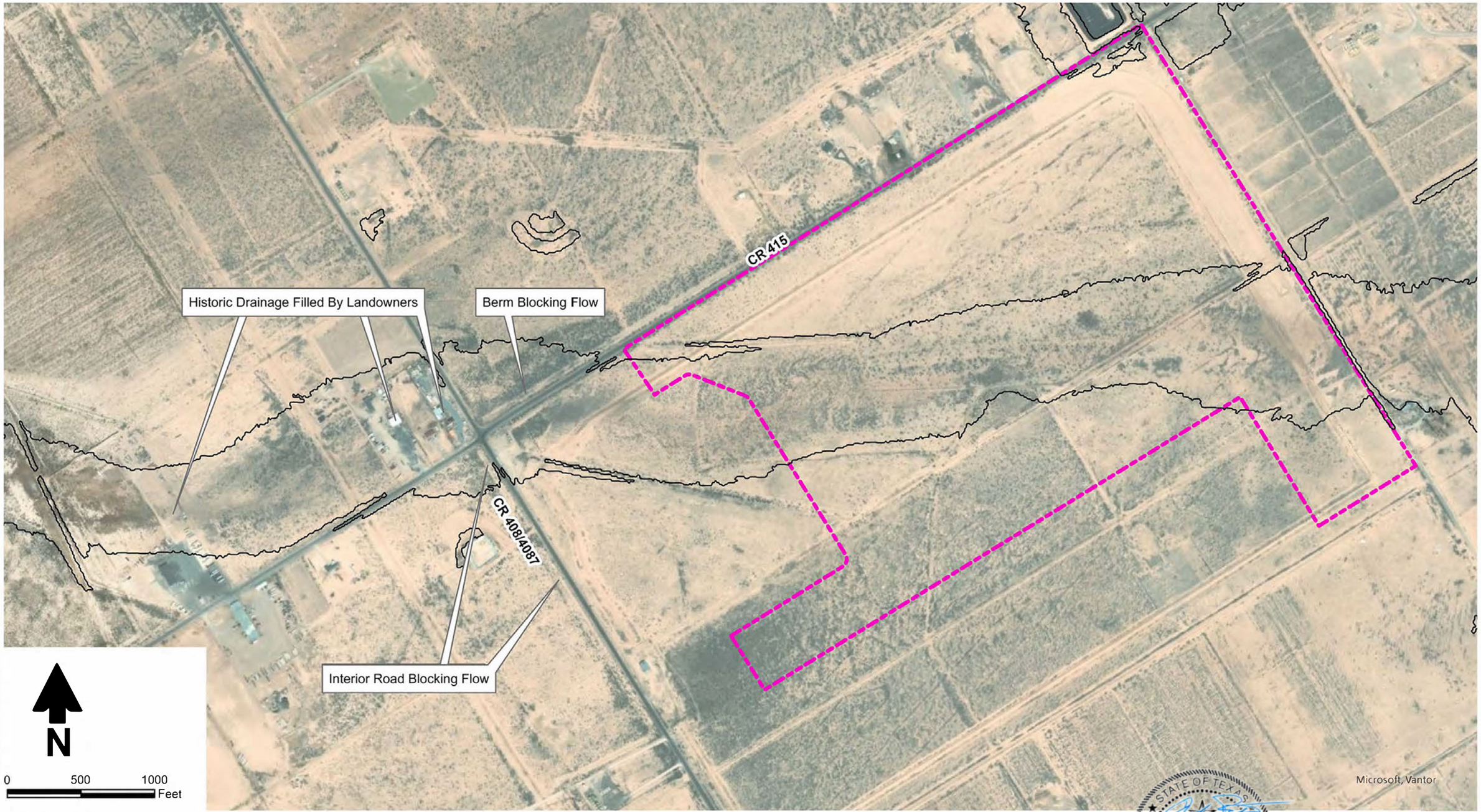
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WST LANDFILL

TWDB 100-Year Fluvial Floodplain Data, Larger Watershed

Figure III-3-1



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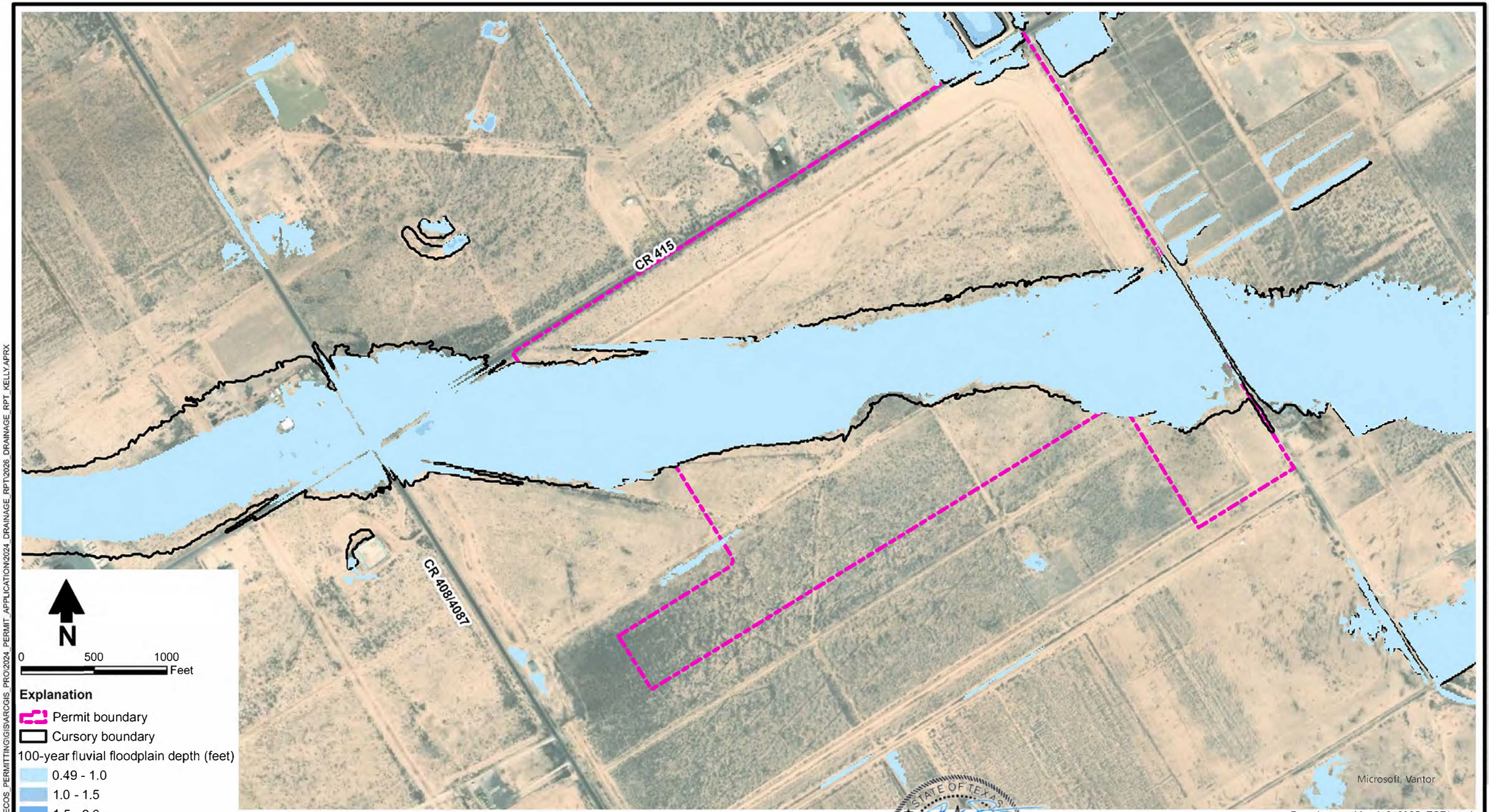
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Rev 2: July 2026 (Rev 0: March 2026)

WST LANDFILL
Aerial Imagery

Figure III-3-2

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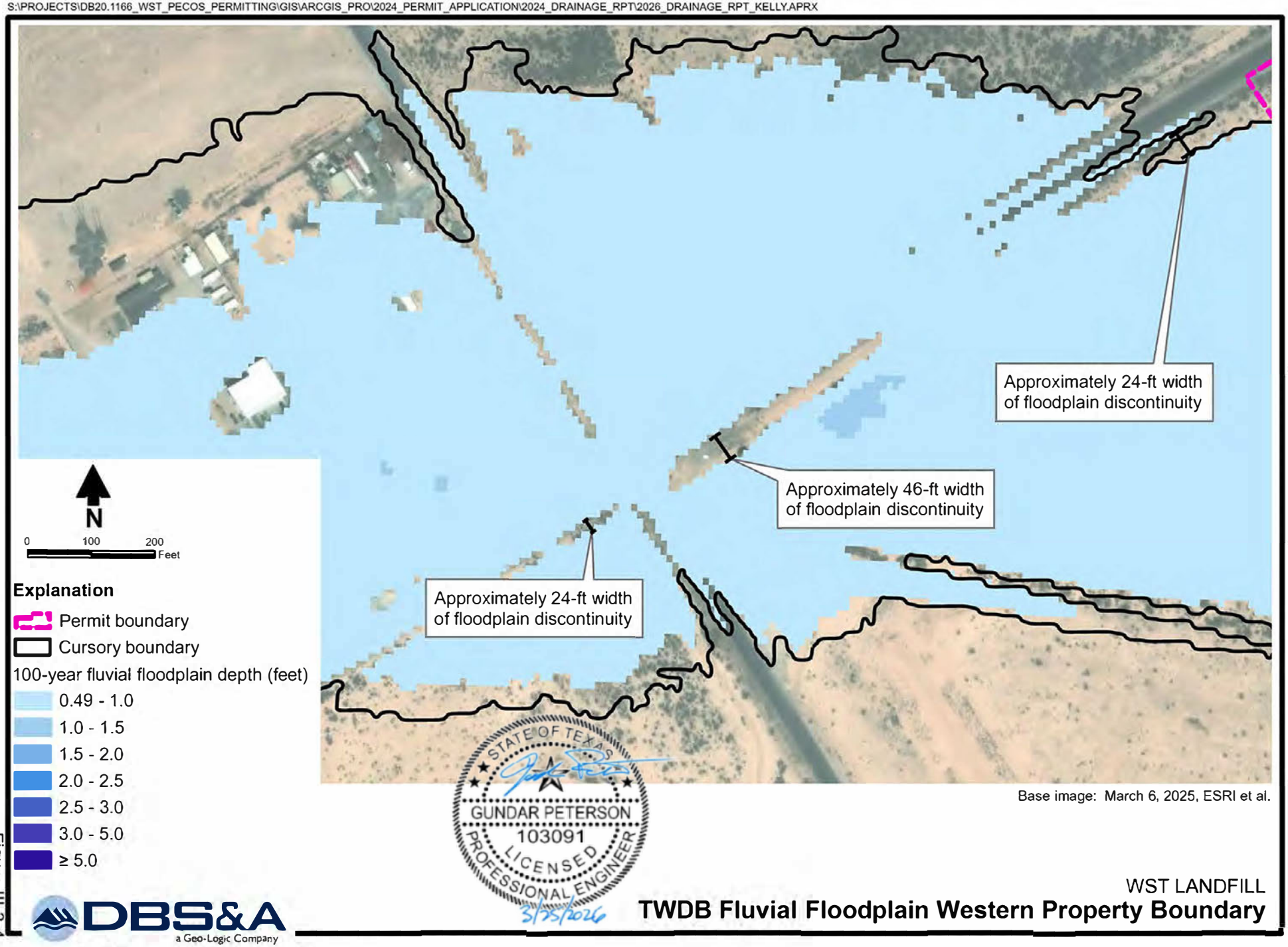
TWDB 100-Year Fluvial Floodplain Data, Site Location

Figure III-3-3

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Figure III-3-4

WST LANDFILL

TWDB Fluvial Floodplain Western Property Boundary

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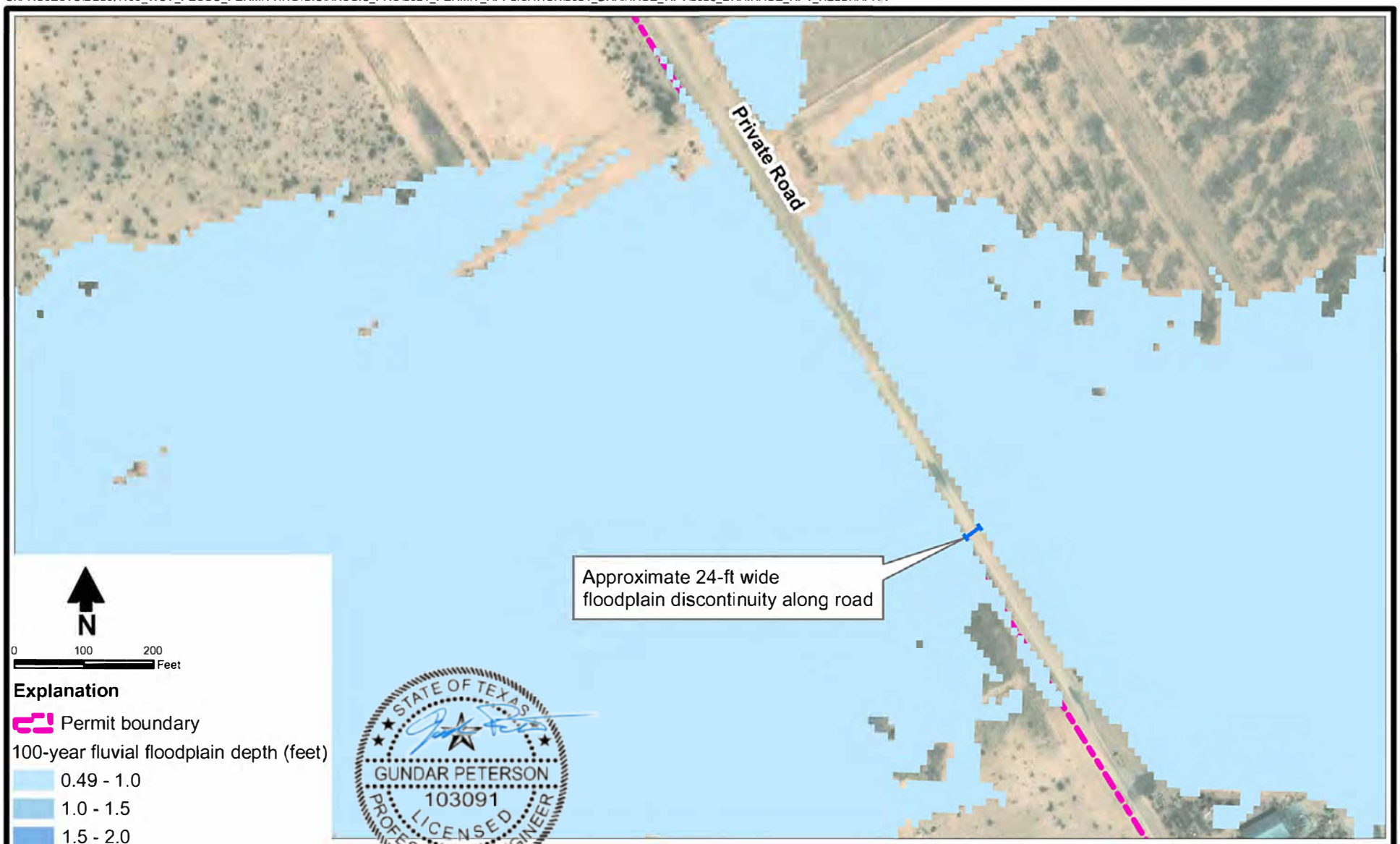


Figure III-3-5

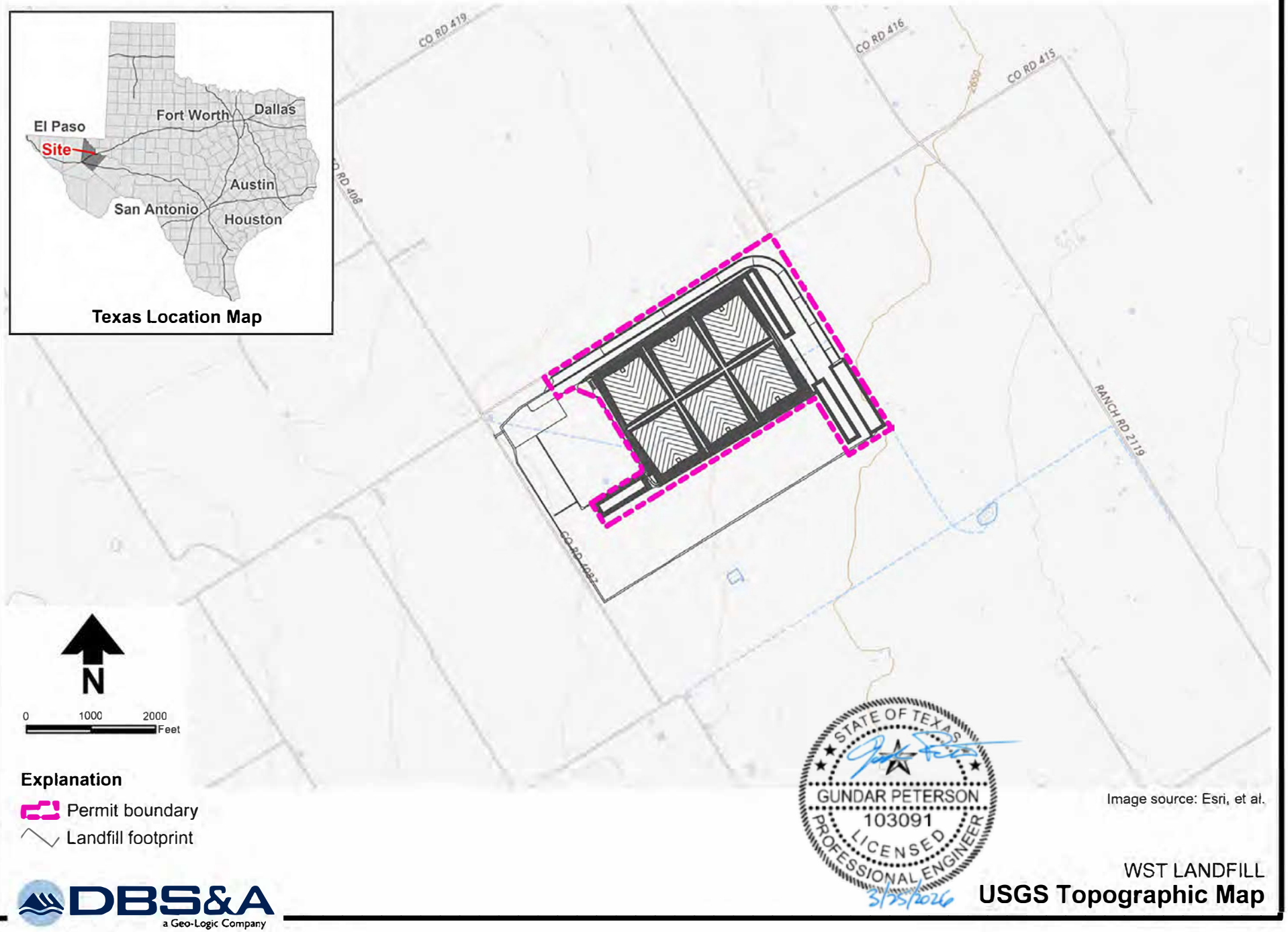
WST LANDFILL

TWDB Fluvial Floodplain Eastern Permit Boundary Discontinuity

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Texas Location Map



Explanation

Permit boundary

Landfill footprint

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Image source: Esri, et al.

Figure III-3-4

WST LANDFILL

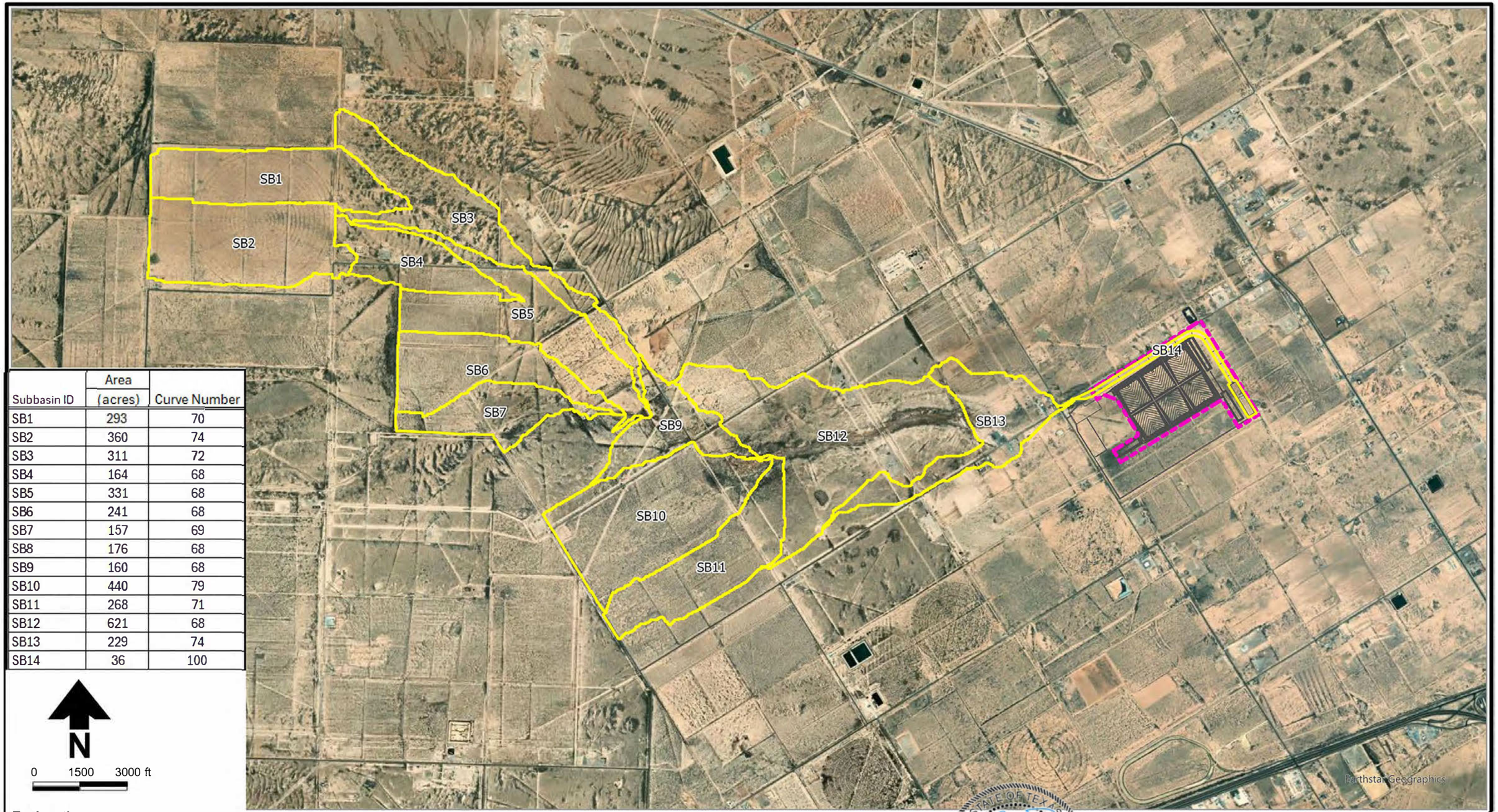
USGS Topographic Map

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Subbasin ID	Area (acres)	Curve Number
SB1	293	70
SB2	360	74
SB3	311	72
SB4	164	68
SB5	331	68
SB6	241	68
SB7	157	69
SB8	176	68
SB9	160	68
SB10	440	79
SB11	268	71
SB12	621	68
SB13	229	74
SB14	36	100



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WST LANDFILL

Run-On Drainage Contributing Watershed Area

Figure III-3-7

CO RD 419

Ranch RD 2119

CO RD 4087

CO RD 415

N

0 1500 3000 ft

Explanation

- Subbasin boundary
- Permit boundary
- Landfill footprint
- Barren land
- Developed, low intensity
- Developed, medium intensity
- Developed, open space
- Grassland/herbaceous
- Scrub/scrub

Base image: March 6, 2025, ESRI et al.

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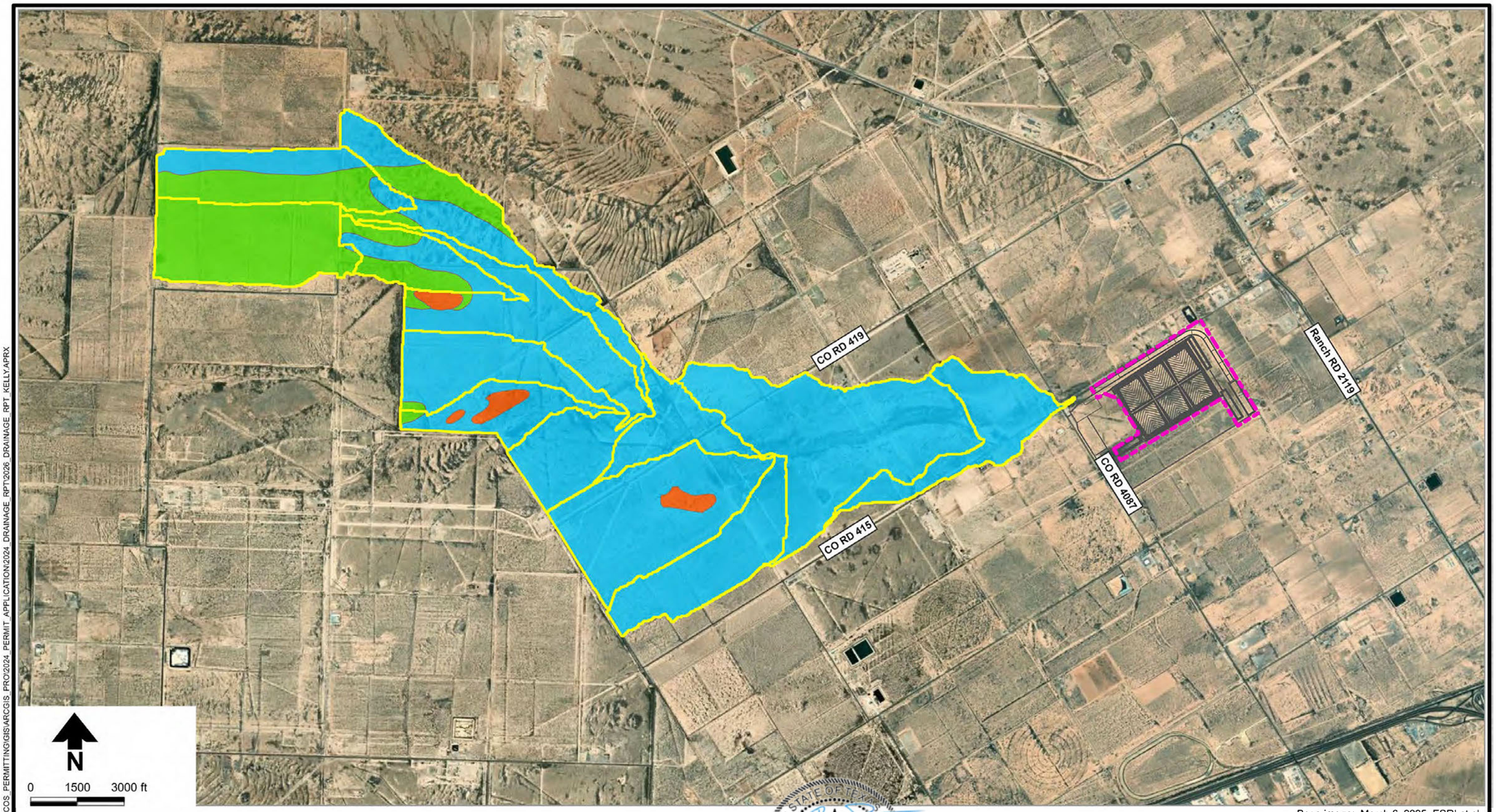
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WST LANDFILL

Land Cover within Contributing Subbasins

Figure III-3-8

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Base image: March 6, 2025, ESRI et al.

STATE OF TEXAS
GUNDAR PETERSON
103091
LICENSED
PROFESSIONAL ENGINEER
3/25/2026

DBS&A
a Geo-Logic Company

3/25/2026 DB20.1166

Rev 2: July 2026 (Rev 0: March 2026)

WST LANDFILL

Hydrologic Soil Group Classifications within Contributing Subbasins

Figure III-3-9

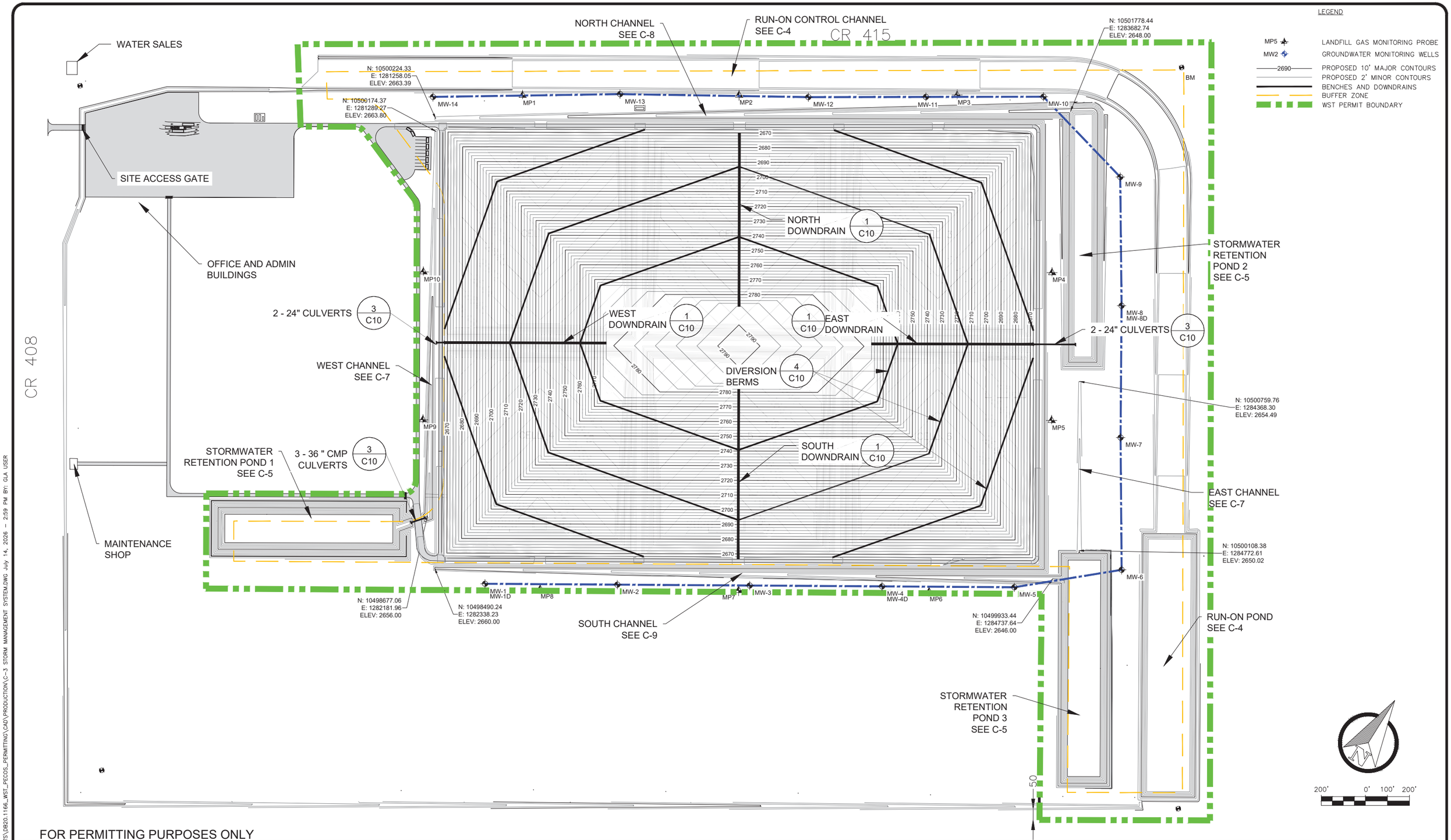
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Appendix III-3-A

Drawings

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FOR PERMITTING PURPOSES ONLY

REV. NO.	DATE	DESCRIPTION	APPROVED BY

DATE OF ISSUE: 07/22/2026
DESIGNED BY: KJ
DRAWN BY: CK, JA, ML
CHECKED BY: GP
APPROVED BY: GP

STATE OF TEXAS GUNDAR PETERSON 103091 LICENSED PROFESSIONAL ENGINEER 7/22/2026

DBS&A a Geo-Logic Company
TEXAS REGISTERED ENGINEERING FIRM F-286

WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

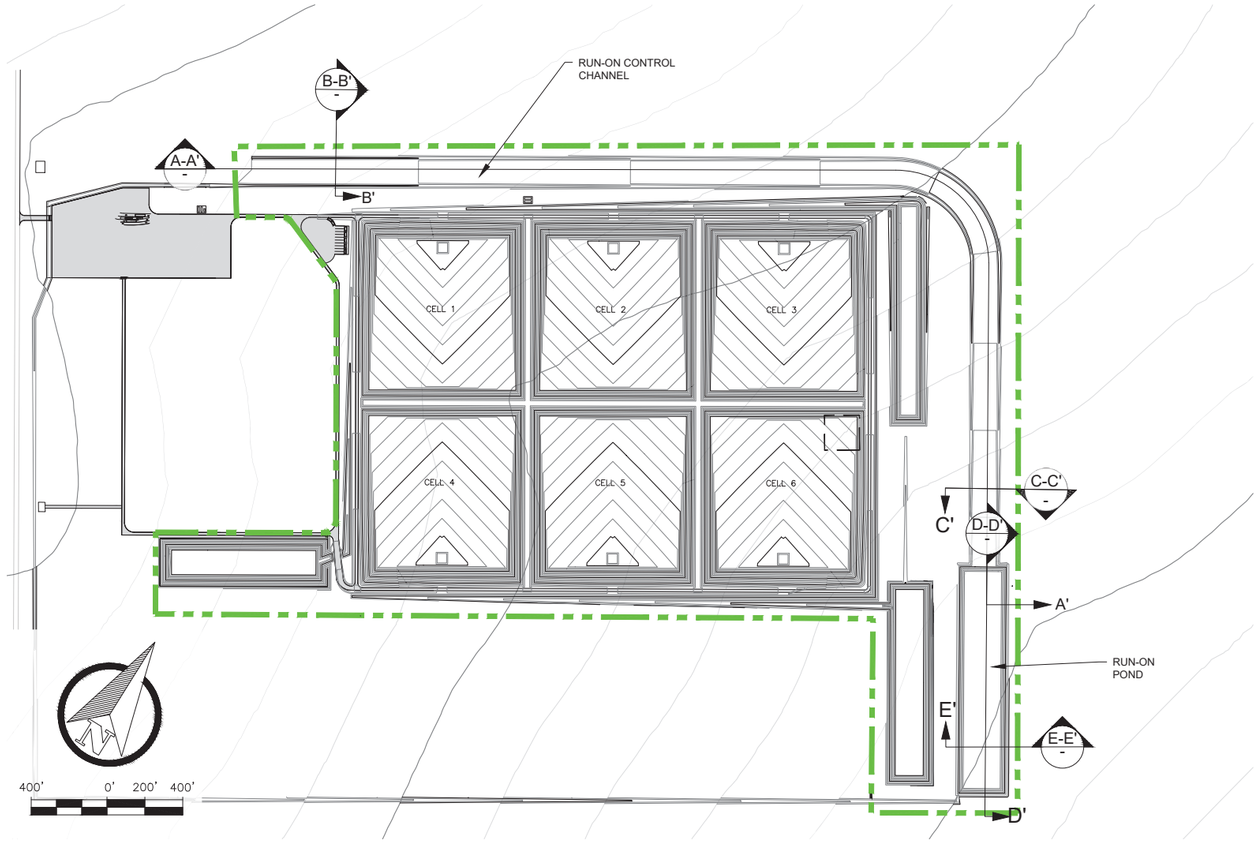
WST LANDFILL
REEVES COUNTY, TEXAS

STORMWATER MANAGEMENT SYSTEM

SHEET 5 OF 21
DWG NO. C-3

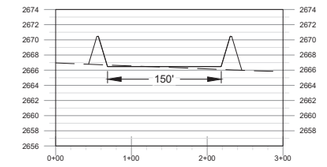
JOB NO. DB20.1166

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LEGEND

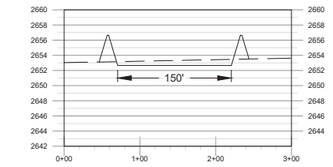
- EXISTING 10' MAJOR CONTOURS
- EXISTING 2' MINOR CONTOURS
- PROPOSED 10' MAJOR CONTOURS
- PROPOSED 2' MINOR CONTOURS
- WST PERMIT BOUNDARY
- EXISTING GRADE
- PROPOSED GRADE
- WATER DEPTH



SECTION B-B'

VERTICAL: 0' 10' 20'

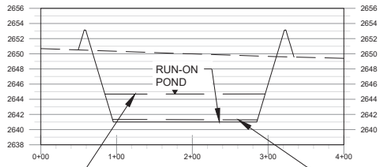
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SECTION C-C'

VERTICAL: 0' 10' 20'

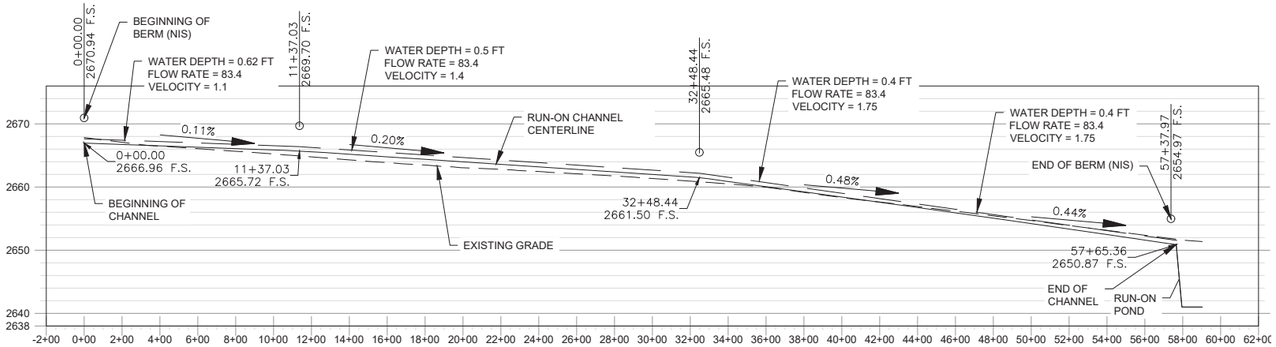
HORIZONTAL: 0' 100' 200'



SECTION E-E'

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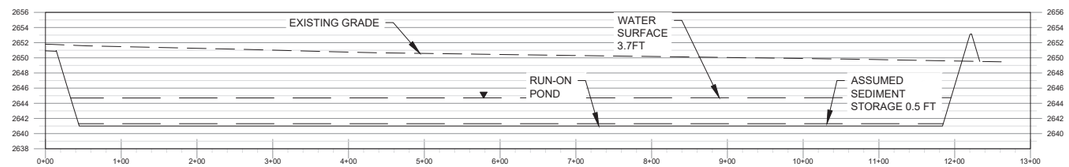
HORIZONTAL: 0' 100' 200'



SECTION A-A'

VERTICAL: 0' 12' 24'

HORIZONTAL: 0' 40' 80'



SECTION D-D'

VERTICAL: 0' 10' 20'

HORIZONTAL: 0' 100' 200'

FOR PERMITTING PURPOSES ONLY

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STATE OF TEXAS GUNDAR PETERSON 103091 LICENSED PROFESSIONAL ENGINEER 7/22/2026

DBS&A a Geo-Logic Company
TEXAS REGISTERED ENGINEERING FIRM F-286

WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

WST LANDFILL
REEVES COUNTY, TEXAS

RUN-ON CHANNEL AND POND

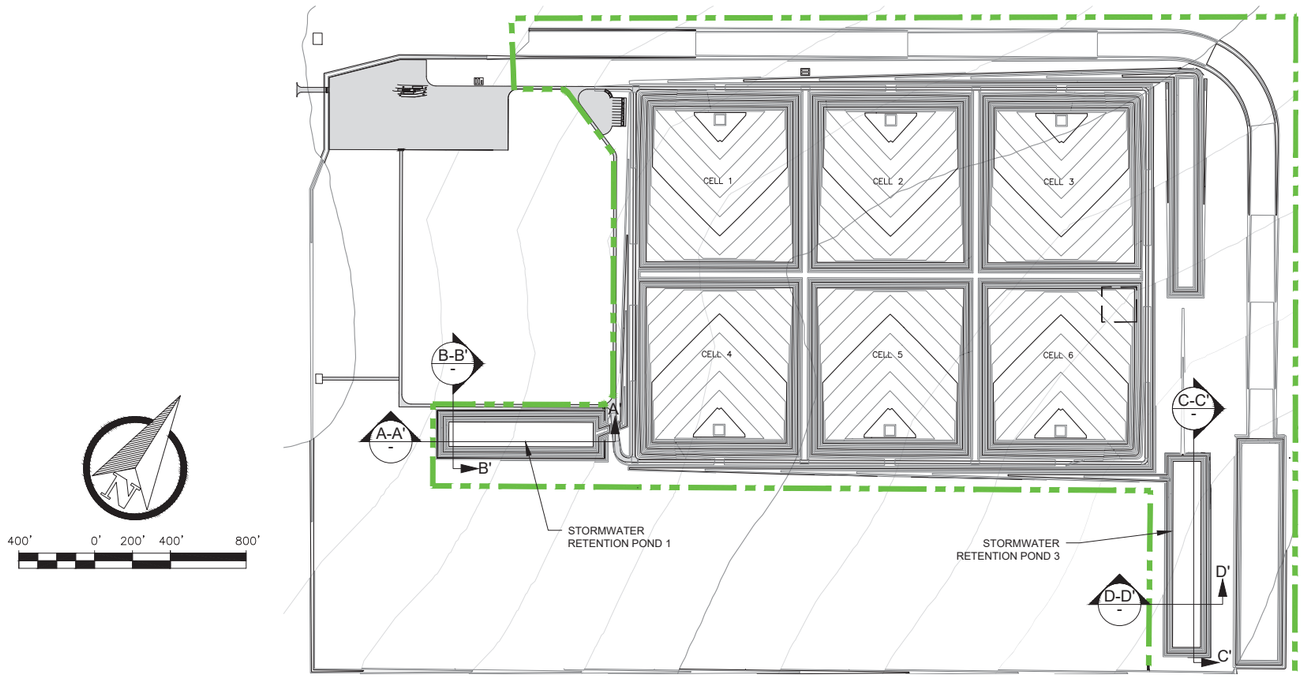
SHEET 6 of 21
DWG NO. C-4

JOB NO.
DB20.1166

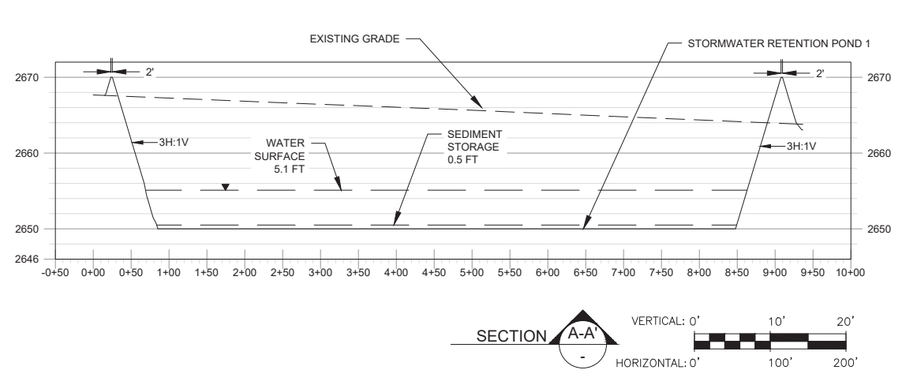
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LEGEND

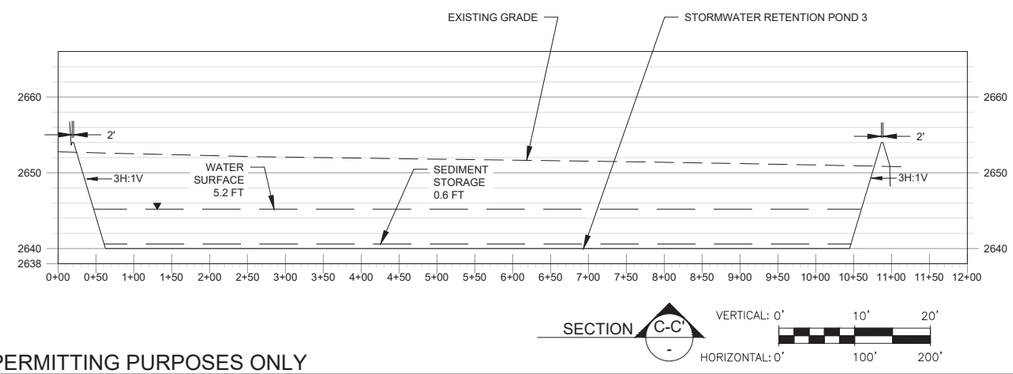
- EXISTING 10' MAJOR CONTOURS
- EXISTING 2' MINOR CONTOURS
- PROPOSED 10' MAJOR CONTOURS
- PROPOSED 2' MINOR CONTOURS
- WST PERMIT BOUNDARY
- EXISTING GRADE
- PROPOSED GRADE
- WATER DEPTH



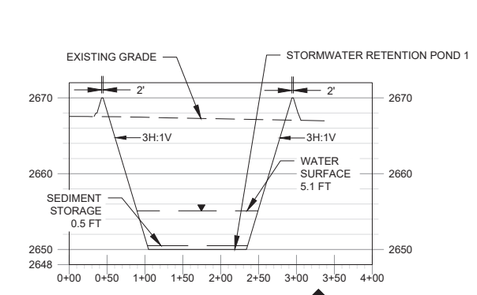
PLAN 1



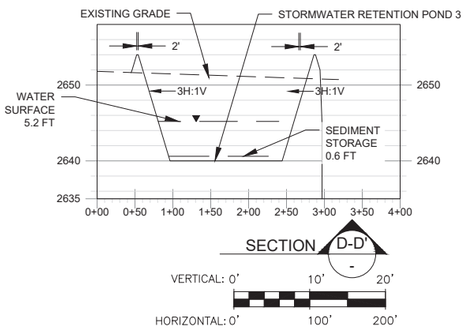
SECTION A-A' -
VERTICAL: 0' 10' 20'
HORIZONTAL: 0' 100' 200'



SECTION C-C' -
VERTICAL: 0' 10' 20'
HORIZONTAL: 0' 100' 200'



SECTION B-B' -
VERTICAL: 0' 10' 20'
HORIZONTAL: 0' 100' 200'



SECTION D-D' -
VERTICAL: 0' 10' 20'
HORIZONTAL: 0' 100' 200'

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DBS&A a Geo-Logic Company
TEXAS REGISTERED ENGINEERING FIRM F-286

WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

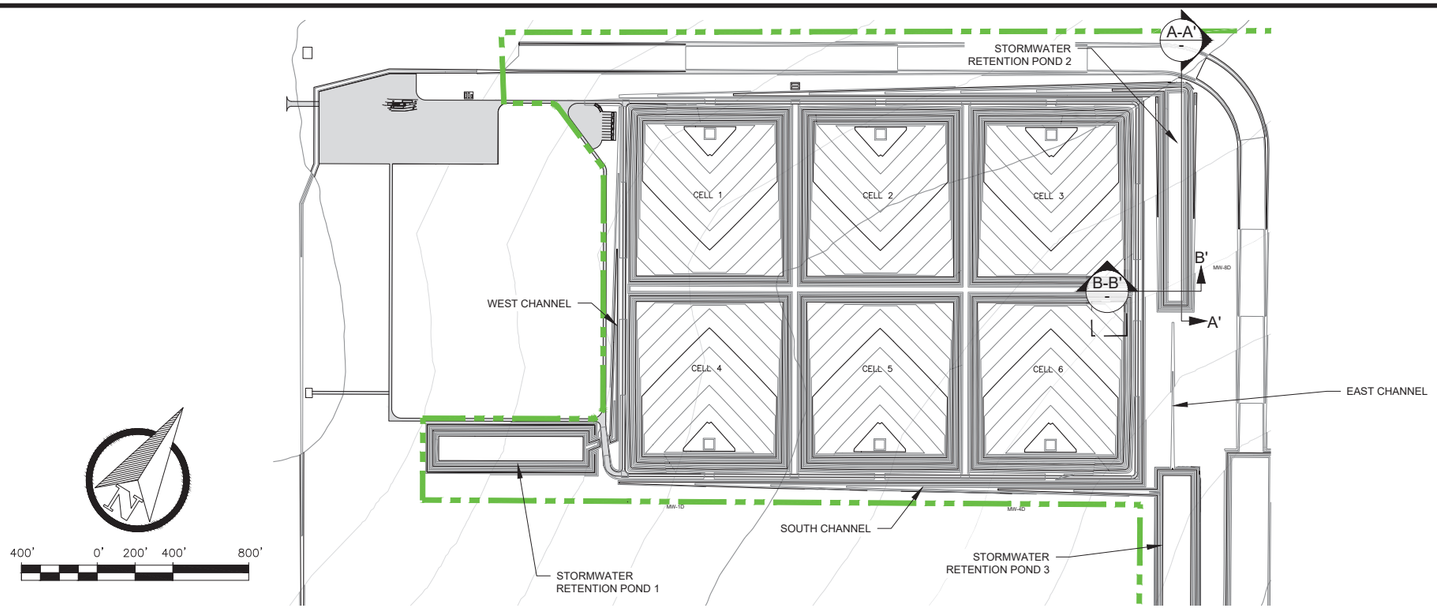
WST LANDFILL
REEVES COUNTY, TEXAS

POND 1 AND 3 LAYOUT

SHEET 7 OF 21
DWG NO. C-5

JOB NO.
DB20.1166

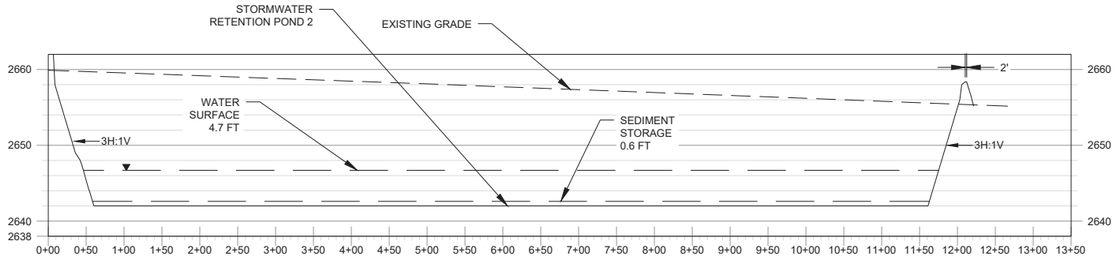
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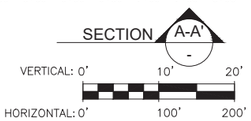
PLAN 1 -

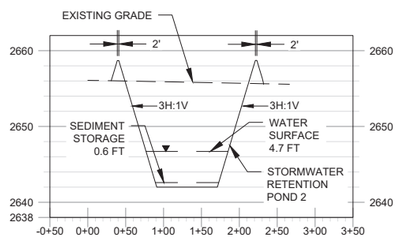
LEGEND

- EXISTING 10' MAJOR CONTOURS
- EXISTING 2' MINOR CONTOURS
- PROPOSED 10' MAJOR CONTOURS
- PROPOSED 2' MINOR CONTOURS
- WST PERMIT BOUNDARY
- EXISTING GRADE
- PROPOSED GRADE
- WATER DEPTH

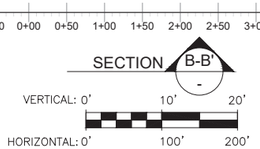


SECTION A-A' -





SECTION B-B' -



FOR PERMITTING PURPOSES ONLY

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STATE OF TEXAS
GUNDAR PETERSON
103091
LICENSED
PROFESSIONAL ENGINEER
7/22/2026

DBS&A
a Geo-Logic Company
TEXAS REGISTERED ENGINEERING FIRM F-286

WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

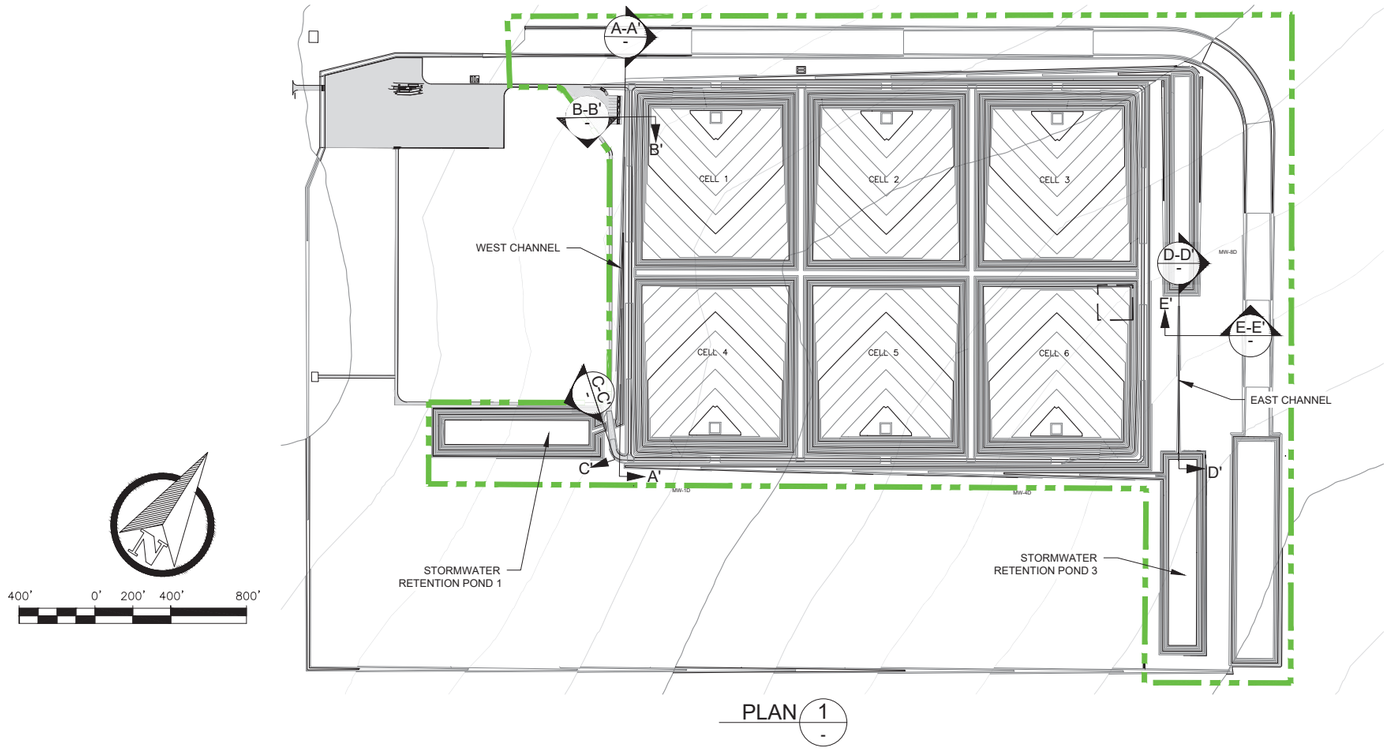
WST LANDFILL
REEVES COUNTY, TEXAS

POND 2 LAYOUT

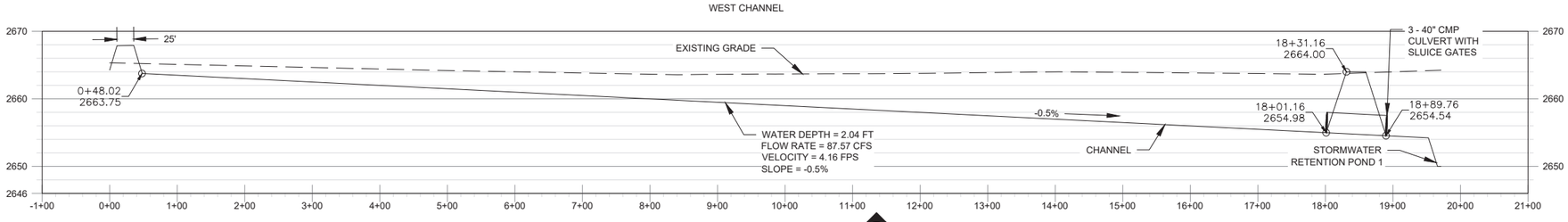
SHEET 8 OF 21
DWG NO. C-6

JOB NO.
DB20.1166

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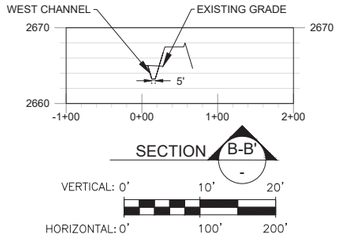


PLAN 1



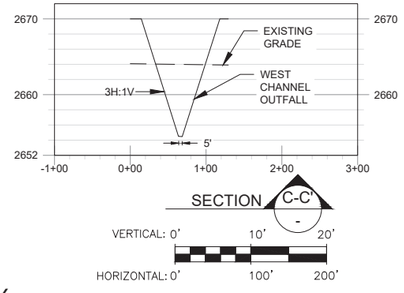
SECTION A-A'

VERTICAL: 0' 10' 20'
HORIZONTAL: 0' 100' 200'



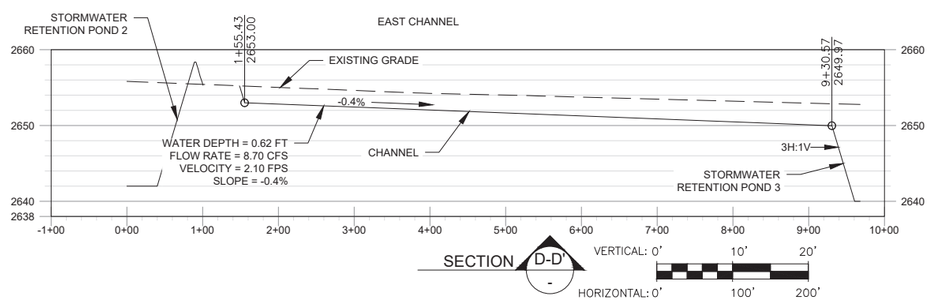
SECTION B-B'

VERTICAL: 0' 10' 20'
HORIZONTAL: 0' 100' 200'



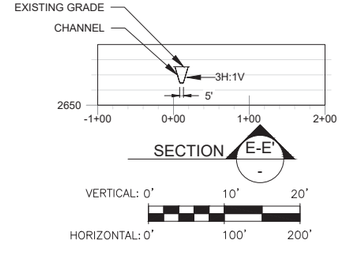
SECTION C-C'

VERTICAL: 0' 10' 20'
HORIZONTAL: 0' 100' 200'



SECTION D-D'

VERTICAL: 0' 10' 20'
HORIZONTAL: 0' 100' 200'



SECTION E-E'

VERTICAL: 0' 10' 20'
HORIZONTAL: 0' 100' 200'

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STATE OF TEXAS GUNDAR PETERSON 103091 LICENSED PROFESSIONAL ENGINEER 7/22/2026

DBS&A a Geo-Logic Company
TEXAS REGISTERED ENGINEERING FIRM F-286

WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

WST LANDFILL
REEVES COUNTY, TEXAS

WEST AND EAST CHANNEL GRADING

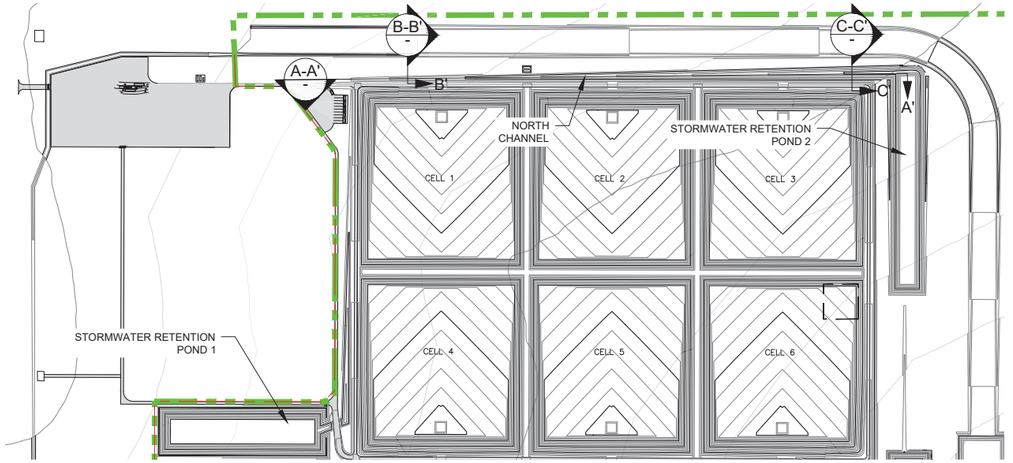
SHEET 9 OF 21
DWG NO. C-7

JOB NO. DB20.1166

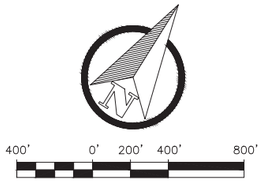
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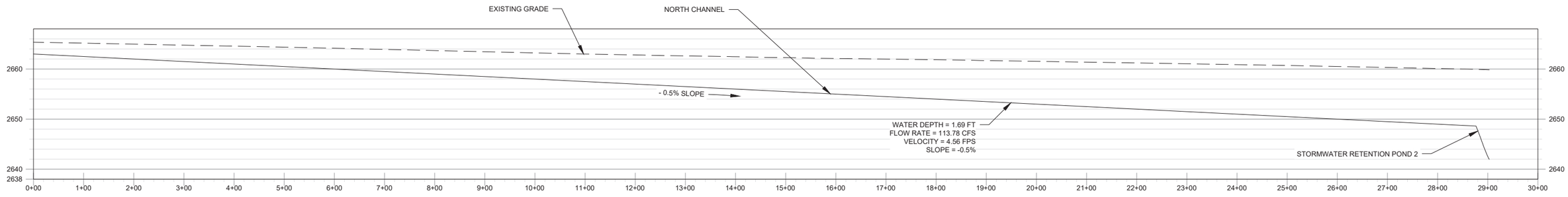
LEGEND

- EXISTING 10' MAJOR CONTOURS
- EXISTING 2' MINOR CONTOURS
- PROPOSED 10' MAJOR CONTOURS
- PROPOSED 2' MINOR CONTOURS
- WST PERMIT BOUNDARY
- EXISTING GRADE
- PROPOSED GRADE



PLAN 1 -

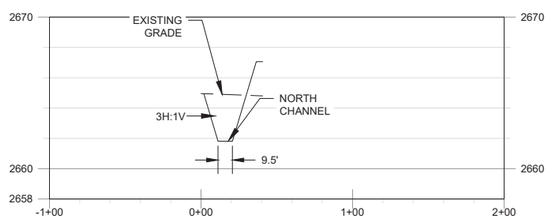




SECTION A-A' -

VERTICAL: 0' 10' 20'

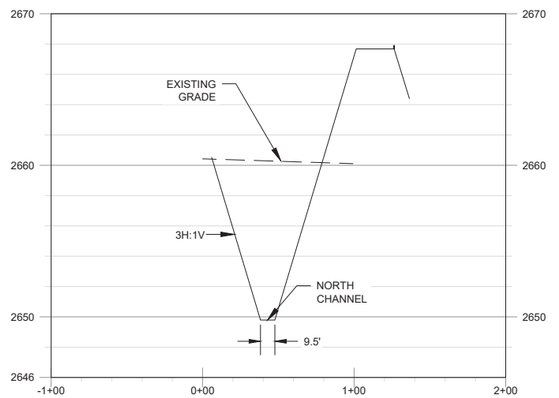
HORIZONTAL: 0' 100' 200'



SECTION B-B' -

VERTICAL: 0' 5' 10'

HORIZONTAL: 0' 50' 100'



SECTION C-C' -

VERTICAL: 0' 10' 20'

HORIZONTAL: 0' 100' 200'

FOR PERMITTING PURPOSES ONLY

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DBS&A a Geo-Logic Company
TEXAS REGISTERED ENGINEERING FIRM F-286

WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

WST LANDFILL
REEVES COUNTY, TEXAS

NORTH CHANNEL GRADING

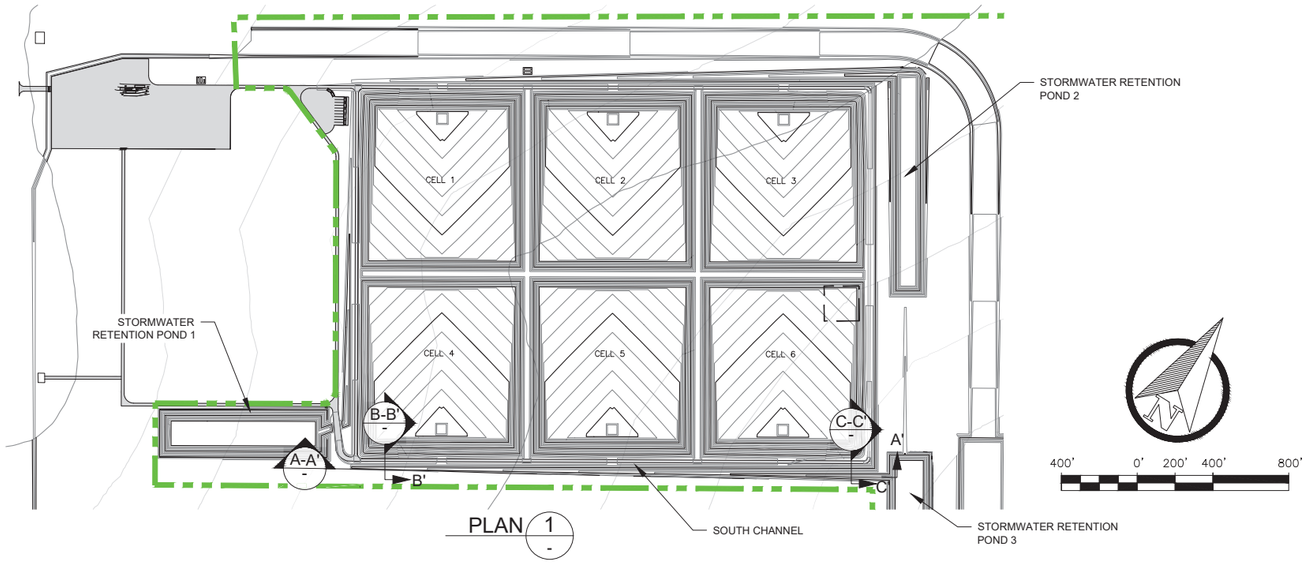
SHEET 10 OF 21
DWG NO. C-8

JOB NO. DB20.1166

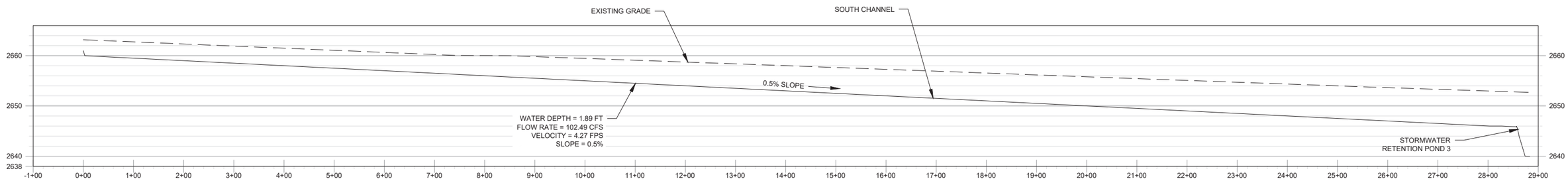
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LEGEND

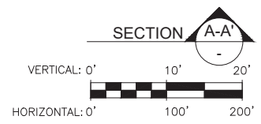
- EXISTING 10' MAJOR CONTOURS
- EXISTING 2' MINOR CONTOURS
- PROPOSED 10' MAJOR CONTOURS
- PROPOSED 2' MINOR CONTOURS
- WST PERMIT BOUNDARY
- EXISTING GRADE
- PROPOSED GRADE

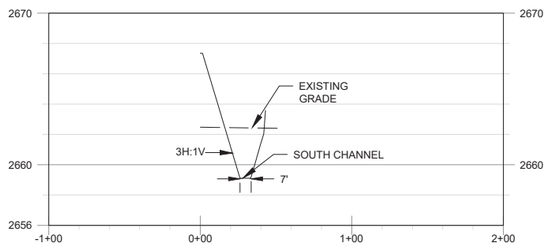


PLAN 1

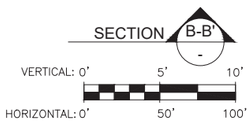


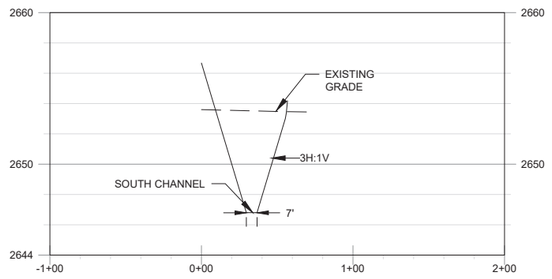
SECTION A-A'



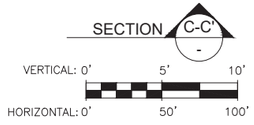


SECTION B-B'





SECTION C-C'



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600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

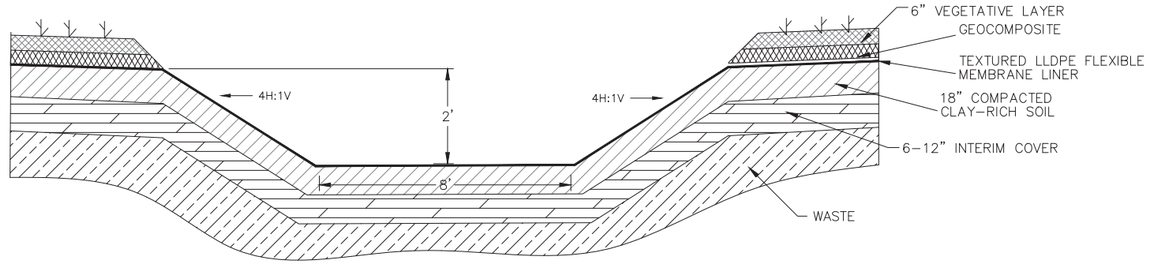
WST LANDFILL
REEVES COUNTY, TEXAS

SOUTH CHANNEL GRADING

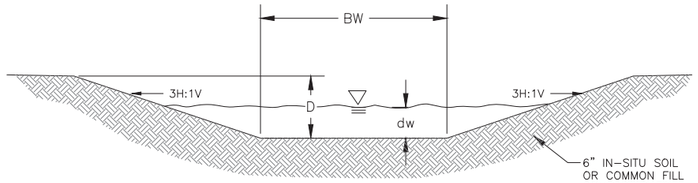
SHEET 11 OF 21
DWG NO. C-9

JOB NO. DB20.1166

Z:\1X\MWTX\S\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\CAD\PRODUCTION\C-9 SOUTH CHANNEL GRADING.DWG July 14, 2026 - 3:05 PM BY: GJA USER



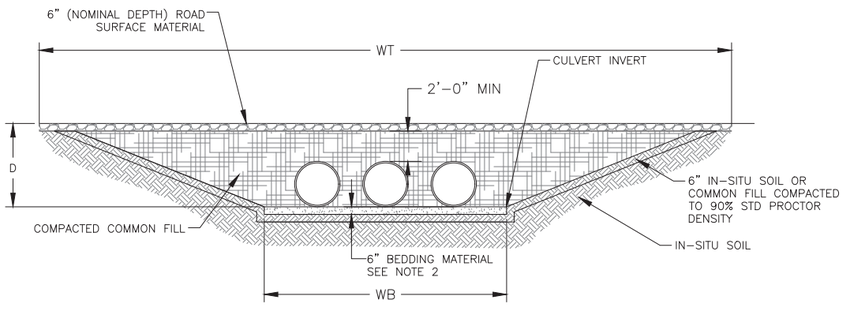
DOWN DRAIN DETAIL (1 / -)
NTS



SCHEDULE OF DIMENSIONS

CHANNEL	SLOPE	D (FEET)	BW (FEET)	dw (FEET)
WEST	0.5%	2.5-9	5.0	2.04
NORTH	0.5%	3-9.5	9.5	1.7
SOUTH	0.5%	3-6.2	7.0	1.9
EAST	0.5%	3-3.5	5.0	0.63

TYPICAL UNLINED DITCH SECTION DETAIL (2 / -)
NTS



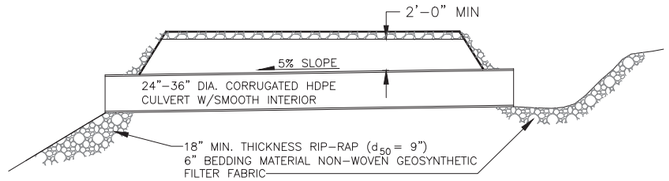
SECTION

SCHEDULE OF DIMENSIONS

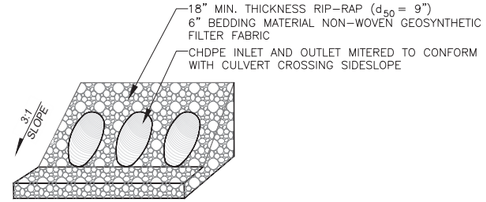
CULVERT DIA (IN)	CULVERT LENGTH (FT)	WT (FT)	WB (FT)	D (FT)	SLOPE (FT/FT)
24	±30.0	34.5	7.5	4.5	0.05
36	36.0	47.0	13.5	5.5	0.05

NOTES:

1. SEE SHEET C-3 FOR LOCATIONS OF CULVERT CROSSINGS.
2. BEDDING MATERIAL SHALL BE SHAPED TO PROVIDE UNIFORM CONTACT WITH THE BOTTOM OF THE CULVERTS.
3. ALL CULVERTS ARE CORRUGATED HDPE WITH SMOOTH INTERIOR.
4. 18" MINIMUM SPACING BETWEEN EACH CULVERT PIPE, WALL TO WALL.

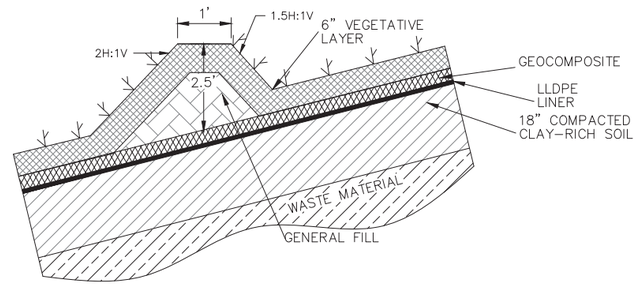


SIDE VIEW SECTION



TYPICAL CULVERT INLET AND OUTLET DETAIL

CULVERT ROAD CROSSING DETAILS (3 / -)
NTS



DIVERSION BERM DETAIL (4 / -)
NTS

FOR PERMITTING PURPOSES ONLY

REV. NO.	DATE	DESCRIPTION	APPROVED BY

DATE OF ISSUE: 07/22/2026
DESIGNED BY: KJ
DRAWN BY: CK, JA, ML
CHECKED BY: GP
APPROVED BY: GP

STATE OF TEXAS — GUNDAR PETERSON — 103091 — LICENSED PROFESSIONAL ENGINEER — 7/22/2026

DBS&A a Geo-Logic Company
TEXAS REGISTERED ENGINEERING FIRM F-286

WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

WST LANDFILL
REEVES COUNTY, TEXAS

DRAINAGE DETAILS

SHEET 12 OF 21
DWG NO. C-10

JOB NO. DB20.1166

Z:\1X\MFTA\S\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\CAD\PRODUCTION\C-10 DRAINAGE DETAILS.DWG July 14, 2026 - 3:04 PM BY: GLA USER

Appendix III-3-B

Data Sources for Hydrologic and Hydraulic Calculations

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Appendix III-3-B1

TP-40 Precipitation Maps

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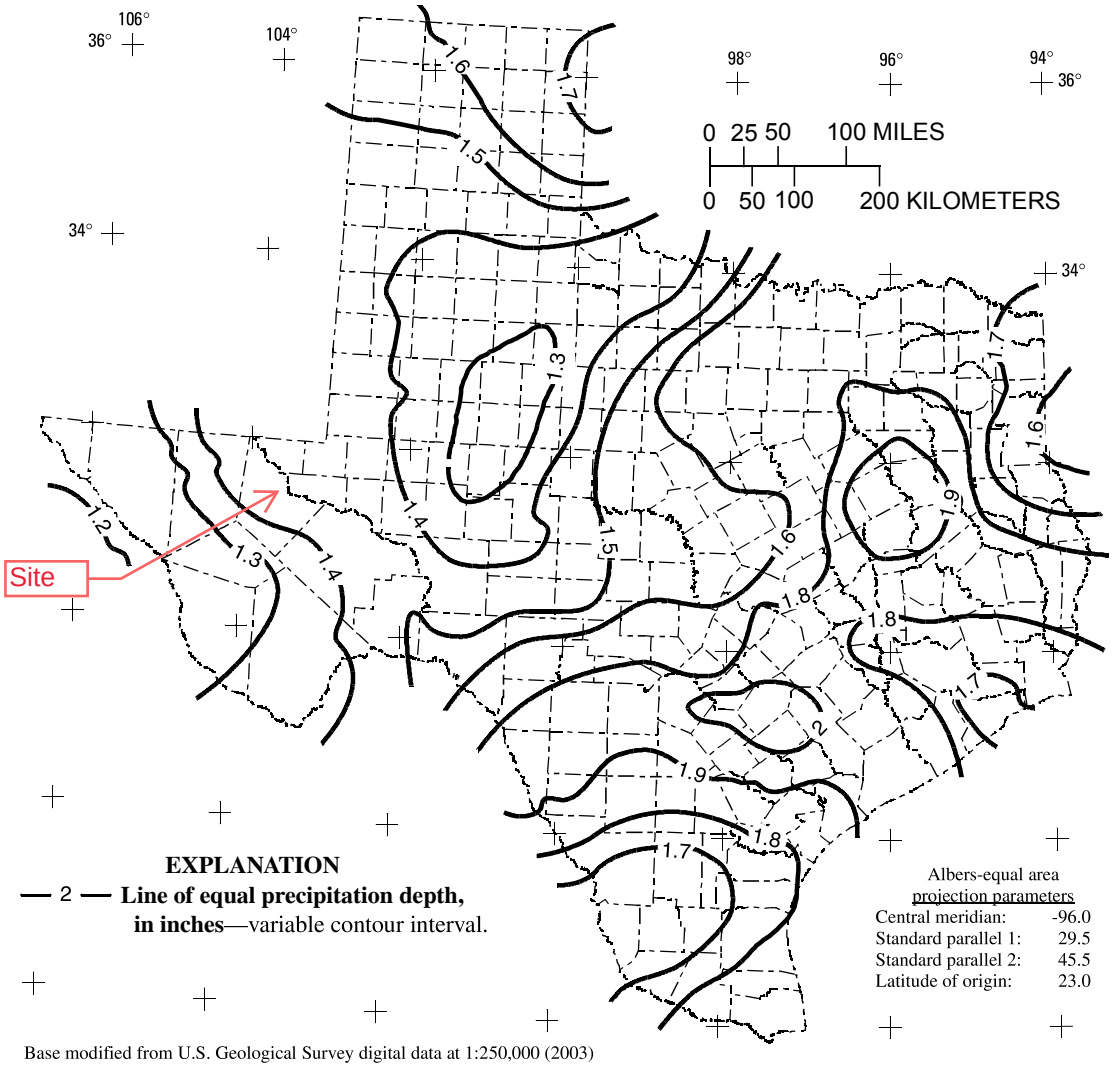


Figure 40. Depth of precipitation for 25-year storm for 15-minute duration in Texas.

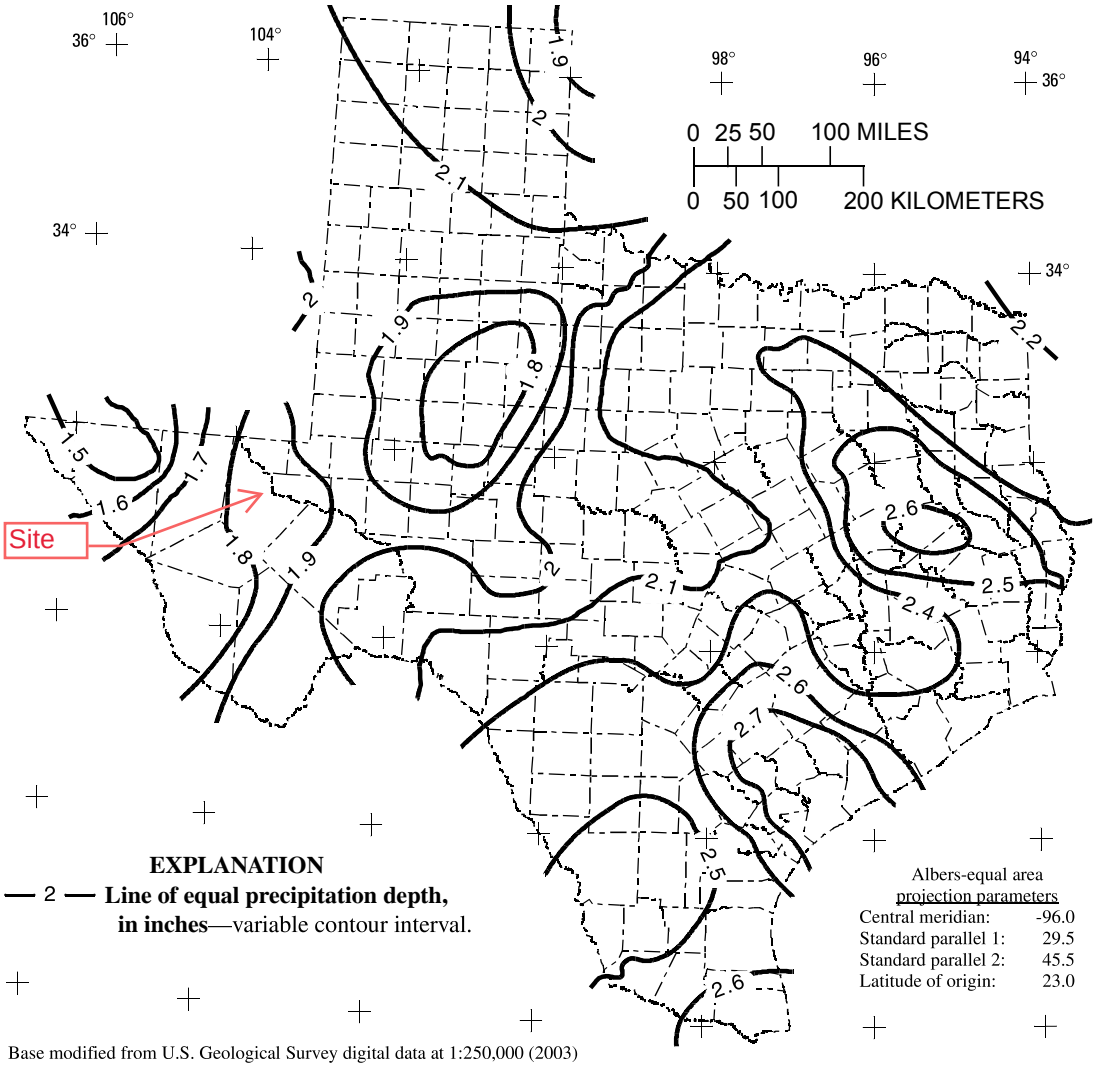


Figure 41. Depth of precipitation for 25-year storm for 30-minute duration in Texas.

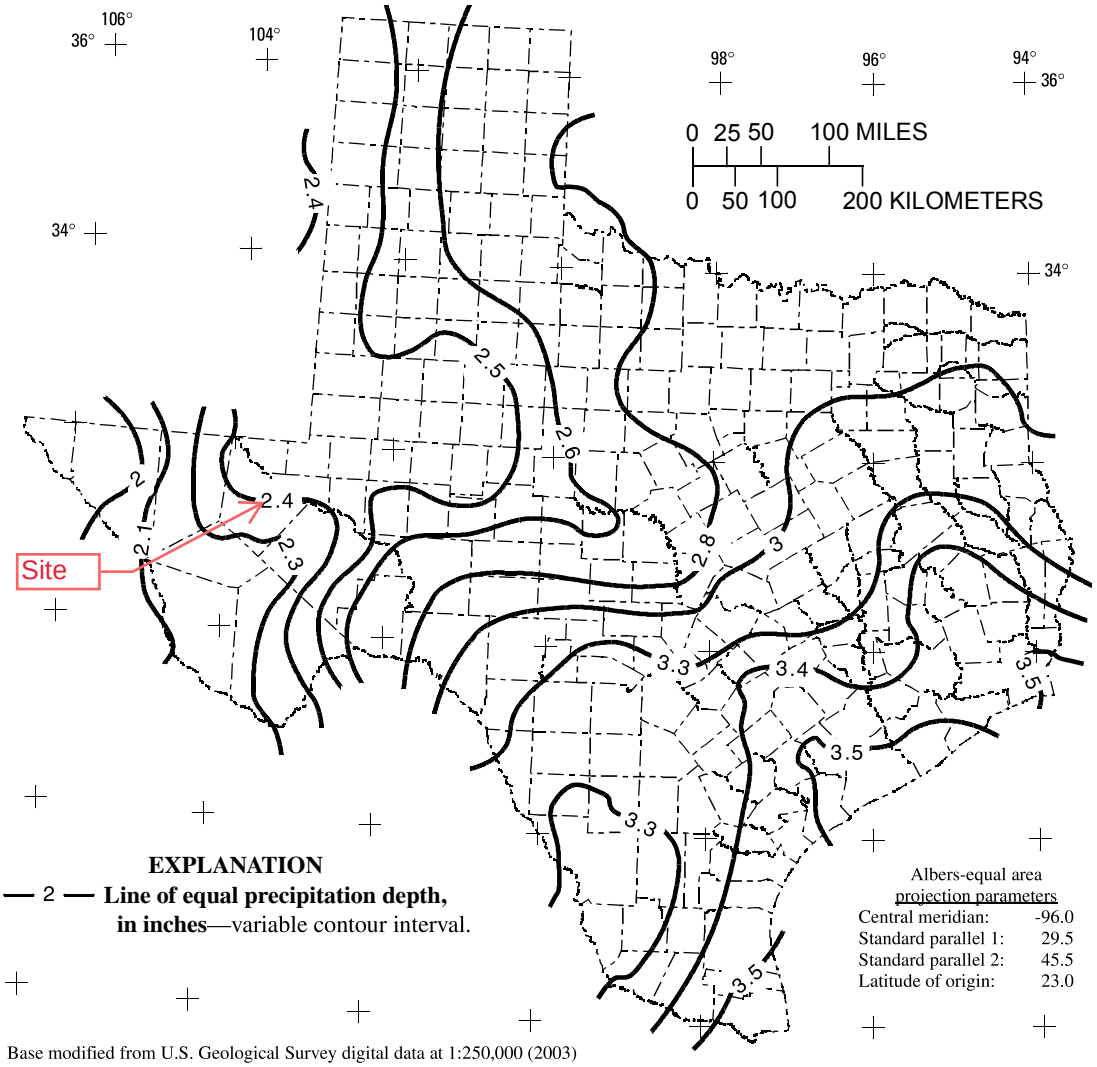


Figure 42. Depth of precipitation for 25-year storm for 1-hour duration in Texas.

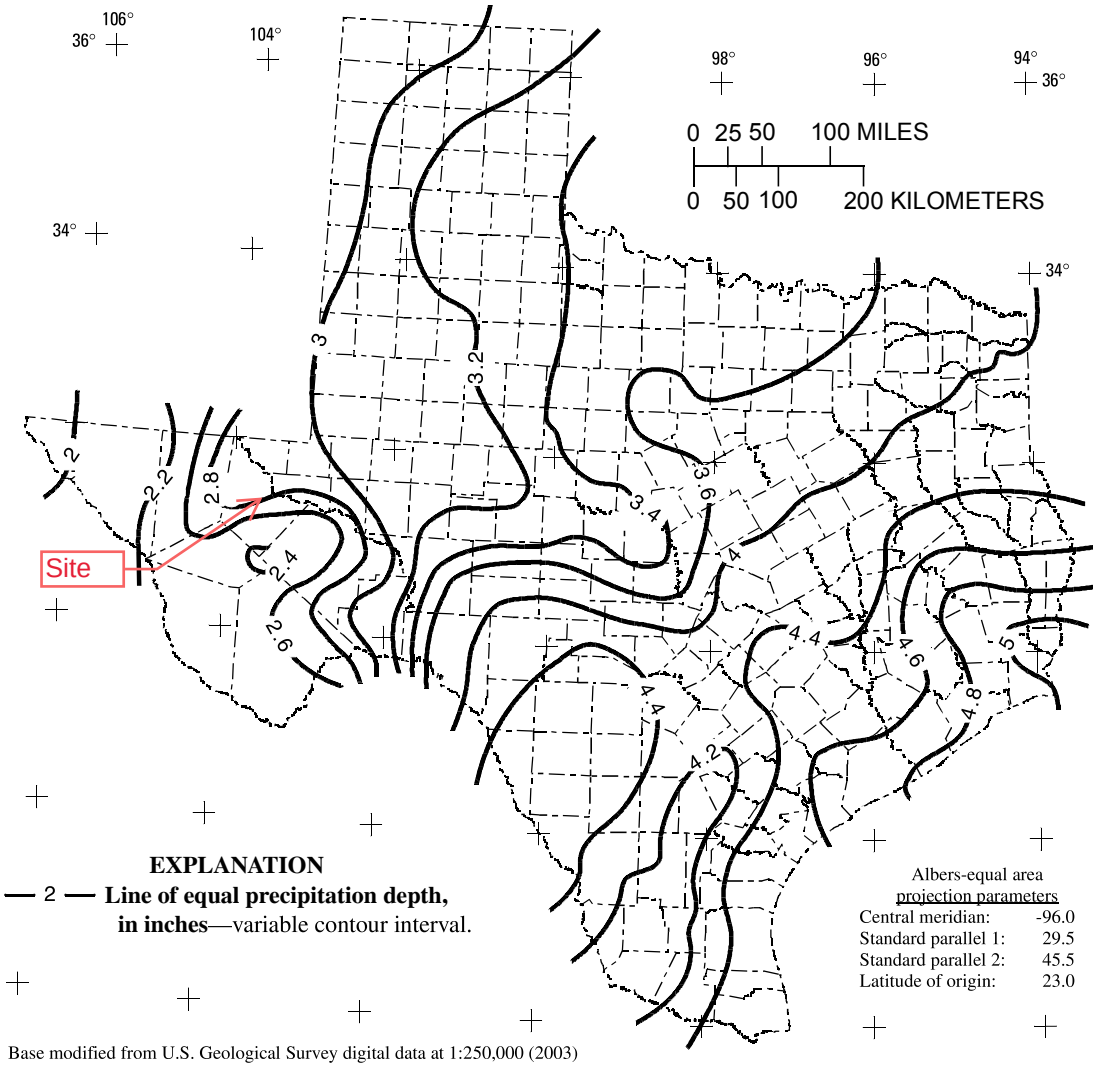


Figure 43. Depth of precipitation for 25-year storm for 2-hour duration in Texas.

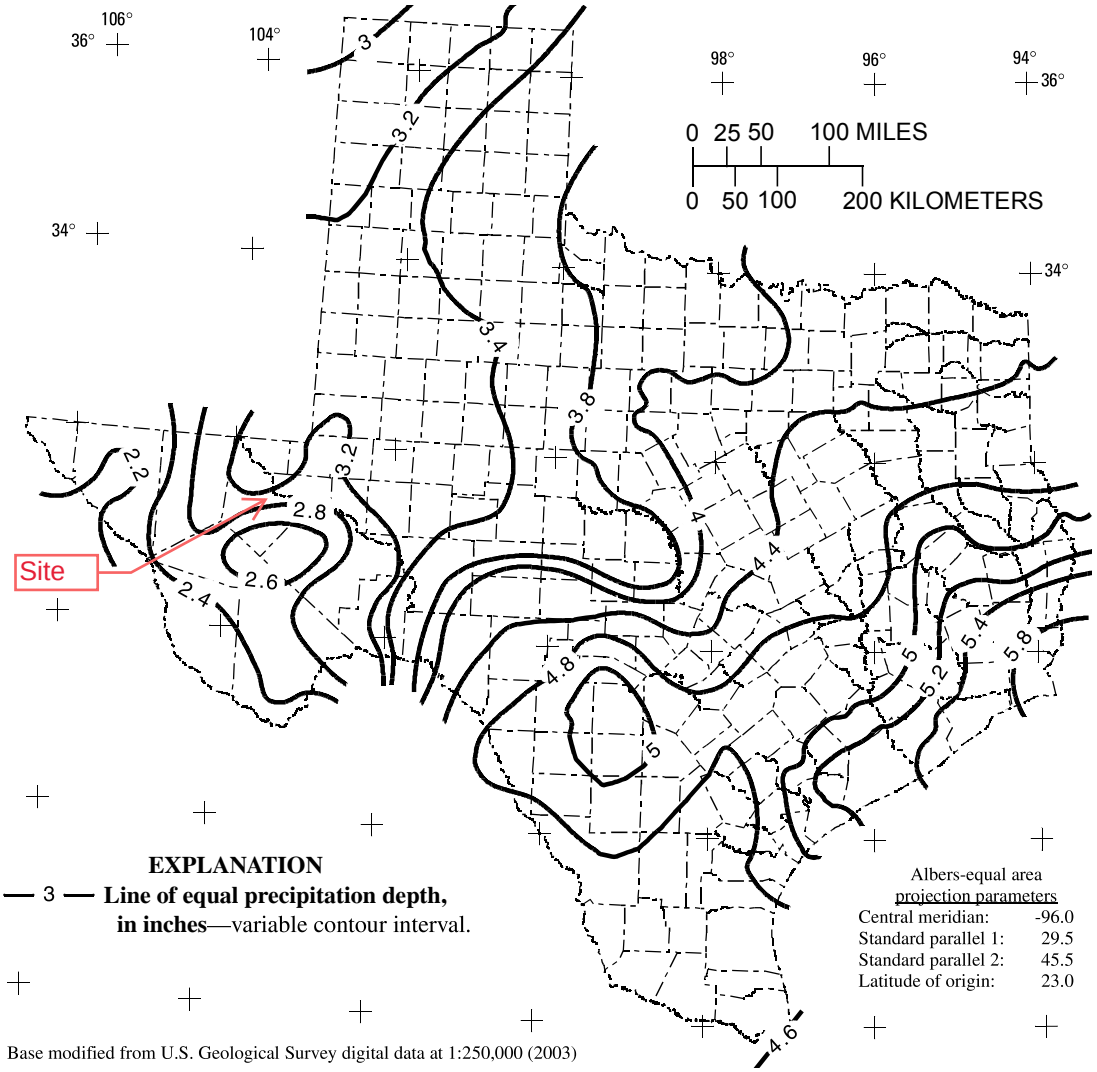


Figure 44. Depth of precipitation for 25-year storm for 3-hour duration in Texas.

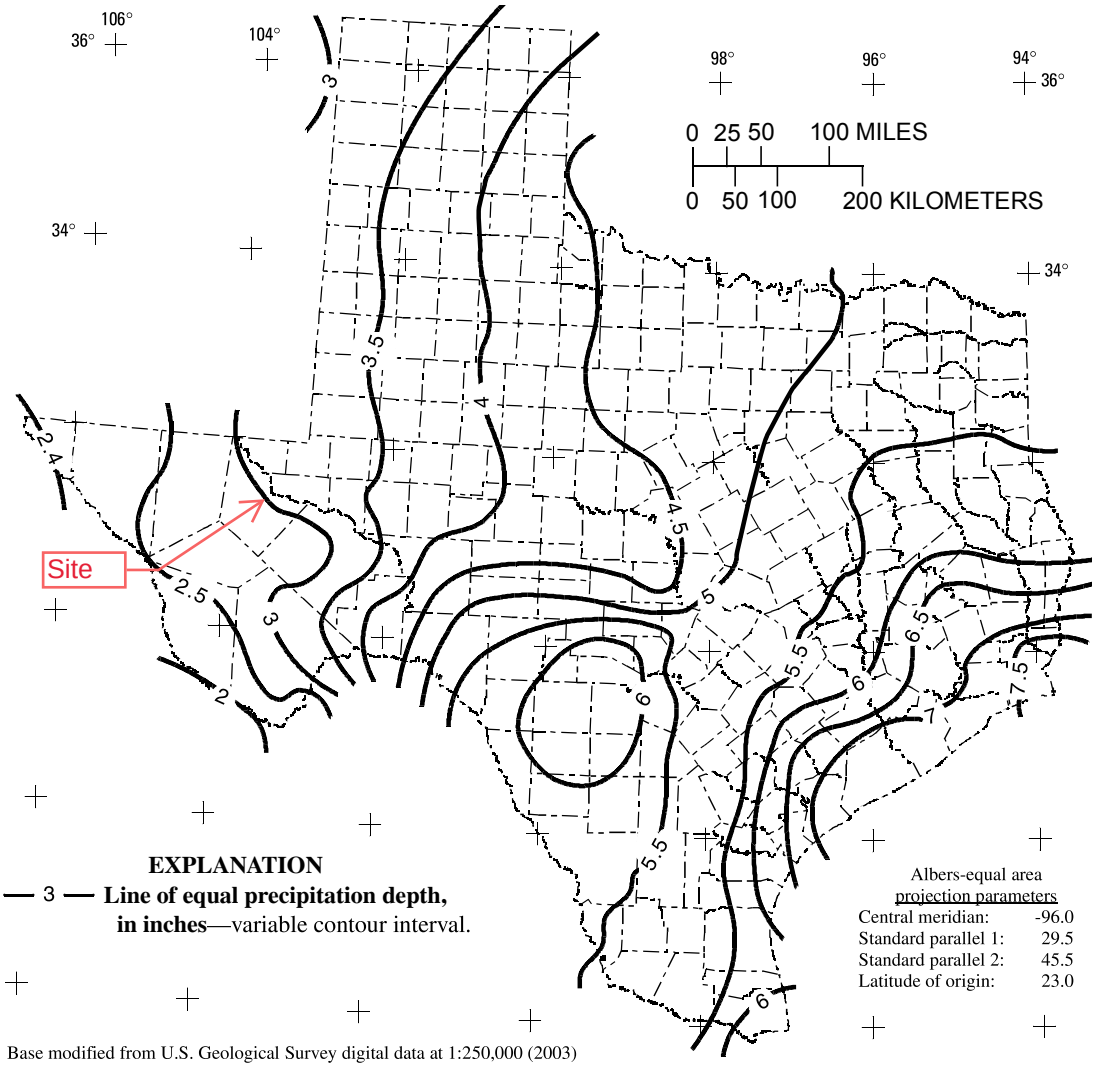


Figure 45. Depth of precipitation for 25-year storm for 6-hour duration in Texas.

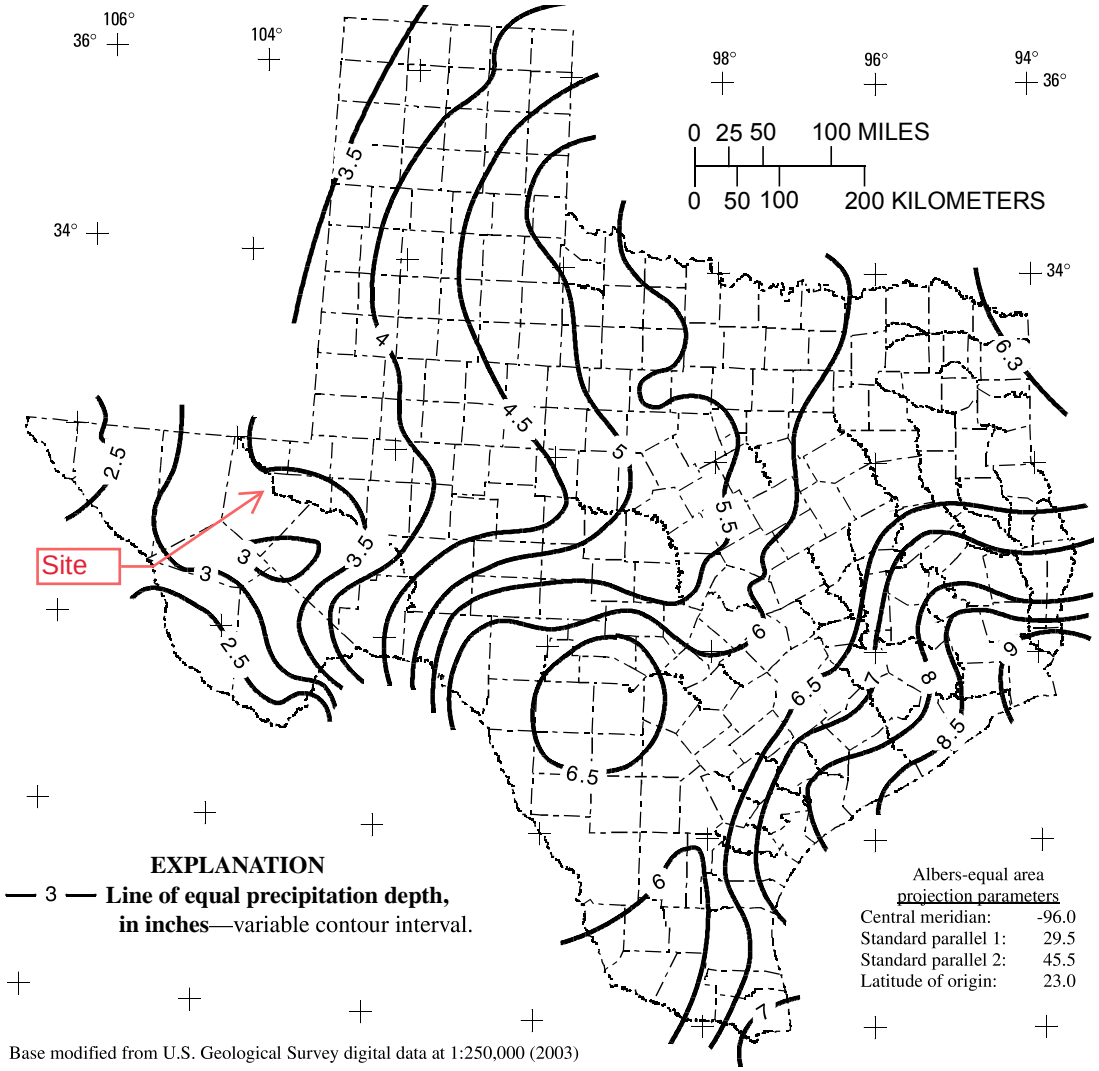
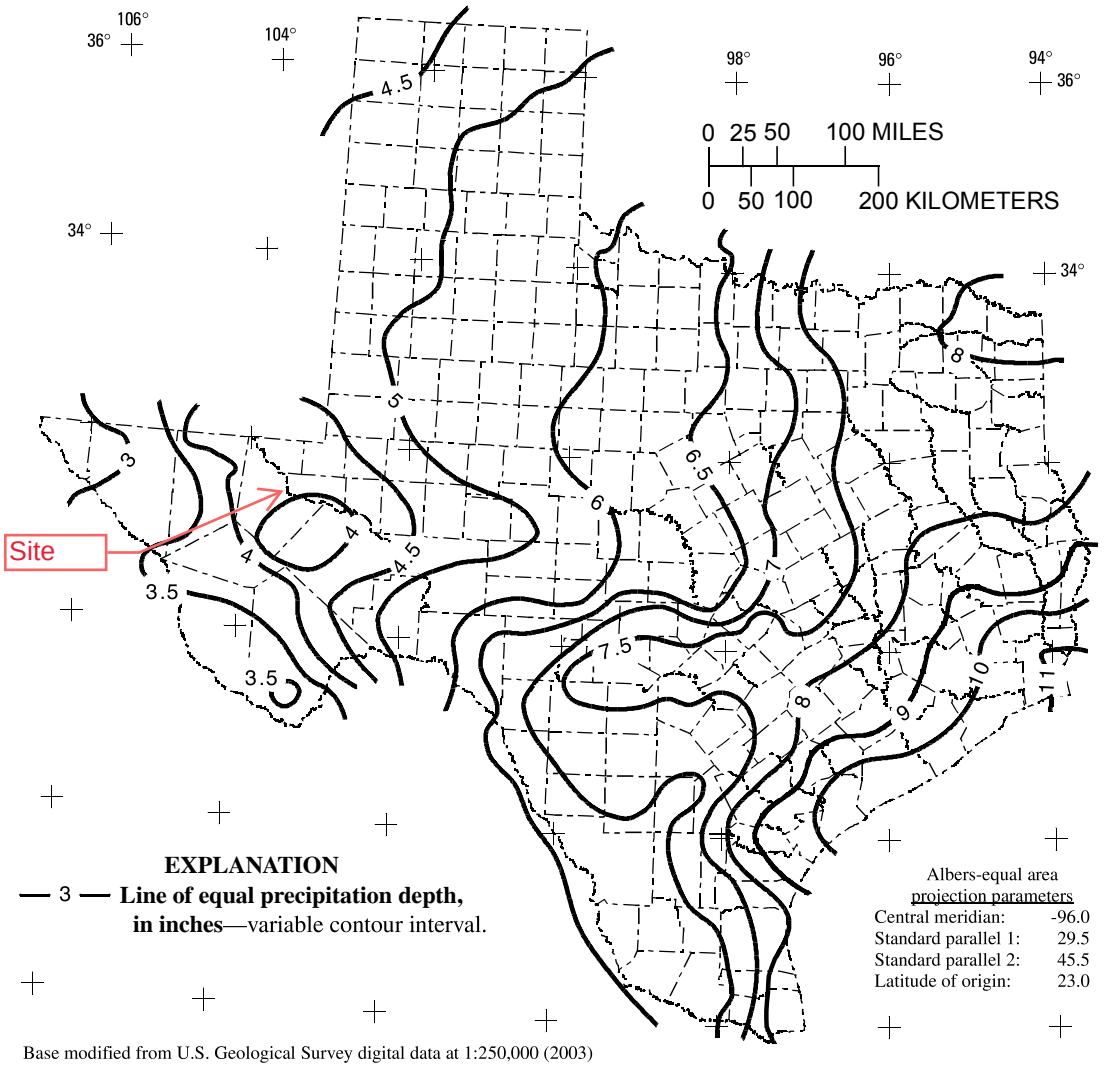


Figure 46. Depth of precipitation for 25-year storm for 12-hour duration in Texas.



Base modified from U.S. Geological Survey digital data at 1:250,000 (2003)

Figure 47. Depth of precipitation for 25-year storm for 1-day duration in Texas.

Appendix III-3-B2

Selected Pages from TR-55

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Table 2-2a Runoff curve numbers for urban areas [1/]

Cover description: Cover type and hydrologic condition	Average percent impervious area [2/]	Curve numbers for hydrologic soil group: A	B	C	D
Fully developed urban areas (vegetation established)					
Open space (lawns, parks, golf courses, cemeteries, etc.) [3/]:					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) [4/]		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
Developing urban areas					
Newly graded areas (pervious areas only, no vegetation) [5/]		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

1 Average runoff condition, and $I_a = 0.2S$.

2 The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.

3 CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.

4 Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.

5 Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4 based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

Table 2-2b Runoff curve numbers for cultivated agricultural lands [1/]

Cover description			Curve numbers for hydrologic soil group			
Cover type	Treatment [2/]	Hydrologic condition [3/]	A	B	C	D
Fallow	Bare soil	—	77	86	91	94
	Crop residue cover (CR)	Poor	76	85	90	93
		Good	74	83	88	90
Row crops	Straight row (SR)	Poor	72	81	88	91
		Good	67	78	85	89
	SR + CR	Poor	71	80	87	90
		Good	64	75	82	85
	Contoured (C)	Poor	70	79	84	88
		Good	65	75	82	86
	C + CR	Poor	69	78	83	87
		Good	64	74	81	85
	Contoured & terraced (C&T)	Poor	66	74	80	82
		Good	62	71	78	81
	C&T+ CR	Poor	65	73	79	81
		Good	61	70	77	80
Small grain	SR	Poor	65	76	84	88
		Good	63	75	83	87
	SR + CR	Poor	64	75	83	86
		Good	60	72	80	84
	C	Poor	63	74	82	85
		Good	61	73	81	84
	C + CR	Poor	62	73	81	84
		Good	60	72	80	83
	C&T	Poor	61	72	79	82
		Good	59	70	78	81
	C&T+ CR	Poor	60	71	78	81
		Good	58	69	77	80
Close-seeded or broadcast legumes or rotation meadow	SR	Poor	66	77	85	89
		Good	58	72	81	85
	C	Poor	64	75	83	85
		Good	55	69	78	83
	C&T	Poor	63	73	80	83
		Good	51	67	76	80

[1] Average runoff condition, and I_a=0.2S

[2] Crop residue cover applies only if residue is on at least 5% of the surface throughout the year.

[3] Hydraulic condition is based on combination factors that affect infiltration and runoff, including (a) density and canopy of vegetative areas, (b) amount of year-round cover, (c) amount of grass or close-seeded legumes, (d) percent of residue cover on the land surface (good ≥ 20%), and (e) degree of surface roughness.

Poor: Factors impair infiltration and tend to increase runoff.

Good: Factors encourage average and better than average infiltration and tend to decrease runoff.

Table 2-2c Runoff curve numbers for other agricultural lands [1/]

Cover description		Curve numbers for hydrologic soil group			
Cover type	Hydrologic condition	A	B	C	D
Pasture, grassland, or range—continuous forage for grazing. [2/]	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadow—continuous grass, protected from grazing and generally mowed for hay.	—	30	58	71	78
Brush—brush-weed-grass mixture with brush the major element. [3/]	Poor	48	67	77	83
	Fair	35	56	70	77
	Good	30 [4/]	48	65	73
Woods—grass combination (orchard or tree farm). [5/]	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
Woods. [6/]	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	30 [4/]	55	70	77
Farmsteads—buildings, lanes, driveways, and surrounding lots.	—	59	74	82	86

1 Average runoff condition, and $I_a = 0.2S$.

2 *Poor:* <50%) ground cover or heavily grazed with no mulch.
Fair: 50 to 75% ground cover and not heavily grazed.
Good: > 75% ground cover and lightly or only occasionally grazed.

3 *Poor:* <50% ground cover.
Fair: 50 to 75% ground cover.
Good: >75% ground cover.

4 Actual curve number is less than 30; use CN = 30 for runoff computations.

5 CN's shown were computed for areas with 50% woods and 50% grass (pasture) cover. Other combinations of conditions may be computed from the CN's for woods and pasture.

6 *Poor:* Forest litter, small trees, and brush are destroyed by heavy grazing or regular burning.
Fair: Woods are grazed but not burned, and some forest litter covers the soil.
Good: Woods are protected from grazing, and litter and brush adequately cover the soil.

Table 2-2d Runoff curve numbers for arid and semiarid rangelands [1/]

Cover description		Curve numbers for hydrologic soil group			
Cover type	Hydrologic condition [2/]	A [3/]	B	C	D
Herbaceous—mixture of grass, weeds, and low-growing brush, with brush the minor element.	Poor		80	87	93
	Fair		71	81	89
	Good		62	74	85
Oak-aspen—mountain brush mixture of oak brush, aspen, mountain mahogany, bitter brush, maple, and other brush.	Poor		66	74	79
	Fair		48	57	63
	Good		30	41	48
Pinyon-juniper—pinyon, juniper, or both; grass understory.	Poor		75	85	89
	Fair		58	73	80
	Good		41	61	71
Sagebrush with grass understory.	Poor		67	80	85
	Fair		51	63	70
	Good		35	47	55
Desert shrub—major plants include saltbush, greasewood, creosotebush, blackbrush, bursage, palo verde, mesquite, and cactus.	Poor	63	77	85	88
	Fair	55	72	81	86
	Good	49	68	79	84

1 Average runoff condition, and I_a, = 0.2S. For range in humid regions, use table 2-2c.
2 Poor: <30% ground cover (litter, grass, and brush overstory).
Fair: 30 to 70% ground cover.
Good: > 70% ground cover.
3 Curve numbers for group A have been developed only for desert shrub.

Appendix III-3-B3

NRCS Soil Report

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United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Reeves County, Texas



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

Preface.....2
How Soil Surveys Are Made.....5
Soil Map.....8
Soil Map.....9
Legend.....10
Map Unit Legend.....11
Map Unit Descriptions.....11
Reeves County, Texas.....13
16—Hoban silty clay loam, 0 to 1 percent slopes.....13
18—Hodgins silty clay loam, 0 to 1 percent slopes.....14
26—Orla clay loam, 0 to 1 percent slopes.....15
34—Reeves clay loam, 0 to 1 percent slopes.....16
41—Upton gravelly loam, 0 to 2 percent slopes.....17
Soil Information for All Uses.....19
Soil Reports.....19
Water Features.....19
Hydrologic Soil Group and Surface Runoff (Pecos).....19
References.....21

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

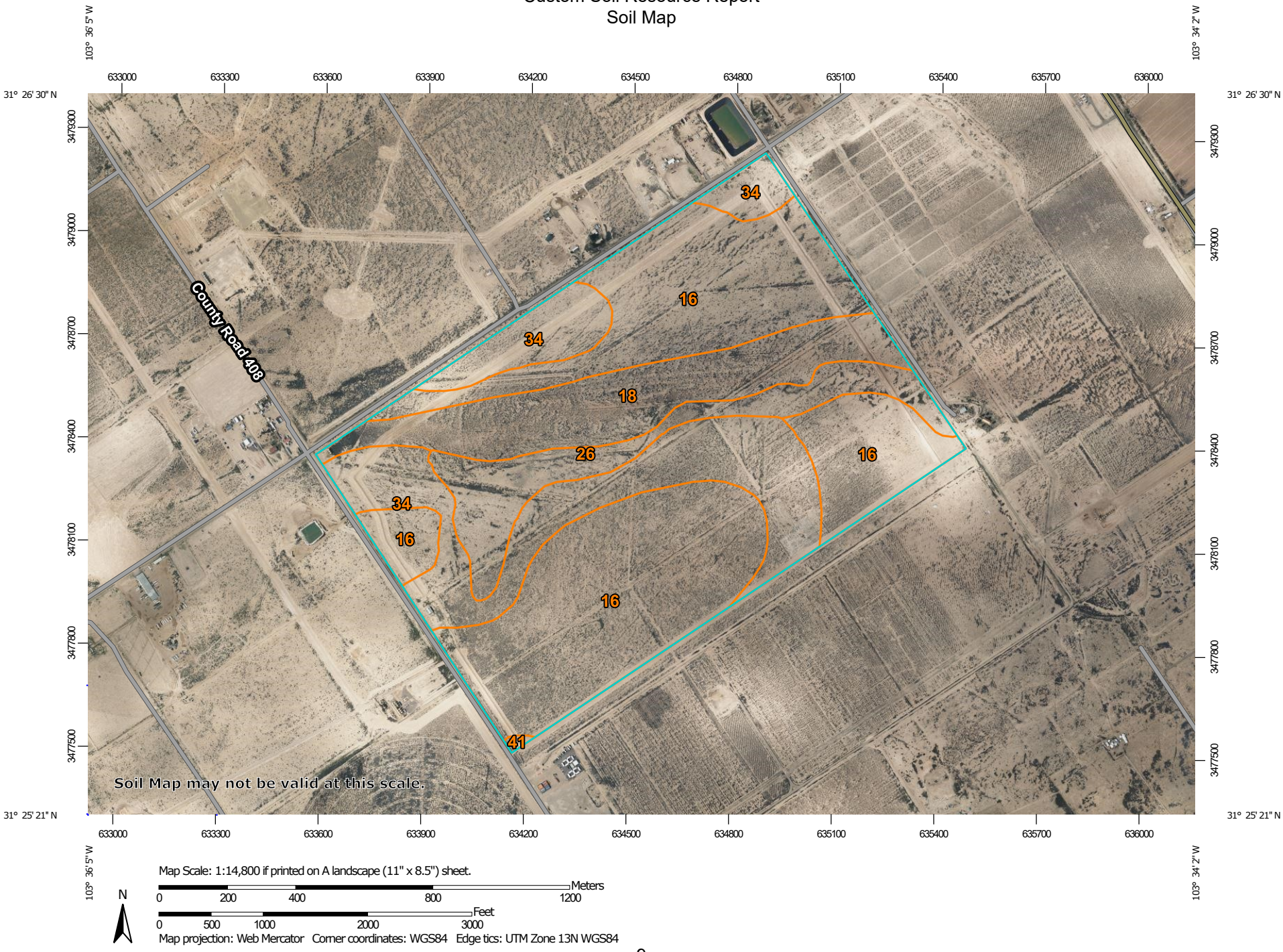
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.


103° 36' 5" W
103° 34' 2" W
633000
633300
633600
633900
634200
634500
634800
635100
635400
635700
636000
31° 26' 30" N
31° 25' 21" N
3479300
3479000
3478700
3478400
3478100
3477800
3477500
County Road 408
34
16
34
18
26
16
34
16
16
41
Soil Map may not be valid at this scale.
Map Scale: 1:14,800 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 200 400 800 1200
Feet
0 500 1000 2000 3000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Reeves County, Texas
Survey Area Data: Version 26, Sep 5, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 20, 2020—Mar 22, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
16	Hoban silty clay loam, 0 to 1 percent slopes	209.3	51.1%
18	Hodgins silty clay loam, 0 to 1 percent slopes	61.3	15.0%
26	Orla clay loam, 0 to 1 percent slopes	41.6	10.2%
34	Reeves clay loam, 0 to 1 percent slopes	96.9	23.7%
41	Upton gravelly loam, 0 to 2 percent slopes	0.6	0.1%
Totals for Area of Interest		**409.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Reeves County, Texas

16—Hoban silty clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 1yx7
Landscape: Basins
Elevation: 2,000 to 4,000 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 61 to 66 degrees F
Frost-free period: 210 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Hoban and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hoban

Setting

Landscape: Basins
Landform: Basin floors
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Calcareous loamy alluvium

Typical profile

H1 - 0 to 18 inches: silty clay loam
H2 - 18 to 46 inches: silty clay loam
H3 - 46 to 72 inches: silty clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Gypsum, maximum content: 72 percent
Maximum salinity: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: B
Ecological site: R042AC250TX - Loamy, Desert Grassland
Hydric soil rating: No

18—Hodgins silty clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 1yx9
Landscape: Basins
Elevation: 1,500 to 4,000 feet
Mean annual precipitation: 10 to 18 inches
Mean annual air temperature: 61 to 68 degrees F
Frost-free period: 210 to 240 days
Farmland classification: Farmland of statewide importance, if irrigated

Map Unit Composition

Hodgins and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hodgins

Setting

Landscape: Basins
Landform: Alluvial flats
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fine-silty alluvium derived from sedimentary rock

Typical profile

H1 - 0 to 8 inches: silty clay loam
H2 - 8 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: B
Ecological site: R042AC250TX - Loamy, Desert Grassland
Hydric soil rating: No

26—Orla clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 1yxl
Landscape: Basins
Elevation: 2,550 to 4,000 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 63 to 66 degrees F
Frost-free period: 210 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Orla and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Orla

Setting

Landscape: Basins
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Saline loamy lacustrine deposits

Typical profile

H1 - 0 to 15 inches: clay loam
H2 - 15 to 60 inches: gypsiferous material

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 99 percent
Maximum salinity: Slightly saline to strongly saline (4.0 to 36.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: R070BD252TX - Salty, Desert Grassland
Hydric soil rating: No

34—Reeves clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 1yxw
Landscape: Upland plains
Elevation: 2,500 to 5,300 feet
Mean annual precipitation: 10 to 15 inches
Mean annual air temperature: 57 to 64 degrees F
Frost-free period: 200 to 230 days
Farmland classification: Not prime farmland

Map Unit Composition

Reeves and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Reeves

Setting

Landscape: Upland plains
Landform: Basin floors
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy alluvium over residuum weathered from gypsum

Typical profile

H1 - 0 to 11 inches: clay loam
H2 - 11 to 33 inches: clay loam
H3 - 33 to 60 inches: gypsiferous material

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Gypsum, maximum content: 80 percent
Maximum salinity: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: R042AC250TX - Loamy, Desert Grassland
Hydric soil rating: No

41—Upton gravelly loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 1yy4
Landscape: Basins
Elevation: 1,100 to 4,000 feet
Mean annual precipitation: 7 to 13 inches
Mean annual air temperature: 61 to 70 degrees F
Frost-free period: 210 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Upton and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Upton

Setting

Landscape: Basins
Landform: Fan remnants
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Pleistocene-age gravelly alluvium derived from limestone and/or pleistocene-age gravelly pedisediment derived from limestone

Typical profile

H1 - 0 to 5 inches: gravelly loam
H2 - 5 to 18 inches: gravelly loam
H3 - 18 to 23 inches: cemented material
H4 - 23 to 40 inches: gravelly loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 7 to 20 inches to petrocalcic
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 75 percent
Available water supply, 0 to 60 inches: Very low (about 2.0 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: R042AC244TX - Gravelly, Desert Grassland

Hydric soil rating: No

Soil Information for All Uses

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Water Features

This folder contains tabular reports that present soil hydrology information. The reports (tables) include all selected map units and components for each map unit. Water Features include ponding frequency, flooding frequency, and depth to water table.

Hydrologic Soil Group and Surface Runoff (Pecos)

This table gives estimates of various soil water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or

soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

Surface runoff refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. The concept indicates relative runoff for very specific conditions. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

Report—Hydrologic Soil Group and Surface Runoff (Pecos)

Absence of an entry indicates that the data were not estimated. The dash indicates no documented presence.

Hydrologic Soil Group and Surface Runoff–Reeves County, Texas			
Map symbol and soil name	**Pct. of map unit**	**Surface Runoff**	**Hydrologic Soil Group**
16—Hoban silty clay loam, 0 to 1 percent slopes			
Hoban	100	Negligible	B
18—Hodgins silty clay loam, 0 to 1 percent slopes			
Hodgins	100	Negligible	B
26—Orla clay loam, 0 to 1 percent slopes			
Orla	100	Negligible	B
34—Reeves clay loam, 0 to 1 percent slopes			
Reeves	100	Negligible	B
41—Upton gravelly loam, 0 to 2 percent slopes			
Upton	100	Medium	D

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Appendix III-3-C

Run-On Management System Calculations

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Project: Pecos
Simulation Run: 25yr24hr
Simulation Start: 31 December 2023, 24:00
Simulation End: 2 January 2024, 24:00

HMS Version: 4.13
Executed: 25 March 2026, 19:14

Global Parameter Summary - Subbasin

Location		
Element Name	**Longitude Degrees**	**Latitude Degrees**
Sb2	-103.68	31.44
Sb4	-103.66	31.44
Sb6	-103.65	31.43
Sb7	-103.65	31.43
Sb5	-103.65	31.44
Sb3	-103.66	31.45
Sb1	-103.68	31.45
Sb8	-103.65	31.43
Sb10	-103.64	31.42
Sb11	-103.63	31.42
Sb9	-103.63	31.43
Sb12	-103.62	31.43
Sb13	-103.6	31.43

Area (MI2)	
Element Name	**Area (MI2)**
Sb2	0.56
Sb4	0.26
Sb6	0.38
Sb7	0.25
Sb5	0.52
Sb3	0.49
Sb1	0.46
Sb8	0.28
Sb10	0.69
Sb11	0.42
Sb9	0.25
Sb12	0.97
Sb13	0.36
Sb14	0.06

Downstream

Element Name	Downstream
Sb2	J - 2
Sb4	J - 3
Sb6	J - 5
Sb7	J - 5
Sb5	J - 4
Sb3	J - 4
Sb1	J - 1
Sb8	J - 4
Sb10	J - 6
Sb11	J - 6
Sb9	J - 6
Sb12	J - 7
Sb13	J - 8
Sb14	Pond - 1

Loss Rate: Scs

Element Name	Percent Impervious Area	Curve Number	Initial Abstraction
Sb2	0.31	79.06	0.53
Sb4	1.41	73.59	0.72
Sb6	0.06	68.31	0.93
Sb7	0.02	71.01	0.82
Sb5	0.26	69.72	0.87
Sb3	0.07	71.61	0.79
Sb1	0.09	74.24	0.69
Sb8	0.05	68	0.94
Sb10	0.21	68.81	0.91
Sb11	0.14	68.01	0.94
Sb9	1.16	68.05	0.94
Sb12	0.8	68.24	0.93
Sb13	2.8	68.15	0.93
Sb14	0.2	99	0

Transform: Scs

Element Name	Lag	Unitgraph Type
Sb2	108	Standard
Sb4	93	Standard
Sb6	110	Standard
Sb7	104	Standard
Sb5	188	Standard
Sb3	223	Standard
Sb1	120	Standard
Sb8	60	Standard
Sb10	111	Standard
Sb11	128	Standard
Sb9	103	Standard
Sb12	174	Standard
Sb13	163	Standard
Sb14	38	Standard

Global Parameter Summary - Reach

Downstream

Element Name	Downstream

Reach - 2	J - 3
Reach - 3	J - 4
Reach - 4	J - 4
Reach - 1	J - 4
Reach - 5	J - 6
Reach - 6	J - 7
Reach - 7	J - 8
Reach - 8	Pond - 1

Route: Muskingum Cunge

Element Name	Method	Channel	Length (FT)	Energy Slope (FT/FT)	Mannings n	Bottom Width (FT)	Side Slope (FT/FT)	Initial Variable	Space - Time Method	Index Parameter Type	Index Flow	Maximum Depth Iterations	Max R S Itera
Reach - 2	Muskingum Cunge	1.28	6296	0	0.1	500	4	Combined Inflow	Automatic DX and DT	Index Flow	87	20	
Reach - 3	Muskingum Cunge	1.48	6568	0	0.1	500	4	Combined Inflow	Automatic DX and DT	Index Flow	46	20	
Reach - 4	Muskingum Cunge	1.28	817	0	0.1	500	4	Combined Inflow	Automatic DX and DT	Index Flow	56	20	
Reach - 1	Muskingum Cunge	1.4	12373	0	0.1	500	1	Combined Inflow	Automatic DX and DT	Index Flow	50	20	
Reach - 5	Muskingum Cunge	1.36	5365	0	0.1	500	4	Combined Inflow	Automatic DX and DT	Index Flow	101	20	
Reach - 6	Muskingum Cunge	1.28	7014	0	0.1	800	4	Combined Inflow	Automatic DX and DT	Index Flow	108	20	
Reach - 7	Muskingum Cunge	1.43	4327	0	0.1	800	4	Combined Inflow	Automatic DX and DT	Index Flow	20	20	
Reach - 8	Muskingum Cunge	1.28	6865	0	0	120	3	Combined Inflow	Automatic DX and DT	Index Flow	22	20	

Global Results Summary

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Sb2	0.56	173.33	01Jan2024, 08:00	1.95
J - 2	0.56	173.33	01Jan2024, 08:00	1.95
Reach - 2	0.56	75.99	01Jan2024, 10:05	0.29
Sb4	0.26	68.41	01Jan2024, 07:50	1.58
J - 3	0.82	91.22	01Jan2024, 10:00	0.7
Reach - 3	0.82	0	31Dec2023, 24:00	0
Sb6	0.38	61.72	01Jan2024, 08:10	1.21
Sb7	0.25	49.99	01Jan2024, 08:00	1.37
J - 5	0.62	111.48	01Jan2024, 08:05	1.27
Reach - 4	0.62	98.75	01Jan2024, 08:25	0.73
Sb5	0.52	58.26	01Jan2024, 09:30	1.3
Sb3	0.49	52.25	01Jan2024, 10:10	1.42
Sb1	0.46	99.53	01Jan2024, 08:15	1.59
J - 1	0.46	99.53	01Jan2024, 08:15	1.59
Reach - 1	0.46	0	31Dec2023, 24:00	0
Sb8	0.28	71.74	01Jan2024, 07:15	1.19

J - 4	3.18	202.98	01Jan2024, 08:35	0.67
Reach - 5	3.18	112.59	01Jan2024, 10:30	0.15
Sb10	0.69	116.19	01Jan2024, 08:10	1.24
Sb11	0.42	59.18	01Jan2024, 08:30	1.19
Sb9	0.25	44.13	01Jan2024, 08:00	1.22
J - 6	4.53	216.83	01Jan2024, 08:10	0.47
Reach - 6	4.53	24.2	01Jan2024, 12:10	0.01
Sb12	0.97	108.5	01Jan2024, 09:15	1.22
J - 7	5.5	108.5	01Jan2024, 09:15	0.22
Storage - 1	5.5	40.82	01Jan2024, 12:55	0.13
Reach - 7	5.5	0	31Dec2023, 24:00	0
Sb13	0.36	44.71	01Jan2024, 09:05	1.27
J - 8	5.86	44.71	01Jan2024, 09:05	0.08
Reach - 8	5.86	20.33	01Jan2024, 09:20	0.01
Sb14	0.06	83.28	01Jan2024, 06:40	3.87
Pond - 1	5.92	6.9	01Jan2024, 10:55	0.05
Sink - 1	5.92	6.9	01Jan2024, 10:55	0.05

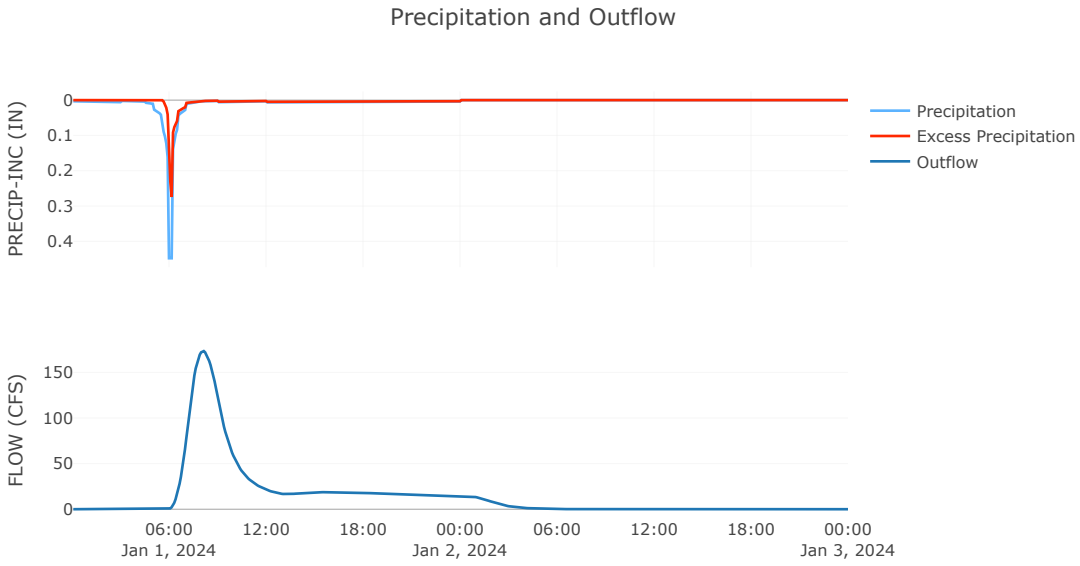
Subbasin: SB2

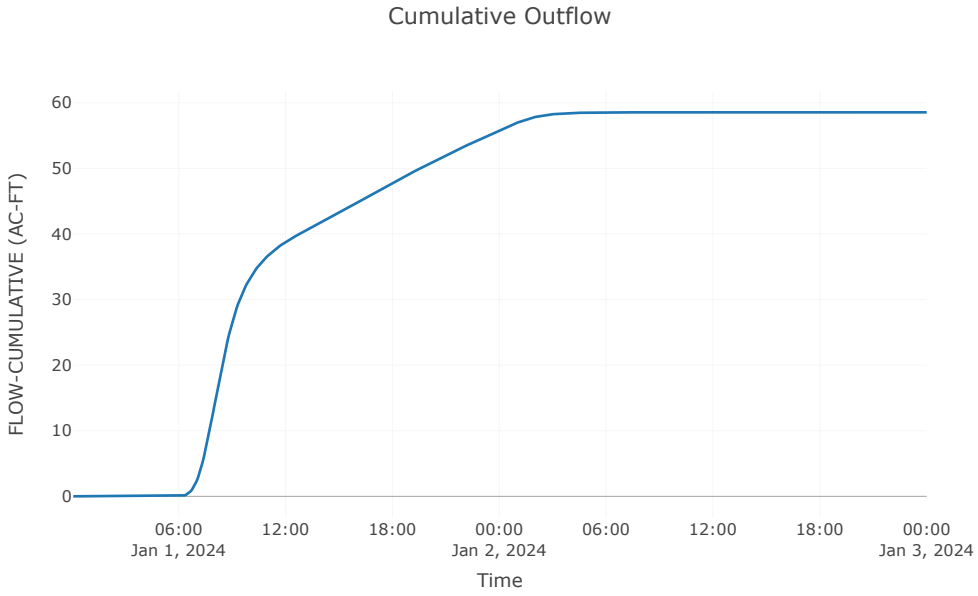
Area (MI2) : 0.56
Latitude Degrees : 31.44
Longitude Degrees : -103.68
Downstream : J - 2

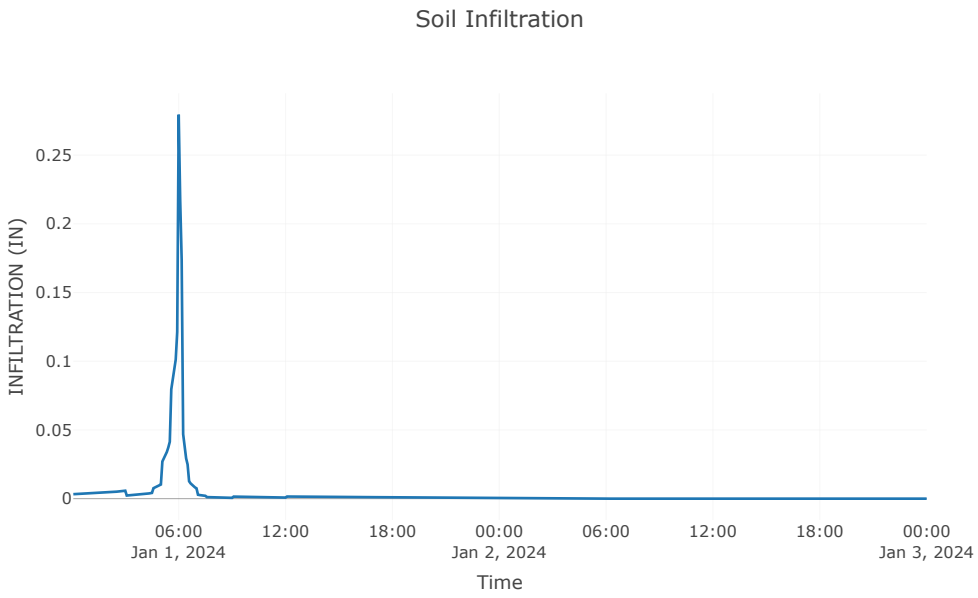
Loss Rate: Scs	
Percent Impervious Area	0.31
Curve Number	79.06
Initial Abstraction	0.53

Transform: Scs	
Lag	108
Unitgraph Type	Standard

Results: SB2	
Peak Discharge (CFS)	173.33
Time of Peak Discharge	01Jan2024, 08:00
Volume (IN)	1.95
Precipitation Volume (AC - FT)	119.18
Loss Volume (AC - FT)	60.63
Excess Volume (AC - FT)	58.55
Direct Runoff Volume (AC - FT)	58.55
Baseflow Volume (AC - FT)	0


Precipitation and Outflow
PRECIP-INC (IN)
0
0.1
0.2
0.3
0.4
Precipitation
Excess Precipitation
Outflow
FLOW (CFS)
150
100
50
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024

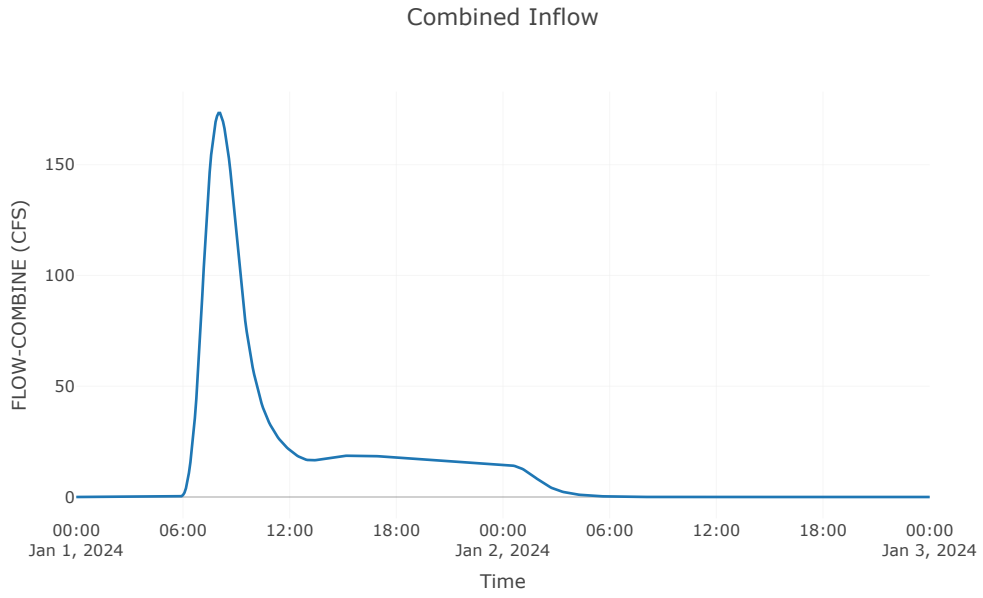

Cumulative Outflow
FLOW-CUMULATIVE (AC-FT)
60
50
40
30
20
10
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

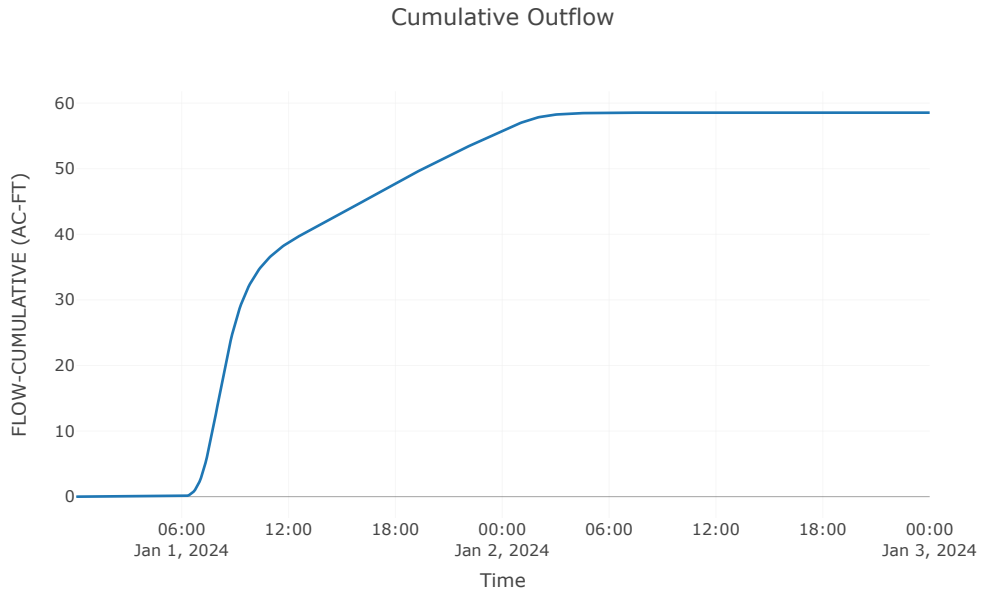

Soil Infiltration
INFILTRATION (IN)
0.25
0.2
0.15
0.1
0.05
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

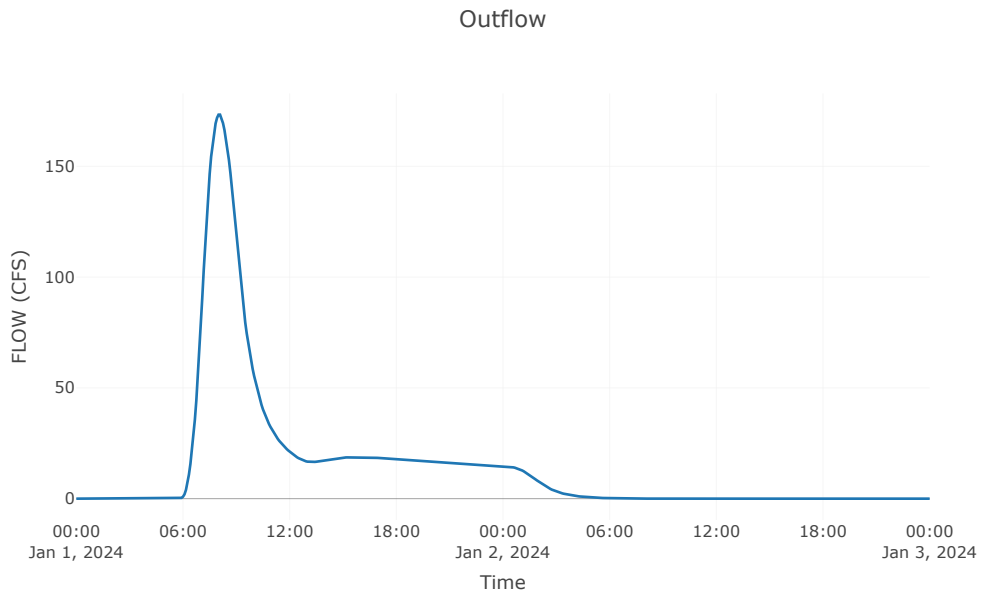
Junction: J-2

Downstream : Reach - 2

Results: J-2	
Peak Discharge (CFS)	173.33
Time of Peak Discharge	01Jan2024, 08:00
Volume (IN)	1.95





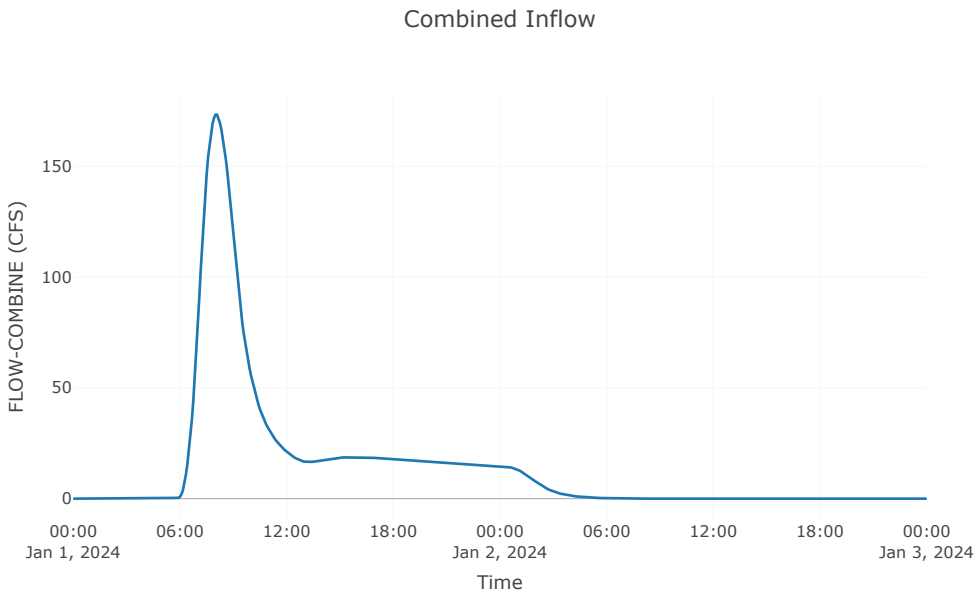

Outflow
150
100
50
0
FLOW (CFS)
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

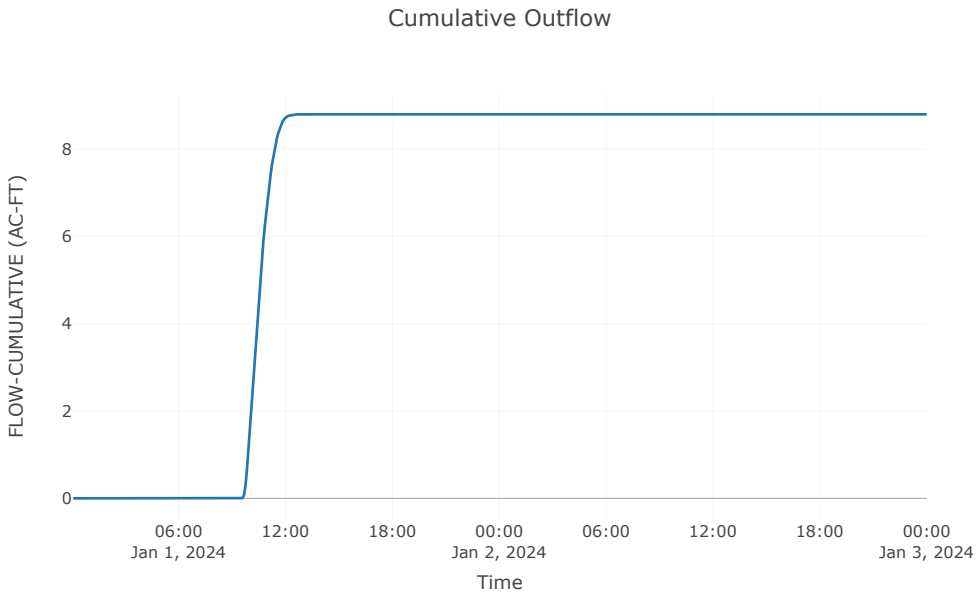
Reach: Reach-2

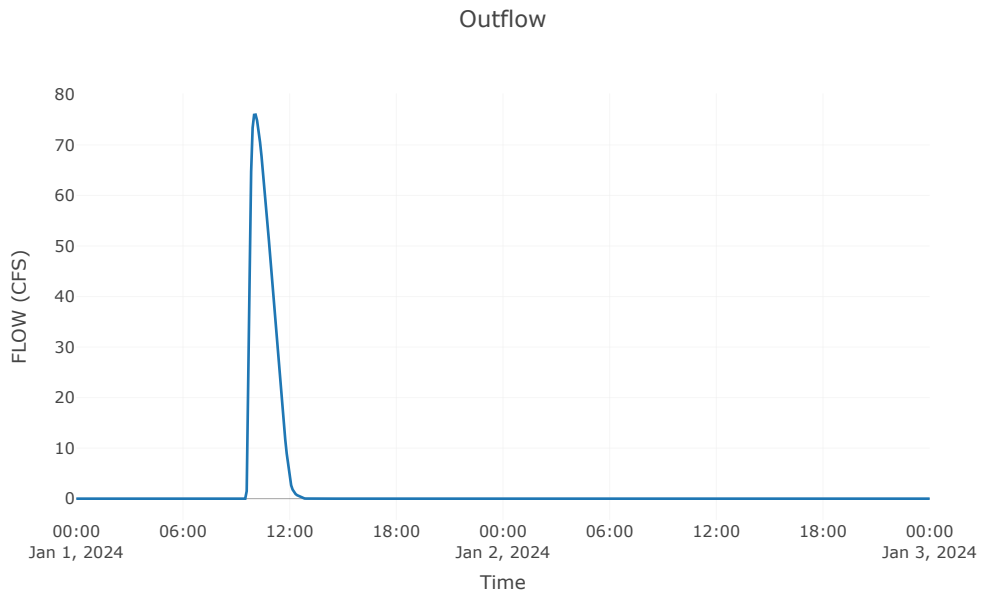
Downstream : J - 3

Route: Muskingum Cunge	
Method	Muskingum Cunge
Channel	Trapezoid
Length (FT)	6296
Energy Slope (FT/FT)	0
Mannings n	0.1
Bottom Width (FT)	500
Side Slope (FT/FT)	4
Initial Variable	Combined Inflow
Space - Time Method	Automatic DX and DT
Index Parameter Type	Index Flow
Index Flow	87
Maximum Depth Iterations	20
Maximum Route Step Iterations	30
Channel Loss	Percolation
Channel Loss Percolation Rate	1.28
End Channel Loss	

Results: Reach-2	
Peak Discharge (CFS)	75.99
Time of Peak Discharge	01Jan2024, 10:05
Volume (IN)	0.29
Peak Inflow (CFS)	173.33
Inflow Volume (AC - FT)	58.55


Combined Inflow
FLOW-COMBINE (CFS)
150
100
50
0
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time


Cumulative Outflow
FLOW-CUMULATIVE (AC-FT)
8
6
4
2
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time


Outflow
80
70
60
50
40
30
20
10
0
FLOW (CFS)
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

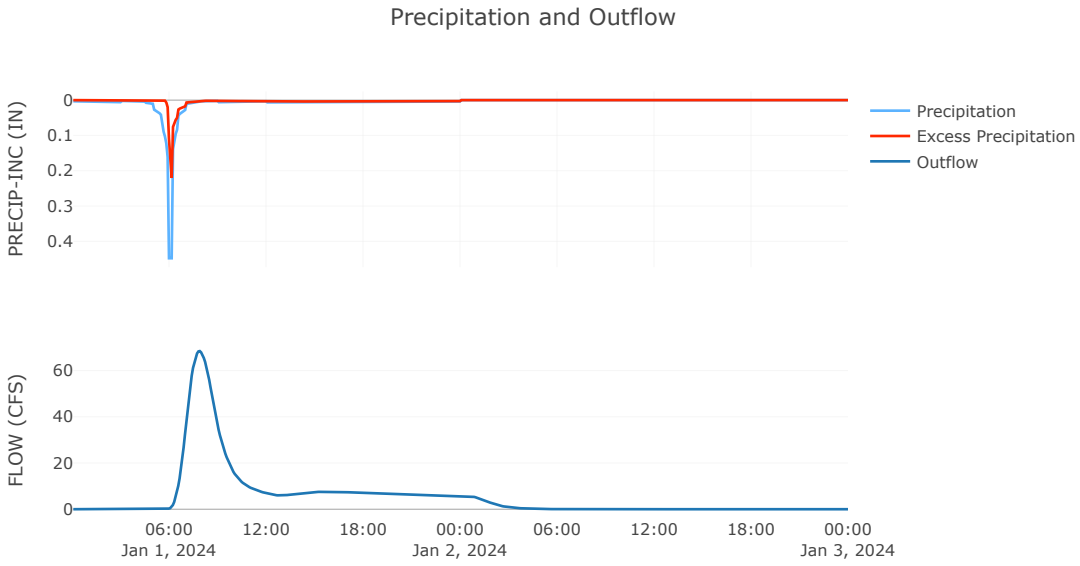
Subbasin: SB4

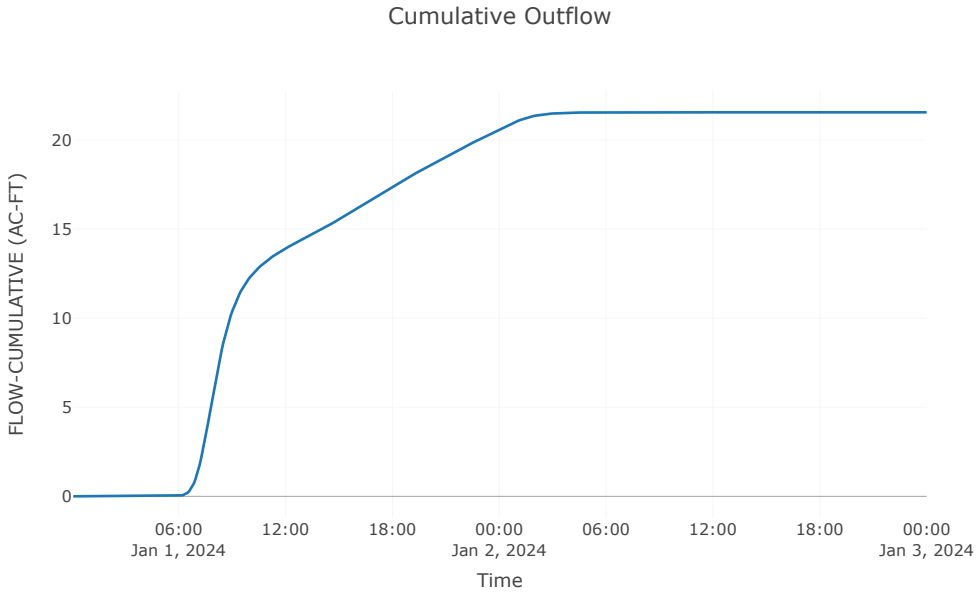
Area (MI2) : 0.26
Latitude Degrees : 31.44
Longitude Degrees : -103.66
Downstream : J - 3

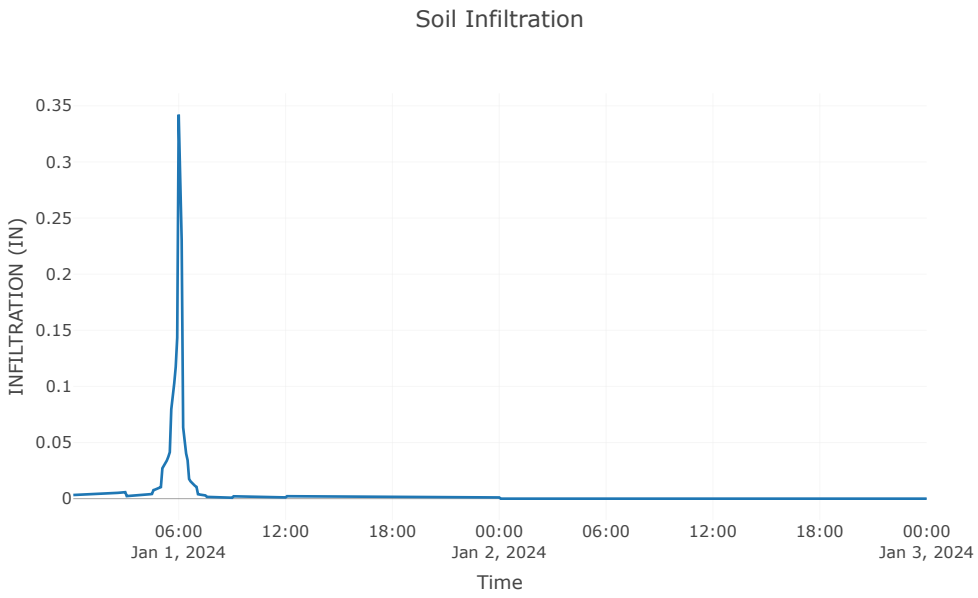
Loss Rate: Scs	
Percent Impervious Area	1.41
Curve Number	73.59
Initial Abstraction	0.72

Transform: Scs	
Lag	93
Unitgraph Type	Standard

Results: SB4	
Peak Discharge (CFS)	68.41
Time of Peak Discharge	01Jan2024, 07:50
Volume (IN)	1.58
Precipitation Volume (AC - FT)	54.18
Loss Volume (AC - FT)	32.62
Excess Volume (AC - FT)	21.56
Direct Runoff Volume (AC - FT)	21.56
Baseflow Volume (AC - FT)	0


Precipitation and Outflow
PRECIP-INC (IN)
0
0.1
0.2
0.3
0.4
Precipitation
Excess Precipitation
Outflow
FLOW (CFS)
60
40
20
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024

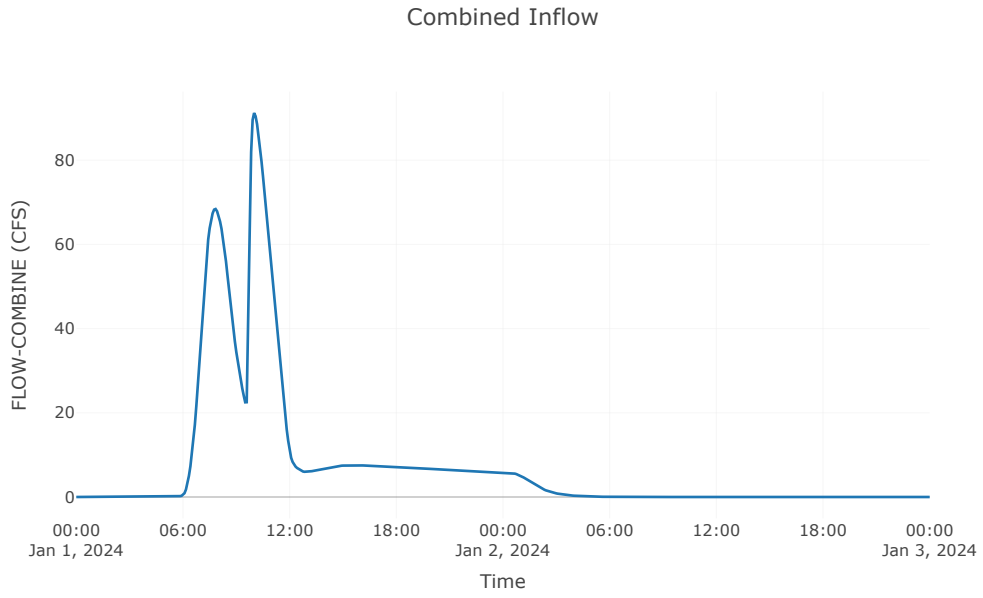

Cumulative Outflow
FLOW-CUMULATIVE (AC-FT)
20
15
10
5
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

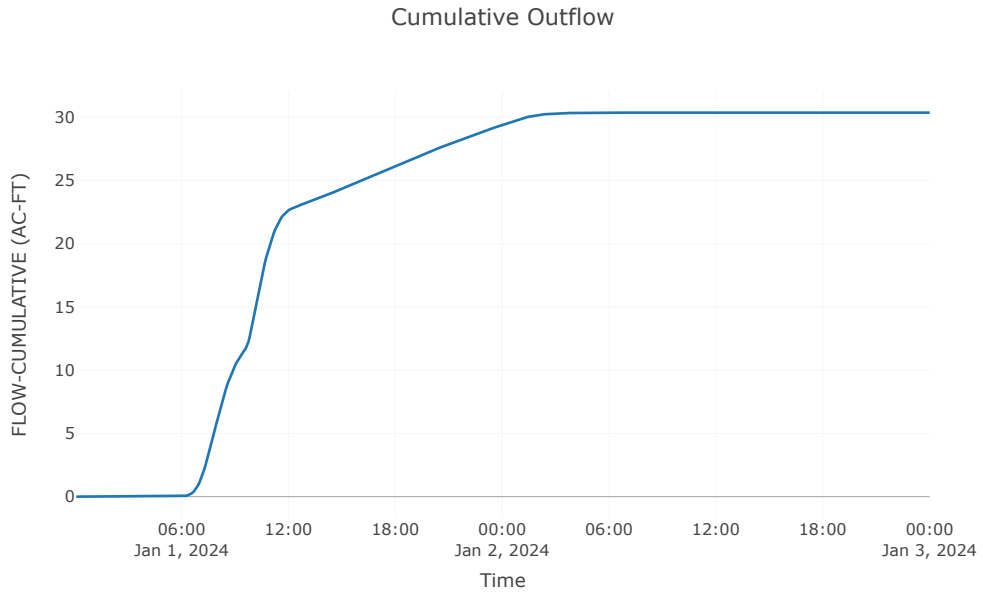

Soil Infiltration
INFILTRATION (IN)
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

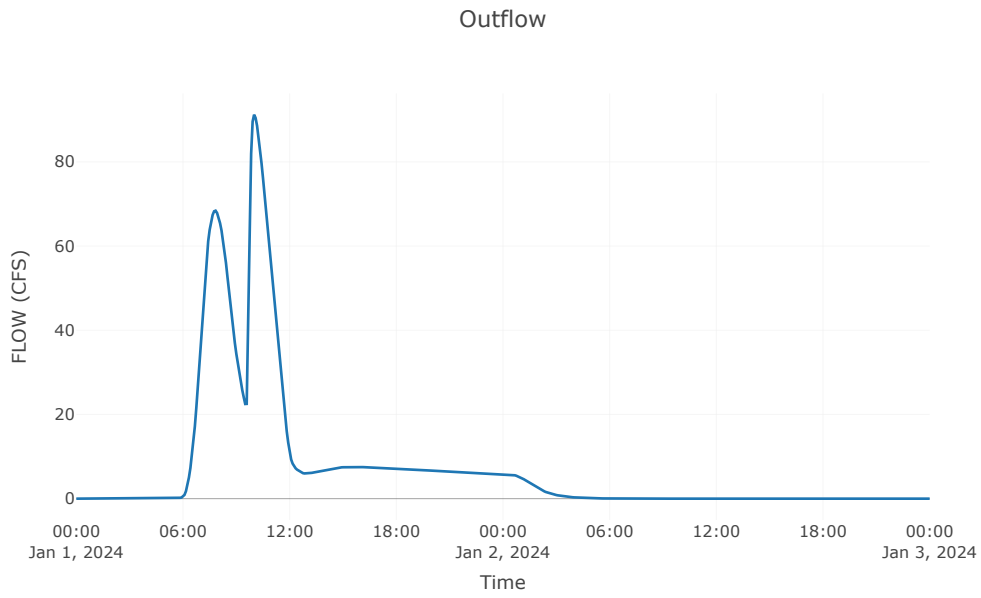
Junction: J-3

Downstream : Reach - 3

Results: J-3	
Peak Discharge (CFS)	91.22
Time of Peak Discharge	01Jan2024, 10:00
Volume (IN)	0.7





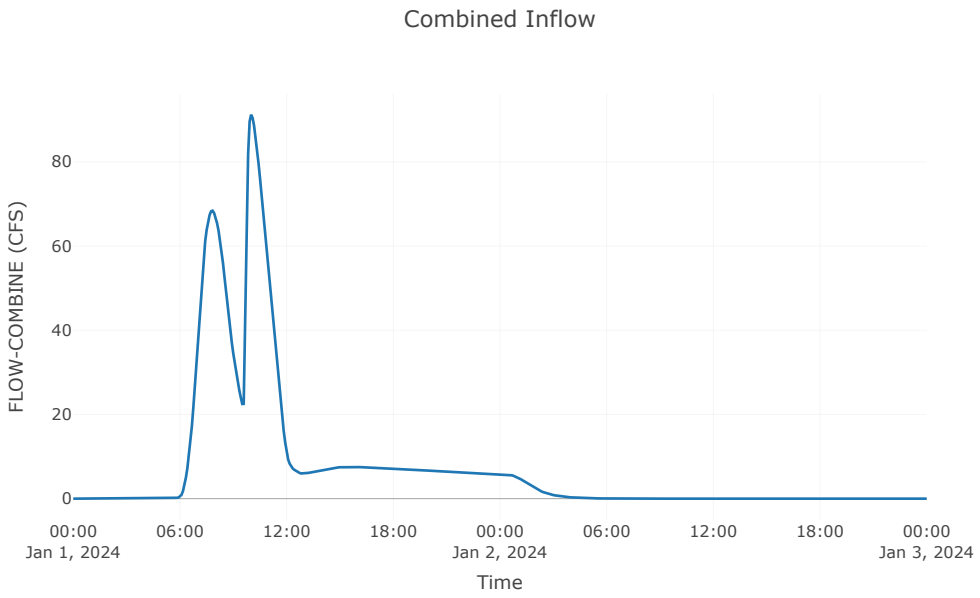

Outflow
FLOW (CFS)
80
60
40
20
0
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

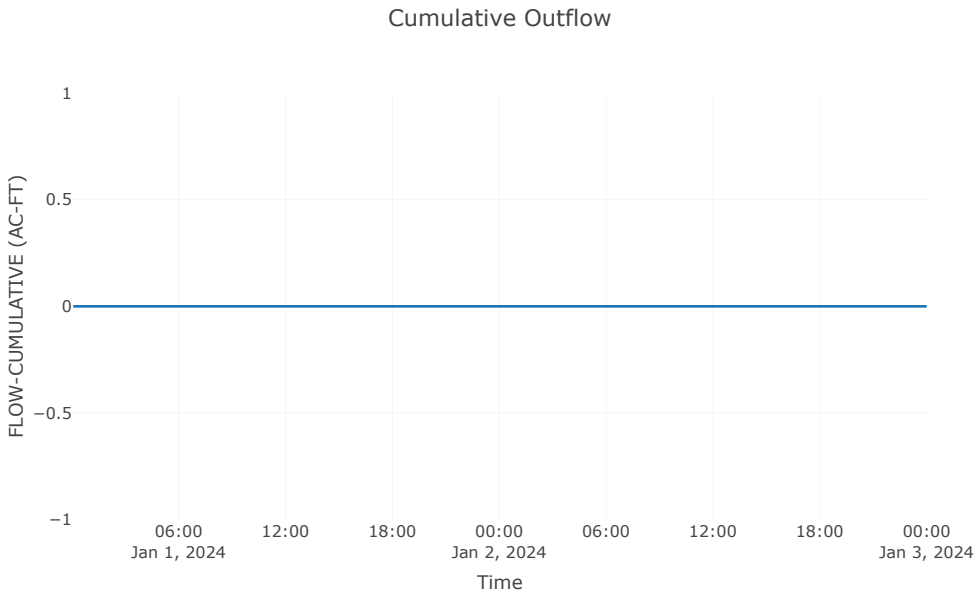
Reach: Reach-3

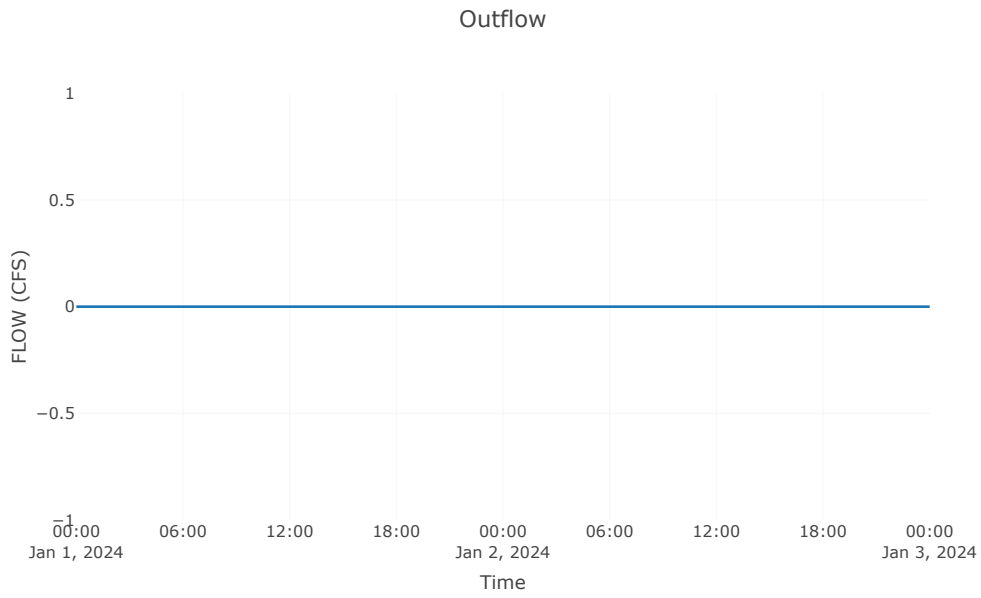
Downstream : J - 4

Route: Muskingum Cunge	
Method	Muskingum Cunge
Channel	Trapezoid
Length (FT)	6568
Energy Slope (FT/FT)	0
Mannings n	0.1
Bottom Width (FT)	500
Side Slope (FT/FT)	4
Initial Variable	Combined Inflow
Space - Time Method	Automatic DX and DT
Index Parameter Type	Index Flow
Index Flow	46
Maximum Depth Iterations	20
Maximum Route Step Iterations	30
Channel Loss	Percolation
Channel Loss Percolation Rate	1.48
End Channel Loss	

Results: Reach-3	
Peak Discharge (CFS)	0
Time of Peak Discharge	31Dec2023, 24:00
Volume (IN)	0
Peak Inflow (CFS)	91.22
Inflow Volume (AC - FT)	30.36


Combined Inflow
FLOW-COMBINE (CFS)
80
60
40
20
0
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time


Cumulative Outflow
FLOW-CUMULATIVE (AC-FT)
1
0.5
0
−0.5
−1
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time


Outflow
1
0.5
0
−0.5
−1
FLOW (CFS)
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

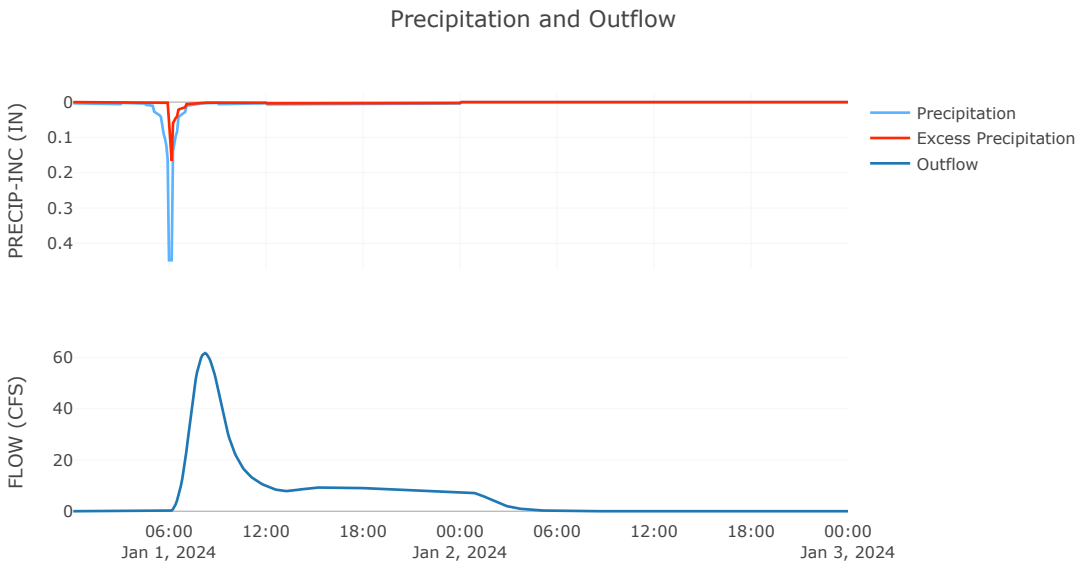
Subbasin: SB6

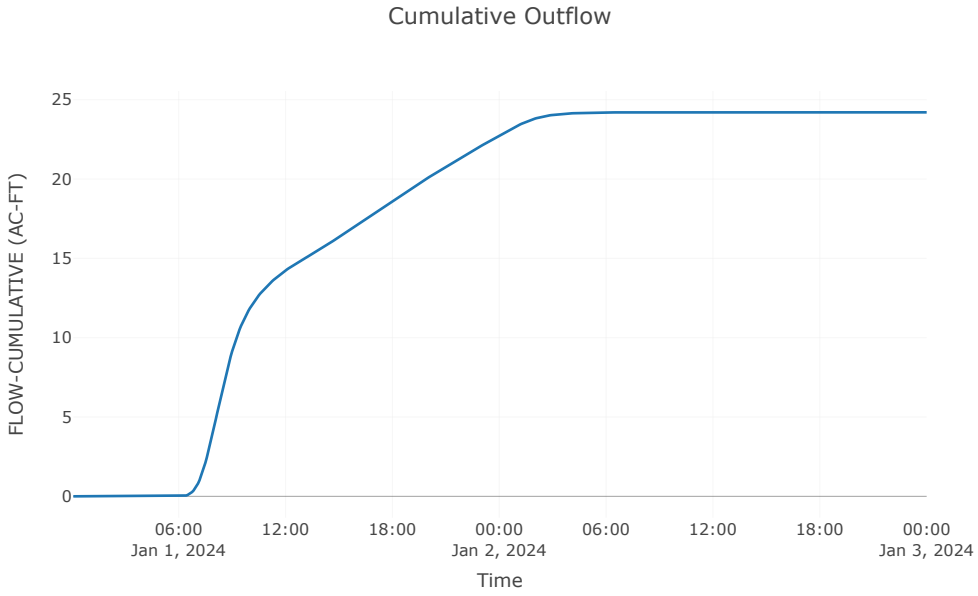
Area (MI2) : 0.38
Latitude Degrees : 31.43
Longitude Degrees : -103.65
Downstream : J - 5

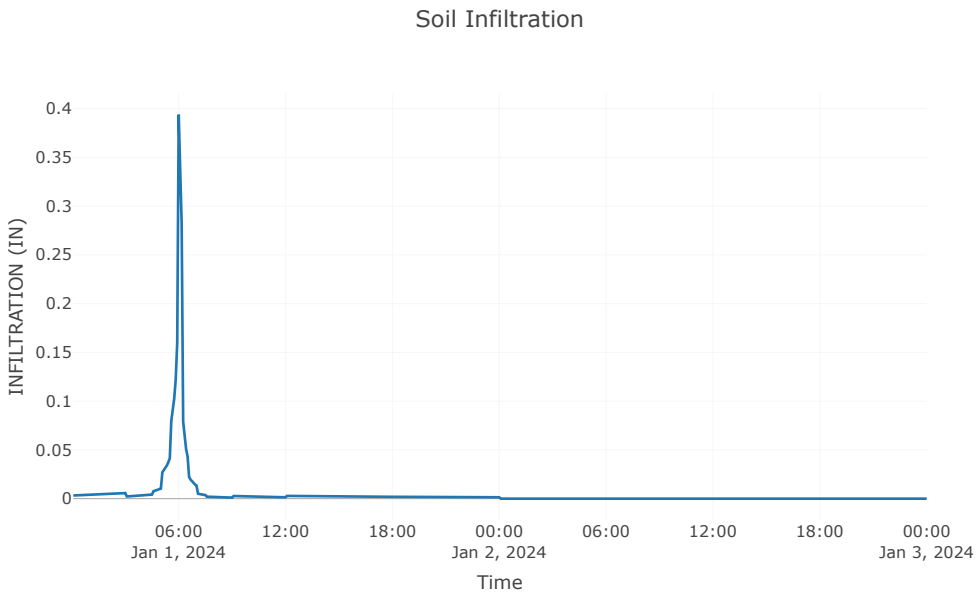
Loss Rate: Scs	
Percent Impervious Area	0.06
Curve Number	68.31
Initial Abstraction	0.93

Transform: Scs	
Lag	110
Unitgraph Type	Standard

Results: SB6	
Peak Discharge (CFS)	61.72
Time of Peak Discharge	01Jan2024, 08:10
Volume (IN)	1.21
Precipitation Volume (AC - FT)	79.67
Loss Volume (AC - FT)	55.47
Excess Volume (AC - FT)	24.2
Direct Runoff Volume (AC - FT)	24.2
Baseflow Volume (AC - FT)	0


Precipitation and Outflow
PRECIP-INC (IN)
0
0.1
0.2
0.3
0.4
Precipitation
Excess Precipitation
Outflow
FLOW (CFS)
60
40
20
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024


Cumulative Outflow
FLOW-CUMULATIVE (AC-FT)
25
20
15
10
5
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time


Soil Infiltration
INFILTRATION (IN)
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

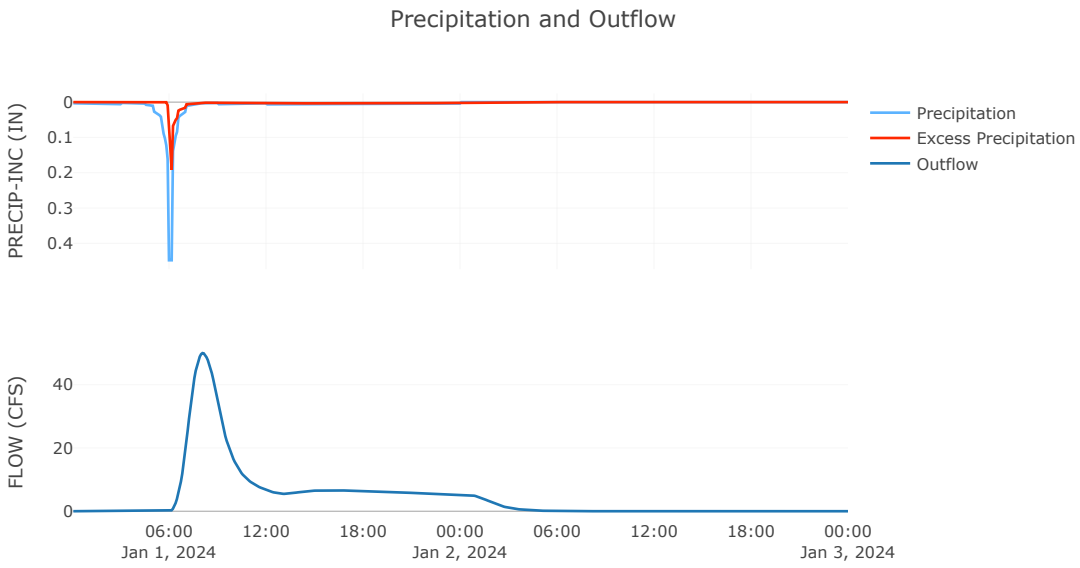
Subbasin: SB7

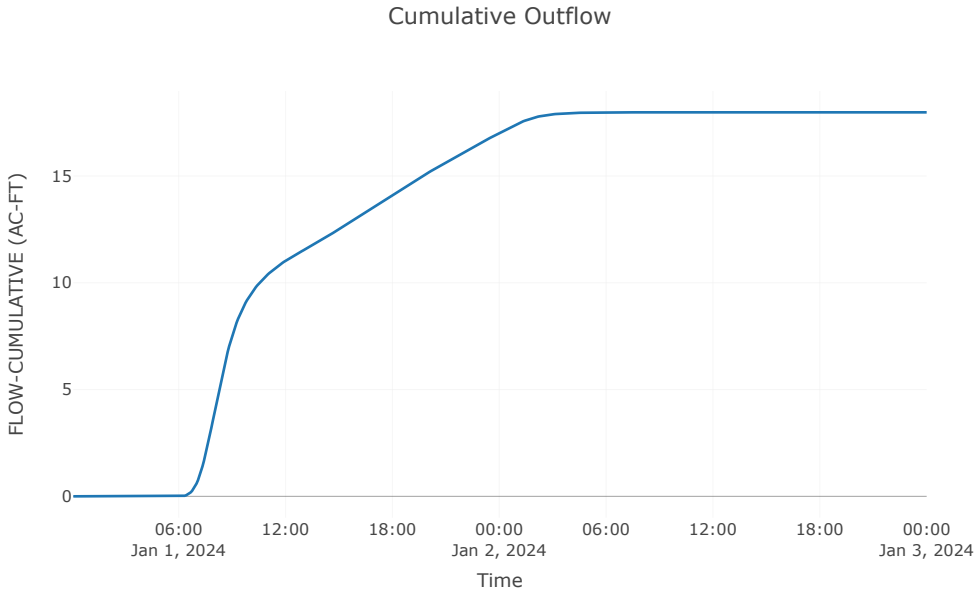
Area (MI2) : 0.25
Latitude Degrees : 31.43
Longitude Degrees : -103.65
Downstream : J - 5

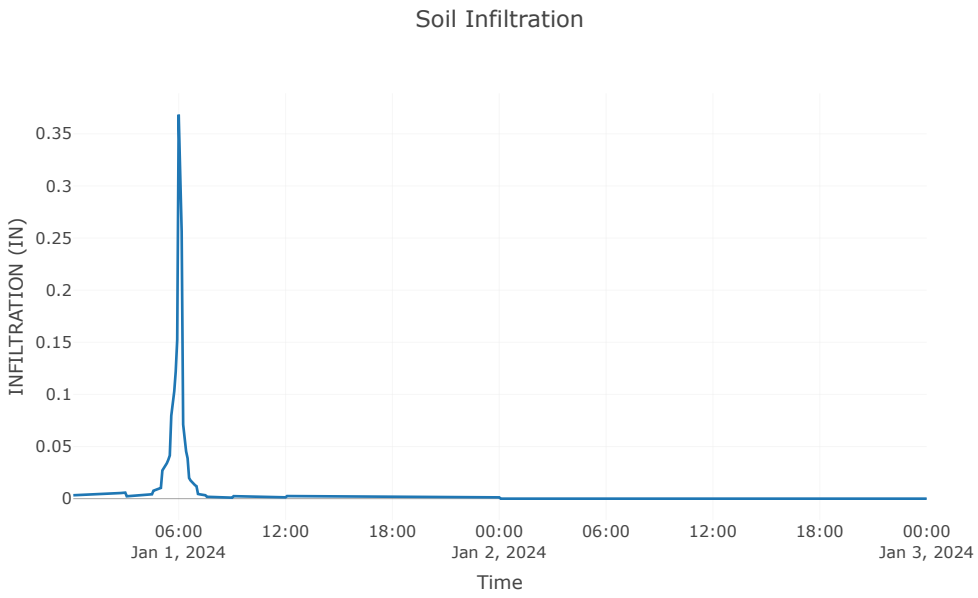
Loss Rate: Scs	
Percent Impervious Area	0.02
Curve Number	71.01
Initial Abstraction	0.82

Transform: Scs	
Lag	104
Unitgraph Type	Standard

Results: SB7	
Peak Discharge (CFS)	49.99
Time of Peak Discharge	01Jan2024, 08:00
Volume (IN)	1.37
Precipitation Volume (AC - FT)	51.93
Loss Volume (AC - FT)	33.95
Excess Volume (AC - FT)	17.98
Direct Runoff Volume (AC - FT)	17.98
Baseflow Volume (AC - FT)	0


Precipitation and Outflow
PRECIP-INC (IN)
0
0.1
0.2
0.3
0.4
Precipitation
Excess Precipitation
Outflow
FLOW (CFS)
40
20
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024

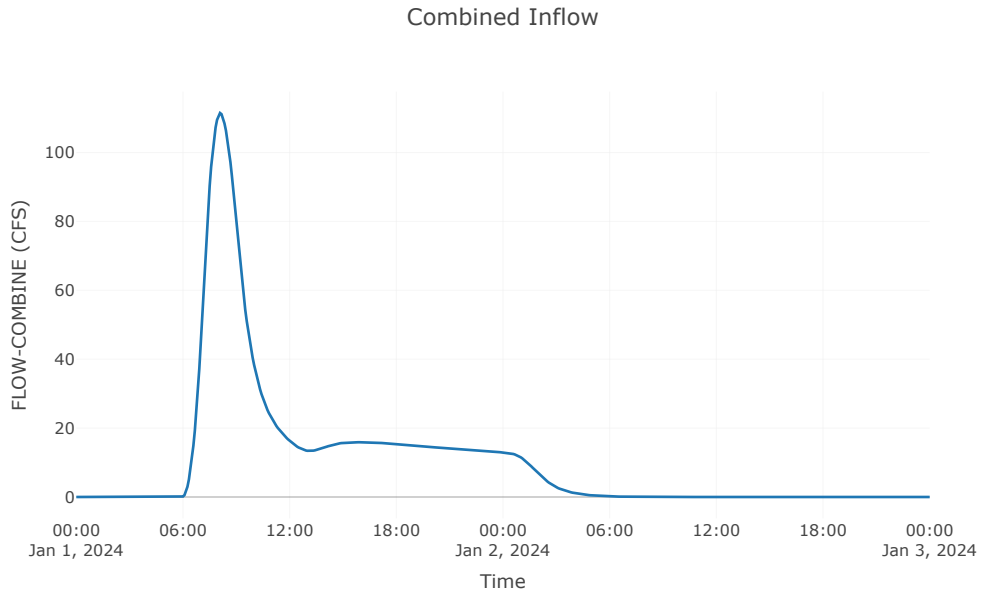

Cumulative Outflow
FLOW-CUMULATIVE (AC-FT)
15
10
5
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

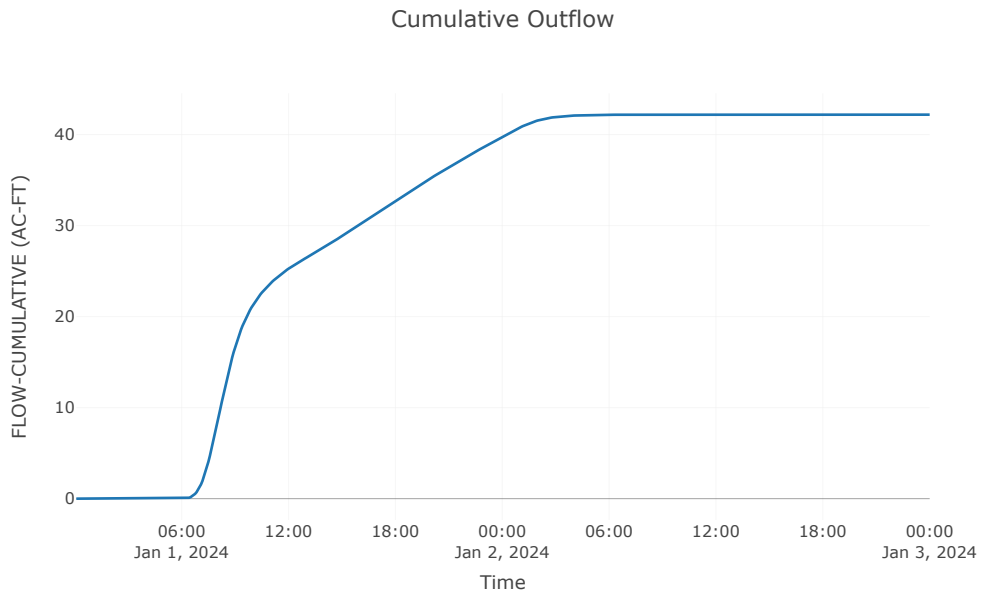

Soil Infiltration
INFILTRATION (IN)
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

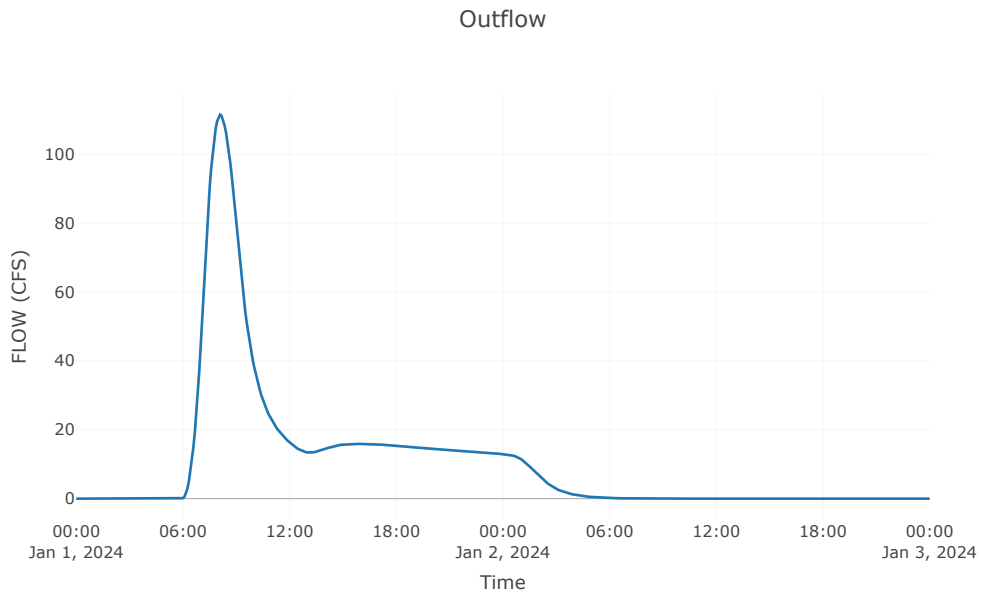
Junction: J-5

Downstream : Reach - 4

Results: J-5	
Peak Discharge (CFS)	111.48
Time of Peak Discharge	01Jan2024, 08:05
Volume (IN)	1.27





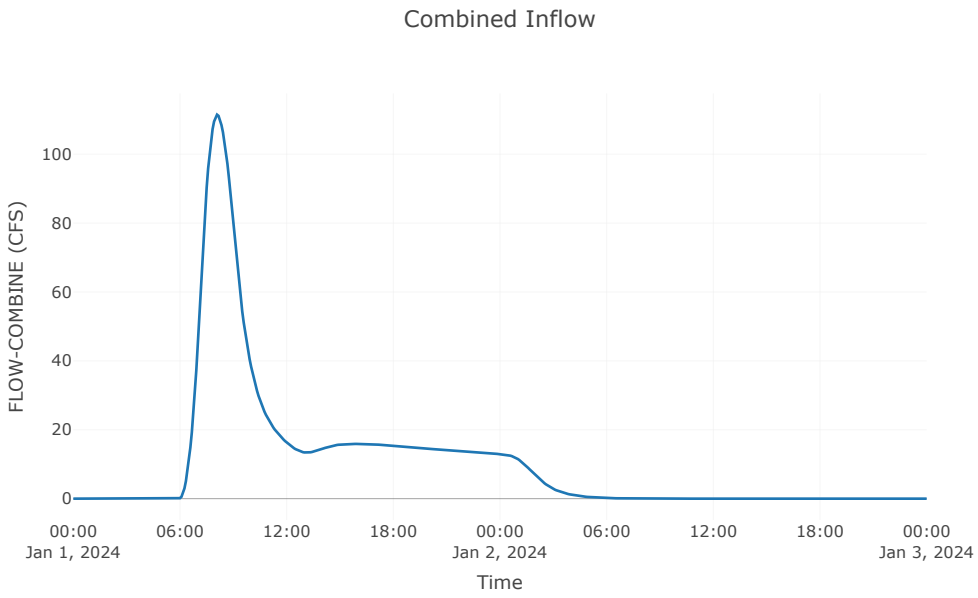

Outflow
100
80
60
40
20
0
FLOW (CFS)
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

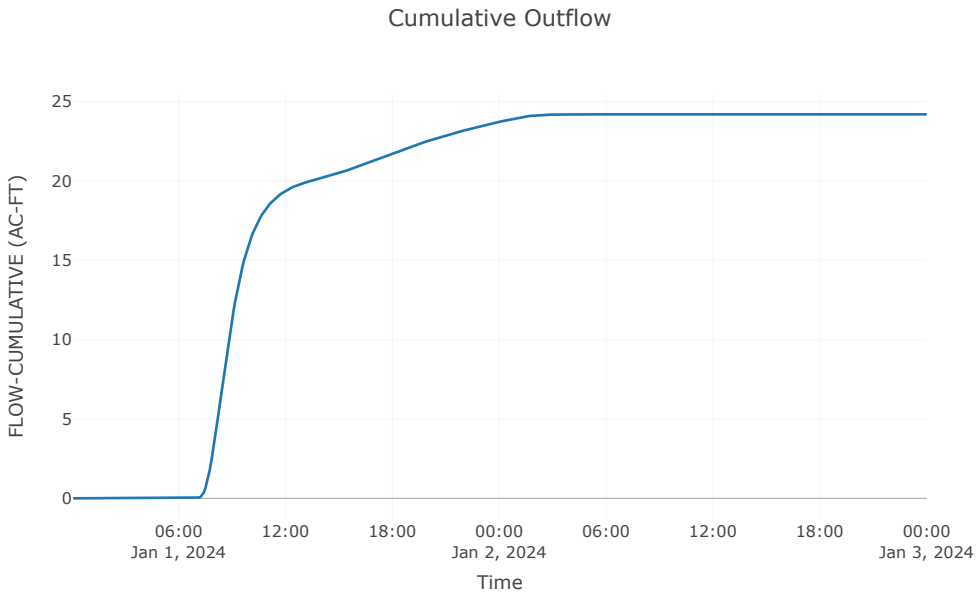
Reach: Reach-4

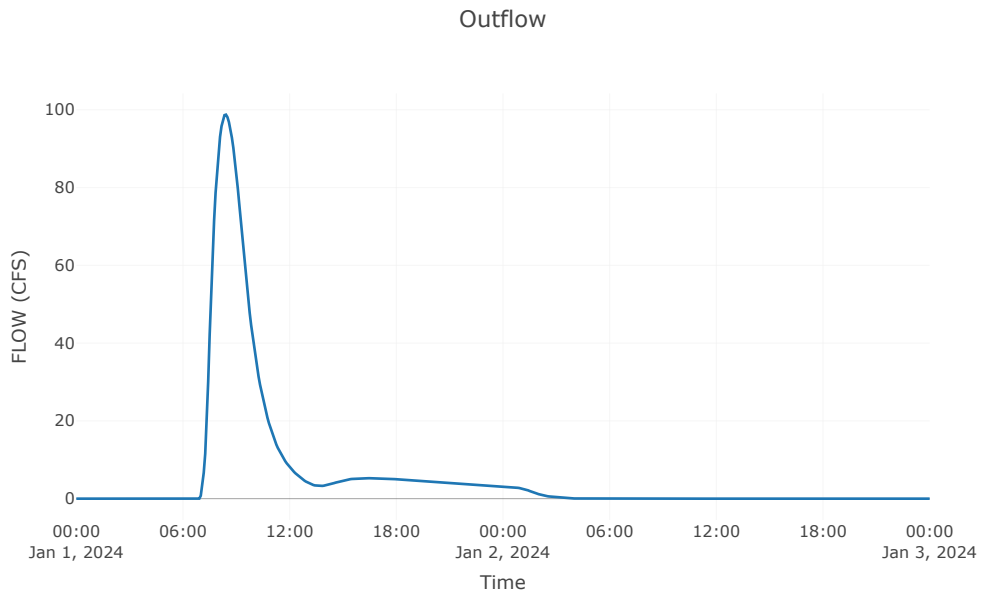
Downstream : J - 4

Route: Muskingum Cunge	
Method	Muskingum Cunge
Channel	Trapezoid
Length (FT)	817
Energy Slope (FT/FT)	0
Mannings n	0.1
Bottom Width (FT)	500
Side Slope (FT/FT)	4
Initial Variable	Combined Inflow
Space - Time Method	Automatic DX and DT
Index Parameter Type	Index Flow
Index Flow	56
Maximum Depth Iterations	20
Maximum Route Step Iterations	30
Channel Loss	Percolation
Channel Loss Percolation Rate	1.28
End Channel Loss	

Results: Reach-4	
Peak Discharge (CFS)	98.75
Time of Peak Discharge	01Jan2024, 08:25
Volume (IN)	0.73
Peak Inflow (CFS)	111.48
Inflow Volume (AC - FT)	42.18


Combined Inflow
FLOW-COMBINE (CFS)
100
80
60
40
20
0
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time


Cumulative Outflow
FLOW-CUMULATIVE (AC-FT)
25
20
15
10
5
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time


Outflow
100
80
60
40
20
0
FLOW (CFS)
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

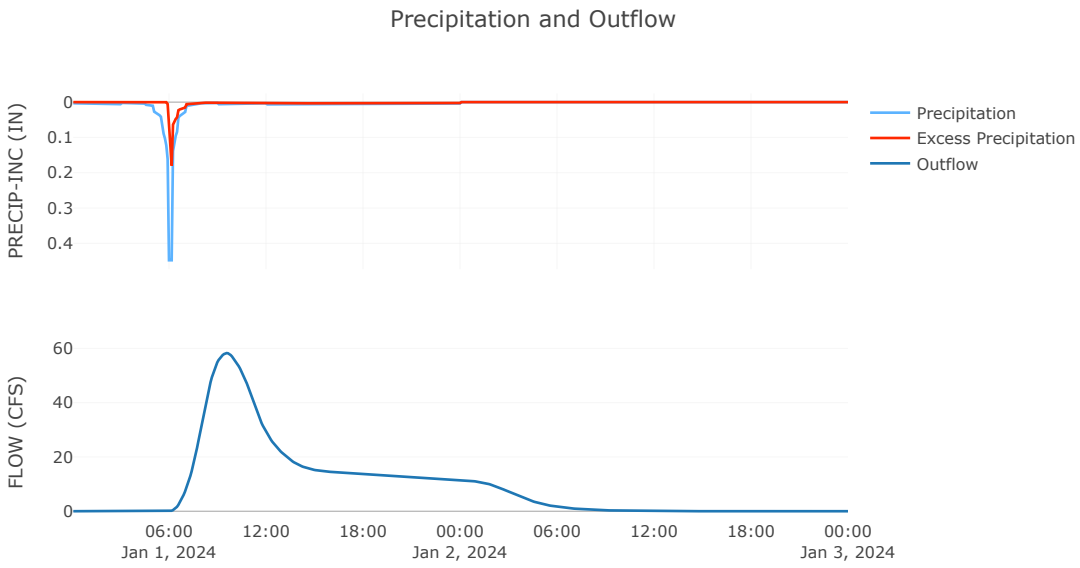
Subbasin: SB5

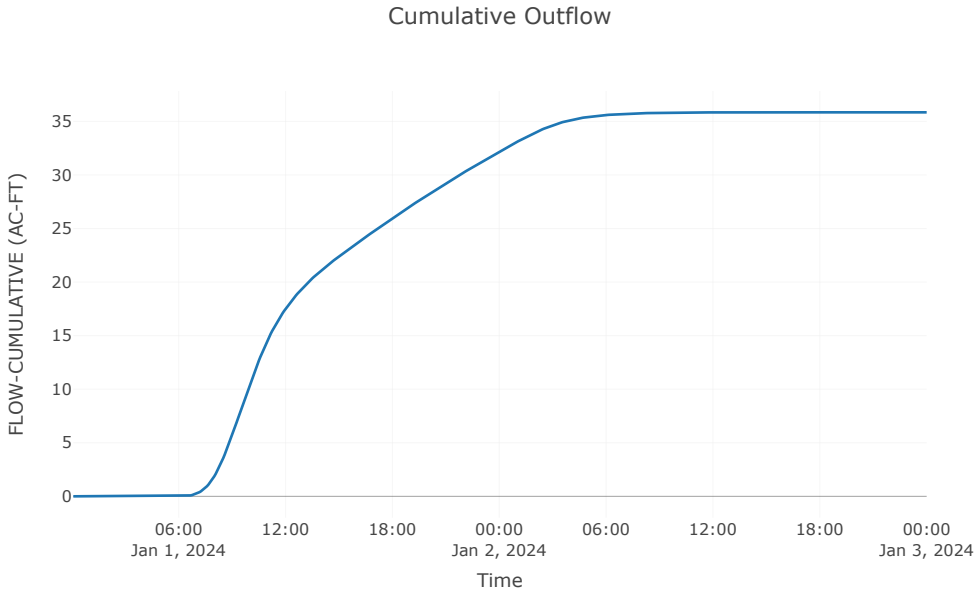
Area (MI2) : 0.52
Latitude Degrees : 31.44
Longitude Degrees : -103.65
Downstream : J - 4

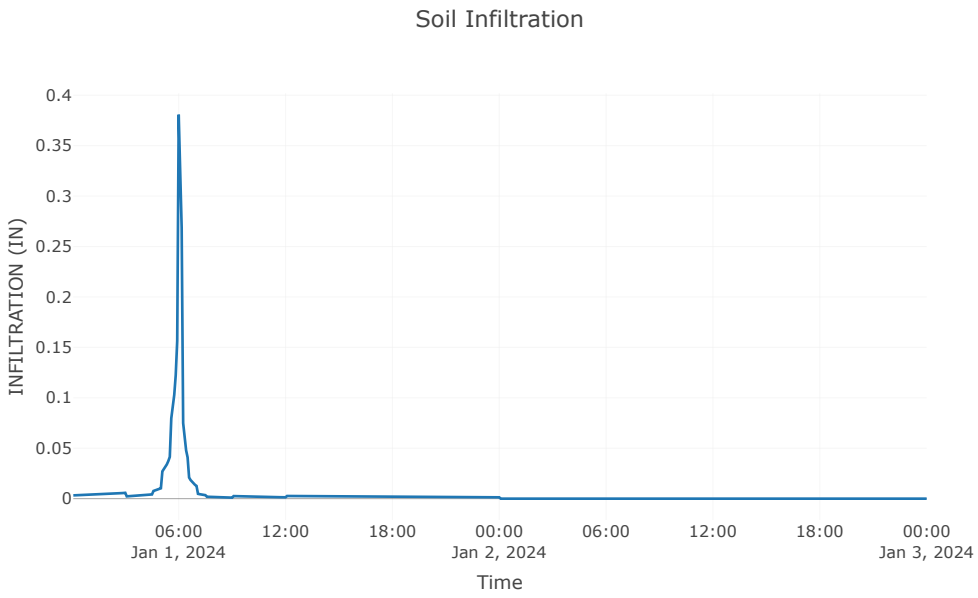
Loss Rate: Scs	
Percent Impervious Area	0.26
Curve Number	69.72
Initial Abstraction	0.87

Transform: Scs	
Lag	188
Unitgraph Type	Standard

Results: SB5	
Peak Discharge (CFS)	58.26
Time of Peak Discharge	01Jan2024, 09:30
Volume (IN)	1.3
Precipitation Volume (AC - FT)	109.56
Loss Volume (AC - FT)	73.72
Excess Volume (AC - FT)	35.85
Direct Runoff Volume (AC - FT)	35.85
Baseflow Volume (AC - FT)	0


Precipitation and Outflow
PRECIP-INC (IN)
0
0.1
0.2
0.3
0.4
Precipitation
Excess Precipitation
Outflow
FLOW (CFS)
60
40
20
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024


Cumulative Outflow
FLOW-CUMULATIVE (AC-FT)
35
30
25
20
15
10
5
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time


Soil Infiltration
INFILTRATION (IN)
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

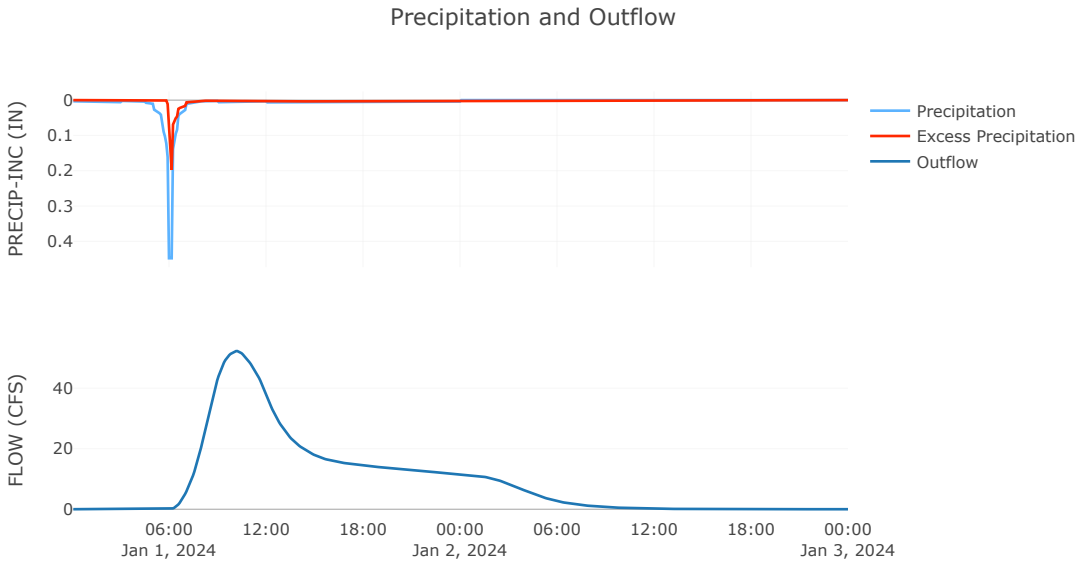
Subbasin: SB3

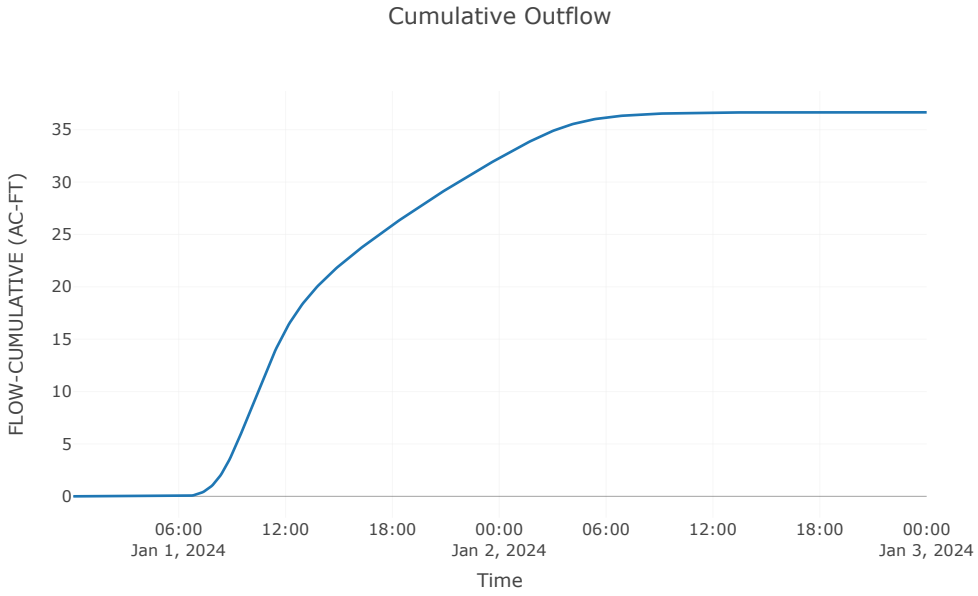
Area (MI2) : 0.49
Latitude Degrees : 31.45
Longitude Degrees : -103.66
Downstream : J - 4

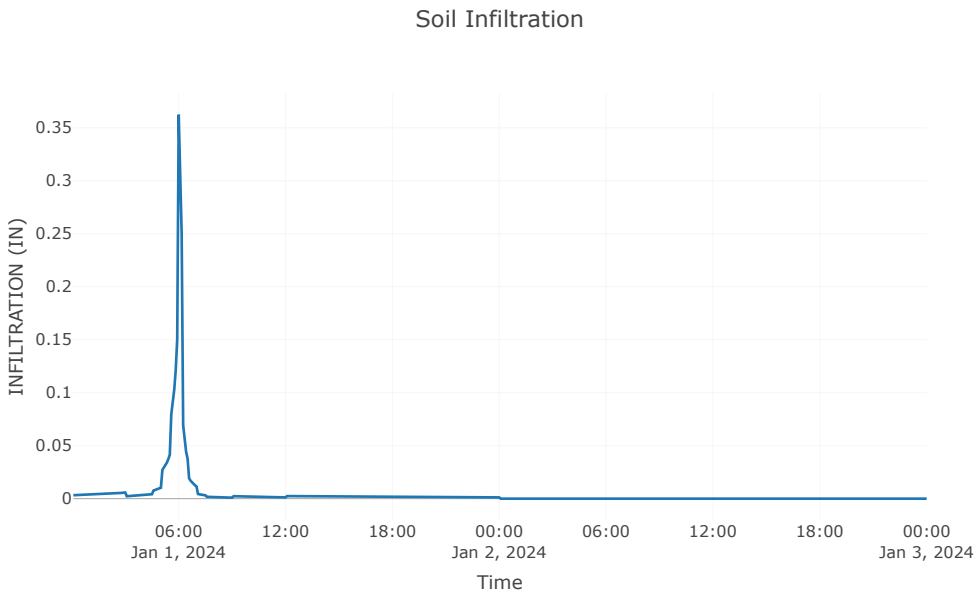
Loss Rate: Scs	
Percent Impervious Area	0.07
Curve Number	71.61
Initial Abstraction	0.79

Transform: Scs	
Lag	223
Unitgraph Type	Standard

Results: SB3	
Peak Discharge (CFS)	52.25
Time of Peak Discharge	01Jan2024, 10:10
Volume (IN)	1.42
Precipitation Volume (AC - FT)	102.83
Loss Volume (AC - FT)	66.17
Excess Volume (AC - FT)	36.66
Direct Runoff Volume (AC - FT)	36.66
Baseflow Volume (AC - FT)	0


Precipitation and Outflow
PRECIP-INC (IN)
0
0.1
0.2
0.3
0.4
Precipitation
Excess Precipitation
Outflow
FLOW (CFS)
40
20
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024


Cumulative Outflow
FLOW-CUMULATIVE (AC-FT)
35
30
25
20
15
10
5
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time


Soil Infiltration
INFILTRATION (IN)
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

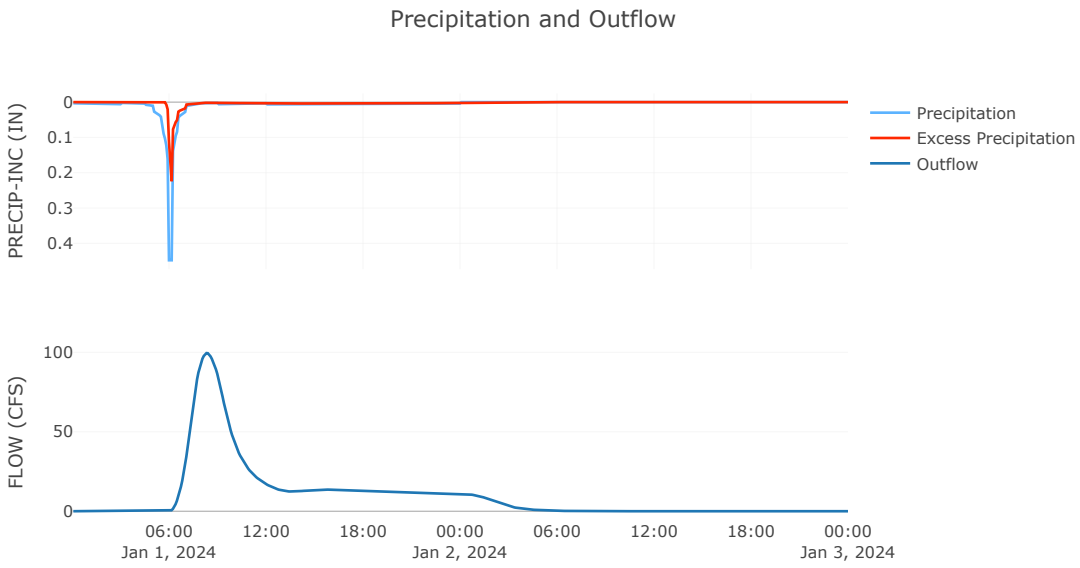
Subbasin: SB1

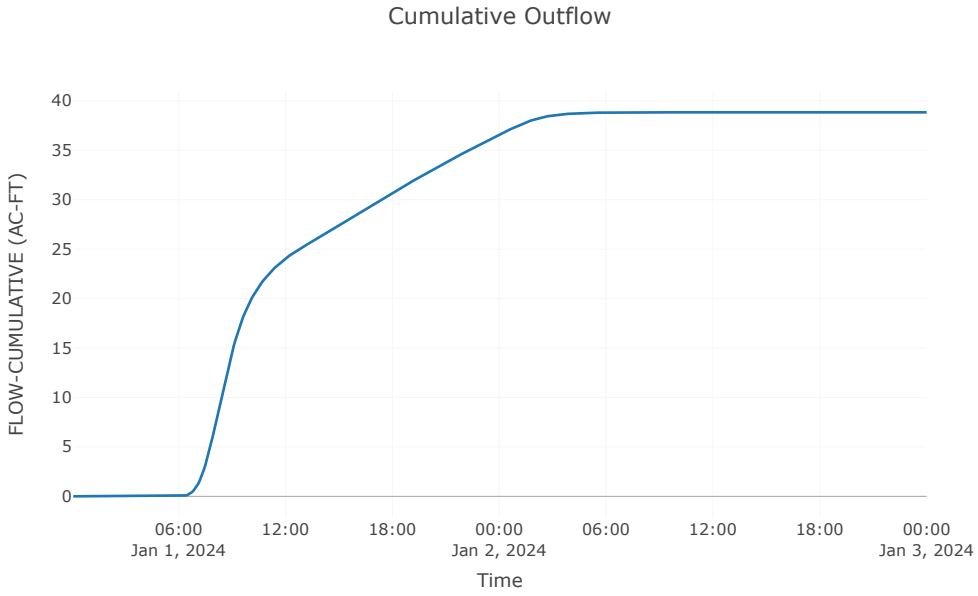
Area (MI2) : 0.46
Latitude Degrees : 31.45
Longitude Degrees : -103.68
Downstream : J - 1

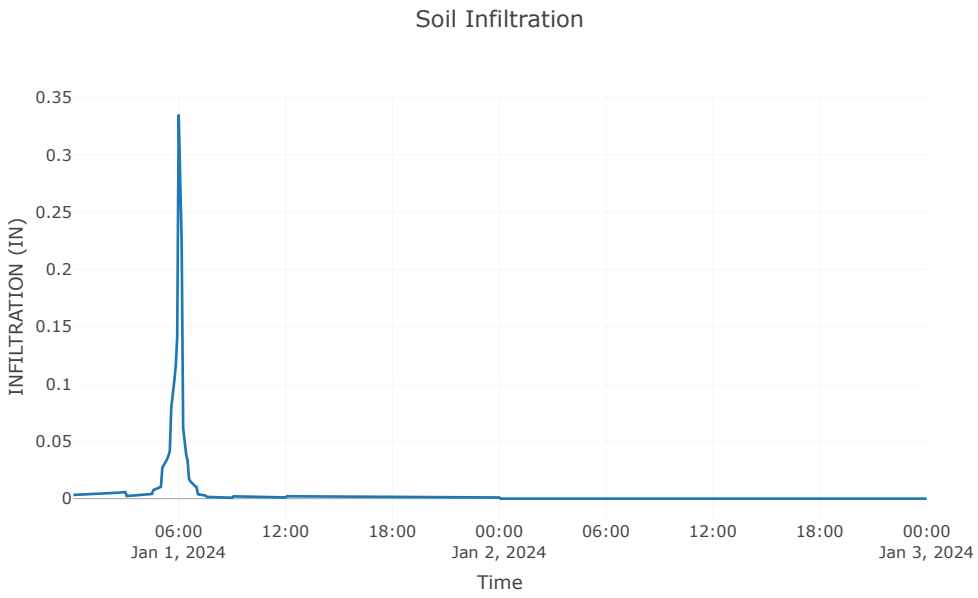
Loss Rate: Scs	
Percent Impervious Area	0.09
Curve Number	74.24
Initial Abstraction	0.69

Transform: Scs	
Lag	120
Unitgraph Type	Standard

Results: SB1	
Peak Discharge (CFS)	99.53
Time of Peak Discharge	01Jan2024, 08:15
Volume (IN)	1.59
Precipitation Volume (AC - FT)	96.8
Loss Volume (AC - FT)	57.96
Excess Volume (AC - FT)	38.84
Direct Runoff Volume (AC - FT)	38.84
Baseflow Volume (AC - FT)	0


Precipitation and Outflow
PRECIP-INC (IN)
0
0.1
0.2
0.3
0.4
Precipitation
Excess Precipitation
Outflow
FLOW (CFS)
100
50
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024

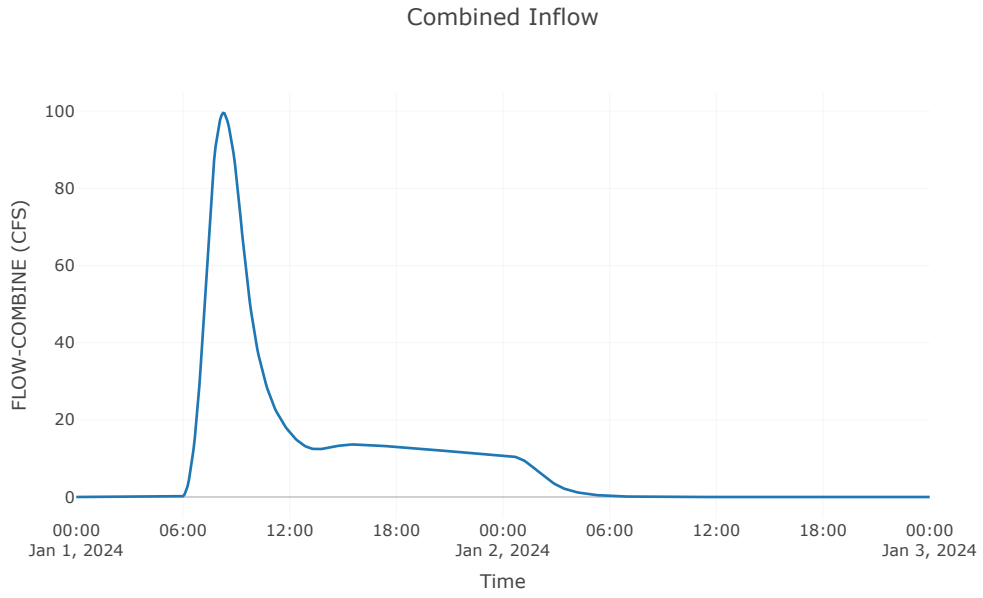

Cumulative Outflow
FLOW-CUMULATIVE (AC-FT)
40
35
30
25
20
15
10
5
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

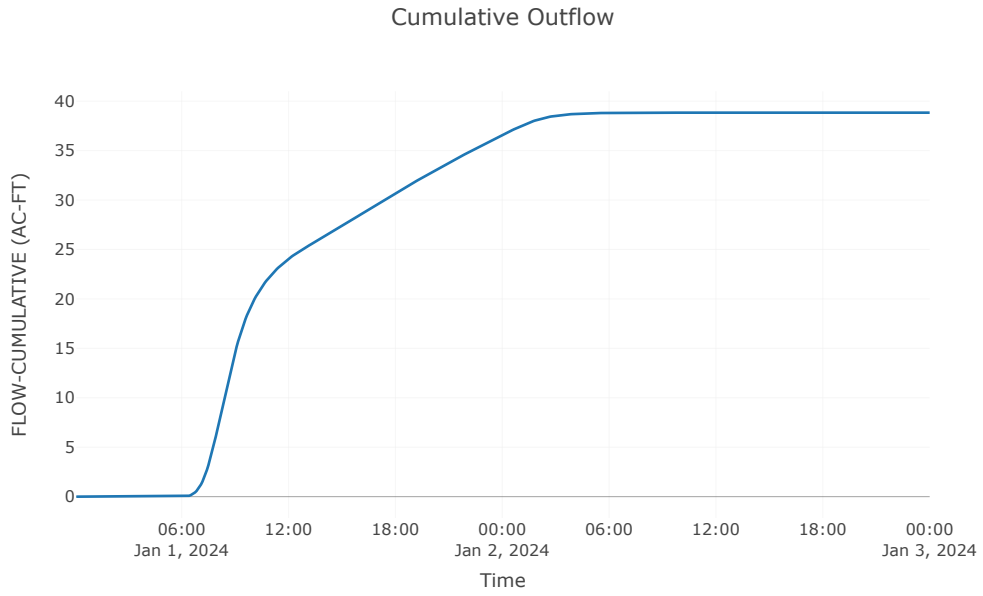

Soil Infiltration
INFILTRATION (IN)
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

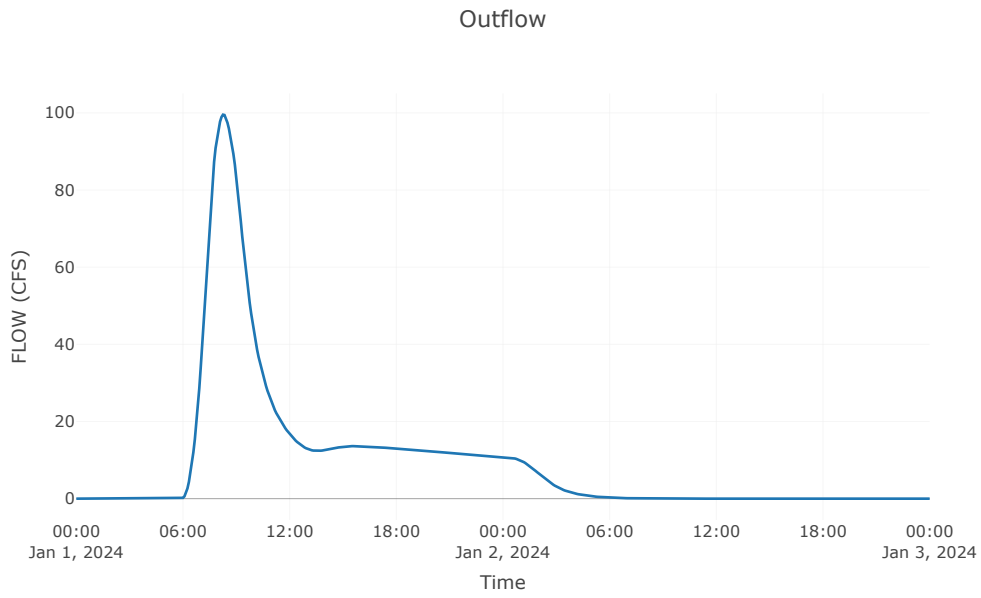
Junction: J-1

Downstream : Reach - 1

Results: J-1	
Peak Discharge (CFS)	99.53
Time of Peak Discharge	01Jan2024, 08:15
Volume (IN)	1.59





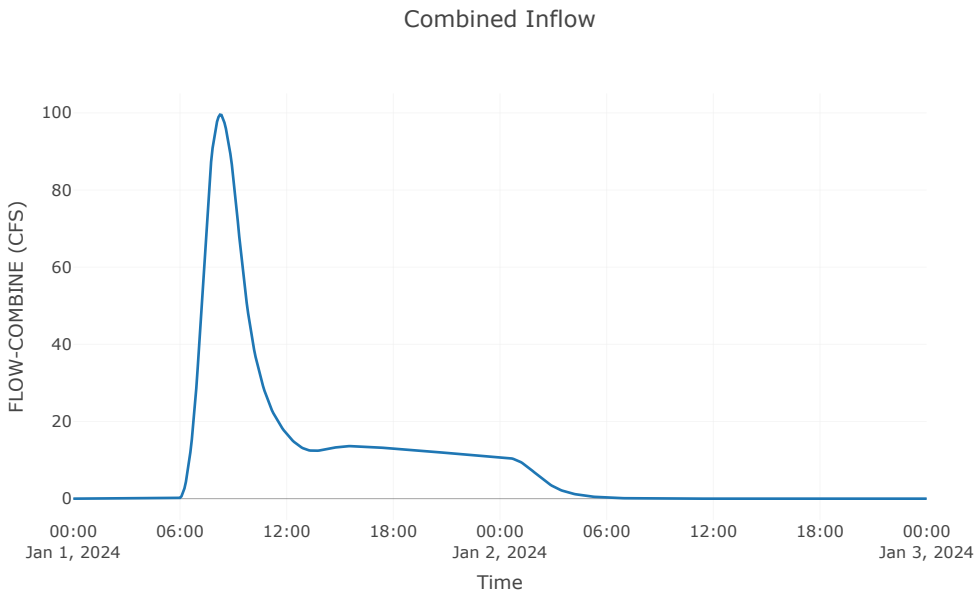

Outflow
100
80
60
40
20
0
FLOW (CFS)
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

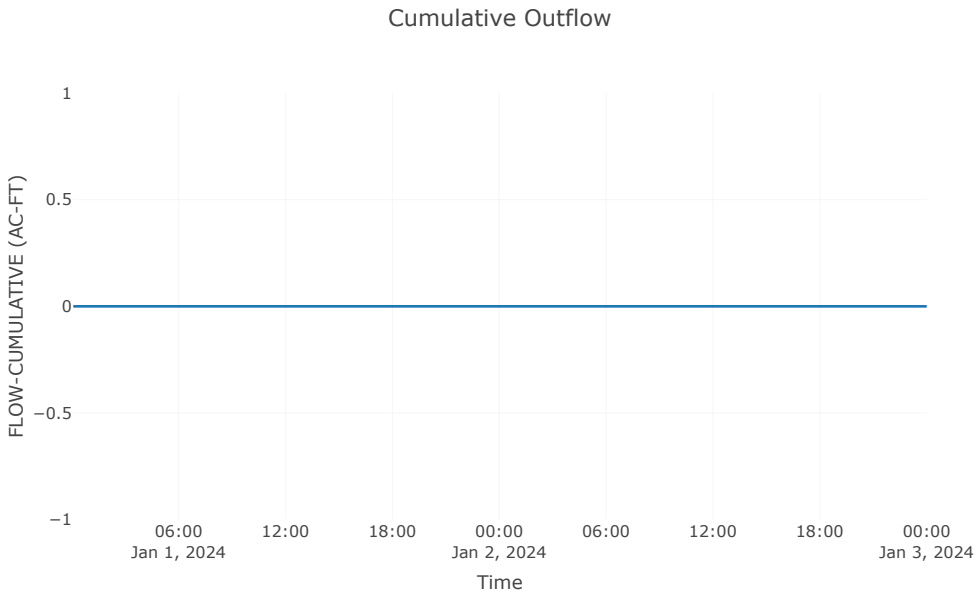
Reach: Reach-1

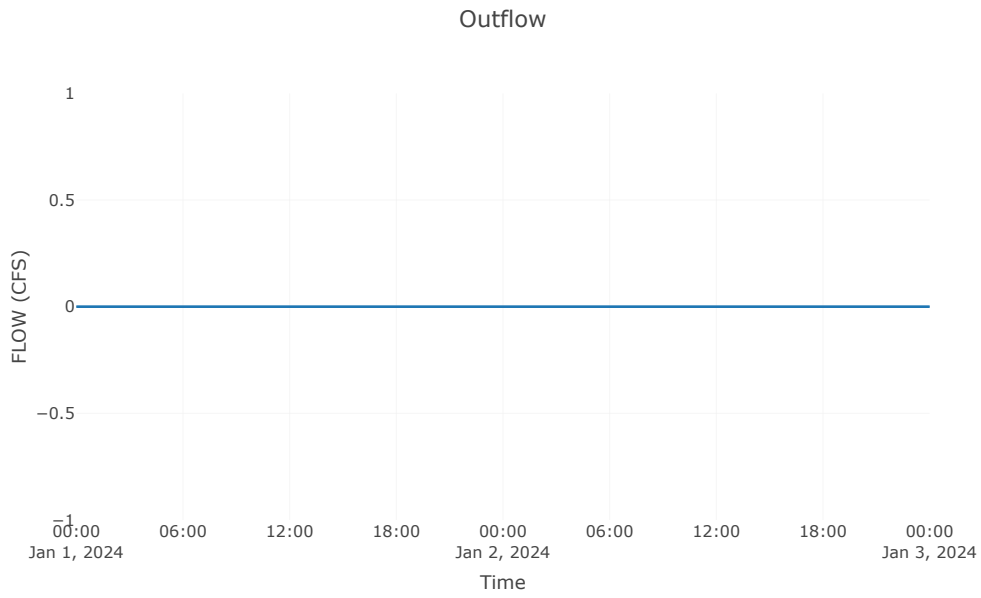
Downstream : J - 4

Route: Muskingum Cunge	
Method	Muskingum Cunge
Channel	Trapezoid
Length (FT)	12373
Energy Slope (FT/FT)	0
Mannings n	0.1
Bottom Width (FT)	500
Side Slope (FT/FT)	1
Initial Variable	Combined Inflow
Space - Time Method	Automatic DX and DT
Index Parameter Type	Index Flow
Index Flow	50
Maximum Depth Iterations	20
Maximum Route Step Iterations	30
Channel Loss	Percolation
Channel Loss Percolation Rate	1.4
End Channel Loss	

Results: Reach-1	
Peak Discharge (CFS)	0
Time of Peak Discharge	31Dec2023, 24:00
Volume (IN)	0
Peak Inflow (CFS)	99.53
Inflow Volume (AC - FT)	38.84


Combined Inflow
FLOW-COMBINE (CFS)
100
80
60
40
20
0
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time


Cumulative Outflow
FLOW-CUMULATIVE (AC-FT)
1
0.5
0
−0.5
−1
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time


Outflow
1
0.5
0
−0.5
−1
FLOW (CFS)
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

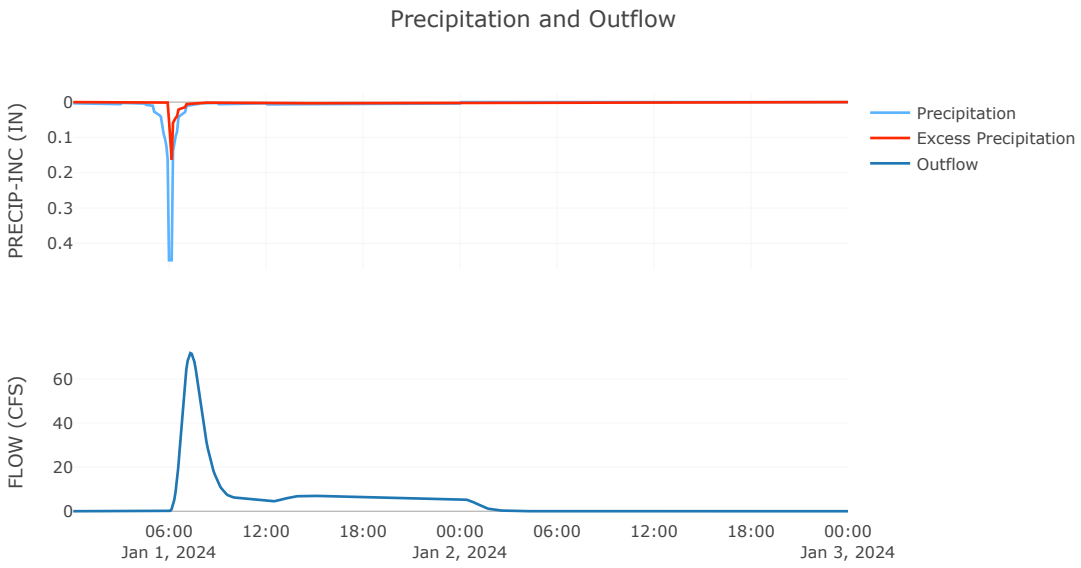
Subbasin: SB8

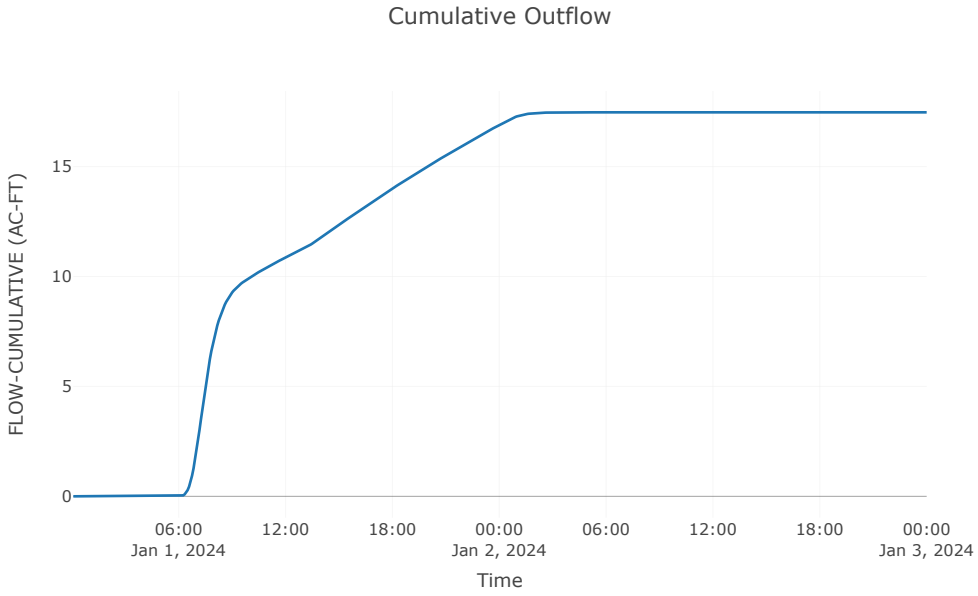
Area (MI2) : 0.28
Latitude Degrees : 31.43
Longitude Degrees : -103.65
Downstream : J - 4

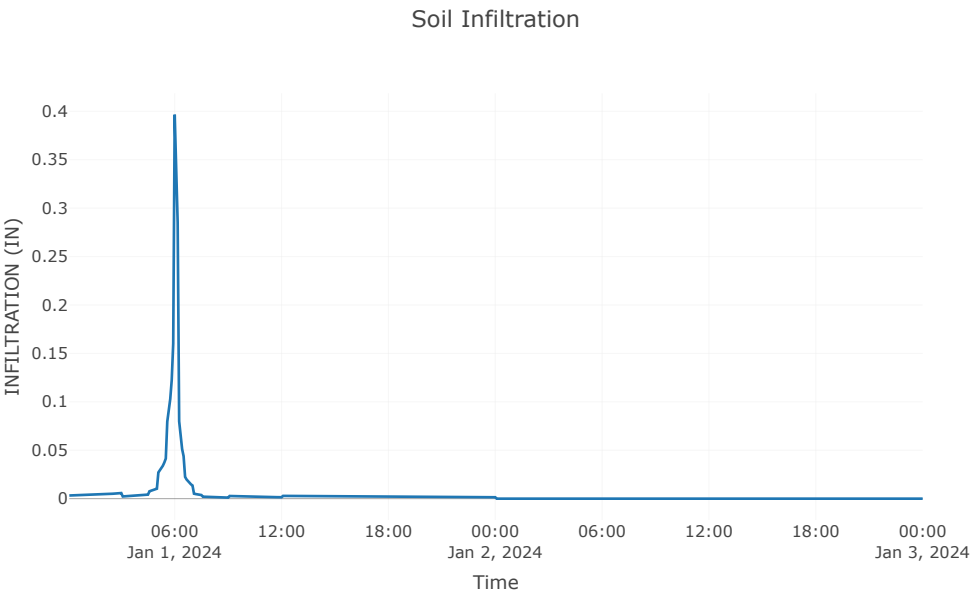
Loss Rate: Scs	
Percent Impervious Area	0.05
Curve Number	68
Initial Abstraction	0.94

Transform: Scs	
Lag	60
Unitgraph Type	Standard

Results: SB8	
Peak Discharge (CFS)	71.74
Time of Peak Discharge	01Jan2024, 07:15
Volume (IN)	1.19
Precipitation Volume (AC - FT)	58.39
Loss Volume (AC - FT)	40.92
Excess Volume (AC - FT)	17.47
Direct Runoff Volume (AC - FT)	17.47
Baseflow Volume (AC - FT)	0


Precipitation and Outflow
PRECIP-INC (IN)
0
0.1
0.2
0.3
0.4
Precipitation
Excess Precipitation
Outflow
FLOW (CFS)
60
40
20
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024

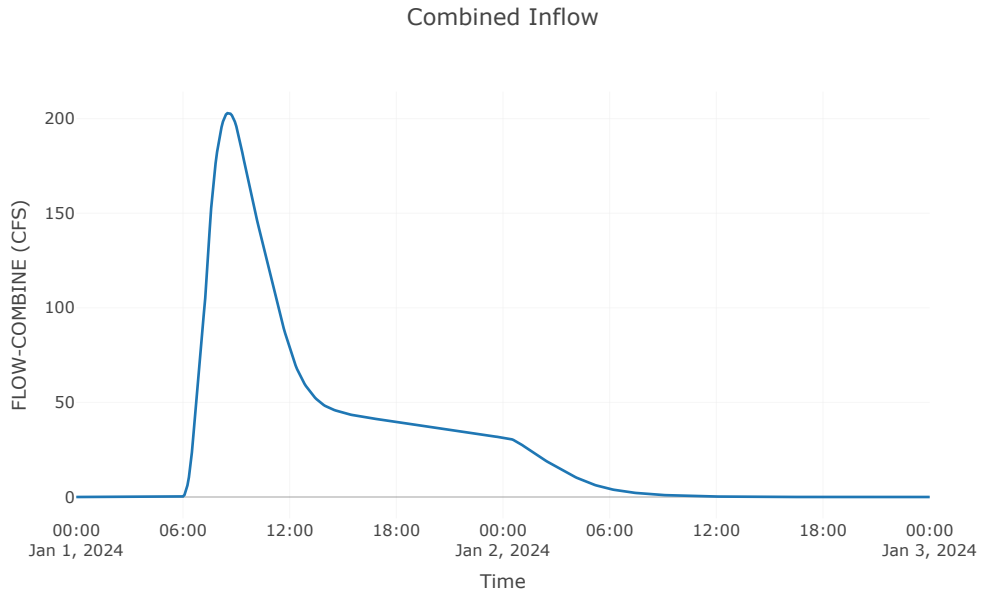

Cumulative Outflow
FLOW-CUMULATIVE (AC-FT)
15
10
5
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

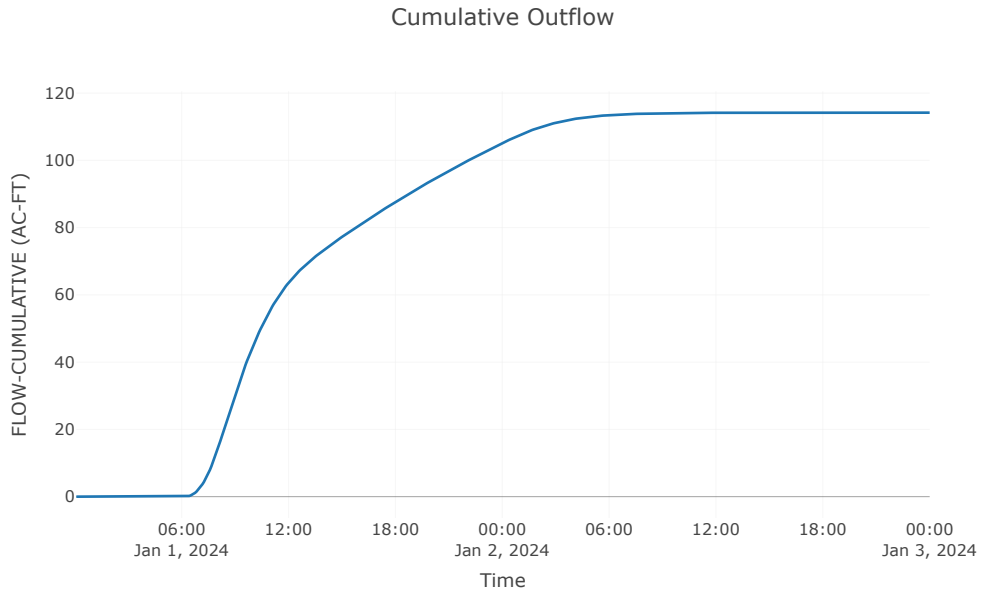

Soil Infiltration
INFILTRATION (IN)
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

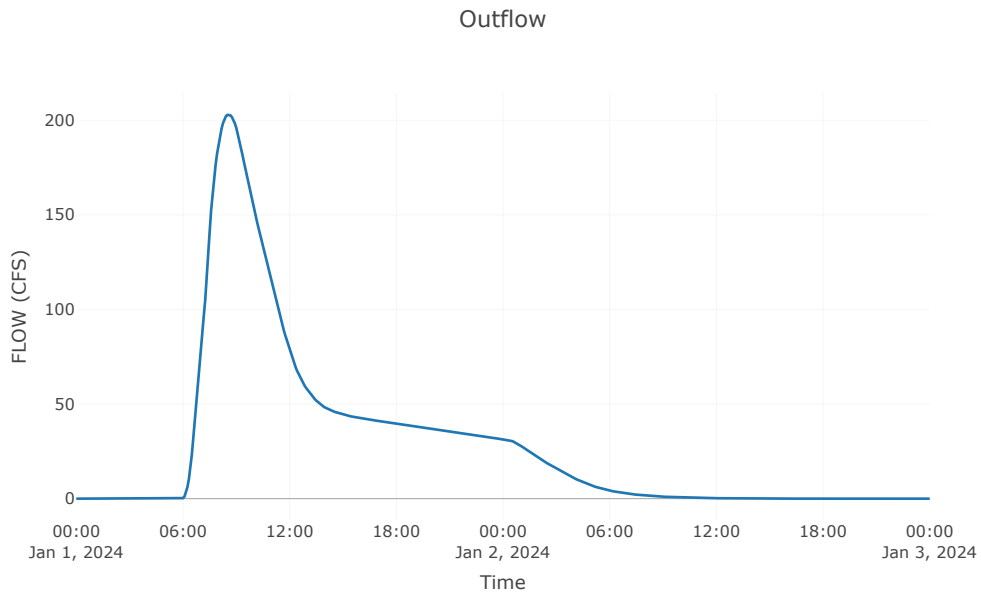
Junction: J-4

Downstream : Reach - 5

Results: J-4	
Peak Discharge (CFS)	202.98
Time of Peak Discharge	01Jan2024, 08:35
Volume (IN)	0.67





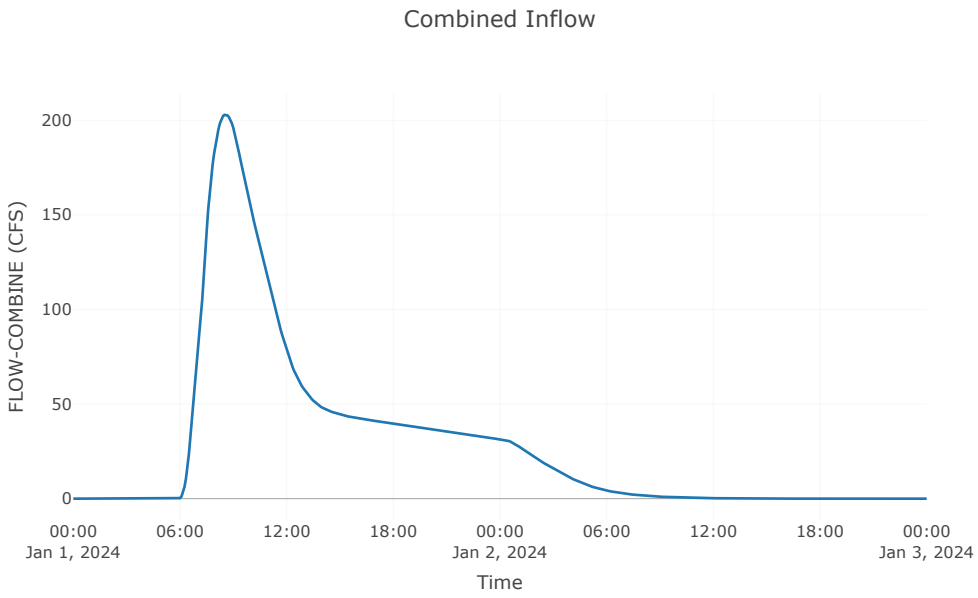

Outflow
200
150
100
50
0
FLOW (CFS)
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

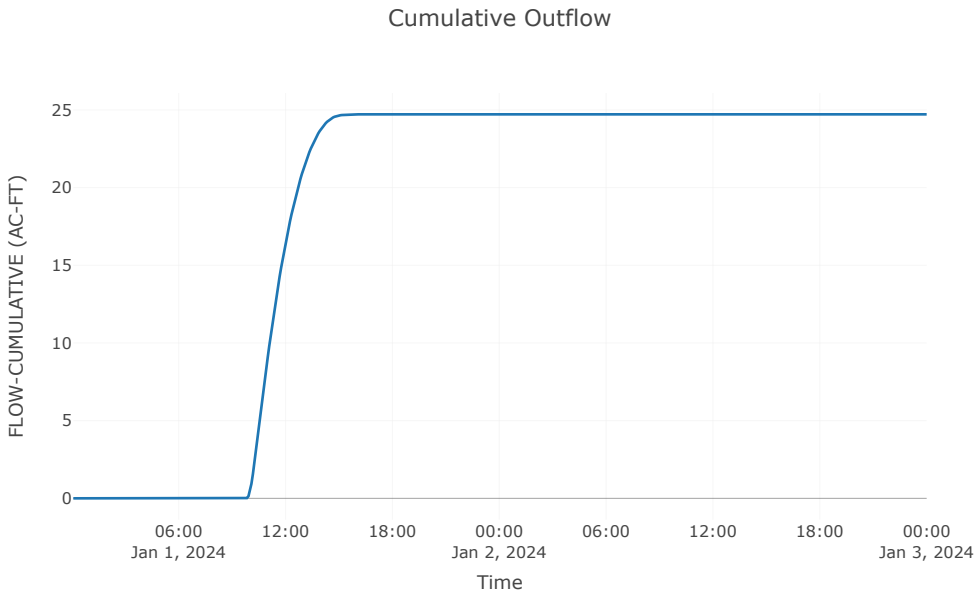
Reach: Reach-5

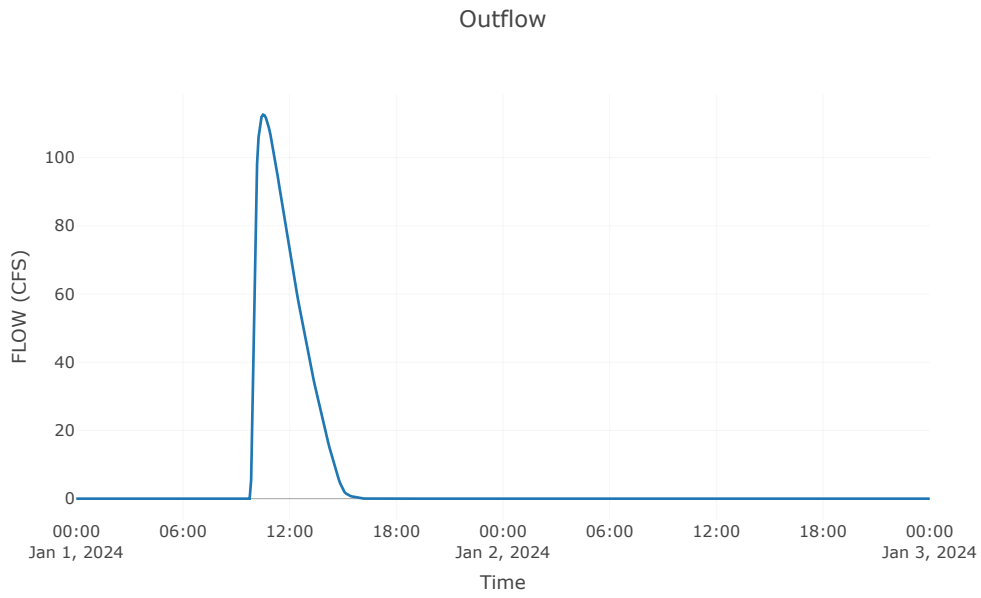
Downstream : J - 6

Route: Muskingum Cunge	
Method	Muskingum Cunge
Channel	Trapezoid
Length (FT)	5365
Energy Slope (FT/FT)	0
Mannings n	0.1
Bottom Width (FT)	500
Side Slope (FT/FT)	4
Initial Variable	Combined Inflow
Space - Time Method	Automatic DX and DT
Index Parameter Type	Index Flow
Index Flow	101
Maximum Depth Iterations	20
Maximum Route Step Iterations	30
Channel Loss	Percolation
Channel Loss Percolation Rate	1.36
End Channel Loss	

Results: Reach-5	
Peak Discharge (CFS)	112.59
Time of Peak Discharge	01Jan2024, 10:30
Volume (IN)	0.15
Peak Inflow (CFS)	202.98
Inflow Volume (AC - FT)	114.18


Combined Inflow
FLOW-COMBINE (CFS)
200
150
100
50
0
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time


Cumulative Outflow
FLOW-CUMULATIVE (AC-FT)
25
20
15
10
5
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time


Outflow
100
80
60
40
20
0
FLOW (CFS)
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

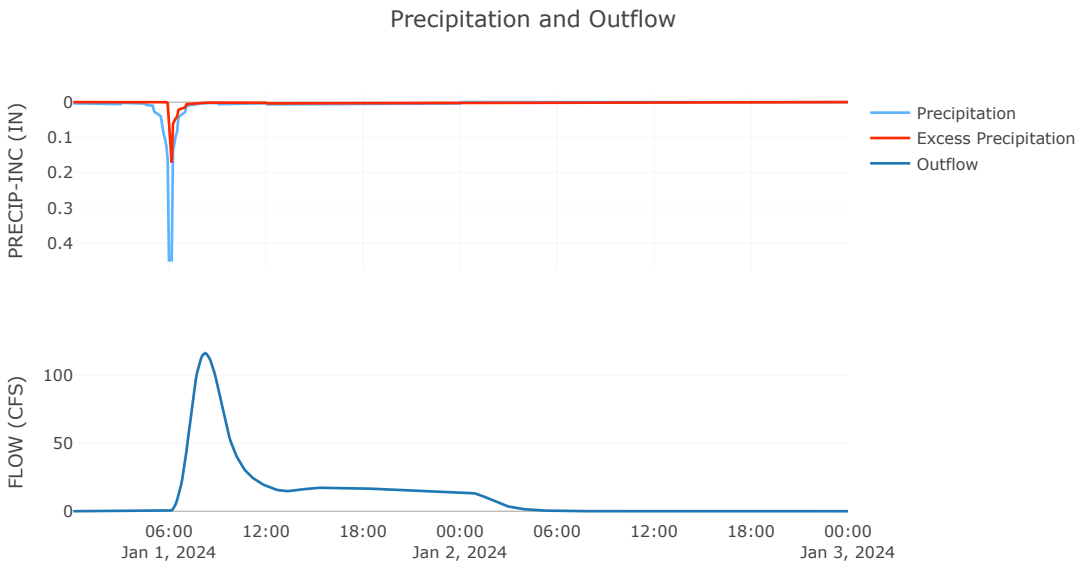
Subbasin: SB10

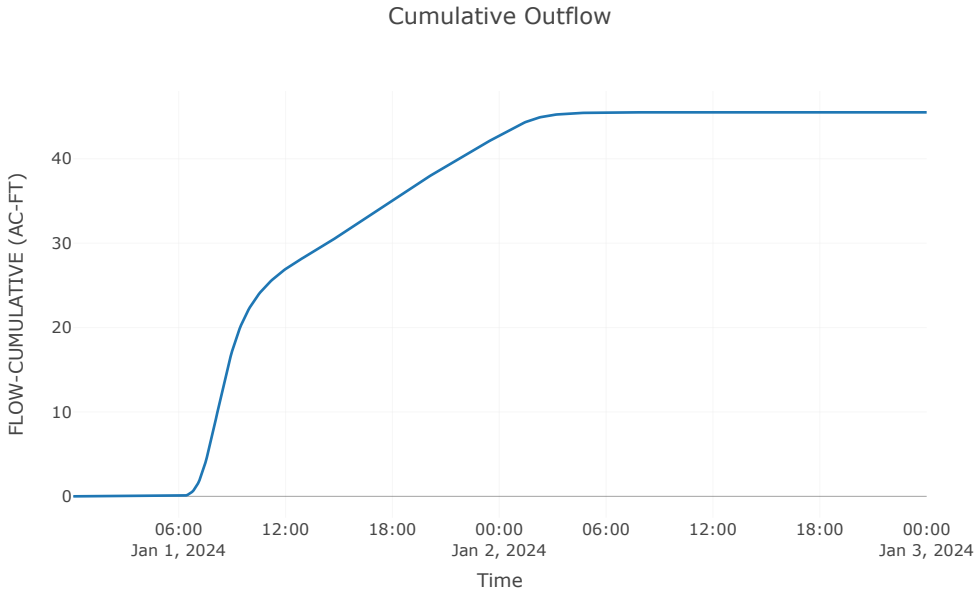
Area (MI2) : 0.69
Latitude Degrees : 31.42
Longitude Degrees : -103.64
Downstream : J - 6

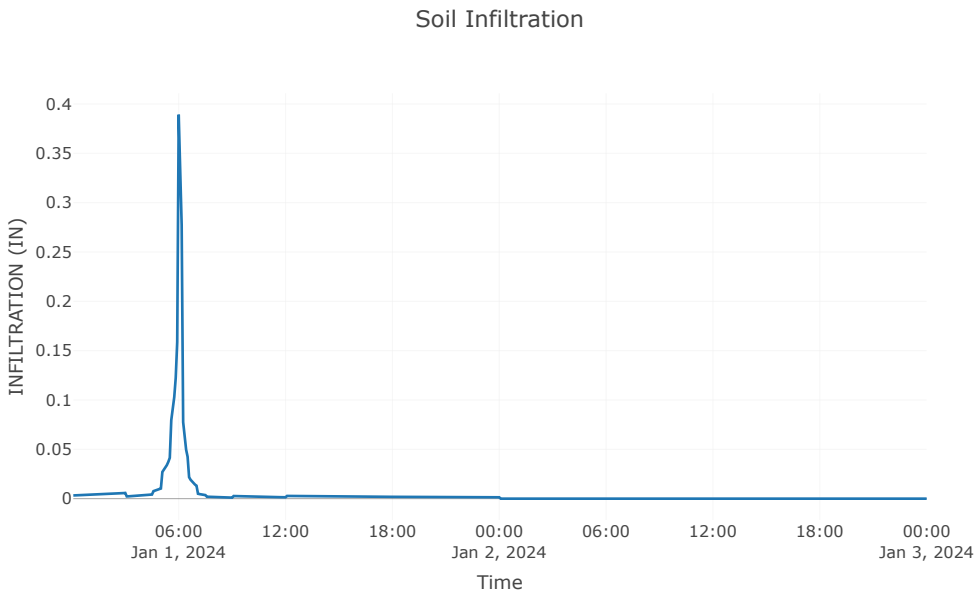
Loss Rate: Scs	
Percent Impervious Area	0.21
Curve Number	68.81
Initial Abstraction	0.91

Transform: Scs	
Lag	111
Unitgraph Type	Standard

Results: SB10	
Peak Discharge (CFS)	116.19
Time of Peak Discharge	01Jan2024, 08:10
Volume (IN)	1.24
Precipitation Volume (AC - FT)	145.53
Loss Volume (AC - FT)	100.03
Excess Volume (AC - FT)	45.5
Direct Runoff Volume (AC - FT)	45.5
Baseflow Volume (AC - FT)	0


Precipitation and Outflow
PRECIP-INC (IN)
0
0.1
0.2
0.3
0.4
Precipitation
Excess Precipitation
Outflow
FLOW (CFS)
100
50
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024


Cumulative Outflow
FLOW-CUMULATIVE (AC-FT)
40
30
20
10
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time


Soil Infiltration
INFILTRATION (IN)
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

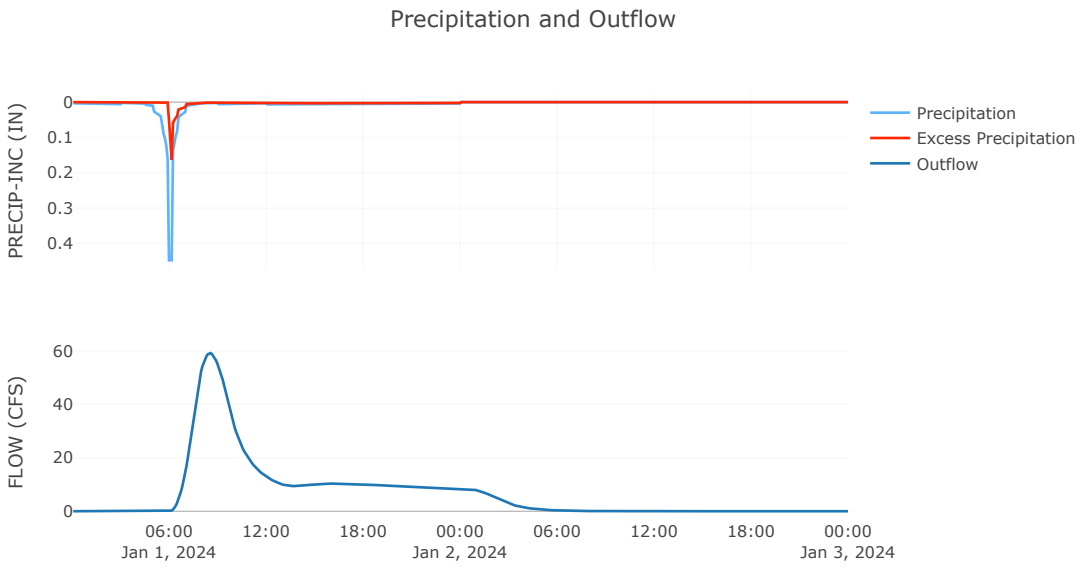
Subbasin: SB11

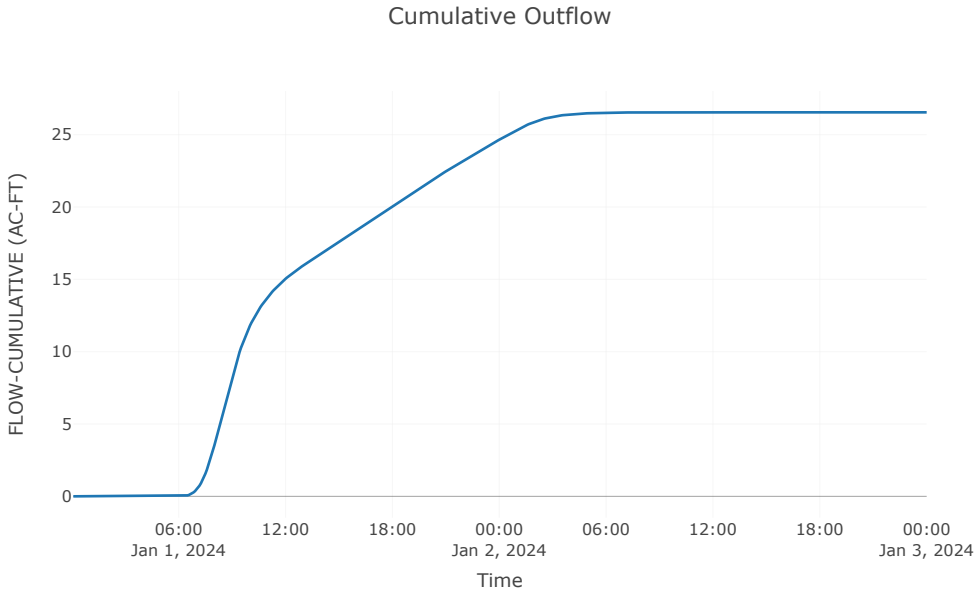
Area (MI2) : 0.42
Latitude Degrees : 31.42
Longitude Degrees : -103.63
Downstream : J - 6

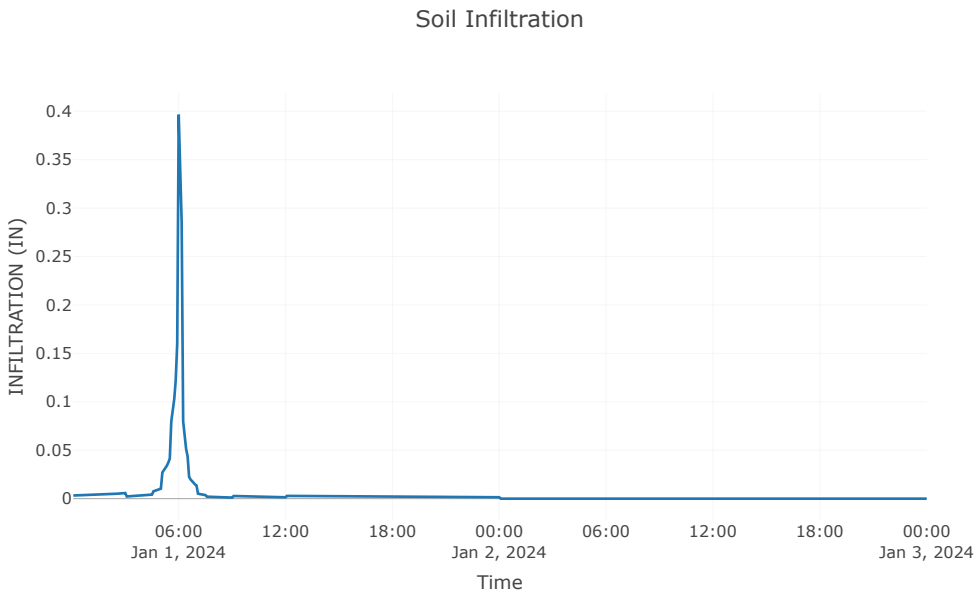
Loss Rate: Scs	
Percent Impervious Area	0.14
Curve Number	68.01
Initial Abstraction	0.94

Transform: Scs	
Lag	128
Unitgraph Type	Standard

Results: SB11	
Peak Discharge (CFS)	59.18
Time of Peak Discharge	01Jan2024, 08:30
Volume (IN)	1.19
Precipitation Volume (AC - FT)	88.52
Loss Volume (AC - FT)	61.97
Excess Volume (AC - FT)	26.54
Direct Runoff Volume (AC - FT)	26.54
Baseflow Volume (AC - FT)	0


Precipitation and Outflow
PRECIP-INC (IN)
0
0.1
0.2
0.3
0.4
Precipitation
Excess Precipitation
Outflow
FLOW (CFS)
60
40
20
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024


Cumulative Outflow
FLOW-CUMULATIVE (AC-FT)
25
20
15
10
5
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time


Soil Infiltration
INFILTRATION (IN)
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

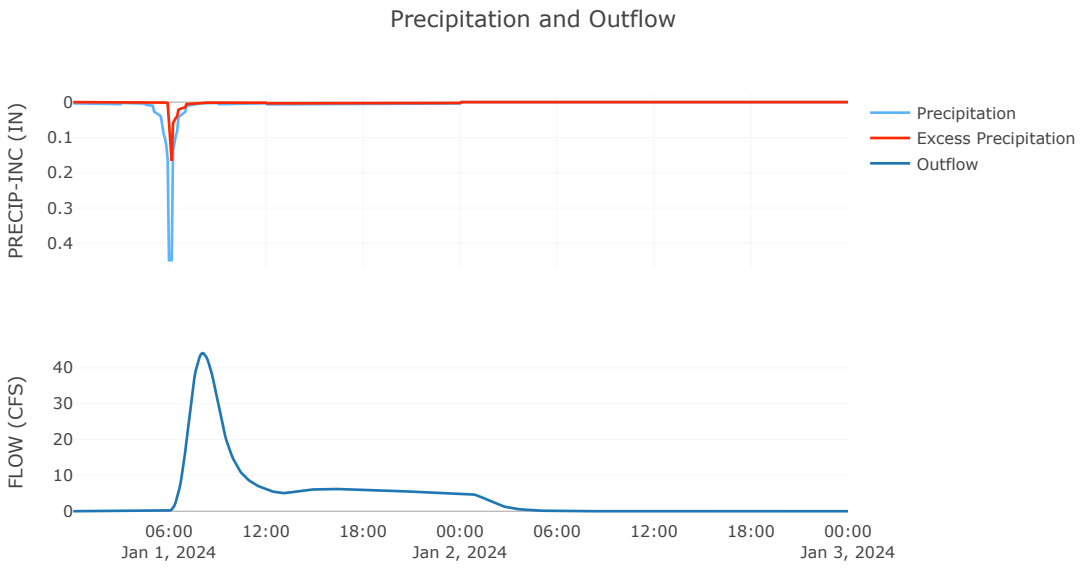
Subbasin: SB9

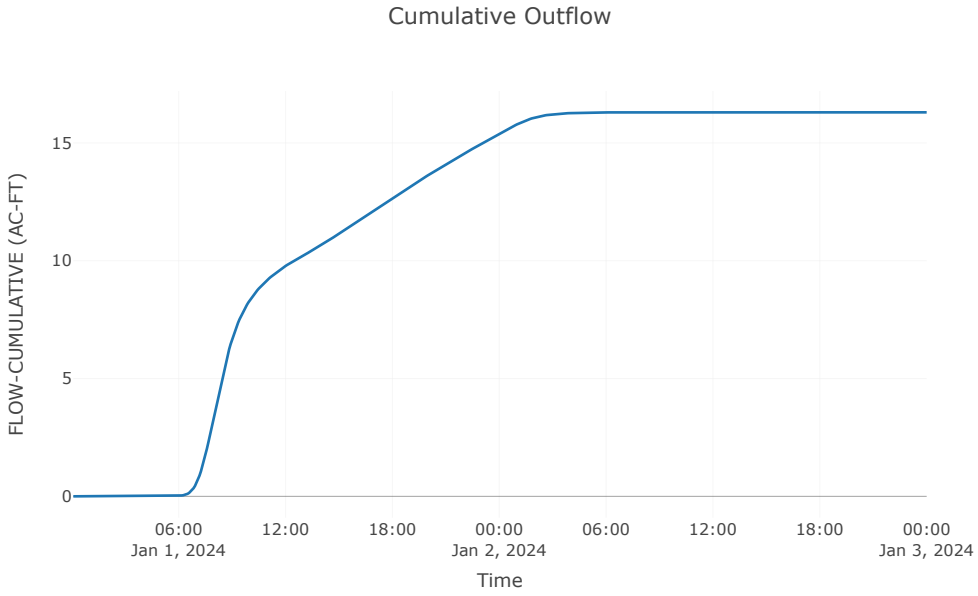
Area (MI2) : 0.25
Latitude Degrees : 31.43
Longitude Degrees : -103.63
Downstream : J - 6

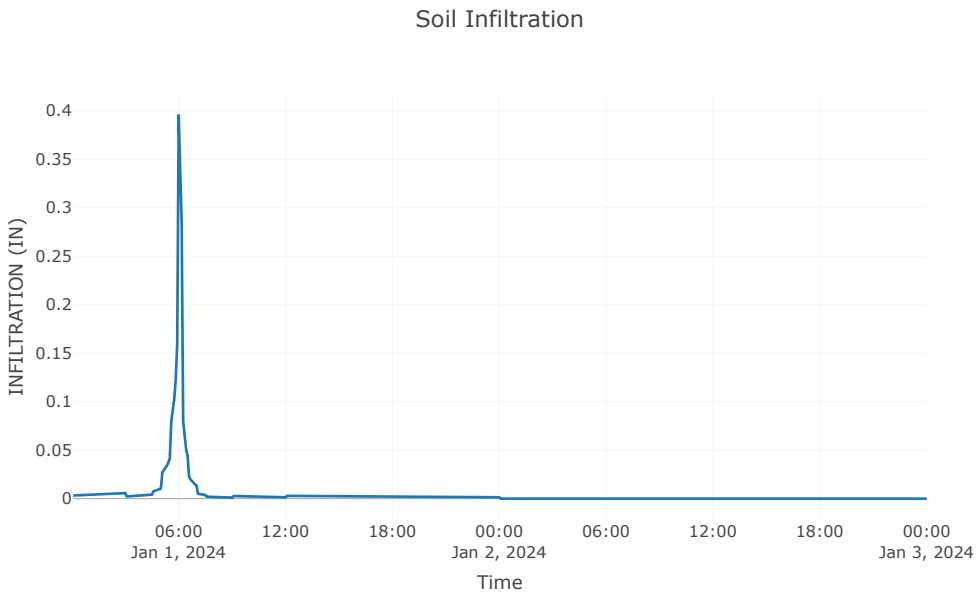
Loss Rate: Scs	
Percent Impervious Area	1.16
Curve Number	68.05
Initial Abstraction	0.94

Transform: Scs	
Lag	103
Unitgraph Type	Standard

Results: SB9	
Peak Discharge (CFS)	44.13
Time of Peak Discharge	01Jan2024, 08:00
Volume (IN)	1.22
Precipitation Volume (AC - FT)	52.97
Loss Volume (AC - FT)	36.67
Excess Volume (AC - FT)	16.3
Direct Runoff Volume (AC - FT)	16.3
Baseflow Volume (AC - FT)	0


Precipitation and Outflow
PRECIP-INC (IN)
0
0.1
0.2
0.3
0.4
Precipitation
Excess Precipitation
Outflow
FLOW (CFS)
40
30
20
10
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024

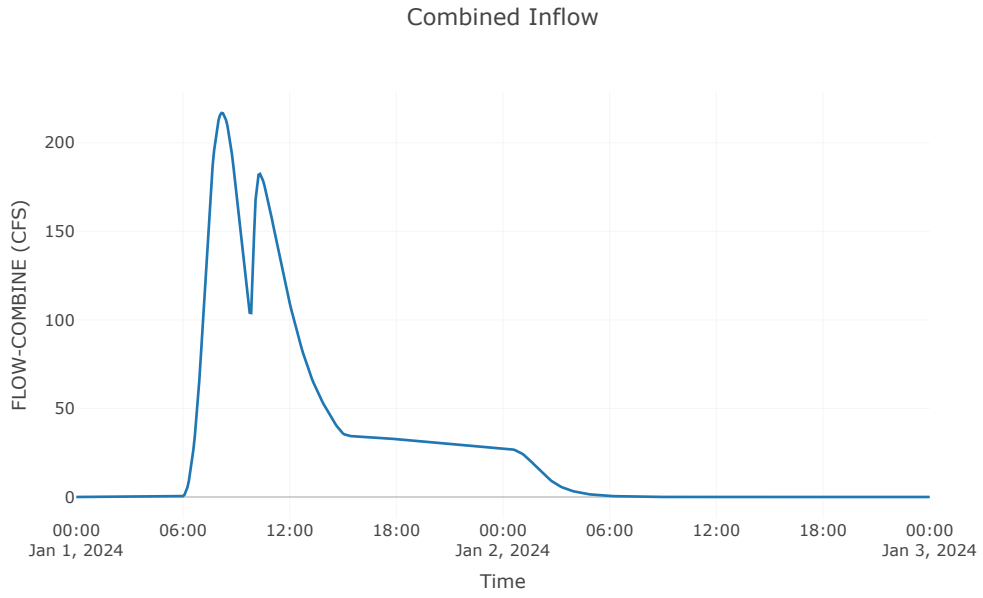

Cumulative Outflow
FLOW-CUMULATIVE (AC-FT)
15
10
5
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

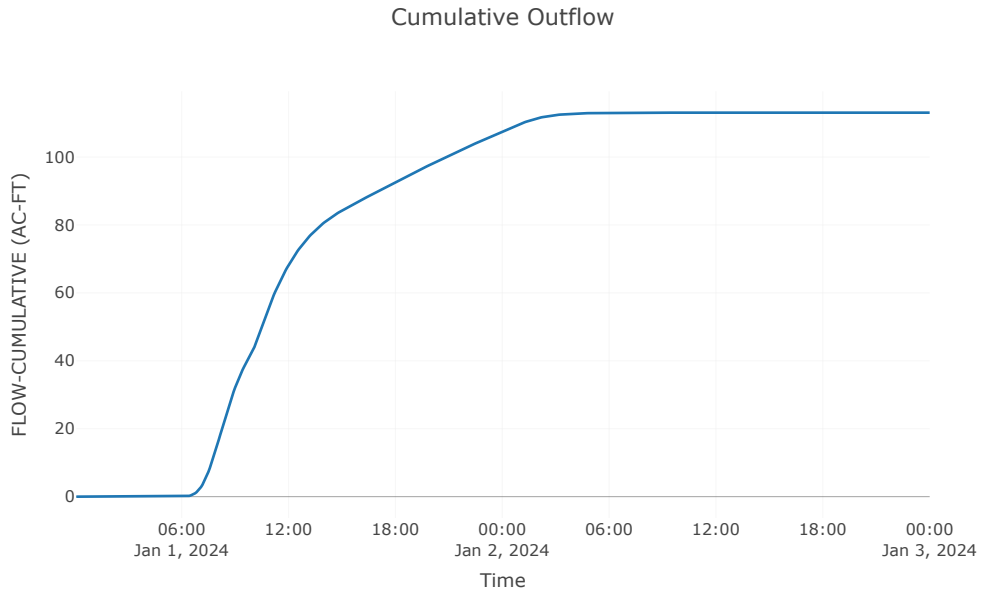

Soil Infiltration
INFILTRATION (IN)
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

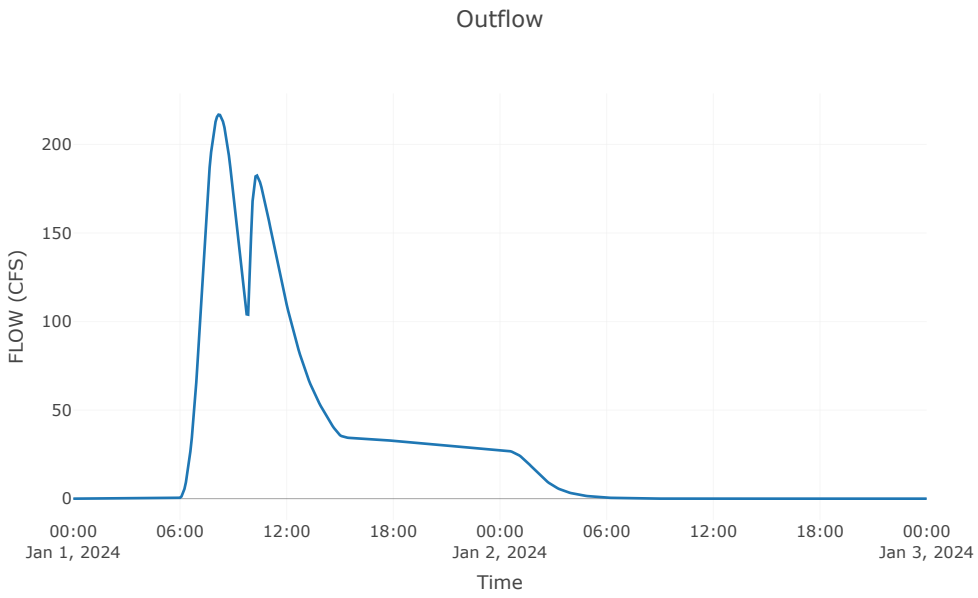
Junction: J-6

Downstream : Reach - 6

Results: J-6	
Peak Discharge (CFS)	216.83
Time of Peak Discharge	01Jan2024, 08:10
Volume (IN)	0.47





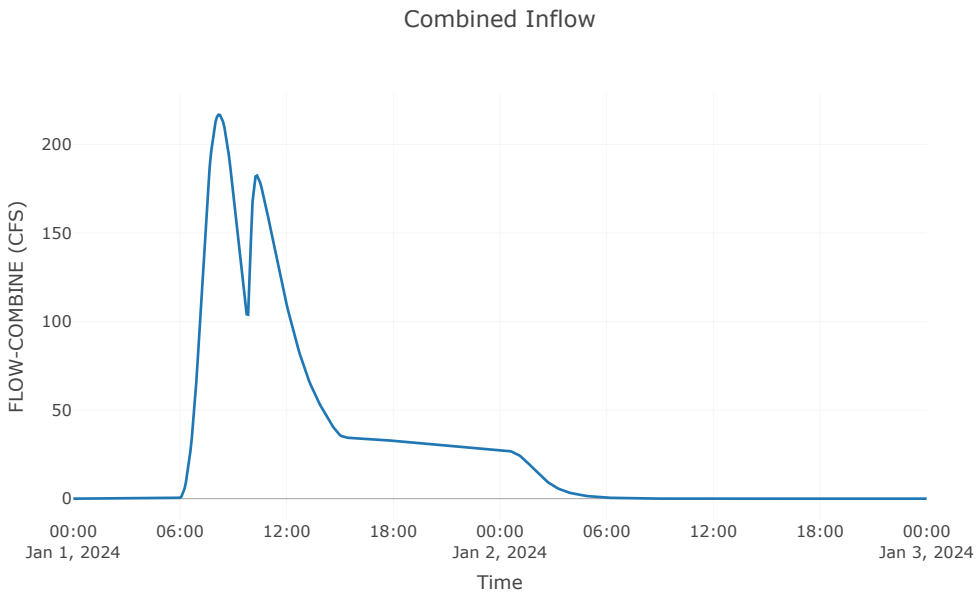

Outflow
FLOW (CFS)
200
150
100
50
0
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

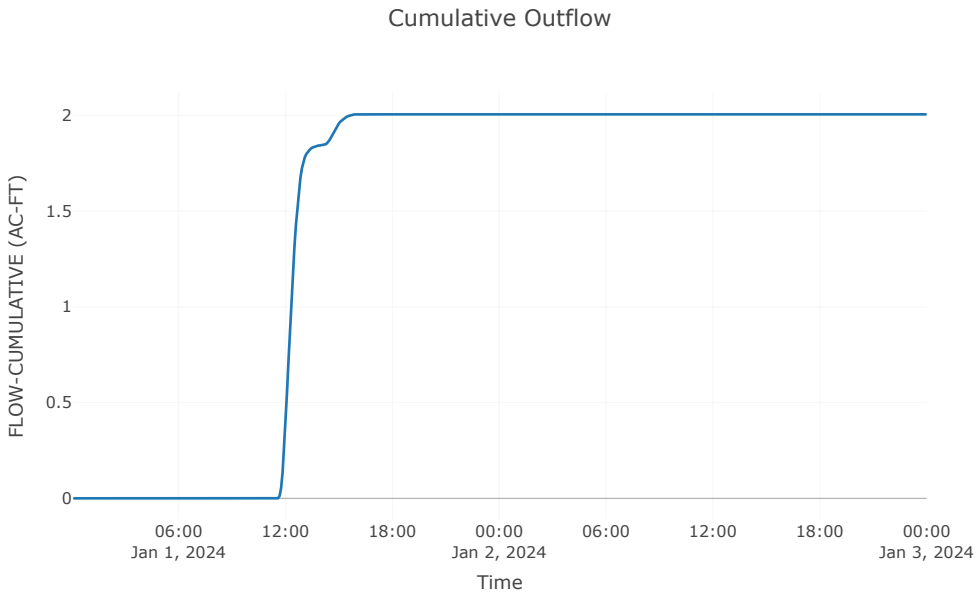
Reach: Reach-6

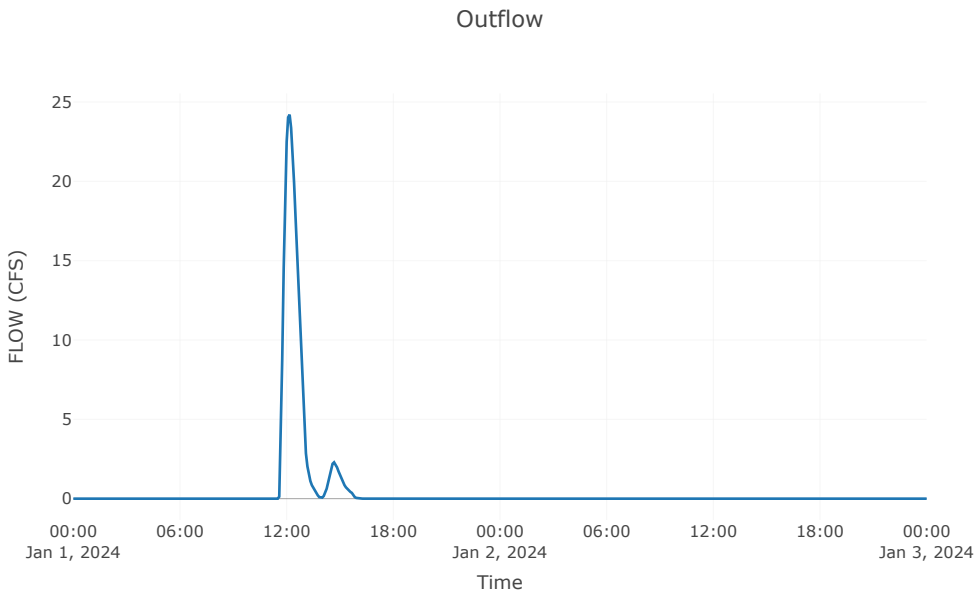
Downstream : J - 7

Route: Muskingum Cunge	
Method	Muskingum Cunge
Channel	Trapezoid
Length (FT)	7014
Energy Slope (FT/FT)	0
Mannings n	0.1
Bottom Width (FT)	800
Side Slope (FT/FT)	4
Initial Variable	Combined Inflow
Space - Time Method	Automatic DX and DT
Index Parameter Type	Index Flow
Index Flow	108
Maximum Depth Iterations	20
Maximum Route Step Iterations	30
Channel Loss	Percolation
Channel Loss Percolation Rate	1.28
End Channel Loss	

Results: Reach-6	
Peak Discharge (CFS)	24.2
Time of Peak Discharge	01Jan2024, 12:10
Volume (IN)	0.01
Peak Inflow (CFS)	216.83
Inflow Volume (AC - FT)	113.06


Combined Inflow
FLOW-COMBINE (CFS)
200
150
100
50
0
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time


Cumulative Outflow
FLOW-CUMULATIVE (AC-FT)
2
1.5
1
0.5
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time


Outflow
25
20
15
10
5
0
FLOW (CFS)
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

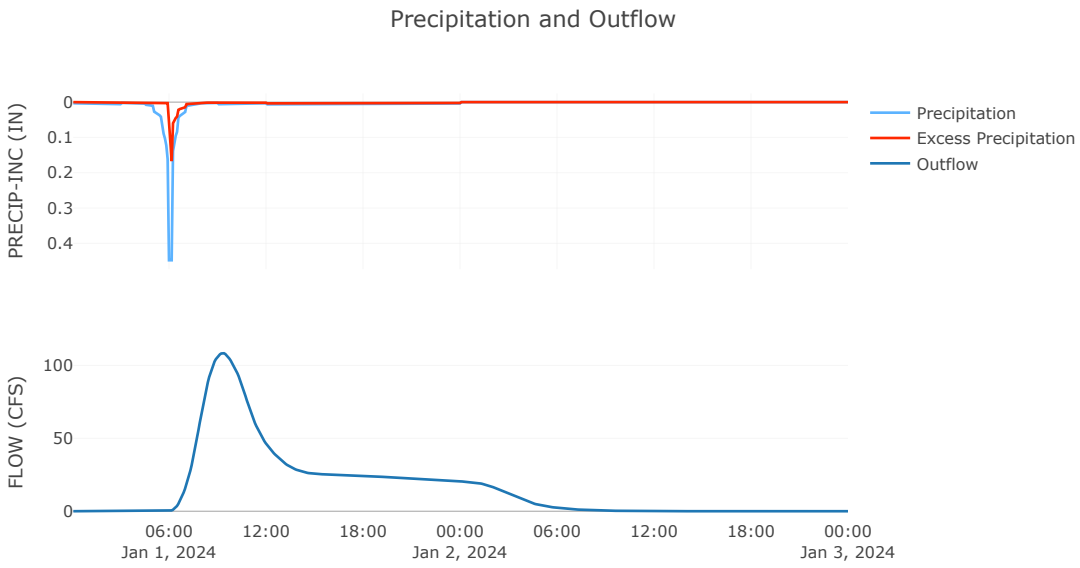
Subbasin: SB12

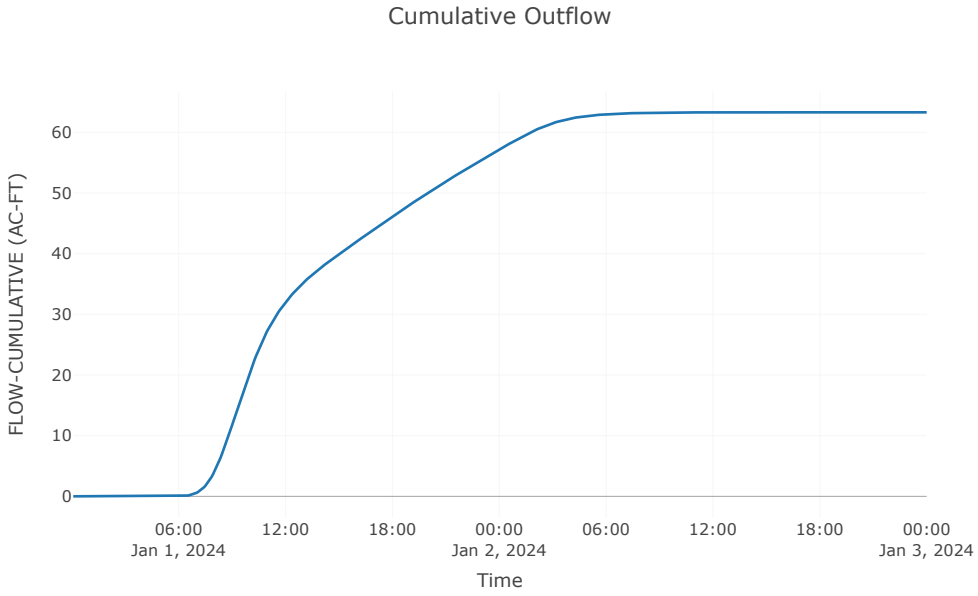
Area (MI2) : 0.97
Latitude Degrees : 31.43
Longitude Degrees : -103.62
Downstream : J - 7

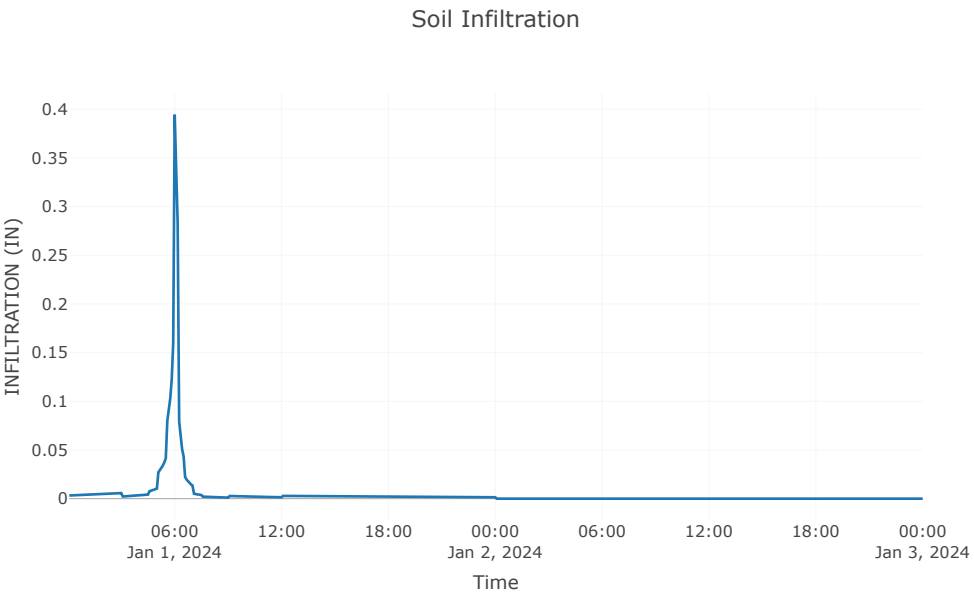
Loss Rate: Scs	
Percent Impervious Area	0.8
Curve Number	68.24
Initial Abstraction	0.93

Transform: Scs	
Lag	174
Unitgraph Type	Standard

Results: SB12	
Peak Discharge (CFS)	108.5
Time of Peak Discharge	01Jan2024, 09:15
Volume (IN)	1.22
Precipitation Volume (AC - FT)	205.54
Loss Volume (AC - FT)	142.25
Excess Volume (AC - FT)	63.29
Direct Runoff Volume (AC - FT)	63.29
Baseflow Volume (AC - FT)	0


Precipitation and Outflow
PRECIP-INC (IN)
0
0.1
0.2
0.3
0.4
Precipitation
Excess Precipitation
Outflow
FLOW (CFS)
100
50
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024

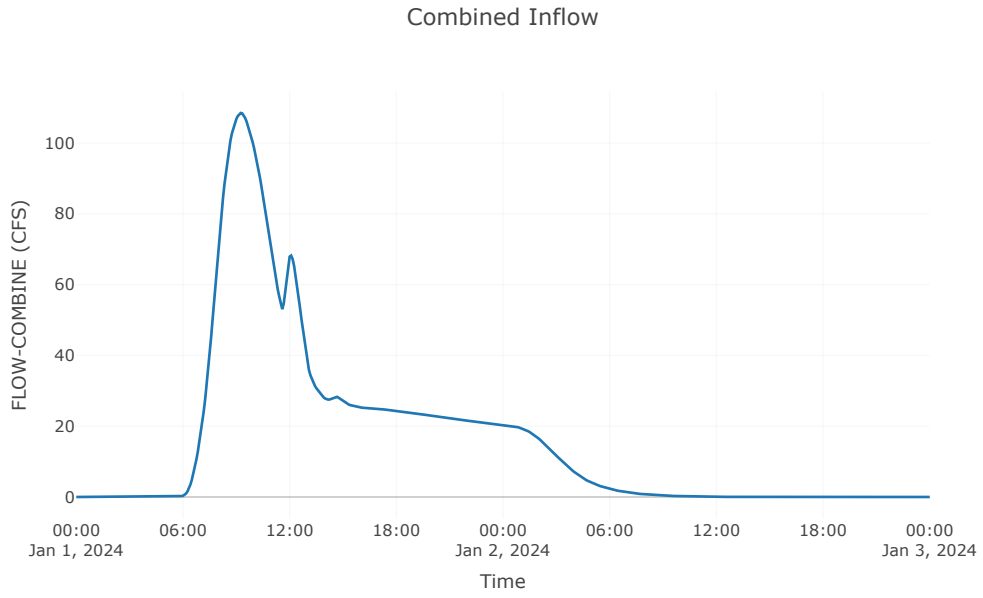

Cumulative Outflow
FLOW-CUMULATIVE (AC-FT)
60
50
40
30
20
10
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

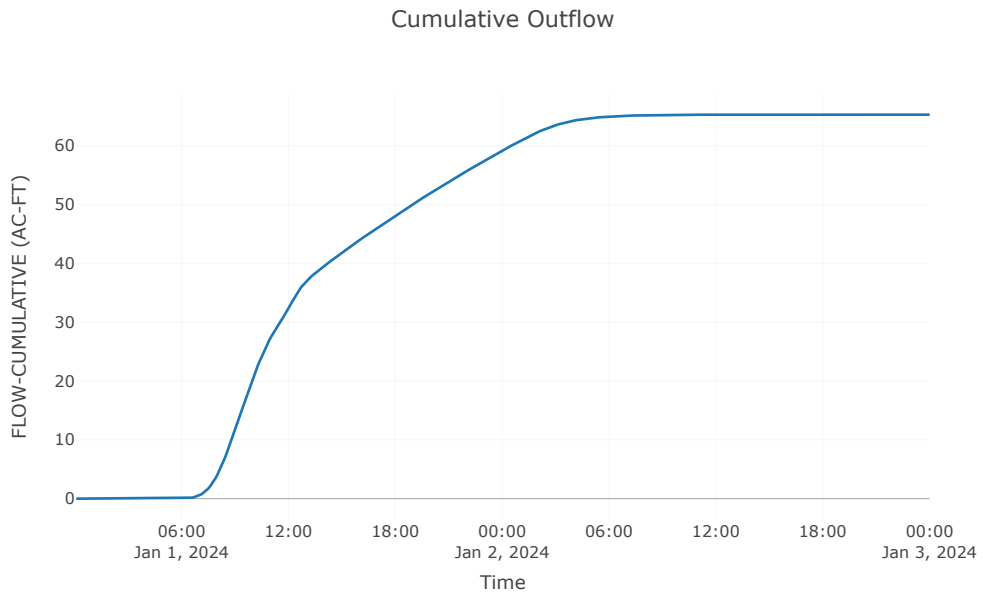

Soil Infiltration
INFILTRATION (IN)
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

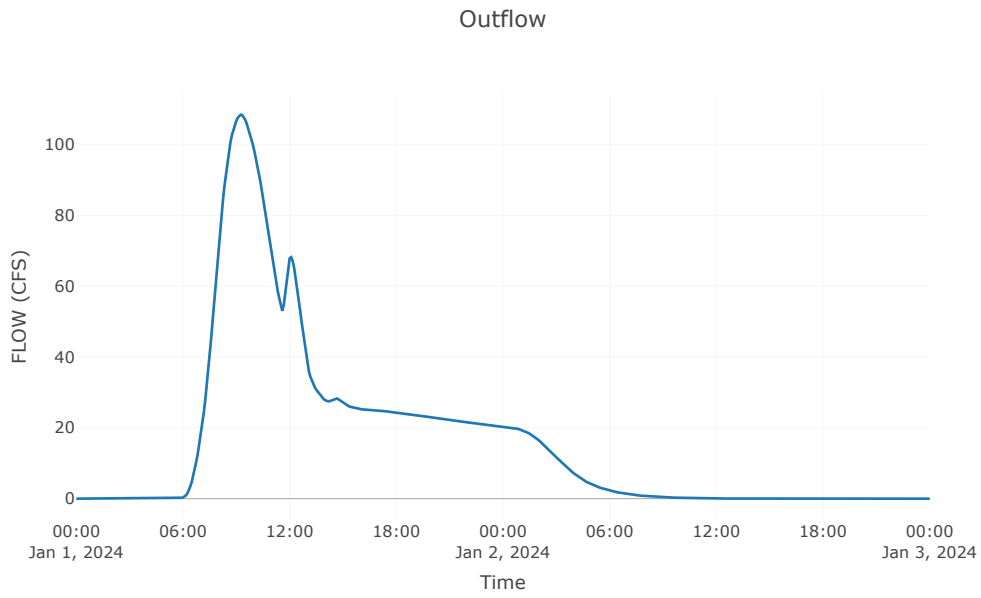
Junction: J-7

Downstream : Storage - 1

Results: J-7	
Peak Discharge (CFS)	108.5
Time of Peak Discharge	01Jan2024, 09:15
Volume (IN)	0.22



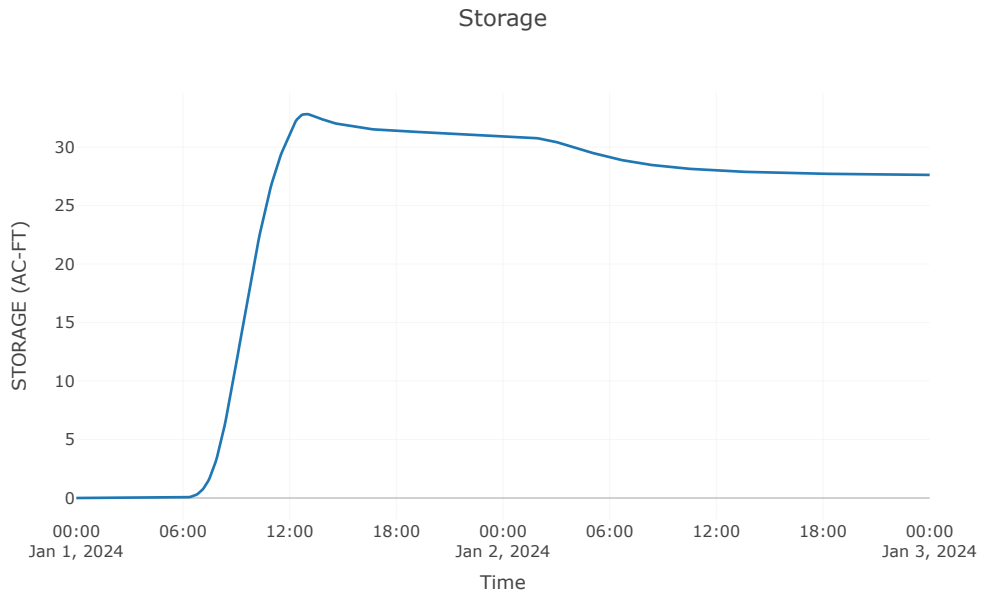


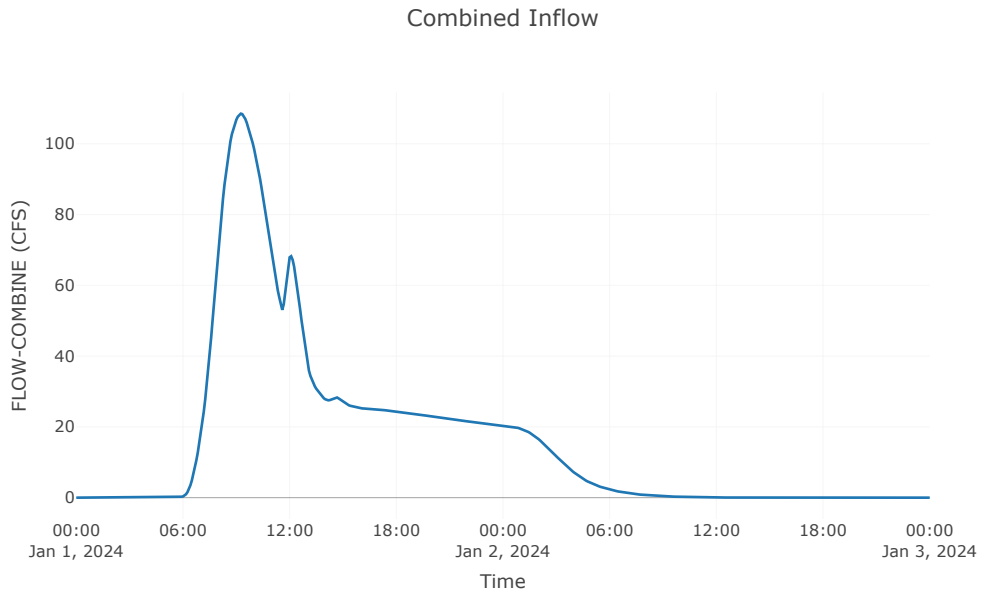

Outflow
FLOW (CFS)
100
80
60
40
20
0
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

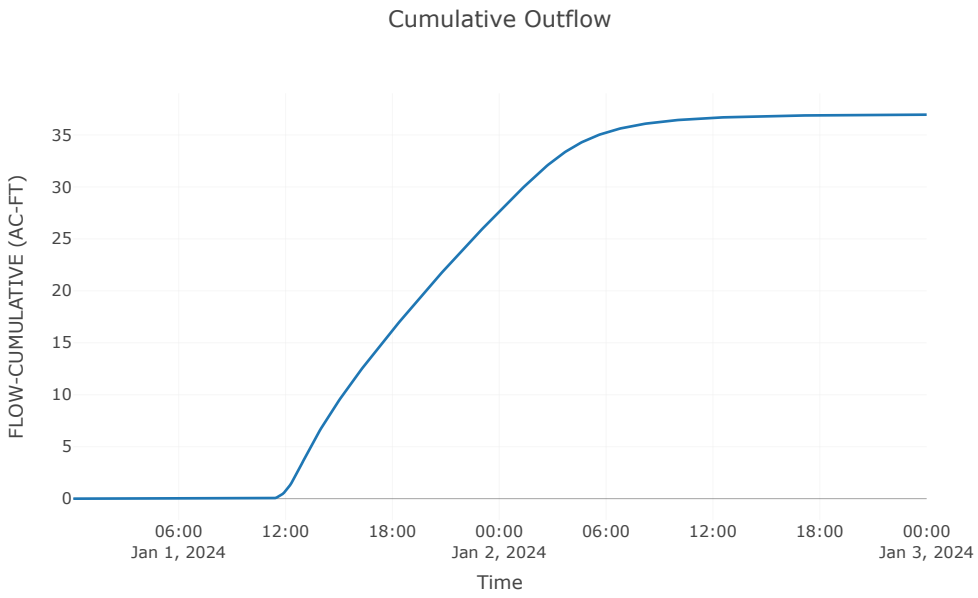
Reservoir: Storage-1

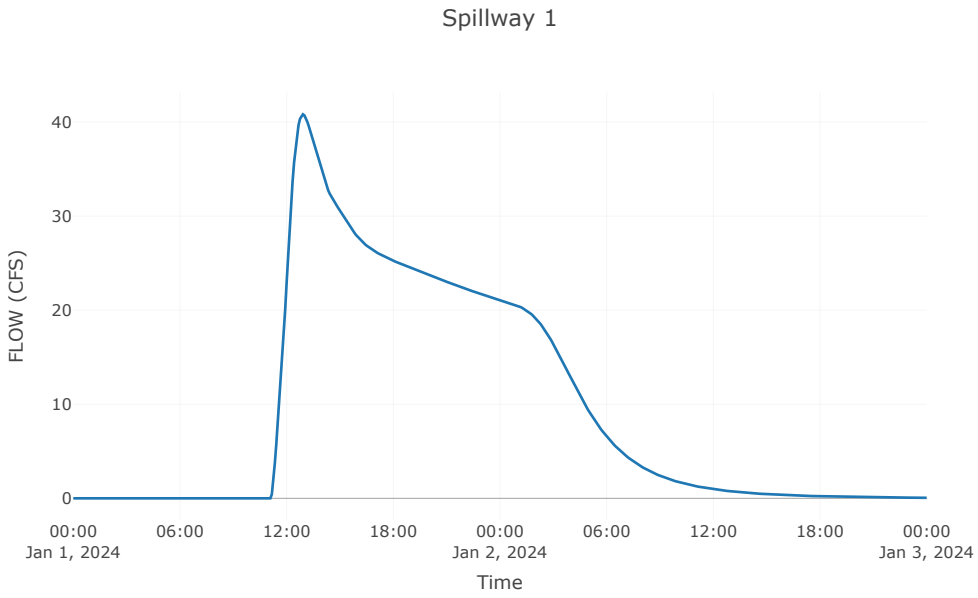
Downstream : Reach - 7

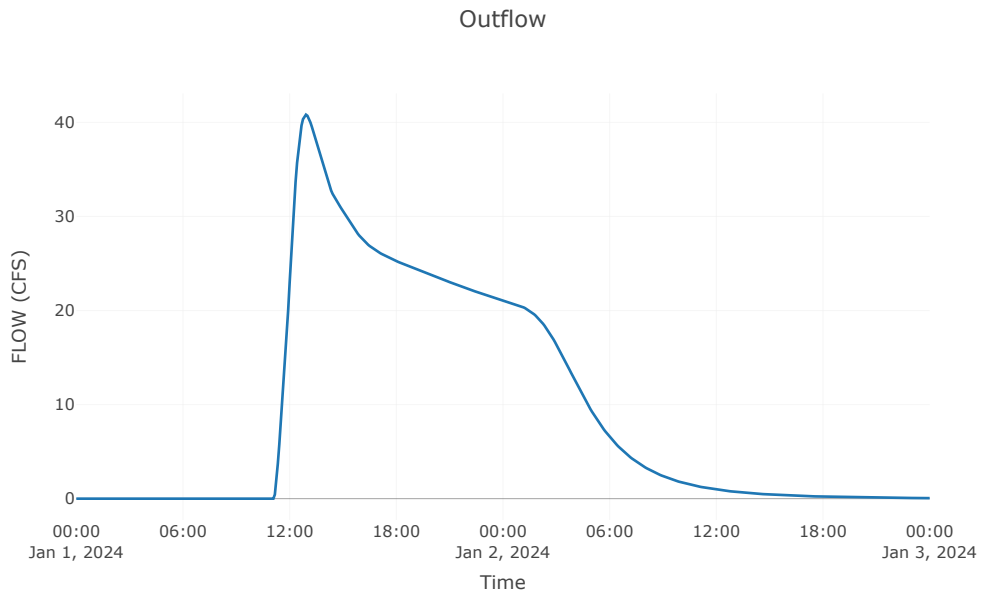
Results: Storage-1	
Peak Discharge (CFS)	40.82
Time of Peak Discharge	01Jan2024, 12:55
Volume (IN)	0.13
Peak Inflow (CFS)	108.5
Time of Peak Inflow	01Jan2024, 09:15
Inflow Volume (AC - FT)	65.29
Maximum Storage (AC - FT)	32.83
Peak Elevation (FT)	2683.26
Discharge Volume (AC - FT)	36.95






Cumulative Outflow
FLOW-CUMULATIVE (AC-FT)
35
30
25
20
15
10
5
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time


Spillway 1
FLOW (CFS)
40
30
20
10
0
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

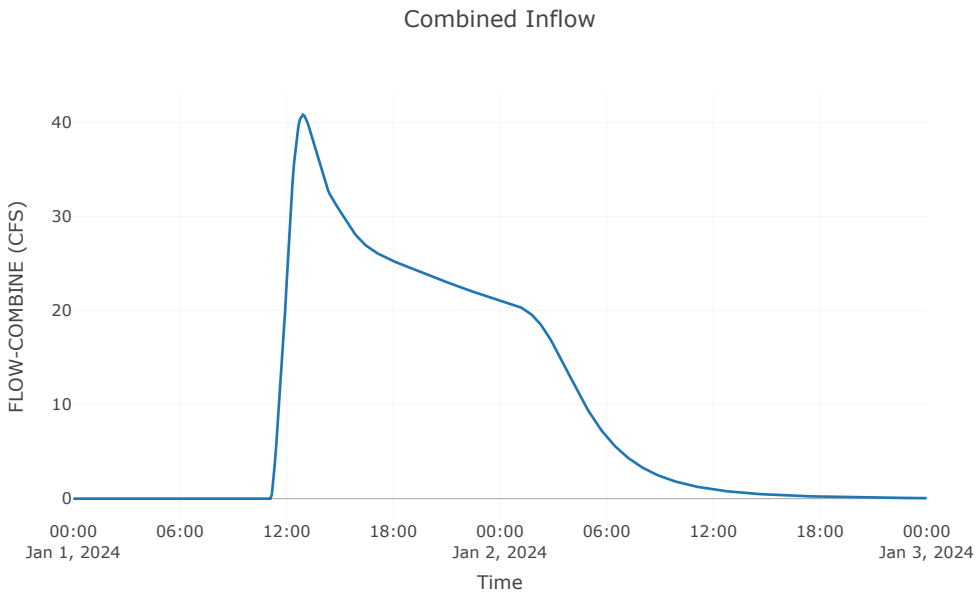

Outflow
FLOW (CFS)
40
30
20
10
0
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

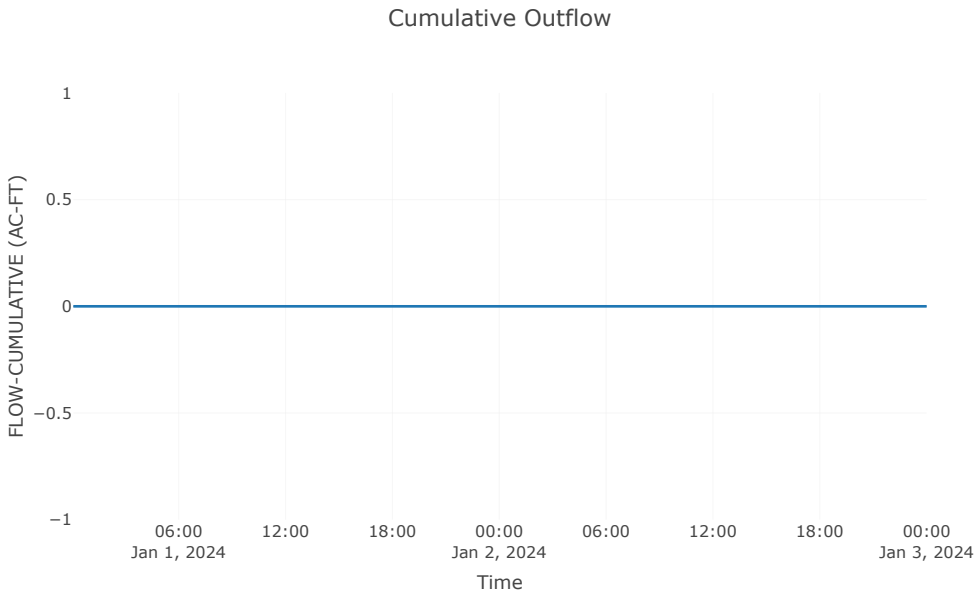
Reach: Reach-7

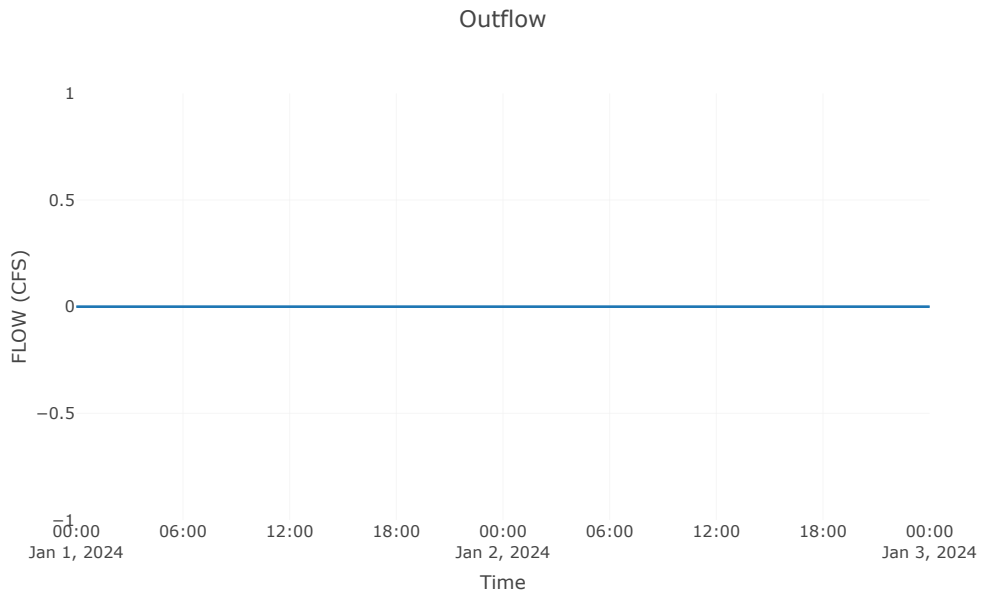
Downstream : J - 8

Route: Muskingum Cunge	
Method	Muskingum Cunge
Channel	Trapezoid
Length (FT)	4327
Energy Slope (FT/FT)	0
Mannings n	0.1
Bottom Width (FT)	800
Side Slope (FT/FT)	4
Initial Variable	Combined Inflow
Space - Time Method	Automatic DX and DT
Index Parameter Type	Index Flow
Index Flow	20
Maximum Depth Iterations	20
Maximum Route Step Iterations	30
Channel Loss	Percolation
Channel Loss Percolation Rate	1.43
End Channel Loss	

Results: Reach-7	
Peak Discharge (CFS)	0
Time of Peak Discharge	31Dec2023, 24:00
Volume (IN)	0
Peak Inflow (CFS)	40.82
Inflow Volume (AC - FT)	36.95


Combined Inflow
FLOW-COMBINE (CFS)
40
30
20
10
0
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time


Cumulative Outflow
FLOW-CUMULATIVE (AC-FT)
1
0.5
0
−0.5
−1
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time


Outflow
1
0.5
0
−0.5
−1
FLOW (CFS)
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

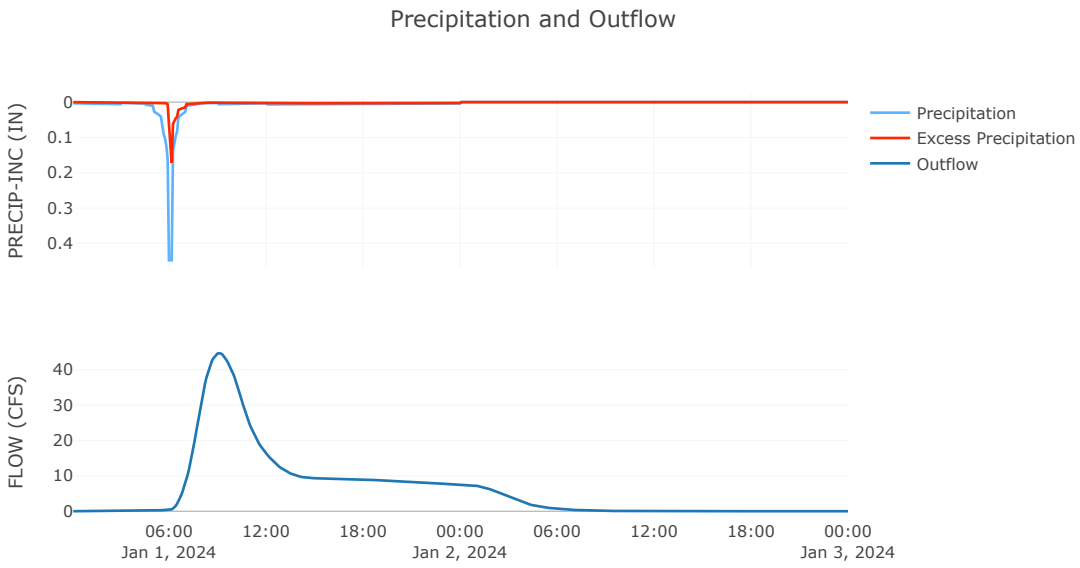
Subbasin: SB13

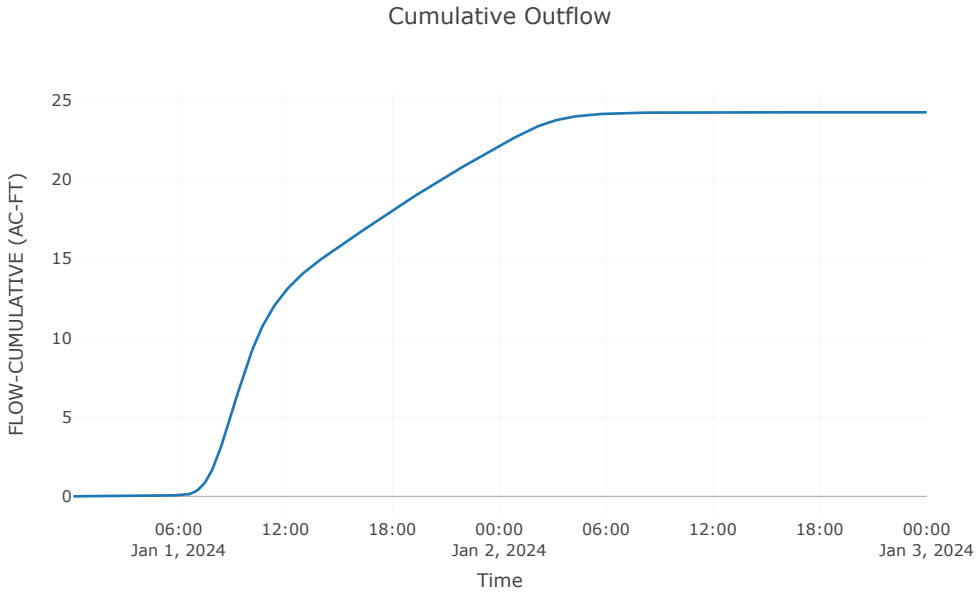
Area (MI2) : 0.36
Latitude Degrees : 31.43
Longitude Degrees : -103.6
Downstream : J - 8

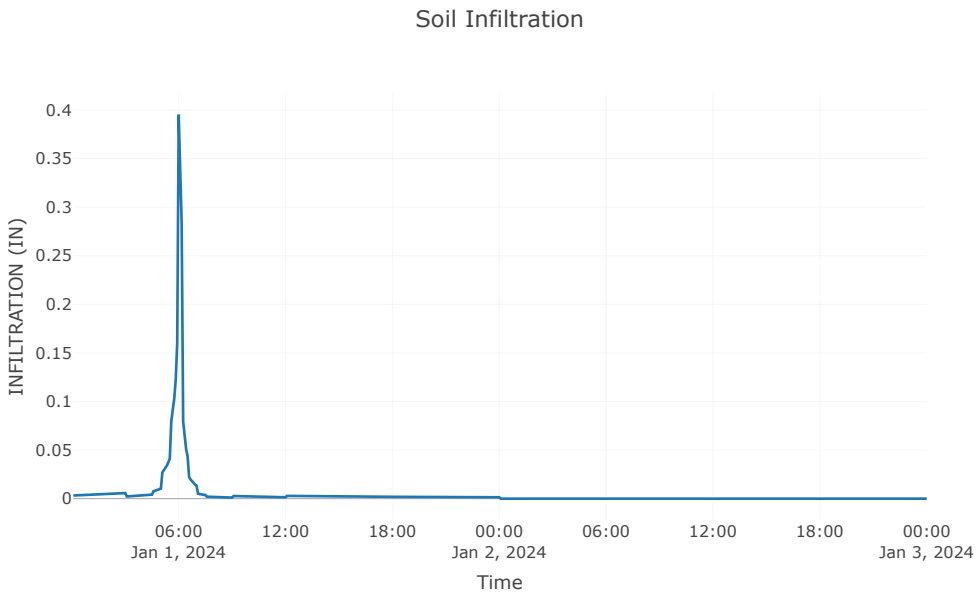
Loss Rate: Scs	
Percent Impervious Area	2.8
Curve Number	68.15
Initial Abstraction	0.93

Transform: Scs	
Lag	163
Unitgraph Type	Standard

Results: SB13	
Peak Discharge (CFS)	44.71
Time of Peak Discharge	01Jan2024, 09:05
Volume (IN)	1.27
Precipitation Volume (AC - FT)	75.63
Loss Volume (AC - FT)	51.38
Excess Volume (AC - FT)	24.25
Direct Runoff Volume (AC - FT)	24.25
Baseflow Volume (AC - FT)	0


Precipitation and Outflow
PRECIP-INC (IN)
0
0.1
0.2
0.3
0.4
Precipitation
Excess Precipitation
Outflow
FLOW (CFS)
40
30
20
10
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024

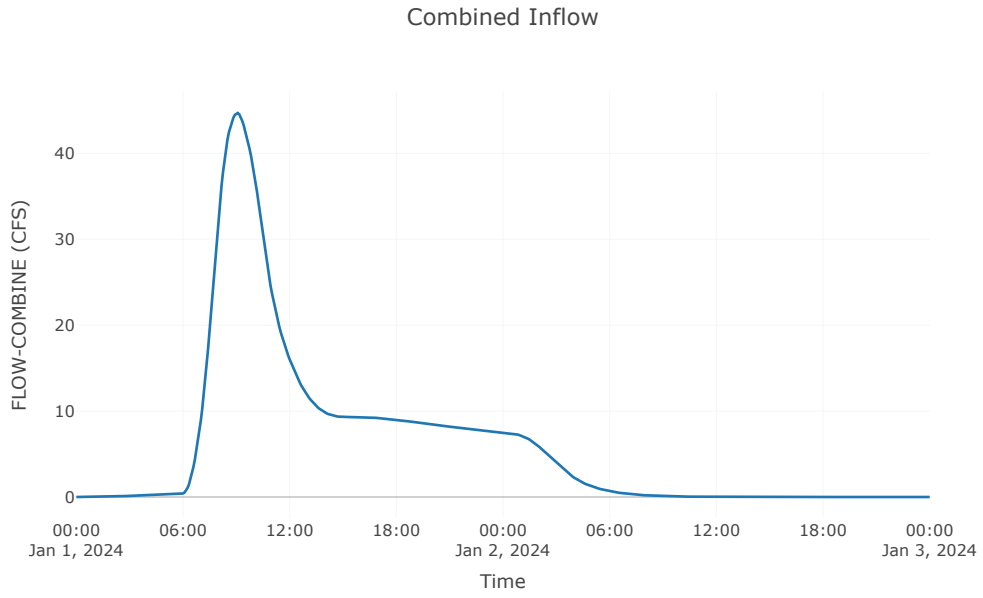

Cumulative Outflow
FLOW-CUMULATIVE (AC-FT)
25
20
15
10
5
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

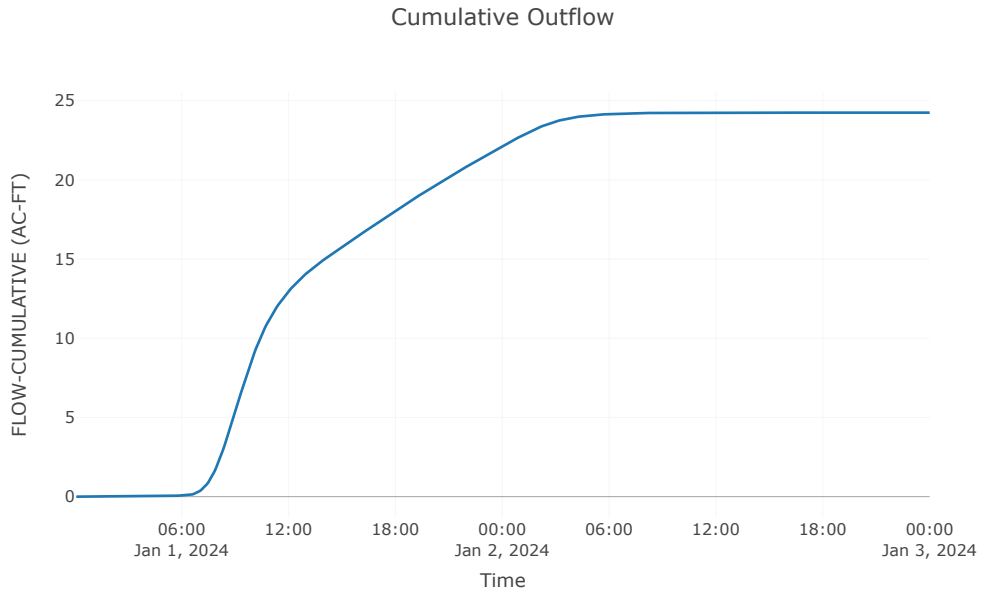

Soil Infiltration
INFILTRATION (IN)
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

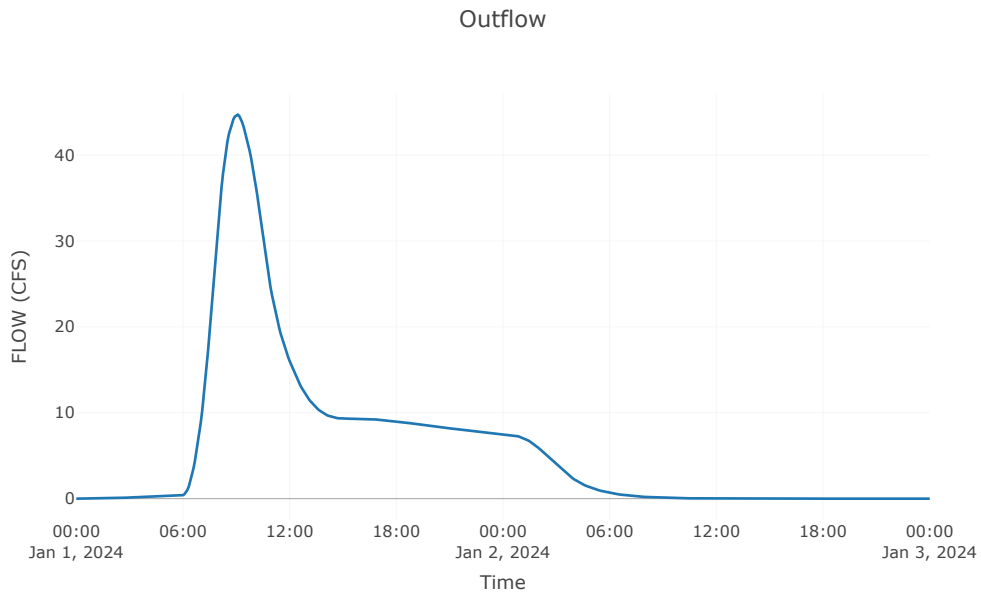
Junction: J-8

Downstream : Reach - 8

Results: J-8	
Peak Discharge (CFS)	44.71
Time of Peak Discharge	01Jan2024, 09:05
Volume (IN)	0.08





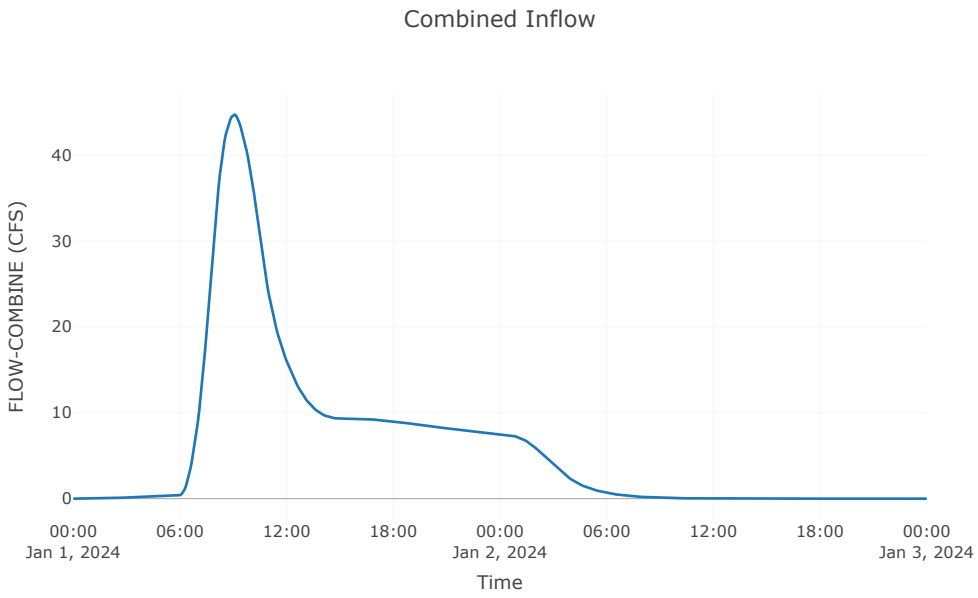

Outflow
FLOW (CFS)
40
30
20
10
0
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

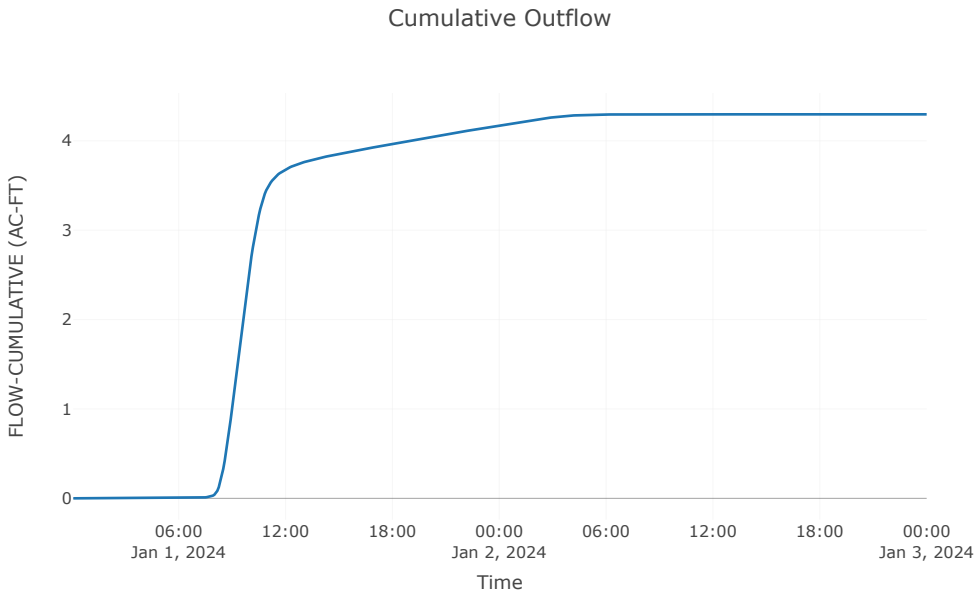
Reach: Reach-8

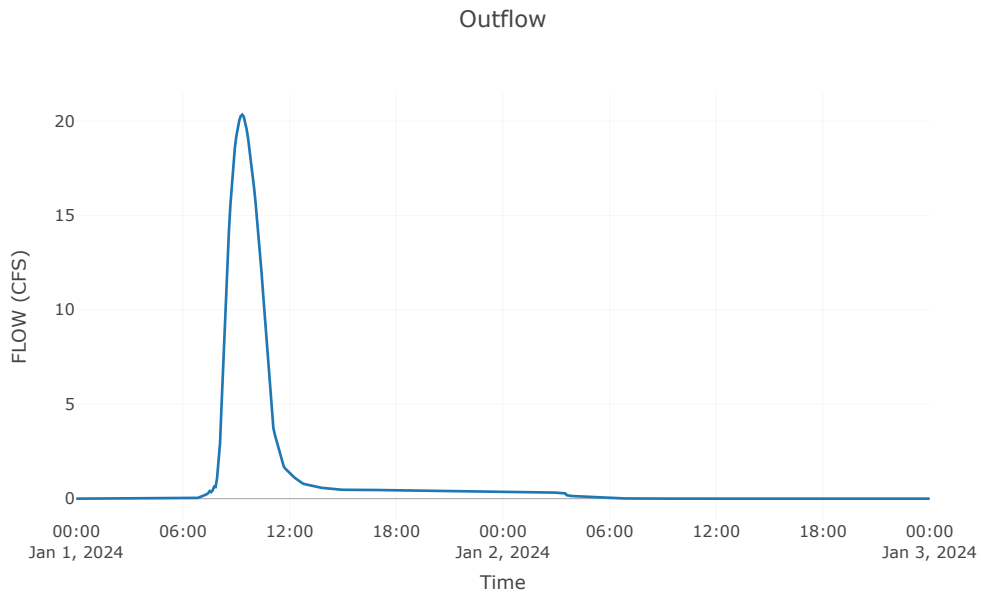
Downstream : Pond - 1

Route: Muskingum Cunge	
Method	Muskingum Cunge
Channel	Trapezoid
Length (FT)	6865
Energy Slope (FT/FT)	0
Mannings n	0
Bottom Width (FT)	120
Side Slope (FT/FT)	3
Initial Variable	Combined Inflow
Space - Time Method	Automatic DX and DT
Index Parameter Type	Index Flow
Index Flow	22
Maximum Depth Iterations	20
Maximum Route Step Iterations	30
Channel Loss	Percolation
Channel Loss Percolation Rate	1.28
End Channel Loss	

Results: Reach-8	
Peak Discharge (CFS)	20.33
Time of Peak Discharge	01Jan2024, 09:20
Volume (IN)	0.01
Peak Inflow (CFS)	44.71
Inflow Volume (AC - FT)	24.25


Combined Inflow
FLOW-COMBINE (CFS)
40
30
20
10
0
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time


Cumulative Outflow
FLOW-CUMULATIVE (AC-FT)
4
3
2
1
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time


Outflow
FLOW (CFS)
20
15
10
5
0
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

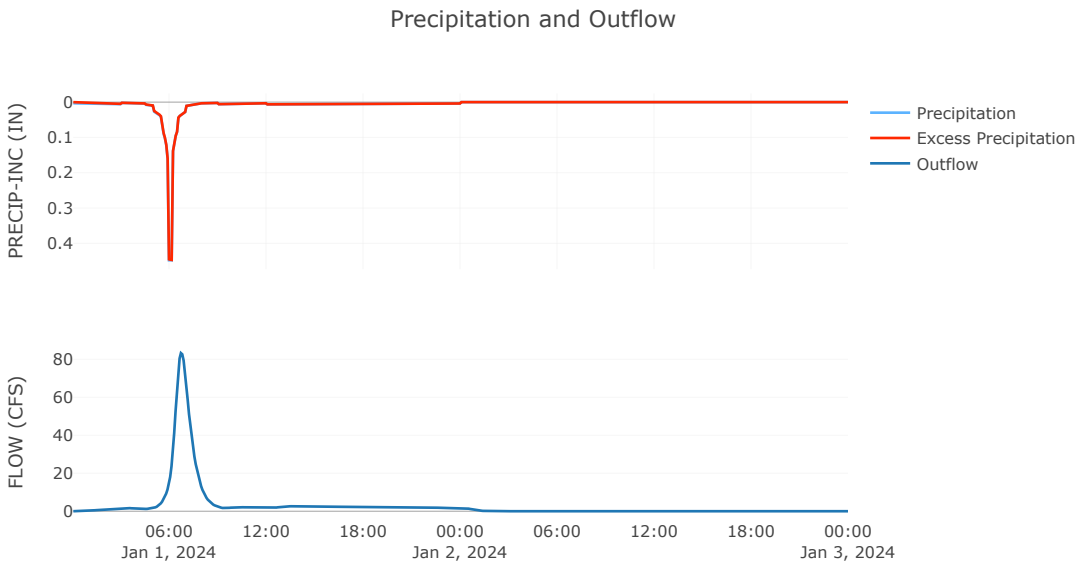
Subbasin: SB14

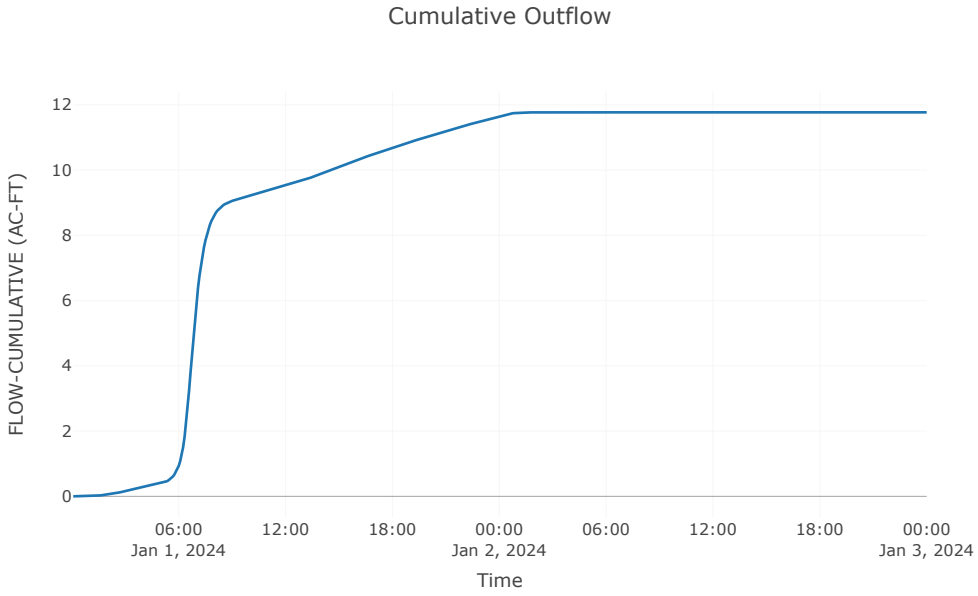
Area (MI2) : 0.06
Downstream : Pond - 1

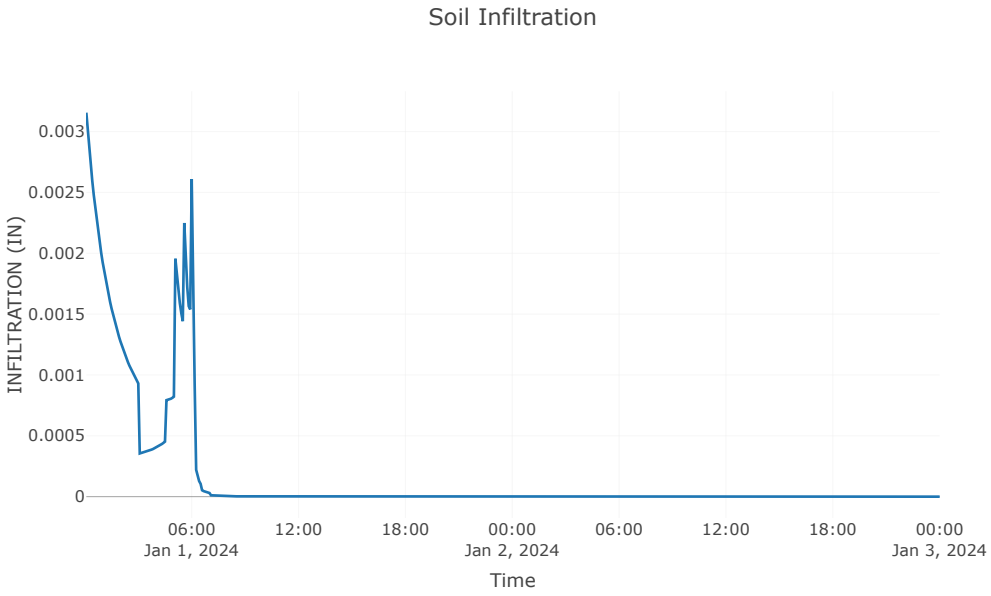
Loss Rate: Scs	
Percent Impervious Area	0.2
Curve Number	99
Initial Abstraction	0

Transform: Scs	
Lag	38
Unitgraph Type	Standard

Results: SB14	
Peak Discharge (CFS)	83.28
Time of Peak Discharge	01Jan2024, 06:40
Volume (IN)	3.87
Precipitation Volume (AC - FT)	12.07
Loss Volume (AC - FT)	0.3
Excess Volume (AC - FT)	11.77
Direct Runoff Volume (AC - FT)	11.77
Baseflow Volume (AC - FT)	0


Precipitation and Outflow
PRECIP-INC (IN)
0
0.1
0.2
0.3
0.4
Precipitation
Excess Precipitation
Outflow
FLOW (CFS)
80
60
40
20
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024

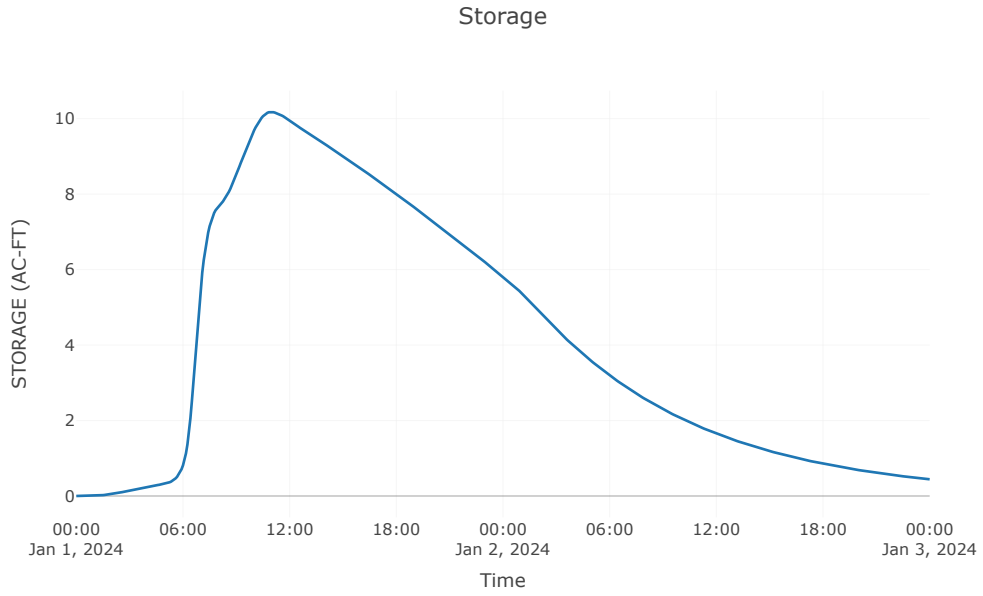

Cumulative Outflow
FLOW-CUMULATIVE (AC-FT)
12
10
8
6
4
2
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

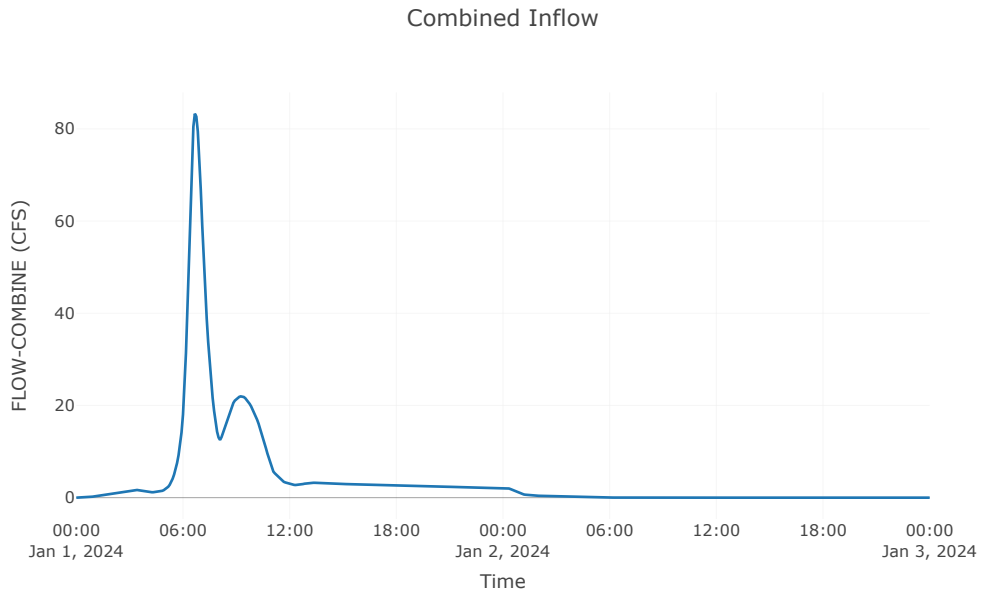

Soil Infiltration
INFILTRATION (IN)
0.003
0.0025
0.002
0.0015
0.001
0.0005
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

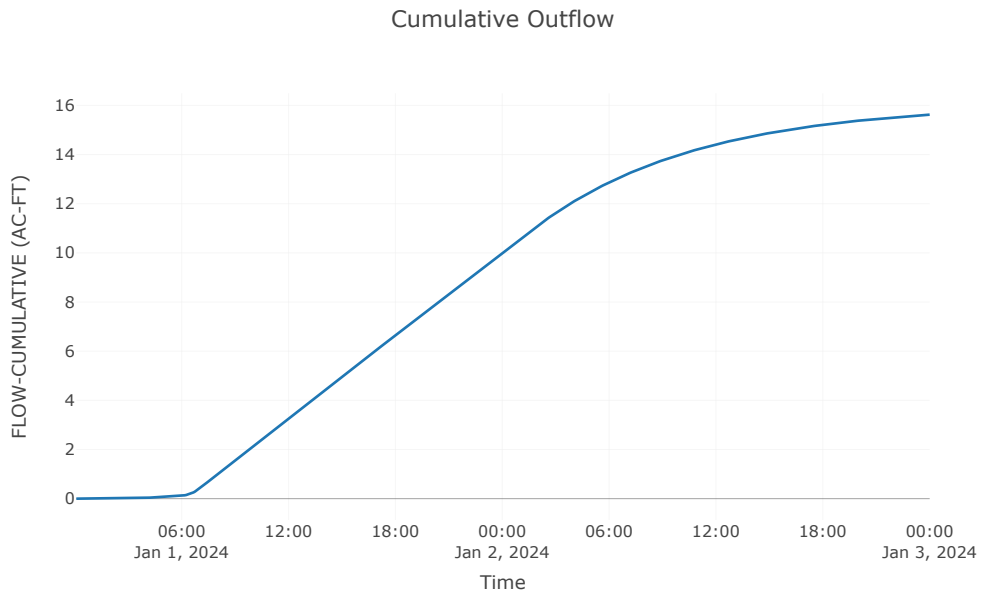
Reservoir: Pond-1

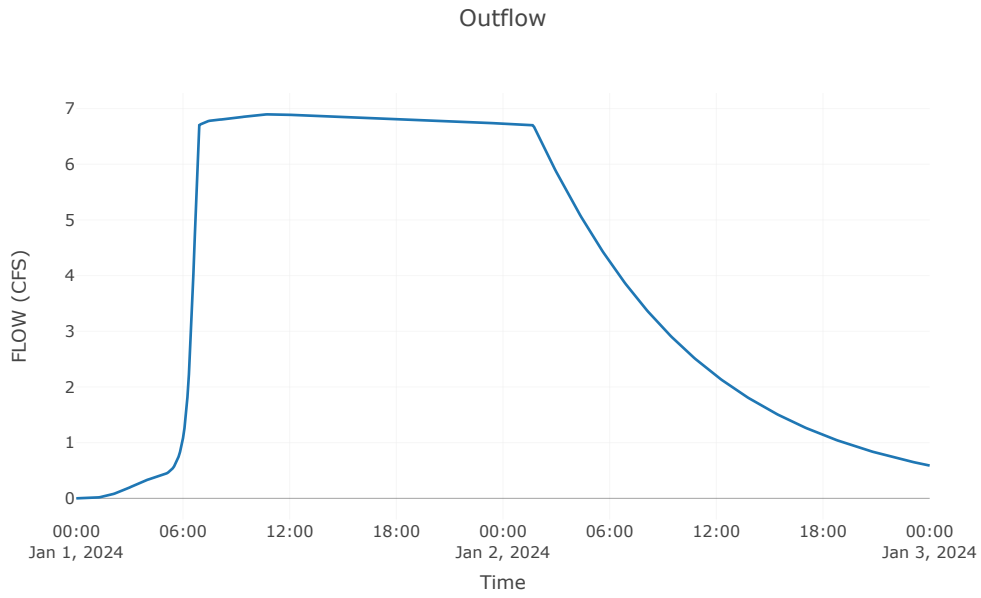
Downstream : Sink - 1

Results: Pond-1	
Peak Discharge (CFS)	6.9
Time of Peak Discharge	01Jan2024, 10:55
Volume (IN)	0.05
Peak Inflow (CFS)	83.3
Time of Peak Inflow	01Jan2024, 06:40
Inflow Volume (AC - FT)	16.07
Maximum Storage (AC - FT)	10.18
Peak Elevation (FT)	2642.98
Discharge Volume (AC - FT)	15.62



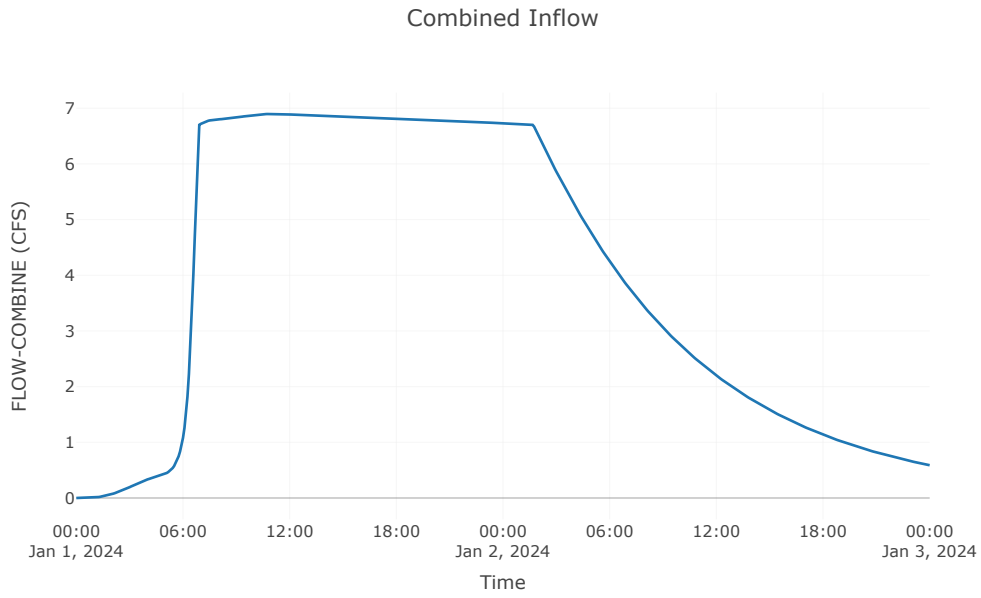


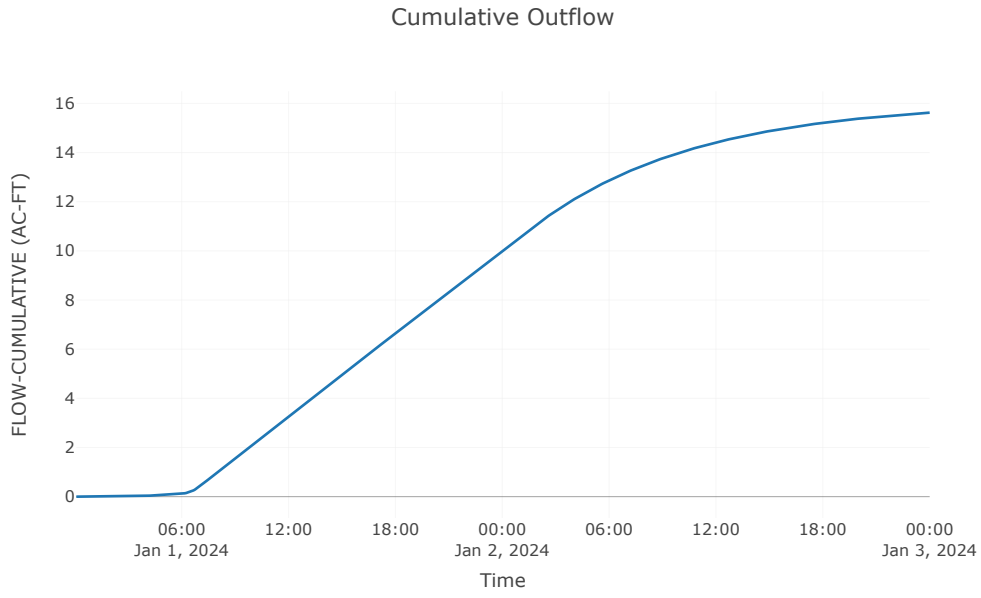

Cumulative Outflow
FLOW-CUMULATIVE (AC-FT)
16
14
12
10
8
6
4
2
0
06:00
Jan 1, 2024
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

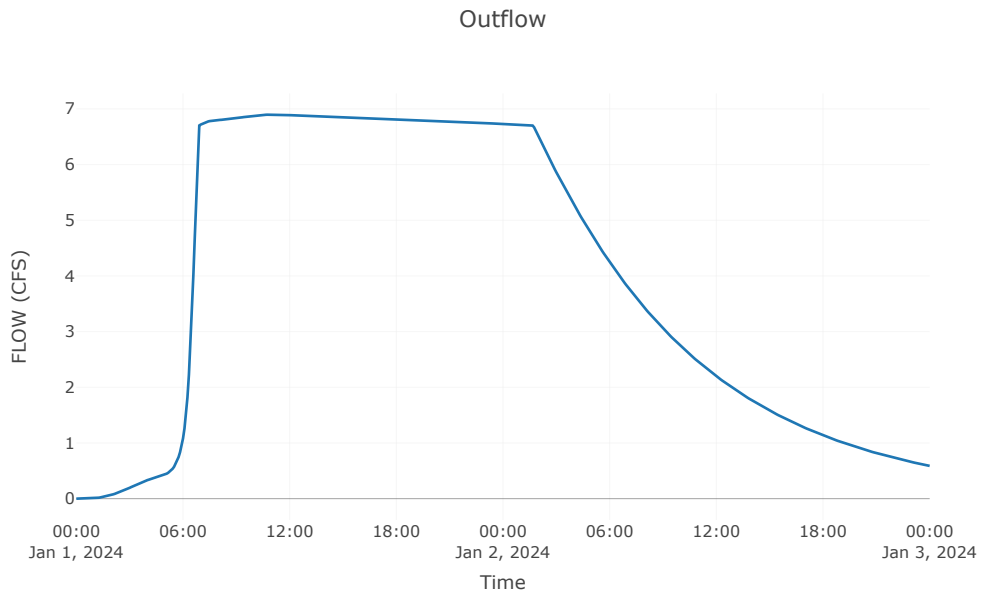

Outflow
FLOW (CFS)
7
6
5
4
3
2
1
0
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

Sink: Sink-1

Results: Sink-1	
Peak Discharge (CFS)	6.9
Time of Peak Discharge	01Jan2024, 10:55
Volume (IN)	0.05






Outflow
FLOW (CFS)
7
6
5
4
3
2
1
0
00:00
Jan 1, 2024
06:00
12:00
18:00
00:00
Jan 2, 2024
06:00
12:00
18:00
00:00
Jan 3, 2024
Time

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Appendix III-3-D

Runoff Management System Calculations

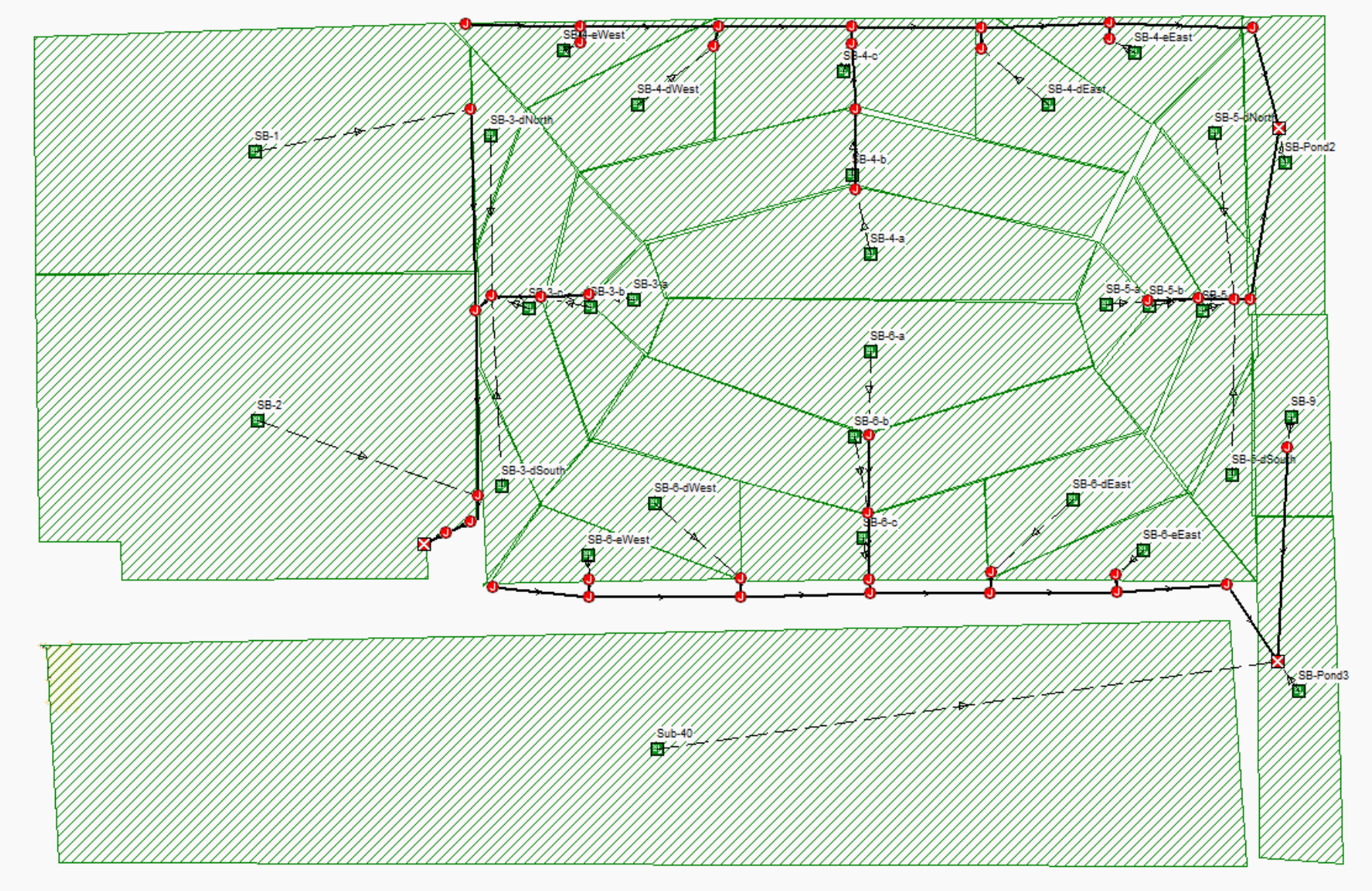
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Appendix III-3-D1

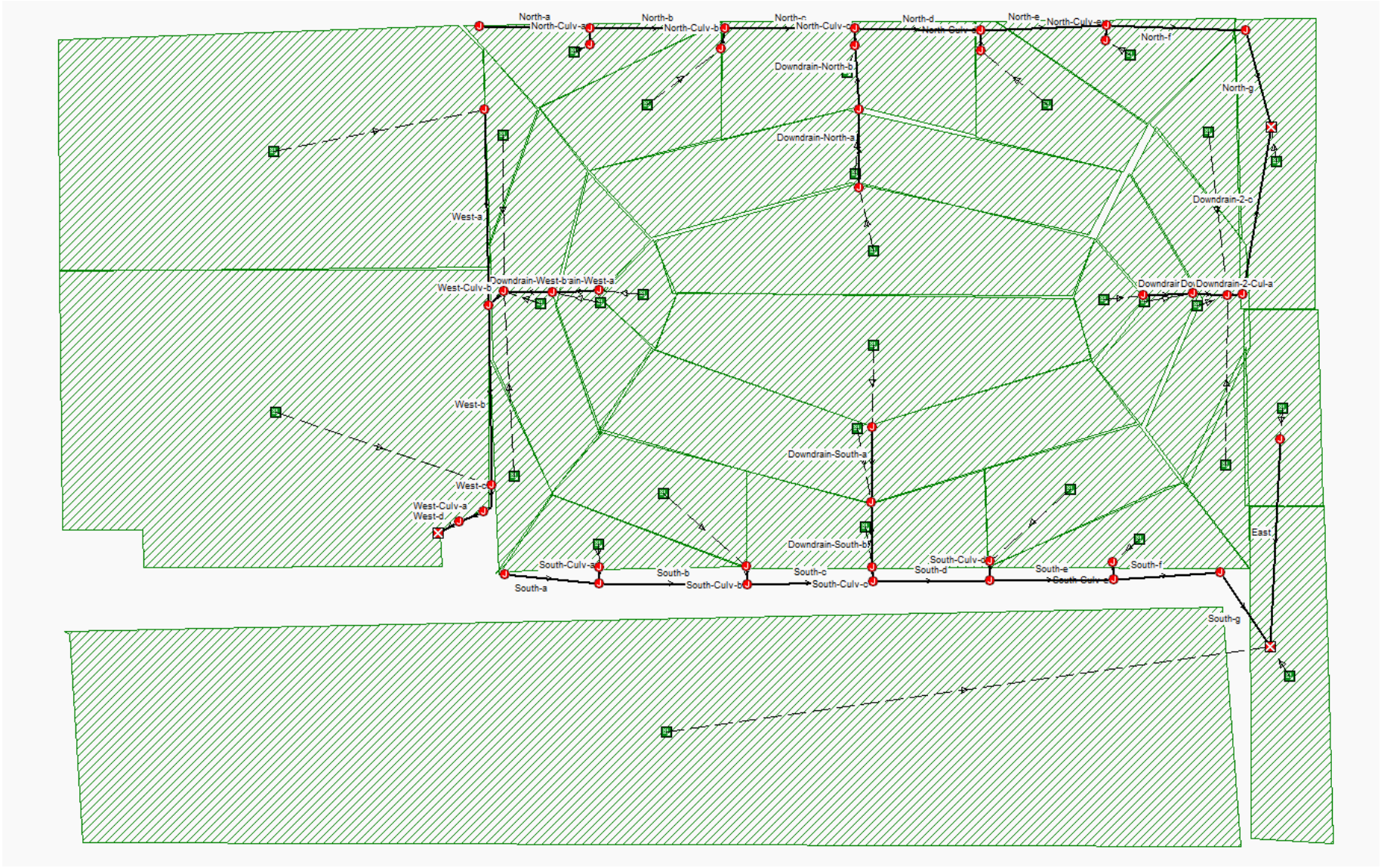
Non-Contact Runoff Model Results

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Runoff Management System Model - Subbasins



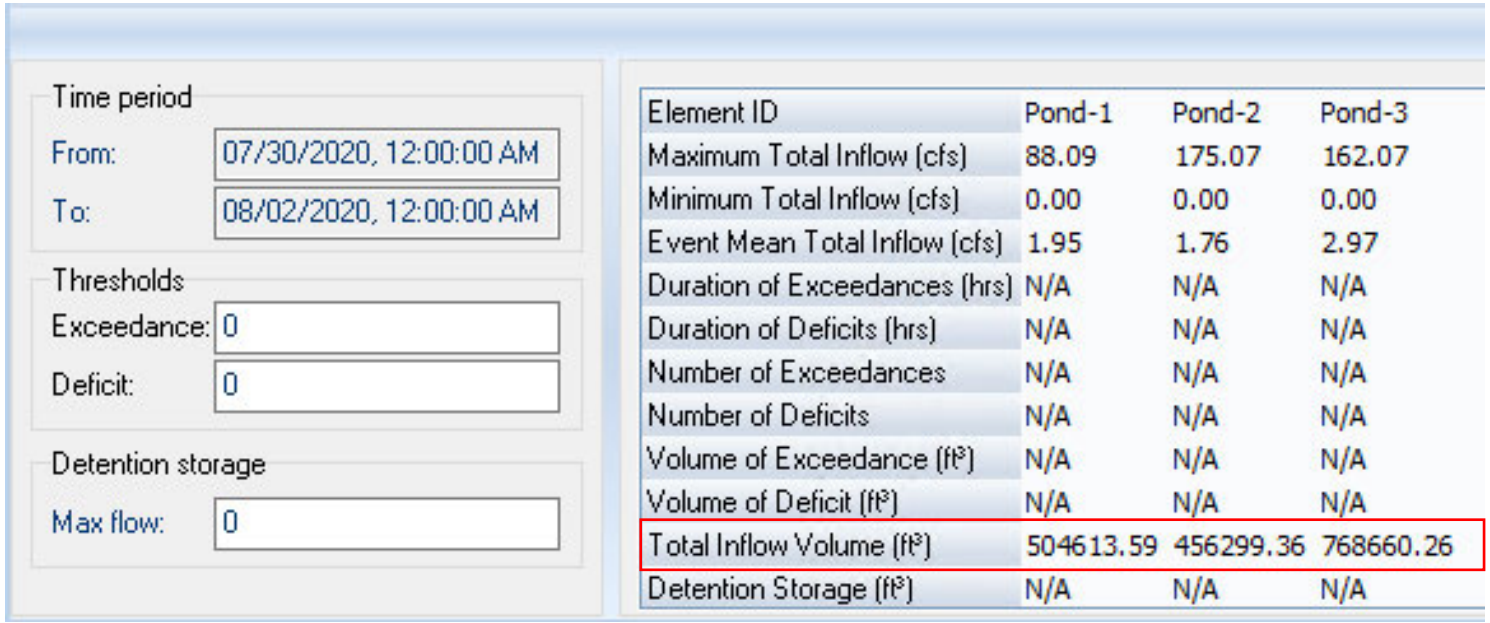
Runoff Management System Model - Channels and Culverts



Pond Contributing Areas

Pond	Contributing Areas (SSA ID)
Pond 1	SB-1, SB-2, SB-3-a, SB-3-b, SB-3-c, SB-3-dNorth, SB-3-dSouth
Pond 2	SB-4-a, SB-4-b, SB-4-c, SB-4-dEast, SB-4-dWest, SB-4-eEast, SB-4-eWest, SB-5-a, SB-5-b, SB-5-c, SB-5-dNorth, SB-4-dSouth, SB-Pond2
Pond 3	SB-6-a, SB-6-b, SB-6-c, SB-6-dEast, SB-6-dWest, SB-6-eEast, SB-6-eWest, SB-9, SB-Pond3, Sub-40

Runoff Volume Entering Ponds



Element ID	Pond-1	Pond-2	Pond-3
Maximum Total Inflow (cfs)	88.09	175.07	162.07
Minimum Total Inflow (cfs)	0.00	0.00	0.00
Event Mean Total Inflow (cfs)	1.95	1.76	2.97
Duration of Exceedances (hrs)	N/A	N/A	N/A
Duration of Deficits (hrs)	N/A	N/A	N/A
Number of Exceedances	N/A	N/A	N/A
Number of Deficits	N/A	N/A	N/A
Volume of Exceedance (ft^3)	N/A	N/A	N/A
Volume of Deficit (ft^3)	N/A	N/A	N/A
Total Inflow Volume (ft^3)	504613.59	456299.36	768660.26
Detention Storage (ft^3)	N/A	N/A	N/A

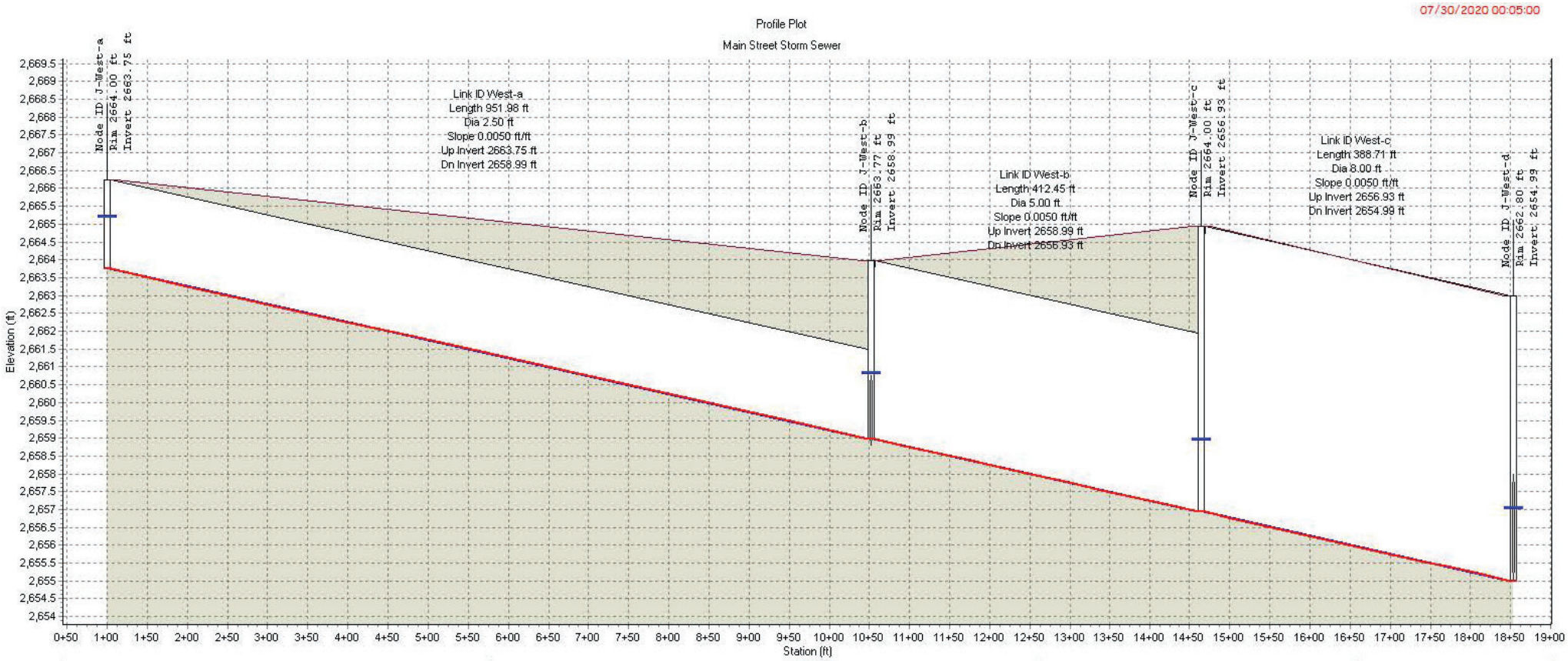
SN	Element ID	Area (acres)	Drainage Node ID	Total Precipitation (inches)	Total Runoff (inches)	Peak Runoff (cfs)	Time of Concentration (hh:mm:ss)
1	SB-1	38.83	J-West-a	4.00	1.42	42.95	01:08:03
2	SB-2	37.39	J-West-c	4.00	1.27	36.32	01:11:47
3	SB-3-a	2.05	64	4.00	1.48	4.57	00:25:12
4	SB-3-b	5.54	64	4.00	1.48	16.23	00:12:55
5	SB-3-c	9.12	64	4.00	1.48	26.56	00:13:03
6	SB-3-dNorth	3.66	64	4.00	1.47	10.92	00:12:03
7	SB-3-dSouth	3.98	64	4.00	1.47	11.80	00:12:16
8	SB-4-a	9.49	64	4.00	1.47	21.04	00:25:35
9	SB-4-b	10.89	64	4.00	1.48	31.04	00:13:34
10	SB-4-c	8.07	64	4.00	1.48	21.25	00:17:48
11	SB-4-dEast	4.02	64	4.00	1.48	11.60	00:13:21
12	SB-4-dWest	4.02	64	4.00	1.48	11.60	00:13:21
13	SB-4-eEast	5.99	64	4.00	1.48	16.34	00:15:00
14	SB-4-eWest	6.18	64	4.00	1.48	16.86	00:15:00
15	SB-5-a	2.05	64	4.00	1.48	4.57	00:25:12
16	SB-5-b	5.54	64	4.00	1.48	16.23	00:12:55
17	SB-5-c	9.12	64	4.00	1.48	26.56	00:13:03
18	SB-5-dNorth	3.66	64	4.00	1.47	10.92	00:12:03
19	SB-5-dSouth	3.98	64	4.00	1.47	11.80	00:12:16
20	SB-6-a	8.94	64	4.00	1.48	19.90	00:25:35
21	SB-6-b	10.88	64	4.00	1.48	31.04	00:13:34
22	SB-6-c	6.66	64	4.00	1.48	17.54	00:17:48
23	SB-6-dEast	4.03	64	4.00	1.48	11.60	00:13:21
24	SB-6-dWest	4.02	64	4.00	1.48	11.60	00:13:21
25	SB-6-eEast	4.98	J-So	4.00	1.48	13.55	00:15:00
26	SB-6-eWest	4.11	64	4.00	1.47	11.12	00:15:00
27	SB-9	6.46	East-a	4.00	1.09	8.86	00:35:03
28	SB-Pond2	10.80	Pond-2	4.00	1.73	18.77	00:44:21
29	SB-Pond3	8.76	Pond-3	4.00	1.88	17.13	00:40:56
30	Sub-40	115.0	Pond-3	4.00	1.08	82.89	00:00:00

Appendix III-3-D2

Non-Contact Runoff Model Channel and Culvert Sizing Results

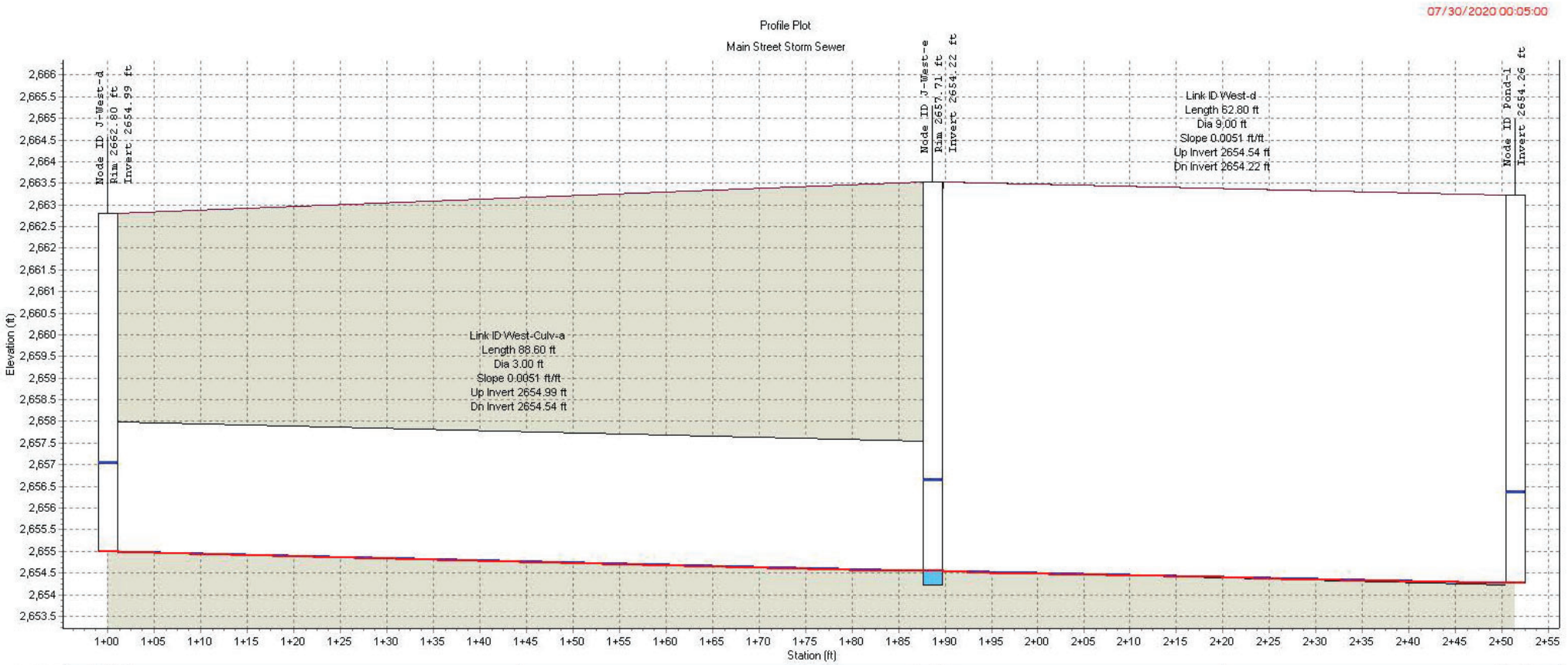
DBS&A
a Geo-Logic Company

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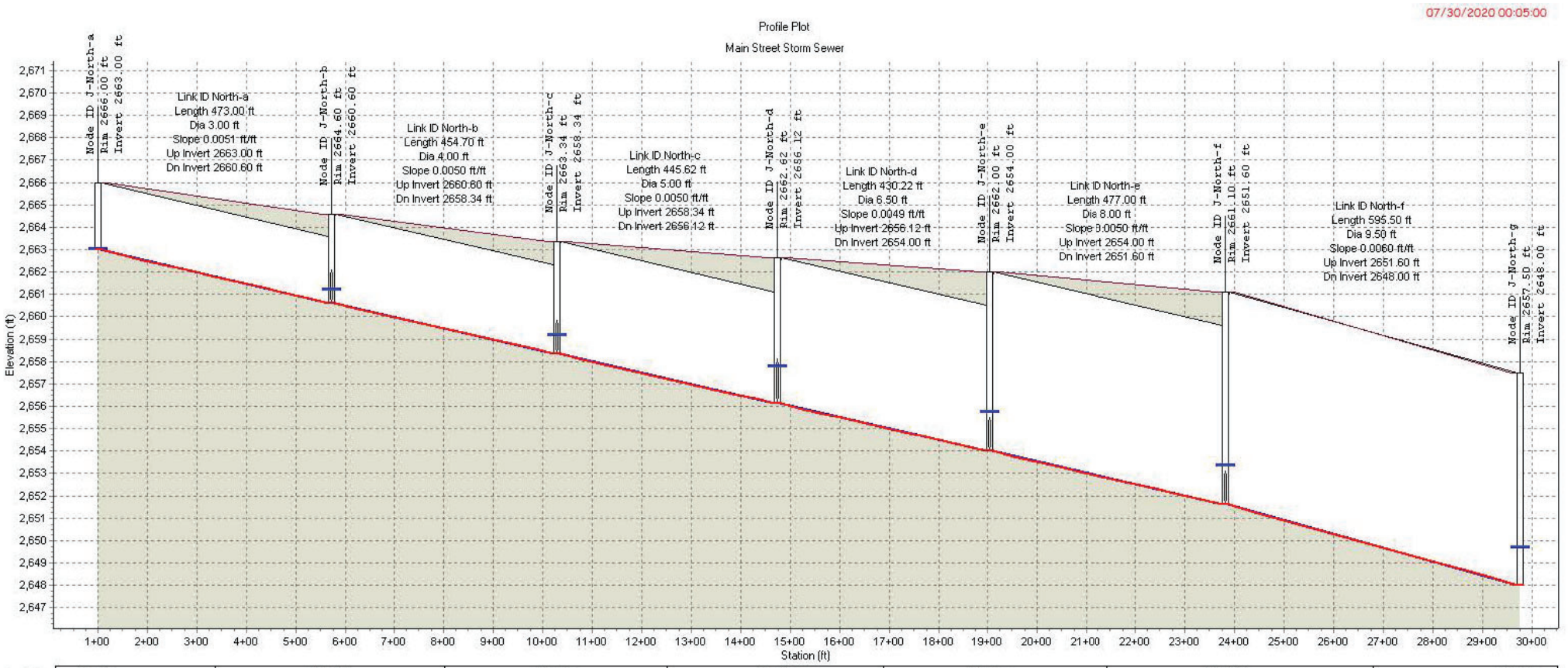
Node ID:	J-West-a	J-West-b	J-West-c	J-West-d
Rim (ft):	2664.00	2663.77	2664.00	2662.80
Invert (ft):	2663.75	2658.99	2656.93	2654.99
Min Pipe Cover (ft):	0.00	0.00	0.00	0.00
Max HGL (ft):	2665.20	2660.91	2658.99	2657.04

Link ID:	West-a	West-b	West-c
Length (ft):	951.98	412.45	388.71
Dia (ft):	2.50	5.00	8.00
Slope (ft/ft):	0.0050	0.0050	0.0050
Up Invert (ft):	2663.75	2658.99	2656.93
Dn Invert (ft):	2658.99	2656.93	2654.99
Max Q (cfs):	42.94	75.76	88.26
Max Vel (ft/s):	3.48	4.08	4.17
Max Depth (ft):	1.44	1.83	2.04



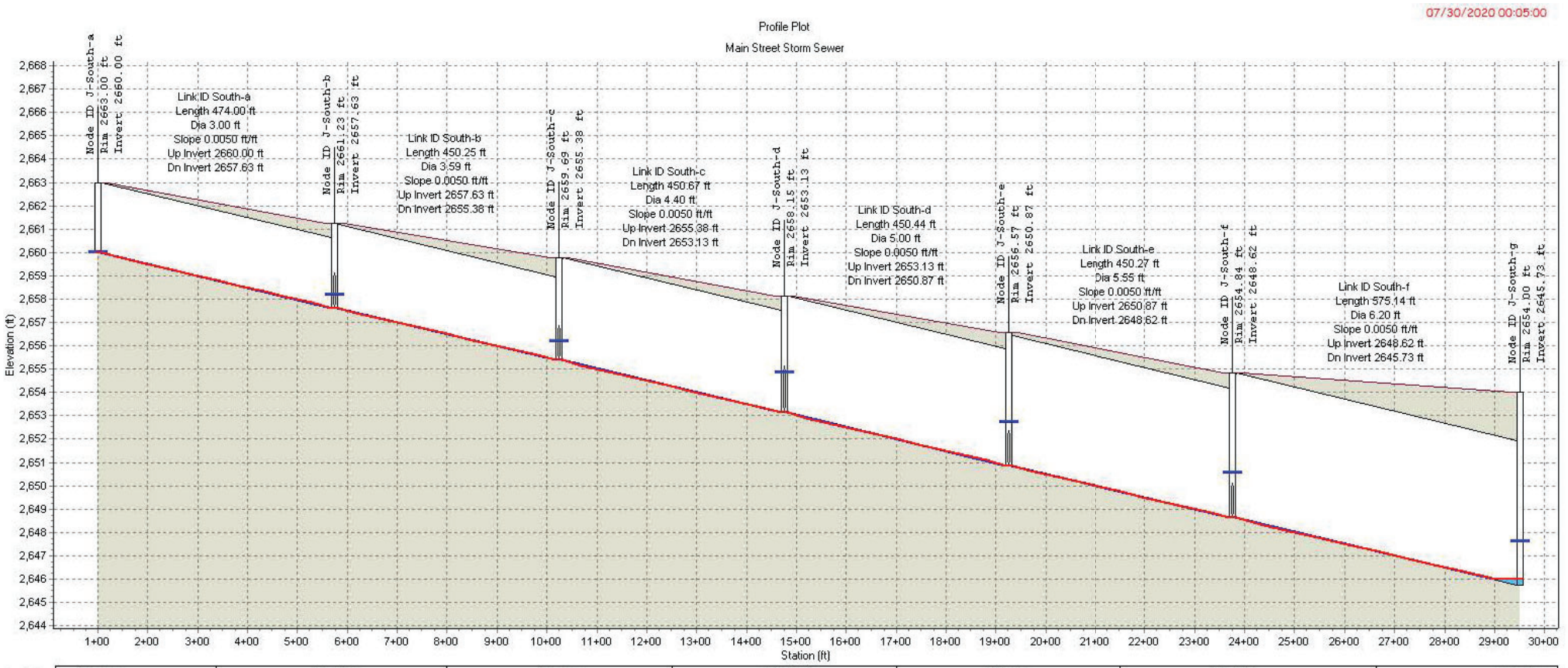
Node ID:	J-West-d	J-West-e	Pond-1
Rim (ft):	2662.80	2657.71	
Invert (ft):	2654.99	2654.22	2654.26
Min Pipe Cover (ft):	0.00	0.00	
Max HGL (ft):	2657.04	2656.64	2656.36

Link ID:	West-Culv-a	West-d
Length (ft):	88.60	62.80
Dia (ft):	3.00	9.00
Slope (ft/ft):	0.0051	0.0051
Up Invert (ft):	2654.99	2654.54
Dn Invert (ft):	2654.54	2654.22
Max Q (cfs):	88.26	88.26
Max Vel (ft/s):	6.33	3.89
Max Depth (ft):	1.87	2.10



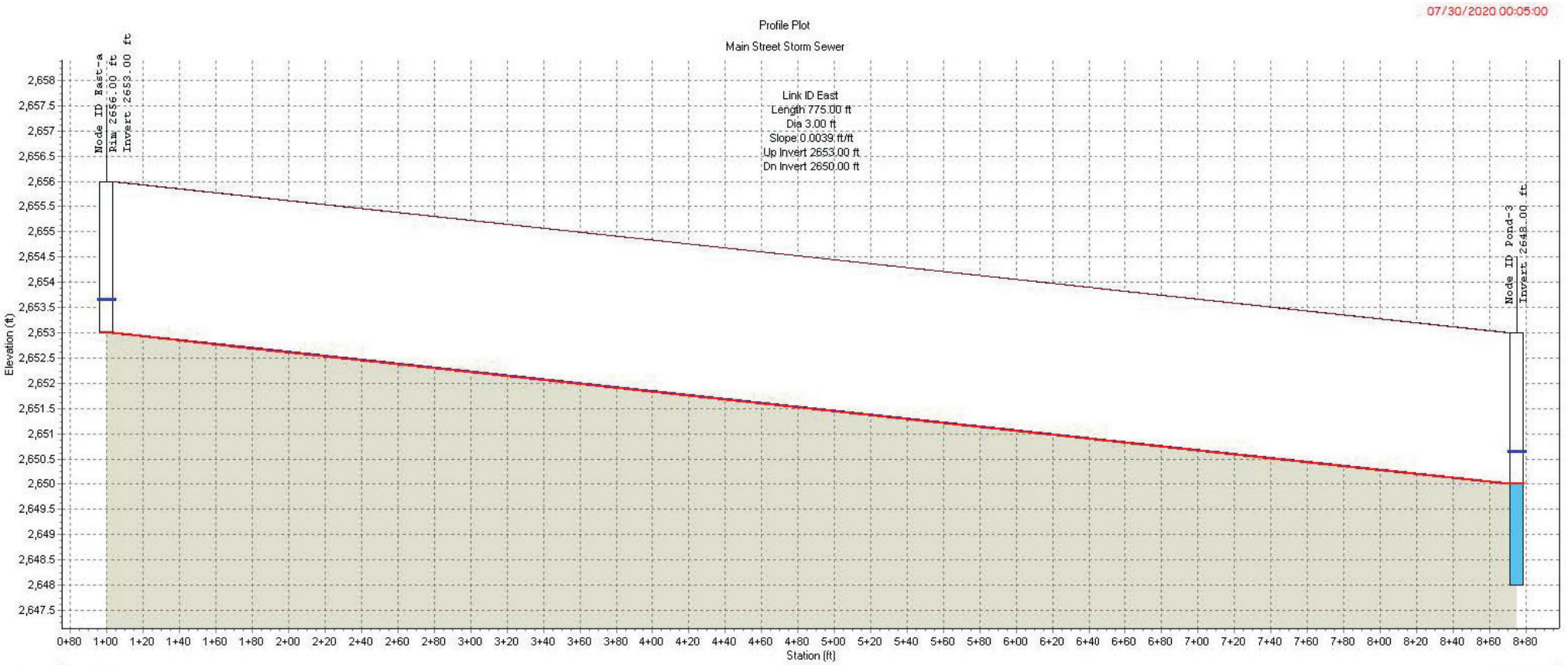
Node ID:	J-North-a	J-North-b	J-North-c	J-North-d	J-North-e	J-North-f	J-North-g
Rim (ft):	2666.00	2664.60	2663.34	2662.62	2662.00	2661.10	2657.50
Invert (ft):	2663.00	2660.60	2658.34	2656.12	2654.00	2651.60	2648.00
Min Pipe Cover (ft):	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max HGL (ft):	2663.00	2661.24	2659.17	2657.78	2655.73	2653.35	2649.74

Link ID:	North-a	North-b	North-c	North-d	North-e	North-f
Length (ft):	473.00	454.70	445.62	430.22	477.00	595.50
Dia (ft):	3.00	4.00	5.00	6.50	8.00	9.50
Slope (ft/ft):	0.0051	0.0050	0.0050	0.0049	0.0050	0.0060
Up Invert (ft):	2663.00	2660.60	2658.34	2656.12	2654.00	2651.60
Dn Invert (ft):	2660.60	2658.34	2656.12	2654.00	2651.60	2648.00
Max Q (cfs):	0.00	16.48	26.41	93.55	102.14	114.64
Max Vel (ft/s):	0.00	2.60	2.78	4.05	4.15	4.57
Max Depth (ft):	0.00	0.61	0.82	1.65	1.71	1.70



Node ID:	J-South-a	J-South-b	J-South-c	J-South-d	J-South-e	J-South-f	J-South-g
Rim (ft):	2663.00	2661.23	2659.69	2658.15	2656.57	2654.84	2654.00
Invert (ft):	2660.00	2657.63	2655.38	2653.13	2650.87	2648.62	2645.73
Min Pipe Cover (ft):	0.00	0.01	0.00	0.02	0.15	0.02	2.07
Max HGL (ft):	2660.00	2658.22	2656.22	2654.89	2652.72	2650.57	2647.67

Link ID:	South-a	South-b	South-c	South-d	South-e	South-f
Length (ft):	474.00	450.25	450.67	450.44	450.27	575.14
Dia (ft):	3.00	3.59	4.40	5.00	5.55	6.20
Slope (ft/ft):	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050
Up Invert (ft):	2660.00	2657.63	2655.38	2653.13	2650.87	2648.62
Dn Invert (ft):	2657.63	2655.38	2653.13	2650.87	2648.62	2645.73
Max Q (cfs):	0.00	10.83	20.90	84.05	92.90	103.25
Max Vel (ft/s):	0.00	2.45	2.76	4.13	4.16	4.28
Max Depth (ft):	0.00	0.56	0.83	1.74	1.83	1.90



Node ID:	East-a		Pond-3
Rim (ft):	2656.00		
Invert (ft):	2653.00		2648.00
Min Pipe Cover (ft):	0.00		
Max HGL (ft):	2653.66		2650.65

Link ID:	East
Length (ft):	775.00
Dia (ft):	3.00
Slope (ft/ft):	0.0039
Up Invert (ft):	2653.00
Dn Invert (ft):	2650.00
Max Q (cfs):	8.78
Max Vel (ft/s):	2.11
Max Depth (ft):	0.62

Non-Contact System Channel Information

Element ID	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Total Drop (ft)	Average Slope (%)	Channel Type	Channel Height (ft)	Channel Width (ft)	Channel Manning's Roughness	Entrance Losses	Exit/Bend Losses	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Max Flow Velocity (ft/sec)	Travel Time (min)	Design Flow Capacity (cfs)	Max Flow / Design Flow Ratio	Max Flow Depth / Total Depth Ratio	Total Time Surcharged (min)	Max Flow Depth (ft)
Downdrain-2-a	64	64	318.20	2760.00	2712.00	48.00	15.0800	Trapezoidal	1.500	14.50	0.0150	0.5000	0.5000	4.59	0 07:23	6.56	0.81	795.07	0.01	0.05	0.00	0.07
Downdrain-2-b	64	64	296.24	2712.00	2666.50	45.50	15.3600	Trapezoidal	1.500	14.50	0.0150	0.5000	0.5000	19.60	0 07:17	11.51	0.43	802.27	0.02	0.11	0.00	0.16
Downdrain-North-a	64	64	576.31	2741.00	2693.00	48.00	8.3300	Trapezoidal	1.500	14.50	0.0150	0.5000	0.5000	21.15	0 07:23	9.94	0.97	590.78	0.04	0.14	0.00	0.21
Downdrain-North-b	64	64	350.07	2693.00	2668.00	25.00	7.1400	Trapezoidal	1.500	14.50	0.0150	0.5000	0.5000	48.12	0 07:18	12.77	0.46	547.05	0.09	0.24	0.00	0.35
Downdrain-South-a	64	64	318.10	2741.00	2693.00	48.00	15.0900	Trapezoidal	1.500	14.50	0.0150	0.5000	0.5000	19.95	0 07:23	11.58	0.46	795.20	0.03	0.11	0.00	0.17
Downdrain-South-b	64	64	166.70	2693.00	2668.00	25.00	15.0000	Trapezoidal	1.500	14.50	0.0150	0.5000	0.5000	47.92	0 07:18	16.06	0.17	792.75	0.06	0.19	0.00	0.28
Downdrain-West-a	64	64	318.20	2760.00	2712.00	48.00	15.0800	Trapezoidal	1.500	14.50	0.0150	0.5000	0.5000	4.59	0 07:23	6.56	0.81	795.07	0.01	0.05	0.00	0.07
Downdrain-West-b	64	64	296.24	2712.00	2666.50	45.50	15.3600	Trapezoidal	1.500	14.50	0.0150	0.5000	0.5000	19.60	0 07:17	11.51	0.43	802.27	0.02	0.11	0.00	0.16
East	East-a	Pond-3	775.00	2653.00	2650.00	3.00	0.3900	Trapezoidal	3.000	23.00	0.0300	0.5000	0.5000	8.78	0 07:30	2.11	6.12	188.10	0.05	0.21	0.00	0.62
North-a	J-North-a	J-North-b	473.00	2663.00	2660.60	2.40	0.5100	Trapezoidal	3.000	27.50	0.0300	0.5000	0.5000	0.00	0 00:00	0.00		305.56	0.00	0.00	0.00	0.00
North-b	J-North-b	J-North-c	454.70	2660.60	2658.34	2.26	0.5000	Trapezoidal	4.000	33.50	0.0300	0.5000	0.5000	16.48	0 07:19	2.60	2.91	548.97	0.03	0.16	0.00	0.61
North-c	J-North-c	J-North-d	445.62	2658.34	2656.12	2.22	0.5000	Trapezoidal	5.000	39.50	0.0300	0.5000	0.5000	26.41	0 07:20	2.78	2.67	886.67	0.03	0.16	0.00	0.82
North-d	J-North-d	J-North-e	430.22	2656.12	2654.00	2.12	0.4900	Trapezoidal	6.500	48.50	0.0300	0.5000	0.5000	93.55	0 07:20	4.05	1.77	1574.89	0.06	0.25	0.00	1.65
North-e	J-North-e	J-North-f	477.00	2654.00	2651.60	2.40	0.5000	Trapezoidal	8.000	57.50	0.0300	0.5000	0.5000	102.14	0 07:21	4.15	1.92	2551.15	0.04	0.21	0.00	1.71
North-f	J-North-f	J-North-g	595.50	2651.60	2648.00	3.60	0.6000	Trapezoidal	9.500	66.50	0.0300	0.5000	0.5000	114.64	0 07:22	4.57	2.17	4166.61	0.03	0.18	0.00	1.70
South-a	J-South-a	J-South-b	474.00	2660.00	2657.63	2.37	0.5000	Trapezoidal	3.000	25.00	0.0300	0.5000	0.5000	0.00	0 00:00	0.00		253.18	0.00	0.00	0.00	0.00
South-b	J-South-b	J-South-c	450.25	2657.63	2655.38	2.25	0.5000	Trapezoidal	3.590	28.54	0.0300	0.5000	0.5000	10.83	0 07:19	2.45	3.06	371.83	0.03	0.16	0.00	0.56
South-c	J-South-c	J-South-d	450.67	2655.38	2653.13	2.25	0.5000	Trapezoidal	4.400	33.40	0.0300	0.5000	0.5000	20.90	0 07:20	2.76	2.72	580.92	0.04	0.19	0.00	0.83
South-d	J-South-d	J-South-e	450.44	2653.13	2650.87	2.26	0.5000	Trapezoidal	5.000	37.00	0.0300	0.5000	0.5000	84.05	0 07:19	4.13	1.82	775.46	0.11	0.35	0.00	1.74
South-e	J-South-e	J-South-f	450.27	2650.87	2648.62	2.25	0.5000	Trapezoidal	5.550	40.30	0.0300	0.5000	0.5000	92.90	0 07:21	4.16	1.80	980.83	0.09	0.33	0.00	1.83
South-f	J-South-f	J-South-g	575.14	2648.62	2645.73	2.89	0.5000	Trapezoidal	6.200	44.20	0.0300	0.5000	0.5000	103.25	0 07:22	4.28	2.24	1268.65	0.08	0.31	0.00	1.90
West-a	J-West-a	J-West-b	951.98	2663.75	2658.99	4.76	0.5000	Trapezoidal	2.500	19.50	0.0300	0.5000	0.5000	42.94	0 07:42	3.48	4.56	136.28	0.32	0.58	0.00	1.44
West-b	J-West-b	J-West-c	412.45	2658.99	2656.93	2.06	0.5000	Trapezoidal	5.000	34.50	0.0300	0.5000	0.5000	75.76	0 07:17	4.08	1.68	661.66	0.11	0.38	0.00	1.83
West-c	J-West-c	J-West-d	388.71	2656.93	2654.99	1.94	0.5000	Trapezoidal	8.000	52.50	0.0300	0.5000	0.5000	88.26	0 07:37	4.17	1.55	2056.50	0.04	0.26	0.00	2.04
West-d	J-West-e	Pond-1	62.80	2654.54	2654.22	0.32	0.5100	Trapezoidal	9.000	58.50	0.0300	0.5000	0.5000	88.26	0 07:37	3.89	0.27	2599.40	0.03	0.23	0.00	2.10

Non-Contact System Culvert Information

Element ID	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (ft)	Pipe Width (ft)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Max Flow Velocity (ft/sec)	Travel Time (min)	Design Flow Capacity (cfs)	Max Flow / Design Flow Ratio	Max Flow Depth / Total Depth Ratio	Total Time Surcharged (min)	Max Flow Depth (ft)
Downdrain-2-c	64	Pond-2	1243.84	2656.00	2649.60	6.40	0.5100	Dummy	0.000	0.00	0.0150	0.5000	0.5000	68.50	0 07:17	0.00			0.02	0.11	0.00	0.16
Downdrain-2-Cul-a	64	64	160.00	2666.50	2650.00	16.50	10.3100	CIRCULAR	2.000	2.00	0.0150	0.5000	0.5000	68.50	0 07:17	20.49	0.13	125.92	0.54	0.53	0.00	0.99
North-Culv-a	64	J-North-b	50.00	2666.00	2660.60	5.40	10.8000	CIRCULAR	1.500	1.50	0.0150	0.5000	0.5000	16.86	0 07:17	14.55	0.06	59.84	0.28	0.36	0.00	0.51
North-Culv-b	64	J-North-c	32.00	2668.00	2658.34	9.66	30.1900	CIRCULAR	1.500	1.50	0.0150	0.5000	0.5000	11.58	0 07:17	18.87	0.03	100.04	0.12	0.23	0.00	0.33
North-Culv-c	64	J-North-d	41.00	2666.00	2656.12	9.88	24.1000	CIRCULAR	2.000	2.00	0.0150	0.5000	0.5000	68.81	0 07:18	28.06	0.02	192.49	0.36	0.41	0.00	0.81
North-Culv-d	64	J-North-e	41.00	2668.00	2654.00	14.00	34.1500	CIRCULAR	1.500	1.50	0.0150	0.5000	0.5000	11.58	0 07:17	19.74	0.03	106.40	0.11	0.22	0.00	0.32
North-Culv-e	64	J-North-f	78.00	2666.60	2651.60	15.00	19.2300	CIRCULAR	1.500	1.50	0.0150	0.5000	0.5000	16.33	0 07:17	17.75	0.07	79.85	0.20	0.31	0.00	0.43
North-g	J-North-g	Pond-2	5.00	2648.00	2648.00	0.00	0.0000	Dummy	0.000	0.00	0.0320	0.5000	0.5000	114.64	0 07:22	0.00			0.03	0.18	0.00	1.70
South-Culv-a	64	J-South-b	60.00	2666.00	2657.63	8.37	13.9500	CIRCULAR	1.500	1.50	0.0150	0.5000	0.5000	11.12	0 07:17	14.18	0.07	68.00	0.16	0.27	0.00	0.39
South-Culv-b	64	J-South-c	65.00	2668.00	2655.38	12.62	19.4200	CIRCULAR	1.500	1.50	0.0150	0.5000	0.5000	11.57	0 07:17	16.16	0.07	80.23	0.14	0.26	0.00	0.37
South-Culv-c	64	J-South-d	72.00	2668.00	2653.13	14.87	20.6500	CIRCULAR	2.000	2.00	0.0150	0.5000	0.5000	65.25	0 07:18	26.14	0.05	178.20	0.37	0.42	0.00	0.81
South-Culv-d	64	J-South-e	78.50	2668.00	2650.87	17.13	21.8200	CIRCULAR	1.500	1.50	0.0150	0.5000	0.5000	11.57	0 07:17	16.85	0.08	85.05	0.14	0.25	0.00	0.36
South-Culv-e	J-So	J-South-f	86.00	2668.00	2648.62	19.38	22.5300	CIRCULAR	1.500	1.50	0.0150	0.5000	0.5000	13.55	0 07:17	17.81	0.08	86.43	0.16	0.27	0.00	0.38
South-g	J-South-g	Pond-3	9.69	2646.00	2645.00	1.00	10.3200	Dummy	0.000	0.00	0.0320	0.5000	0.5000	103.25	0 07:22	0.00			0.08	0.31	0.00	1.90
West-Culv-a	J-West-d	J-West-e	88.60	2654.99	2654.54	0.45	0.5100	CIRCULAR	3.000	3.00	0.0150	0.5000	0.5000	88.26	0 07:37	6.33	0.23	123.59	0.71	0.63	0.00	1.87
West-Culv-b	64	J-West-b	57.00	2666.50	2658.77	7.73	13.5600	CIRCULAR	2.000	2.00	0.0150	0.5000	0.5000	68.61	0 07:17	22.46	0.04	142.33	0.48	0.49	0.00	0.93

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Appendix III-3-E

Landfill Cover Erosion Evaluation Data Sources

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Appendix III-3-E1

NRCS Custom Soil Resource Report for Reeves County, Texas

DBS&A
a Geo-Logic Company

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United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Reeves County, Texas



August 5, 2014

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

Preface.....2
How Soil Surveys Are Made.....5
Soil Map.....7
Soil Map.....8
Legend.....9
Map Unit Legend.....10
Map Unit Descriptions.....10
Reeves County, Texas.....12
16—Hoban silty clay loam, 0 to 1 percent slopes.....12
18—Hodgins silty clay loam, 0 to 1 percent slopes.....13
26—Orla clay loam, 0 to 1 percent slopes.....14
34—Reeves clay loam, 0 to 1 percent slopes.....15
41—Upton gravelly loam, 0 to 2 percent slopes.....16
References.....17

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

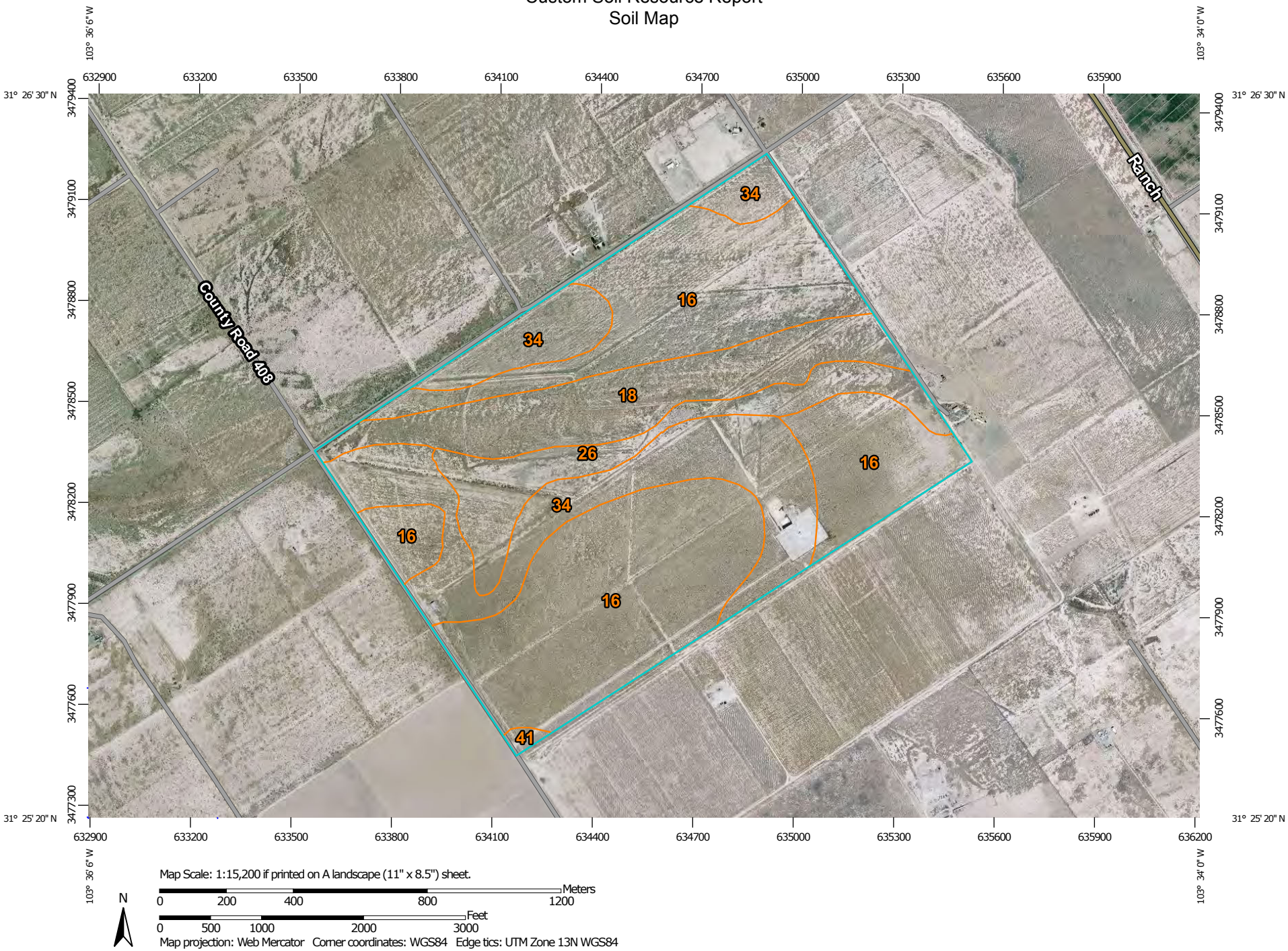
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Soil Map


103° 36' 6" W
103° 34' 0" W
31° 26' 30" N
31° 25' 20" N
632900
633200
633500
633800
634100
634400
634700
635000
635300
635600
635900
636200
3479400
3479100
3478800
3478500
3478200
3477900
3477600
3477300
County Road 408
Ranch
34
16
34
18
26
16
34
16
16
41
Map Scale: 1:15,200 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 200 400 800 1200
Feet
0 500 1000 2000 3000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Reeves County, Texas
Survey Area Data: Version 10, Dec 16, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 16, 2011—Mar 17, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Reeves County, Texas (TX389)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
16	Hoban silty clay loam, 0 to 1 percent slopes	227.7	51.9%
18	Hodgins silty clay loam, 0 to 1 percent slopes	62.7	14.3%
26	Orla clay loam, 0 to 1 percent slopes	42.1	9.6%
34	Reeves clay loam, 0 to 1 percent slopes	104.4	23.8%
41	Upton gravelly loam, 0 to 2 percent slopes	1.6	0.4%
Totals for Area of Interest		**438.5**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Reeves County, Texas

16—Hoban silty clay loam, 0 to 1 percent slopes

Map Unit Setting

Elevation: 2,000 to 4,000 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 61 to 66 degrees F
Frost-free period: 210 to 240 days

Map Unit Composition

Hoban and similar soils: 100 percent

Description of Hoban

Setting

Landform: Basin floors
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Linear

Typical profile

H1 - 0 to 18 inches: silty clay loam
H2 - 18 to 46 inches: silty clay loam
H3 - 46 to 72 inches: silty clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Gypsum, maximum in profile: 72 percent
Salinity, maximum in profile: Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.4 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: B
Ecological site: Loamy, Desert Grassland (R042XC250TX)

18—Hodgins silty clay loam, 0 to 1 percent slopes

Map Unit Setting

Elevation: 1,500 to 4,000 feet
Mean annual precipitation: 10 to 18 inches
Mean annual air temperature: 61 to 68 degrees F
Frost-free period: 210 to 240 days

Map Unit Composition

Hodgins and similar soils: 100 percent

Description of Hodgins

Setting

Landform: Alluvial flats
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fine-silty alluvium derived from sedimentary rock

Typical profile

H1 - 0 to 8 inches: silty clay loam
H2 - 8 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Available water storage in profile: High (about 10.2 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: B
Ecological site: Loamy, Desert Grassland (R042XC250TX)

26—Orla clay loam, 0 to 1 percent slopes

Map Unit Setting

Elevation: 2,550 to 4,000 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 63 to 66 degrees F
Frost-free period: 210 to 240 days

Map Unit Composition

Orla and similar soils: 100 percent

Description of Orla

Setting

Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave

Typical profile

H1 - 0 to 15 inches: clay loam
H2 - 15 to 60 inches: gypsiferous material

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 99 percent
Salinity, maximum in profile: Very slightly saline to strongly saline (4.0 to 36.0 mmhos/cm)
Available water storage in profile: Low (about 4.6 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: Salty, Desert Grassland (R042XC252TX)

34—Reeves clay loam, 0 to 1 percent slopes

Map Unit Setting

Elevation: 2,500 to 5,300 feet
Mean annual precipitation: 10 to 15 inches
Mean annual air temperature: 57 to 64 degrees F
Frost-free period: 200 to 230 days

Map Unit Composition

Reeves and similar soils: 100 percent

Description of Reeves

Setting

Landform: Basin floors
Down-slope shape: Linear
Across-slope shape: Linear

Typical profile

H1 - 0 to 11 inches: clay loam
H2 - 11 to 33 inches: clay loam
H3 - 33 to 60 inches: gypsiferous material

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Gypsum, maximum in profile: 80 percent
Salinity, maximum in profile: Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: Loamy, Desert Grassland (R042XC250TX)

41—Upton gravelly loam, 0 to 2 percent slopes

Map Unit Setting

Elevation: 1,100 to 4,000 feet
Mean annual precipitation: 7 to 13 inches
Mean annual air temperature: 61 to 70 degrees F
Frost-free period: 210 to 240 days

Map Unit Composition

Upton and similar soils: 100 percent

Description of Upton

Setting

Landform: Fan remnants
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Pleistocene-age gravelly alluvium derived from limestone and/or pleistocene-age gravelly pedisediment derived from limestone

Typical profile

H1 - 0 to 5 inches: gravelly loam
H2 - 5 to 18 inches: gravelly loam
H3 - 18 to 23 inches: cemented material
H4 - 23 to 40 inches: gravelly loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 7 to 20 inches to petrocalcic
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 75 percent
Available water storage in profile: Very low (about 2.0 inches)

Interpretive groups

Farmland classification: Not prime farmland
Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Gravelly, Desert Grassland (R042XC244TX)

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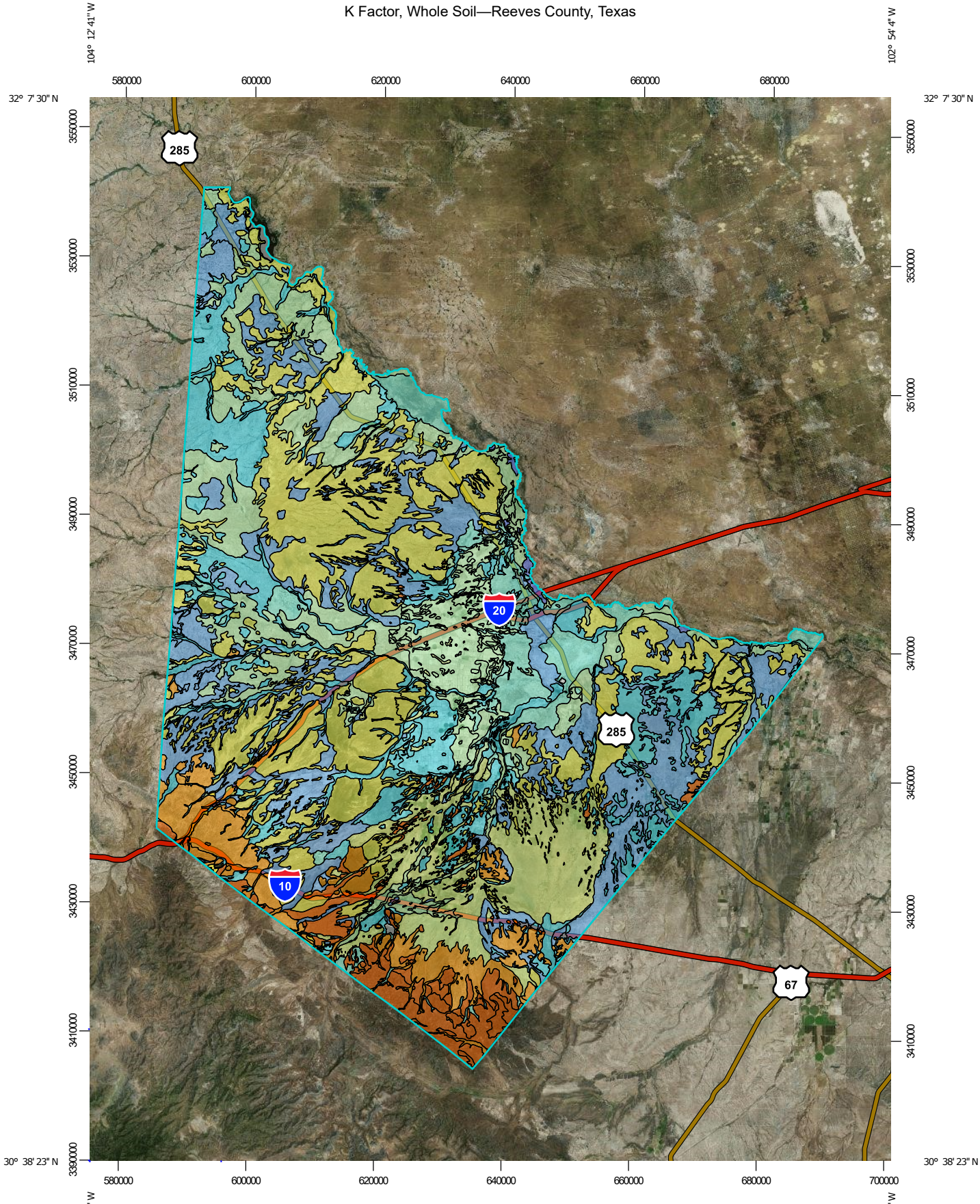
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Appendix III-3-E2

Soil Erodibility Factor (K)

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Map Scale: 1:804,000 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 10000 20000 40000 60000

Feet
0 35000 70000 140000 210000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- .02
- .05
- .10
- .15
- .17
- .20
- .24
- .28
- .32
- .37
- .43
- .49
- .55
- .64
- Not rated or not available

Soil Rating Lines
- .02
- .05
- .10
- .15
- .17
- .20
- .24
- .28
- .32
- .37
- .43
- .49
- .55
- .64
- Not rated or not available

Soil Rating Points
- .02
- .05
- .10
- .15
- .17
- .20
- .24
- .28
- .32
- .37
- .43
- .49
- .55
- .64
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Reeves County, Texas
Survey Area Data: Version 24, Sep 6, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 1, 1999—Dec 31, 2003

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

K Factor, Whole Soil

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Arno clay, saline	.24	540.7	0.0%
2	Arno-Pecos-Patrole association	.32	20,409.1	1.2%
3	Balmorhea silty clay loam	.37	4,047.0	0.2%
4	Balmorhea association, saline	.37	7,986.1	0.5%
5	Bigetty association	.37	4,128.7	0.2%
6	Bigetty-Rockhouse association	.43	6,688.4	0.4%
7	Boracho-Espy complex, 1 to 8 percent slopes	.10	2,556.4	0.2%
8	Brewster association, hilly	.05	33,756.7	2.0%
9	Brewster-Rock outcrop association, steep	.05	7,001.6	0.4%
10	Canutio-Delnorte complex, 1 to 3 percent slopes	.05	9,338.8	0.6%
11	Dalby clay	.24	9,335.1	0.6%
12	Delnorte-Chilicotal association, rolling	.20	407,777.8	24.1%
13	Bissett-Rock outcrop complex, 10 to 30 percent slopes	.10	31,461.9	1.9%
14	Gila fine sandy loam, saline	.28	3,894.1	0.2%
15	Gila-Patrole association	.28	5,073.1	0.3%
16	Hoban silty clay loam, 0 to 1 percent slopes	.28	51,021.3	3.0%
17	Hoban-Reeves-Holloman association, nearly level	.28	164,859.7	9.7%
18	Hodgins silty clay loam, 0 to 1 percent slopes	.37	27,544.6	1.6%
19	Hodgins soils, frequently flooded	.37	44,467.5	2.6%
20	Holloman-Reeves association, gently undulating	.37	92,581.0	5.5%
21	Limpia-Mitre association, gently sloping	.05	28,271.3	1.7%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
22	Lozier-Rock outcrop complex, 1 to 8 percent slopes	.10	22,571.5	1.3%
23	Lozier-Rock outcrop complex, 20 to 70 percent slopes	.10	2,565.3	0.2%
24	Mierhill association, hilly	.10	9,012.4	0.5%
25	Monahans association, nearly level	.28	9,604.2	0.6%
26	Orla clay loam, 0 to 1 percent slopes	.32	11,257.9	0.7%
27	Orla association, nearly level	.32	57,739.4	3.4%
28	Patrole silt loam	.49	3,276.7	0.2%
29	Pecos silty clay, saline	.28	4,676.4	0.3%
30	Bunton silty clay loam, 0 to 2 percent slopes, occasionally flooded	.32	4,589.7	0.3%
31	Reakor silty clay loam, 0 to 1 percent slopes	.37	25,985.1	1.5%
32	Reakor association, nearly level	.43	262,670.7	15.5%
33	Reakor-Lozier association, undulating	.43	30,540.5	1.8%
34	Reeves clay loam, 0 to 1 percent slopes	.28	24,979.2	1.5%
35	Rockhouse association, nearly level	.10	5,212.0	0.3%
36	Sanderson-Upton association, gently sloping	.17	2,222.2	0.1%
37	Saragosa association, nearly level	.43	10,023.5	0.6%
38	Toyah loam	.28	2,235.5	0.1%
39	Toyah clay loam	.28	12,581.2	0.7%
40	Toyah clay loam, saline	.28	1,642.3	0.1%
41	Upton gravelly loam, 0 to 2 percent slopes	.20	11,334.3	0.7%
42	Upton-Delnorte association, nearly level	.37	57,876.7	3.4%
43	Verhalen clay	.24	133,705.0	7.9%
44	Verhalen association	.10	21,533.8	1.3%
45	Water		2,520.5	0.1%
46	Dams		16.2	0.0%
Totals for Area of Interest			**1,693,113.1**	**100.0%**

Description

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Factor K does not apply to organic horizons and is not reported for those layers.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

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Appendix III-3-E3

Erosivity Factor (R) Map

DBS&A
a Geo-Logic Company

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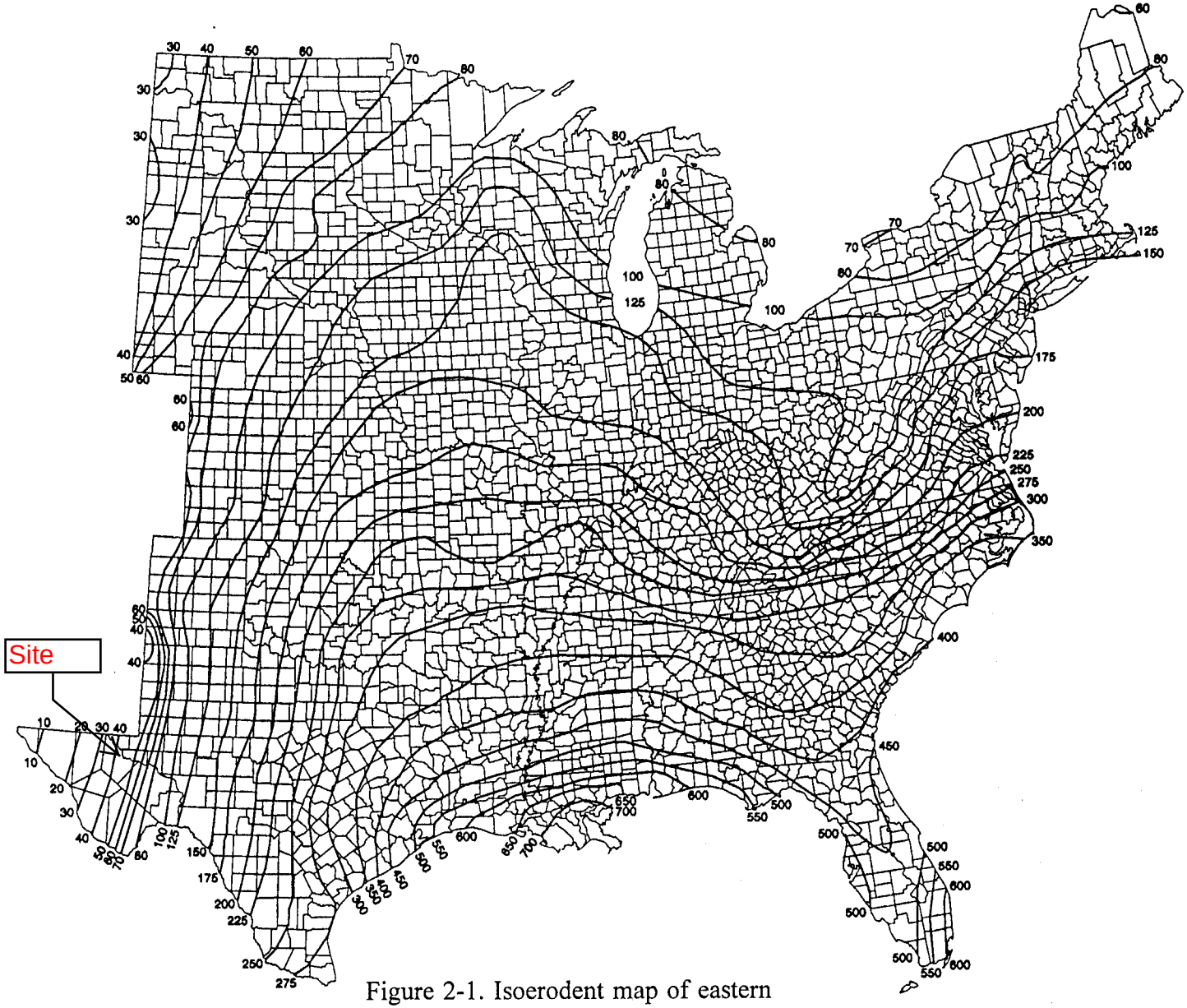


Figure 2-1. Isoerodent map of eastern United States. Units are hundreds $ft \cdot tonf \cdot in(ac \cdot h \cdot yr)^{-1}$.

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Appendix III-3-E4

Topographic Factor (LS)

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Table 4-2.
Values for topographic factor, LS, for moderate ratio of rill to interrill erosion.[1]

Slope (%)	Horizontal slope length (ft)																
	3	6	9	12	15	25	50	75	100	150	200	250	300	400	600	800	1000
0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06
0.5	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.10
1.0	0.11	0.11	0.11	0.11	0.11	0.12	0.13	0.14	0.14	0.15	0.16	0.17	0.17	0.18	0.19	0.20	0.20
2.0	0.17	0.17	0.17	0.17	0.17	0.19	0.22	0.25	0.27	0.29	0.31	0.33	0.35	0.37	0.41	0.44	0.47
3.0	0.22	0.22	0.22	0.22	0.22	0.25	0.32	0.36	0.39	0.44	0.48	0.52	0.55	0.60	0.68	0.75	0.80
4.0	0.26	0.26	0.26	0.26	0.26	0.31	0.40	0.47	0.52	0.60	0.67	0.72	0.77	0.86	0.99	1.10	1.19
5.0	0.30	0.30	0.30	0.30	0.30	0.37	0.49	0.58	0.65	0.76	0.85	0.93	1.01	1.13	1.33	1.49	1.63
6.0	0.34	0.34	0.34	0.34	0.34	0.43	0.58	0.69	0.78	0.93	1.05	1.16	1.25	1.42	1.69	1.91	2.11
8.0	0.42	0.42	0.42	0.42	0.42	0.53	0.74	0.91	1.04	1.26	1.45	1.62	1.77	2.03	2.47	2.83	3.15
10.0	0.46	0.48	0.50	0.51	0.52	0.67	0.97	1.19	1.38	1.71	1.98	2.22	2.44	2.84	3.50	4.06	4.56
12.0	0.47	0.53	0.58	0.61	0.64	0.84	1.23	1.53	1.79	2.23	2.61	2.95	3.26	3.81	4.75	5.56	6.28
14.0	0.48	0.58	0.65	0.70	0.75	1.00	1.48	1.86	2.19	2.76	3.25	3.69	4.09	4.82	6.07	7.15	8.11
16.0	0.49	0.63	0.72	0.79	0.85	1.15	1.73	2.20	2.60	3.30	3.90	4.45	4.95	5.86	7.43	8.79	10.02
20.0	0.52	0.71	0.85	0.96	1.06	1.45	2.22	2.85	3.40	4.36	5.21	5.97	6.68	7.97	10.23	12.20	13.99
25.0	0.56	0.80	1.00	1.16	1.30	1.81	2.82	3.65	4.39	5.69	6.83	7.88	8.86	10.65	13.80	16.58	19.13
30.0	0.59	0.89	1.13	1.34	1.53	2.15	3.39	4.42	5.34	6.98	8.43	9.76	11.01	13.30	17.37	20.99	24.31
40.0	0.65	1.05	1.38	1.68	1.95	2.77	4.45	5.87	7.14	9.43	11.47	13.37	15.14	18.43	24.32	29.60	34.48
50.0	0.71	1.18	1.59	1.97	2.32	3.32	5.40	7.17	8.78	11.66	14.26	16.67	18.94	23.17	30.78	37.65	44.02
60.0	0.76	1.30	1.78	2.23	2.65	3.81	6.24	8.33	10.23	13.65	16.76	19.64	22.36	27.45	36.63	44.96	52.70

[1]Such as for row-cropped agricultural and other moderately consolidated soil conditions with little-to-moderate cover (not applicable to thawing soil)

Table 4-3.
Values for topographic factor, LS, for high ratio of rill to interrill erosion.[1]

Slope (%)	Horizontal slope length (ft)																
	<3	6	9	12	15	25	50	75	100	150	200	250	300	400	600	800	1000
0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06
0.5	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.09	0.09	0.10	0.10	0.10	0.11	0.12	0.12	0.13
1.0	0.09	0.09	0.09	0.09	0.09	0.10	0.13	0.14	0.15	0.17	0.18	0.19	0.20	0.22	0.24	0.26	0.27
2.0	0.13	0.13	0.13	0.13	0.13	0.16	0.21	0.25	0.28	0.33	0.37	0.40	0.43	0.48	0.56	0.63	0.69
3.0	0.17	0.17	0.17	0.17	0.17	0.21	0.30	0.36	0.41	0.50	0.57	0.64	0.69	0.80	0.96	1.10	1.23
4.0	0.20	0.20	0.20	0.20	0.20	0.26	0.38	0.47	0.55	0.68	0.79	0.89	0.98	1.14	1.42	1.65	1.86
5.0	0.23	0.23	0.23	0.23	0.23	0.31	0.46	0.58	0.68	0.86	1.02	1.16	1.28	1.51	1.91	2.25	2.55
6.0	0.26	0.26	0.26	0.26	0.26	0.36	0.54	0.69	0.82	1.05	1.25	1.43	1.60	1.90	2.43	2.89	3.30
8.0	0.32	0.32	0.32	0.32	0.32	0.45	0.70	0.91	1.10	1.43	1.72	1.99	2.24	2.70	3.52	4.24	4.91
10.0	0.35	0.37	0.38	0.39	0.40	0.57	0.91	1.20	1.46	1.92	2.34	2.72	3.09	3.75	4.95	6.03	7.02
12.0	0.36	0.41	0.45	0.47	0.49	0.71	1.15	1.54	1.88	2.51	3.07	3.60	4.09	5.01	6.67	8.17	9.57
14.0	0.38	0.45	0.51	0.55	0.58	0.85	1.40	1.87	2.31	3.09	3.81	4.48	5.11	6.30	8.45	10.40	12.23
16.0	0.39	0.49	0.56	0.62	0.67	0.98	1.64	2.21	2.73	3.68	4.56	5.37	6.15	7.60	10.26	12.69	14.96
20.0	0.41	0.56	0.67	0.76	0.84	1.24	2.10	2.86	3.57	4.85	6.04	7.16	8.23	10.24	13.94	17.35	20.57
25.0	0.45	0.64	0.80	0.93	1.04	1.56	2.67	3.67	4.59	6.30	7.88	9.38	10.81	13.53	18.57	23.24	27.66
30.0	0.48	0.72	0.91	1.08	1.24	1.86	3.22	4.44	5.58	7.70	9.67	11.55	13.35	16.77	23.14	29.07	34.71
40.0	0.53	0.85	1.13	1.37	1.59	2.41	4.24	5.89	7.44	10.35	13.07	15.67	18.17	22.95	31.89	40.29	48.29
50.0	0.58	0.97	1.31	1.62	1.91	2.91	5.16	7.20	9.13	12.75	16.16	19.42	22.57	28.60	39.95	50.63	60.84
60.0	0.63	1.07	1.47	1.84	2.19	3.36	5.97	8.37	10.63	14.89	18.92	22.78	26.51	33.67	47.18	59.93	72.15

[1]Such as for freshly prepared construction and other highly disturbed soil conditions with little or no cover (not applicable to thawing soil)

Appendix III-3-E5

Cover Management Factor (C)

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Factor C for Permanent Pasture, Range, and Idle Land[1]

Vegetative canopy		Cover that contacts the soil surface						
Type and Height[2]	Percent Cover[3]	Type[4]	Percent Ground Cover					
			0	20	40	60	80	95+
No appreciable canopy		G	0.45	0.20	0.10	0.042	0.013	0.003
		W	0.45	0.24	0.15	0.091	0.043	0.011
Tall weeds or short brush with average drop fall height of 20 in.	25	G	0.36	0.17	0.09	0.038	0.013	0.003
		W	0.36	0.20	0.13	0.083	0.041	0.011
	50	G	0.26	0.13	0.07	0.035	0.012	0.003
		W	0.26	0.16	0.11	0.076	0.039	0.011
	75	G	0.17	0.10	0.06	0.032	0.011	0.003
		W	0.17	0.12	0.09	0.068	0.038	0.011
Appreciable brush or bushes, with average drop fall height of 6.5 ft	25	G	0.40	0.18	0.09	0.040	0.013	0.003
		W	0.40	0.22	0.14	0.087	0.042	0.011
	50	G	0.34	0.16	0.08	0.038	0.012	0.003
		W	0.34	0.19	0.13	0.082	0.041	0.011
	75	G	0.28	0.14	0.08	0.036	0.012	0.003
		W	0.28	0.17	0.12	0.078	0.040	0.011
Trees, but no appreciable low brush. Average drop fall height of 13 ft	25	G	0.42	0.19	0.10	0.041	0.013	0.003
		W	0.42	0.23	0.14	0.089	0.042	0.011
	50	G	0.39	0.18	0.09	0.040	0.013	0.003
		W	0.39	0.21	0.14	0.087	0.042	0.011
	75	G	0.36	0.17	0.09	0.039	0.012	0.003
		W	0.36	0.20	0.13	0.084	0.041	0.011

[1] The listed *C* values assume that the vegetation and mulch are randomly distributed over the entire area.
[2] Canopy height is measured as the average fall height of water drops falling from the canopy to the ground. Canopy effect is inversely proportional to drop fall height and is negligible if fall height exceeds 33 ft.
[3] Portion of total-area surface that would be hidden from view by canopy in a vertical projection (a bird's-eye view).
[4] G: Cover at surface is grass, grass-like plants, decaying compacted duff, or litter at least 2 in. deep.
W: Cover at surface is mostly broadleaf herbaceous plants (as weeds with little lateral-root network near the surface) or undecayed residues or both.

Source: U.S. Department of Agriculture. *Predicting Rainfall Erosion Losses: A Guide to Conservation Planning*. Agricultural Handbook Number 537. Washington, DC: USDA, 1978, Table 10, p. 32. https://www.ars.usda.gov/ARSUserFiles/64080530/RUSLE/AH_537.pdf.

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Appendix III-3-F

Stormwater Infrastructure Maintenance Log

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Stormwater System Inspection and Maintenance Form

General Information			
Inspector's Name(s)			
Date of Inspection		**Start/End Time**	
Type of Inspection: ❑ Regular ❑ After heavy rain			
Weather Information			
Has there been a storm event since the last inspection? ❑Yes ❑No **If yes, provide:** Storm Start Date & Time: Storm Duration (hrs): Approximate Amount of Precipitation (in):			
Weather at time of this inspection? ❑ Clear ❑Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snowing ❑ High Winds Temp_____˚F			

	System Component	Inspected	Maintenance Required?	Corrective Action Needed and Notes
1	Vegetated areas	❑Yes ❑No	❑Yes ❑No	
2	Stormwater channels	❑Yes ❑No	❑Yes ❑No	
3	Benches and downdrains	❑Yes ❑No	❑Yes ❑No	
4	Culverts	❑Yes ❑No	❑Yes ❑No	
5	Stormwater pond	❑Yes ❑No	❑Yes ❑No	

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Attachment III-4

Waste Management Unit Design

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Waste Management Unit Design
WST Landfill
Reeves County, Texas

Prepared for
West Sun Tex, LLC
Pecos, Texas

Prepared by

DBS&A
a Geo-Logic Company

Texas Registered Engineering Firm F-286
Texas Registered Geoscience Firm No. 50045
12303 Technology Boulevard, Suite 930D
Austin, Texas 78727
www.dbstephens.com
DB20.1166



July 2026

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Table of Contents

1. Storage and Transfer Units 1
2. Surface Impoundments 2
3. MSW Landfill Units 3

List of Appendices

III-4-A Drawings
III-4-B Leachate and Contaminated Water Plan
III-4-C Liner Quality Control Plan
III-4-D Evaporation Pond Sizing
III-4-E Slope Stability Analysis
III-4-F Equivalency Calculation
III-4-G Waste Generation Calculation



1. Storage and Transfer Units

The only storage and transfer units at WST Landfill will be situated within the Citizens' Collection Station (CCS). The CCS will be located near the scale house to reduce traffic within the landfill and at the working face. The CCS will house roll-off containers for residential customers, which shall be designated for municipal solid waste (MSW), large items, white goods, and whole tires. Roll-off containers in the CCS will have a maximum capacity of 40 cubic yards. A 40 cubic yard roll-off is approximately 23 feet, 1 inch long by 8 feet, 3 inches wide by 7 feet, 9 inches high and has a weight limit of 8 to 9 tons. Roll-off containers used for tires and white good storage will also be 40 cubic yards. One roll-off container is designated for tire collection, one is designated for white goods storage, and five are designated for municipal solid waste and larger items. Roll-off containers will be removed and waste will be disposed of as they are filled; however, waste will remain in the CCS no longer than 90 days prior to removal for final disposal. Further details regarding the layout of the CCS are included in Drawing C-2 (Appendix III-4-A).

The CCS will not be used for any on-site processing; therefore, sanitation in relation to processing facilities is not applicable. However, WST Landfill shall enact procedures to prevent the creation of public health hazards or nuisances due to odors, fly breeding, or harborage of other vectors during storage as required by 30 TAC 330.63(d)(1)(A). WST Landfill will transport the deposited waste to the working face on a scheduled basis or as needed to prevent the development of a nuisance or to preclude the discharge of pollutants to the area, but retention of waste deposited in the CCS shall not exceed 180 days.

Items unloaded in the residential drop-off area or at the working face that cannot be disposed of in the landfill (tires, white goods, etc.) will be consolidated into one area for removal. Segregation of these types of items will occur on a daily basis. Unenclosed areas containing solid waste will be designed to account for precipitation from a 25-year, 24-hour rainfall event. Further descriptions pertaining to the handling of large items are available in Section 14 of the Site Operating Plan (SOP) (Part IV).

The CCS will be contained on asphalt bordered by a 6-inch curb that can be cleaned. This improved surface area and curb shall also be able to effectively control a worst-case spill or release from the unit as required by 30 TAC 330.63(d)(1)(B). Containers within the CCS will be designed to securely contain waste products and prevent spillage, and shall be covered to minimize contact with rainfall. The CCS containers and surfaces will be cleaned by washing with

water as needed, but no less than once per week to prevent odors and the creation of additional nuisances. A 60,000-gallon sump, 71 feet in length and 12 feet in diameter, will be installed 1 foot below ground to contain wash water. Any water that comes into contact with waste and/or leachate within the CCS shall be treated as contaminated water, which shall be promptly pumped and removed to leachate storage tanks pictured in Drawing C-1 or the contaminated water pond (Appendix III-4-A) as further described in the Leachate and Contaminated Water Plan (LCWP) (Appendix III-4-B). Generalized construction details of leachate storage tanks can be found in Drawing C-18 (Appendix III-4-A). All contaminated water will be treated, transported, and stored in a manner that complies with 30 TAC 330.63(b)(4).

2. Surface Impoundments

The contact stormwater pond, also referred to as the lined on-site evaporation pond and contaminated water pond, shall be located over Cell 6 and shall be the only surface impoundment at WST Landfill. The pond will be designed to manage contaminated stormwater and leachate from the facility and shall be lined using the following system of geosynthetics, from the bottom up: geosynthetic clay liner (GCL), high-density polyethylene (HDPE) geomembrane, and an additional layer of HDPE geomembrane. A plan view and cross section of this liner system are provided in the drawings (Appendix III-4-A). Construction and liner quality control procedures for the evaporation pond are outlined in the Liner Quality Control Plan (LQCP) (Appendix III-4-C).

A conservative estimate of the volume of contaminated water that will be managed by the evaporation pond was determined using leachate generation figures from the U.S. Environmental Protection Agency (EPA) Hydrologic Evaluation of Landfill Performance (HELP) model, described in Appendix III-4-B. The evaporation pond will receive leachate from MSW management units when the leachate sumps are manually pumped and transported in trucks to the evaporation pond. This will occur on an as-needed basis to prevent the head of leachate on the liner system from exceeding 12 inches (or 30 centimeters [cm]) as required by 30 TAC 330.331(a)(2).

The contact stormwater/contaminated water pond has been sized to manage the occurrence of a 100-year, 24-hour rainfall event in addition to the facility's leachate production, and shall provide at least 1 foot of freeboard in all design conditions (including abnormal conditions such as the 100-year storm) (Appendix III-4-D). Additionally, historical evaporation data within this

region of Texas consistently and substantially exceed historical precipitation data during all months of the year. Under normal operating conditions, minimal leachate accumulation in the pond is anticipated (Appendix III-4-D). The pond will have a 2-foot berm surrounding it to prevent run-on into the pond, and also to help minimize wind and wave action. The contaminated water pond is designed having surface dimensions of 184 feet by 184 feet with a depth of 6.5 feet to accommodate a maximum volume of 1,073,835 gallons of leachate and contaminated water. A plan view and cross section of the surface impoundment are provided in the drawings (Appendix III-4-A). The evaporation pond will be inspected regularly to confirm proper operation and to ensure that no nuisance or odor is caused by the contents of the impoundment. Further inspection procedures are detailed in Sections 4.3 and 15 of the SOP (Part IV).

3. MSW Landfill Units

WST Landfill will have MSW landfill units that will function using a moving-face cell method. The elevation of the deepest excavation is 2,626 feet above mean sea level (feet msl) as shown in Drawing C-14 (Appendix III-4-A). The maximum elevation of waste will be 2,788 feet msl. The maximum elevation of final cover will be 2,790 feet msl. Cross sections of the landfill unit, as well as the locations of groundwater monitor wells and landfill gas wells, are provided in the engineering drawings (Appendix III-4-A).

A total of six cells are planned for construction at WST Landfill. Only one cell (Cell 4) is intended for acceptance of Class 1 waste (Appendix III-4-A, Drawing C-19). However, all six landfill cells include the same alternative liner design that is suitable for Class 1 waste (detailed in Appendix III-4-C, Section 2.1). Prior to above-grade MSW placement in Cell 4, the Class 1 waste will be covered with a 4-foot compacted clay-rich soil barrier with a permeability coefficient no greater than 1×10^{-7} centimeters per second (cm/s) per 30 TAC 330.457(b). A cross section detailing the placement of the Class 1 soil barrier is provided in Appendix III-4-A, Drawing C-15. No Class 1 waste will be placed above-grade.

The liner quality control plan (Appendix III-4-C) was prepared in accordance with requirements in 30 TAC 330.339 and guidance from the Texas Commission on Environmental Quality (TCEQ). Liner system components are confirmed for suitability according to the slope stability analysis provided as Appendix III-4-E. A demonstration of equivalency for the alternate liner system detailed in the LQCP (using GCL rather than the prescriptive compacted soil liner) is provided as

Appendix III-4-F in accordance with 30 TAC 330.335. The LQCP describes the components of the engineered containment systems (including landfill disposal units, leachate collection systems, the contact stormwater surface impoundment, and final cover of the landfill). It also dictates lines of communication for all project personnel, establishes the quality assurance program and procedures to be followed during liner construction, states recording and documenting procedures for verification of the project plans and specifications, and defines report submittal requirements. The professional of record for the liner evaluation report or their representative will be on-site during all liner construction as described by the LQCP.

A calculation of the estimated rate of solid waste deposition and operating life of the landfill unit is provided as Appendix III-4-G. The estimated maximum rate of solid waste deposition at WST Landfill is 104,377 cubic yards per year. This figure is based on an average collection rate of 15 acre-feet of solid waste per year per 10,000 people along with a 2031 population estimate of 43,171 people (provided by Texas Demographic Center population projections). The estimated operating life of the landfill is 115 years.

Caliche and/or gravel roads throughout the facility will provide for all-weather access. In the case of muddy conditions, WST Landfill personnel shall continuously monitor all on-site roads and provide all-weather controls (e.g., regrading, the addition of gravel or crushed stone, etc.) as needed to maintain site access. In addition, tracking of mud onto public access road will be minimized by the use of a rock vehicle tracking pad and cattleguard with a containment curb at the site entrance/exit; details of these components are provided in Drawing C-16 (Appendix III-4-A). If vehicles traveling from WST Landfill do track mud onto roadways including County Road (CR) 408, landfill personnel will remove debris in accordance with procedures described in the SOP (Part IV, Section 17).

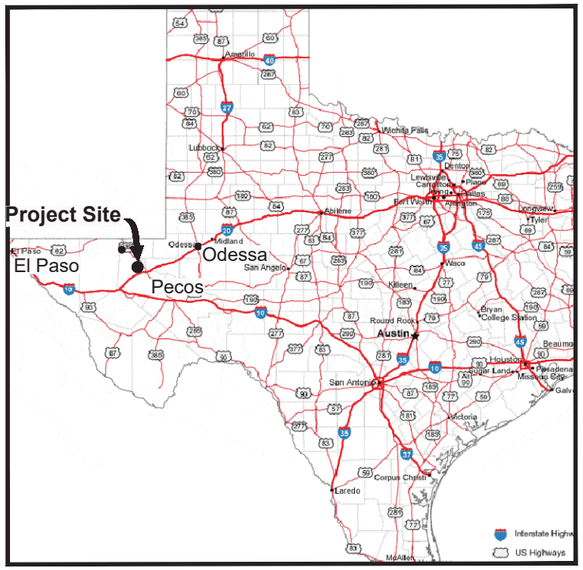
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Appendix III-4-A

Drawings

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WST LANDFILL
MUNICIPAL SOLID WASTE FACILITY
REEVES COUNTY, TEXAS
PREPARED FOR WEST SUN TEX, LLC



VICINITY MAP
NTS
NORTH



SITE MAP
NTS
NORTH

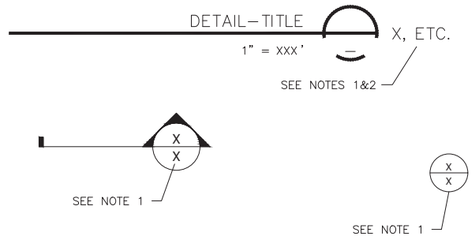
INDEX OF DRAWINGS

		GENERAL	
1	G-0	COVER SHEET AND INDEX	0
2	G-1	WASTE FLOW DIAGRAM	0
		CIVIL	
3	C-1	SITE PLAN	0
4	C-2	TYPICAL CELL LAYOUT & CITIZEN COLLECTION STATION	0
5	C-3	STORMWATER MANAGEMENT SYSTEM	0
6	C-4	RUN-ON CHANNEL AND POND	0
7	C-5	POND 1 AND 3 LAYOUT	0
8	C-6	POND 2 LAYOUT	0
9	C-7	WEST AND EAST CHANNEL GRADING	0
10	C-8	NORTH CHANNEL GRADING	0
11	C-9	SOUTH CHANNEL GRADING	0
12	C-10	DRAINAGE DETAILS	0
13	C-11	CONTAMINATED WATER POND	0
14	C-12	EXCAVATION PLAN	0
15	C-13	FINAL CONTOURS	0
16	C-14	CROSS SECTIONS 1	0
17	C-15	CROSS SECTIONS 2	0
18	C-16	CIVIL DETAILS 1	0
19	C-17	CIVIL DETAILS 2	0
20	C-18	CIVIL DETAILS 3	0
21	C-19	LANDFILL GRID	0

ABBREVIATIONS:

AGS	ABOVE GROUND SURFACE
APWA	AMERICAN PUBLIC WORKS ASSOCIATION
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BGS	BELOW GROUND SURFACE
BM	BENCH MARK
CCL	COMPACTED CLAY LINER
CHDPE	CORRUGATED HIGH DENSITY POLYETHYLENE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
D_{50}	MEDIAN ROCK DIAMETER
DIA	DIAMETER
ELEV	ELEVATION
EW	EXTRACTION WELL
EXIST	EXISTING
FG	FINISHED GRADE
FT	FEET
F.S.	FINISHED SURFACE
H	HEIGHT
H:V	HORIZONTAL TO VERTICAL
HOR	HORIZONTAL
INV	INVERT ELEVATION
LF	LINEAR FEET
MIN	MINIMUM
MSL	MEAN SEA LEVEL
N/A	NOT APPLICABLE
NTS	NOT TO SCALE
OC	ON CENTER
P/L	PROPERTY LINE
ROW	RIGHT OF WAY
SDR	STANDARD DIMENSION RATIO
SIM	SIMILAR
SPEC	SPECIFICATION
STA	STATION
STD	STANDARD
TOP	TOP OF PIPE
TXDOT	TEXAS DEPARTMENT OF TRANSPORTATION
TYP	TYPICAL
VERT	VERTICAL
W	WIDTH
W/	WITH
WL	WATER LINE
WSE	WATER SURFACE ELEVATION

LEGEND:

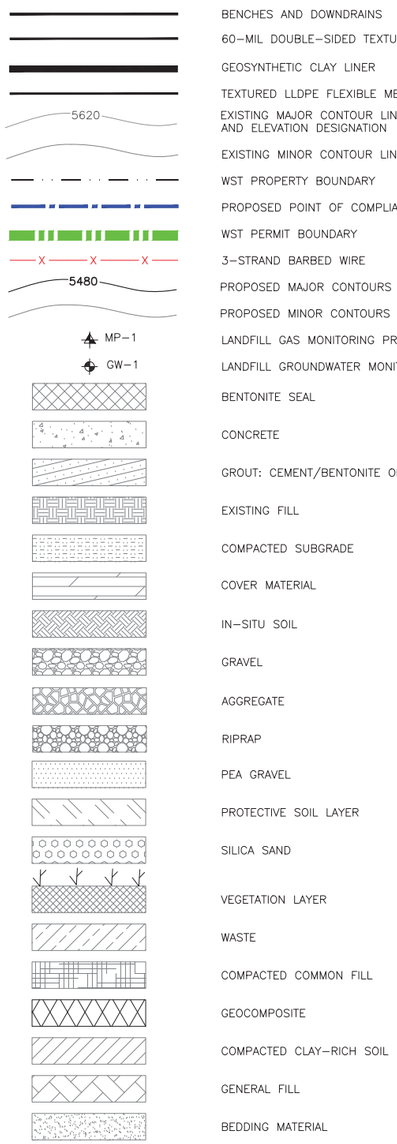


NOTES:

1. IF SECTION, DETAIL, SCHEMATIC, OR DIAGRAM IS DRAWN ON THE SAME SHEET THAT IT IS TAKEN FROM, THE SHEET NUMBER SHALL BE REPLACED WITH A HYPHEN.
2. IF THE SECTION, DETAIL, SCHEMATIC, OR DIAGRAM IS REFERENCED ON MULTIPLE SHEETS, ALL SHEETS SHOULD BE LISTED TO THE OUTSIDE RIGHT OF THE DETAIL–TITLE BUBBLE, AND SEPARATED WITH A COMMA.

MISCELLANEOUS SYMBOLS:

NOTE: SYMBOLS ARE NOT SHOWN TO SCALE ON PLAN OR PROFILE DRAWINGS, AND INDICATE APPROXIMATE LOCATION ONLY.



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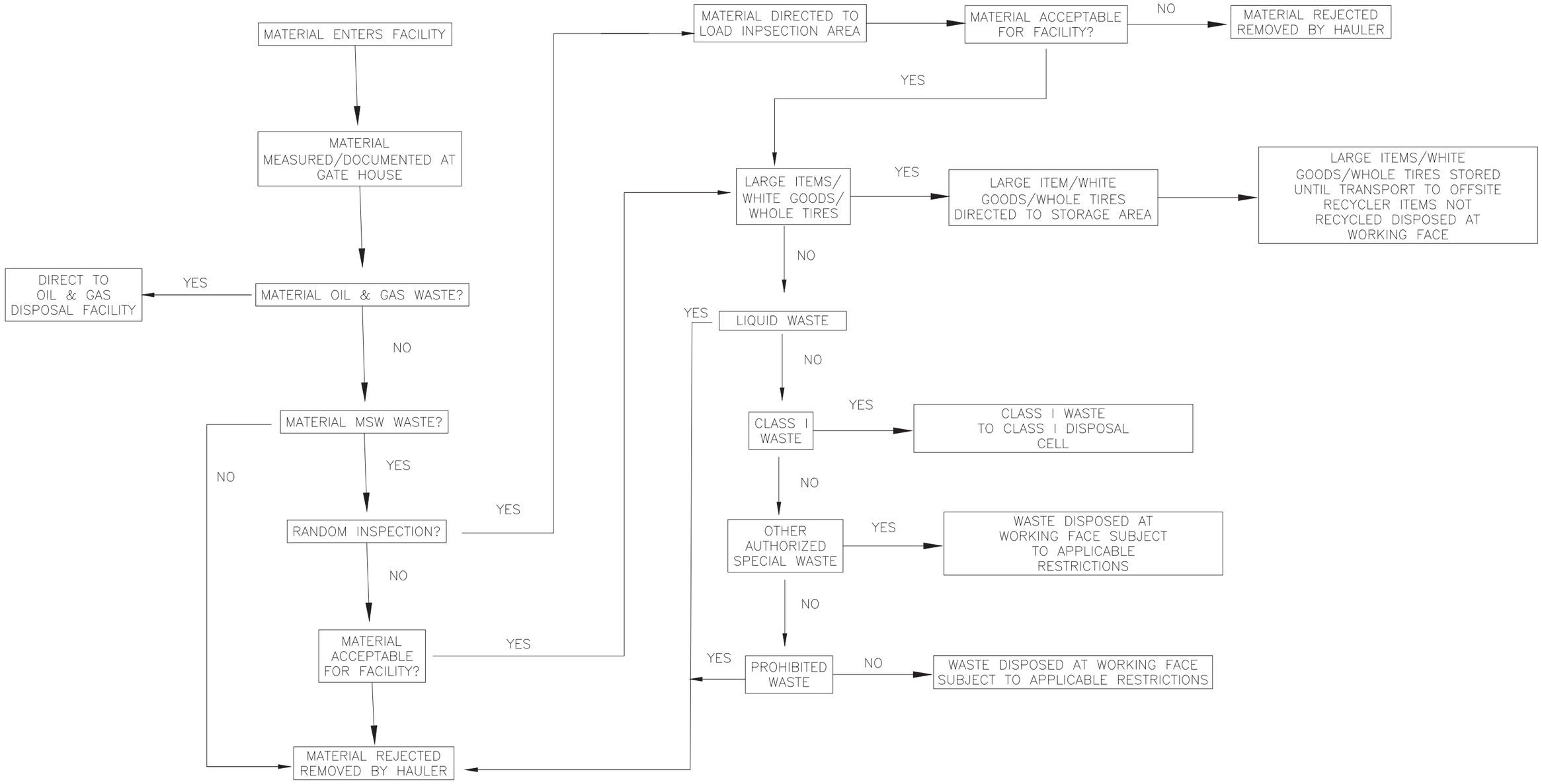
DBS&A a Geo-Logic Company
TEXAS REGISTERED ENGINEERING FIRM F–286

WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

WST LANDFILL
REEVES COUNTY, TEXAS
COVER SHEET AND INDEX

SHEET 1 OF 21
DWG NO. G-0
JOB NO. DB20.1166

Z:\1XV\MTA'S\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\CAD\PRODUCTION_G-0 CVR SHT & IDX - G-1 GEN NTS & LOND.DWG July 14, 2026 - 2:58 PM BY: GLA USER



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STATE OF TEXAS GUNDAR PETERSON 103091 LICENSED PROFESSIONAL ENGINEER 7/22/2026

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TEXAS REGISTERED ENGINEERING FIRM F-286

WEST SUN TEX, LLC
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SOUTHLAKE, TEXAS 76092

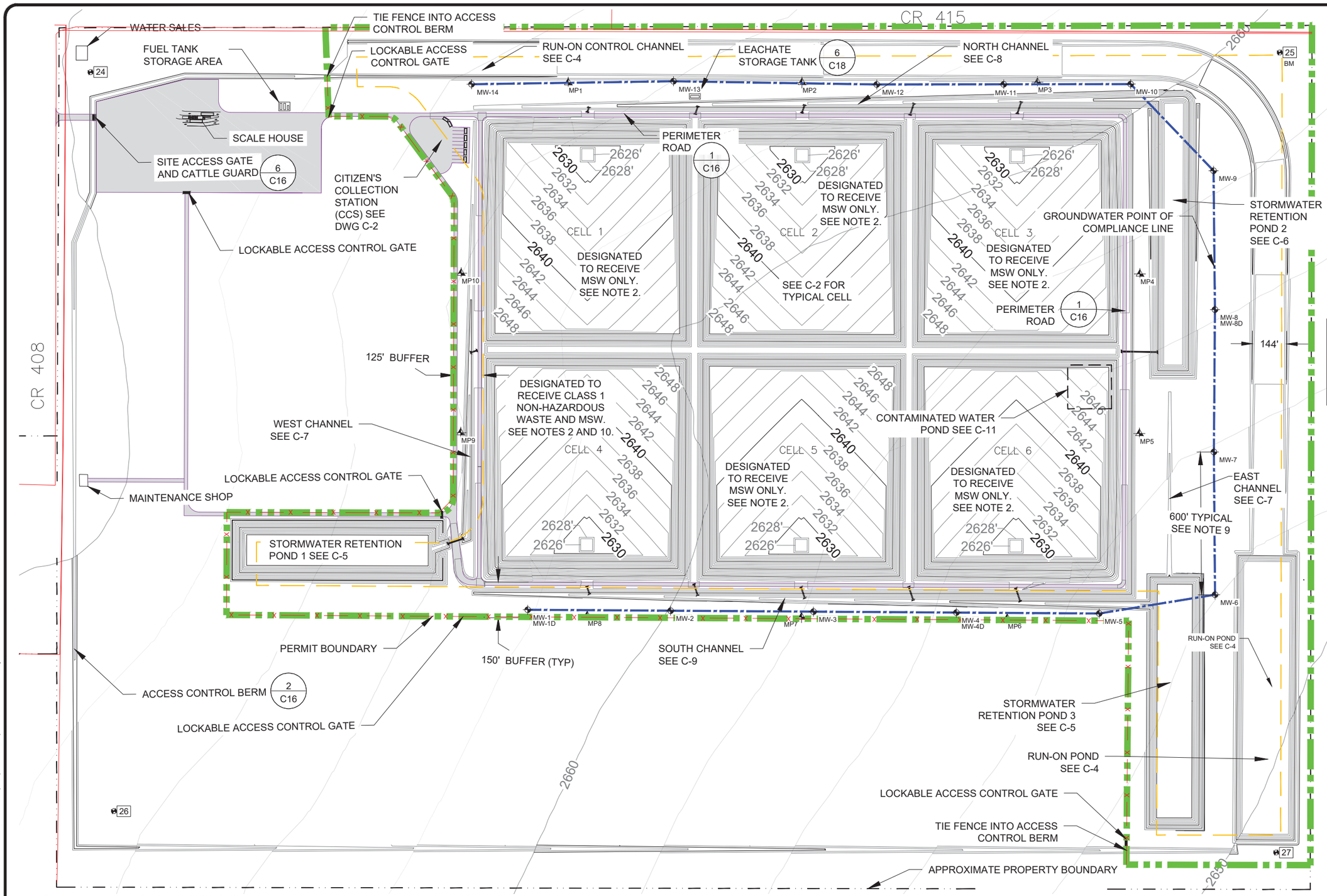
WST LANDFILL
REEVES COUNTY, TEXAS

WASTE FLOW DIAGRAM

SHEET 2 OF 21
DWG NO. G-1

JOB NO. DB20.1166

Z:\1\XWMFX\S\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\CAD\PRODUCTION_G-0 CVR SHT & IDX - G-1 GEN NTS & LGND.DWG July 14, 2026 - 3:03 PM BY: GLA USER



LEGEND

- MP5 — LANDFILL GAS MONITORING PROBE
- MW-2 — GROUNDWATER MONITORING WELLS
- 2650 — EXISTING 10' CONTOURS
- EXISTING 2' CONTOURS
- 2650 — PROPOSED 10' MAJOR CONTOURS
- 2652 — PROPOSED 2' MINOR CONTOURS
- BUFFER ZONE
- WST PROPERTY BOUNDARY
- WST PERMIT BOUNDARY
- POINT OF COMPLIANCE
- X — 3-STRAND BARBED WIRE
- EASEMENTS
- 25 — CONTROL POINTS
- CULVERT

Point Table				
Point #	Elevation	Northing	Easting	Description
24	2669.96	10499494.93	1279813.75	CONTROL PONT
25	2659.30	10502211.55	1284004.91	CONTROL PONT
26	2666.60	10496914.84	1281542.08	CONTROL PONT
27	2649.40	10499353.42	1285773.20	CONTROL PONT

NOTE:
1. CONTROL POINTS ARE BASED ON NAD 83 TEXAS STATE PLANE CENTRAL ZONE US FOOT. (TX83-CF)
2. ALL CELLS ARE DESIGNED FOR CLASS 1 NON-HAZARDOUS WASTE. CELL 4 IS DESIGNATED TO RECEIVE CLASS 1 NON-HAZARDOUS WASTE. OTHER CELLS MAY BE DESIGNATED IN THE FUTURE.
3. SITE BENCHMARK IS AT CONTROL POINT 25
4. SEE DRAWING C-2 FOR TYPICAL CELL LAYOUT
5. SEE DRAWING C-12 FOR EXCAVATION PLAN
6. SEE DRAWING C-13 FOR FINAL COVER PLAN
7. SEE DRAWING C-19 FOR LANDFILL GRID LAYOUT
8. EXISTING GROUND CONTOURS FROM U.S. DEPARTMENT OF THE INTERIOR U.S. GEOLOGICAL SURVEY, PECOS WEST TX. 2019.
9. SEE PART III, ATTACHMENT 5 FOR INFORMATION ON GROUNDWATER MONITOR WELL SPACING AND INSTALLATION DETAILS.
10. CLASS 1 WASTE SHALL BE DISPOSED BELOW THE EXTERIOR BERM ELEVATION, AND COVERED BY A 4-FOOT CLAY RICH SOIL BARRIER. MSW MAY BE DISPOSED OF BELOW THE EXTERIOR BERM ELEVATION AND/OR ABOVE THE CLASS 1 WASTE CLAY BARRIER.
11. CELLS 1 AND 4 WILL BE CONSTRUCTED FIRST. ADDITIONAL CELLS WILL BE CONSTRUCTED WEST TO EAST.

200' 0' 100' 200'

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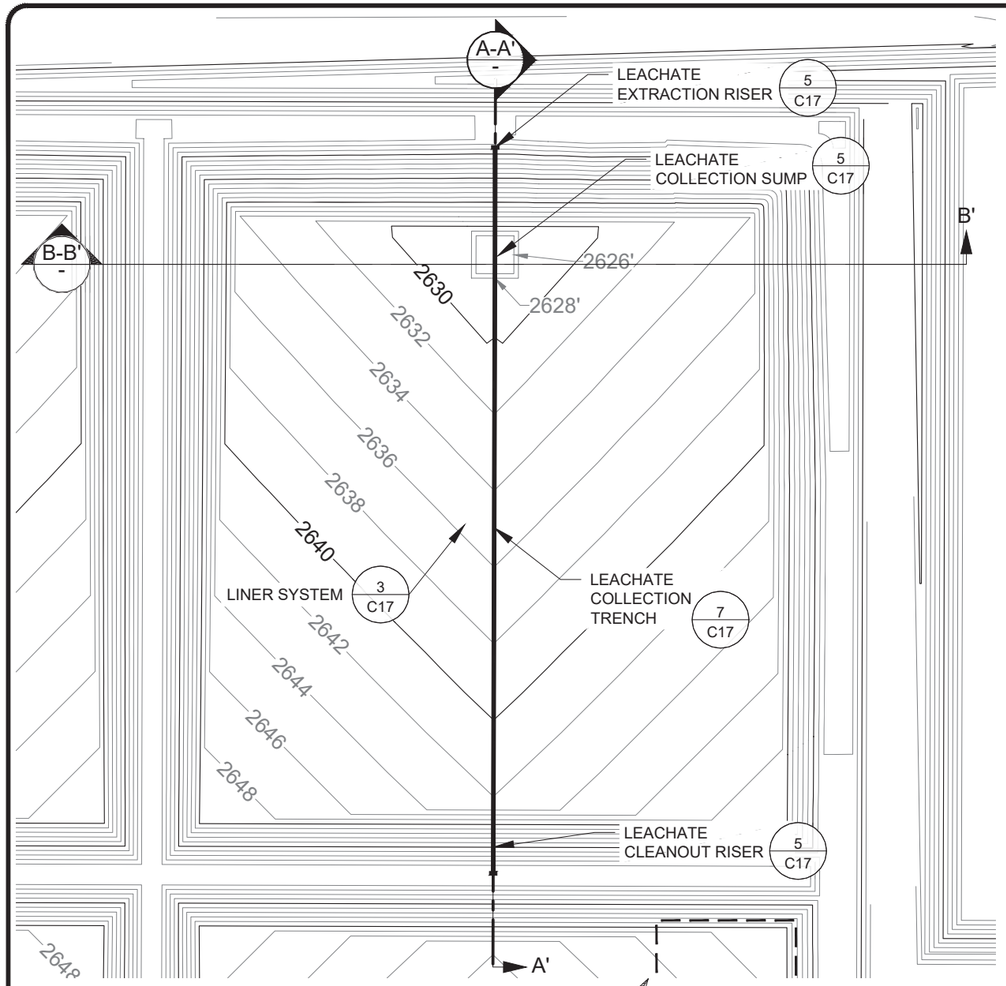
WST LANDFILL
REEVES COUNTY, TEXAS

SITE PLAN

SHEET 3 OF 21
DWG NO. C-1

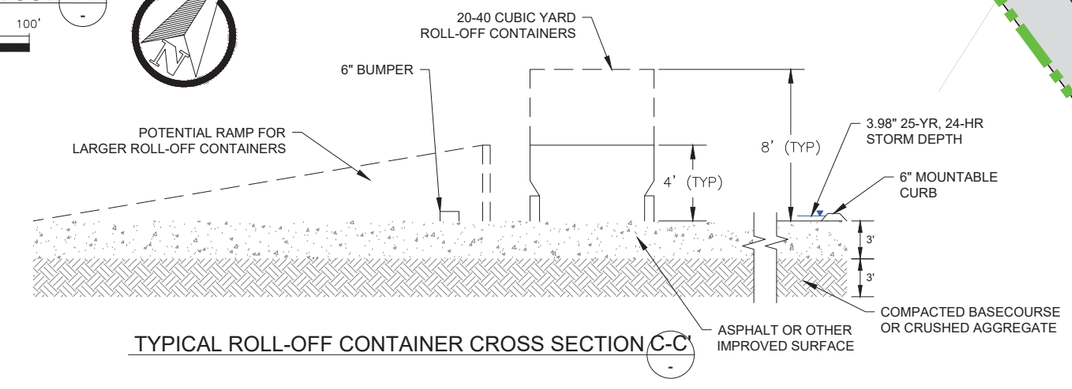
JOB NO. DB20.1166

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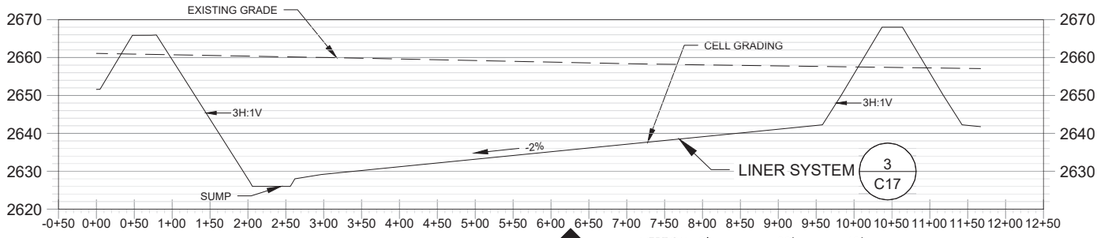


TYPICAL CELL LAYOUT 1 -

100' 0' 50' 100'



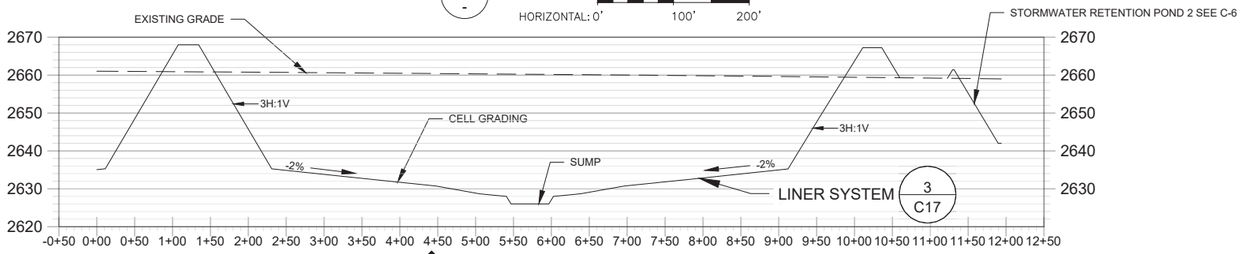
TYPICAL ROLL-OFF CONTAINER CROSS SECTION C-C' -



SECTION A-A' -

VERTICAL: 0' 20' 40'

HORIZONTAL: 0' 100' 200'



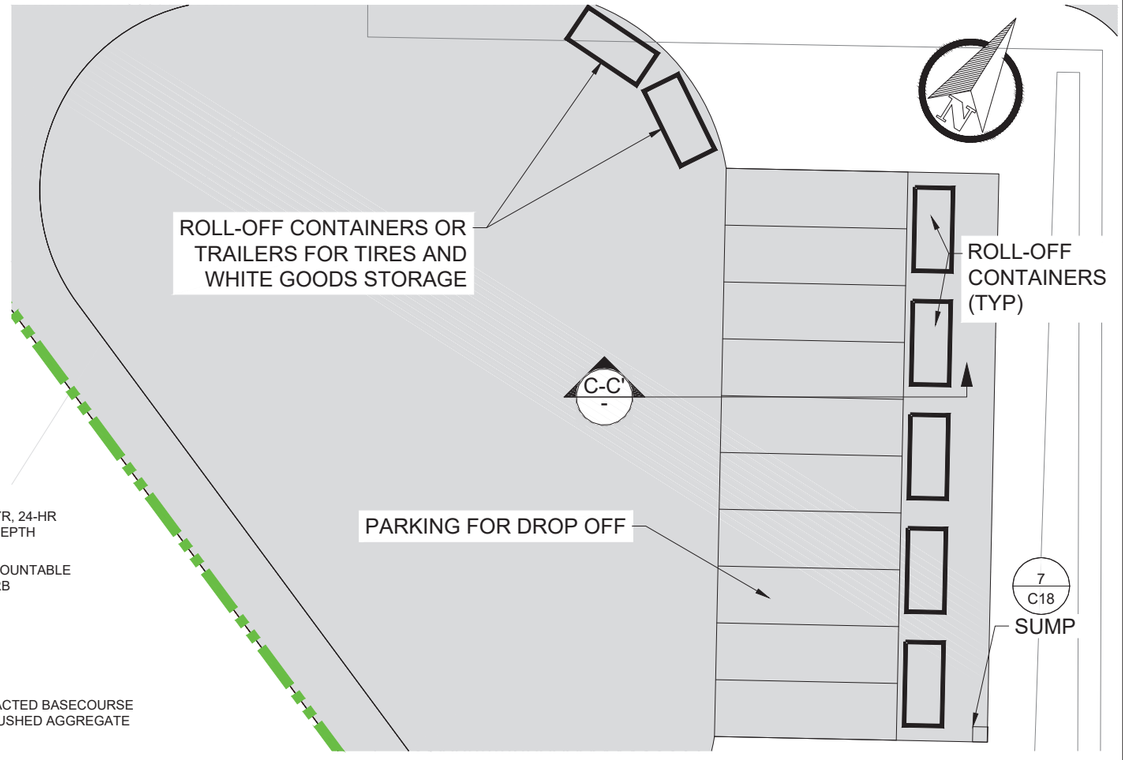
SECTION B-B' -

VERTICAL: 0' 20' 40'

HORIZONTAL: 0' 100' 200'

LEGEND

2650 EXISTING 10' MAJOR CONTOURS
EXISTING 2' MINOR CONTOURS
2650 PROPOSED MAJOR CONTOURS
2652 PROPOSED MINOR CONTOURS



CITIZEN'S COLLECTION STATION 2 -

NTS

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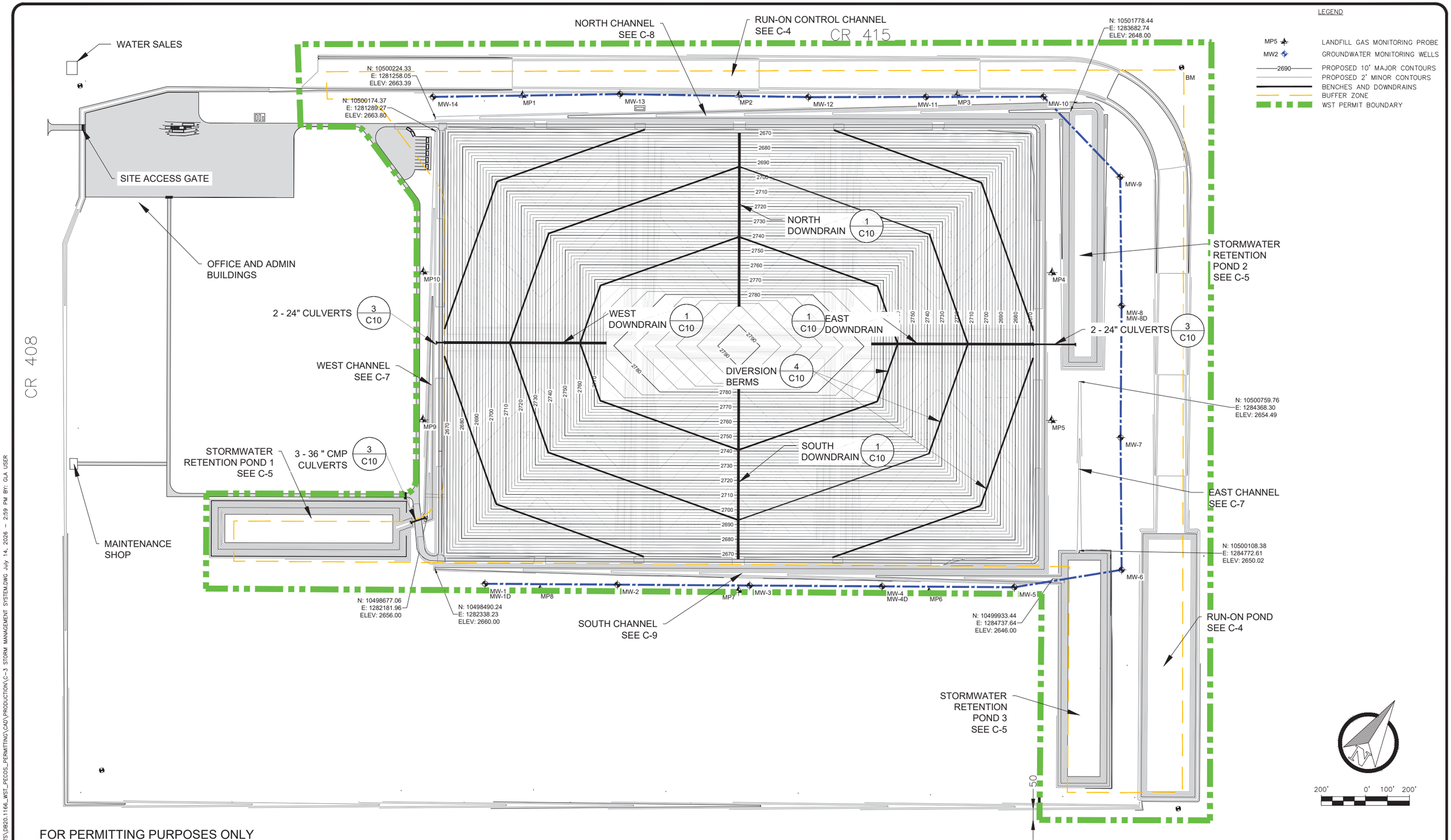
WST LANDFILL
REEVES COUNTY, TEXAS

CELL LAYOUT AND CCS

SHEET 4 OF 21
DWG NO. C-2

JOB NO. DB20.1166

Z:\1 PJ\WMTX\S\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\CAD\PRODUCTION\C-2 TYPICAL CELL LAYOUT.DWG July 14, 2026 - 2:59 PM BY: GLA USER



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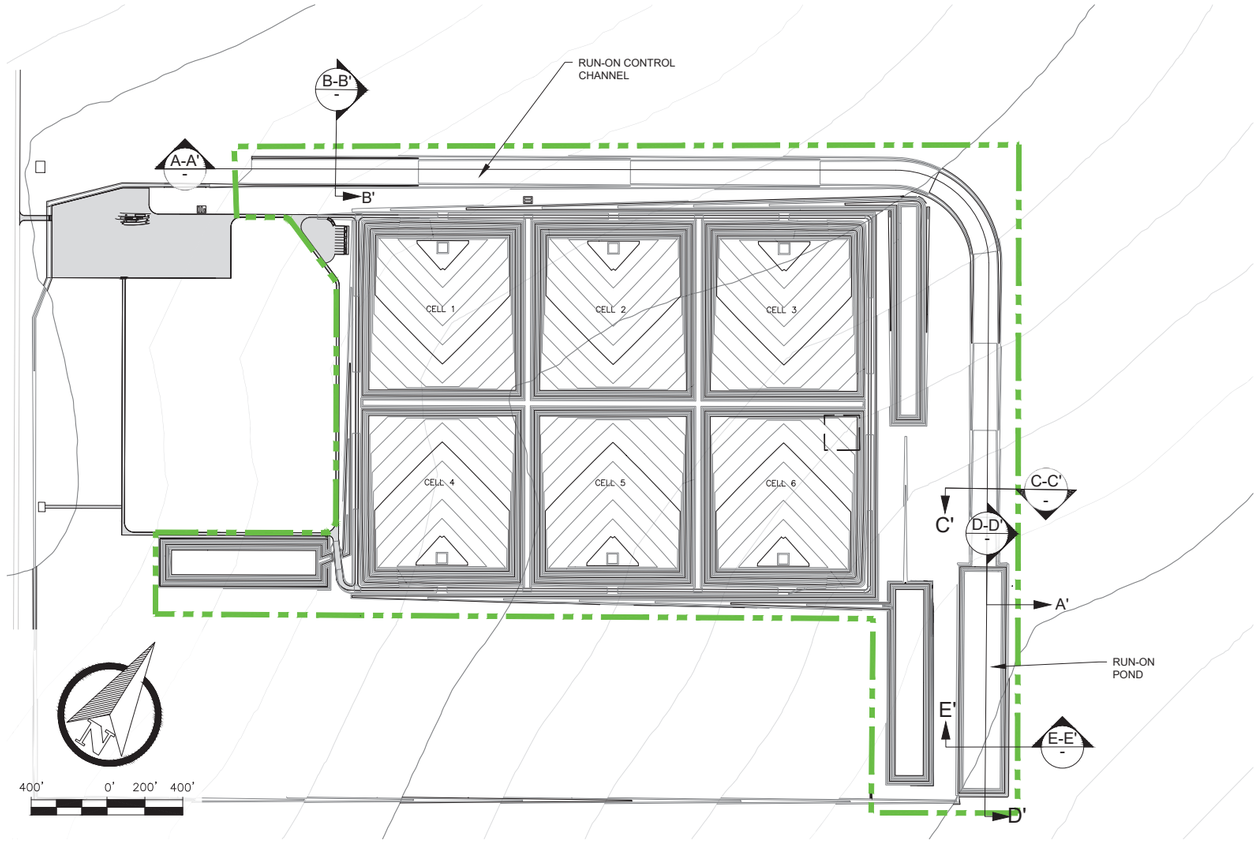
WST LANDFILL
REEVES COUNTY, TEXAS

STORMWATER MANAGEMENT SYSTEM

SHEET 5 OF 21
DWG NO. C-3

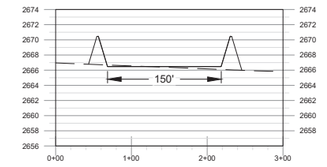
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LEGEND

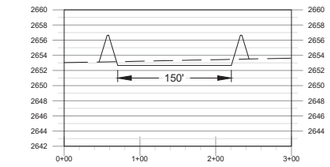
- EXISTING 10' MAJOR CONTOURS
- EXISTING 2' MINOR CONTOURS
- PROPOSED 10' MAJOR CONTOURS
- PROPOSED 2' MINOR CONTOURS
- WST PERMIT BOUNDARY
- EXISTING GRADE
- PROPOSED GRADE
- WATER DEPTH



SECTION B-B'

VERTICAL: 0' 10' 20'

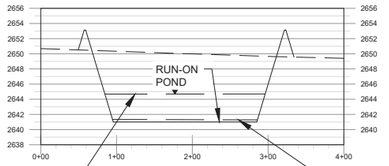
HORIZONTAL: 0' 100' 200'



SECTION C-C'

VERTICAL: 0' 10' 20'

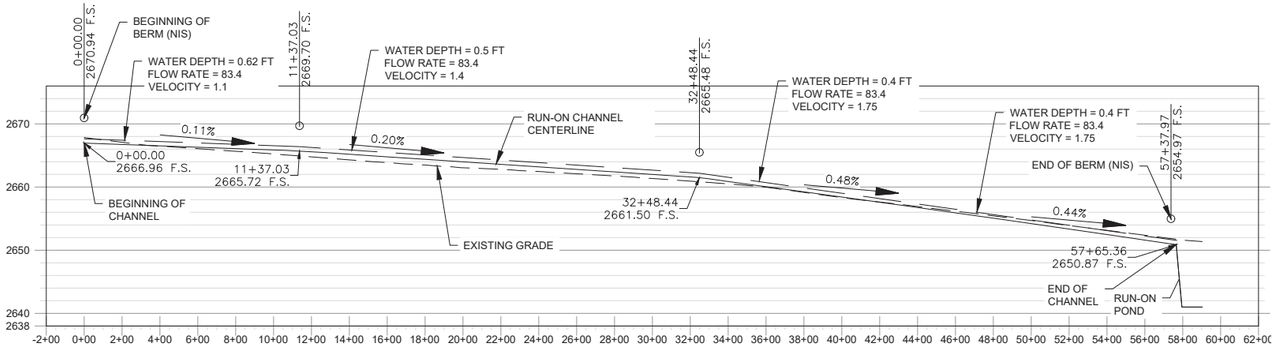
HORIZONTAL: 0' 100' 200'



SECTION E-E'

VERTICAL: 0' 10' 20'

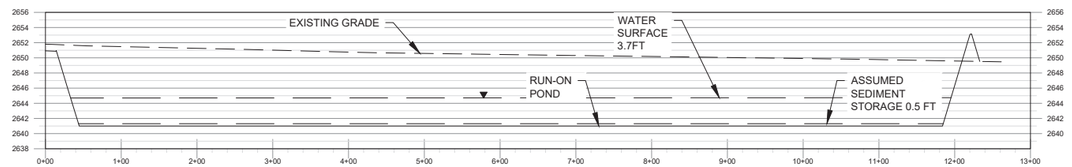
HORIZONTAL: 0' 100' 200'



SECTION A-A'

VERTICAL: 0' 12' 24'

HORIZONTAL: 0' 40' 80'



SECTION D-D'

VERTICAL: 0' 10' 20'

HORIZONTAL: 0' 100' 200'

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WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

WST LANDFILL
REEVES COUNTY, TEXAS

RUN-ON CHANNEL AND POND

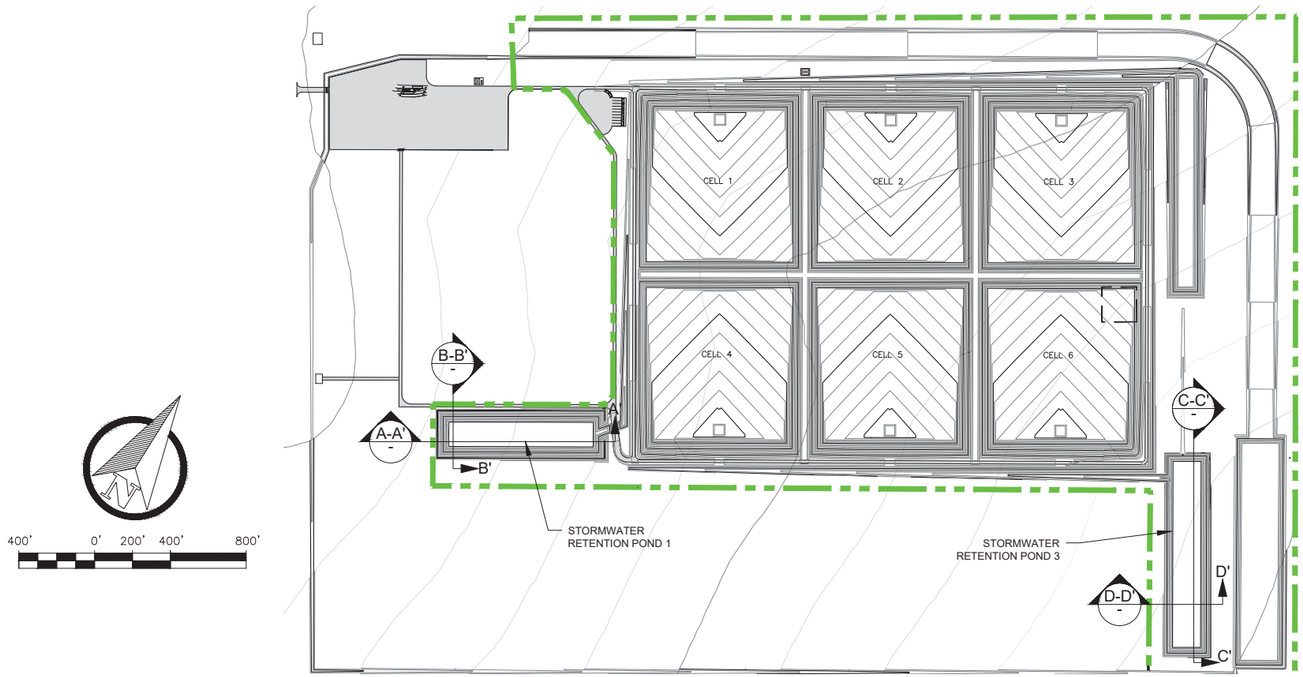
SHEET 6 of 21
DWG NO. C-4

JOB NO.
DB20.1166

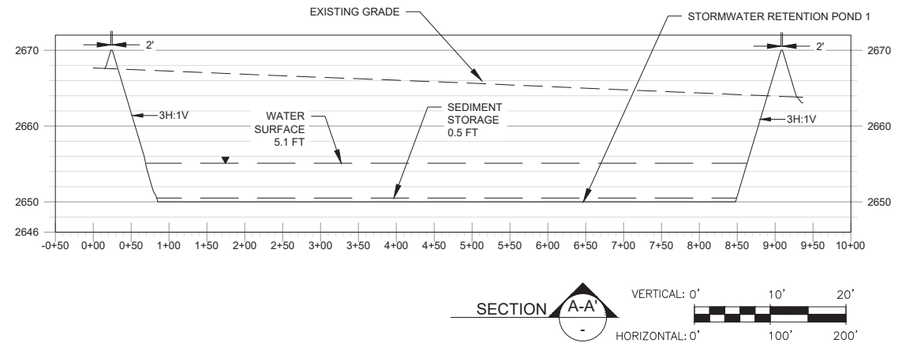
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LEGEND

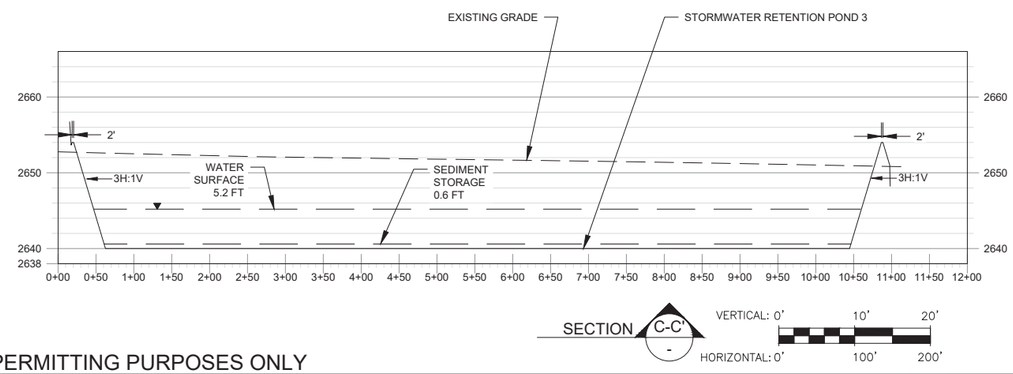
- EXISTING 10' MAJOR CONTOURS
- EXISTING 2' MINOR CONTOURS
- PROPOSED 10' MAJOR CONTOURS
- PROPOSED 2' MINOR CONTOURS
- WST PERMIT BOUNDARY
- EXISTING GRADE
- PROPOSED GRADE
- WATER DEPTH



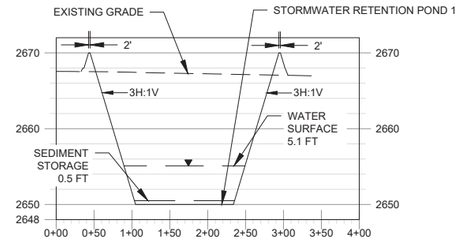
PLAN 1



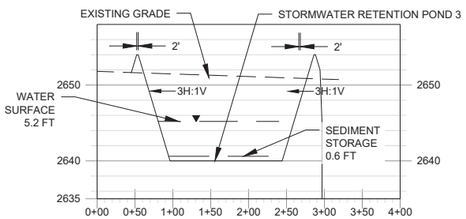
SECTION A-A' - VERTICAL: 0' 10' 20' HORIZONTAL: 0' 100' 200'



SECTION C-C' - VERTICAL: 0' 10' 20' HORIZONTAL: 0' 100' 200'



SECTION B-B' - VERTICAL: 0' 10' 20' HORIZONTAL: 0' 100' 200'



SECTION D-D' - VERTICAL: 0' 10' 20' HORIZONTAL: 0' 100' 200'

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WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

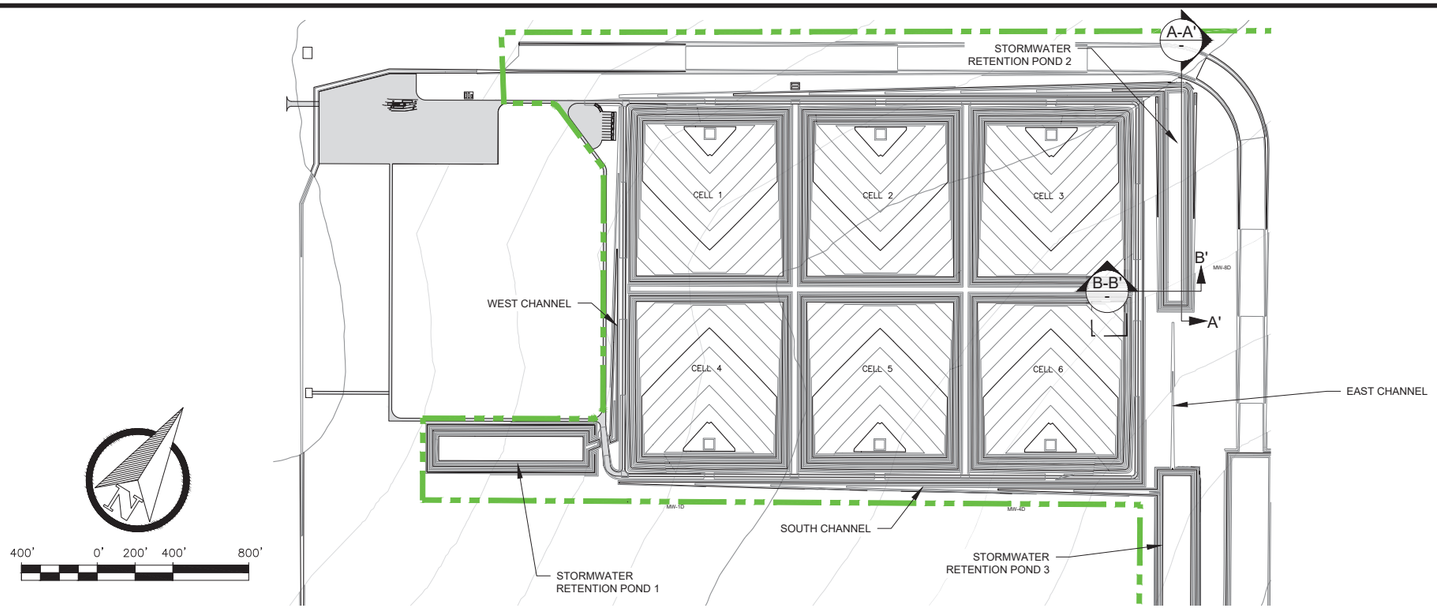
WST LANDFILL
REEVES COUNTY, TEXAS

POND 1 AND 3 LAYOUT

SHEET 7 OF 21
DWG NO. C-5

JOB NO. DB20.1166

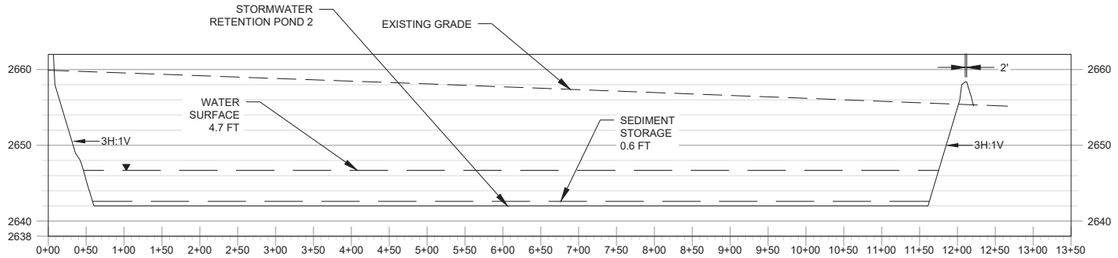
Z:\!XV\MTA'S\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\CAD\PRODUCTION\C-5 POND 1 AND 3 LAYOUT.DWG July 14, 2026 - 2:59 PM BY: GLA USER



PLAN 1

LEGEND

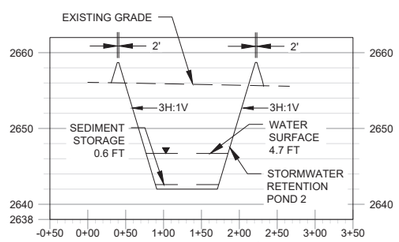
- EXISTING 10' MAJOR CONTOURS
- EXISTING 2' MINOR CONTOURS
- PROPOSED 10' MAJOR CONTOURS
- PROPOSED 2' MINOR CONTOURS
- WST PERMIT BOUNDARY
- EXISTING GRADE
- PROPOSED GRADE
- WATER DEPTH



SECTION A-A'

VERTICAL: 0' 10' 20'

HORIZONTAL: 0' 100' 200'



SECTION B-B'

VERTICAL: 0' 10' 20'

HORIZONTAL: 0' 100' 200'

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103091
LICENSED
PROFESSIONAL ENGINEER
7/22/2026

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WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

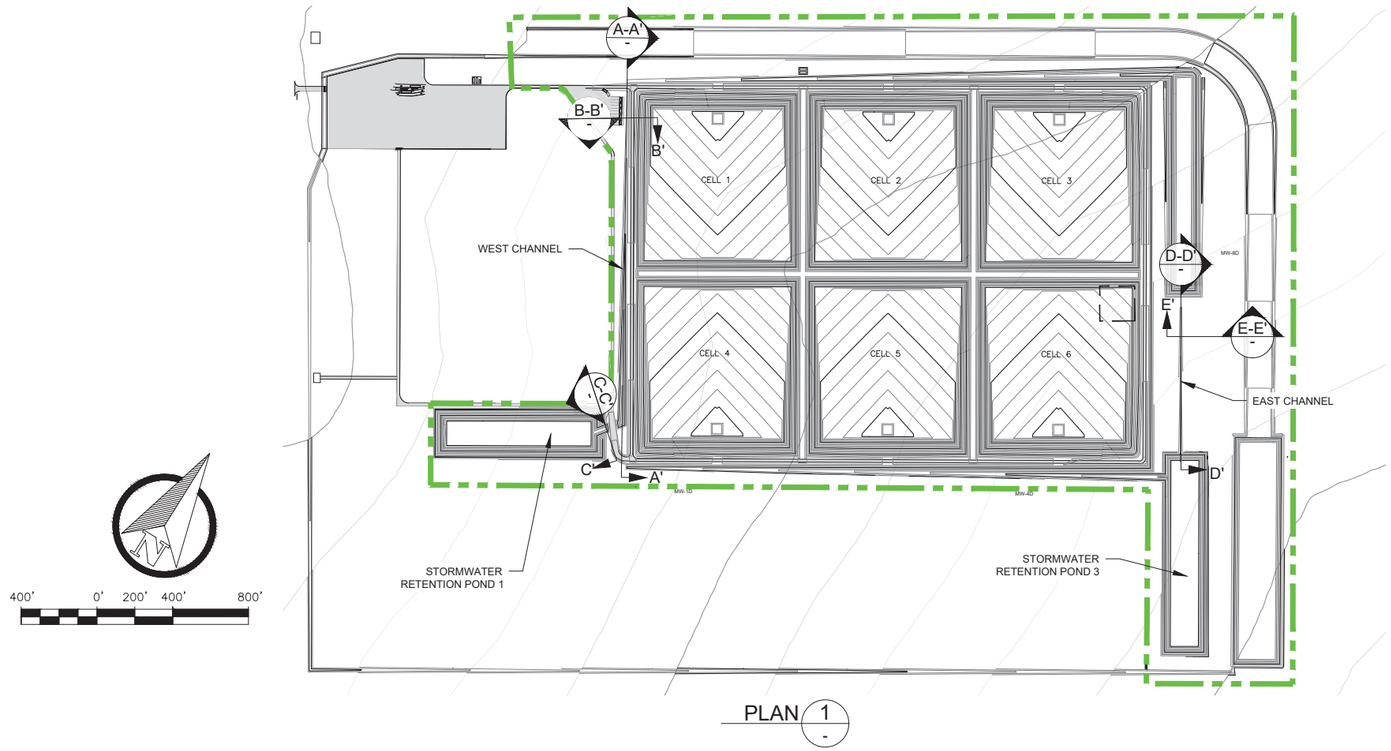
WST LANDFILL
REEVES COUNTY, TEXAS

POND 2 LAYOUT

SHEET 8 OF 21
DWG NO. C-6

JOB NO.
DB20.1166

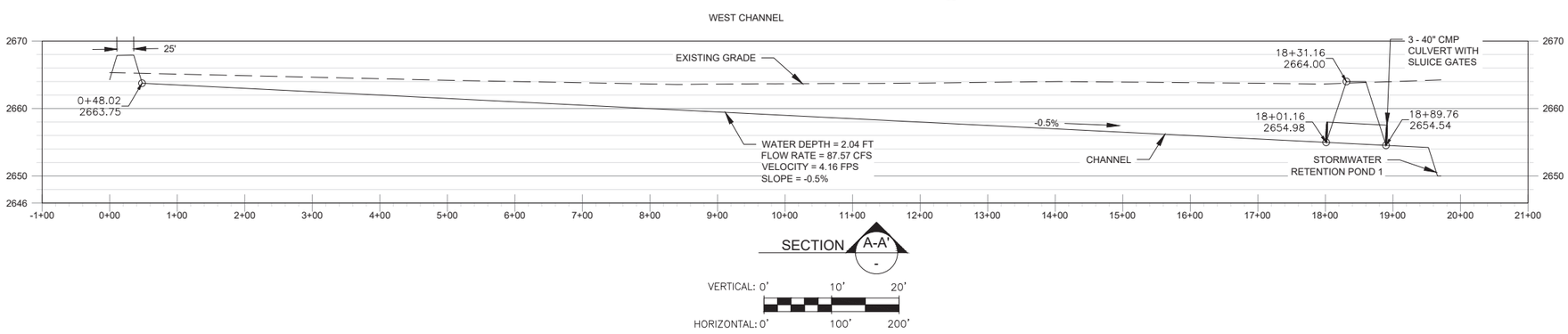
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PLAN 1

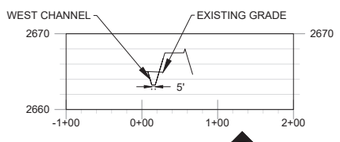
LEGEND

- EXISTING 10' MAJOR CONTOURS
- EXISTING 2' MINOR CONTOURS
- PROPOSED 10' MAJOR CONTOURS
- PROPOSED 2' MINOR CONTOURS
- WST PERMIT BOUNDARY
- EXISTING GRADE
- PROPOSED GRADE



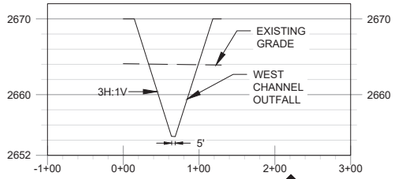
SECTION A-A'

VERTICAL: 0' 10' 20'
HORIZONTAL: 0' 100' 200'



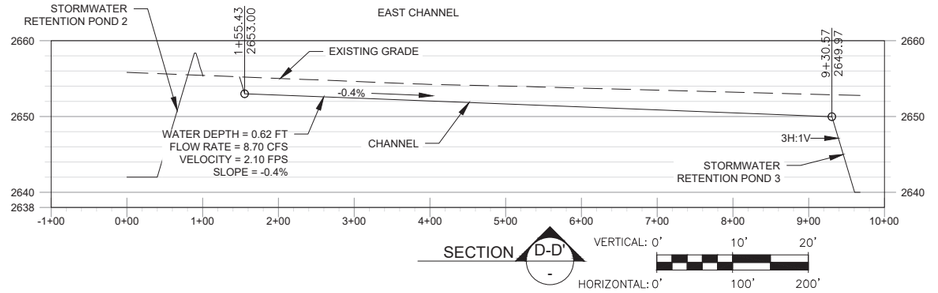
SECTION B-B'

VERTICAL: 0' 10' 20'
HORIZONTAL: 0' 100' 200'



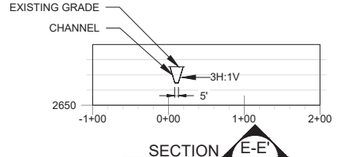
SECTION C-C'

VERTICAL: 0' 10' 20'
HORIZONTAL: 0' 100' 200'



SECTION D-D'

VERTICAL: 0' 10' 20'
HORIZONTAL: 0' 100' 200'



SECTION E-E'

VERTICAL: 0' 10' 20'
HORIZONTAL: 0' 100' 200'

FOR PERMITTING PURPOSES ONLY

REV. NO.	DATE	DESCRIPTION	APPROVED BY

DATE OF ISSUE: 07/22/2026
DESIGNED BY: KJ
DRAWN BY: CK, JA, ML
CHECKED BY: GP
APPROVED BY: GP

STATE OF TEXAS
GUNDAR PETERSON
103091
LICENSED
PROFESSIONAL ENGINEER
7/22/2026

DBS&A
a Geo-Logic Company
TEXAS REGISTERED ENGINEERING FIRM F-286

WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

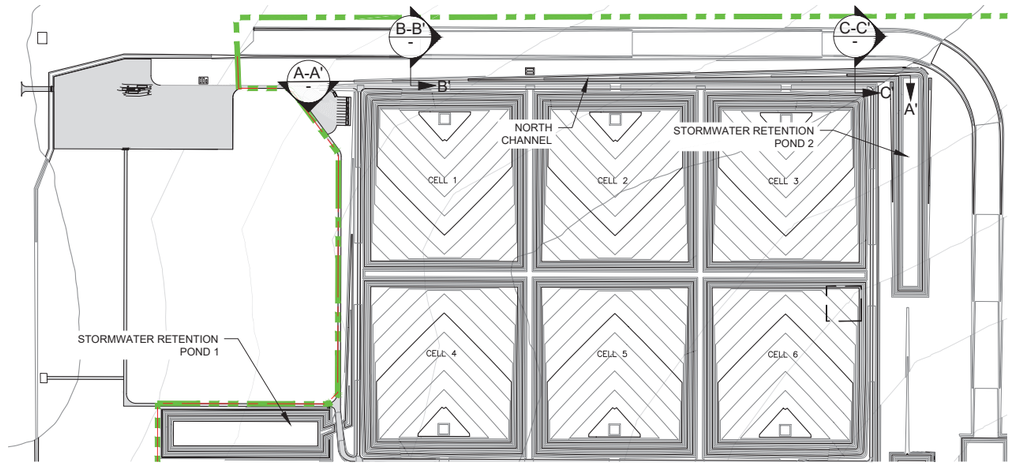
WST LANDFILL
REEVES COUNTY, TEXAS

WEST AND EAST CHANNEL GRADING

SHEET 9 OF 21
DWG NO. C-7

JOB NO.
DB20.1166

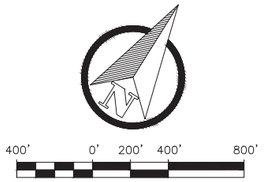
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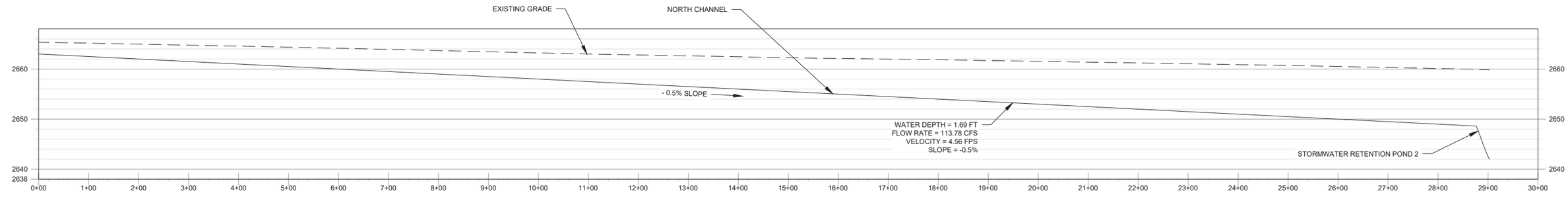


PLAN 1 -

LEGEND

- EXISTING 10' MAJOR CONTOURS
- EXISTING 2' MINOR CONTOURS
- PROPOSED 10' MAJOR CONTOURS
- PROPOSED 2' MINOR CONTOURS
- WST PERMIT BOUNDARY
- EXISTING GRADE
- PROPOSED GRADE

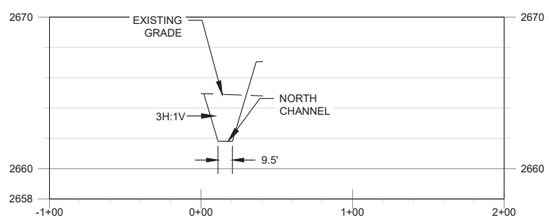




SECTION A-A' -

VERTICAL: 0' 10' 20'

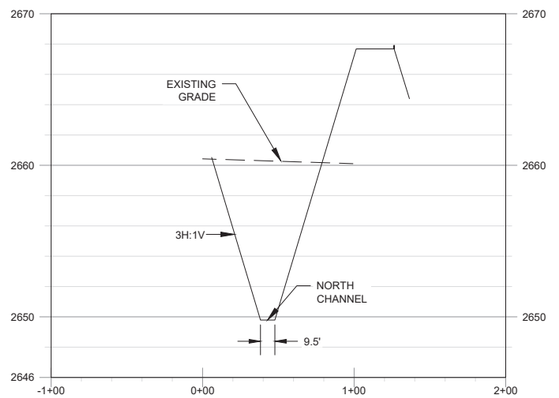
HORIZONTAL: 0' 100' 200'



SECTION B-B' -

VERTICAL: 0' 5' 10'

HORIZONTAL: 0' 50' 100'



SECTION C-C' -

VERTICAL: 0' 10' 20'

HORIZONTAL: 0' 100' 200'

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DBS&A a Geo-Logic Company
TEXAS REGISTERED ENGINEERING FIRM F-286

WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

WST LANDFILL
REEVES COUNTY, TEXAS

NORTH CHANNEL GRADING

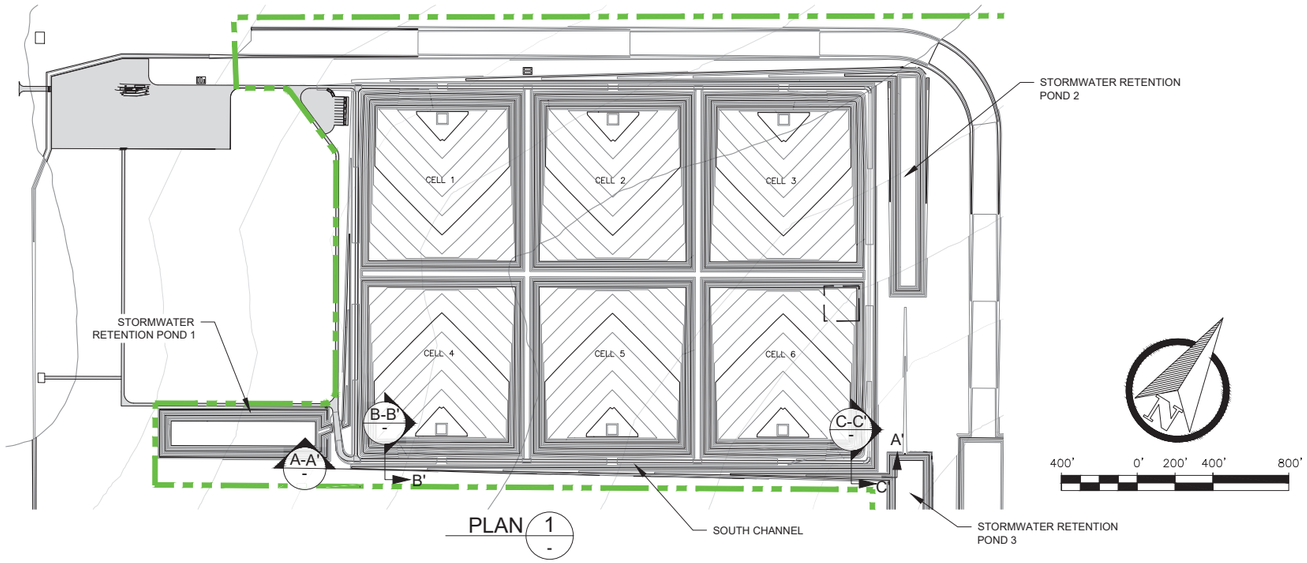
SHEET 10 OF 21
DWG NO. C-8

JOB NO. DB20.1166

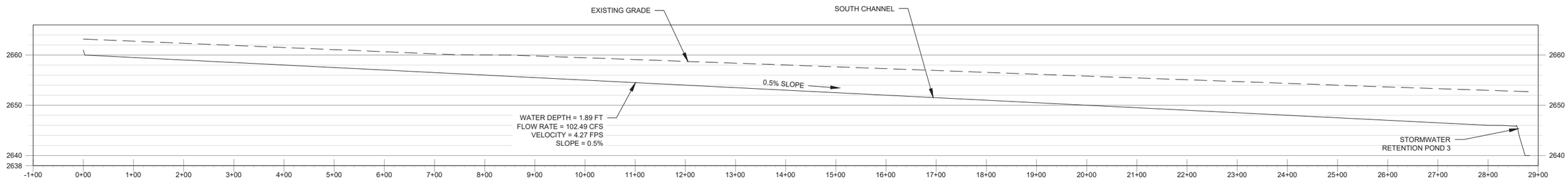
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LEGEND

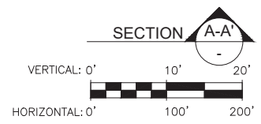
- EXISTING 10' MAJOR CONTOURS
- EXISTING 2' MINOR CONTOURS
- PROPOSED 10' MAJOR CONTOURS
- PROPOSED 2' MINOR CONTOURS
- WST PERMIT BOUNDARY
- EXISTING GRADE
- PROPOSED GRADE

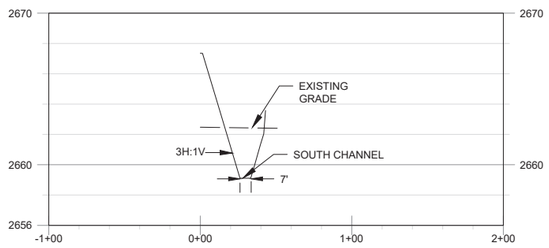


PLAN 1

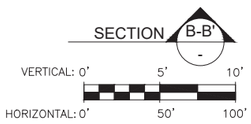


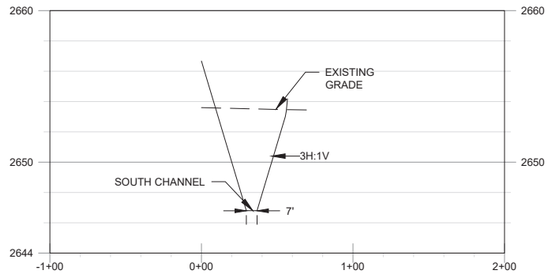
SECTION A-A'



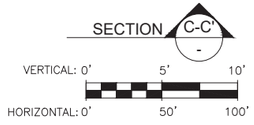


SECTION B-B'





SECTION C-C'



FOR PERMITTING PURPOSES ONLY

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STATE OF TEXAS GUNDAR PETERSON 103091 LICENSED PROFESSIONAL ENGINEER 7/22/2026

DBS&A a Geo-Logic Company
TEXAS REGISTERED ENGINEERING FIRM F-286

WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

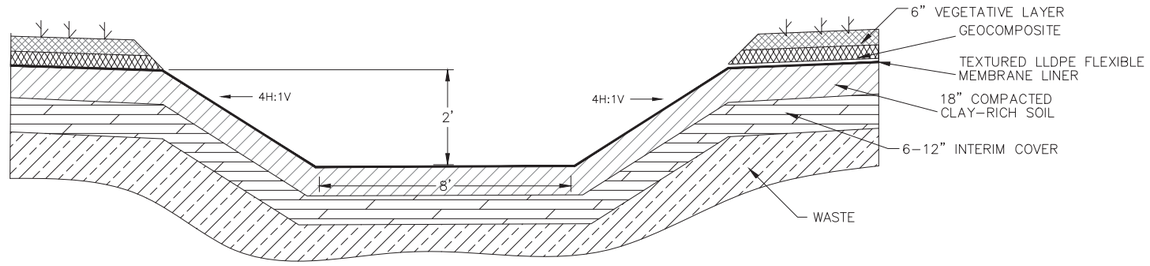
WST LANDFILL
REEVES COUNTY, TEXAS

SOUTH CHANNEL GRADING

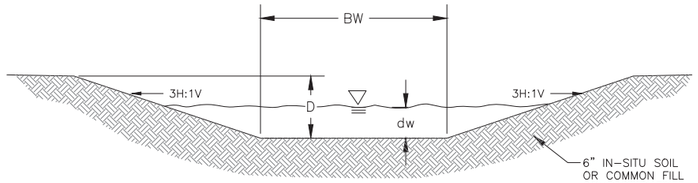
SHEET 11 OF 21
DWG NO. C-9

JOB NO.
DB20.1166

Z:\1X\MWTA\S\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\CAD\PRODUCTION\C-9 SOUTH CHANNEL GRADING.DWG July 14, 2026 - 3:05 PM BY: GJA USER



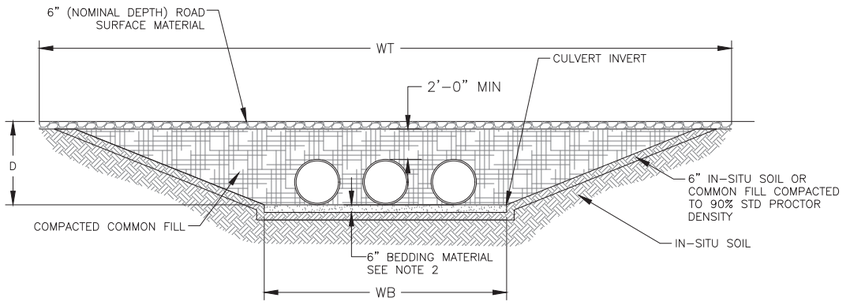
DOWN DRAIN DETAIL (1 / -)
NTS



SCHEDULE OF DIMENSIONS

CHANNEL	SLOPE	D (FEET)	BW (FEET)	dw (FEET)
WEST	0.5%	2.5-9	5.0	2.04
NORTH	0.5%	3-9.5	9.5	1.7
SOUTH	0.5%	3-6.2	7.0	1.9
EAST	0.5%	3-3.5	5.0	0.63

TYPICAL UNLINED DITCH SECTION DETAIL (2 / -)
NTS



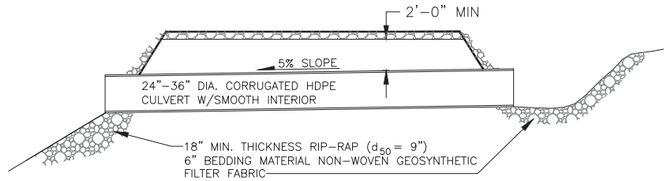
SECTION

SCHEDULE OF DIMENSIONS

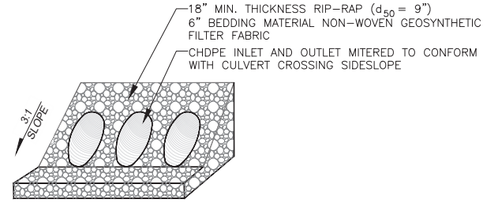
CULVERT DIA (IN)	CULVERT LENGTH (FT)	WT (FT)	WB (FT)	D (FT)	SLOPE (FT/FT)
24	±30.0	34.5	7.5	4.5	0.05
36	36.0	47.0	13.5	5.5	0.05

NOTES:

1. SEE SHEET C-3 FOR LOCATIONS OF CULVERT CROSSINGS.
2. BEDDING MATERIAL SHALL BE SHAPED TO PROVIDE UNIFORM CONTACT WITH THE BOTTOM OF THE CULVERTS.
3. ALL CULVERTS ARE CORRUGATED HDPE WITH SMOOTH INTERIOR.
4. 18" MINIMUM SPACING BETWEEN EACH CULVERT PIPE, WALL TO WALL.

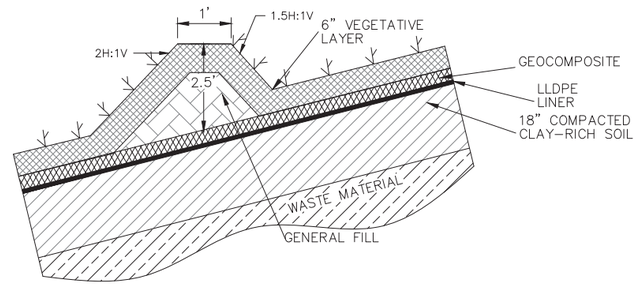


SIDE VIEW SECTION



TYPICAL CULVERT INLET AND OUTLET DETAIL

CULVERT ROAD CROSSING DETAILS (3 / -)
NTS



DIVERSION BERM DETAIL (4 / -)
NTS

FOR PERMITTING PURPOSES ONLY

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STATE OF TEXAS — GUNDAR PETERSON — 103091 — LICENSED PROFESSIONAL ENGINEER — 7/22/2026

DBS&A a Geo-Logic Company
TEXAS REGISTERED ENGINEERING FIRM F-286

WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

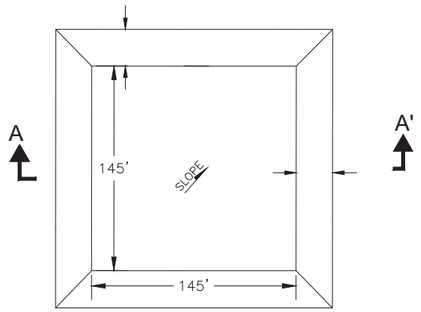
WST LANDFILL
REEVES COUNTY, TEXAS

DRAINAGE DETAILS

SHEET 12 OF 21
DWG NO. C-10

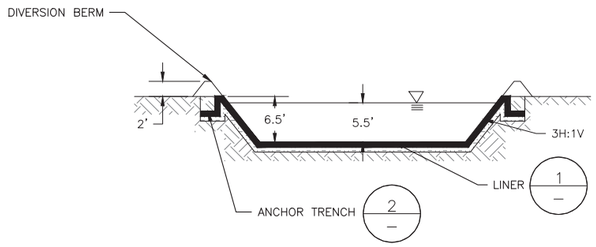
JOB NO. DB20.1166

Z:\1X\MFTA\S\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\CAD\PRODUCTION\C-10 DRAINAGE DETAILS.DWG July 14, 2026 - 3:04 PM BY: GLA USER



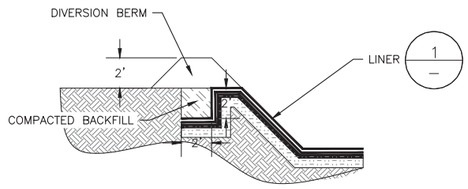
PLAN VIEW

NTS



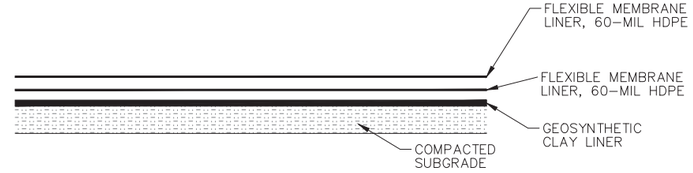
SECTION A-A'

NTS



ANCHOR TRENCH 2

SCALE: NTS



POND LINER DETAIL 1

SCALE: NTS

FOR PERMITTING PURPOSES ONLY

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STATE OF TEXAS
GUNDAR PETERSON
103091
LICENSED
PROFESSIONAL ENGINEER
7/22/2026

DBS&A
a Geo-Logic Company
TEXAS REGISTERED ENGINEERING FIRM F-286

WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

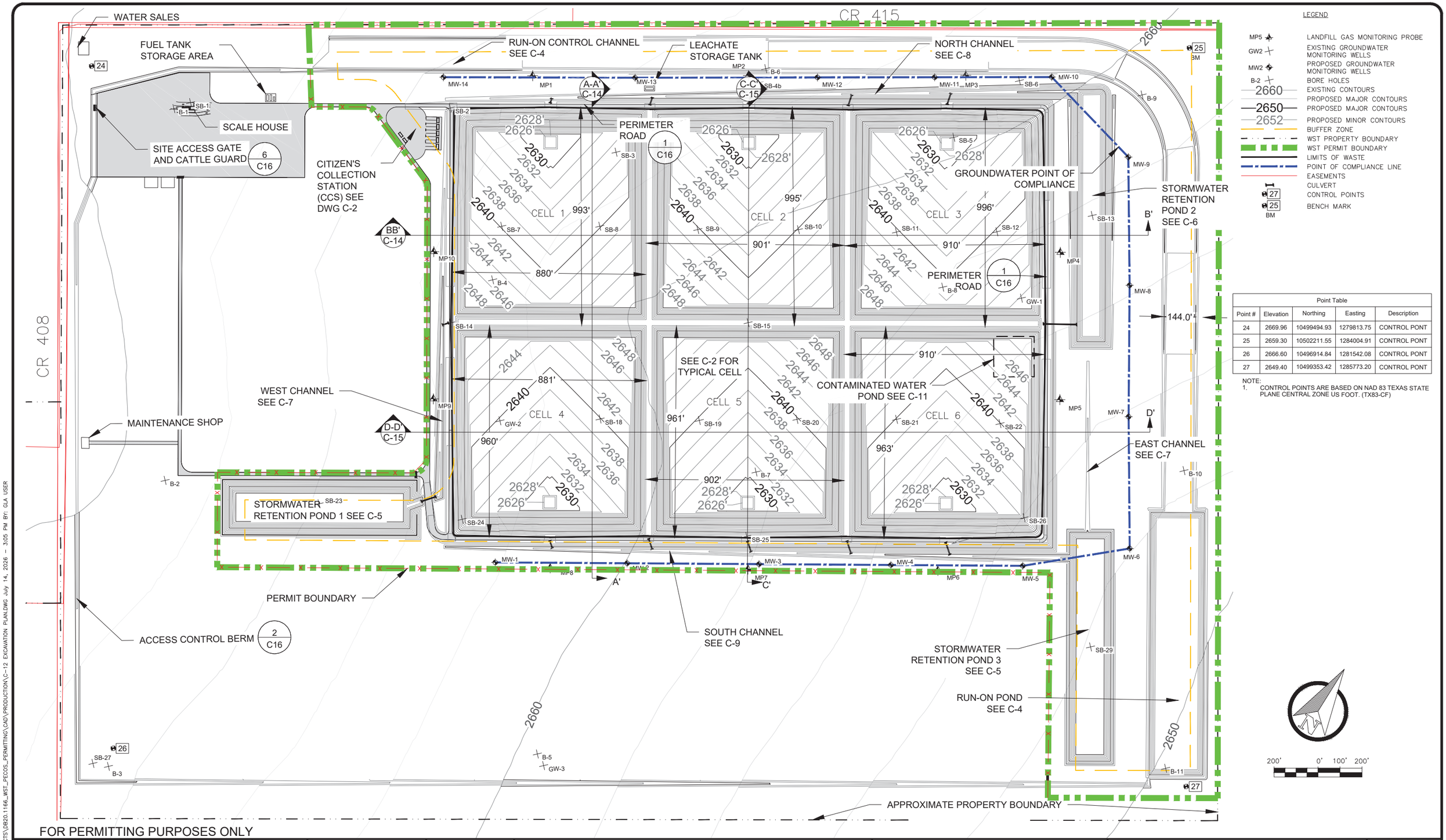
WST LANDFILL
REEVES COUNTY, TEXAS

CONTAMINATED WATER POND

SHEET 13 OF 21
DWG NO. C-11

JOB NO.
DB20.1166

Z:\1)X\WMTX\S\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\CAD\PRODUCTION\C-11 CONTACT STORMWATER POND.DWG July 14, 2026 - 3:05 PM BY: GLA USER



LEGEND

- MP5 — LANDFILL GAS MONITORING PROBE
- GW2 — EXISTING GROUNDWATER MONITORING WELLS
- MW2 — PROPOSED GROUNDWATER MONITORING WELLS
- B-2 — BORE HOLES
- 2660 — EXISTING CONTOURS
- 2650 — PROPOSED MAJOR CONTOURS
- 2652 — PROPOSED MINOR CONTOURS
- BUFFER ZONE
- WST PROPERTY BOUNDARY
- WST PERMIT BOUNDARY
- LIMITS OF WASTE
- POINT OF COMPLIANCE LINE
- EASEMENTS
- CULVERT
- 27 — CONTROL POINTS
- 25 BM — BENCH MARK

Point Table				
Point #	Elevation	Northing	Easting	Description
24	2669.96	10499494.93	1279813.75	CONTROL PONT
25	2659.30	10502211.55	1284004.91	CONTROL PONT
26	2666.60	10496914.84	1281542.08	CONTROL PONT
27	2649.40	10499353.42	1285773.20	CONTROL PONT

NOTE:
1. CONTROL POINTS ARE BASED ON NAD 83 TEXAS STATE PLANE CENTRAL ZONE US FOOT. (TX83-CF)

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STATE OF TEXAS — GUNDAR PETERSON — 103091 — LICENSED PROFESSIONAL ENGINEER — 7/22/2026

DBS&A a Geo-Logic Company
TEXAS REGISTERED ENGINEERING FIRM F-286

WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

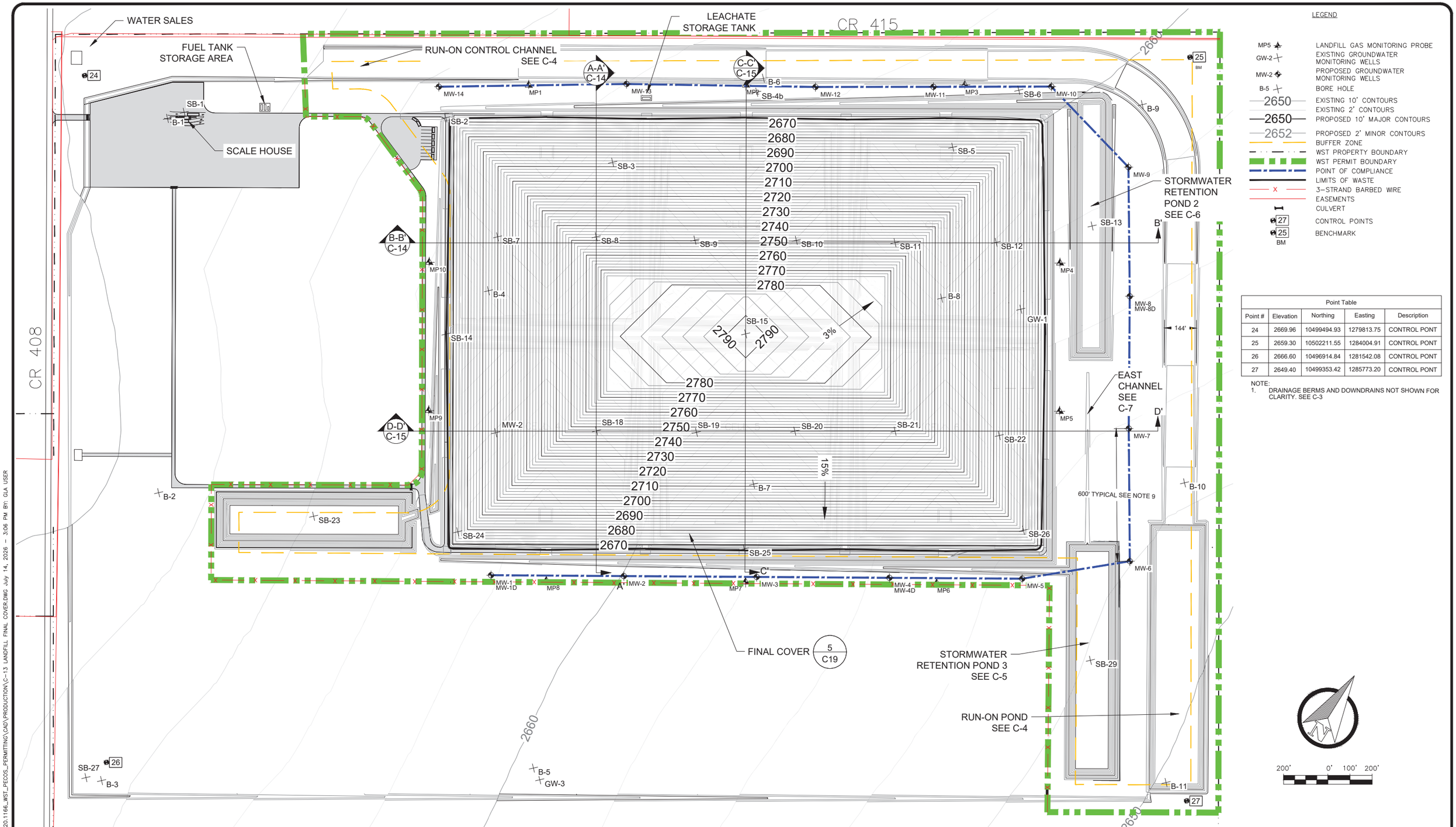
WST LANDFILL
REEVES COUNTY, TEXAS

EXCAVATION PLAN

SHEET 14 OF 21
DWG NO. C-12

JOB NO. DB20.1166

Z:\1YX\MTX\S\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\CAD\PRODUCTION\C-12 EXCAVATION PLAN.DWG July 14, 2026 - 3:05 PM BY: GLA USER



LEGEND

- MP5 — LANDFILL GAS MONITORING PROBE
- GW-2 — EXISTING GROUNDWATER MONITORING WELLS
- MW-2 — PROPOSED GROUNDWATER MONITORING WELLS
- B-5 — BORE HOLE
- 2650 — EXISTING 10' CONTOURS
- EXISTING 2' CONTOURS
- 2650 — PROPOSED 10' MAJOR CONTOURS
- 2652 — PROPOSED 2' MINOR CONTOURS
- BUFFER ZONE
- WST PROPERTY BOUNDARY
- WST PERMIT BOUNDARY
- POINT OF COMPLIANCE
- LIMITS OF WASTE
- X — 3-STRAND BARBED WIRE
- EASEMENTS
- CULVERT
- 27 — CONTROL POINTS
- 25 BM — BENCHMARK

Point Table				
Point #	Elevation	Northing	Easting	Description
24	2669.96	10499494.93	1279813.75	CONTROL PONT
25	2659.30	10502211.55	1284004.91	CONTROL PONT
26	2666.60	10496914.84	1281542.08	CONTROL PONT
27	2649.40	10499353.42	1285773.20	CONTROL PONT

NOTE:
1. DRAINAGE BERMS AND DOWNDRAINS NOT SHOWN FOR CLARITY. SEE C-3

FOR PERMITTING PURPOSES ONLY

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DBS&A a Geo-Logic Company
TEXAS REGISTERED ENGINEERING FIRM F-286

WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

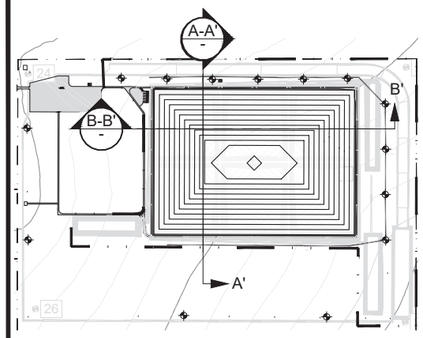
WST LANDFILL
REEVES COUNTY, TEXAS

FINAL CONTOURS

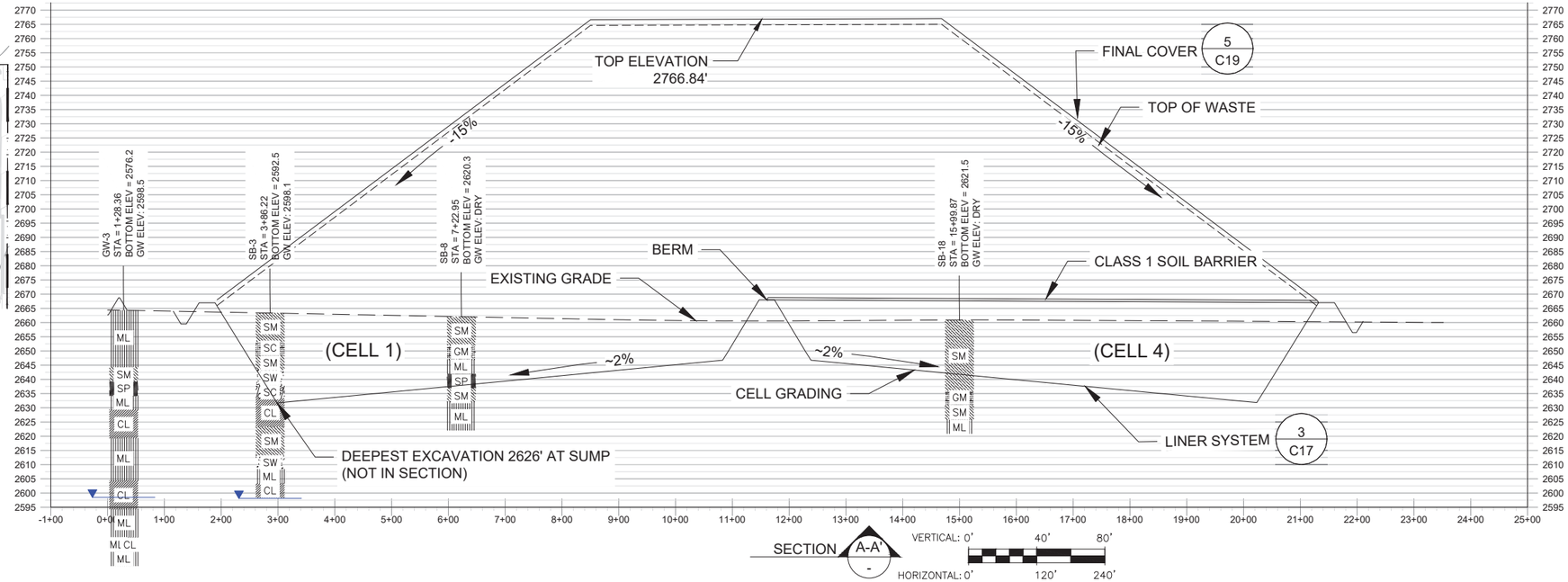
SHEET 15 OF 21
DWG NO. C-13

JOB NO. DB20.1166

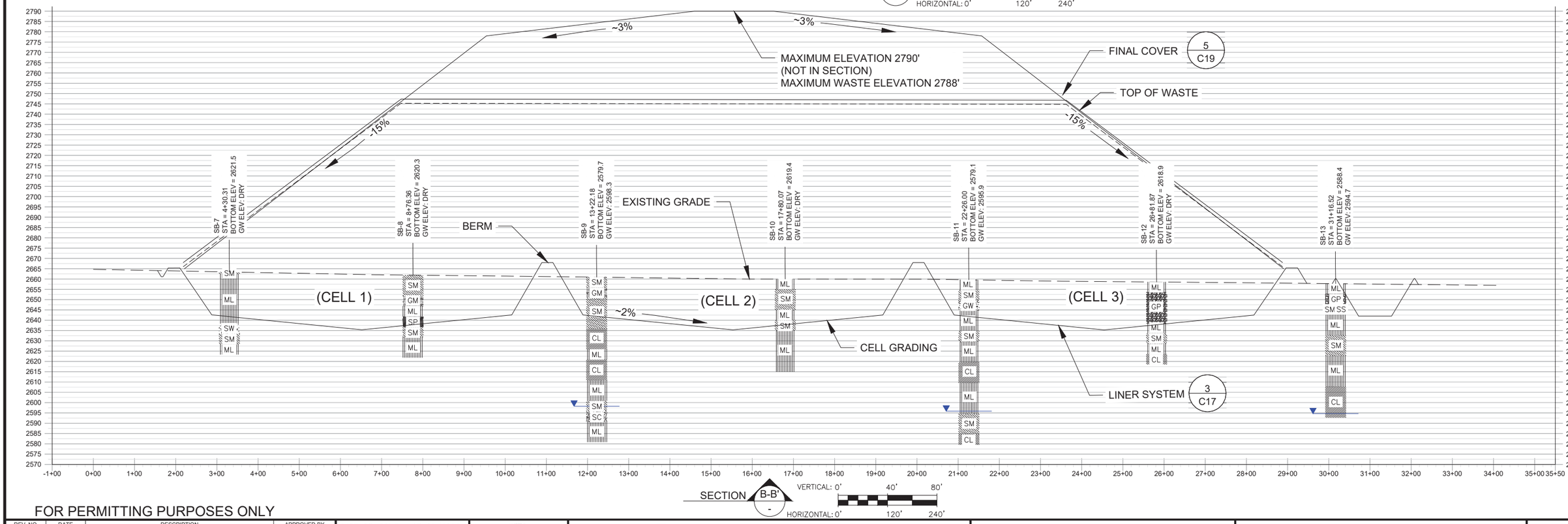
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INSET
NOT TO SCALE



SECTION A-A'
VERTICAL: 0' 40' 80'
HORIZONTAL: 0' 120' 240'



SECTION B-B'
VERTICAL: 0' 40' 80'
HORIZONTAL: 0' 120' 240'

LEGEND

- MP5 — LANDFILL GAS MONITORING PROBE
- GW2 — GROUNDWATER MONITORING WELL
- EXISTING 10' MAJOR CONTOUR
- EXISTING 2' MAJOR CONTOUR
- PROPOSED 2' GRADING CONTOURS
- PROPOSED 10' FILL CONTOURS
- SB–X — SOIL BORING LOCATION
- SM — SANDY SILT
- SC — CLAYEY SILTY SAND
- SW — SAND
- CL — SILTY CLAY
- ML — SILTY CLAYEY SAND
- GM — GRAVELLY SILTY SAND
- SP — GRAVELLY SAND WITH SILT
- GW — SANDY GRAVEL WITH SILT
- GP — SANDY GRAVEL
- CH — CLAY

DESIGN SURVEY NOTES:

1. EXISTING GROUND CONTOURS ON THESE DRAWINGS ARE FROM U.S. DEPARTMENT OF THE INTERIOR U.S. GEOLOGICAL SURVEY, PECOS WEST TX. 2019.
2. PROJECT COORDINATES ARE MODIFIED (GROUND) VALUES BASED ON STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, NAD27 DATUM. ELEVATIONS ARE SLD 1929 DATUM VALUES.

FOR PERMITTING PURPOSES ONLY

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STATE OF TEXAS — GUNDAR PETERSON — 103091 — LICENSED PROFESSIONAL ENGINEER — 7/22/2026

DBS&A a Geo-Logic Company
TEXAS REGISTERED ENGINEERING FIRM F–286

WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

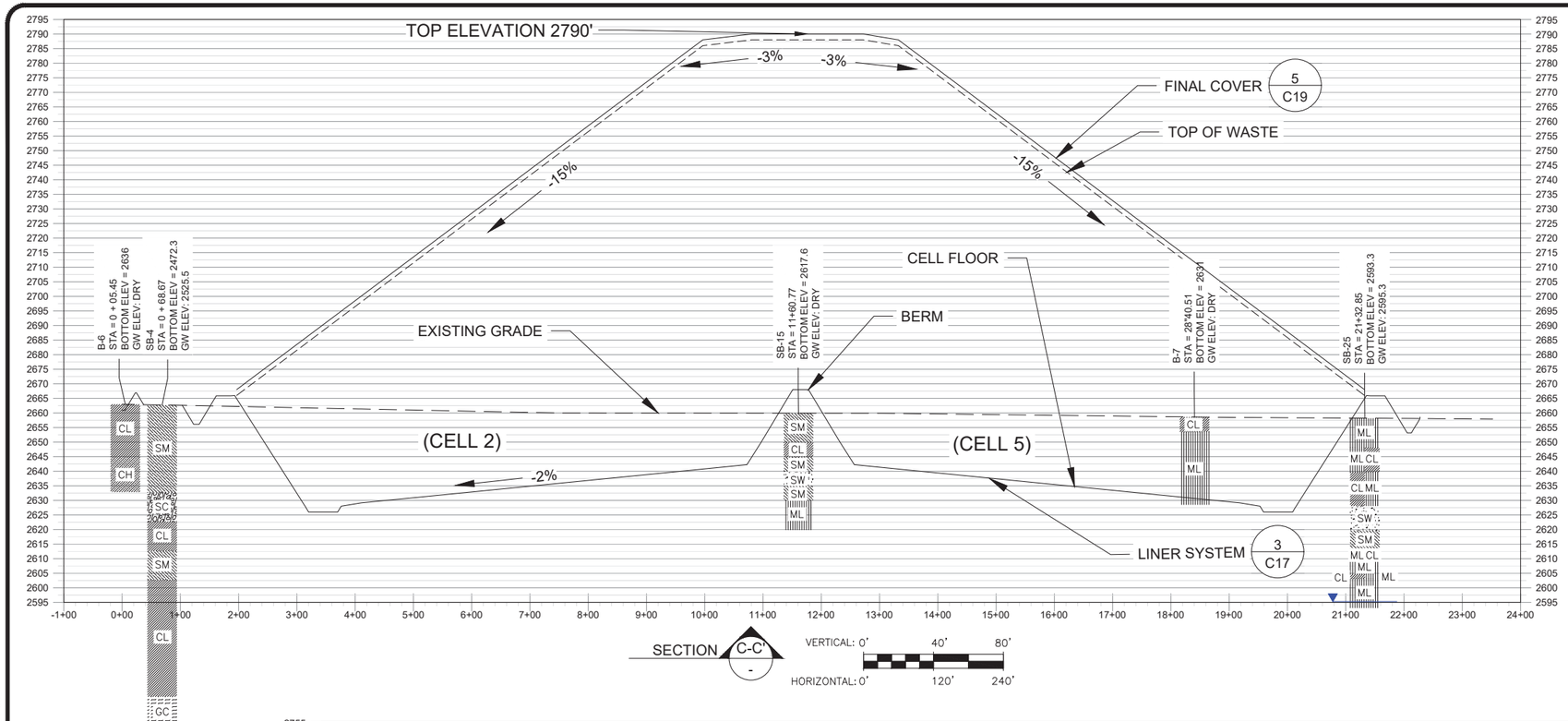
WST LANDFILL
REEVES COUNTY, TEXAS

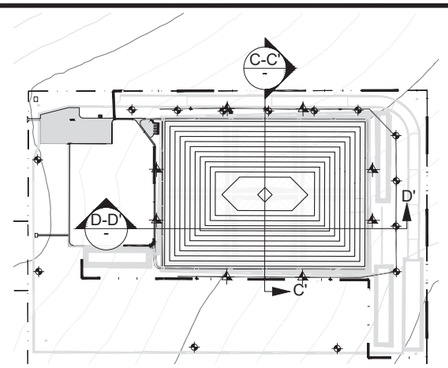
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SHEET 16 OF 21
DWG NO. C-14

JOB NO.
DB20.1166

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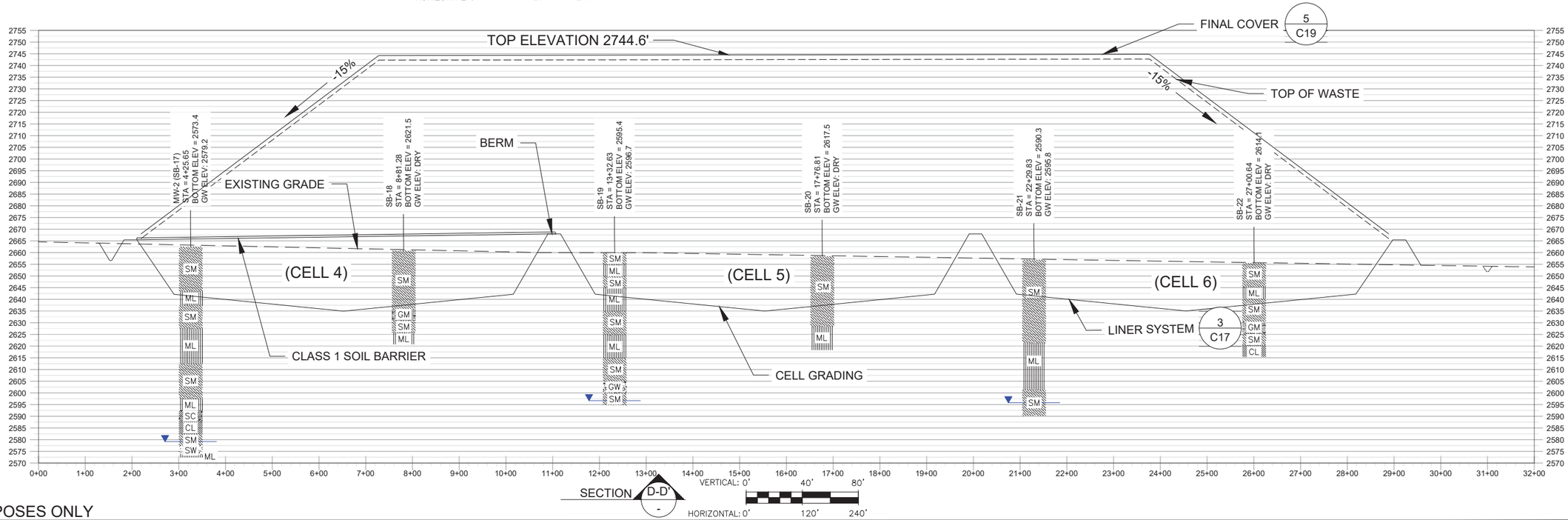
INSET
NOT TO SCALE

LEGEND

- MP5 — LANDFILL GAS MONITORING PROBE
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WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

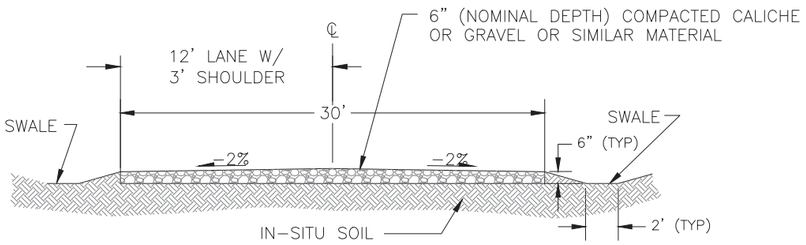
WST LANDFILL
REEVES COUNTY, TEXAS

CROSS SECTIONS 2

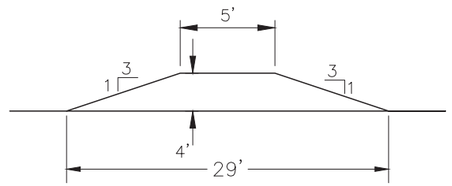
SHEET 17 OF 21
DWG NO. C-15

JOB NO.
DB20.1166

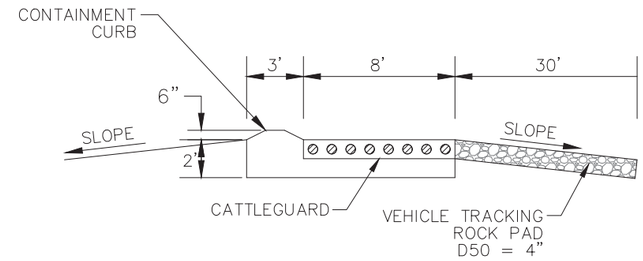
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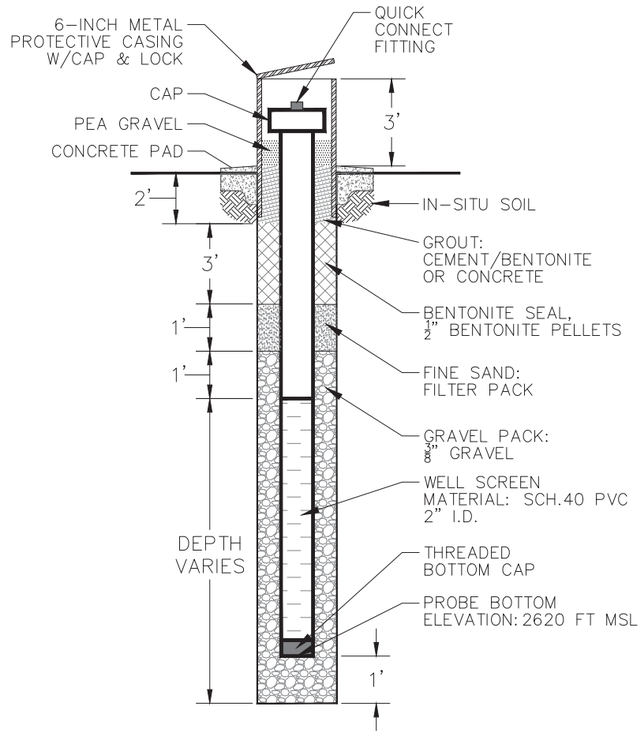
CALICHE OR GRAVEL ACCESS ROAD DETAIL 1
NTS



PERIMETER ACCESS CONTROL BERM DETAIL 2
NTS

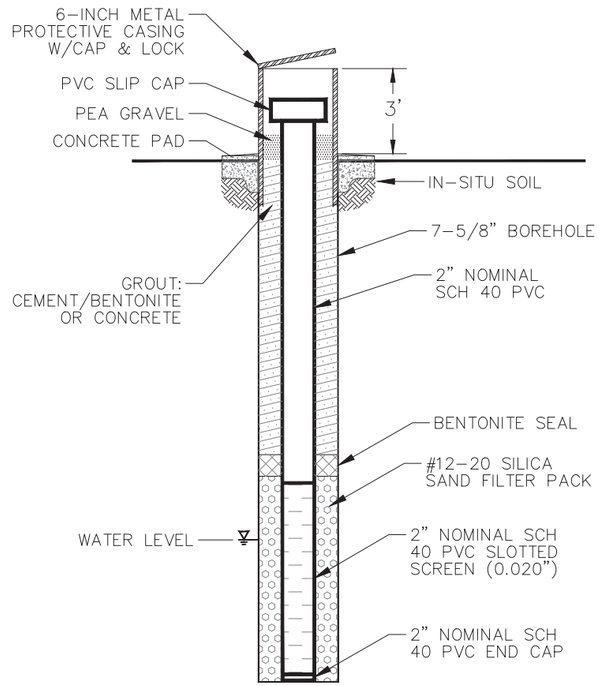


EXIT CATTLEGAURD AND CONTAINMENT CURB (SECTION) DETAIL 3
NTS



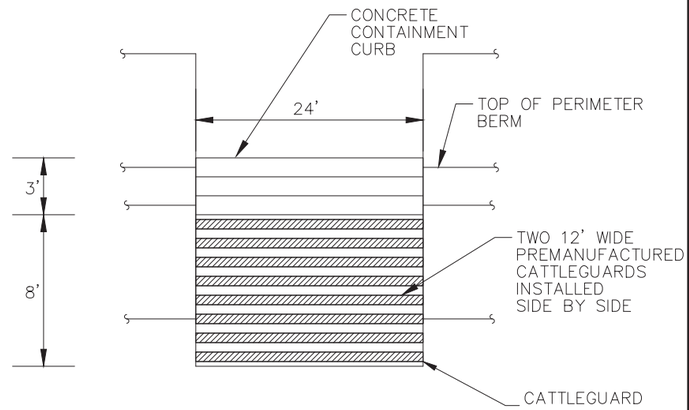
LFG MONITORING PROBE DIAGRAM 4
NTS

NOTES:
1. ELEVATION OF DEEPEST EXCAVATION IS 2626'.



GROUNDWATER MONITOR WELL DIAGRAM 5
NTS

NOTES:
1. USE THREADED SCREW JOINTS ONLY.
2. SEE PART III, ATTACHMENT 5 FOR ADDITIONAL INFORMATION REGARDING GROUNDWATER MONITOR WELLS.



EXIT CATTLEGAURD AND CONTAINMENT CURB (PLAN VIEW) DETAIL 6
SCALE: NTS

Well Name	State Plane X	State Plane Y	Elevation (ft)	Distance to next well (ft)
MW-1	1,282,567	10,498,553	2,663	600
MW-2	1,283,078	10,498,867	2,661	600
MW-3	1,283,589	10,499,182	2,658	600
MW-4	1,284,100	10,499,497	2,656	600
MW-5	1,284,611	10,499,811	2,653	493
MW-6	1,284,981	10,500,136	2,652	600
MW-7	1,284,660	10,500,642	2,653	598
MW-8	1,284,347	10,501,151	2,657	584
MW-9	1,284,032	10,501,643	2,659	503
MW-10	1,283,544	10,501,767	2,661	533
MW-11	1,283,093	10,501,484	2,662	533
MW-12	1,282,641	10,501,201	2,663	854
MW-13	1,281,910	10,500,760	2,666	848
MW-14	1,281,197	10,500,300	2,665	-
MW-1D	1,282,562	10,498,548	2,663	N/A
MW-4D	1,284,105	10,499,502	2,656	N/A
MW-8D	1,284,352	10,501,146	2,657	N/A

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WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

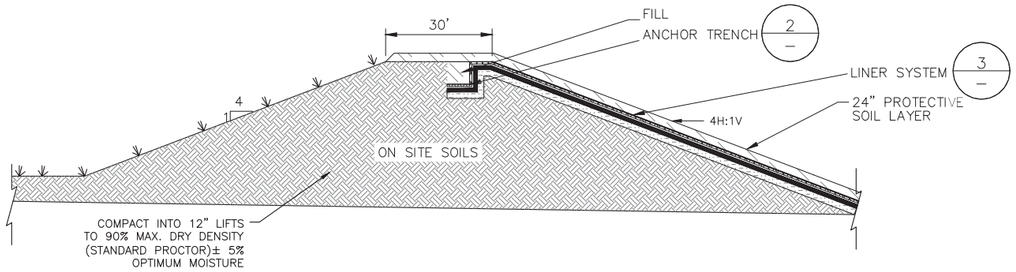
WST LANDFILL
REEVES COUNTY, TEXAS

CIVIL DETAILS 1

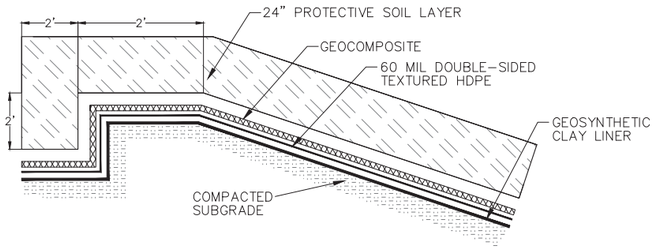
SHEET 18 OF 21
DWG NO. C-16

JOB NO. DB20.1166

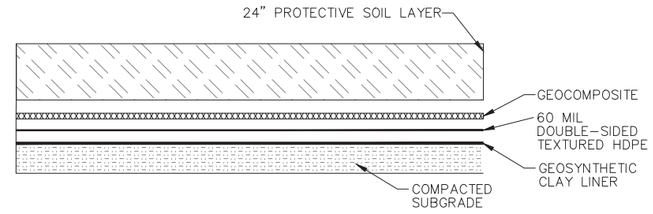
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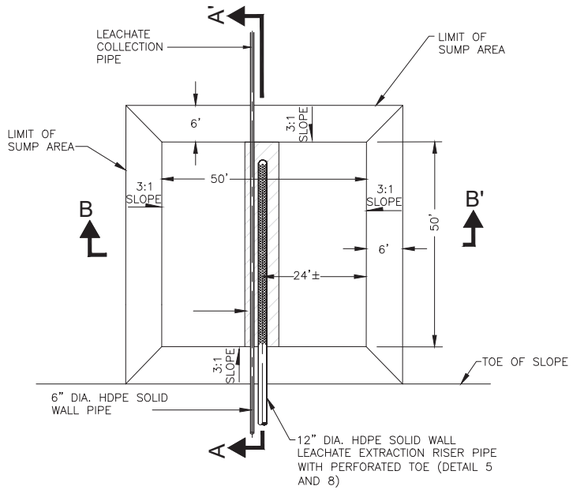
CELL PERIMETER BERM DETAIL 1 -
NTS



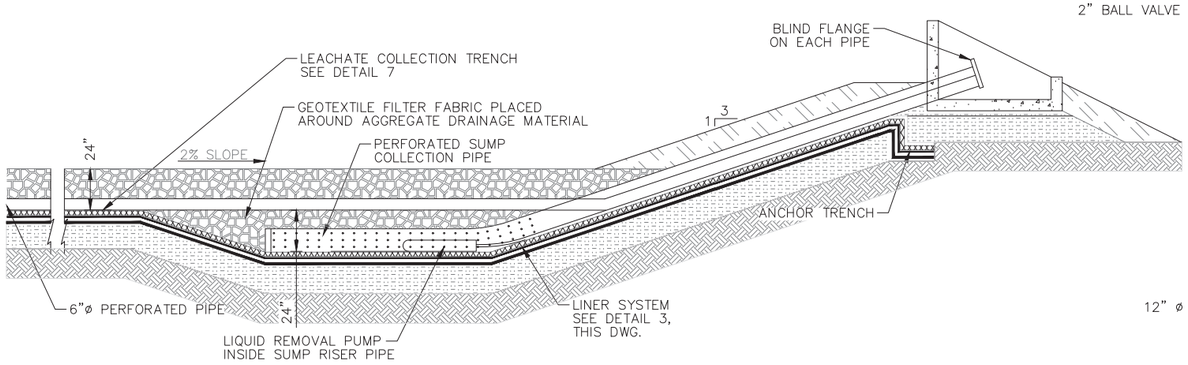
ANCHOR TRENCH DETAIL 2 -
SCALE: NTS



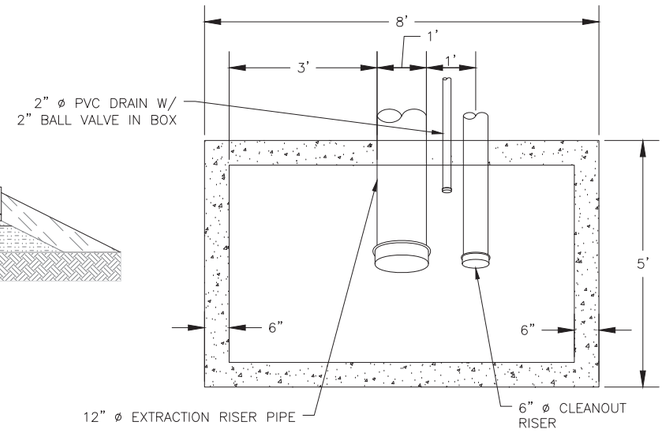
BOTTOM AND SIDESLOPE LINER SYSTEM 3 -
SCALE: NTS



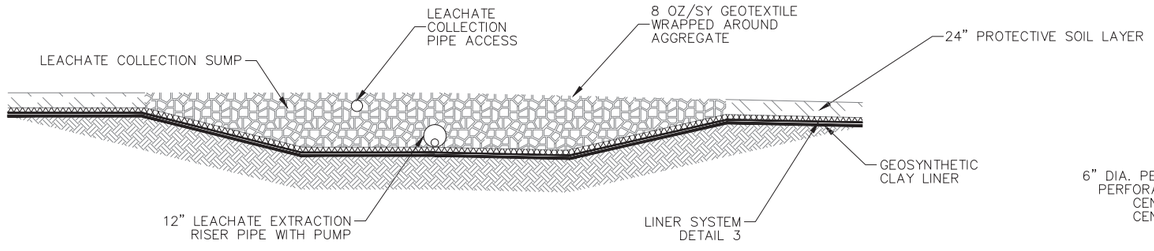
TYPICAL LEACHATE COLLECTION SUMP PLAN 4 -
NTS



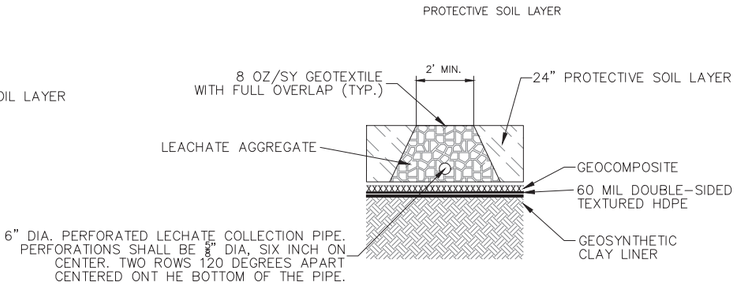
LEACHATE SUMP AND EXTRACTION RISER 5 -
NTS



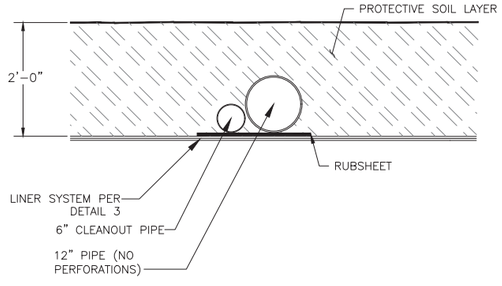
RISER VAULT PLAN 6 -
NTS



SUMP SECTION B-B' 7 -
NTS



LEACHATE COLLECTION TRENCH 8 -
SCALE: NTS



SIDE SLOPE RISER PIPE SECTION 9 -
SCALE: NTS

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TEXAS REGISTERED ENGINEERING FIRM F-286

WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

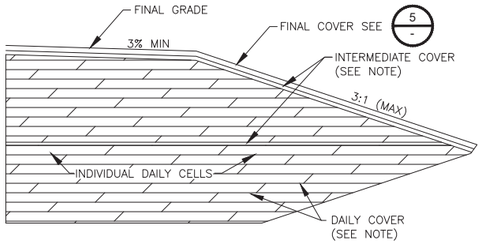
WST LANDFILL
REEVES COUNTY, TEXAS

CIVIL DETAILS 2

SHEET 19 OF 21
DWG NO. C-17

JOB NO. DB20.1166

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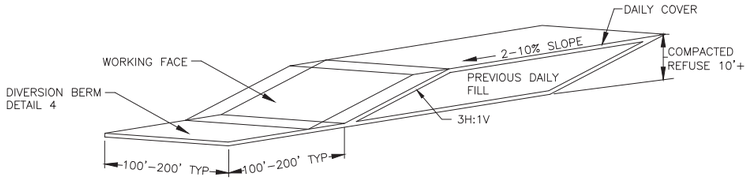


INTERMEDIATE COVER MINIMUM 12" SOIL APPLIED AND COMPACTED ON LIFTS WHICH HAVE NOT BEEN ACTIVE WITHIN 180 DAYS.

DAILY COVER ALTERNATE DAILY COVER OR MINIMUM 6" SOIL APPLIED AT THE END OF EACH WORKING DAY.

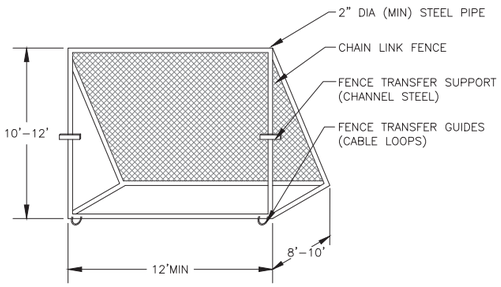
CLASS 1 SOIL BARRIER 4-FOOT-THICK CLAY RICH SOIL BARRIER AT MAXIMUM CLASS 1 WASTE HEIGHT

TYPICAL CROSS SECTION COVER APPLICATION 1 -
NTS

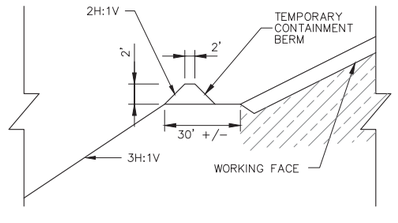


NOTE: REFUSE APPLIED IN LAYERS 2'-3' THICK TYPICAL AND COMPACTED BY REPEATED PASSES BY LANDFILL EQUIPMENT (COMPACTOR OR BULLDOZER)

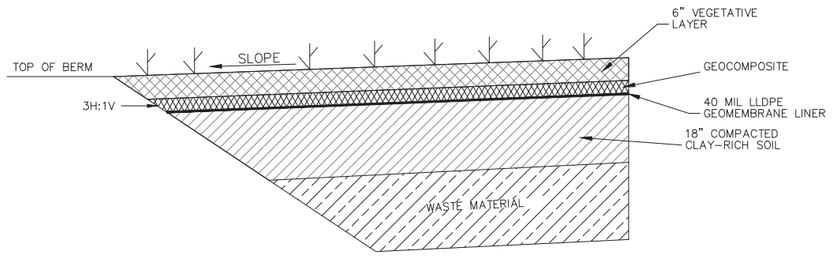
TYPICAL DAILY FILLING PLAN 2 -
NTS



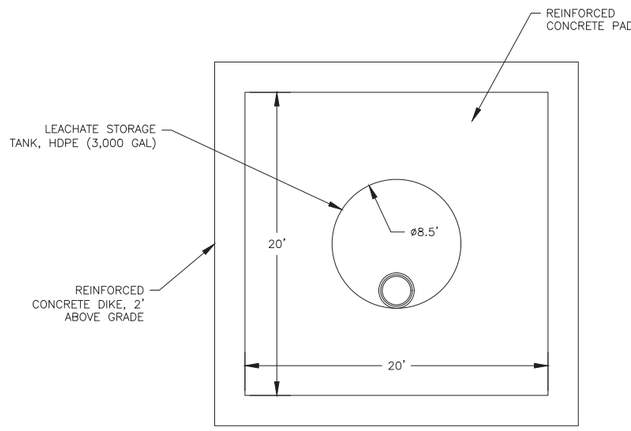
TYPICAL PORTABLE LITTER FENCE 3 -
NTS



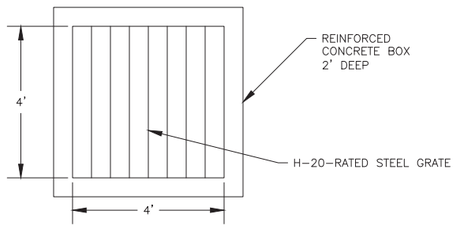
CONTACT WATER CONTAINMENT BERM 4 -
SCALE: NTS



FINAL COVER SECTION DETAIL 5 -
SCALE: NTS



LEACHATE STORAGE DETAIL 6 C-1
NTS



CITIZEN COLLECTION STATION SUMP DETAIL 7 C-1
NTS

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SOUTHLAKE, TEXAS 76092

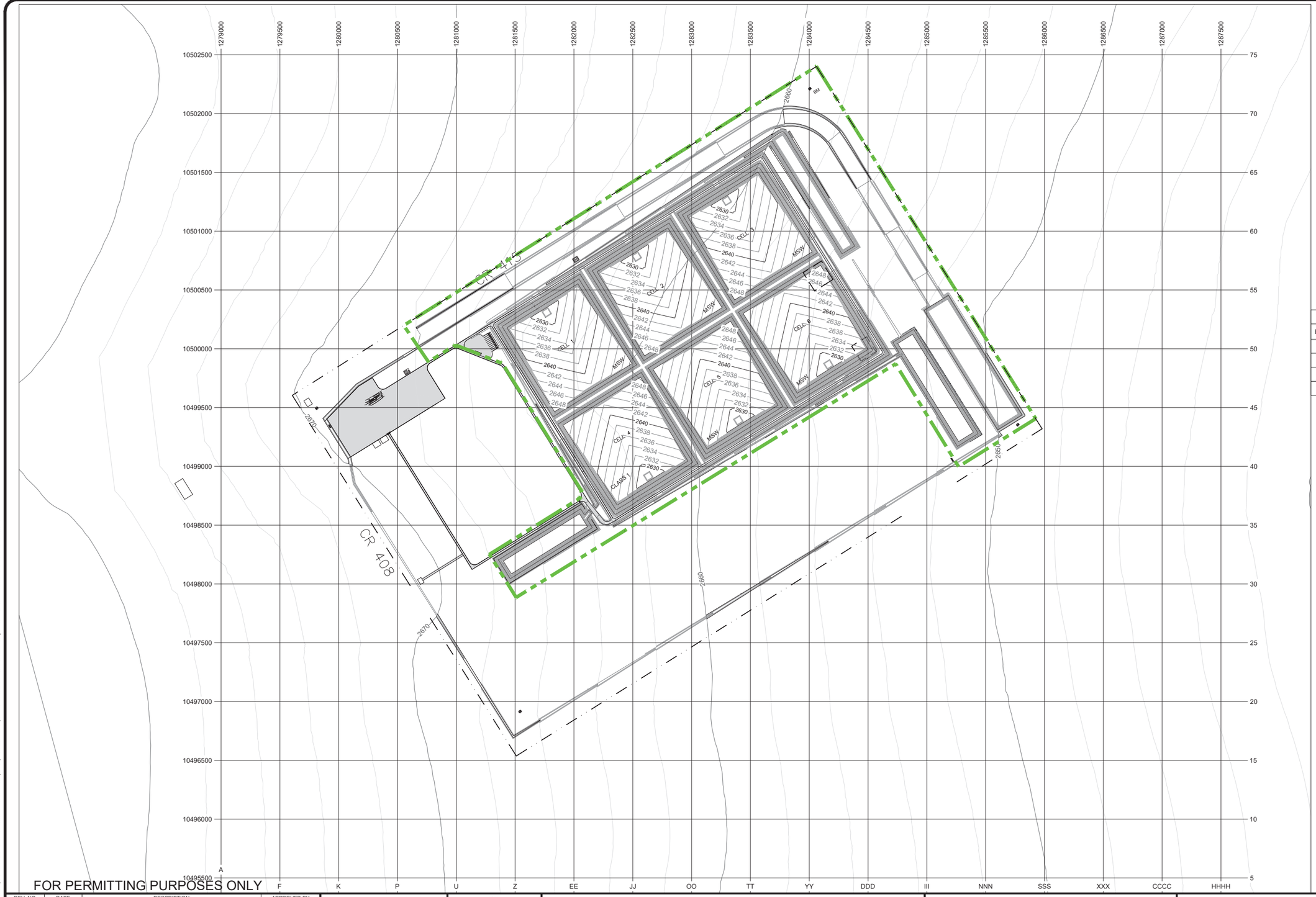
WST LANDFILL
REEVES COUNTY, TEXAS

CIVIL DETAILS 3

SHEET 20 OF 21
DWG NO. C-18

JOB NO. DB20.1166

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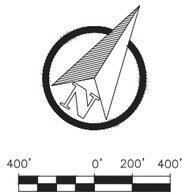


LEGEND

2650	EXISTING 10' CONTOURS
	EXISTING 2' CONTOURS
2640	PROPOSED 10' MAJOR CONTOURS
2642	PROPOSED 2' MINOR CONTOURS
	WST PROPERTY BOUNDARY
	WST PERMIT BOUNDARY
	CONTROL POINTS
BM	BENCH MARK = CP 25

Point Table				
Point #	Elevation	Northing	Easting	Description
24	2669.96	10499494.93	1279813.75	CONTROL PONT
25	2659.30	10502211.55	1284004.91	CONTROL PONT
26	2666.60	10496914.84	1281542.08	CONTROL PONT
27	2649.40	10499353.42	1285773.20	CONTROL PONT

NOTE:
1. CONTROL POINTS ARE BASED ON NAD 83 TEXAS STATE PLANE CENTRAL ZONE US FOOT. (TX83-CF)
2. SITE BENCHMARK IS AT CONTROL POINT 25.
3. SEE DRAWING C-2 FOR TYPICAL CELL LAYOUT.
4. SEE DRAWING C-12 FOR EXCAVATION PLAN.
5. SEE DRAWING C-13 FOR FINAL COVER PLAN.



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GUNDAR PETERSON
103091
LICENSED
PROFESSIONAL ENGINEER
7/22/2026

DBS&A
a Geo-Logic Company
TEXAS REGISTERED ENGINEERING FIRM F-286

WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

WST LANDFILL
REEVES COUNTY, TEXAS

LANDFILL GRID

SHEET 21 OF 21
DWG NO. C-19

JOB NO.
DB20.1166

Z:\1YA\NMTX\S\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\CAD\PRODUCTION\C-19 LANDFILL GRID.DWG July 14, 2026 – 3:00 PM BY: GLA USER

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Appendix III-4-B

Leachate and Contaminated Water Plan

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Leachate and Contaminated Water Plan

WST Landfill

Reeves County, Texas

Prepared for
West Sun Tex, LLC
Pecos, Texas

Prepared by

DBS&A
a Geo-Logic Company

Texas Registered Engineering Firm F-286
Texas Registered Geoscience Firm No. 50045
12303 Technology Boulevard, Suite 930D
Austin, Texas 78727
www.dbstephens.com
DB20.1166



July 2026

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Table of Contents

1. Introduction 1
2. Key Definitions 1
3. Overview of Leachate 1
4. Overview of Leachate Collection and Removal System 2
   4.1 Drainage Layer 2
   4.2 Leachate Collection Pipes in Gravel Chimney 2
   4.3 Leachate Collection Sumps 3
   4.4 Leachate Aggregate 3
   4.5 Leachate Pump and Riser System 3
   4.6 Conveyance 4
   4.7 Leachate Storage 4
5. Analysis of Leachate Collection System Adequacy 5
   5.1 Pipe Strength Analysis 5
   5.2 Geocomposite and Geotextile Flow Capacity Analysis 6
   5.3 Determination of Peak Leachate Generation Rate 7
      5.3.1 Open Conditions Analysis 8
      5.3.2 Intermediate Conditions Analysis 8
      5.3.3 Closed Conditions Analysis 8
      5.3.4 Leachate Head 9
      5.3.5 Leachate Pipe and Sump Sizing 9
      5.3.6 Leachate Tank Sizing 9
6. Operations 10
   6.1 Leachate and Contaminated Water Minimization 10
   6.2 Contaminated Water Treatment and Disposal 10
   6.3 Monitoring and Maintenance 11
   6.4 Recordkeeping 11

List of Attachments

III-4-B1 Calculations
III-4-B2 HELP Model Output
III-4-B3 References

1. Introduction

Daniel B. Stephens & Associates, Inc. (DBS&A) has prepared this leachate and contaminated water plan (LCWP) for the WST Landfill. This LCWP describes the leachate collection system design and provides procedures for the storage, treatment, and disposal of leachate, contaminated water, and gas condensate.

2. Key Definitions

Per 30 TAC 303.3(78), leachate is defined as a liquid that has passed through or emerged from solid waste and contains soluble, suspended, or miscible materials removed from such waste.

Contaminated water is defined in 30 TAC 330.3(36) as leachate, gas condensate, or water that has come into contact with waste.

30 TAC 330.3(57) defines gas condensate as the liquid generated as a result of any gas recovery process at a municipal solid waste facility.

3. Overview of Leachate

Leachate generation and the composition of the leachate are influenced primarily by the following factors:

- The availability and potential for water to infiltrate or seep through the landfill
- The physical and chemical characteristics of the waste (including but not limited to moisture content, solubility, and absorptive capacity)
- The rate of biological decomposition of the waste (which is influenced by pH, temperature, and oxygen availability)

Most leachate in a landfill stems from precipitation on active areas on the landfill or from precipitation that percolates through cover. Precipitation on areas of the landfill that have been capped with final cover will run off rather than infiltrating into the waste, which will greatly reduce long-term leachate generation in those sections.

4. Overview of Leachate Collection and Removal System

The leachate collection and removal system (LCRS) is designed to ensure that leachate head does not exceed 12 inches on the liner per 30 TAC Chapter 330. All leachate collection systems will be constructed with materials that are chemically resistant to the leachate expected to be generated. The leachate management system consists of the following components: (1) drainage layer, (2) collection pipes in gravel chimney, (3) sumps, risers, and pumps, (4) an evaporation pond, and (5) storage tank(s) with secondary containment.

4.1 Drainage Layer

The bottom drainage layer consists of a protective soil layer and 150-mil geocomposite, which sits on top of high-density polyethylene (HDPE) membrane liner. The drainage layer sits below the waste and is sloped to convey leachate to the leachate collector pipes and ultimately to the sump. A 2-foot protective soil layer will be installed above the geocomposite and will serve to prevent damage to the geocomposite drainage layer during waste filling and construction operations. Geonet compression calculations are provided in Section 5 of Attachment III-4-B1.

4.2 Leachate Collection Pipes in Gravel Chimney

The leachate collection system uses leachate collection pipes that run along the center of each cell at the low point.

The pipes will be placed in 2-foot-wide by 2-foot-deep leachate collection trenches (chimney) situated within the protective soil layer. Along the inside of the trenches, 6-inch-diameter perforated HDPE pipes will slope toward the leachate sumps at a minimum grade of 2.8 percent. The collector pipes are HDPE 6-inch standard dimension ratio (SDR) 11 with ⅝-inch perforations, with four perforations per foot of piping. According to the calculations performed in Section 3 of Attachment III-4-B1, the pipes meet design requirements when sized at SDR 9 or SDR 13. The perforated collector pipes will be placed at the invert of the bottom slopes and embedded in granular material. The collection pipes and aggregate embedment will be wrapped with a geotextile to prevent soil from entering the granular layer and potentially clogging the perforated collection pipe. The perforated collector pipes discharge directly into the sump area at the low points of each of the cells. See Drawing C-1 (Appendix III-4-A) for sump layout, leachate collection trench, and collector pipe details.

Extraction risers are provided at the top of the exterior side slopes for periodic maintenance of the collector pipes for each of the cells. The risers are constructed of minimum 6-inch-diameter non-perforated HDPE pipe that is joined to the perforated collector pipe. The 6-inch pipe size allows sufficient cross-sectional area for effective cleaning by pressurized jetting equipment. Details for the extraction risers are shown in Drawing C-17 (Appendix III-4-A).

Pipe crushing, buckling, and ring deflection calculations are provided in Section 4 of Attachment III-4-B1 to demonstrate that the leachate collection piping will be able to adequately handle maximum overburden pressures.

4.3 Leachate Collection Sumps

Leachate that enters the drainage layer and collection lines will be discharged into collection sumps. The sumps will be located at the toe of the landfill slopes in the center of each cell. The sump consists of a 2-foot-deep inverted truncated square pyramid with 3 horizontal (H): 1 vertical (V) sidewalls. The base of the sump will be 50 feet by 50 feet. Each sump will handle leachate generated at constant peak flow conditions for 2.32 days from each cell. The peak daily generation rate was obtained from the Hydrologic Evaluation of Landfill Performance (HELP) model (Attachment III-4-B2). See Drawings C-2 and Drawing C-17 (Appendix III-4-A) for layout and details of the leachate collection sumps. Sump capacity calculations are provided in Section 7.3 of Attachment III-4-B1.

4.4 Leachate Aggregate

Leachate aggregate will be placed in the leachate collection trenches and sumps. Aggregate will consist of natural or manufactured materials, and must meet the following sizing criteria:

85 percent size of aggregate > 1.7 (perforation hole diameter)

$$D_{85} > 1.7\ (\phi)$$

If the leachate collection pipe perforations have a ⅝-inch diameter (as outlined in Section 3.2.1 of Attachment III-4-B1), the aggregate 85 percent size must be greater than 1.06 inches.

4.5 Leachate Pump and Riser System

Leachate will be extracted from the collection sumps with submersible pumps, which can be operated either manually or automatically. Leachate levels will be monitored to ensure that the head buildup is no greater than the lowest point of the landfill floor adjacent to the sump.

Sump riser pipes will be located directly up the side slopes from the sumps at the disposal area perimeter. Risers will be a minimum 12-inch-diameter SDR 11 HDPE pipe, and will provide a means for lowering submersible pumps down the side slope incline into the collection sumps. The lower portion of the riser pipe within the sump is perforated to allow leachate to flow to the pumps.

The depth of leachate on the liner will be measured either using electronic transducers mounted on the leachate pump or manually gauged at least every month. The leachate pumps will be sized appropriately to ensure that leachate levels can be maintained at a depth no greater than the low point of the landfill floor adjacent to the sump in each cell. If electronic transducers are used, they will be installed at appropriate elevations to activate the pump when the leachate level reaches the activation (24 inches), and deactivate the pump when the leachate level is less than 6 inches from the bottom of the sump.

4.6 Conveyance

Leachate will be transferred from the sump to the on-site evaporation pond or storage tank by tanker truck or pipeline for treatment and disposal. Spill containment for the truck hose connection and loading will be provided by a portable trough. Protection will also be provided at hose connection locations. Contaminated water will be transported to an authorized and permitted facility, or to the on-site evaporation pond for treatment and disposal.

4.7 Leachate Storage

Leachate will be stored on-site in one or more on-site leachate storage tank(s) or evaporation pond prior to transportation to a permitted treatment facility, if needed.

The evaporation pond will be monitored to ensure a minimum of 1 foot of freeboard is available at all times to handle the 100-year, 24-hour storm event. In the event that the liquid level rises in the pond to where less than 1 foot of freeboard is available, contaminated water will be hauled off to an authorized and permitted facility.

At least one 3,000-gallon HDPE tank, with a maximum of three tanks, will be located at the facility to store contaminated water that has been produced at the landfill. The tank is appropriately sized to store one year's worth of leachate based on the maximum leachate generation rate determined from the HELP model runs. Secondary containment will be provided for the leachate storage tank, including 110 percent of the largest tank volume and precipitation from the 25-year, 24-hour storm within the secondary containment area. Larger and/or

additional tanks may be used as long as the proper containment is provided and Texas Commission on Environmental Quality (TCEQ) approval is obtained in advance. Calculations are provided in Sections 7.4 and 7.5 of Attachment III-4-B1.

5. Analysis of Leachate Collection System Adequacy

Leachate collection is a critical function of modern landfills. Therefore, the components of the leachate collection system must be designed to ensure continued performance through the entire life of the landfill and post-closure. To determine whether the selected leachate collection system components are appropriate for the specific landfill, the following design objectives must be met:

- Ensure that the leachate collection system is able to function with the loading associated with landfill equipment and with the weight of the overlying waste column.
- Ensure that the leachate collection system is sized appropriately to collect and convey the peak daily leachate generation rate during all phases of development.
- Ensure that the system displays resistance to chemicals of concern based on a 48-hour exposure period, up to temperatures of 120°F.

All components of the WST leachate collection system design have been evaluated and found to meet the design objectives. This section provides an overview of the detailed analysis and supporting information provided in Attachment III-4-B1.

5.1 Pipe Strength Analysis

The following pipes were analyzed to determine their adequacy to resist loads and convey leachate at WST Landfill:

- 6-inch SDR 9/11/13 leachate collection pipe in leachate chimney
- 12-inch SDR 9/11/13 leachate riser pipe on side slopes
- 6-inch SDR 9/11/13 leachate cleanout pipe on side slopes

Analysis was completed to determine the peak loading on the leachate conveyance pipes for two scenarios:

1. Full Loading: Loading on the pipe due to landfill at final grade
2. Point-Source Loading: Loading on pipe due to 5 feet of waste (half of one 10-foot lift) and compactor concentrated load

Based on the calculations provided in Section 2 of Attachment III-4-B1, the full loading scenario is shown to provide greater loading on the conveyance pipes than point-source loading. Therefore, all subsequent calculations use the full loading values to analyze pipe strength and adequacy for use at WST Landfill.

When pressure is applied to the sidewall of a pipe due to loading, the pipe will undergo a deformation identified as ring deflection. This deformation results in an elliptical-shaped pipe with the shortest cross-section aligned with the direction of loading. The leachate collection and conveyance pipes have been analyzed to ensure that the degree of ring deflection does not exceed material performance specifications. In addition to verifying that the pipe is operating within manufacturer recommendations for ring deflection, this analysis is also important for pipe cleaning operations. By knowing the maximum ring deflection and resulting minimum diameter within the pipe, the appropriate cleanout jet head size can be selected. The maximum ring deflection calculated for the pipes to be used at WST Landfill is 6.5 percent at SDR 13, which is less than the 8.0 percent maximum allowable ring deflection recommended in Table 11 of WL Plastics V 2.0 Supplement (Attachment III-4-B3). Therefore, the pipes are deemed able to support the overlying waste with continued performance based on ring deflection. See Section 3 of Attachment III-4-B1 for additional information and pipe analyses.

The leachate collection and conveyance pipes were also reviewed to ensure that the pipes would not undergo crushing failure (pipe collapse) or buckling (bending) failure when sized at SDR 11. All pipes were found to have a safety factor of 2.5 or more for both failure scenarios. The pipes also demonstrate an appropriate safety factor when sized at SDR 9 or SDR 13. Therefore, the pipes are deemed appropriate for loading associated with landfill construction and operations. See Section 4 of Attachment III-4-B1 for additional information.

5.2 Geocomposite and Geotextile Flow Capacity Analysis

The geocomposite is the principal leachate collection and conveyance material, and is located above the composite liner in all areas. The geocomposite is used to direct leachate toward the leachate collection pipes, and ultimately to the leachate sumps for removal. The geocomposite has been analyzed to ensure that it is able to convey the peak daily leachate generation rate without restrictions or backup for the landfill during open, intermediate, and closed conditions.

It is recognized that the performance of the geocomposite will decrease after installation due to partial clogging of the geotextile and the compression of the geonet (both components of the geocomposite). This occurs due to compression from the loading associated with the overlying waste, as well as creep and intrusion performance reduction factors.

As the geonet is considered the principal conveyance structure component of the geocomposite, it was analyzed first to determine its resultant hydraulic conductivity after compression. Using manufacturer's material specifications for a typical geocomposite, performance reduction factors and a reduction in geonet thickness were determined to reduce the "as-installed" hydraulic conductivity. This reduced value is then used as an input in the HELP model as the maximum leachate conveyance rate for that layer, which is described in subsequent text. See Section 5.1 of Attachment III-4-B1 for determination of the reduced hydraulic conductivity of the geonet.

Similar to a reduction in performance of the geonet component, the initial permittivity of an installed geotextile (either as a component of the geocomposite or as a standalone product such as used in the chimney) will be reduced based on multiple performance factors, which are principally associated with clogging (soil, chemical, and biological clogging). Therefore, it is important to apply performance reduction factors to the geotextile to ensure that it will perform adequately should clogging occur. The peak daily leachate generation rate determined from the HELP model was used and the required permittivity that a geotextile must meet at the time of installation was back calculated to allow comparison to manufacturer specifications. See Section 5.2 of Attachment III-4-B1 for this analysis.

5.3 Determination of Peak Leachate Generation Rate

To predict the amount of leachate that may be generated during open, intermediate, and closed conditions, the landfill was modeled using the HELP modeling program. This program was developed by the U.S. Army Corps of Engineers to assist designers in determining the effectiveness of landfill liner designs. The HELP model is an unsaturated flow, water balance model that uses site-specific climate, soil, and design data to predict the leachate generation rates, leachate head on the bottom liner system and percolation through the bottom liner for the proposed landfill design over a specified time period. The HELP model requires three types of input data including climatological, soil, and general design data. The model will synthetically generate a table of precipitation values based on provided latitude and longitude values. Ultimately, this model is used to determine the leachate generation rate, which represents the rate at which leachate will reach the leachate collection layer below the waste. Assumptions

used for this model are summarized in Section 6.1 of Attachment III-4-B1. HELP model results are summarized in Section 6.2 of Attachment III-4-B1. See Attachment III-4-B2-1 for a summary of all HELP model inputs and results.

5.3.1 Open Conditions Analysis

The HELP model was first used to simulate open conditions when the facility begins to accept waste. The HELP model estimates that leachate will be generated from the first lift of waste deposited, when it is overlain with 6 inches of daily cover. The first run was modeled for one year, which is the minimum time increment provided in the model. A peak daily leachate generation rate of 38.8 cubic feet per day per acre (ft^3/d-ac) was determined for this scenario. The output file for the first run is provided in Attachment III-4-B2-2. The HELP model sets the field capacity for MSW at 0.292 vol/vol, and the first scenario was modeled with a waste moisture content of 0.28 vol/vol. This value falls within the upper range of reliable moisture content measurements for landfills at or below field capacity. For the subsequent scenarios, the existing waste layer was assigned the final moisture content of the previously modeled scenario, while each new lift of waste was given a moisture content of 0.28 vol/vol. A second run was modeled for an additional 10 feet of waste overlain with 6 inches of daily cover. The output file for the second run is provided in Attachment III-4-B2-3. No leachate was generated in this scenario or any of the subsequent runs modeling intermediate and closed conditions given the conservative assumptions used in the models.

5.3.2 Intermediate Conditions Analysis

One scenario was run for the intermediate conditions at 76 feet of waste. The top layer of waste is assumed to be overlain with 12 inches of intermediate cover material. The model was run for a 10-year period. The HELP intermediate conditions run estimates that no leachate will be generated. This is anticipated because the incoming waste is at a moisture content lower than the field capacity of the waste, and due to the large amount of evaporation versus precipitation of the area. The output file for intermediate conditions is provided in Attachment III-4-B2-4.

5.3.3 Closed Conditions Analysis

Under the closed conditions model, 152 feet (full height) of waste is assumed to be overlain with final cover. The model was run for a 30-year period. Based on this analysis, no leachate will be generated. Similar to the intermediate conditions, no leachate is generated because the incoming waste is at a moisture content lower than the field capacity of the waste, and due to the large amount of evaporation versus precipitation of the area. With the final cover in place,

minimal water will enter the landfill, resulting in negligible leachate generation. The output file for closed conditions is provided in Attachment III-4-B2-5.

5.3.4 Leachate Head

Based on the HELP model results for all modeled runs, the maximum leachate head was found to be 0.0451 inch for the first lift of waste (10 feet) in open conditions. This result complies with 30 TAC 330.331 requirements that less than 30 centimeters (cm) of head be present over the liner. It is also noted that the maximum head buildup of 0.0451 inch is less than the compressed geonet thickness at full load.

5.3.5 Leachate Pipe and Sump Sizing

The leachate pipes and sumps have been sized to accommodate the peak daily leachate generation rate determined through HELP modeling described in the previous sections. As noted, the peak leachate generation rate of all modeled operating conditions (including open, intermediate, closed) is 38.8 ft^3/d-ac, which equates to 0.0092 cubic feet per second (cfs) when considering the largest cell (20.95 acres). This peak daily leachate generation rate is based on open conditions with one lift of waste (10 feet) and daily cover.

Based on the design configuration and parameters for the leachate collection pipe and aggregate, it has been determined that they are appropriately sized to handle these peak flows. Demonstration is provided in Section 7.2 of Attachment III-4-B1.

5.3.6 Leachate Tank Sizing

At least one 3,000-gallon tank, with a maximum of three tanks, will be located at the facility to store leachate that has been extracted from the landfill. This size of tank is appropriately sized to store one week worth of leachate based on the maximum leachate generation rate determined from the HELP model runs and assumes no leachate recirculation. Secondary containment will be provided for 110 percent or more of the total tank volume. Larger and/or additional tanks may be used as long as the proper containment is provided. The demonstration is provided in Section 7.3 of Attachment III-4-B1. It is noted that an evaporation pond may also be available for leachate storage, if needed. See Drawing C-18 (Appendix III-4-A) for leachate storage tank dimensions. See Appendix III-4-D for evaporation pond sizing. The contaminated stormwater and leachate pond in Cell 6, which is double lined, will also be used for leachate storage.

6. Operations

6.1 Leachate and Contaminated Water Minimization

The prevention of ponding water helps to prevent infiltration and reduce the volume of leachate produced by the facility. Stormwater runoff will be channeled on-site into retention ponds. If ponded water has come into contact with waste, leachate, or contaminated soil, it will be treated as contaminated water. An intact layer of on-site soil will be placed over the waste to prevent rainfall from coming into contact with the waste. Swales, culverts, and ditches will be constructed as necessary to prevent stormwater from reaching active fill areas. As cells in the landfill are brought to final grade, final cover will be installed as detailed in the Final Closure Plan (Attachment III-8). The final cover soil will be vegetated to limit erosion, prevent stormwater infiltration, and promote evapotranspiration.

6.2 Contaminated Water Treatment and Disposal

Contaminated water will be evaporated through the use of an evaporation pond or stored in storage tanks. Tanker trucks will haul off any excess contaminated water and transport it to a permitted wastewater treatment plant. Any liquids transferred to a wastewater treatment plant will be handled in compliance with TCEQ requirements, as well as any requirements of the plant operator. No leachate will be recirculated.

Water that comes in contact with leachate, waste, or gas condensate will be considered contaminated and confined to the working face area. The contaminated water will be collected in the leachate collection system. In the case of a rainfall event where the contaminated surface water runoff remains on the working face for more than 48 hours, the excess contaminated water will be pumped out and transported to either the storage tanks, evaporation pond, or directly off-site for proper disposal or treatment. There will be no off-site discharge without prior authorization from the TCEQ.

Interim drainage controls will minimize the volume of water from entering the leachate collection system, as well as potential flooding in the developed cell area. Water collected outside of the working face but within cell boundaries from areas with intact daily cover is considered to be uncontaminated. This water may be pumped out of the excavated area if ponding is excessive and does not evaporate within 48 hours. The facility will follow all applicable publicly owned treatment works (POTW) and Texas Pollutant Discharge Elimination System (TPDES) requirements.

6.3 Monitoring and Maintenance

Regular maintenance and monitoring will be performed on components of the leachate collection system throughout the active life on the site as well as during the post-closure care maintenance period. The following maintenance and monitoring activities will be performed:

- Electronic transducers on leachate pumps, or in the sump, or on cleanout risers will be placed to measure the depth of the leachate on the liner. Manual measurements may also be used. The depth of fluid will be recorded at least once a month, as well as after significant rainfall events during the active life of the landfill. Measurements will be recorded semiannually during the post-closure care period.
- Portable pumps will be maintained per manufacturer recommendations. Backup portable pumps will remain available in the event that a primary pump requires repair or replacement. Maintenance on the pumps will take place during the active life of the facility, as well as during the post-closure care period.
- Cleanouts will be provided on all leachate collection pipes. Leachate that is stored in the leachate storage tanks, or clean water, may be used for pipe cleanout activities. Cleanout activities will occur as needed during the active life of the facility, as well as during the post-closure care period.
- The storage pond will be inspected weekly, as well as after every rainfall event in excess of 2 inches to verify that greater than 1 foot of freeboard remains.
- Storage tanks will be inspected weekly for leakage, and leachate depths will be recorded.

6.4 Recordkeeping

Records relating to the LCWP will be retained until the end of post-closure monitoring. The following records will be including within the site operating record (SOR) at the facility:

- Leachate monitoring field information records
- Leachate analysis results reports
- Leachate and contaminated water removal and disposal records

The full list of recordkeeping requirements is documented in the Site Operating Plan (Part IV).

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Attachment III-4-B1

Calculations

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Attachment III-4-B1. LCWP Calculations

1. Introduction

This document outlines the assumptions and calculations used to design the leachate collection system at the WST Landfill.

2. Loads on Leachate Collection System

To determine the maximum loading on the leachate conveyance pipes, two loading scenarios are considered:

1. Full Loading: W_{FL} = Loading on pipe due to landfill at final grade
2. Point-Source Loading: W_{PS} = Loading on pipe due to 5 feet of waste (half of one 10-foot lift) and compactor concentrated load

The higher loading values of the two scenarios will be used in subsequent calculations to determine the ability of each of the pipes to resist the load. The leachate conveyance pipes in Table III-4-B1-1 are analyzed.

Table III-4-B1-1. Leachate Conveyance Pipe Details

Case	Nominal Pipe Diameter (inches)	Outer Diameter (B_c) (feet)	Pipe Type
1	6	0.553	Perforated leachate collection pipe
2	12	1.063	Extraction riser pipe on side slope
3	6	0.553	Leachate cleanout pipe on side slope

The outer diameter (B_c) for each pipe was determined by calculating the average outer diameter of high-density polyethylene (HDPE) pipe from the values presented in Sclairpipe's HDPE pipe technical specifications sheet (Attachment III-4-B3-12). The calculated values were converted from inches to feet for Table III-4-B1-1.

2.1 Full Loading Assumptions

The following assumptions are made for the full-loading scenario:

First, Marston's formula is used to calculate the prism load on the pipe (Equation 9-8 from Attachment III-4-B3-3)

$$W_c = C_c w B^2_c$$

where W_c = Linear load on pipe (pounds per foot [lb/ft])
C_c = Load coefficient (Table 9-3 in Attachment III-4-B3-3)
w = Unit weight of overlying fill (pounds per cubic foot [pcf])
B_c = Outer diameter of pipe (feet)
H = Height of fill above the top of the pipe (feet)

It is assumed that the soil conditions immediately under the pipe are the same as those surrounding the pipe trench. Thus, the settlement ratio can be considered equal to zero. This makes the load coefficient (C_c) equal to the height of the fill (H) divided by the outer diameter of the pipe (B_c). The equation then simplifies to:

$$W_c = C_c w B_c^2 = \left(\frac{H}{B_c}\right) w B_c^2 = H w B_c$$

The unit weight of waste with a typical soil cover compaction value of 10.0 kilonewtons per cubic meter (kN/m^3) (63.7 pcf) was selected from Table 2 from the Unit Weight of Municipal Solid Waste (Attachment III-4-B3-1). The conversion from kN/m^3 to pcf is shown below:

$$\frac{10.0\ \text{kN}}{\text{m}^3} * \frac{1.0\ \text{m}^3}{35.3\ \text{cf}} = \frac{0.3\ \text{kN}}{1\ \text{cf}} * \frac{1000\ \text{N}}{1\ \text{kN}} = \frac{283.2\ \text{N}}{1\ \text{cf}} * \frac{0.225\ \text{lb}}{1\ \text{N}} = 63.7\ \text{pcf}$$

The unit weight of the gravel of (20.0 kN/m^3 or 127 pcf) in the collection trench was selected from the saturated value presented in the soil properties technical note presented by ABG (Attachment III-4-B3-2). The on-site soil density is assumed to be 105 pcf based on the conservative soil density values available in the geology report (Attachment III-5).

The thickness of the overlying waste is 152 feet for the perforated leachate collection pipe (Case 1). The thickness of the overlying waste is 62 feet for the leachate extraction pipe and cleanout pipe on the side slope (Case 2 and Case 3).

2.2 Point-Source Loading Assumptions

D.L. Holl's integration of Boussinesq's formula is used to calculate the load on the pipe due to a superimposed concentrated load, corresponding to a landfill compactor (Equation 9-19 in Attachment III-4-B3-3).

$$W_{sc} = C_s \frac{PF}{L}$$

where W_{sc} = Load on pipe (lb/ft)
P = Concentrated load (lb)
F = Impact factor
C_s = Load coefficient, a function of $B_c/2H$
H = Height of fill above pipe (feet)
B_c = Outer diameter of pipe (feet)
L = Effective length of pipe (feet)

For the point-source loading calculations, 5 feet of waste (half lift) is assumed to be the minimum anticipated waste thickness prior to the use of a compactor.

The total weight of the compactor (Caterpillar Model 836, Attachment III-4-B3-4) is divided by two axles:

P = 125,622 lb/2 = 62,811 lb/axle

An impact factor of 1.0 (F) was selected as the height of the fill exceeds 3 feet (Table 9-4 of ASCE-60, Attachment III-4-B3-3).

The effective length of pipe was set to 3 feet (Section 9.3.1.1 of ASCE-60, Attachment III-4-B3-3).

The height of fill above each pipe (H) is shown in Table III-4-B1-2.

Table III-4-B1-2. Height of Fill (H) for Point-Source Loading Calculations

Case #	Pipe Diameter (inches)	H (description)	Location
1	6	1.5 feet of drainage layer material + 5 feet of waste (1/2 lift)	Perforated leachate collection pipe
2	12	3 feet of drainage layer material + 5 feet of waste (1/2 lift)	Extraction riser pipe on side slope
3	6	3.5 feet of drainage layer material + 5 feet of waste (1/2 lift)	Leachate cleanout pipe on side slope

2.3 Load Coefficient

The load coefficient (C_s) for use in the Boussinesq formula can be determined using the outer diameter (B_c), height of fill (H), and effective length of pipe (L). The calculated values for $B_c/2H$ and L/2H are shown in Table III-4-B1-3. These values were rounded to the nearest tenth, and the ratios were used in Table 9-3 of ASCE No. 60 (Attachment III-4-B3-3) to determine the load coefficients for each case.

Table III-4-B1-3. Load Coefficients for Full and Point-Source Loading Calculations

Case #	Pipe Diameter (inches)	B_c (feet)	H (feet)	L	$B_c/2H$	L/2H	Cs
1	6	0.553	6.5	3	0.04	0.23	0.037
2	12	1.063	8.0	3	0.07	0.19	0.037
3	6	0.553	8.5	3	0.03	0.18	0.037

2.4 Case 1: Leachate Collection Pipe (6-inch)

Table III-4-B1-4. Average Load on Leachate Collection Pipe at Final Grade

Layers	Thickness (feet)	Density (pcf)	Load (psf) Thickness (feet) x Density (pcf)
Final Cover	3.00	105	315
Waste	152	63.7	9,682
Aggregate	1.50	127	191
Cumulative Load (psf)			10,188
Total Thickness (feet)			156.5
Average Density (Total Load/Total Thickness) (pcf)			65.1

Per Marston's simplified formula, multiplying the height of final cover and waste by the average density (w), as well as the outer diameter of the pipe (B_c) results in the average load on the pipe (Section 9.6.2 of ASCE-60, Attachment III-4-B3-3):

$$W_c = HwB_c$$

$$W_c = 156.5 \text{ ft} * 65.1 \frac{\text{lb}}{\text{ft}^3} * 0.553 \text{ ft} = 5{,}634 \frac{\text{lb}}{\text{ft}} = 470 \frac{\text{lb}}{\text{in}}$$

Table III-4-B1-5. Average Load on Leachate Collection Pipe from Half-Lift of Waste (5 feet)

Layers	Thickness (feet)	Density (pcf)	Load (psf) Thickness (feet) x Density (pcf)
Waste	5.00	63.7	319
Aggregate	1.50	127	191
		Cumulative load (psf)	510
		Total Thickness (feet)	6.50
		Average Density (Total Load/Total Thickness) (pcf)	78.5

The average load on the leachate collection pipe from the half-lift of waste is calculated below (Section 9.6.2, Attachment III-4-B3-3):

$$W_c = HwB_c$$

$$W_c = 6.50\ \text{ft} * 78.5\frac{\text{lb}}{\text{ft}^3} * 0.553\ \text{ft} = 282\frac{\text{lb}}{\text{ft}} = 23.5\frac{\text{lb}}{\text{in}}\ (\text{half lift of waste})$$

Next, the load on the pipe from the first axle of the compactor (W_{sc}) is calculated using the following formula (Equation 9-19, Attachment III-4-B3-3):

$$W_{sc} = C_s\left(\frac{P*F}{L}\right)$$

$$W_{sc} = 0.037\ \left(\frac{62{,}811\ \text{lb}*1.0}{3.0\ \text{ft}}\right) = 775\ \frac{\text{lb}}{\text{ft}} = 64.6\ \frac{\text{lb}}{\text{in}}\ (\text{compactor load})$$

The point-source loading on the pipe (W_{PS}) can be determined by adding the load from the half lift of waste (W_c) to the compactor load (W_{sc}):

$$W_{PS} = W_c + W_{sc}$$

$$W_{PS} = 23.5\frac{\text{lb}}{\text{in}} + 64.6\frac{\text{lb}}{\text{in}} = 88.1\frac{\text{lb}}{\text{in}}$$

2.5 Case 2: Leachate Extraction Riser Pipe (12-inch)

Table III-4-B1-6. Average Load on Extraction Riser Pipe at Final Grade

Layers	Thickness (feet)	Density (pcf)	Load (psf) Thickness (feet) x Density (pcf)
Final Cover	3.00	105	315
Waste	62.0	63.7	3,949
Aggregate	3.00	127	381
Cumulative Load (psf)			4,645
Total Thickness (feet)			68.0
Average Density (Total Load/Total Thickness) (pcf)			68.3

The average load on the extraction riser pipe at final grade is calculated below (Section 9.6.2, Attachment III-4-B3-3):

$$W_c = HwB_c$$

$$W_c = 68.0 \text{ ft} * 68.3 \frac{\text{lb}}{\text{ft}^3} * 1.063 \text{ ft} = 4{,}937 \frac{\text{lb}}{\text{ft}} = 411 \frac{\text{lb}}{\text{in}}$$

Table III-4-B1-7. Average Load on Extraction Riser Pipe from Half-Lift of Waste (5 feet)

Layers	Thickness (feet)	Density (pcf)	Load (psf) Thickness (feet) x Density (pcf)
Waste	5.00	63.7	319
Aggregate	3.00	127	381
Cumulative Load (psf)			700
Total Thickness (feet)			8.00
Average Density (Total Load/Total Thickness) (pcf)			87.5

The average load on the extraction riser pipe from the half-lift of waste is calculated below (Section 9.6.2, Attachment III-4-B3-3):

$$W_c = HwB_c$$

$$W_c = 8.00 \text{ ft} * 87.5 \frac{\text{lb}}{\text{ft}^3} * 1.063 \text{ ft} = 744 \frac{\text{lb}}{\text{ft}} = 62 \frac{\text{lb}}{\text{in}} \text{ (half lift of waste)}$$

Next, the load on pipe from the first axle of the compactor (W_{sc}) is calculated using the following formula (Equation 9-19, Attachment III-4-B3-3):

$$W_{sc} = C_s\left(\frac{P*F}{L}\right)$$

$$W_{sc} = 0.037\ \left(\frac{62{,}811\ \text{lb}*1.0}{3.0\ \text{ft}}\right) = 775\ \frac{\text{lb}}{\text{ft}} = 64.6\frac{\text{lb}}{\text{in}}\ (\text{compactor load})$$

The point-source loading on the pipe (W_{PS}) can be determined by adding the load from the half lift of waste (W_c) to the compactor load (W_{sc}):

$$W_{PS} = W_c + W_{sc}$$

$$W_{PS} = 62\frac{\text{lb}}{\text{in}} + 64.6\frac{\text{lb}}{\text{in}} = 126.6\frac{\text{lb}}{\text{in}}$$

2.6 Case 3: Leachate Cleanout Pipe (6-inch)

Table III-4-B1-8. Average Load on Leachate Cleanout Pipe at Final Grade

Layers	Thickness (feet)	Density (pcf)	Load (psf) Thickness (feet) x Density (pcf)
Final Cover	3.00	105	315
Waste	62.0	63.7	3,949
Aggregate	3.50	127	445
		Cumulative Load (psf)	4,709
		Total Thickness (feet)	68.5
		Average Density (Total Load/Total Thickness) (pcf)	68.7

The average load on the leachate cleanout pipe is calculated below (Section 9.6.2, Attachment III-4-B3-3):

$$W_c = HwB_c$$

$$W_c = 68.5\ \text{ft} * 68.7\frac{\text{lb}}{\text{ft}^3} * 0.553\ \text{ft} = 2{,}602 = 217\frac{\text{lb}}{\text{in}}$$

Table III-4-B1-9. Average Load on Leachate Cleanout Pipe from Half-Lift of Waste (5 feet)

Layers	Thickness (feet)	Density (pcf)	Load (psf) Thickness (feet) x Density (pcf)
Waste	5.00	63.7	319
Aggregate	3.50	127	445
		Cumulative Load (psf)	764
		Total Thickness (feet)	8.50
		Average Density (Total Load/Total Thickness) (pcf)	89.9

The average load on the pipe from the half-lift of waste is calculated below (Section 9.6.2, Attachment III-4-B3-3):

$$W_c = HwB_c$$

$$W_c = 8.5\text{ ft} * 89.9\frac{\text{lb}}{\text{ft}^3} * 0.553\text{ ft} = 423\frac{\text{lb}}{\text{ft}} = 35.2\frac{\text{lb}}{\text{in}}\ \text{(half lift of waste)}$$

Next, the load on pipe from the first axle of the compactor (W_{sc}) is calculated using the following formula (Equation 9-19, Attachment III-4-B3-3):

$$W_{sc} = C_s\left(\frac{P*F}{L}\right)$$

$$W_{sc} = 0.037\left(\frac{62{,}811\text{ lb}*1.0}{3.0\text{ ft}}\right) = 775\ \frac{\text{lb}}{\text{ft}} = 64.6\frac{\text{lb}}{\text{in}}\ \text{(compactor load)}$$

The point-source loading on the pipe (W_{PS}) can be determined by adding the load from the half lift of waste (W_c) to the compactor load (W_{sc}):

$$W_{PS} = W_c + W_{sc}$$

$$W_{PS} = 35.2\frac{\text{lb}}{\text{in}} + 64.6\frac{\text{lb}}{\text{in}} = 99.8\frac{\text{lb}}{\text{in}}$$

2.7 Loading Results

Table III-4-B1-10. Loading Comparisons for Full vs. Point-Source Loading

Case #	Pipe Diameter (inches)	Full Loading (lb/in)	Point-Source Loading (lb/in)	Location
1	6	470	88	Perforated leachate collection pipe
2	12	411	127	Extraction riser pipe on side slope
3	6	217	100	Leachate cleanout pipe on side slope

Because the full loading scenario is more conservative than point-source loading, the loads presented in Table III-4-B1-11 (calculated in Tables III-4-B1-4, -6, and -8) will be used to determine pipe strength.

Table III-4-B1-11. Load on Leachate Collection System from Final Grade

Case #	Pipe Diameter (inches)	Full Loading (psf)	Location
1	6	10,188	Perforated leachate collection pipe
2	12	4,645	Extraction riser pipe on side slope
3	6	4,709	Leachate cleanout pipe on side slope

3. Ring Deflection

This section calculates the ring deflection of the pipes in the leachate collection system using the loads calculated at final grade. Ring deflection is a function of standard dimension ratio (SDR) and is independent of pipe diameter.

3.1 Assumptions

3.1.1 Leachate Collection Pipe Assumptions

Pipe deflection for perforated pipes (Case 1, Leachate Collection Pipe) may be determined using the Watkins-Graube graph (Figure 3-6), Equation 3-24, Equation 3-26, Equation 3-27, and Equation 3-28 from the Plastic Pipe Institute Handbook of Polyethylene Pipe (Attachment III-4-B3-15). The Watkins-Graube graph technique was developed to analyze pipes

in deeper fill sections and is more appropriate for determining the ring deflection of the leachate collection pipes at the bottom of the landfill.

$$\text{Rigidity Factor } (R_F) = \frac{12E_S(DR-1)^3}{E} \quad \text{[Eq. 3-24]}$$

where E_S = Secant modulus of soil (psi)
DR = SDR = Standard dimension ratio
E = Apparent modulus of elasticity of pipe material (psi)

Modulus of elasticity for pipe (E) is set to 15,000 psi for long term conditions at 120°F for all pipe scenarios (WL Plastics V 2.0 Supplement, Attachment III-4-B3-5).

$$\text{Secant Modulus of Soil } (E_S) = M_S \frac{(1+\mu)(1-2\mu)}{(1-\mu)} \quad \text{[Eq. 3-26]}$$

where M_S = One-dimensional soil modulus (psi)
μ = Soil's Poisson Ratio

Modulus of soil reaction (M_S) is set to 3,000 psi for the leachate collection pipe, as the surrounding bedding material is crushed rock, or Soil Type A (WL Plastics V 2.0 Supplement, Attachment III-4-B3-5).

The soil's Poisson ratio is set to 0.3, based on the example provided in the Plastic Pipe Institute Handbook of Polyethylene Pipe (Attachment III-4-B3-15).

$$\text{Soil Strain } (\varepsilon_S) = \frac{wH}{144E_S} \quad \text{[Eq. 3-27]}$$

where w = Unit weight of soil (pcf)
H = Height of fill above pipe crown (feet)
E_S = Secant modulus of soil (psi)

The unit weight of soil (w) is assumed to be 105 pcf, based on the conservative soil density values available in the geology report (Attachment III-5).

The height of fill above the pipe crown for the perforated leachate collection pipe was determined to be 156.5 feet, per Table III-4-B1-4.

$$\text{Ring Deflection} = (\varepsilon_S * D_F) * 100 \quad \text{[Eq. 3-28]}$$

where D_F = Deformation factor from the Watkins-Graube graph

3.1.2 Extraction Riser and Cleanout Pipe Assumptions

Pipe deflection for the extraction riser and cleanout pipes may be determined with a variation of the Modified Iowa formula shown below (Equation 30 from WL Plastics V 2.0 Supplement, Attachment III-4-B3-5):

$$\text{Ring Deflection} = \frac{P_T}{144}\left(\frac{K*D_L}{\frac{2E}{3}\left(\frac{1}{DR-1}\right)^3+0.061E'}\right)*100$$

where P_T = Total load pressure on pipe crown (lb/ft^2)
K = Bedding factor
D_L = Deflection lag factor
E = Modulus of elasticity for pipe (psi)
E' = Modulus of soil reaction (psi)
DR = SDR = Standard dimension ratio

Total loads (P_T) from Table III-4-B1-11 are used for this calculation.

Bedding factor (K) is set to 0.1 (WL Plastics V 2.0 Supplement, Attachment III-4-B3-5).

Deflection lag factor (D_L) is set to 2.5 for the extraction riser and cleanout pipes in the side slope (WL Plastics V 2.0 Supplement, Attachment III-4-B3-5).

Modulus of soil reaction (E') is set to 2,500 psi for the extraction riser and cleanout pipes, as the surrounding material is on-site soils, or a mix of Soil Type B and C (WL Plastics V 2.0 Supplement, Attachment III-4-B3-5).

Modulus of elasticity for pipe (E) is set to 15,000 psi for long term conditions at 120°F for all pipe scenarios (WL Plastics V 2.0 Supplement, Attachment III-4-B3-5).

3.2 Percent Deflection Calculations

The maximum pipe deflection occurs when there is maximum loading on the pipe, which takes place when the landfill is fully constructed and final grades have been achieved. Due to the additional void space present in perforated pipe, a different approach is used to account for the reduction in pipe strength. For the following set of calculations, the pipes are assumed to be SDR 11. Table III-4-B1-12 provides the ring deflection results for SDR 9 and SDR 13 to provide the facility with flexibility when making decisions regarding final design.

3.2.1 Case 1: Leachate Collection Pipe (6-inch SDR 11)

Because the leachate collection pipe is perforated, strength is reduced. For this calculation, the load will be increased to account for the perforations rather than reducing the allowable load. It is assumed that the 6-inch SDR 11 pipe contains two ⅝-inch holes on either side of the pipe every 6 inches. The number of holes per foot of pipe can be calculated by multiplying the number of perforations by 12 inches, and then dividing the result by the specified perforation spacing:

$$\text{Holes per foot} = \left(\frac{\text{\# of perforations} * 12 \text{ inches}}{\text{perforation spacing}}\right)$$

$$\text{Holes per foot} = \left(\frac{2 \text{ perforations} * 12 \text{ inches}}{6 \text{ inches}}\right) = 4 \text{ holes per foot}$$

Therefore, there are 4 holes per foot of piping. To be adequately sized for drainage, the area of the perforations should exceed 1.0 in^2/ft. This can be calculated by multiplying the area of each hole by the number of perforations per foot.

$$\text{A} = \pi\left(\frac{0.625 \text{ in}}{2}\right)^2 = 0.31 \text{ in}^2 \text{ per hole}$$

$$0.31 \text{ in}^2 * 4 \text{ perforations} = 1.23 \text{ in}^2$$

The perforation size and spacing is considered appropriate for drainage.

Next, the length of pipe is reduced due to the perforations. Since the loads calculated above are assumed to be applied to each foot of pipe, the length of missing pipe per foot can be determined by subtracting the number of perforations (4) multiplied by the diameter (⅝ inch) from 1 foot.

$$\text{Reduced Pipe Length} = \text{Original length} - (\text{\# of perforations} * \text{ diameter of perforations})$$

$$\text{Reduced Pipe Length} = 12 \text{ inches} - (4 * 0.625 \text{ inches}) = 9.5 \text{ inches}$$

Finally, the proposed load is increased in proportion to the decrease in pipe length from 12 inches to 9.5 inches. The calculated load for this scenario was determined to be 10,188 psf according to Section 2.7 (Table III-4-B1-11). The calculated load is multiplied by the ratio of the original pipe length to the reduced pipe length to get an increased load.

$$\text{Design Load} = \text{Original Load} * \left(\frac{\text{Original Pipe Length}}{\text{Reduced Pipe Length}}\right)$$

$$\text{Design Load} = 10{,}188 \text{ psf} * \left(\frac{12 \text{ inches}}{9.5 \text{ inches}}\right) = 12{,}869 \text{ psf}$$

To use the Watkins-Graube graph to calculate ring deflection, the rigidity factor was determined, which is a function of the secant modulus of soil (M_S). The secant modulus of soil is calculated below, using the assumptions in Section 3.1.

$$\text{Secant Modulus of Soil } (E_S) = M_S \frac{(1+\mu)(1-2\mu)}{(1-\mu)} \quad \text{[Eq. 3-27]}$$

$$\text{Secant Modulus of Soil } (E_S) = 3{,}000 \text{ psi } \frac{(1+0.3)(1-2(0.3))}{(1-0.3)} = 2{,}229 \text{ psi}$$

The calculated secant modulus of soil can then be used in Equation 3-24 to calculate the rigidity factor (R_F), which describes the relative stiffness between the pipe and soil:

$$\text{Rigidity Factor } (R_F) = \frac{12E_S(DR-1)^3}{E} \quad \text{[Eq. 3-24]}$$

$$\text{Rigidity Factor } (R_F) = \frac{12(2{,}229 \text{ psi})(11-1)^3}{15{,}000 \text{ psi}} = 1{,}783$$

The rigidity factor can be used in the Watkins-Graube Graph (Figure III-4-B1-1) to determine the deformation factor (D_F).

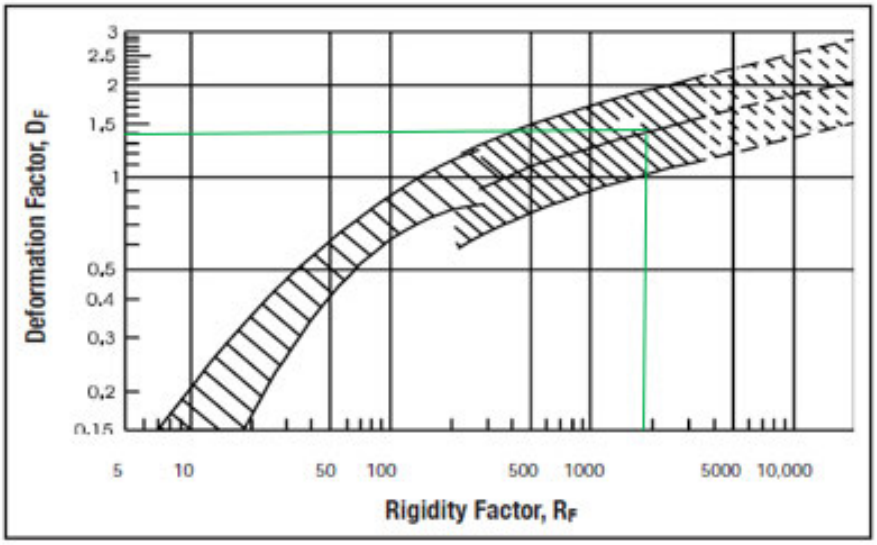


Figure III-4-B1-1. Watkins-Graube Graph from Plastics Pipe Institute of Polyethylene Pipe (Figure 3-6, Attachment III-4-B3-15)

Thus, the deformation factor is assumed to be 1.4.

The final component required to calculate ring deflection is the soil strain, which is calculated using Equation 3-27 below:

$$\text{Soil Strain } (\varepsilon_S) = \frac{wH}{144E_S} \quad \text{[Eq. 3-27]}$$

$$\text{Soil Strain } (\varepsilon_S) = \frac{12{,}869 \text{ psf}}{144(2{,}229 \text{ psi})} = 0.040$$

Ring deflection for the perforated 6-inch SDR 11 pipe is calculated using the equation below:

$$\text{Ring Deflection} = (\varepsilon_S * D_F) * 100 \quad \text{[Eq. 3-28]}$$

$$\text{Ring Deflection } = (0.040 * 1.4) * 100 = 5.6\%$$

The ring deflection for a 6-inch SDR 11 perforated leachate collection pipe (Case 1) is 5.6 percent.

3.2.2 Case 2: Extraction Riser Pipe (12-inch SDR 11)

Assuming that the extraction riser pipe contains two ⅝-inch holes on either side of the pipe every 6 inches, the pipe will have 4 perforations per foot of pipe. Because the perforation size and spacing is the same as the leachate collection pipe, the load on the extraction riser pipe (presented in Table III-4-B1-11) can be multiplied by the same factor calculated in Section 3.2.1. The design load for the extraction riser pipe is calculated below:

$$\text{Design Load} = \text{Original Load} * \left(\frac{\text{Original Pipe Length}}{\text{Reduced Pipe Length}}\right)$$

$$\text{Design Load} = 4{,}645 \text{ psf} * \left(\frac{12 \text{ inches}}{9.5 \text{ inches}}\right) = 5{,}867 \text{ psf}$$

The Modified Iowa formula can be used with the design load to calculate the percent deflection for the perforated 12-inch SDR 11 extraction riser pipe (Equation 30, WL Plastics V 2.0 Supplement, Attachment III-4-B3-5):

$$\text{Percent Deflection} = \frac{5{,}867\frac{\text{lb}}{\text{ft}^2}}{144}\left(\frac{0.1*2.5}{\frac{2(15{,}000 \text{ psi})}{3}\left(\frac{1}{11-1}\right)^3 + (0.061)(2{,}500 \text{ psi})}\right) * 100 = 6.27\%$$

3.2.3 Case 3: Leachate Cleanout Pipe (6-inch SDR 11)

Assuming that the leachate cleanout pipe contains two ⅝-inch holes on either side of the pipe every 6 inches, the pipe will have 4 perforations per foot of pipe. Because the perforation size and spacing is the same as the leachate collection pipe, the load on the extraction riser pipe (presented in Table III-4-B1-11) can be multiplied by the same factor calculated in Section 3.2.1. The design load for the extraction riser pipe is calculated below:

$$\text{Design Load} = \text{Original Load} * \left(\frac{\text{Original Pipe Length}}{\text{Reduced Pipe Length}}\right)$$

$$\text{Design Load} = 4{,}709 \text{ psf} * \left(\frac{12 \text{ inches}}{9.5 \text{ inches}}\right) = 5{,}948 \text{ psf}$$

The Modified Iowa formula can be used with the design load to calculate the percent deflection for the perforated 6-inch SDR 11 leachate cleanout pipe (Equation 30, WL Plastics V 2.0 Supplement, Attachment III-4-B3-5):

$$\text{Percent Deflection} = \frac{5{,}948 \frac{\text{lb}}{\text{ft}^2}}{144}\left(\frac{0.1*2.5}{\frac{2(15{,}000 \text{ psi})}{3}\left(\frac{1}{11-1}\right)^3+(0.061)(2{,}500 \text{ psi})}\right) * 100 = 6.35\%$$

3.3 Ring Deflection Results

The calculated ring deflections above represent the worst-case loading conditions at the landfill. Table III-4-B1-12 showcases the calculated ring deflections for the pipes at SDR 9, 11, and 13 using the same methodology illustrated above.

Table III-4-B1-12. Ring Deflection Results for SDR 9, 11, and 13 for Leachate Collection System Pipes

Case #	Pipe Diameter (inches)	SDR	Ring Deflection	Location
1	6	9	4.8%	Leachate collection pipe
		11	5.6%	
		13	6.0%	
2	12	9	5.9%	Extraction riser pipe on side slope
		11	6.3%	
		13	6.4%	
3	6	9	6.0%	Leachate cleanout pipe on side slope
		11	6.4%	
		13	6.5%	

The calculated maximum percent ring deflection occurs at SDR 13: 6.00 percent for the leachate collection pipe, 6.43 percent for the extraction riser pipe, and 6.52 percent for the leachate cleanout pipe.

Per the guidance provided in Table 11 of WL Plastics V 2.0 Supplement (Attachment III-4-B3-5), the acceptable deflection for non-pressure PE3408 piping is limited to 8 percent. Therefore, the

maximum calculated ring deflection of 6.52 percent for the leachate cleanout pipe using SDR 13 is considered acceptable.

4. Structural Capacity of the Leachate Collection System

This section evaluates whether the proposed leachate pipes (leachate collection pipe, extraction riser pipe, and leachate cleanout pipe) possess sufficient strength to support the overlying landfill materials due to (1) wall crushing and (2) wall buckling. Table III-4-B1-13 summarizes the height of material cover above each of the analyzed pipes, as determined in Section 2.

Table III-4-B1-13. Height of Material Cover (H) above Analyzed Pipes

Case #	Pipe Diameter (inches)	Aggregate Thickness (feet)	Waste Thickness (feet)	Final Cover Thickness (feet)	H (feet)	Location
1	6	1.5	152	3	156.5	Perforated leachate collection pipe
2	12	3	62	3	68	Extraction riser pipe on side slope
3	6	3.5	62	3	68.5	Leachate cleanout pipe on side slope

4.1 Assumptions

The safety factor against wall crushing is determined by the following formula (Equation 25, WL Plastics V 2.0 Supplement, Attachment III-4-B3-5):

$$N_C = \frac{460{,}800}{P_T * DR}$$

where N_C = Safety factor against wall crushing
P_T = Total load pressure on pipe crown (psf)
DR = SDR = Standard dimension ratio

The safety factor against wall buckling is determined by the following formula (Equation 26, WL Plastics V 2.0 Supplement, Attachment III-4-B3-5):

$$N_B = \frac{144 * P_{WC}}{P_T}$$

where N_C = Safety factor against wall crushing

P_T = Total load pressure on pipe crown (psf)
P_{WC} = Constrained bulking pressure (psi)

To calculate constrained bulking pressure (P_{WC}), the formula is used (Equation 27, WL Plastics WL PipeCalc™ Supplement, WL Plastics V 2.0 Supplement, Attachment III-4-B3-5):

$$P_{WC} = 5.65\sqrt{\frac{RB'E'E}{12(DR-1)^3}}$$

where R = reduction factor for buoyancy (Equation 28):

$$R = 1 - 0.33(\frac{H'}{H})$$

where H' = Height of leachate above pipe (feet)
H = Height of material cover above pipe (feet)
B' = Elastic support factor (Equation 29):

$$B' = \frac{1}{1+10.87312^{(-0.065H)}}$$

where E' = modulus of soil reaction (psi)
E = modulus of elasticity for the pipe (psi)

The height of leachate above the pipe (H') is set to 1.0 foot. This is based on a maximum leachate head of 30 cm per 30 TAC 330 requirements.

The values for total load pressure on the pipe crown (P_T) are taken from Section 3.2. The calculated design load is used to account for the increased load due to the pipes being perforated.

Modulus of soil reaction (E') is set to 3,000 psi for the leachate collection pipe, as the surrounding bedding material is crushed rock, or Soil Type A (WL Plastics V 2.0 Supplement, Attachment III-4-B3-5). Modulus of soil reaction (E') is set to 2,500 psi for the extraction riser and cleanout pipes, as the surrounding material is well-compacted on-site soils, or a mix of Soil Type B and C (WL Plastics V 2.0 Supplement, Attachment III-4-B3-5).

Modulus of elasticity for pipe (E) is set to 15,000 psi for long term conditions at 120°F (WL Plastics V 2.0 Supplement, Attachment III-4-B3-5).

4.2 Case 1: Leachate Collection Pipe (6-inch SDR 11)

First, the safety factor against wall crushing for the 6-inch SDR 11 HDPE pipe is calculated:

$$N_C = \frac{460{,}800}{P_T * DR} = \frac{460{,}800}{(12{,}869)(11)} = 3.26$$

Next, the safety factor against wall buckling for 6-inch SDR 11 HDPE pipe is calculated:

$$R = 1 - 0.33\left(\frac{H'}{H}\right) = 1 - 0.33\left(\frac{1.0\text{ ft}}{156.5\text{ ft}}\right) = 1.0$$

$$B' = \frac{1}{1+10.87312^{(-0.065H)}} = \frac{1}{1+10.87312^{(-0.065*156.5)}} = 1.0$$

$$P_{WC} = 5.65\sqrt{\frac{RB'E'E}{12(DR-1)^3}} = 5.65\sqrt{\frac{(1.00)*(1.00)*(3{,}000)*(15{,}000)}{12(11-1)^3}} = 346$$

$$N_B = \frac{144*P_{WC}}{P_T} = \frac{144*346}{12{,}869} = 3.87$$

4.3 Case 2: Extraction Riser Pipe (12-inch SDR 11)

First, the safety factor against wall crushing for the 12-inch SDR 11 HDPE pipe is calculated:

$$N_C = \frac{460{,}800}{P_T * DR} = \frac{460{,}800}{(5{,}867)(11)} = 7.14$$

Next, the safety factor against wall buckling for 12-inch SDR 11 HDPE extraction riser pipe is calculated:

$$R = 1 - 0.33\left(\frac{H'}{H}\right) = 1 - 0.33\left(\frac{1.0\text{ ft}}{68\text{ ft}}\right) = 1.0$$

$$B' = \frac{1}{1+10.87312^{(-0.065H)}} = \frac{1}{1+10.87312^{(-0.065*68)}} = 1.0$$

$$P_{WC} = 5.65\sqrt{\frac{RB'E'E}{12(DR-1)^3}} = 5.65\sqrt{\frac{(1.00)*(1.00)*(2{,}500)*(15{,}000)}{12(11-1)^3}} = 315$$

$$N_B = \frac{144*P_{WC}}{P_T} = \frac{144*315}{5{,}867} = 7.73$$

4.4 Case 3: Leachate Cleanout Pipe (6-inch SDR 11)

First, the safety factor against wall crushing for the 6-inch SDR 11 HDPE leachate cleanout pipe is calculated:

$$N_C = \frac{460{,}800}{P_T * DR} = \frac{460{,}800}{(5{,}948)(11)} = 7.04$$

Next, the safety factor against wall buckling for 6-inch SDR 11 HDPE pipe is calculated:

$$R = 1 - 0.33\left(\frac{H'}{H}\right) = 1 - 0.33\left(\frac{1.0\text{ ft}}{68.5\text{ ft}}\right) = 1.0$$

$$B' = \frac{1}{1+10.87312^{(-0.065H)}} = \frac{1}{1+10.87312^{(-0.065*68.5)}} = 1.0$$

$$P_{WC} = 5.65\sqrt{\frac{RB'E'E}{12(DR-1)^3}} = 5.65\sqrt{\frac{(1.00)*(1.00)*(2{,}500)*(15{,}000)}{12(11-1)^3}} = 315$$

$$N_B = \frac{144*P_{WC}}{P_T} = \frac{144*315}{5{,}948} = 7.63$$

4.5 Pipe Crushing and Buckling Results

The proposed leachate collection pipes will possess sufficient strength to support the overlying landfill, as shown by the calculated factors of safety against pipe wall crushing and wall buckling. The calculations above were repeated for pipe thicknesses of SDR 9 and SDR 13.

Table III-4-B1-14. Leachate Pipe Factors of Safety

SDR	Pipe Failure Mode	Factor of Safety		
		Perforated Leachate Collection Pipe (6-inch)	Extraction Riser Pipe on Side Slope (12-inch)	Leachate Cleanout Pipe on Side Slope (6-inch)
9	Wall Crushing	3.98	8.73	8.61
	Wall Buckling	5.40	10.81	10.66
11	Wall Crushing	3.26	7.14	7.04
	Wall Buckling	3.87	7.73	7.63
13	Wall Crushing	2.75	6.04	5.96
	Wall Buckling	2.94	5.88	5.80

5. Geonet Compressed Thickness and Hydraulic Conductivity

The purpose of this section is to determine the compressed thickness and resulting hydraulic conductivity of the geonet component of the geocomposite drainage layer for open, intermediate, and closed conditions.

The unit weight of compacted waste with a typical soil cover (10.0 kN/m^3 or 63.7 pcf) was selected from Table 2 from the Unit Weight of Municipal Solid Waste (Attachment III-4-B3-1). The unit weight of the gravel (20.0 kN/m^3) in the aggregate trench was selected from the saturated value presented in the soil properties technical note presented by ABG (Attachment III-4-B3-2). Using the same conversion method presented in Section 2.1, the weight of the aggregate was determined to be 127 pcf.

5.1 Geonet Compressed Thickness

To determine the geonet compression, the total load on the geonet must be calculated first. This is done by multiplying the unit weight of each material by the thickness of the layer to find the load of each individual layer on the geonet. Then, the total load on the geonet was calculated using the sum of the loads, and then converting the units from psf to psi (by dividing by 144).

Figure III-4-B1-2 is from Figure 2.5 of the GSE PermaNet Drainage Design Manual (Attachment III-4-B3-6), and is used to determine the compression on the geonet using the total load values.

Table III-4-B1-15. Geonet Compression Calculations

Layer	Thickness (feet)	Unit Weight (pcf)	Load on Geonet (psf)	Total Load on Geonet (psi)	Geonet Compression (inches)	Resultant Geonet Thickness (inches)
Open Conditions - 10 feet of Waste; Geonet (150 mil)						
Daily Cover [a]	0.5	105	52.5	6.55	<0.001	0.150
Waste [b]	10	63.7	637			
Aggregate Trench [c]	2	127	254			
Open Conditions - 20 feet of Waste; Geonet (150 mil)						
Daily Cover [a]	0.5	105	52.5	10.98	0.005	0.145
Waste [b]	20	63.7	1274			
Aggregate Trench [c]	2	127	254			
Intermediate Conditions - 76 feet of Waste; Geonet (150 mil)						
Intermediate Cover [a]	1	105	105	36.5	0.010	0.140
Daily Cover [a]	0.5	105	52.5			
Waste [b]	76	63.7	4940			
Aggregate Trench [c]	2	127	254			
Closed Conditions - 152 feet of Waste; Geonet (150 mil)						
Topsoil [a]	0.5	105	105	71.6	0.015	0.135
Barrier Soil Liner [a]	1.5	105	158			
Intermediate Cover [a]	1	105	105			
Daily Cover [a]	0.5	105	52.5			
Waste [b]	152	63.7	9680			
Aggregate Trench [c]	2	127	254			

[a] Conservative soil density value selected from geology report (Attachment III-5).

[b] Waste density selected from typical value in Table 2 in Unit Weight of Municipal Solid Waste (Att III-4-B3-1) and converted from kN/m^3 to pcf

[c] Gravel density value selected from the Soil Properties Technical Note (Attachment III-4-B3-2) and converted from kN/m^3 to pcf.

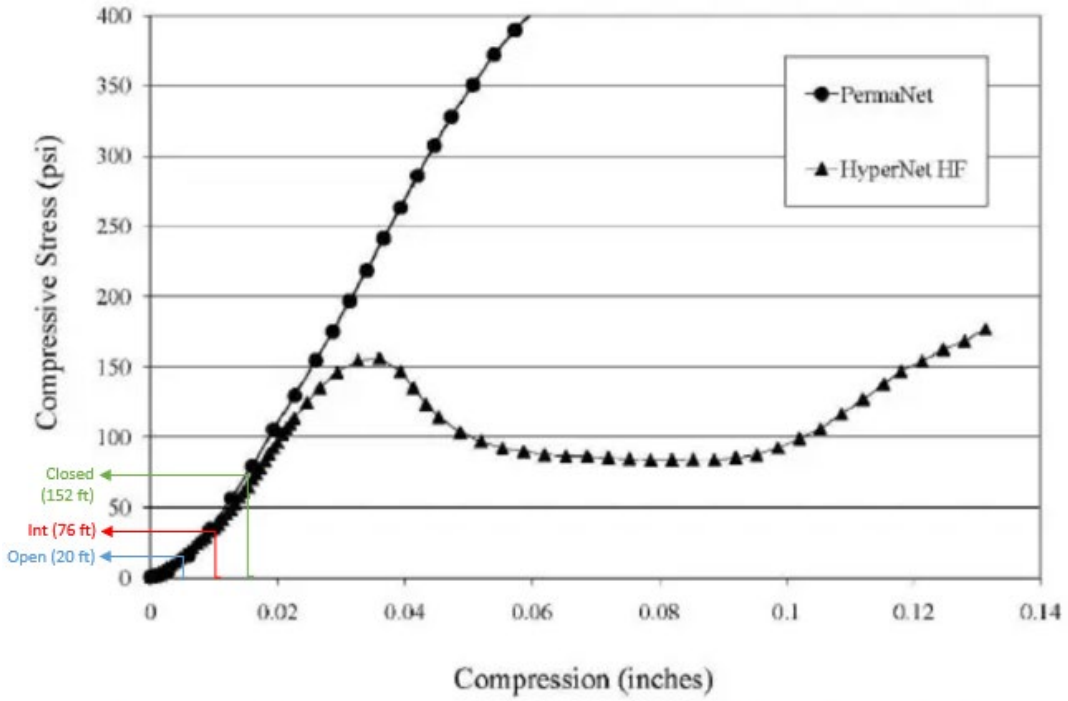


Figure 2.5. Compression strength of HyperNet vs. PermaNet.

Figure III-4-B1-2. Total Load vs. Resultant Compression on PermaNet from GSE PermaNet Drainage Design Manual

5.2 Geonet Hydraulic Conductivity

The equation below is used to determine the allowable transmissivity of the geocomposite given reduction and clogging factors presented in Table 4.2 of Designing with Geosynthetics (Equation 4.5, Attachment III-4-B3-7):

$$T_{avail} = T_{ult}\left(\frac{1}{RF_{CR} * RF_{IN} * RF_{CC} * RF_{BC}}\right)$$

where T_{avail} = Available transmissivity of geonet
T_{ult} = 1.00 x 10^{-3} m^2/s (Attachment III-4-B3-8)
RF_{CR} = Creep reduction factor
RF_{IN} = Intrusion reduction factor
RF_{CC} = Chemical clogging reduction factor
RF_{BC} = Biological clogging reduction factor

The transmissivity values for a typical 150 mil geonet were used in this calculation (Attachment III-4-B3-8). While the referenced product data sheet does provide a standard

transmissivity value, accounting for reduction and clogging factors provides a more conservative value for leachate generation modeling purposes. All reduction factors were conservatively assumed to be 2 for the geonet used for primary leachate collection in all scenarios (Table 4.2, Attachment III-4-B3-7).

$$T_{avail} = 1.00 * 10^{-3} \frac{m^2}{sec}\left(\frac{1}{2*2*2*2}\right) = 6.25 * 10^{-5} \frac{m^2}{sec}$$

The required hydraulic conductivity of the compressed geonet can be calculated for each scenario with the following equation:

$$k_{req} = \frac{T_{avail}}{t}$$

Table III-4-B1-16. Hydraulic Conductivity of Compressed Geonet

Condition	Compacted Geonet Thickness		T_{avail} (m^2/s)	k_{req} (cm/s)
	inches	meters		
Open [a] (20 feet of waste)	0.150	3.81×10^{-3}	6.25×10^{-5}	1.64
Intermediate (76 feet of waste)	0.148	3.76×10^{-3}	6.25×10^{-5}	1.70
Closed	0.135	3.43×10^{-3}	6.25×10^{-5}	1.82

[a] Geonet does not experience appreciable compression under open conditions with 10 feet of waste.

The calculated thickness and hydraulic conductivity for the geonet for each condition from Tables III-4-B1-15 and -16 is used in the HELP model scenarios.

6. HELP Model Demonstration

The Hydrologic Evaluation of Landfill Performance (HELP) model is used to predict leachate generation rates, leachate head on the bottom liner system, and percolation through the bottom liner for the proposed landfill design. The HELP model is an unsaturated flow, water balance model that uses site-specific soil, climate, and design specifications to simulate landfill conditions over a given time period. All HELP model inputs used in the modeled scenarios are delineated in the following sections. The input parameters were determined based on proposed landfill design details, site-specific data collected during geotechnical investigations, 30 TAC 330 requirements, and local climate data. Table III-4-B1-17 outlines the scenarios that were modeled in HELP.

Table III-4-B1-17. HELP Model Run Scenarios

Scenario	Height of Waste (feet)	Years of Simulation	Attachment
Open	10	1	III-4-B2-2
Open	20	1	III-4-B2-3
Intermediate	76	10	III-4-B2-4
Closed	152	30	III-4-B2-5

6.1 HELP Input Parameters

6.1.1 Groundwater Inflow

According to the geology report (Attachment III-5), the highest elevation of the water table at the site is approximately 60 feet below ground surface (bgs), which is significantly deeper than the deepest excavation of the landfill. Due to this separation and the proposed placement of the liner system, it was assumed that there will be no groundwater inflow into the landfill.

6.1.2 Weather and Evapotranspiration Data

Synthetic evapotranspiration data representative of the Pecos, Texas area was generated by the HELP model. The latitude and longitude coordinates of the landfill were entered and the nearest WGEN weather parcel was automatically selected from the available locations within the model. According to the HELP User Manual (Attachment III-4-B3-9), the program retrieves calculated weather values from the nearest 0.25 x 0.25-degree grid point contained in the database based on the entered latitude and longitude inputs.

Average annual wind speed and relative humidity were retrieved from the Wind Resource Database hosted by the National Renewable Energy Laboratory to use as inputs. The database was queried for wind speed and humidity recordings from 2019 through 2023 using the coordinates of the landfill. A comma-separated file was provided with wind speed and relative humidity readings at 60-minute intervals for the queried time period. The dataset was filtered by quarter across all five years, and averages for each quarter were calculated in Excel. The average wind speed and the quarterly relative humidity percentages were entered into the HELP model. A summary of the calculated values is provided in Attachment III-4-B3-10. The start and end of the growing season (March 29 to November 10) were chosen based on data from NASA's MERRA-2 Modern Era Retrospective Analysis Model, which was aggregated and interpreted by Weather Spark for Pecos (Attachment III-4-B3-11).

The evaporative zone depth was set to 18 inches based on the minimum evaporative zone depth for the area provided by the HELP 4.0 user manual (Figure 1, Attachment III-4-B3-9, reproduced below). The exception to this is the closed conditions scenario, as the topsoil layer is 6 inches thick. Because the evaporative zone cannot extend beyond the liner (which is present directly beneath the topsoil), the evaporative zone depth for this scenario was set to 6 inches.

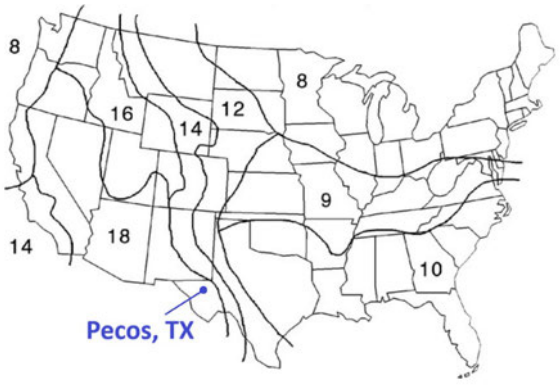


Figure III-4-B1-3. HELP Minimum Evaporative Zone Depths (inches) from HELP 4.0 User Manual

A leaf area index of 0 (bare ground) was used for the open conditions model, a leaf area index of 0.6 was used for intermediate conditions, and a leaf area index of 1.2 (poor stand of grass) was used for closed conditions (see Figure III-4-B1-4). These parameters were chosen because the maximum leaf area index appropriate for this region of Texas (according to the HELP user manual) is 1.2.

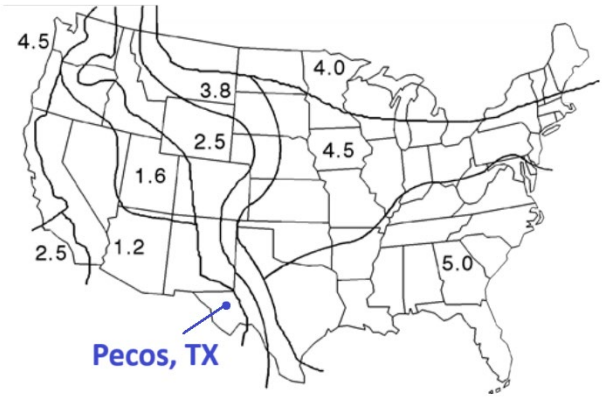


Figure III-4-B1-4. Geographic Distribution of Maximum Leaf Area Index from HELP 4.0 User Manual

6.1.3 Runoff Potential

Runoff potential for the first lift of waste (10 feet) in open conditions was assumed to be zero, although operational daily cover will allow runoff on graded portions of filled areas. Runoff potential for the second lift of waste (20 feet) in open conditions was assumed to be 50 percent. Runoff potential for intermediate conditions was assumed to be 75 percent, as areas with intermediate cover will be graded to drain. The closed conditions model assumes a runoff potential of 100 percent of the surface area, as final grading and vegetative cover will be constructed and maintained to control stormwater runoff and minimize ponding on final cover.

6.1.4 Runoff Curve Number

A runoff curve number of 85 was conservatively chosen based on the site-specific soil properties and the final cover design.

6.1.5 Final Cover Layers

The layers discussed in this section are only applicable when modeling closed conditions.

The topsoil was modeled with a 6-inch topsoil layer. The HELP texture 9 (silty loam) was used for the topsoil, as it is most representative of the on-site soils described in the geology report (Attachment III-5).

A linear low-density polyethylene (LLDPE) membrane is placed beneath the geonet under the topsoil. It was assumed that the LLDPE liner will have a "good" installation quality, with 2 pinholes per acre and 3 installation defects per acre. However, adherence to the Liner Quality Control Plan (Appendix III-4-E) will greatly minimize the likelihood of holes and installation defects in the geomembrane liner.

For the 18-inch infiltration layer beneath the LLDPE membrane, the hydraulic conductivity was modified from the HELP default hydraulic conductivity to be $1x10^{-5}$ centimeters per second (cm/s) to meet regulatory requirements.

6.1.6 Daily and Intermediate Cover Soil Layers

The open conditions model assumes that 6 inches of daily cover soil are in place. The intermediate and closed conditions model assumes that 12 inches of intermediate soil cover are in place. The HELP texture 9 (silty loam) was used for the daily and intermediate cover as the most representative of the on-site soils described in the geology report (Attachment III-5).

6.1.7 Waste Layer

The waste layers were modeled at the following thicknesses:

1. Open conditions: 10 feet and 20 feet of waste with daily cover
2. Intermediate conditions: 76 feet of waste with intermediate cover
3. Closed conditions: 152 feet of waste with final cover

6.1.8 Drainage and Leachate Collection Layers

The drainage layer in the final cover and leachate collection systems will consist of a double-sided drainage geocomposite. HELP custom geocomposite textures were used. The top drainage geonet in the final cover is present directly below the topsoil layer. The thickness of the top drainage geocomposite was set to 200 mil, with a drainage length of 422 feet and a slope of 2.8 percent. The bottom leachate collection geocomposite thickness was set to 150 mil, with a drainage length of 508 feet and a slope of 2.8 percent. The drainage length and slope were estimated based on Drawing C-2 (Appendix III-4-A).

The weight of the waste and soil layers results in compression, which results in a compressed thickness of the geonet as well as higher required hydraulic conductivity values. The compressed thicknesses and hydraulic conductivity values used in the model can be found in Tables III-4-B1-15 and -16.

6.1.9 Protective Soil Layer

The protective soil layer will be placed over the bottom liner and consist of a 24-inch layer of on-site soils. The HELP texture 9 (silty loam) was used for the protective soil layer, as being most representative of the on-site soils described in the geology report (Attachment III-5).

6.1.10 Composite Liner System

The composite liner system will consist of a geosynthetic clay liner (GCL), as well as a 60-mil-thick HDPE flexible membrane liner on top of the GCL. Custom HELP texture 47 was used for the GCL so that the hydraulic conductivity could be modified to 5×10^{-9} cm/s to reflect manufacturer values (Attachment III-4-B3-14). HELP texture 35 was used for the HDPE liner. It was assumed that the HDPE liner will have a "good" installation quality, with 2 pinholes per acre and 3 installation defects per acre. However, adherence to the Liner Quality Control Plan (Appendix III-4-C) will greatly minimize the likelihood of holes and installation defects in the geomembrane liner.

6.1.11 Moisture Content

The initial moisture content for each soil layer above the composite liner was conservatively set equal to the field capacity for all scenarios. The compacted soil layer component of the composite liner was specified as a barrier soil layer and HELP assigns a saturation moisture content equal to the porosity.

For both the drainage and leachate collection geocomposite, the initial moisture content was set to the field capacity, 0.01 vol/vol.

For the first lift of waste (10 feet), an initial moisture content of 0.28 vol/vol was used. The HELP model sets the field capacity for municipal solid waste (MSW) at 0.292 vol/vol. This is considered conservative given the arid environment at the site. For the remainder of the scenarios, the waste layer was given the final moisture content of the previously modeled scenario. Any additional lifts of waste were given an initial moisture content of 0.28 vol/vol.

6.2 HELP Model Results

The peak leachate generation rate of 38.8 ft^3/d-ac occurs in the open condition with one lift of waste (10 feet). The maximum average annual leachate generation rate of 1,380.3 ft^3/yr-ac occurs for the same scenario. The output file for this run is provided in Attachment III-4-B2-2.

The maximum leachate head on the bottom liner is 0.0451 inch, which is less than the maximum of 30 centimeters (cm) required under 30 TAC 330 and the minimum compressed thickness of the geonet, which is 0.135 inch under closed conditions (calculated in Section 5.1). No leachate is generated in the other modeled scenarios. The HELP model inputs and output files are summarized in Attachment III-4-B2-1.

7. Leachate Collection System Flow Rates and Capacities

The purpose of this section is to determine the daily generation rate into leachate collection system components (the leachate collection pipe and sump) to ensure that they are adequately sized. We can calculate the flow rates based on the HELP results summarized in Attachment III-4-B2 and the cell configuration and leachate liner grades shown in Drawings C-1 and C-2 (Appendix III-4-A).

7.1 Peak Leachate Generation Rate

The peak leachate generation rate of 38.8 ft^3/d-ac occurs in the open condition with daily cover and one lift of waste (Attachment III-4-B2-2). This rate is equivalent to approximately 290 gallons per day per acre (gpd/ac). All leachate collection system components will be uniformly sized and capable of handling leachate conveyance volumes. Per the Site Operating Plan (Part IV), the working face experiencing the open conditions simulated by the HELP model will be confined to the smallest practical area, ranging from 2,000 to 6,000 square feet (or approximately 0.13 acre). Limiting the size of the working face will reduce the amount of leachate the facility generates.

7.2 Full Flow Capacity of Leachate Collection Pipe

The full flow capacity of the 6-inch SDR 11 leachate collection pipe can be determined using the maximum cell size (20.95 acres) and Manning's equation:

$$Q_{cap} = \left(\frac{1.486}{n}\right) AR^{\frac{2}{3}} S^{\frac{1}{2}}$$

where Q_{cap} = Flow capacity of pipe (cfs)
Assumed Peak flow rate = 38.8 ft^3 per day per acre
Maximum Flow = 20.95 acres/cell * 38.8 ft^3/d-ac = 812.86 ft^3/d = 0.0092 cfs per cell
n = Manning's number = 0.009
d = Inner diameter of pipe = 0.535 in = 0.446 foot (Attachment III-4-B3-12)
A = Cross-sectional area of pipe = $\pi d^2/4$ ft^2 = (π (0.446 ft)^2/4) = 0.156 ft^2
R = hydraulic radius of pipe = d/4 feet = 0.446/4 = 0.111 foot
S = slope of pipe = 2% (Drawing C-11, Appendix III-4-A)

$$Q_{cap} = \left(\frac{1.486}{0.009}\right)(0.156\ ft^2)(0.111\ ft)^{\frac{2}{3}}(0.02)^{\frac{1}{2}} = 0.844\ cfs$$

The capacity of the leachate collection pipe to convey 0.844 cfs significantly exceeds the peak flow rate that will develop for the largest cell (0.0092 cfs). Therefore, it is appropriately sized to handle the maximum flow that will be generated.

7.3 Sump Capacity

The capacity of the sump can be determined using the dimensions of the sump and the peak flow rate. The sump is in the shape of a truncated pyramid that is 50 feet wide by 50 feet long with a depth of 2 feet and side slopes of 3H:1V (Drawing C-17, Appendix III-4-A). The side length of the top of the sump can be calculated using the slope ratio. For every foot of height

gained on the side slope, the side length will increase by a factor of 3. The total volume of the sump can be calculated using the equation below:

$$V = \frac{1}{3}(a^2 + ab + b^2)h$$

where a = Side length of top of sump = 50 feet + (2 sides x 2 feet x 3) = 62 feet
b = Side length of sump base = 50 feet
h = 2 feet

$$V_{sump} = \frac{1}{3}(62^2 + (62 * 50) + 50^2) * 2 = 6{,}296\ ft^3$$

The available volume in the sump can be calculated by multiplying the total volume by the porosity of the gravel fill.

$$V_{avail} = V_{sump} * P$$

where V_{sump} = 6,296 ft^3
P = porosity of gravel fill = 0.3 (Attachment III-4-B3-13)

$$V_{avail} = 6{,}296\ ft^3 * 0.3 = 1{,}889\ ft^3$$

The time it takes to fill the sump can be calculated by dividing the available volume by the peak flow:

Peak flow rate as determined above for open conditions = 38.8 ft^3/d-ac

20.95 acres/cell * 38.8 ft^3/d-ac = 813 ft^3/d per cell

Time to fill sump = $1{,}889\ ft^3 \div 813 \frac{ft^3}{d} = 2.32$ days

The sump will take approximately 2.32 days to be filled under constant peak flow conditions, assuming that the entire cell (20.95 acres) is active and is overlain with only 6 inches of daily cover. As such, the above estimate is considered highly conservative, as the working face is limited to a maximum of 6,000 ft^2 per cell, or 0.13 acre per the Site Operating Plan (SOP) (Part IV).

If constant peak flow conditions are assumed across only the working face and not the entire cell, then the leachate generated is approximately 5.04 ft^3/d (0.13 acres * 38.8 ft^3/d-ac). Under this assumption, the sump would take over a year to fill (~375 days).

7.4 Storage Tank Capacity

The storage tank should be sized to store 1 week worth of leachate under typical conditions. We can determine the average flow per day from the facility using the average annual leachate generation rate (HELP Model Outputs, Attachment III-4-B2-2). Assuming that the landfill has a maximum of two working faces (one for the Class I cell, one for a standard MSW cell), we can determine the average flow per day from the facility by converting the average annual flow to average weekly flow, and then multiplying the resultant leachate generations rate by the area of the working face. Per the Site Operating Plan (Part IV), the maximum size of a working face is limited to 6,000 ft^2 per cell, or 0.13 acre per working face.

To determine the volume of leachate generated at the landfill in one week under typical conditions, we use the following formula:

Weekly Leachate = (Average Annual Flow Rate ÷ 365) * 7 days * (working face * 2)

Weekly Peak Leachate = (1,380.3 ft^3/yr-ac ÷ 365 days/year) * 7 days * (0.13 acre * 2) = 6.88 ft^3/week

The weekly average leachate generation rate from two working faces is 6.88 ft^3. This is equivalent to approximately 51.4 gallons per week. Thus, a 3,000-gallon tank is considered appropriate for this facility, as it will be able to reasonably contain a year's worth of leachate (approximately 2,700 gallons).

If constant peak flow conditions are assumed instead of the average annual volume, then the leachate generated from two active working faces is estimated at 10.09 ft^3/d (0.13 acre * 2 * 38.8 ft^3/d-ac), assuming that leachate is only being generated at the working face. This is equivalent to roughly 75 gallons. Under this condition, the 3,000-gallon tank would take 40 days to be filled.

7.5 Secondary Containment

Secondary containment will be provided for the leachate storage tank, including 110 percent of the largest tank volume and precipitation from the 25-year, 24-hour storm within the secondary containment area. The single tank volume is 3,000 gallons, so 110 percent of that volume is 3,300 gallons or 441 cubic feet. Assume a containment area that is 20 feet by 20 feet square, and the 25-year, 24-hour design storm for the site is 4 inches. Precipitation from the design storm is 133 cubic feet. The total required secondary containment volume is approximately 575 cubic feet.

Assume the leachate storage tank has a diameter of 8.5 feet, which translates to an area of 57 square feet. The area available for secondary containment, excluding the tank area, is 343 square feet. Assume that 2-foot-high concrete dikes are installed around the secondary containment area. This translates to an available secondary containment volume of approximately 687 cubic feet, which exceeds the required volume.

8. Geotextile Permittivity

The purpose of this section is to determine the necessary permittivity for the geotextile at installation to ensure continued performance after reduction factors are considered. Geotextile will be placed around the leachate drainage aggregate and is also part of the geocomposite. The permittivity required can be determined using the peak leachate generation rate calculated in Section 7.1, and the typical cell layout shown in (Drawing C-2, Appendix III-4-A).

The leachate chimney will extend the entire length of the leachate collection trench, from the high point in the center of each cell to the toes on either end. The maximum length for a leachate chimney is approximately 814 feet. The minimum width of the chimney is 2 feet.

The following assumptions are made for calculating the required permittivity:

- The maximum head will be equal to the allowable head on the geotextile, which is 30 cm or approximately 1 foot, in accordance with 30 TAC 330.331(a)(2).
- Geotextile performance reduction factors, typical for landfilling operations (Table 2.12, Attachment III-4-B3-7):
  - RF_{SCB} = Soil clogging/binding reduction factor = Range 2.0-10.0
  - RF_{CR} = Creep reduction factor = Range 1.5-2.0
  - RF_{IN} = Intrusion reduction factor = Range 1.0-1.2
  - RF_{CC} = Chemical clogging reduction factor = Range 1.2-1.5
  - RF_{BC} = Biological clogging reduction factor = Range 2.0-5.0

8.1 Leachate Collection Trench Geotextile

The required permittivity for the geotextile to pass leachate collection system flow rates calculated in Section 7.1 can be calculated using the following equation (Equation 2.16, Attachment III-4-B3-7):

$$\psi = \frac{q}{\Delta h A}$$

where Ψ = Permittivity (s^{-1})
q = Peak inflow rate = 0.0092 cfs
Δh = Maximum allowable head on geotextile = 1.0 foot
L = Total chimney length = 814 feet (Drawing C-2, Appendix III-4-A)
W = Width of chimney = 2 feet
A = Inflow area into trench = L x W = 1,628 ft^2

$$\psi_{reduced} = \frac{q}{\Delta h A} = \frac{0.0092 \text{ cfs}}{1 \text{ ft} * 1{,}628 \text{ ft}^2} = 5.779 * 10^{-6} \frac{1}{\text{sec}}$$

The specified minimum permittivity must be increased to account for any performance reduction factors encountered during landfill operations. Due to the wide range of values for the reduction factors, the low, median, and high values are selected to determine a range of anticipated effective permittivity values (Equation 2.25a, Attachment III-4-B3-7):

$$\psi_{reduced} = \psi_{installed} \left(\frac{1}{RF_{SCB} * RF_{CR} * RF_{IN} * RF_{CC} * RF_{BC}} \right)$$

Table III-4-B1-18. Required Installed Permittivity for Leachate Collection Trench

Scenario	RF_{SCB}	RF_{CR}	RF_{IN}	RF_{CC}	RF_{BC}	$\Psi_{reduced}$ (s^{-1})	$\Psi_{installed}$ (s^{-1})
Low Reduction	2.0	1.5	1.0	1.2	2.0	5.779 x 10^{-6}	4.161 x 10^{-5}
Average Reduction	6.0	1.8	1.1	1.4	3.5	5.779 x 10^{-6}	3.154 x 10^{-4}
High Reduction	10.0	2.0	1.2	1.5	5.0	5.779 x 10^{-6}	1.040 x 10^{-3}

8.2 Geocomposite Geotextile

The needed permittivity for the geotextile can be calculated before any performance reduction (Equation 2.16, Attachment III-4-B3-7):

$$\Psi = \frac{q}{\Delta h A}$$

where Ψ = Permittivity
q = Peak inflow rate = 0.0092 cfs
Δh = Maximum allowable head on geotextile = 1.0 foot
A = Maximum cell area = 20.95 acres = 912,582 ft^2

$$\psi_{reduced} = \frac{q}{\Delta h A} = \frac{0.0092 \text{ cfs}}{1 \text{ ft} * 912{,}582 \text{ ft}^2} = 1.031 * 10^{-8} \frac{1}{\text{sec}}$$

The specified permittivity must be increased to account for any performance reduction factors encountered during landfill operations. Due to the wide range of values for the reduction factors, the low, median, and high values are selected to determine a range of anticipated effective permittivity values (Equation 2.25a, Attachment III-4-B3-7):

$$\psi_{reduced} = \psi_{installed} \left(\frac{1}{RF_{SCB} * RF_{CR} * RF_{IN} * RF_{CC} * RF_{BC}} \right)$$

Table III-4-B1-19. Required Installed Permittivity for Geocomposite

Scenario	RF_{SCB}	RF_{CR}	RF_{IN}	RF_{CC}	RF_{BC}	$\Psi_{reduced}$ (s^{-1})	$\Psi_{installed}$ (s^{-1})
Low Reduction	2.0	1.5	1.0	1.2	2.0	1.031×10^{-8}	7.423×10^{-8}
Average Reduction	6.0	1.8	1.1	1.4	3.5	1.031×10^{-8}	5.626×10^{-7}
High Reduction	10.0	2.0	1.2	1.5	5.0	1.031×10^{-8}	1.856×10^{-6}

8.3 Permittivity Results

The initial permittivity of an installed geotextile will be reduced based on multiple performance factors. This calculation has identified the minimum acceptable initial permittivity at the time of installation in order to pass the leachate flow rates at the WST Landfill once performance factors are considered. The most conservative reduction factors identify a minimum permittivity to be 1.040×10^{-3}/s for the leachate collection trench and 1.856×10^{-6}/s for the geocomposite. A typical non-woven geotextile with a weight of 8 ounces per square yard has a manufactured permittivity of about 1.5/s, greatly exceeding the requirement.

Attachment III-4-B2

HELP Model Output

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Attachment III-4-B2-1

HELP Scenarios Summary

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Design Specifications		Open with Daily Cover (10 feet of Waste)	Open with Daily Cover (20 feet of Waste)	Intermediate (76 feet of Waste)	Closed (152 feet of Waste)
	Number of Years Modeled	1	1	10	30
	Model Area (acre)	1	1	1	1
	Runoff Curve Number	85	85	85	85
	Area Allowing Runoff (%)	0	50	75	100
	Evaporative Zone Depth (in)	18	18	18	6
	Maximum Leaf Area Index	0	0	0.6	1.2
	Precipitation - Avg. Annual (in)	8.37	8.37	10.68	10.79
	Runoff - Avg. Annual (in)	0	0.033	0.057	0.052
	Evapotranspiration - Avg. Annual (in)	8.460	8.071	10.727	9.790
	Average Annual Wind Speed (mph)	8.22	8.22	8.22	8.22
Topsoil Layer	Texture				9
	Thickness (in)				6
	Porosity (vol/vol)				0.501
	Field Capacity (vol/vol)	N/A	N/A	N/A	0.284
	Wilting Point (vol/vol)				0.135
	Initial Moisture Content (vol/vol)				0.284
	Hydraulic Conductivity (cm/s)				1.90E-04
Drainage Net	Texture				20
	Thickness (in)				0.2
	Porosity (vol/vol)				0.85
	Field Capacity (vol/vol)				0.01
	Wilting Point (vol/vol)	N/A	N/A	N/A	0.005
	Initial Moisture Content (vol/vol)				0.01
	Hydraulic Conductivity (cm/s)				1.00E+01
	Slope (%)				2.8
	Slope Length (ft)				422
LLDPE Membrane	Texture				36
	Thickness (in)				0.04
	Hydraulic Conductivity (cm/s)	N/A	N/A	N/A	3.94E-13
	Pinhole Density (holes/acre)				2
	Install. Defects				3
	Placement Quality				3
Barrier Soil Liner	Texture				48
	Thickness (in)				18
	Porosity (vol/vol)				0.451
	Field Capacity (vol/vol)	N/A	N/A	N/A	0.411
	Wilting Point (vol/vol)				0.311
	Initial Moisture Content (vol/vol)				0.451
	Hydraulic Conductivity (cm/s)				1.00E-05
Final Cover	Texture				9
	Thickness (in)				12
	Porosity (vol/vol)				0.501
	Field Capacity (vol/vol)	N/A	N/A	N/A	0.284
	Wilting Point (vol/vol)				0.135
	Initial Moisture Content (vol/vol)				0.284
	Hydraulic Conductivity (cm/s)				1.90E-04

Design Specifications		Open with Daily Cover (10 feet of Waste)	Open with Daily Cover (20 feet of Waste)	Intermediate (76 feet of Waste)	Closed (152 feet of Waste)
Solid Waste	Texture				18
	Thickness (in)				912
	Porosity (vol/vol)				0.671
	Field Capacity (vol/vol)	N/A	N/A	N/A	0.292
	Wilting Point (vol/vol)				0.077
	Initial Moisture Content (vol/vol)				0.28
	Hydraulic Conductivity (cm/s)				1.00E-03
Intermediate Cover	Texture			9	9
	Thickness (in)			12	12
	Porosity (vol/vol)			0.501	0.501
	Field Capacity (vol/vol)	N/A	N/A	0.284	0.284
	Wilting Point (vol/vol)			0.135	0.135
	Initial Moisture Content (vol/vol)			0.284	0.284
	Hydraulic Conductivity (cm/s)			1.90E-04	1.90E-04
Solid Waste	Texture			18	18
	Thickness (in)			672	672
	Porosity (vol/vol)			0.671	0.671
	Field Capacity (vol/vol)	N/A	N/A	0.292	0.292
	Wilting Point (vol/vol)			0.077	0.077
	Initial Moisture Content (vol/vol)			0.2786	0.2800
	Hydraulic Conductivity (cm/s)			1.00E-03	1.00E-03
Daily Cover	Texture		9	9	9
	Thickness (in)		6	6	6
	Porosity (vol/vol)		0.501	0.501	0.501
	Field Capacity (vol/vol)	N/A	0.284	0.284	0.284
	Wilting Point (vol/vol)		0.135	0.135	0.135
	Initial Moisture Content (vol/vol)		0.284	0.284	0.284
	Hydraulic Conductivity (cm/s)		1.90E-04	1.90E-04	1.90E-04
Solid Waste	Texture		18	18	18
	Thickness (in)		120	120	120
	Porosity (vol/vol)		0.671	0.671	0.671
	Field Capacity (vol/vol)	N/A	0.292	0.292	0.292
	Wilting Point (vol/vol)		0.077	0.077	0.077
	Initial Moisture Content (vol/vol)		0.28	0.2786	0.2818
	Hydraulic Conductivity (cm/s)		1.00E-03	1.00E-03	1.00E-03
Daily Cover	Texture	9	9	9	9
	Thickness (in)	6	6	6	6
	Porosity (vol/vol)	0.501	0.501	0.501	0.501
	Field Capacity (vol/vol)	0.284	0.284	0.284	0.284
	Wilting Point (vol/vol)	0.135	0.135	0.135	0.135
	Initial Moisture Content (vol/vol)	0.284	0.284	0.284	0.284
	Hydraulic Conductivity (cm/s)	1.90E-04	1.90E-04	1.90E-04	1.90E-04
Solid Waste	Texture	18	18	18	18
	Thickness (in)	120	120	120	120
	Porosity (vol/vol)	0.671	0.671	0.671	0.671
	Field Capacity (vol/vol)	0.292	0.292	0.292	0.292
	Wilting Point (vol/vol)	0.077	0.077	0.077	0.077
	Initial Moisture Content (vol/vol)	0.28	0.2805	0.2878	0.2879
	Hydraulic Conductivity (cm/s)	1.00E-03	1.00E-03	1.00E-03	1.00E-03

Design Specifications		Open with Daily Cover (10 feet of Waste)	Open with Daily Cover (20 feet of Waste)	Intermediate (76 feet of Waste)	Closed (152 feet of Waste)
Protective Cover	Texture	9	9	9	9
	Thickness (in)	24	24	24	24
	Porosity (vol/vol)	0.501	0.501	0.501	0.501
	Field Capacity (vol/vol)	0.284	0.284	0.284	0.284
	Wilting Point (vol/vol)	0.135	0.135	0.135	0.135
	Initial Moisture Content (vol/vol)	0.284	0.284	0.284	0.284
	Hydraulic Conductivity (cm/s)	1.90E-04	1.90E-04	1.90E-04	1.90E-04
Drainage Net	Texture	123	123	123	123
	Calculated Thickness (in)	0.150	0.145	0.140	0.135
	Porosity (vol/vol)	0.85	0.85	0.85	0.85
	Field Capacity (vol/vol)	0.01	0.01	0.01	0.01
	Wilting Point (vol/vol)	0.005	0.005	0.005	0.005
	Initial Moisture Content (vol/vol)	0.01	0.01	0.01	0.01
	Calculated Kallow (cm/s)	1.64	1.64	1.70	1.82
	Slope (%)	2.8	2.8	2.8	2.8
	Slope Length (ft)	550	550	550	550
HDPE Membrane	Texture	35	35	35	35
	Thickness (in)	0.06	0.06	0.06	0.06
	Hydraulic Conductivity (cm/s)	2.00E-13	2.00E-13	2E-13	2.00E-13
	Pinhole Density (holes/acre)	2	2	2	2
	Install. Defects	3	3	3	3
	Placement Quality	3	3	3	3
Geosynthetic Clay	Texture	17	17	47	47
Liner	Thickness (in)	0.25	0.25	0.25	0.25
	Porosity (vol/vol)	0.75	0.75	0.75	0.75
	Field Capacity (vol/vol)	0.747	0.747	0.747	0.747
	Wilting Point (vol/vol)	0.4	0.4	0.40	0.40
	Initial Moisture Content (vol/vol)	0.75	0.75	0.75	0.75
	Hydraulic Conductivity (cm/s)	3.00E-09	3.00E-09	5.00E-09	5.00E-09
Outputs					
Upper Geonet	Average Annual (cf/year-acre)	N/A	N/A	N/A	3529.1
Lateral Drainage	Peak Daily (cf/day-acre)				2726.9
Lower Geonet Lateral	Average Annual (cf/year-acre)	1380.3	0	0	0
Drainage Collected	Peak Daily (cf/day-acre)	38.8	0	0	0
Maximum Head on	Average Annual (in)	0.0022	0	0	0
Bottom Liner	Peak Daily (in)	0.0451	0	0	0

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Attachment III-4-B2-2

HELP Results, Open with Daily Cover (10 feet of Waste)

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HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE
HELP MODEL VERSION 4.0 BETA (2018)
DEVELOPED BY USEPA NATIONAL RISK MANAGEMENT RESEARCH LABORATORY

Title: WST Landfill **Simulated On:** 3/13/2026 13:07

Layer 1

Type 1 - Vertical Percolation Layer (Cover Soil)
SiL - Silty Loam
Material Texture Number 9

Thickness	=	6	inches
Porosity	=	0.501	vol/vol
Field Capacity	=	0.284	vol/vol
Wilting Point	=	0.135	vol/vol
Initial Soil Water Content	=	0.284	vol/vol
Effective Sat. Hyd. Conductivity	=	1.90E-04	cm/sec

Layer 2

Type 1 - Vertical Percolation Layer (Waste)
Municipal Solid Waste (MSW) (900 pcy)
Material Texture Number 18

Thickness	=	120	inches
Porosity	=	0.671	vol/vol
Field Capacity	=	0.292	vol/vol
Wilting Point	=	0.077	vol/vol
Initial Soil Water Content	=	0.28	vol/vol
Effective Sat. Hyd. Conductivity	=	1.00E-03	cm/sec

Layer 3

Type 1 - Vertical Percolation Layer
SiL - Silty Loam
Material Texture Number 9

Thickness	=	24	inches
Porosity	=	0.501	vol/vol
Field Capacity	=	0.284	vol/vol
Wilting Point	=	0.135	vol/vol
Initial Soil Water Content	=	0.284	vol/vol
Effective Sat. Hyd. Conductivity	=	1.90E-04	cm/sec

Layer 4

Type 2 - Lateral Drainage Layer
Drainage Net

Material Texture Number 123

Thickness	=	0.15	inches
Porosity	=	0.85	vol/vol
Field Capacity	=	0.01	vol/vol
Wilting Point	=	0.005	vol/vol
Initial Soil Water Content	=	0.01	vol/vol
Effective Sat. Hyd. Conductivity	=	1.64E+00	cm/sec
Slope	=	2.8	%
Drainage Length	=	550	ft

Layer 5

Type 4 - Flexible Membrane Liner

HDPE Membrane

Material Texture Number 35

Thickness	=	0.06	inches
Effective Sat. Hyd. Conductivity	=	2.00E-13	cm/sec
FML Pinhole Density	=	2	Holes/Acre
FML Installation Defects	=	3	Holes/Acre
FML Placement Quality	=	3	Good

Layer 6

Type 3 - Barrier Soil Liner

Bentonite (High)

Material Texture Number 17

Thickness	=	0.25	inches
Porosity	=	0.75	vol/vol
Field Capacity	=	0.747	vol/vol
Wilting Point	=	0.4	vol/vol
Initial Soil Water Content	=	0.75	vol/vol
Effective Sat. Hyd. Conductivity	=	3.00E-09	cm/sec

Note: Initial moisture content of the layers and snow water were specified by the user.

General Design and Evaporative Zone Data

SCS Runoff Curve Number	=	85	
Fraction of Area Allowing Runoff	=	0	%
Area projected on a horizontal plane	=	1	acres
Evaporative Zone Depth	=	18	inches
Initial Water in Evaporative Zone	=	5.064	inches
Upper Limit of Evaporative Storage	=	11.058	inches
Lower Limit of Evaporative Storage	=	1.734	inches
Initial Snow Water	=	0	inches

Initial Water in Layer Materials	=	42.309	inches
Total Initial Water	=	42.309	inches
Total Subsurface Inflow	=	0	inches/year

Note: SCS Runoff Curve Number was User-Specified.

Evapotranspiration and Weather Data

Station Latitude	=	31.43	Degrees
Maximum Leaf Area Index	=	0	
Start of Growing Season (Julian Date)	=	88	days
End of Growing Season (Julian Date)	=	314	days
Average Wind Speed	=	8.22	mph
Average 1st Quarter Relative Humidity	=	42	%
Average 2nd Quarter Relative Humidity	=	35	%
Average 3rd Quarter Relative Humidity	=	41	%
Average 4th Quarter Relative Humidity	=	46	%

Note: Evapotranspiration data was obtained for Reeves County, Texas

Normal Mean Monthly Precipitation (inches)

Jan/Jul	Feb/Aug	Mar/Sep	Apr/Oct	May/Nov	Jun/Dec
0.480294	0.37877	0.41867	0.499307	1.107455	0.847711
1.962765	1.766718	1.510229	0.881425	0.376923	0.558686

Note: Precipitation was simulated based on HELP V4 weather simulation for:
Lat/Long: 31.43/-103.59

Normal Mean Monthly Temperature (Degrees Fahrenheit)

Jan/Jul	Feb/Aug	Mar/Sep	Apr/Oct	May/Nov	Jun/Dec
57.5	59.3	67.6	74	85.5	94.1
94.5	92.5	85.8	75.7	67.9	63.4

Note: Temperature was simulated based on HELP V4 weather simulation for:
Lat/Long: 31.43/-103.59
Solar radiation was simulated based on HELP V4 weather simulation for:
Lat/Long: 31.43/-103.59

Daily Output for Year 1

Column key: Head #1: drainage from Layer 5
Drain #1: drainage from Layer 4
Leak #1: leakage thru Layer 6

Title: WST Landfill
Simulated On: 3/13/2026 13:08

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)
1			0.00	0.000	0.012	0.2792	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.012	0.2763	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.011	0.2737	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.011	0.2712	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.011	0.2685	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.011	0.2656	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.011	0.2628	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.011	0.2601	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.011	0.2575	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.011	0.2551	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.011	0.2528	0.0000	0.0000	0.00E+00
12	*		0.00	0.000	0.011	0.2507	0.0000	0.0000	0.00E+00
13	*		0.00	0.000	0.000	0.2492	0.0000	0.0000	0.00E+00
14	*		0.00	0.000	0.003	0.2480	0.0000	0.0000	0.00E+00
15	*		0.00	0.000	0.000	0.2468	0.0000	0.0000	0.00E+00
16	*		0.00	0.000	0.000	0.2456	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.011	0.2439	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.011	0.2422	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.011	0.2407	0.0000	0.0000	0.00E+00
20	*		0.02	0.000	0.019	0.2398	0.0000	0.0000	0.00E+00
21			0.23	0.000	0.011	0.2509	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.011	0.2503	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.010	0.2497	0.0000	0.0000	0.00E+00
24	*		0.00	0.000	0.010	0.2492	0.0000	0.0000	0.00E+00

25		0.00	0.000	0.010	0.2484	0.0000	0.0000	0.00E+00
26		0.00	0.000	0.010	0.2470	0.0000	0.0000	0.00E+00
27		0.00	0.000	0.010	0.2455	0.0000	0.0000	0.00E+00
28		0.00	0.000	0.010	0.2442	0.0000	0.0000	0.00E+00
29		0.00	0.000	0.010	0.2429	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.010	0.2418	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.010	0.2406	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.010	0.2395	0.0000	0.0000	0.00E+00
33		0.00	0.000	0.010	0.2384	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.010	0.2373	0.0000	0.0000	0.00E+00
35		0.00	0.000	0.010	0.2362	0.0000	0.0000	0.00E+00
36		0.00	0.000	0.010	0.2351	0.0000	0.0000	0.00E+00
37		0.01	0.000	0.010	0.2346	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.010	0.2336	0.0000	0.0000	0.00E+00
39	*	0.00	0.000	0.010	0.2326	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.010	0.2316	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.010	0.2306	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.010	0.2295	0.0000	0.0000	0.00E+00
43		0.22	0.000	0.010	0.2408	0.0000	0.0000	0.00E+00
44		0.00	0.000	0.009	0.2403	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.009	0.2398	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.009	0.2393	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.009	0.2386	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.009	0.2377	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.009	0.2366	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.009	0.2355	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.009	0.2346	0.0000	0.0000	0.00E+00
52	*	0.00	0.000	0.009	0.2336	0.0000	0.0000	0.00E+00
53	*	0.00	0.000	0.000	0.2333	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.009	0.2328	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.009	0.2320	0.0000	0.0000	0.00E+00
56	*	0.00	0.000	0.009	0.2312	0.0000	0.0000	0.00E+00

57	*	0.00	0.000	0.009	0.2305	0.0000	0.0000	0.00E+00
58	*	0.00	0.000	0.000	0.2303	0.0000	0.0000	0.00E+00
59	*	0.00	0.000	0.000	0.2300	0.0000	0.0000	0.00E+00
60	*	0.00	0.000	0.000	0.2297	0.0000	0.0000	0.00E+00
61	*	0.00	0.000	0.009	0.2289	0.0000	0.0000	0.00E+00
62	*	0.00	0.000	0.000	0.2285	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.009	0.2277	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.009	0.2268	0.0000	0.0000	0.00E+00
65		0.00	0.000	0.009	0.2259	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.009	0.2251	0.0000	0.0000	0.00E+00
67		0.00	0.000	0.009	0.2243	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.009	0.2235	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.009	0.2228	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.009	0.2220	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.009	0.2215	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.009	0.2210	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.009	0.2205	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.009	0.2201	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.009	0.2196	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.008	0.2191	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.008	0.2186	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.008	0.2182	0.0000	0.0000	0.00E+00
79		0.00	0.000	0.008	0.2177	0.0000	0.0000	0.00E+00
80		0.00	0.000	0.008	0.2172	0.0000	0.0000	0.00E+00
81		0.00	0.000	0.008	0.2168	0.0000	0.0000	0.00E+00
82		0.00	0.000	0.008	0.2163	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.008	0.2159	0.0000	0.0000	0.00E+00
84		0.00	0.000	0.008	0.2154	0.0000	0.0000	0.00E+00
85		0.00	0.000	0.008	0.2149	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.008	0.2147	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.008	0.2142	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.008	0.2139	0.0000	0.0000	0.00E+00

89		0.14	0.000	0.008	0.2209	0.0000	0.0000	0.00E+00
90		0.09	0.000	0.008	0.2255	0.0000	0.0000	0.00E+00
91		0.00	0.000	0.008	0.2250	0.0000	0.0000	0.00E+00
92		0.00	0.000	0.008	0.2246	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.008	0.2242	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.008	0.2237	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.008	0.2233	0.0000	0.0000	0.00E+00
96		0.00	0.000	0.008	0.2228	0.0000	0.0000	0.00E+00
97		0.00	0.000	0.008	0.2224	0.0000	0.0000	0.00E+00
98		0.00	0.000	0.008	0.2219	0.0000	0.0000	0.00E+00
99		0.00	0.000	0.008	0.2215	0.0000	0.0000	0.00E+00
100		0.00	0.000	0.008	0.2211	0.0000	0.0000	0.00E+00
101		0.00	0.000	0.008	0.2206	0.0000	0.0000	0.00E+00
102		0.00	0.000	0.008	0.2201	0.0000	0.0000	0.00E+00
103		0.00	0.000	0.008	0.2195	0.0000	0.0000	0.00E+00
104		0.00	0.000	0.008	0.2188	0.0000	0.0000	0.00E+00
105		0.00	0.000	0.008	0.2181	0.0000	0.0000	0.00E+00
106		0.00	0.000	0.008	0.2174	0.0000	0.0000	0.00E+00
107		0.00	0.000	0.008	0.2168	0.0000	0.0000	0.00E+00
108		0.00	0.000	0.008	0.2161	0.0000	0.0000	0.00E+00
109		0.03	0.000	0.008	0.2170	0.0000	0.0000	0.00E+00
110		0.10	0.000	0.008	0.2219	0.0000	0.0000	0.00E+00
111		0.00	0.000	0.008	0.2212	0.0000	0.0000	0.00E+00
112	*	0.00	0.000	0.008	0.2208	0.0000	0.0000	0.00E+00
113		0.00	0.000	0.008	0.2204	0.0000	0.0000	0.00E+00
114		0.00	0.000	0.008	0.2200	0.0000	0.0000	0.00E+00
115		0.00	0.000	0.008	0.2195	0.0000	0.0000	0.00E+00
116		0.00	0.000	0.007	0.2191	0.0000	0.0000	0.00E+00
117		0.00	0.000	0.007	0.2187	0.0000	0.0000	0.00E+00
118		0.00	0.000	0.007	0.2181	0.0000	0.0000	0.00E+00
119		0.00	0.000	0.007	0.2175	0.0000	0.0000	0.00E+00
120		0.00	0.000	0.007	0.2169	0.0000	0.0000	0.00E+00

121	0.00	0.000	0.007	0.2163	0.0000	0.0000	0.00E+00
122	0.14	0.000	0.008	0.2238	0.0000	0.0000	0.00E+00
123	0.00	0.000	0.007	0.2234	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.007	0.2230	0.0000	0.0000	0.00E+00
125	0.00	0.000	0.007	0.2226	0.0000	0.0000	0.00E+00
126	0.00	0.000	0.007	0.2221	0.0000	0.0000	0.00E+00
127	0.00	0.000	0.007	0.2217	0.0000	0.0000	0.00E+00
128	0.68	0.000	0.008	0.2589	0.0000	0.0000	0.00E+00
129	0.02	0.000	0.008	0.2593	0.0000	0.0000	0.00E+00
130	0.00	0.000	0.007	0.2589	0.0000	0.0000	0.00E+00
131	0.00	0.000	0.007	0.2585	0.0000	0.0000	0.00E+00
132	1.19	0.000	0.008	0.3244	0.0000	0.0000	0.00E+00
133	0.00	0.000	0.256	0.3102	0.0000	0.0000	0.00E+00
134	0.00	0.000	0.218	0.2971	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.293	0.2765	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.238	0.2589	0.0000	0.0000	0.00E+00
137	0.00	0.000	0.201	0.2478	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.083	0.2432	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.064	0.2396	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.054	0.2367	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.047	0.2340	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.043	0.2316	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.039	0.2295	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.037	0.2274	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.034	0.2255	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.033	0.2237	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.031	0.2220	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.030	0.2203	0.0000	0.0000	0.00E+00
149	0.02	0.000	0.029	0.2192	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.027	0.2177	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.026	0.2162	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.025	0.2148	0.0000	0.0000	0.00E+00

153	0.00	0.000	0.024	0.2135	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.024	0.2122	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.023	0.2109	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.023	0.2096	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.022	0.2084	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.022	0.2072	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.021	0.2060	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.021	0.2049	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.020	0.2037	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.020	0.2026	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.019	0.2015	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.019	0.2005	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.019	0.1994	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.018	0.1984	0.0000	0.0000	0.00E+00
167	0.07	0.000	0.019	0.2012	0.0000	0.0000	0.00E+00
168	0.19	0.000	0.019	0.2107	0.0000	0.0000	0.00E+00
169	0.10	0.000	0.018	0.2151	0.0000	0.0000	0.00E+00
170	0.02	0.000	0.018	0.2144	0.0000	0.0000	0.00E+00
171	0.14	0.000	0.018	0.2209	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.018	0.2202	0.0000	0.0000	0.00E+00
173	0.00	0.000	0.017	0.2193	0.0000	0.0000	0.00E+00
174	0.00	0.000	0.016	0.2184	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.016	0.2175	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.016	0.2166	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.016	0.2157	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.016	0.2148	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.015	0.2140	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.015	0.2131	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.015	0.2123	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.015	0.2115	0.0000	0.0000	0.00E+00
183	0.00	0.000	0.015	0.2106	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.015	0.2098	0.0000	0.0000	0.00E+00

185	0.00	0.000	0.014	0.2090	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.014	0.2082	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.014	0.2075	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.014	0.2067	0.0000	0.0000	0.00E+00
189	0.00	0.000	0.014	0.2059	0.0000	0.0000	0.00E+00
190	0.00	0.000	0.014	0.2052	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.014	0.2044	0.0000	0.0000	0.00E+00
192	0.11	0.000	0.014	0.2097	0.0000	0.0000	0.00E+00
193	0.08	0.000	0.014	0.2132	0.0000	0.0000	0.00E+00
194	0.19	0.000	0.014	0.2228	0.0000	0.0000	0.00E+00
195	0.00	0.000	0.013	0.2220	0.0000	0.0000	0.00E+00
196	0.46	0.000	0.014	0.2469	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.013	0.2462	0.0000	0.0000	0.00E+00
198	0.01	0.000	0.014	0.2462	0.0000	0.0000	0.00E+00
199	0.12	0.000	0.014	0.2520	0.0000	0.0000	0.00E+00
200	0.03	0.000	0.014	0.2532	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.012	0.2525	0.0000	0.0000	0.00E+00
202	0.04	0.000	0.013	0.2538	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.012	0.2531	0.0000	0.0000	0.00E+00
204	0.04	0.000	0.013	0.2545	0.0000	0.0000	0.00E+00
205	0.00	0.000	0.012	0.2533	0.0000	0.0000	0.00E+00
206	0.00	0.000	0.012	0.2526	0.0000	0.0000	0.00E+00
207	0.00	0.000	0.012	0.2520	0.0000	0.0000	0.00E+00
208	0.00	0.000	0.012	0.2513	0.0000	0.0000	0.00E+00
209	0.00	0.000	0.012	0.2507	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.012	0.2500	0.0000	0.0000	0.00E+00
211	0.09	0.000	0.013	0.2543	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.012	0.2536	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.011	0.2530	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.011	0.2519	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.011	0.2513	0.0000	0.0000	0.00E+00
216	0.00	0.000	0.012	0.2498	0.0000	0.0000	0.00E+00

217	0.24	0.000	0.012	0.2626	0.0000	0.0000	0.00E+00
218	0.00	0.000	0.011	0.2620	0.0000	0.0000	0.00E+00
219	0.00	0.000	0.011	0.2614	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.011	0.2608	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.011	0.2602	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.011	0.2596	0.0000	0.0000	0.00E+00
223	0.16	0.000	0.012	0.2667	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.339	0.2478	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.011	0.2461	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.011	0.2444	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.011	0.2427	0.0009	0.0004	3.70E-09
228	0.00	0.000	0.011	0.2411	0.0013	0.0006	7.27E-09
229	0.09	0.000	0.012	0.2447	0.0007	0.0003	7.07E-09
230	0.02	0.000	0.012	0.2444	0.0023	0.0011	7.54E-09
231	0.00	0.000	0.010	0.2434	0.0036	0.0017	7.95E-09
232	0.00	0.000	0.010	0.2428	0.0020	0.0009	7.46E-09
233	0.00	0.000	0.010	0.2423	0.0013	0.0006	7.24E-09
234	0.06	0.000	0.012	0.2444	0.0028	0.0013	7.71E-09
235	0.00	0.000	0.010	0.2434	0.0127	0.0060	1.04E-08
236	0.20	0.000	0.011	0.2530	0.0157	0.0074	1.11E-08
237	0.04	0.000	0.011	0.2543	0.0153	0.0073	1.10E-08
238	0.00	0.000	0.010	0.2538	0.0100	0.0047	9.69E-09
239	0.00	0.000	0.010	0.2529	0.0158	0.0075	1.12E-08
240	0.00	0.000	0.010	0.2524	0.0179	0.0085	1.17E-08
241	0.00	0.000	0.010	0.2518	0.0226	0.0107	1.28E-08
242	0.00	0.000	0.010	0.2509	0.0202	0.0096	1.22E-08
243	0.00	0.000	0.010	0.2500	0.0139	0.0066	1.07E-08
244	0.00	0.000	0.010	0.2492	0.0125	0.0059	1.03E-08
245	0.00	0.000	0.010	0.2485	0.0125	0.0059	1.03E-08
246	0.00	0.000	0.010	0.2475	0.0135	0.0064	1.06E-08
247	0.00	0.000	0.010	0.2463	0.0098	0.0046	9.63E-09
248	0.00	0.000	0.010	0.2454	0.0081	0.0038	9.17E-09

249	0.00	0.000	0.010	0.2442	0.0087	0.0041	9.35E-09
250	0.00	0.000	0.009	0.2432	0.0082	0.0039	9.20E-09
251	0.00	0.000	0.010	0.2423	0.0095	0.0045	9.54E-09
252	0.09	0.000	0.011	0.2465	0.0105	0.0050	9.82E-09
253	0.13	0.000	0.011	0.2530	0.0097	0.0046	9.60E-09
254	0.09	0.000	0.281	0.2425	0.0076	0.0036	9.05E-09
255	0.02	0.000	0.011	0.2430	0.0067	0.0032	8.81E-09
256	0.00	0.000	0.009	0.2425	0.0079	0.0037	9.12E-09
257	0.00	0.000	0.009	0.2419	0.0134	0.0063	1.05E-08
258	0.01	0.000	0.011	0.2420	0.0204	0.0096	1.23E-08
259	0.23	0.000	0.011	0.2538	0.0219	0.0104	1.27E-08
260	0.03	0.000	0.178	0.2454	0.0174	0.0082	1.15E-08
261	0.09	0.000	0.011	0.2498	0.0102	0.0048	9.73E-09
262	0.00	0.000	0.009	0.2492	0.0056	0.0026	8.50E-09
263	0.00	0.000	0.009	0.2487	0.0048	0.0023	8.29E-09
264	0.00	0.000	0.009	0.2482	0.0028	0.0013	7.71E-09
265	0.00	0.000	0.009	0.2477	0.0015	0.0007	7.33E-09
266	0.00	0.000	0.009	0.2470	0.0019	0.0009	7.45E-09
267	0.00	0.000	0.009	0.2465	0.0026	0.0012	7.65E-09
268	0.04	0.000	0.010	0.2484	0.0014	0.0007	7.29E-09
269	0.00	0.000	0.009	0.2479	0.0008	0.0004	7.09E-09
270	0.00	0.000	0.009	0.2472	0.0004	0.0002	6.97E-09
271	0.00	0.000	0.009	0.2465	0.0033	0.0016	7.85E-09
272	0.00	0.000	0.009	0.2456	0.0070	0.0033	8.87E-09
273	0.00	0.000	0.009	0.2446	0.0079	0.0037	9.12E-09
274	0.00	0.000	0.009	0.2438	0.0093	0.0044	9.50E-09
275	0.00	0.000	0.009	0.2431	0.0102	0.0048	9.73E-09
276	0.00	0.000	0.009	0.2424	0.0095	0.0045	9.56E-09
277	0.00	0.000	0.009	0.2418	0.0134	0.0064	1.06E-08
278	0.00	0.000	0.009	0.2413	0.0111	0.0053	9.96E-09
279	0.00	0.000	0.008	0.2407	0.0076	0.0036	9.06E-09
280	0.00	0.000	0.008	0.2401	0.0061	0.0029	8.63E-09

281	*	0.10	0.000	0.065	0.2410	0.0064	0.0030	8.73E-09
282	*	0.10	0.000	0.054	0.2419	0.0065	0.0031	8.75E-09
283		0.52	0.000	0.022	0.2719	0.0062	0.0030	8.68E-09
284		0.00	0.000	0.095	0.2665	0.0043	0.0020	8.15E-09
285		0.00	0.000	0.106	0.2608	0.0040	0.0019	8.07E-09
286		0.00	0.000	0.085	0.2561	0.0022	0.0011	7.54E-09
287		0.00	0.000	0.142	0.2480	0.0012	0.0006	7.23E-09
288		0.07	0.000	0.145	0.2438	0.0026	0.0012	7.65E-09
289		0.49	0.000	0.202	0.2598	0.0039	0.0019	8.04E-09
290		0.00	0.000	0.221	0.2469	0.0039	0.0018	8.02E-09
291		0.00	0.000	0.254	0.2328	0.0051	0.0024	8.36E-09
292		0.00	0.000	0.201	0.2215	0.0100	0.0047	9.69E-09
293		0.39	0.000	0.085	0.2383	0.0066	0.0031	8.77E-09
294		0.00	0.000	0.064	0.2348	0.0036	0.0017	7.94E-09
295		0.00	0.000	0.054	0.2318	0.0020	0.0009	7.46E-09
296		0.00	0.000	0.047	0.2292	0.0011	0.0005	7.18E-09
297		0.00	0.000	0.043	0.2268	0.0006	0.0003	7.02E-09
298	*	0.00	0.000	0.039	0.2244	0.0015	0.0007	7.33E-09
299		0.00	0.000	0.037	0.2222	0.0036	0.0017	7.96E-09
300		0.00	0.000	0.034	0.2201	0.0057	0.0027	8.54E-09
301		0.00	0.000	0.033	0.2180	0.0067	0.0032	8.81E-09
302		0.00	0.000	0.031	0.2162	0.0074	0.0035	9.00E-09
303		0.00	0.000	0.030	0.2146	0.0042	0.0020	8.11E-09
304		0.00	0.000	0.028	0.2130	0.0023	0.0011	7.56E-09
305		0.02	0.000	0.029	0.2127	0.0012	0.0006	7.24E-09
306		0.23	0.000	0.028	0.2239	0.0007	0.0003	7.06E-09
307		0.00	0.000	0.025	0.2225	0.0004	0.0002	6.95E-09
308		0.00	0.000	0.025	0.2211	0.0002	0.0001	6.89E-09
309		0.00	0.000	0.024	0.2198	0.0001	0.0001	6.85E-09
310		0.00	0.000	0.023	0.2185	0.0001	0.0000	6.83E-09
311		0.00	0.000	0.023	0.2172	0.0000	0.0000	6.82E-09
312		0.00	0.000	0.022	0.2160	0.0000	0.0000	6.81E-09

313	0.00	0.000	0.022	0.2148	0.0000	0.0000	6.81E-09
314	0.02	0.000	0.023	0.2143	0.0002	0.0001	6.87E-09
315	0.00	0.000	0.021	0.2130	0.0022	0.0010	7.51E-09
316	0.00	0.000	0.020	0.2117	0.0044	0.0021	8.17E-09
317	0.00	0.000	0.020	0.2104	0.0051	0.0024	8.36E-09
318	0.00	0.000	0.019	0.2093	0.0050	0.0024	8.35E-09
319	0.00	0.000	0.019	0.2082	0.0029	0.0014	7.74E-09
320	0.00	0.000	0.019	0.2072	0.0016	0.0007	7.35E-09
321	0.00	0.000	0.018	0.2061	0.0009	0.0004	7.12E-09
322	0.00	0.000	0.018	0.2051	0.0007	0.0003	7.05E-09
323	0.00	0.000	0.018	0.2039	0.0029	0.0014	7.75E-09
324	0.00	0.000	0.018	0.2027	0.0053	0.0025	8.41E-09
325	0.00	0.000	0.017	0.2014	0.0070	0.0033	8.90E-09
326	0.00	0.000	0.017	0.2002	0.0083	0.0039	9.24E-09
327	0.20	0.000	0.018	0.2102	0.0072	0.0034	8.94E-09
328	0.00	0.000	0.017	0.2092	0.0039	0.0019	8.04E-09
329	0.00	0.000	0.016	0.2081	0.0025	0.0012	7.63E-09
330	0.00	0.000	0.017	0.2070	0.0061	0.0029	8.65E-09
331	0.00	0.000	0.016	0.2060	0.0073	0.0035	8.96E-09
332	0.00	0.000	0.016	0.2052	0.0042	0.0020	8.11E-09
333	0.00	0.000	0.016	0.2043	0.0023	0.0011	7.56E-09
334	0.00	0.000	0.015	0.2034	0.0012	0.0006	7.24E-09
335	0.00	0.000	0.015	0.2026	0.0007	0.0003	7.06E-09
336	0.00	0.000	0.015	0.2018	0.0004	0.0002	6.95E-09
337	0.00	0.000	0.015	0.2009	0.0002	0.0001	6.89E-09
338	0.00	0.000	0.015	0.2001	0.0001	0.0001	6.85E-09
339	0.00	0.000	0.015	0.1993	0.0001	0.0000	6.83E-09
340	0.00	0.000	0.014	0.1984	0.0003	0.0001	6.92E-09
341	0.00	0.000	0.014	0.1974	0.0032	0.0015	7.84E-09
342	0.00	0.000	0.014	0.1964	0.0055	0.0026	8.49E-09
343	0.00	0.000	0.014	0.1954	0.0069	0.0032	8.85E-09
344	0.00	0.000	0.014	0.1944	0.0076	0.0036	9.05E-09

345		0.00	0.000	0.014	0.1934	0.0080	0.0038	9.16E-09
346		0.00	0.000	0.014	0.1924	0.0082	0.0039	9.21E-09
347		0.00	0.000	0.013	0.1915	0.0083	0.0039	9.22E-09
348		0.00	0.000	0.013	0.1905	0.0082	0.0039	9.21E-09
349		0.00	0.000	0.013	0.1896	0.0081	0.0038	9.18E-09
350		0.00	0.000	0.013	0.1886	0.0079	0.0038	9.14E-09
351		0.00	0.000	0.013	0.1877	0.0078	0.0037	9.09E-09
352		0.00	0.000	0.013	0.1868	0.0076	0.0036	9.04E-09
353		0.00	0.000	0.013	0.1859	0.0074	0.0035	8.98E-09
354		0.00	0.000	0.013	0.1850	0.0072	0.0034	8.93E-09
355		0.00	0.000	0.013	0.1842	0.0070	0.0033	8.87E-09
356		0.03	0.000	0.013	0.1853	0.0055	0.0026	8.48E-09
357		0.00	0.000	0.013	0.1847	0.0030	0.0014	7.77E-09
358	*	0.00	0.000	0.012	0.1838	0.0032	0.0015	7.83E-09
359		0.00	0.000	0.012	0.1830	0.0052	0.0024	8.38E-09
360		0.00	0.000	0.012	0.1821	0.0059	0.0028	8.58E-09
361		0.06	0.000	0.012	0.1850	0.0049	0.0023	8.30E-09
362		0.02	0.000	0.012	0.1852	0.0026	0.0013	7.67E-09
363		0.00	0.000	0.012	0.1845	0.0014	0.0007	7.30E-09
364		0.00	0.000	0.012	0.1838	0.0008	0.0004	7.09E-09
365		0.00	0.000	0.012	0.1832	0.0004	0.0002	6.97E-09

* = Frozen (air or soil)

Annual Totals for Year 1			
	inches	cubic feet	percent
Precipitation	8.37	30,382.5	100.00
Runoff	0.000	0.0000	0.00
Evapotranspiration	8.460	30,709.2	101.08
Drainage Collected from Layer 4	0.3803	1,380.3	4.54
Percolation/Leakage through Layer 6	0.000001	0.0043	0.00

Average Head on Top of Layer 5	0.0022	---	---
Change in Water Storage	-0.4703	-1,707.1	-5.62
Soil Water at Start of Year	42.3089	153,581.5	505.49
Soil Water at End of Year	41.8387	151,874.4	499.87
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Average Annual Totals Summary

Title: WST Landfill
Simulated on: 3/13/2026 13:08

	Average Annual Totals for Years 1 - 1*			
	(inches)	[std dev]	(cubic feet)	(percent)
Precipitation	8.37	[0]	30,382.5	100.00
Runoff	0.000	[0]	0.0000	0.00
Evapotranspiration	8.460	[0]	30,709.2	101.08
Subprofile1				
Lateral drainage collected from Layer 4	0.3803	[0]	1,380.3	4.54
Percolation/leakage through Layer 6	0.000001	[0]	0.0043	0.00
Average Head on Top of Layer 5	0.0022		---	---
Water storage				
Change in water storage	-0.4703		-1,707.1	-5.62

* Note: Average inches are converted to volume based on the user-specified area.

Peak Values Summary

Title: WST Landfill
Simulated on: 3/13/2026 13:09

	Peak Values for Years 1 - 1*		
	(inches)		(cubic feet)
Precipitation	1.19		4,333.7
Runoff	0.000		0.0000
Subprofile1			
Drainage collected from Layer 4	0.0107		38.8
Percolation/leakage through Layer 6	0.000000		0.0000
Average head on Layer 5	0.0226		---
Maximum head on Layer 5	0.0451		---
Location of maximum head in Layer 4	0.55	(feet from drain)	
Other Parameters			
Snow water	0.0990		359.3
Maximum vegetation soil water	0.3244	(vol/vol)	
Minimum vegetation soil water	0.1821	(vol/vol)	

Final Water Storage in Landfill Profile at End of Simulation Period

Title: WST Landfill
Simulated on: 3/13/2026 13:09
Simulation period: 1 years

	Final Water Storage	
Layer	(inches)	(vol/vol)
1	1.1777	0.1963
2	33.6557	0.2805
3	6.8160	0.2840
4	0.0017	0.0116
5	0.0000	0.0000
6	0.1875	0.7500
Snow water	0.0000	---

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Attachment III-4-B2-3

HELP Results, Open with Daily Cover (20 feet of Waste)

DBS&A
a Geo-Logic Company

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HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE
HELP MODEL VERSION 4.0 BETA (2018)
DEVELOPED BY USEPA NATIONAL RISK MANAGEMENT RESEARCH LABORATORY

Title: WST Landfill **Simulated On:** 3/13/2026 13:38

Layer 1

Type 1 - Vertical Percolation Layer (Cover Soil)
SiL - Silty Loam
Material Texture Number 9

Thickness	=	6	inches
Porosity	=	0.501	vol/vol
Field Capacity	=	0.284	vol/vol
Wilting Point	=	0.135	vol/vol
Initial Soil Water Content	=	0.284	vol/vol
Effective Sat. Hyd. Conductivity	=	1.90E-04	cm/sec

Layer 2

Type 1 - Vertical Percolation Layer (Waste)
Municipal Solid Waste (MSW) (900 pcy)
Material Texture Number 18

Thickness	=	120	inches
Porosity	=	0.671	vol/vol
Field Capacity	=	0.292	vol/vol
Wilting Point	=	0.077	vol/vol
Initial Soil Water Content	=	0.28	vol/vol
Effective Sat. Hyd. Conductivity	=	1.00E-03	cm/sec

Layer 3

Type 1 - Vertical Percolation Layer
SiL - Silty Loam
Material Texture Number 9

Thickness	=	6	inches
Porosity	=	0.501	vol/vol
Field Capacity	=	0.284	vol/vol
Wilting Point	=	0.135	vol/vol
Initial Soil Water Content	=	0.284	vol/vol
Effective Sat. Hyd. Conductivity	=	1.90E-04	cm/sec

Layer 4

Type 1 - Vertical Percolation Layer (Waste)
Municipal Solid Waste (MSW) (900 pcy)

Material Texture Number 18

Thickness	=	120	inches
Porosity	=	0.671	vol/vol
Field Capacity	=	0.292	vol/vol
Wilting Point	=	0.077	vol/vol
Initial Soil Water Content	=	0.2805	vol/vol
Effective Sat. Hyd. Conductivity	=	1.00E-03	cm/sec

Layer 5

Type 1 - Vertical Percolation Layer

SiL - Silty Loam

Material Texture Number 9

Thickness	=	24	inches
Porosity	=	0.501	vol/vol
Field Capacity	=	0.284	vol/vol
Wilting Point	=	0.135	vol/vol
Initial Soil Water Content	=	0.284	vol/vol
Effective Sat. Hyd. Conductivity	=	1.90E-04	cm/sec

Layer 6

Type 2 - Lateral Drainage Layer

Drainage Net

Material Texture Number 123

Thickness	=	0.15	inches
Porosity	=	0.85	vol/vol
Field Capacity	=	0.01	vol/vol
Wilting Point	=	0.005	vol/vol
Initial Soil Water Content	=	0.01	vol/vol
Effective Sat. Hyd. Conductivity	=	1.64E+00	cm/sec
Slope	=	2.8	%
Drainage Length	=	550	ft

Layer 7

Type 4 - Flexible Membrane Liner

HDPE Membrane

Material Texture Number 35

Thickness	=	0.06	inches
Effective Sat. Hyd. Conductivity	=	2.00E-13	cm/sec
FML Pinhole Density	=	2	Holes/Acre
FML Installation Defects	=	3	Holes/Acre
FML Placement Quality	=	3	Good

Layer 8

Type 3 - Barrier Soil Liner

Bentonite (High)
Material Texture Number 17

Thickness	=	0.25	inches
Porosity	=	0.75	vol/vol
Field Capacity	=	0.747	vol/vol
Wilting Point	=	0.4	vol/vol
Initial Soil Water Content	=	0.75	vol/vol
Effective Sat. Hyd. Conductivity	=	3.00E-09	cm/sec

Note: Initial moisture content of the layers and snow water were specified by the user.

General Design and Evaporative Zone Data

SCS Runoff Curve Number	=	85	
Fraction of Area Allowing Runoff	=	50	%
Area projected on a horizontal plane	=	1	acres
Evaporative Zone Depth	=	18	inches
Initial Water in Evaporative Zone	=	5.064	inches
Upper Limit of Evaporative Storage	=	11.058	inches
Lower Limit of Evaporative Storage	=	1.734	inches
Initial Snow Water	=	0	inches
Initial Water in Layer Materials	=	77.673	inches
Total Initial Water	=	77.673	inches
Total Subsurface Inflow	=	0	inches/year

Note: SCS Runoff Curve Number was User-Specified.

Evapotranspiration and Weather Data

Station Latitude	=	31.43	Degrees
Maximum Leaf Area Index	=	0	
Start of Growing Season (Julian Date)	=	88	days
End of Growing Season (Julian Date)	=	314	days
Average Wind Speed	=	8.22	mph
Average 1st Quarter Relative Humidity	=	42	%
Average 2nd Quarter Relative Humidity	=	35	%
Average 3rd Quarter Relative Humidity	=	41	%
Average 4th Quarter Relative Humidity	=	46	%

Note: Evapotranspiration data was obtained for Reeves County, Texas

Normal Mean Monthly Precipitation (inches)

Jan/Jul	Feb/Aug	Mar/Sep	Apr/Oct	May/Nov	Jun/Dec
0.480294	0.37877	0.41867	0.499307	1.107455	0.847711
1.962765	1.766718	1.510229	0.881425	0.376923	0.558686

Note: Precipitation was simulated based on HELP V4 weather simulation for:
Lat/Long: 31.43/-103.59

Normal Mean Monthly Temperature (Degrees Fahrenheit)

Jan/Jul	Feb/Aug	Mar/Sep	Apr/Oct	May/Nov	Jun/Dec
57.5	59.3	67.6	74	85.5	94.1
94.5	92.5	85.8	75.7	67.9	63.4

Note: Temperature was simulated based on HELP V4 weather simulation for:
Lat/Long: 31.43/-103.59
Solar radiation was simulated based on HELP V4 weather simulation for:
Lat/Long: 31.43/-103.59

Daily Output for Year 1

Column key: Head #1: drainage from Layer 7
Drain #1: drainage from Layer 6
Leak #1: leakage thru Layer 8

Title: WST Landfill
Simulated On: 3/13/2026 13:39

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)
1			0.00	0.000	0.012	0.2792	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.012	0.2763	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.011	0.2737	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.011	0.2712	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.011	0.2685	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.011	0.2656	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.011	0.2628	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.011	0.2601	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.011	0.2575	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.011	0.2551	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.011	0.2528	0.0000	0.0000	0.00E+00
12	*		0.00	0.000	0.011	0.2507	0.0000	0.0000	0.00E+00
13	*		0.00	0.000	0.000	0.2492	0.0000	0.0000	0.00E+00
14	*		0.00	0.000	0.003	0.2480	0.0000	0.0000	0.00E+00
15	*		0.00	0.000	0.000	0.2468	0.0000	0.0000	0.00E+00
16	*		0.00	0.000	0.000	0.2456	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.011	0.2439	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.011	0.2422	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.011	0.2407	0.0000	0.0000	0.00E+00
20	*		0.02	0.000	0.019	0.2398	0.0000	0.0000	0.00E+00
21			0.23	0.000	0.011	0.2509	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.011	0.2503	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.010	0.2497	0.0000	0.0000	0.00E+00
24	*		0.00	0.000	0.010	0.2492	0.0000	0.0000	0.00E+00

25		0.00	0.000	0.010	0.2482	0.0000	0.0000	0.00E+00
26		0.00	0.000	0.010	0.2468	0.0000	0.0000	0.00E+00
27		0.00	0.000	0.010	0.2453	0.0000	0.0000	0.00E+00
28		0.00	0.000	0.010	0.2440	0.0000	0.0000	0.00E+00
29		0.00	0.000	0.010	0.2428	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.010	0.2416	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.010	0.2405	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.010	0.2394	0.0000	0.0000	0.00E+00
33		0.00	0.000	0.010	0.2383	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.010	0.2372	0.0000	0.0000	0.00E+00
35		0.00	0.000	0.010	0.2361	0.0000	0.0000	0.00E+00
36		0.00	0.000	0.010	0.2350	0.0000	0.0000	0.00E+00
37		0.01	0.000	0.010	0.2345	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.010	0.2335	0.0000	0.0000	0.00E+00
39	*	0.00	0.000	0.010	0.2325	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.010	0.2315	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.010	0.2305	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.010	0.2294	0.0000	0.0000	0.00E+00
43		0.22	0.000	0.010	0.2407	0.0000	0.0000	0.00E+00
44		0.00	0.000	0.009	0.2402	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.009	0.2396	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.009	0.2391	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.009	0.2385	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.009	0.2375	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.009	0.2365	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.009	0.2354	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.009	0.2344	0.0000	0.0000	0.00E+00
52	*	0.00	0.000	0.009	0.2335	0.0000	0.0000	0.00E+00
53	*	0.00	0.000	0.000	0.2332	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.009	0.2327	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.009	0.2318	0.0000	0.0000	0.00E+00
56	*	0.00	0.000	0.009	0.2311	0.0000	0.0000	0.00E+00

57	*	0.00	0.000	0.009	0.2303	0.0000	0.0000	0.00E+00
58	*	0.00	0.000	0.000	0.2302	0.0000	0.0000	0.00E+00
59	*	0.00	0.000	0.000	0.2299	0.0000	0.0000	0.00E+00
60	*	0.00	0.000	0.000	0.2296	0.0000	0.0000	0.00E+00
61	*	0.00	0.000	0.009	0.2287	0.0000	0.0000	0.00E+00
62	*	0.00	0.000	0.000	0.2284	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.009	0.2275	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.009	0.2267	0.0000	0.0000	0.00E+00
65		0.00	0.000	0.009	0.2258	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.009	0.2250	0.0000	0.0000	0.00E+00
67		0.00	0.000	0.009	0.2242	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.009	0.2234	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.009	0.2226	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.009	0.2219	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.009	0.2212	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.009	0.2207	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.009	0.2202	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.009	0.2197	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.009	0.2192	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.008	0.2187	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.008	0.2183	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.008	0.2178	0.0000	0.0000	0.00E+00
79		0.00	0.000	0.008	0.2173	0.0000	0.0000	0.00E+00
80		0.00	0.000	0.008	0.2169	0.0000	0.0000	0.00E+00
81		0.00	0.000	0.008	0.2164	0.0000	0.0000	0.00E+00
82		0.00	0.000	0.008	0.2159	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.008	0.2155	0.0000	0.0000	0.00E+00
84		0.00	0.000	0.008	0.2150	0.0000	0.0000	0.00E+00
85		0.00	0.000	0.008	0.2146	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.008	0.2143	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.008	0.2138	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.008	0.2135	0.0000	0.0000	0.00E+00

89		0.14	0.000	0.008	0.2206	0.0000	0.0000	0.00E+00
90		0.09	0.000	0.008	0.2251	0.0000	0.0000	0.00E+00
91		0.00	0.000	0.008	0.2247	0.0000	0.0000	0.00E+00
92		0.00	0.000	0.008	0.2242	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.008	0.2238	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.008	0.2233	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.008	0.2229	0.0000	0.0000	0.00E+00
96		0.00	0.000	0.008	0.2225	0.0000	0.0000	0.00E+00
97		0.00	0.000	0.008	0.2220	0.0000	0.0000	0.00E+00
98		0.00	0.000	0.008	0.2216	0.0000	0.0000	0.00E+00
99		0.00	0.000	0.008	0.2211	0.0000	0.0000	0.00E+00
100		0.00	0.000	0.008	0.2207	0.0000	0.0000	0.00E+00
101		0.00	0.000	0.008	0.2203	0.0000	0.0000	0.00E+00
102		0.00	0.000	0.008	0.2198	0.0000	0.0000	0.00E+00
103		0.00	0.000	0.008	0.2191	0.0000	0.0000	0.00E+00
104		0.00	0.000	0.008	0.2185	0.0000	0.0000	0.00E+00
105		0.00	0.000	0.008	0.2178	0.0000	0.0000	0.00E+00
106		0.00	0.000	0.008	0.2171	0.0000	0.0000	0.00E+00
107		0.00	0.000	0.008	0.2165	0.0000	0.0000	0.00E+00
108		0.00	0.000	0.008	0.2158	0.0000	0.0000	0.00E+00
109		0.03	0.000	0.008	0.2167	0.0000	0.0000	0.00E+00
110		0.10	0.000	0.008	0.2216	0.0000	0.0000	0.00E+00
111		0.00	0.000	0.008	0.2210	0.0000	0.0000	0.00E+00
112	*	0.00	0.000	0.008	0.2206	0.0000	0.0000	0.00E+00
113		0.00	0.000	0.008	0.2202	0.0000	0.0000	0.00E+00
114		0.00	0.000	0.008	0.2198	0.0000	0.0000	0.00E+00
115		0.00	0.000	0.008	0.2193	0.0000	0.0000	0.00E+00
116		0.00	0.000	0.007	0.2189	0.0000	0.0000	0.00E+00
117		0.00	0.000	0.007	0.2185	0.0000	0.0000	0.00E+00
118		0.00	0.000	0.007	0.2179	0.0000	0.0000	0.00E+00
119		0.00	0.000	0.007	0.2173	0.0000	0.0000	0.00E+00
120		0.00	0.000	0.007	0.2167	0.0000	0.0000	0.00E+00

121	0.00	0.000	0.007	0.2161	0.0000	0.0000	0.00E+00
122	0.14	0.000	0.008	0.2235	0.0000	0.0000	0.00E+00
123	0.00	0.000	0.007	0.2231	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.007	0.2227	0.0000	0.0000	0.00E+00
125	0.00	0.000	0.007	0.2223	0.0000	0.0000	0.00E+00
126	0.00	0.000	0.007	0.2219	0.0000	0.0000	0.00E+00
127	0.00	0.000	0.007	0.2215	0.0000	0.0000	0.00E+00
128	0.68	0.000	0.008	0.2587	0.0000	0.0000	0.00E+00
129	0.02	0.000	0.008	0.2592	0.0000	0.0000	0.00E+00
130	0.00	0.000	0.007	0.2588	0.0000	0.0000	0.00E+00
131	0.00	0.000	0.007	0.2584	0.0000	0.0000	0.00E+00
132	1.19	0.033	0.008	0.3225	0.0000	0.0000	0.00E+00
133	0.00	0.000	0.256	0.3082	0.0000	0.0000	0.00E+00
134	0.00	0.000	0.218	0.2947	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.293	0.2720	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.238	0.2579	0.0000	0.0000	0.00E+00
137	0.00	0.000	0.201	0.2464	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.083	0.2418	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.064	0.2383	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.054	0.2353	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.047	0.2327	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.043	0.2303	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.039	0.2281	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.037	0.2261	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.034	0.2242	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.033	0.2223	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.031	0.2206	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.030	0.2190	0.0000	0.0000	0.00E+00
149	0.02	0.000	0.029	0.2183	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.027	0.2168	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.026	0.2154	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.025	0.2139	0.0000	0.0000	0.00E+00

153	0.00	0.000	0.024	0.2126	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.024	0.2113	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.023	0.2100	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.023	0.2087	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.022	0.2075	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.022	0.2063	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.021	0.2051	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.021	0.2040	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.020	0.2028	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.020	0.2017	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.019	0.2006	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.019	0.1996	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.019	0.1985	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.018	0.1975	0.0000	0.0000	0.00E+00
167	0.07	0.000	0.019	0.2003	0.0000	0.0000	0.00E+00
168	0.19	0.000	0.019	0.2098	0.0000	0.0000	0.00E+00
169	0.10	0.000	0.018	0.2142	0.0000	0.0000	0.00E+00
170	0.02	0.000	0.018	0.2136	0.0000	0.0000	0.00E+00
171	0.14	0.000	0.018	0.2202	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.018	0.2195	0.0000	0.0000	0.00E+00
173	0.00	0.000	0.017	0.2185	0.0000	0.0000	0.00E+00
174	0.00	0.000	0.016	0.2176	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.016	0.2167	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.016	0.2158	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.016	0.2150	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.016	0.2141	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.015	0.2132	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.015	0.2124	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.015	0.2116	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.015	0.2107	0.0000	0.0000	0.00E+00
183	0.00	0.000	0.015	0.2099	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.015	0.2091	0.0000	0.0000	0.00E+00

185	0.00	0.000	0.014	0.2083	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.014	0.2075	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.014	0.2067	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.014	0.2060	0.0000	0.0000	0.00E+00
189	0.00	0.000	0.014	0.2052	0.0000	0.0000	0.00E+00
190	0.00	0.000	0.014	0.2044	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.014	0.2037	0.0000	0.0000	0.00E+00
192	0.11	0.000	0.014	0.2090	0.0000	0.0000	0.00E+00
193	0.08	0.000	0.014	0.2124	0.0000	0.0000	0.00E+00
194	0.19	0.000	0.014	0.2221	0.0000	0.0000	0.00E+00
195	0.00	0.000	0.013	0.2213	0.0000	0.0000	0.00E+00
196	0.46	0.000	0.014	0.2462	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.013	0.2455	0.0000	0.0000	0.00E+00
198	0.01	0.000	0.014	0.2455	0.0000	0.0000	0.00E+00
199	0.12	0.000	0.014	0.2513	0.0000	0.0000	0.00E+00
200	0.03	0.000	0.014	0.2525	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.012	0.2518	0.0000	0.0000	0.00E+00
202	0.04	0.000	0.013	0.2530	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.012	0.2524	0.0000	0.0000	0.00E+00
204	0.04	0.000	0.013	0.2538	0.0000	0.0000	0.00E+00
205	0.00	0.000	0.012	0.2527	0.0000	0.0000	0.00E+00
206	0.00	0.000	0.012	0.2520	0.0000	0.0000	0.00E+00
207	0.00	0.000	0.012	0.2513	0.0000	0.0000	0.00E+00
208	0.00	0.000	0.012	0.2507	0.0000	0.0000	0.00E+00
209	0.00	0.000	0.012	0.2500	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.012	0.2494	0.0000	0.0000	0.00E+00
211	0.09	0.000	0.013	0.2536	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.012	0.2530	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.011	0.2523	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.011	0.2513	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.011	0.2507	0.0000	0.0000	0.00E+00
216	0.00	0.000	0.012	0.2493	0.0000	0.0000	0.00E+00

217	0.24	0.000	0.012	0.2622	0.0000	0.0000	0.00E+00
218	0.00	0.000	0.011	0.2615	0.0000	0.0000	0.00E+00
219	0.00	0.000	0.011	0.2609	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.011	0.2603	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.011	0.2597	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.011	0.2587	0.0000	0.0000	0.00E+00
223	0.16	0.000	0.012	0.2659	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.011	0.2653	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.011	0.2640	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.011	0.2627	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.011	0.2616	0.0000	0.0000	0.00E+00
228	0.00	0.000	0.010	0.2610	0.0000	0.0000	0.00E+00
229	0.09	0.000	0.012	0.2655	0.0000	0.0000	0.00E+00
230	0.02	0.000	0.252	0.2518	0.0000	0.0000	0.00E+00
231	0.00	0.000	0.010	0.2502	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.010	0.2488	0.0000	0.0000	0.00E+00
233	0.00	0.000	0.010	0.2474	0.0000	0.0000	0.00E+00
234	0.06	0.000	0.012	0.2491	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.010	0.2478	0.0000	0.0000	0.00E+00
236	0.20	0.000	0.011	0.2576	0.0000	0.0000	0.00E+00
237	0.04	0.000	0.011	0.2589	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.010	0.2584	0.0000	0.0000	0.00E+00
239	0.00	0.000	0.010	0.2577	0.0000	0.0000	0.00E+00
240	0.00	0.000	0.010	0.2564	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.010	0.2558	0.0000	0.0000	0.00E+00
242	0.00	0.000	0.010	0.2547	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.010	0.2538	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.010	0.2530	0.0000	0.0000	0.00E+00
245	0.00	0.000	0.010	0.2518	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.010	0.2505	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.010	0.2491	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.010	0.2479	0.0000	0.0000	0.00E+00

249	0.00	0.000	0.010	0.2468	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.009	0.2458	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.010	0.2449	0.0000	0.0000	0.00E+00
252	0.09	0.000	0.011	0.2490	0.0000	0.0000	0.00E+00
253	0.13	0.000	0.011	0.2556	0.0000	0.0000	0.00E+00
254	0.09	0.000	0.281	0.2447	0.0000	0.0000	0.00E+00
255	0.02	0.000	0.011	0.2453	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.009	0.2447	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.009	0.2442	0.0000	0.0000	0.00E+00
258	0.01	0.000	0.011	0.2442	0.0000	0.0000	0.00E+00
259	0.23	0.000	0.011	0.2558	0.0000	0.0000	0.00E+00
260	0.03	0.000	0.178	0.2475	0.0000	0.0000	0.00E+00
261	0.09	0.000	0.011	0.2517	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.340	0.2328	0.0000	0.0000	0.00E+00
263	0.00	0.000	0.009	0.2323	0.0000	0.0000	0.00E+00
264	0.00	0.000	0.009	0.2316	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.009	0.2308	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.009	0.2300	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.009	0.2291	0.0000	0.0000	0.00E+00
268	0.04	0.000	0.010	0.2305	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.009	0.2296	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.009	0.2287	0.0000	0.0000	0.00E+00
271	0.00	0.000	0.009	0.2281	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.009	0.2274	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.009	0.2269	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.009	0.2262	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.009	0.2254	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.009	0.2246	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.009	0.2237	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.009	0.2228	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.009	0.2220	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.008	0.2212	0.0000	0.0000	0.00E+00

281	*	0.10	0.000	0.065	0.2219	0.0000	0.0000	0.00E+00
282	*	0.10	0.000	0.054	0.2227	0.0000	0.0000	0.00E+00
283		0.52	0.000	0.022	0.2526	0.0000	0.0000	0.00E+00
284		0.00	0.000	0.095	0.2473	0.0000	0.0000	0.00E+00
285		0.00	0.000	0.106	0.2416	0.0000	0.0000	0.00E+00
286		0.00	0.000	0.085	0.2369	0.0000	0.0000	0.00E+00
287		0.00	0.000	0.083	0.2320	0.0000	0.0000	0.00E+00
288		0.07	0.000	0.066	0.2323	0.0000	0.0000	0.00E+00
289		0.49	0.000	0.056	0.2565	0.0000	0.0000	0.00E+00
290		0.00	0.000	0.221	0.2443	0.0000	0.0000	0.00E+00
291		0.00	0.000	0.047	0.2417	0.0000	0.0000	0.00E+00
292		0.00	0.000	0.043	0.2392	0.0000	0.0000	0.00E+00
293		0.39	0.000	0.041	0.2585	0.0000	0.0000	0.00E+00
294		0.00	0.000	0.264	0.2438	0.0000	0.0000	0.00E+00
295		0.00	0.000	0.037	0.2418	0.0000	0.0000	0.00E+00
296		0.00	0.000	0.034	0.2398	0.0000	0.0000	0.00E+00
297		0.00	0.000	0.033	0.2379	0.0000	0.0000	0.00E+00
298	*	0.00	0.000	0.031	0.2362	0.0000	0.0000	0.00E+00
299		0.00	0.000	0.030	0.2346	0.0000	0.0000	0.00E+00
300		0.00	0.000	0.028	0.2330	0.0000	0.0000	0.00E+00
301		0.00	0.000	0.027	0.2314	0.0000	0.0000	0.00E+00
302		0.00	0.000	0.026	0.2299	0.0000	0.0000	0.00E+00
303		0.00	0.000	0.025	0.2285	0.0000	0.0000	0.00E+00
304		0.00	0.000	0.025	0.2270	0.0000	0.0000	0.00E+00
305		0.02	0.000	0.026	0.2268	0.0000	0.0000	0.00E+00
306		0.23	0.000	0.025	0.2381	0.0000	0.0000	0.00E+00
307		0.00	0.000	0.023	0.2367	0.0000	0.0000	0.00E+00
308		0.00	0.000	0.022	0.2354	0.0000	0.0000	0.00E+00
309		0.00	0.000	0.022	0.2342	0.0000	0.0000	0.00E+00
310		0.00	0.000	0.021	0.2329	0.0000	0.0000	0.00E+00
311		0.00	0.000	0.021	0.2318	0.0000	0.0000	0.00E+00
312		0.00	0.000	0.020	0.2306	0.0000	0.0000	0.00E+00

313	0.00	0.000	0.020	0.2294	0.0000	0.0000	0.00E+00
314	0.02	0.000	0.021	0.2290	0.0000	0.0000	0.00E+00
315	0.00	0.000	0.019	0.2278	0.0000	0.0000	0.00E+00
316	0.00	0.000	0.019	0.2267	0.0000	0.0000	0.00E+00
317	0.00	0.000	0.018	0.2257	0.0000	0.0000	0.00E+00
318	0.00	0.000	0.018	0.2246	0.0000	0.0000	0.00E+00
319	0.00	0.000	0.018	0.2234	0.0000	0.0000	0.00E+00
320	0.00	0.000	0.018	0.2222	0.0000	0.0000	0.00E+00
321	0.00	0.000	0.017	0.2211	0.0000	0.0000	0.00E+00
322	0.00	0.000	0.017	0.2199	0.0000	0.0000	0.00E+00
323	0.00	0.000	0.017	0.2188	0.0000	0.0000	0.00E+00
324	0.00	0.000	0.017	0.2176	0.0000	0.0000	0.00E+00
325	0.00	0.000	0.016	0.2165	0.0000	0.0000	0.00E+00
326	0.00	0.000	0.016	0.2154	0.0000	0.0000	0.00E+00
327	0.20	0.000	0.017	0.2254	0.0000	0.0000	0.00E+00
328	0.00	0.000	0.016	0.2244	0.0000	0.0000	0.00E+00
329	0.00	0.000	0.016	0.2235	0.0000	0.0000	0.00E+00
330	0.00	0.000	0.016	0.2225	0.0000	0.0000	0.00E+00
331	0.00	0.000	0.015	0.2217	0.0000	0.0000	0.00E+00
332	0.00	0.000	0.015	0.2208	0.0000	0.0000	0.00E+00
333	0.00	0.000	0.015	0.2196	0.0000	0.0000	0.00E+00
334	0.00	0.000	0.015	0.2186	0.0000	0.0000	0.00E+00
335	0.00	0.000	0.015	0.2176	0.0000	0.0000	0.00E+00
336	0.00	0.000	0.014	0.2166	0.0000	0.0000	0.00E+00
337	0.00	0.000	0.014	0.2157	0.0000	0.0000	0.00E+00
338	0.00	0.000	0.014	0.2147	0.0000	0.0000	0.00E+00
339	0.00	0.000	0.014	0.2138	0.0000	0.0000	0.00E+00
340	0.00	0.000	0.014	0.2130	0.0000	0.0000	0.00E+00
341	0.00	0.000	0.014	0.2122	0.0000	0.0000	0.00E+00
342	0.00	0.000	0.014	0.2115	0.0000	0.0000	0.00E+00
343	0.00	0.000	0.013	0.2107	0.0000	0.0000	0.00E+00
344	0.00	0.000	0.013	0.2100	0.0000	0.0000	0.00E+00

345		0.00	0.000	0.013	0.2092	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.013	0.2085	0.0000	0.0000	0.00E+00
347		0.00	0.000	0.013	0.2078	0.0000	0.0000	0.00E+00
348		0.00	0.000	0.013	0.2071	0.0000	0.0000	0.00E+00
349		0.00	0.000	0.013	0.2064	0.0000	0.0000	0.00E+00
350		0.00	0.000	0.013	0.2057	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.013	0.2050	0.0000	0.0000	0.00E+00
352		0.00	0.000	0.012	0.2043	0.0000	0.0000	0.00E+00
353		0.00	0.000	0.012	0.2036	0.0000	0.0000	0.00E+00
354		0.00	0.000	0.012	0.2029	0.0000	0.0000	0.00E+00
355		0.00	0.000	0.012	0.2022	0.0000	0.0000	0.00E+00
356		0.03	0.000	0.013	0.2033	0.0000	0.0000	0.00E+00
357		0.00	0.000	0.012	0.2027	0.0000	0.0000	0.00E+00
358	*	0.00	0.000	0.012	0.2019	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.012	0.2011	0.0000	0.0000	0.00E+00
360		0.00	0.000	0.012	0.2003	0.0000	0.0000	0.00E+00
361		0.06	0.000	0.012	0.2031	0.0000	0.0000	0.00E+00
362		0.02	0.000	0.012	0.2033	0.0000	0.0000	0.00E+00
363		0.00	0.000	0.012	0.2027	0.0000	0.0000	0.00E+00
364		0.00	0.000	0.011	0.2020	0.0000	0.0000	0.00E+00
365		0.00	0.000	0.011	0.2012	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 1			
	inches	cubic feet	percent
Precipitation	8.37	30,382.5	100.00
Runoff	0.033	118.8	0.39
Evapotranspiration	8.071	29,298.9	96.43
Drainage Collected from Layer 6	0.0000	0.0000	0.00
Percolation/Leakage through Layer 8	0.000000	0.0000	0.00

Average Head on Top of Layer 7	0.0000	---	---
Change in Water Storage	0.2658	964.9	3.18
Soil Water at Start of Year	77.6729	281,952.8	928.01
Soil Water at End of Year	77.9387	282,917.7	931.19
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Average Annual Totals Summary

Title: WST Landfill
Simulated on: 3/13/2026 13:39

	Average Annual Totals for Years 1 - 1*			
	(inches)	[std dev]	(cubic feet)	(percent)
Precipitation	8.37	[0]	30,382.5	100.00
Runoff	0.033	[0]	118.8	0.39
Evapotranspiration	8.071	[0]	29,298.9	96.43
Subprofile1				
Lateral drainage collected from Layer 6	0.0000	[0]	0.0000	0.00
Percolation/leakage through Layer 8	0.000000	[0]	0.0000	0.00
Average Head on Top of Layer 7	0.0000		---	---
Water storage				
Change in water storage	0.2658		964.9	3.18

* Note: Average inches are converted to volume based on the user-specified area.

Peak Values Summary

Title: WST Landfill
Simulated on: 3/13/2026 13:40

	Peak Values for Years 1 - 1*		
	(inches)		(cubic feet)
Precipitation	1.19		4,333.7
Runoff	0.033		118.8
Subprofile1			
Drainage collected from Layer 6	0.0000		0.0000
Percolation/leakage through Layer 8	0.000000		0.0000
Average head on Layer 7	0.0000		---
Maximum head on Layer 7	0.0000		---
Location of maximum head in Layer 6	0.00	(feet from drain)	
Other Parameters			
Snow water	0.0990		359.3
Maximum vegetation soil water	0.3225	(vol/vol)	
Minimum vegetation soil water	0.1975	(vol/vol)	

Final Water Storage in Landfill Profile at End of Simulation Period

Title: WST Landfill
Simulated on: 3/13/2026 13:40
Simulation period: 1 years

	Final Water Storage	
Layer	(inches)	(vol/vol)
1	1.2710	0.2118
2	33.4336	0.2786
3	1.6911	0.2818
4	34.5381	0.2878
5	6.8160	0.2840
6	0.0015	0.0100
7	0.0000	0.0000
8	0.1875	0.7500
Snow water	0.0000	---

Attachment III-4-B2-4

HELP Results, Intermediate (76 feet of Waste)

DBS&A
a Geo-Logic Company

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HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE
HELP MODEL VERSION 4.0 BETA (2018)
DEVELOPED BY USEPA NATIONAL RISK MANAGEMENT RESEARCH LABORATORY

Title: WST Landfill **Simulated On:** 3/23/2026 12:12

Layer 1

Type 1 - Vertical Percolation Layer (Cover Soil)
SiL - Silty Loam
Material Texture Number 9

Thickness	=	12	inches
Porosity	=	0.501	vol/vol
Field Capacity	=	0.284	vol/vol
Wilting Point	=	0.135	vol/vol
Initial Soil Water Content	=	0.284	vol/vol
Effective Sat. Hyd. Conductivity	=	1.90E-04	cm/sec

Layer 2

Type 1 - Vertical Percolation Layer (Waste)
Municipal Solid Waste (MSW) (900 pcy)
Material Texture Number 18

Thickness	=	672	inches
Porosity	=	0.671	vol/vol
Field Capacity	=	0.292	vol/vol
Wilting Point	=	0.077	vol/vol
Initial Soil Water Content	=	0.28	vol/vol
Effective Sat. Hyd. Conductivity	=	1.00E-03	cm/sec

Layer 3

Type 1 - Vertical Percolation Layer
SiL - Silty Loam
Material Texture Number 9

Thickness	=	6	inches
Porosity	=	0.501	vol/vol
Field Capacity	=	0.284	vol/vol
Wilting Point	=	0.135	vol/vol
Initial Soil Water Content	=	0.284	vol/vol
Effective Sat. Hyd. Conductivity	=	1.90E-04	cm/sec

Layer 4

Type 1 - Vertical Percolation Layer (Waste)
Municipal Solid Waste (MSW) (900 pcy)

Material Texture Number 18

Thickness	=	120	inches
Porosity	=	0.671	vol/vol
Field Capacity	=	0.292	vol/vol
Wilting Point	=	0.077	vol/vol
Initial Soil Water Content	=	0.2786	vol/vol
Effective Sat. Hyd. Conductivity	=	1.00E-03	cm/sec

Layer 5

Type 1 - Vertical Percolation Layer

SiL - Silty Loam

Material Texture Number 9

Thickness	=	6	inches
Porosity	=	0.501	vol/vol
Field Capacity	=	0.284	vol/vol
Wilting Point	=	0.135	vol/vol
Initial Soil Water Content	=	0.284	vol/vol
Effective Sat. Hyd. Conductivity	=	1.90E-04	cm/sec

Layer 6

Type 1 - Vertical Percolation Layer (Waste)

Municipal Solid Waste (MSW) (900 pcy)

Material Texture Number 18

Thickness	=	120	inches
Porosity	=	0.671	vol/vol
Field Capacity	=	0.292	vol/vol
Wilting Point	=	0.077	vol/vol
Initial Soil Water Content	=	0.2878	vol/vol
Effective Sat. Hyd. Conductivity	=	1.00E-03	cm/sec

Layer 7

Type 1 - Vertical Percolation Layer

SiL - Silty Loam

Material Texture Number 9

Thickness	=	24	inches
Porosity	=	0.501	vol/vol
Field Capacity	=	0.284	vol/vol
Wilting Point	=	0.135	vol/vol
Initial Soil Water Content	=	0.284	vol/vol
Effective Sat. Hyd. Conductivity	=	1.90E-04	cm/sec

Layer 8

Type 2 - Lateral Drainage Layer

Drainage Net

Material Texture Number 123

Thickness	=	0.14	inches
Porosity	=	0.85	vol/vol
Field Capacity	=	0.01	vol/vol
Wilting Point	=	0.005	vol/vol
Initial Soil Water Content	=	0.01	vol/vol
Effective Sat. Hyd. Conductivity	=	1.70E+00	cm/sec
Slope	=	2.8	%
Drainage Length	=	550	ft

Layer 9

Type 4 - Flexible Membrane Liner

HDPE Membrane

Material Texture Number 35

Thickness	=	0.06	inches
Effective Sat. Hyd. Conductivity	=	2.00E-13	cm/sec
FML Pinhole Density	=	2	Holes/Acre
FML Installation Defects	=	3	Holes/Acre
FML Placement Quality	=	3	Good

Layer 10

Type 3 - Barrier Soil Liner

Bentonite (High)

Material Texture Number 17

Thickness	=	0.25	inches
Porosity	=	0.75	vol/vol
Field Capacity	=	0.747	vol/vol
Wilting Point	=	0.4	vol/vol
Initial Soil Water Content	=	0.75	vol/vol
Effective Sat. Hyd. Conductivity	=	3.00E-09	cm/sec

Note: Initial moisture content of the layers and snow water were specified by the user.

General Design and Evaporative Zone Data

SCS Runoff Curve Number	=	85	
Fraction of Area Allowing Runoff	=	75	%
Area projected on a horizontal plane	=	1	acres
Evaporative Zone Depth	=	18	inches
Initial Water in Evaporative Zone	=	5.088	inches
Upper Limit of Evaporative Storage	=	10.038	inches
Lower Limit of Evaporative Storage	=	2.082	inches
Initial Snow Water	=	0	inches

Initial Water in Layer Materials	=	269.949	inches
Total Initial Water	=	269.949	inches
Total Subsurface Inflow	=	0	inches/year

Note: SCS Runoff Curve Number was User-Specified.

Evapotranspiration and Weather Data

Station Latitude	=	31.43	Degrees
Maximum Leaf Area Index	=	0.6	
Start of Growing Season (Julian Date)	=	88	days
End of Growing Season (Julian Date)	=	314	days
Average Wind Speed	=	8.22	mph
Average 1st Quarter Relative Humidity	=	42	%
Average 2nd Quarter Relative Humidity	=	35	%
Average 3rd Quarter Relative Humidity	=	41	%
Average 4th Quarter Relative Humidity	=	46	%

Note: Evapotranspiration data was obtained for Reeves County, Texas

Normal Mean Monthly Precipitation (inches)

Jan/Jul	Feb/Aug	Mar/Sep	Apr/Oct	May/Nov	Jun/Dec
0.480294	0.37877	0.41867	0.499307	1.107455	0.847711
1.962765	1.766718	1.510229	0.881425	0.376923	0.558686

Note: Precipitation was simulated based on HELP V4 weather simulation for:
Lat/Long: 31.43/-103.59

Normal Mean Monthly Temperature (Degrees Fahrenheit)

Jan/Jul	Feb/Aug	Mar/Sep	Apr/Oct	May/Nov	Jun/Dec
57.5	59.3	67.6	74	85.5	94.1
94.5	92.5	85.8	75.7	67.9	63.4

Note: Temperature was simulated based on HELP V4 weather simulation for:
Lat/Long: 31.43/-103.59
Solar radiation was simulated based on HELP V4 weather simulation for:
Lat/Long: 31.43/-103.59

Daily Output for Year 1

Column key: Head #1: drainage from Layer 9
Drain #1: drainage from Layer 8
Leak #1: leakage thru Layer 10

Title: WST Landfill
Simulated On: 3/23/2026 12:13

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)
1			0.00	0.000	0.012	0.2803	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.012	0.2773	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.011	0.2743	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.011	0.2716	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.011	0.2693	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.011	0.2673	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.011	0.2654	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.011	0.2637	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.011	0.2620	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.011	0.2605	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.011	0.2589	0.0000	0.0000	0.00E+00
12	*		0.00	0.000	0.011	0.2575	0.0000	0.0000	0.00E+00
13	*		0.00	0.000	0.000	0.2565	0.0000	0.0000	0.00E+00
14	*		0.00	0.000	0.003	0.2559	0.0000	0.0000	0.00E+00
15	*		0.00	0.000	0.000	0.2554	0.0000	0.0000	0.00E+00
16	*		0.00	0.000	0.000	0.2550	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.011	0.2539	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.011	0.2528	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.011	0.2517	0.0000	0.0000	0.00E+00
20	*		0.02	0.000	0.019	0.2513	0.0000	0.0000	0.00E+00
21			0.23	0.000	0.012	0.2628	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.011	0.2618	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.010	0.2607	0.0000	0.0000	0.00E+00
24	*		0.00	0.000	0.010	0.2595	0.0000	0.0000	0.00E+00

25		0.00	0.000	0.010	0.2586	0.0000	0.0000	0.00E+00
26		0.00	0.000	0.010	0.2579	0.0000	0.0000	0.00E+00
27		0.00	0.000	0.010	0.2571	0.0000	0.0000	0.00E+00
28		0.00	0.000	0.010	0.2560	0.0000	0.0000	0.00E+00
29		0.00	0.000	0.010	0.2549	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.010	0.2539	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.010	0.2528	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.010	0.2518	0.0000	0.0000	0.00E+00
33		0.00	0.000	0.010	0.2508	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.010	0.2498	0.0000	0.0000	0.00E+00
35		0.00	0.000	0.010	0.2488	0.0000	0.0000	0.00E+00
36		0.00	0.000	0.010	0.2478	0.0000	0.0000	0.00E+00
37		0.01	0.000	0.011	0.2479	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.010	0.2471	0.0000	0.0000	0.00E+00
39	*	0.00	0.000	0.010	0.2462	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.010	0.2454	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.010	0.2446	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.010	0.2437	0.0000	0.0000	0.00E+00
43		0.22	0.000	0.011	0.2556	0.0000	0.0000	0.00E+00
44		0.00	0.000	0.009	0.2549	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.009	0.2539	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.009	0.2532	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.009	0.2525	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.009	0.2516	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.009	0.2508	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.009	0.2500	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.009	0.2492	0.0000	0.0000	0.00E+00
52	*	0.00	0.000	0.009	0.2485	0.0000	0.0000	0.00E+00
53	*	0.00	0.000	0.000	0.2483	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.009	0.2477	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.009	0.2471	0.0000	0.0000	0.00E+00
56	*	0.00	0.000	0.009	0.2463	0.0000	0.0000	0.00E+00

57	*	0.00	0.000	0.009	0.2455	0.0000	0.0000	0.00E+00
58	*	0.00	0.000	0.000	0.2453	0.0000	0.0000	0.00E+00
59	*	0.00	0.000	0.000	0.2451	0.0000	0.0000	0.00E+00
60	*	0.00	0.000	0.000	0.2449	0.0000	0.0000	0.00E+00
61	*	0.00	0.000	0.009	0.2441	0.0000	0.0000	0.00E+00
62	*	0.00	0.000	0.000	0.2440	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.009	0.2433	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.009	0.2426	0.0000	0.0000	0.00E+00
65		0.00	0.000	0.009	0.2419	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.009	0.2412	0.0000	0.0000	0.00E+00
67		0.00	0.000	0.009	0.2406	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.009	0.2399	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.009	0.2393	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.009	0.2386	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.009	0.2379	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.009	0.2373	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.009	0.2366	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.009	0.2359	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.009	0.2353	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.008	0.2346	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.008	0.2339	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.008	0.2332	0.0000	0.0000	0.00E+00
79		0.00	0.000	0.008	0.2325	0.0000	0.0000	0.00E+00
80		0.00	0.000	0.008	0.2319	0.0000	0.0000	0.00E+00
81		0.00	0.000	0.008	0.2312	0.0000	0.0000	0.00E+00
82		0.00	0.000	0.008	0.2305	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.008	0.2298	0.0000	0.0000	0.00E+00
84		0.00	0.000	0.008	0.2292	0.0000	0.0000	0.00E+00
85		0.00	0.000	0.008	0.2285	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.009	0.2280	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.008	0.2273	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.009	0.2268	0.0000	0.0000	0.00E+00

89		0.14	0.000	0.009	0.2336	0.0000	0.0000	0.00E+00
90		0.09	0.000	0.009	0.2379	0.0000	0.0000	0.00E+00
91		0.00	0.000	0.008	0.2372	0.0000	0.0000	0.00E+00
92		0.00	0.000	0.008	0.2366	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.008	0.2359	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.008	0.2353	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.008	0.2346	0.0000	0.0000	0.00E+00
96		0.00	0.000	0.008	0.2341	0.0000	0.0000	0.00E+00
97		0.00	0.000	0.008	0.2335	0.0000	0.0000	0.00E+00
98		0.00	0.000	0.008	0.2329	0.0000	0.0000	0.00E+00
99		0.00	0.000	0.008	0.2322	0.0000	0.0000	0.00E+00
100		0.00	0.000	0.008	0.2315	0.0000	0.0000	0.00E+00
101		0.00	0.000	0.008	0.2309	0.0000	0.0000	0.00E+00
102		0.00	0.000	0.008	0.2302	0.0000	0.0000	0.00E+00
103		0.00	0.000	0.008	0.2296	0.0000	0.0000	0.00E+00
104		0.00	0.000	0.008	0.2289	0.0000	0.0000	0.00E+00
105		0.00	0.000	0.008	0.2283	0.0000	0.0000	0.00E+00
106		0.00	0.000	0.008	0.2277	0.0000	0.0000	0.00E+00
107		0.00	0.000	0.008	0.2271	0.0000	0.0000	0.00E+00
108		0.00	0.000	0.008	0.2265	0.0000	0.0000	0.00E+00
109		0.03	0.000	0.009	0.2272	0.0000	0.0000	0.00E+00
110		0.10	0.000	0.009	0.2319	0.0000	0.0000	0.00E+00
111		0.00	0.000	0.008	0.2314	0.0000	0.0000	0.00E+00
112	*	0.00	0.000	0.008	0.2310	0.0000	0.0000	0.00E+00
113		0.00	0.000	0.008	0.2305	0.0000	0.0000	0.00E+00
114		0.00	0.000	0.008	0.2301	0.0000	0.0000	0.00E+00
115		0.00	0.000	0.008	0.2296	0.0000	0.0000	0.00E+00
116		0.00	0.000	0.008	0.2290	0.0000	0.0000	0.00E+00
117		0.00	0.000	0.009	0.2284	0.0000	0.0000	0.00E+00
118		0.00	0.000	0.009	0.2278	0.0000	0.0000	0.00E+00
119		0.00	0.000	0.009	0.2271	0.0000	0.0000	0.00E+00
120		0.00	0.000	0.009	0.2264	0.0000	0.0000	0.00E+00

121	0.00	0.000	0.009	0.2258	0.0000	0.0000	0.00E+00
122	0.14	0.000	0.009	0.2330	0.0000	0.0000	0.00E+00
123	0.00	0.000	0.009	0.2325	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.009	0.2320	0.0000	0.0000	0.00E+00
125	0.00	0.000	0.009	0.2315	0.0000	0.0000	0.00E+00
126	0.00	0.000	0.009	0.2310	0.0000	0.0000	0.00E+00
127	0.00	0.000	0.009	0.2304	0.0000	0.0000	0.00E+00
128	0.68	0.000	0.010	0.2672	0.0000	0.0000	0.00E+00
129	0.02	0.000	0.010	0.2675	0.0000	0.0000	0.00E+00
130	0.00	0.000	0.009	0.2671	0.0000	0.0000	0.00E+00
131	0.00	0.000	0.008	0.2666	0.0000	0.0000	0.00E+00
132	1.19	0.057	0.009	0.3293	0.0000	0.0000	0.00E+00
133	0.00	0.000	0.256	0.3150	0.0000	0.0000	0.00E+00
134	0.00	0.000	0.218	0.2983	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.293	0.2768	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.202	0.2616	0.0000	0.0000	0.00E+00
137	0.00	0.000	0.085	0.2524	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.066	0.2451	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.057	0.2390	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.050	0.2338	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.045	0.2293	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.041	0.2253	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.038	0.2217	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.037	0.2183	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.035	0.2151	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.033	0.2122	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.033	0.2096	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.032	0.2078	0.0000	0.0000	0.00E+00
149	0.02	0.000	0.032	0.2070	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.029	0.2054	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.025	0.2040	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.029	0.2024	0.0000	0.0000	0.00E+00

153	0.00	0.000	0.026	0.2009	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.028	0.1994	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.026	0.1979	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.026	0.1965	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.028	0.1950	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.025	0.1936	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.025	0.1922	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.026	0.1908	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.024	0.1894	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.025	0.1881	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.024	0.1867	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.024	0.1854	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.023	0.1841	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.023	0.1828	0.0000	0.0000	0.00E+00
167	0.07	0.000	0.022	0.1855	0.0000	0.0000	0.00E+00
168	0.19	0.000	0.021	0.1948	0.0000	0.0000	0.00E+00
169	0.10	0.000	0.021	0.1990	0.0000	0.0000	0.00E+00
170	0.02	0.000	0.024	0.1987	0.0000	0.0000	0.00E+00
171	0.14	0.000	0.024	0.2049	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.024	0.2038	0.0000	0.0000	0.00E+00
173	0.00	0.000	0.022	0.2026	0.0000	0.0000	0.00E+00
174	0.00	0.000	0.021	0.2015	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.021	0.2003	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.019	0.1992	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.020	0.1981	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.020	0.1970	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.022	0.1957	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.021	0.1945	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.021	0.1934	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.020	0.1923	0.0000	0.0000	0.00E+00
183	0.00	0.000	0.022	0.1910	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.020	0.1899	0.0000	0.0000	0.00E+00

185	0.00	0.000	0.020	0.1888	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.020	0.1877	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.018	0.1867	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.018	0.1858	0.0000	0.0000	0.00E+00
189	0.00	0.000	0.020	0.1846	0.0000	0.0000	0.00E+00
190	0.00	0.000	0.020	0.1835	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.019	0.1825	0.0000	0.0000	0.00E+00
192	0.11	0.000	0.022	0.1874	0.0000	0.0000	0.00E+00
193	0.08	0.000	0.021	0.1905	0.0000	0.0000	0.00E+00
194	0.19	0.000	0.020	0.1997	0.0000	0.0000	0.00E+00
195	0.00	0.000	0.020	0.1986	0.0000	0.0000	0.00E+00
196	0.46	0.000	0.021	0.2231	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.020	0.2220	0.0000	0.0000	0.00E+00
198	0.01	0.000	0.022	0.2216	0.0000	0.0000	0.00E+00
199	0.12	0.000	0.018	0.2271	0.0000	0.0000	0.00E+00
200	0.03	0.000	0.018	0.2280	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.022	0.2268	0.0000	0.0000	0.00E+00
202	0.04	0.000	0.022	0.2275	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.021	0.2262	0.0000	0.0000	0.00E+00
204	0.04	0.000	0.022	0.2271	0.0000	0.0000	0.00E+00
205	0.00	0.000	0.018	0.2261	0.0000	0.0000	0.00E+00
206	0.00	0.000	0.023	0.2248	0.0000	0.0000	0.00E+00
207	0.00	0.000	0.022	0.2236	0.0000	0.0000	0.00E+00
208	0.00	0.000	0.020	0.2225	0.0000	0.0000	0.00E+00
209	0.00	0.000	0.020	0.2214	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.022	0.2202	0.0000	0.0000	0.00E+00
211	0.09	0.000	0.023	0.2239	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.021	0.2227	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.018	0.2217	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.020	0.2205	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.022	0.2190	0.0000	0.0000	0.00E+00
216	0.00	0.000	0.017	0.2180	0.0000	0.0000	0.00E+00

217	0.24	0.000	0.018	0.2305	0.0000	0.0000	0.00E+00
218	0.00	0.000	0.354	0.2109	0.0000	0.0000	0.00E+00
219	0.00	0.000	0.021	0.2097	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.019	0.2086	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.020	0.2075	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.020	0.2064	0.0000	0.0000	0.00E+00
223	0.16	0.000	0.018	0.2142	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.019	0.2131	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.018	0.2121	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.021	0.2110	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.020	0.2099	0.0000	0.0000	0.00E+00
228	0.00	0.000	0.019	0.2088	0.0000	0.0000	0.00E+00
229	0.09	0.000	0.019	0.2129	0.0000	0.0000	0.00E+00
230	0.02	0.000	0.019	0.2127	0.0000	0.0000	0.00E+00
231	0.00	0.000	0.018	0.2118	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.019	0.2107	0.0000	0.0000	0.00E+00
233	0.00	0.000	0.018	0.2097	0.0000	0.0000	0.00E+00
234	0.06	0.000	0.025	0.2114	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.020	0.2103	0.0000	0.0000	0.00E+00
236	0.20	0.000	0.024	0.2198	0.0000	0.0000	0.00E+00
237	0.04	0.000	0.018	0.2208	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.500	0.1931	0.0000	0.0000	0.00E+00
239	0.00	0.000	0.015	0.1922	0.0000	0.0000	0.00E+00
240	0.00	0.000	0.016	0.1913	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.016	0.1904	0.0000	0.0000	0.00E+00
242	0.00	0.000	0.015	0.1896	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.016	0.1887	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.014	0.1879	0.0000	0.0000	0.00E+00
245	0.00	0.000	0.014	0.1871	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.014	0.1864	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.015	0.1856	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.014	0.1848	0.0000	0.0000	0.00E+00

249	0.00	0.000	0.013	0.1841	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.012	0.1834	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.014	0.1827	0.0000	0.0000	0.00E+00
252	0.09	0.000	0.015	0.1870	0.0000	0.0000	0.00E+00
253	0.13	0.000	0.015	0.1936	0.0000	0.0000	0.00E+00
254	0.09	0.000	0.014	0.1980	0.0000	0.0000	0.00E+00
255	0.02	0.000	0.014	0.1985	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.011	0.1978	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.011	0.1972	0.0000	0.0000	0.00E+00
258	0.01	0.000	0.013	0.1971	0.0000	0.0000	0.00E+00
259	0.23	0.000	0.013	0.2092	0.0000	0.0000	0.00E+00
260	0.03	0.000	0.012	0.2101	0.0000	0.0000	0.00E+00
261	0.09	0.000	0.012	0.2143	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.010	0.2138	0.0000	0.0000	0.00E+00
263	0.00	0.000	0.010	0.2132	0.0000	0.0000	0.00E+00
264	0.00	0.000	0.009	0.2127	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.009	0.2122	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.009	0.2117	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.009	0.2112	0.0000	0.0000	0.00E+00
268	0.04	0.000	0.012	0.2130	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.009	0.2125	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.009	0.2119	0.0000	0.0000	0.00E+00
271	0.00	0.000	0.009	0.2114	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.009	0.2109	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.009	0.2104	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.009	0.2100	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.009	0.2095	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.009	0.2090	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.009	0.2085	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.008	0.2081	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.008	0.2076	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.008	0.2071	0.0000	0.0000	0.00E+00

281	*	0.10	0.000	0.065	0.2082	0.0000	0.0000	0.00E+00
282	*	0.10	0.000	0.054	0.2093	0.0000	0.0000	0.00E+00
283		0.52	0.000	0.022	0.2394	0.0000	0.0000	0.00E+00
284		0.00	0.000	0.093	0.2343	0.0000	0.0000	0.00E+00
285		0.00	0.000	0.104	0.2285	0.0000	0.0000	0.00E+00
286		0.00	0.000	0.083	0.2238	0.0000	0.0000	0.00E+00
287		0.00	0.000	0.140	0.2160	0.0000	0.0000	0.00E+00
288		0.07	0.000	0.143	0.2120	0.0000	0.0000	0.00E+00
289		0.49	0.000	0.203	0.2280	0.0000	0.0000	0.00E+00
290		0.00	0.000	0.216	0.2160	0.0000	0.0000	0.00E+00
291		0.00	0.000	0.250	0.2022	0.0000	0.0000	0.00E+00
292		0.00	0.000	0.201	0.1910	0.0000	0.0000	0.00E+00
293		0.39	0.000	0.086	0.2078	0.0000	0.0000	0.00E+00
294		0.00	0.000	0.064	0.2042	0.0000	0.0000	0.00E+00
295		0.00	0.000	0.054	0.2012	0.0000	0.0000	0.00E+00
296		0.00	0.000	0.047	0.1986	0.0000	0.0000	0.00E+00
297		0.00	0.000	0.043	0.1962	0.0000	0.0000	0.00E+00
298	*	0.00	0.000	0.039	0.1940	0.0000	0.0000	0.00E+00
299		0.00	0.000	0.037	0.1920	0.0000	0.0000	0.00E+00
300		0.00	0.000	0.034	0.1901	0.0000	0.0000	0.00E+00
301		0.00	0.000	0.033	0.1882	0.0000	0.0000	0.00E+00
302		0.00	0.000	0.031	0.1865	0.0000	0.0000	0.00E+00
303		0.00	0.000	0.030	0.1849	0.0000	0.0000	0.00E+00
304		0.00	0.000	0.028	0.1833	0.0000	0.0000	0.00E+00
305		0.02	0.000	0.030	0.1829	0.0000	0.0000	0.00E+00
306		0.23	0.000	0.029	0.1940	0.0000	0.0000	0.00E+00
307		0.00	0.000	0.026	0.1926	0.0000	0.0000	0.00E+00
308		0.00	0.000	0.025	0.1912	0.0000	0.0000	0.00E+00
309		0.00	0.000	0.024	0.1899	0.0000	0.0000	0.00E+00
310		0.00	0.000	0.024	0.1886	0.0000	0.0000	0.00E+00
311		0.00	0.000	0.023	0.1873	0.0000	0.0000	0.00E+00
312		0.00	0.000	0.023	0.1861	0.0000	0.0000	0.00E+00

313	0.00	0.000	0.022	0.1848	0.0000	0.0000	0.00E+00
314	0.02	0.000	0.024	0.1843	0.0000	0.0000	0.00E+00
315	0.00	0.000	0.021	0.1832	0.0000	0.0000	0.00E+00
316	0.00	0.000	0.020	0.1820	0.0000	0.0000	0.00E+00
317	0.00	0.000	0.020	0.1809	0.0000	0.0000	0.00E+00
318	0.00	0.000	0.019	0.1798	0.0000	0.0000	0.00E+00
319	0.00	0.000	0.019	0.1787	0.0000	0.0000	0.00E+00
320	0.00	0.000	0.019	0.1777	0.0000	0.0000	0.00E+00
321	0.00	0.000	0.018	0.1766	0.0000	0.0000	0.00E+00
322	0.00	0.000	0.018	0.1756	0.0000	0.0000	0.00E+00
323	0.00	0.000	0.018	0.1746	0.0000	0.0000	0.00E+00
324	0.00	0.000	0.018	0.1737	0.0000	0.0000	0.00E+00
325	0.00	0.000	0.017	0.1727	0.0000	0.0000	0.00E+00
326	0.00	0.000	0.017	0.1717	0.0000	0.0000	0.00E+00
327	0.20	0.000	0.018	0.1817	0.0000	0.0000	0.00E+00
328	0.00	0.000	0.017	0.1807	0.0000	0.0000	0.00E+00
329	0.00	0.000	0.016	0.1798	0.0000	0.0000	0.00E+00
330	0.00	0.000	0.017	0.1789	0.0000	0.0000	0.00E+00
331	0.00	0.000	0.016	0.1780	0.0000	0.0000	0.00E+00
332	0.00	0.000	0.016	0.1771	0.0000	0.0000	0.00E+00
333	0.00	0.000	0.016	0.1762	0.0000	0.0000	0.00E+00
334	0.00	0.000	0.015	0.1754	0.0000	0.0000	0.00E+00
335	0.00	0.000	0.015	0.1745	0.0000	0.0000	0.00E+00
336	0.00	0.000	0.015	0.1737	0.0000	0.0000	0.00E+00
337	0.00	0.000	0.015	0.1729	0.0000	0.0000	0.00E+00
338	0.00	0.000	0.015	0.1721	0.0000	0.0000	0.00E+00
339	0.00	0.000	0.015	0.1713	0.0000	0.0000	0.00E+00
340	0.00	0.000	0.014	0.1705	0.0000	0.0000	0.00E+00
341	0.00	0.000	0.014	0.1697	0.0000	0.0000	0.00E+00
342	0.00	0.000	0.014	0.1689	0.0000	0.0000	0.00E+00
343	0.00	0.000	0.014	0.1681	0.0000	0.0000	0.00E+00
344	0.00	0.000	0.014	0.1673	0.0000	0.0000	0.00E+00

345		0.00	0.000	0.014	0.1666	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.014	0.1658	0.0000	0.0000	0.00E+00
347		0.00	0.000	0.013	0.1651	0.0000	0.0000	0.00E+00
348		0.00	0.000	0.013	0.1643	0.0000	0.0000	0.00E+00
349		0.00	0.000	0.013	0.1636	0.0000	0.0000	0.00E+00
350		0.00	0.000	0.013	0.1629	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.013	0.1621	0.0000	0.0000	0.00E+00
352		0.00	0.000	0.013	0.1614	0.0000	0.0000	0.00E+00
353		0.00	0.000	0.013	0.1607	0.0000	0.0000	0.00E+00
354		0.00	0.000	0.013	0.1600	0.0000	0.0000	0.00E+00
355		0.00	0.000	0.013	0.1593	0.0000	0.0000	0.00E+00
356		0.03	0.000	0.013	0.1604	0.0000	0.0000	0.00E+00
357		0.00	0.000	0.013	0.1598	0.0000	0.0000	0.00E+00
358	*	0.00	0.000	0.012	0.1591	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.012	0.1584	0.0000	0.0000	0.00E+00
360		0.00	0.000	0.012	0.1577	0.0000	0.0000	0.00E+00
361		0.06	0.000	0.013	0.1606	0.0000	0.0000	0.00E+00
362		0.02	0.000	0.013	0.1607	0.0000	0.0000	0.00E+00
363		0.00	0.000	0.012	0.1601	0.0000	0.0000	0.00E+00
364		0.00	0.000	0.012	0.1594	0.0000	0.0000	0.00E+00
365		0.00	0.000	0.012	0.1588	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 1			
	inches	cubic feet	percent
Precipitation	8.37	30,382.5	100.00
Runoff	0.057	205.7	0.68
Evapotranspiration	9.032	32,785.8	107.91
Drainage Collected from Layer 8	0.0000	0.0000	0.00
Percolation/Leakage through Layer 10	0.000000	0.0000	0.00

Average Head on Top of Layer 9	0.0000	---	---
Change in Water Storage	-0.7187	-2,609.0	-8.59
Soil Water at Start of Year	269.9488	979,914.3	3225.26
Soil Water at End of Year	269.2301	977,305.3	3216.67
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 2

Column key: Head #1: drainage from Layer 9
Drain #1: drainage from Layer 8
Leak #1: leakage thru Layer 10

Title: WST Landfill
Simulated On: 3/23/2026 12:13

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)
1			0.00	0.000	0.012	0.1581	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.012	0.1574	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.011	0.1567	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.011	0.1560	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.011	0.1554	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.011	0.1548	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.011	0.1541	0.0000	0.0000	0.00E+00
8	*		0.00	0.000	0.000	0.1541	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.011	0.1535	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.011	0.1529	0.0000	0.0000	0.00E+00
11	*		0.00	0.000	0.010	0.1523	0.0000	0.0000	0.00E+00
12			0.00	0.000	0.011	0.1517	0.0000	0.0000	0.00E+00
13	*		0.00	0.000	0.000	0.1517	0.0000	0.0000	0.00E+00
14	*		0.00	0.000	0.000	0.1517	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.011	0.1511	0.0000	0.0000	0.00E+00
16			0.00	0.000	0.011	0.1505	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.011	0.1499	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.011	0.1493	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.011	0.1487	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.011	0.1482	0.0000	0.0000	0.00E+00
21			0.00	0.000	0.010	0.1476	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.010	0.1470	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.010	0.1464	0.0000	0.0000	0.00E+00
24			0.00	0.000	0.010	0.1458	0.0000	0.0000	0.00E+00

25		0.00	0.000	0.010	0.1453	0.0000	0.0000	0.00E+00
26		0.00	0.000	0.010	0.1447	0.0000	0.0000	0.00E+00
27		0.00	0.000	0.010	0.1441	0.0000	0.0000	0.00E+00
28		0.00	0.000	0.010	0.1436	0.0000	0.0000	0.00E+00
29		0.00	0.000	0.010	0.1430	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.010	0.1425	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.010	0.1419	0.0000	0.0000	0.00E+00
32		0.02	0.000	0.010	0.1423	0.0000	0.0000	0.00E+00
33		0.00	0.000	0.010	0.1417	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.010	0.1412	0.0000	0.0000	0.00E+00
35		0.04	0.000	0.010	0.1430	0.0000	0.0000	0.00E+00
36	*	0.11	0.000	0.067	0.1441	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.037	0.1436	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.010	0.1430	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.010	0.1425	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.010	0.1420	0.0000	0.0000	0.00E+00
41		0.08	0.000	0.010	0.1456	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.010	0.1451	0.0000	0.0000	0.00E+00
43		0.00	0.000	0.009	0.1446	0.0000	0.0000	0.00E+00
44		0.00	0.000	0.009	0.1441	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.009	0.1435	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.009	0.1430	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.009	0.1425	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.009	0.1420	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.009	0.1415	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.009	0.1410	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.009	0.1405	0.0000	0.0000	0.00E+00
52		0.00	0.000	0.009	0.1399	0.0000	0.0000	0.00E+00
53		0.00	0.000	0.009	0.1394	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.009	0.1389	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.009	0.1384	0.0000	0.0000	0.00E+00
56		0.00	0.000	0.009	0.1379	0.0000	0.0000	0.00E+00

57		0.00	0.000	0.009	0.1375	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.009	0.1370	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.009	0.1365	0.0000	0.0000	0.00E+00
60		0.00	0.000	0.009	0.1360	0.0000	0.0000	0.00E+00
61		0.00	0.000	0.009	0.1355	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.009	0.1350	0.0000	0.0000	0.00E+00
63		0.02	0.000	0.009	0.1354	0.0000	0.0000	0.00E+00
64		0.10	0.000	0.009	0.1406	0.0000	0.0000	0.00E+00
65		0.00	0.000	0.009	0.1401	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.009	0.1397	0.0000	0.0000	0.00E+00
67	*	0.00	0.000	0.009	0.1392	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.009	0.1387	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.009	0.1382	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.008	0.1378	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.008	0.1373	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.008	0.1368	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.008	0.1364	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.008	0.1359	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.008	0.1354	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.008	0.1350	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.008	0.1345	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.008	0.1341	0.0000	0.0000	0.00E+00
79		0.00	0.000	0.008	0.1336	0.0000	0.0000	0.00E+00
80		0.00	0.000	0.008	0.1331	0.0000	0.0000	0.00E+00
81		0.00	0.000	0.008	0.1327	0.0000	0.0000	0.00E+00
82		0.00	0.000	0.008	0.1322	0.0000	0.0000	0.00E+00
83	*	0.00	0.000	0.008	0.1317	0.0000	0.0000	0.00E+00
84		0.00	0.000	0.008	0.1312	0.0000	0.0000	0.00E+00
85		0.00	0.000	0.008	0.1307	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.008	0.1302	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.008	0.1297	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.008	0.1293	0.0000	0.0000	0.00E+00

89	0.00	0.000	0.008	0.1288	0.0000	0.0000	0.00E+00
90	0.00	0.000	0.008	0.1284	0.0000	0.0000	0.00E+00
91	0.00	0.000	0.008	0.1279	0.0000	0.0000	0.00E+00
92	0.33	0.000	0.008	0.1461	0.0000	0.0000	0.00E+00
93	0.00	0.000	0.008	0.1455	0.0000	0.0000	0.00E+00
94	0.00	0.000	0.008	0.1450	0.0000	0.0000	0.00E+00
95	0.00	0.000	0.008	0.1446	0.0000	0.0000	0.00E+00
96	0.00	0.000	0.008	0.1441	0.0000	0.0000	0.00E+00
97	0.00	0.000	0.008	0.1436	0.0000	0.0000	0.00E+00
98	0.00	0.000	0.008	0.1432	0.0000	0.0000	0.00E+00
99	0.00	0.000	0.008	0.1428	0.0000	0.0000	0.00E+00
100	0.15	0.000	0.008	0.1506	0.0000	0.0000	0.00E+00
101	0.05	0.000	0.008	0.1529	0.0000	0.0000	0.00E+00
102	0.00	0.000	0.008	0.1524	0.0000	0.0000	0.00E+00
103	0.00	0.000	0.008	0.1520	0.0000	0.0000	0.00E+00
104	0.00	0.000	0.008	0.1516	0.0000	0.0000	0.00E+00
105	0.00	0.000	0.008	0.1511	0.0000	0.0000	0.00E+00
106	0.00	0.000	0.008	0.1507	0.0000	0.0000	0.00E+00
107	0.00	0.000	0.008	0.1502	0.0000	0.0000	0.00E+00
108	0.00	0.000	0.008	0.1498	0.0000	0.0000	0.00E+00
109	0.00	0.000	0.008	0.1493	0.0000	0.0000	0.00E+00
110	0.00	0.000	0.008	0.1489	0.0000	0.0000	0.00E+00
111	0.00	0.000	0.008	0.1484	0.0000	0.0000	0.00E+00
112	0.00	0.000	0.008	0.1480	0.0000	0.0000	0.00E+00
113	0.00	0.000	0.008	0.1475	0.0000	0.0000	0.00E+00
114	0.00	0.000	0.008	0.1471	0.0000	0.0000	0.00E+00
115	0.00	0.000	0.008	0.1466	0.0000	0.0000	0.00E+00
116	0.00	0.000	0.008	0.1461	0.0000	0.0000	0.00E+00
117	0.00	0.000	0.009	0.1457	0.0000	0.0000	0.00E+00
118	0.00	0.000	0.008	0.1452	0.0000	0.0000	0.00E+00
119	0.00	0.000	0.008	0.1448	0.0000	0.0000	0.00E+00
120	0.04	0.000	0.009	0.1464	0.0000	0.0000	0.00E+00

121	0.00	0.000	0.008	0.1459	0.0000	0.0000	0.00E+00
122	0.00	0.000	0.009	0.1454	0.0000	0.0000	0.00E+00
123	0.05	0.000	0.009	0.1478	0.0000	0.0000	0.00E+00
124	0.02	0.000	0.010	0.1484	0.0000	0.0000	0.00E+00
125	0.27	0.000	0.010	0.1627	0.0000	0.0000	0.00E+00
126	0.00	0.000	0.010	0.1621	0.0000	0.0000	0.00E+00
127	0.21	0.000	0.009	0.1731	0.0000	0.0000	0.00E+00
128	0.00	0.000	0.010	0.1726	0.0000	0.0000	0.00E+00
129	0.09	0.000	0.010	0.1772	0.0000	0.0000	0.00E+00
130	0.48	0.000	0.010	0.2033	0.0000	0.0000	0.00E+00
131	0.00	0.000	0.011	0.2027	0.0000	0.0000	0.00E+00
132	0.00	0.000	0.011	0.2020	0.0000	0.0000	0.00E+00
133	0.00	0.000	0.012	0.2014	0.0000	0.0000	0.00E+00
134	0.00	0.000	0.012	0.2007	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.013	0.2000	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.010	0.1994	0.0000	0.0000	0.00E+00
137	0.00	0.000	0.011	0.1988	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.011	0.1982	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.010	0.1977	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.010	0.1971	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.010	0.1966	0.0000	0.0000	0.00E+00
142	0.21	0.000	0.011	0.2074	0.0000	0.0000	0.00E+00
143	0.05	0.000	0.010	0.2094	0.0000	0.0000	0.00E+00
144	0.01	0.000	0.197	0.1992	0.0000	0.0000	0.00E+00
145	0.06	0.000	0.012	0.2018	0.0000	0.0000	0.00E+00
146	0.14	0.000	0.012	0.2087	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.231	0.1957	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.010	0.1952	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.011	0.1946	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.013	0.1939	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.012	0.1932	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.013	0.1925	0.0000	0.0000	0.00E+00

153	0.03	0.000	0.014	0.1935	0.0000	0.0000	0.00E+00
154	0.05	0.000	0.012	0.1954	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.010	0.1948	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.011	0.1942	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.012	0.1935	0.0000	0.0000	0.00E+00
158	0.17	0.000	0.012	0.2025	0.0000	0.0000	0.00E+00
159	0.05	0.000	0.012	0.2049	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.442	0.1803	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.015	0.1795	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.014	0.1787	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.013	0.1780	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.012	0.1773	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.012	0.1766	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.012	0.1760	0.0000	0.0000	0.00E+00
167	0.00	0.000	0.011	0.1753	0.0000	0.0000	0.00E+00
168	0.00	0.000	0.012	0.1747	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.014	0.1740	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.012	0.1733	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.011	0.1727	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.012	0.1720	0.0000	0.0000	0.00E+00
173	0.00	0.000	0.017	0.1711	0.0000	0.0000	0.00E+00
174	0.00	0.000	0.013	0.1704	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.012	0.1697	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.014	0.1689	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.013	0.1682	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.015	0.1674	0.0000	0.0000	0.00E+00
179	0.15	0.000	0.013	0.1749	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.014	0.1741	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.015	0.1732	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.016	0.1723	0.0000	0.0000	0.00E+00
183	0.00	0.000	0.019	0.1713	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.020	0.1702	0.0000	0.0000	0.00E+00

185	0.00	0.000	0.019	0.1691	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.019	0.1681	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.014	0.1673	0.0000	0.0000	0.00E+00
188	0.63	0.000	0.016	0.2017	0.0000	0.0000	0.00E+00
189	0.23	0.000	0.531	0.1849	0.0000	0.0000	0.00E+00
190	0.01	0.000	0.017	0.1845	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.014	0.1837	0.0000	0.0000	0.00E+00
192	0.00	0.000	0.020	0.1826	0.0000	0.0000	0.00E+00
193	0.00	0.000	0.019	0.1816	0.0000	0.0000	0.00E+00
194	0.02	0.000	0.022	0.1814	0.0000	0.0000	0.00E+00
195	0.00	0.000	0.021	0.1803	0.0000	0.0000	0.00E+00
196	0.14	0.000	0.020	0.1872	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.021	0.1862	0.0000	0.0000	0.00E+00
198	0.00	0.000	0.022	0.1850	0.0000	0.0000	0.00E+00
199	0.00	0.000	0.024	0.1836	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.017	0.1827	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.015	0.1819	0.0000	0.0000	0.00E+00
202	0.00	0.000	0.020	0.1807	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.022	0.1795	0.0000	0.0000	0.00E+00
204	0.26	0.000	0.023	0.1925	0.0000	0.0000	0.00E+00
205	0.00	0.000	0.435	0.1683	0.0000	0.0000	0.00E+00
206	0.00	0.000	0.022	0.1671	0.0000	0.0000	0.00E+00
207	0.00	0.000	0.021	0.1660	0.0000	0.0000	0.00E+00
208	0.19	0.000	0.024	0.1754	0.0000	0.0000	0.00E+00
209	0.01	0.000	0.021	0.1747	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.021	0.1736	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.021	0.1724	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.016	0.1716	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.018	0.1706	0.0000	0.0000	0.00E+00
214	0.27	0.000	0.024	0.1841	0.0000	0.0000	0.00E+00
215	0.30	0.000	0.219	0.1888	0.0000	0.0000	0.00E+00
216	0.04	0.000	0.176	0.1815	0.0000	0.0000	0.00E+00

217	0.00	0.000	0.287	0.1655	0.0000	0.0000	0.00E+00
218	0.01	0.000	0.193	0.1554	0.0000	0.0000	0.00E+00
219	0.00	0.000	0.092	0.1503	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.070	0.1464	0.0000	0.0000	0.00E+00
221	0.05	0.000	0.065	0.1458	0.0000	0.0000	0.00E+00
222	0.01	0.000	0.061	0.1430	0.0000	0.0000	0.00E+00
223	0.00	0.000	0.063	0.1395	0.0000	0.0000	0.00E+00
224	0.37	0.000	0.054	0.1570	0.0000	0.0000	0.00E+00
225	0.11	0.000	0.050	0.1604	0.0000	0.0000	0.00E+00
226	0.59	0.000	0.052	0.1904	0.0000	0.0000	0.00E+00
227	0.01	0.000	0.376	0.1699	0.0000	0.0000	0.00E+00
228	0.00	0.000	0.051	0.1671	0.0000	0.0000	0.00E+00
229	0.20	0.000	0.044	0.1756	0.0000	0.0000	0.00E+00
230	0.08	0.000	0.378	0.1590	0.0000	0.0000	0.00E+00
231	0.09	0.000	0.043	0.1617	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.044	0.1593	0.0000	0.0000	0.00E+00
233	0.06	0.000	0.040	0.1607	0.0000	0.0000	0.00E+00
234	0.00	0.000	0.038	0.1588	0.0000	0.0000	0.00E+00
235	0.08	0.000	0.044	0.1611	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.036	0.1591	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.032	0.1573	0.0000	0.0000	0.00E+00
238	0.10	0.000	0.036	0.1608	0.0000	0.0000	0.00E+00
239	0.08	0.000	0.033	0.1634	0.0000	0.0000	0.00E+00
240	0.41	0.000	0.028	0.1845	0.0000	0.0000	0.00E+00
241	0.72	0.000	0.245	0.2106	0.0000	0.0000	0.00E+00
242	0.03	0.000	0.210	0.2006	0.0000	0.0000	0.00E+00
243	0.01	0.000	0.260	0.1866	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.194	0.1758	0.0000	0.0000	0.00E+00
245	0.00	0.000	0.196	0.1649	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.083	0.1603	0.0000	0.0000	0.00E+00
247	0.03	0.000	0.072	0.1579	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.057	0.1547	0.0000	0.0000	0.00E+00

249	0.00	0.000	0.050	0.1519	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.046	0.1493	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.044	0.1469	0.0000	0.0000	0.00E+00
252	0.00	0.000	0.040	0.1447	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.036	0.1427	0.0000	0.0000	0.00E+00
254	0.00	0.000	0.035	0.1407	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.034	0.1388	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.032	0.1370	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.031	0.1353	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.031	0.1336	0.0000	0.0000	0.00E+00
259	0.09	0.000	0.033	0.1369	0.0000	0.0000	0.00E+00
260	0.06	0.000	0.033	0.1386	0.0000	0.0000	0.00E+00
261	0.00	0.000	0.034	0.1367	0.0000	0.0000	0.00E+00
262	0.02	0.000	0.033	0.1359	0.0000	0.0000	0.00E+00
263	0.29	0.000	0.031	0.1501	0.0000	0.0000	0.00E+00
264	0.52	0.000	0.034	0.1772	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.175	0.1674	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.028	0.1659	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.028	0.1643	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.025	0.1629	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.024	0.1616	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.024	0.1602	0.0000	0.0000	0.00E+00
271	0.07	0.000	0.026	0.1625	0.0000	0.0000	0.00E+00
272	0.01	0.000	0.028	0.1614	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.022	0.1602	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.025	0.1588	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.024	0.1575	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.022	0.1563	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.022	0.1550	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.020	0.1539	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.020	0.1528	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.021	0.1516	0.0000	0.0000	0.00E+00

281		0.00	0.000	0.021	0.1505	0.0000	0.0000	0.00E+00
282		0.00	0.000	0.020	0.1493	0.0000	0.0000	0.00E+00
283		0.00	0.000	0.018	0.1483	0.0000	0.0000	0.00E+00
284		0.29	0.000	0.022	0.1630	0.0000	0.0000	0.00E+00
285		0.00	0.000	0.018	0.1621	0.0000	0.0000	0.00E+00
286		0.00	0.000	0.018	0.1611	0.0000	0.0000	0.00E+00
287		0.00	0.000	0.018	0.1601	0.0000	0.0000	0.00E+00
288		0.00	0.000	0.017	0.1591	0.0000	0.0000	0.00E+00
289		0.00	0.000	0.016	0.1582	0.0000	0.0000	0.00E+00
290		0.00	0.000	0.016	0.1574	0.0000	0.0000	0.00E+00
291		0.00	0.000	0.016	0.1565	0.0000	0.0000	0.00E+00
292		0.00	0.000	0.016	0.1556	0.0000	0.0000	0.00E+00
293		0.00	0.000	0.015	0.1548	0.0000	0.0000	0.00E+00
294		0.00	0.000	0.014	0.1540	0.0000	0.0000	0.00E+00
295		0.00	0.000	0.015	0.1532	0.0000	0.0000	0.00E+00
296	*	0.00	0.000	0.014	0.1524	0.0000	0.0000	0.00E+00
297	*	0.00	0.000	0.014	0.1516	0.0000	0.0000	0.00E+00
298		0.00	0.000	0.014	0.1508	0.0000	0.0000	0.00E+00
299		0.00	0.000	0.014	0.1500	0.0000	0.0000	0.00E+00
300		0.00	0.000	0.014	0.1493	0.0000	0.0000	0.00E+00
301		0.00	0.000	0.014	0.1485	0.0000	0.0000	0.00E+00
302		0.00	0.000	0.014	0.1477	0.0000	0.0000	0.00E+00
303		0.00	0.000	0.014	0.1469	0.0000	0.0000	0.00E+00
304		0.00	0.000	0.014	0.1461	0.0000	0.0000	0.00E+00
305		0.00	0.000	0.014	0.1454	0.0000	0.0000	0.00E+00
306		0.00	0.000	0.013	0.1446	0.0000	0.0000	0.00E+00
307	*	0.00	0.000	0.013	0.1439	0.0000	0.0000	0.00E+00
308		0.00	0.000	0.011	0.1433	0.0000	0.0000	0.00E+00
309		0.00	0.000	0.011	0.1427	0.0000	0.0000	0.00E+00
310		0.00	0.000	0.011	0.1421	0.0000	0.0000	0.00E+00
311		0.00	0.000	0.011	0.1415	0.0000	0.0000	0.00E+00
312		0.00	0.000	0.011	0.1409	0.0000	0.0000	0.00E+00

313		0.00	0.000	0.010	0.1404	0.0000	0.0000	0.00E+00
314		0.00	0.000	0.010	0.1398	0.0000	0.0000	0.00E+00
315		0.00	0.000	0.010	0.1392	0.0000	0.0000	0.00E+00
316		0.00	0.000	0.010	0.1387	0.0000	0.0000	0.00E+00
317		0.00	0.000	0.010	0.1381	0.0000	0.0000	0.00E+00
318		0.00	0.000	0.010	0.1376	0.0000	0.0000	0.00E+00
319		0.00	0.000	0.010	0.1371	0.0000	0.0000	0.00E+00
320		0.00	0.000	0.010	0.1365	0.0000	0.0000	0.00E+00
321		0.00	0.000	0.009	0.1360	0.0000	0.0000	0.00E+00
322		0.00	0.000	0.009	0.1355	0.0000	0.0000	0.00E+00
323		0.00	0.000	0.009	0.1350	0.0000	0.0000	0.00E+00
324		0.09	0.000	0.012	0.1394	0.0000	0.0000	0.00E+00
325		0.02	0.000	0.012	0.1396	0.0000	0.0000	0.00E+00
326		0.02	0.000	0.012	0.1400	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.009	0.1395	0.0000	0.0000	0.00E+00
328		0.00	0.000	0.009	0.1390	0.0000	0.0000	0.00E+00
329		0.00	0.000	0.009	0.1385	0.0000	0.0000	0.00E+00
330		0.03	0.000	0.012	0.1395	0.0000	0.0000	0.00E+00
331		0.11	0.000	0.012	0.1448	0.0000	0.0000	0.00E+00
332		0.00	0.000	0.009	0.1443	0.0000	0.0000	0.00E+00
333		0.00	0.000	0.009	0.1438	0.0000	0.0000	0.00E+00
334		0.00	0.000	0.009	0.1434	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.009	0.1429	0.0000	0.0000	0.00E+00
336		0.00	0.000	0.009	0.1424	0.0000	0.0000	0.00E+00
337		0.00	0.000	0.009	0.1419	0.0000	0.0000	0.00E+00
338		0.00	0.000	0.009	0.1413	0.0000	0.0000	0.00E+00
339		0.00	0.000	0.009	0.1408	0.0000	0.0000	0.00E+00
340		0.00	0.000	0.009	0.1403	0.0000	0.0000	0.00E+00
341		0.00	0.000	0.009	0.1398	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.009	0.1393	0.0000	0.0000	0.00E+00
343	*	0.00	0.000	0.009	0.1387	0.0000	0.0000	0.00E+00
344		0.00	0.000	0.009	0.1382	0.0000	0.0000	0.00E+00

345		0.00	0.000	0.009	0.1377	0.0000	0.0000	0.00E+00
346	*	0.00	0.000	0.009	0.1372	0.0000	0.0000	0.00E+00
347		0.05	0.000	0.013	0.1390	0.0000	0.0000	0.00E+00
348		0.00	0.000	0.010	0.1385	0.0000	0.0000	0.00E+00
349		0.00	0.000	0.009	0.1380	0.0000	0.0000	0.00E+00
350		0.00	0.000	0.008	0.1375	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.008	0.1371	0.0000	0.0000	0.00E+00
352		0.00	0.000	0.008	0.1366	0.0000	0.0000	0.00E+00
353		0.00	0.000	0.008	0.1362	0.0000	0.0000	0.00E+00
354		0.00	0.000	0.009	0.1357	0.0000	0.0000	0.00E+00
355		0.00	0.000	0.009	0.1352	0.0000	0.0000	0.00E+00
356		0.00	0.000	0.009	0.1347	0.0000	0.0000	0.00E+00
357		0.00	0.000	0.009	0.1342	0.0000	0.0000	0.00E+00
358		0.00	0.000	0.009	0.1337	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.009	0.1333	0.0000	0.0000	0.00E+00
360		0.02	0.000	0.012	0.1340	0.0000	0.0000	0.00E+00
361	*	0.02	0.000	0.021	0.1340	0.0000	0.0000	0.00E+00
362	*	0.00	0.000	0.009	0.1335	0.0000	0.0000	0.00E+00
363		0.00	0.000	0.008	0.1330	0.0000	0.0000	0.00E+00
364		0.00	0.000	0.008	0.1326	0.0000	0.0000	0.00E+00
365		0.00	0.000	0.008	0.1321	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 2			
	inches	cubic feet	percent
Precipitation	9.84	35,706.9	100.00
Runoff	0.000	1.3005	0.00
Evapotranspiration	10.299	37,385.1	104.70
Drainage Collected from Layer 8	0.0000	0.0000	0.00
Percolation/Leakage through Layer 10	0.000000	0.0000	0.00

Average Head on Top of Layer 9	0.0000	---	---
Change in Water Storage	-0.4627	-1,679.4	-4.70
Soil Water at Start of Year	269.2301	977,305.3	2737.02
Soil Water at End of Year	268.7674	975,625.8	2732.31
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 3

Column key: Head #1: drainage from Layer 9
Drain #1: drainage from Layer 8
Leak #1: leakage thru Layer 10

Title: WST Landfill
Simulated On: 3/23/2026 12:13

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)
1			0.00	0.000	0.008	0.1317	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.008	0.1312	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.008	0.1307	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.008	0.1303	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.008	0.1298	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.008	0.1294	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.008	0.1289	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.008	0.1285	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.008	0.1280	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.008	0.1276	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.007	0.1272	0.0000	0.0000	0.00E+00
12			0.11	0.000	0.010	0.1330	0.0000	0.0000	0.00E+00
13			0.07	0.000	0.010	0.1364	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.009	0.1360	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.007	0.1356	0.0000	0.0000	0.00E+00
16	*		0.00	0.000	0.007	0.1352	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.007	0.1348	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.007	0.1344	0.0000	0.0000	0.00E+00
19	*		0.00	0.000	0.010	0.1340	0.0000	0.0000	0.00E+00
20	*		0.01	0.000	0.019	0.1336	0.0000	0.0000	0.00E+00
21	*		0.07	0.000	0.053	0.1344	0.0000	0.0000	0.00E+00
22			0.36	0.000	0.011	0.1539	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.007	0.1535	0.0000	0.0000	0.00E+00
24	*		0.01	0.000	0.020	0.1530	0.0000	0.0000	0.00E+00

25		0.00	0.000	0.006	0.1527	0.0000	0.0000	0.00E+00
26		0.00	0.000	0.006	0.1524	0.0000	0.0000	0.00E+00
27		0.00	0.000	0.006	0.1521	0.0000	0.0000	0.00E+00
28		0.00	0.000	0.006	0.1518	0.0000	0.0000	0.00E+00
29		0.00	0.000	0.006	0.1514	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.006	0.1511	0.0000	0.0000	0.00E+00
31	*	0.00	0.000	0.006	0.1508	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.006	0.1505	0.0000	0.0000	0.00E+00
33	*	0.00	0.000	0.005	0.1502	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.005	0.1499	0.0000	0.0000	0.00E+00
35		0.00	0.000	0.005	0.1496	0.0000	0.0000	0.00E+00
36		0.00	0.000	0.005	0.1493	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.005	0.1490	0.0000	0.0000	0.00E+00
38		0.02	0.000	0.009	0.1495	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.005	0.1492	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.007	0.1489	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.007	0.1485	0.0000	0.0000	0.00E+00
42		0.30	0.000	0.010	0.1644	0.0000	0.0000	0.00E+00
43		0.07	0.000	0.010	0.1679	0.0000	0.0000	0.00E+00
44		0.03	0.000	0.010	0.1691	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.007	0.1687	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.007	0.1683	0.0000	0.0000	0.00E+00
47	*	0.00	0.000	0.000	0.1683	0.0000	0.0000	0.00E+00
48	*	0.00	0.000	0.007	0.1680	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.006	0.1676	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.006	0.1673	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.006	0.1669	0.0000	0.0000	0.00E+00
52		0.00	0.000	0.006	0.1666	0.0000	0.0000	0.00E+00
53		0.00	0.000	0.006	0.1662	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.006	0.1659	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.006	0.1655	0.0000	0.0000	0.00E+00
56		0.06	0.000	0.009	0.1686	0.0000	0.0000	0.00E+00

57		0.00	0.000	0.006	0.1682	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.007	0.1679	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.006	0.1675	0.0000	0.0000	0.00E+00
60		0.00	0.000	0.006	0.1672	0.0000	0.0000	0.00E+00
61		0.00	0.000	0.006	0.1668	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.006	0.1665	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.006	0.1661	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.006	0.1658	0.0000	0.0000	0.00E+00
65		0.07	0.000	0.009	0.1691	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.006	0.1688	0.0000	0.0000	0.00E+00
67		0.00	0.000	0.006	0.1684	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.007	0.1680	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.006	0.1677	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.006	0.1674	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.006	0.1670	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.006	0.1667	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.006	0.1664	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.006	0.1660	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.006	0.1657	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.006	0.1654	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.006	0.1650	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.006	0.1647	0.0000	0.0000	0.00E+00
79	*	0.00	0.000	0.006	0.1644	0.0000	0.0000	0.00E+00
80		0.00	0.000	0.006	0.1641	0.0000	0.0000	0.00E+00
81	*	0.00	0.000	0.006	0.1637	0.0000	0.0000	0.00E+00
82	*	0.00	0.000	0.000	0.1637	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.006	0.1634	0.0000	0.0000	0.00E+00
84	*	0.00	0.000	0.006	0.1631	0.0000	0.0000	0.00E+00
85	*	0.00	0.000	0.000	0.1631	0.0000	0.0000	0.00E+00
86	*	0.00	0.000	0.006	0.1628	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.006	0.1624	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.006	0.1621	0.0000	0.0000	0.00E+00

89	0.00	0.000	0.006	0.1618	0.0000	0.0000	0.00E+00
90	0.00	0.000	0.006	0.1615	0.0000	0.0000	0.00E+00
91	0.00	0.000	0.006	0.1612	0.0000	0.0000	0.00E+00
92	0.00	0.000	0.006	0.1608	0.0000	0.0000	0.00E+00
93	0.00	0.000	0.006	0.1605	0.0000	0.0000	0.00E+00
94	0.00	0.000	0.006	0.1602	0.0000	0.0000	0.00E+00
95	0.00	0.000	0.006	0.1598	0.0000	0.0000	0.00E+00
96	0.00	0.000	0.006	0.1595	0.0000	0.0000	0.00E+00
97	0.00	0.000	0.006	0.1592	0.0000	0.0000	0.00E+00
98	0.00	0.000	0.006	0.1588	0.0000	0.0000	0.00E+00
99	0.00	0.000	0.006	0.1585	0.0000	0.0000	0.00E+00
100	0.00	0.000	0.007	0.1581	0.0000	0.0000	0.00E+00
101	0.00	0.000	0.007	0.1577	0.0000	0.0000	0.00E+00
102	0.00	0.000	0.007	0.1574	0.0000	0.0000	0.00E+00
103	0.00	0.000	0.007	0.1570	0.0000	0.0000	0.00E+00
104	0.00	0.000	0.007	0.1566	0.0000	0.0000	0.00E+00
105	0.00	0.000	0.007	0.1562	0.0000	0.0000	0.00E+00
106	0.00	0.000	0.007	0.1558	0.0000	0.0000	0.00E+00
107	0.00	0.000	0.007	0.1554	0.0000	0.0000	0.00E+00
108	0.00	0.000	0.007	0.1551	0.0000	0.0000	0.00E+00
109	0.00	0.000	0.007	0.1547	0.0000	0.0000	0.00E+00
110	0.01	0.000	0.010	0.1546	0.0000	0.0000	0.00E+00
111	0.00	0.000	0.007	0.1542	0.0000	0.0000	0.00E+00
112	0.00	0.000	0.007	0.1538	0.0000	0.0000	0.00E+00
113	0.00	0.000	0.007	0.1535	0.0000	0.0000	0.00E+00
114	0.00	0.000	0.007	0.1531	0.0000	0.0000	0.00E+00
115	0.00	0.000	0.007	0.1527	0.0000	0.0000	0.00E+00
116	0.00	0.000	0.007	0.1523	0.0000	0.0000	0.00E+00
117	0.00	0.000	0.008	0.1519	0.0000	0.0000	0.00E+00
118	0.00	0.000	0.008	0.1514	0.0000	0.0000	0.00E+00
119	0.00	0.000	0.007	0.1510	0.0000	0.0000	0.00E+00
120	0.00	0.000	0.008	0.1506	0.0000	0.0000	0.00E+00

121	0.00	0.000	0.008	0.1502	0.0000	0.0000	0.00E+00
122	0.07	0.000	0.011	0.1536	0.0000	0.0000	0.00E+00
123	0.01	0.000	0.012	0.1532	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.009	0.1528	0.0000	0.0000	0.00E+00
125	0.00	0.000	0.008	0.1523	0.0000	0.0000	0.00E+00
126	0.00	0.000	0.008	0.1519	0.0000	0.0000	0.00E+00
127	0.05	0.000	0.011	0.1539	0.0000	0.0000	0.00E+00
128	0.00	0.000	0.008	0.1535	0.0000	0.0000	0.00E+00
129	0.00	0.000	0.009	0.1530	0.0000	0.0000	0.00E+00
130	0.04	0.000	0.012	0.1544	0.0000	0.0000	0.00E+00
131	0.09	0.000	0.011	0.1588	0.0000	0.0000	0.00E+00
132	0.00	0.000	0.008	0.1583	0.0000	0.0000	0.00E+00
133	0.00	0.000	0.008	0.1579	0.0000	0.0000	0.00E+00
134	0.00	0.000	0.008	0.1574	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.008	0.1570	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.008	0.1566	0.0000	0.0000	0.00E+00
137	0.00	0.000	0.008	0.1561	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.008	0.1556	0.0000	0.0000	0.00E+00
139	0.10	0.000	0.011	0.1605	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.009	0.1600	0.0000	0.0000	0.00E+00
141	0.03	0.000	0.013	0.1608	0.0000	0.0000	0.00E+00
142	0.69	0.000	0.014	0.1985	0.0000	0.0000	0.00E+00
143	0.68	0.000	0.238	0.2230	0.0000	0.0000	0.00E+00
144	0.03	0.000	0.345	0.2056	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.311	0.1883	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.247	0.1746	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.187	0.1642	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.079	0.1598	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.062	0.1564	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.053	0.1534	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.048	0.1508	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.042	0.1484	0.0000	0.0000	0.00E+00

153	0.00	0.000	0.041	0.1461	0.0000	0.0000	0.00E+00
154	0.01	0.000	0.045	0.1442	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.037	0.1421	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.038	0.1400	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.037	0.1380	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.035	0.1360	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.033	0.1342	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.034	0.1323	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.031	0.1306	0.0000	0.0000	0.00E+00
162	0.14	0.000	0.035	0.1366	0.0000	0.0000	0.00E+00
163	0.02	0.000	0.033	0.1360	0.0000	0.0000	0.00E+00
164	0.35	0.000	0.034	0.1534	0.0000	0.0000	0.00E+00
165	0.01	0.000	0.034	0.1518	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.028	0.1502	0.0000	0.0000	0.00E+00
167	0.00	0.000	0.028	0.1486	0.0000	0.0000	0.00E+00
168	0.00	0.000	0.028	0.1471	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.028	0.1455	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.027	0.1441	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.029	0.1425	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.027	0.1410	0.0000	0.0000	0.00E+00
173	0.01	0.000	0.028	0.1398	0.0000	0.0000	0.00E+00
174	0.08	0.000	0.030	0.1423	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.027	0.1408	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.027	0.1393	0.0000	0.0000	0.00E+00
177	0.43	0.000	0.032	0.1612	0.0000	0.0000	0.00E+00
178	0.11	0.000	0.031	0.1659	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.023	0.1646	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.027	0.1631	0.0000	0.0000	0.00E+00
181	0.16	0.000	0.033	0.1704	0.0000	0.0000	0.00E+00
182	0.01	0.000	0.030	0.1692	0.0000	0.0000	0.00E+00
183	0.03	0.000	0.032	0.1691	0.0000	0.0000	0.00E+00
184	0.10	0.000	0.027	0.1733	0.0000	0.0000	0.00E+00

185	0.08	0.000	0.026	0.1761	0.0000	0.0000	0.00E+00
186	0.27	0.000	0.342	0.1720	0.0000	0.0000	0.00E+00
187	0.42	0.000	0.029	0.1939	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.294	0.1776	0.0000	0.0000	0.00E+00
189	0.00	0.000	0.022	0.1764	0.0000	0.0000	0.00E+00
190	0.00	0.000	0.021	0.1752	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.018	0.1742	0.0000	0.0000	0.00E+00
192	0.00	0.000	0.019	0.1732	0.0000	0.0000	0.00E+00
193	0.00	0.000	0.023	0.1720	0.0000	0.0000	0.00E+00
194	0.04	0.000	0.028	0.1725	0.0000	0.0000	0.00E+00
195	0.06	0.000	0.026	0.1744	0.0000	0.0000	0.00E+00
196	0.98	0.006	0.024	0.2272	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.162	0.2184	0.0000	0.0000	0.00E+00
198	0.00	0.000	0.337	0.1996	0.0000	0.0000	0.00E+00
199	0.00	0.000	0.288	0.1837	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.230	0.1709	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.202	0.1596	0.0000	0.0000	0.00E+00
202	0.00	0.000	0.089	0.1547	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.073	0.1506	0.0000	0.0000	0.00E+00
204	0.00	0.000	0.060	0.1472	0.0000	0.0000	0.00E+00
205	0.00	0.000	0.053	0.1443	0.0000	0.0000	0.00E+00
206	0.00	0.000	0.048	0.1416	0.0000	0.0000	0.00E+00
207	0.00	0.000	0.050	0.1388	0.0000	0.0000	0.00E+00
208	0.00	0.000	0.049	0.1361	0.0000	0.0000	0.00E+00
209	0.76	0.000	0.054	0.1756	0.0000	0.0000	0.00E+00
210	1.62	0.132	0.048	0.2557	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.361	0.2357	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.437	0.2113	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.423	0.1878	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.276	0.1724	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.209	0.1608	0.0000	0.0000	0.00E+00
216	0.06	0.000	0.099	0.1587	0.0000	0.0000	0.00E+00

217	0.00	0.000	0.075	0.1545	0.0000	0.0000	0.00E+00
218	0.92	0.000	0.067	0.2021	0.0000	0.0000	0.00E+00
219	0.03	0.000	0.161	0.1951	0.0000	0.0000	0.00E+00
220	0.13	0.000	0.345	0.1834	0.0000	0.0000	0.00E+00
221	0.09	0.000	0.402	0.1661	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.223	0.1538	0.0000	0.0000	0.00E+00
223	0.00	0.000	0.091	0.1487	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.083	0.1441	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.070	0.1402	0.0000	0.0000	0.00E+00
226	0.59	0.000	0.067	0.1695	0.0000	0.0000	0.00E+00
227	0.01	0.000	0.058	0.1666	0.0000	0.0000	0.00E+00
228	0.14	0.000	0.055	0.1711	0.0000	0.0000	0.00E+00
229	0.10	0.000	0.057	0.1733	0.0000	0.0000	0.00E+00
230	0.43	0.000	0.052	0.1943	0.0000	0.0000	0.00E+00
231	0.93	0.013	0.186	0.2349	0.0000	0.0000	0.00E+00
232	0.01	0.000	0.160	0.2263	0.0000	0.0000	0.00E+00
233	0.05	0.000	0.194	0.2182	0.0000	0.0000	0.00E+00
234	0.00	0.000	0.341	0.1992	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.240	0.1859	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.177	0.1760	0.0000	0.0000	0.00E+00
237	0.01	0.000	0.152	0.1681	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.216	0.1561	0.0000	0.0000	0.00E+00
239	0.02	0.000	0.106	0.1512	0.0000	0.0000	0.00E+00
240	0.02	0.000	0.081	0.1477	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.066	0.1441	0.0000	0.0000	0.00E+00
242	0.20	0.000	0.071	0.1516	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.066	0.1479	0.0000	0.0000	0.00E+00
244	0.04	0.000	0.059	0.1466	0.0000	0.0000	0.00E+00
245	0.00	0.000	0.053	0.1437	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.052	0.1408	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.049	0.1381	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.053	0.1352	0.0000	0.0000	0.00E+00

249	0.00	0.000	0.059	0.1319	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.061	0.1285	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.055	0.1254	0.0000	0.0000	0.00E+00
252	0.00	0.000	0.050	0.1226	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.046	0.1200	0.0000	0.0000	0.00E+00
254	0.00	0.000	0.036	0.1180	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.038	0.1159	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.005	0.1157	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
258	0.01	0.000	0.005	0.1157	0.0000	0.0000	0.00E+00
259	0.05	0.000	0.010	0.1177	0.0000	0.0000	0.00E+00
260	0.00	0.000	0.002	0.1175	0.0000	0.0000	0.00E+00
261	0.04	0.000	0.012	0.1193	0.0000	0.0000	0.00E+00
262	0.07	0.000	0.011	0.1229	0.0000	0.0000	0.00E+00
263	0.02	0.000	0.021	0.1228	0.0000	0.0000	0.00E+00
264	0.00	0.000	0.013	0.1221	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.012	0.1214	0.0000	0.0000	0.00E+00
266	0.16	0.000	0.022	0.1293	0.0000	0.0000	0.00E+00
267	0.14	0.000	0.024	0.1356	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.017	0.1347	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.020	0.1336	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.018	0.1326	0.0000	0.0000	0.00E+00
271	0.00	0.000	0.018	0.1318	0.0000	0.0000	0.00E+00
272	0.02	0.000	0.024	0.1318	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.016	0.1309	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.018	0.1299	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.015	0.1290	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.016	0.1282	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.015	0.1273	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.015	0.1265	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.014	0.1257	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.014	0.1250	0.0000	0.0000	0.00E+00

281		0.00	0.000	0.014	0.1242	0.0000	0.0000	0.00E+00
282		0.00	0.000	0.014	0.1234	0.0000	0.0000	0.00E+00
283		0.00	0.000	0.013	0.1227	0.0000	0.0000	0.00E+00
284		0.00	0.000	0.013	0.1220	0.0000	0.0000	0.00E+00
285		0.00	0.000	0.014	0.1212	0.0000	0.0000	0.00E+00
286		0.00	0.000	0.014	0.1205	0.0000	0.0000	0.00E+00
287		0.00	0.000	0.013	0.1198	0.0000	0.0000	0.00E+00
288		0.00	0.000	0.012	0.1191	0.0000	0.0000	0.00E+00
289		0.16	0.000	0.019	0.1271	0.0000	0.0000	0.00E+00
290		0.00	0.000	0.013	0.1264	0.0000	0.0000	0.00E+00
291		0.00	0.000	0.013	0.1257	0.0000	0.0000	0.00E+00
292		0.00	0.000	0.011	0.1251	0.0000	0.0000	0.00E+00
293		0.00	0.000	0.009	0.1246	0.0000	0.0000	0.00E+00
294		0.00	0.000	0.009	0.1241	0.0000	0.0000	0.00E+00
295		0.00	0.000	0.009	0.1236	0.0000	0.0000	0.00E+00
296		0.00	0.000	0.010	0.1230	0.0000	0.0000	0.00E+00
297		0.00	0.000	0.010	0.1225	0.0000	0.0000	0.00E+00
298		0.20	0.000	0.018	0.1324	0.0000	0.0000	0.00E+00
299		0.17	0.000	0.017	0.1411	0.0000	0.0000	0.00E+00
300		0.00	0.000	0.010	0.1405	0.0000	0.0000	0.00E+00
301		0.01	0.000	0.016	0.1404	0.0000	0.0000	0.00E+00
302		0.00	0.000	0.009	0.1399	0.0000	0.0000	0.00E+00
303		0.00	0.000	0.009	0.1394	0.0000	0.0000	0.00E+00
304		0.00	0.000	0.009	0.1388	0.0000	0.0000	0.00E+00
305		0.00	0.000	0.009	0.1384	0.0000	0.0000	0.00E+00
306		0.00	0.000	0.008	0.1379	0.0000	0.0000	0.00E+00
307		0.00	0.000	0.008	0.1374	0.0000	0.0000	0.00E+00
308	*	0.28	0.000	0.046	0.1385	0.0000	0.0000	0.00E+00
309	*	0.00	0.000	0.062	0.1396	0.0000	0.0000	0.00E+00
310		0.00	0.000	0.098	0.1413	0.0000	0.0000	0.00E+00
311		0.00	0.000	0.008	0.1408	0.0000	0.0000	0.00E+00
312		0.00	0.000	0.010	0.1403	0.0000	0.0000	0.00E+00

313		0.00	0.000	0.009	0.1398	0.0000	0.0000	0.00E+00
314		0.00	0.000	0.008	0.1393	0.0000	0.0000	0.00E+00
315		0.00	0.000	0.008	0.1389	0.0000	0.0000	0.00E+00
316		0.00	0.000	0.008	0.1384	0.0000	0.0000	0.00E+00
317		0.00	0.000	0.008	0.1380	0.0000	0.0000	0.00E+00
318		0.00	0.000	0.008	0.1376	0.0000	0.0000	0.00E+00
319		0.00	0.000	0.008	0.1371	0.0000	0.0000	0.00E+00
320	*	0.00	0.000	0.008	0.1367	0.0000	0.0000	0.00E+00
321		0.00	0.000	0.008	0.1363	0.0000	0.0000	0.00E+00
322		0.00	0.000	0.007	0.1359	0.0000	0.0000	0.00E+00
323		0.00	0.000	0.007	0.1355	0.0000	0.0000	0.00E+00
324		0.00	0.000	0.007	0.1351	0.0000	0.0000	0.00E+00
325		0.00	0.000	0.007	0.1347	0.0000	0.0000	0.00E+00
326		0.00	0.000	0.007	0.1343	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.007	0.1339	0.0000	0.0000	0.00E+00
328		0.01	0.000	0.011	0.1335	0.0000	0.0000	0.00E+00
329		0.04	0.000	0.014	0.1351	0.0000	0.0000	0.00E+00
330		0.00	0.000	0.007	0.1347	0.0000	0.0000	0.00E+00
331		0.00	0.000	0.009	0.1343	0.0000	0.0000	0.00E+00
332		0.02	0.000	0.015	0.1347	0.0000	0.0000	0.00E+00
333		0.35	0.000	0.016	0.1532	0.0000	0.0000	0.00E+00
334		0.00	0.000	0.009	0.1527	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.008	0.1522	0.0000	0.0000	0.00E+00
336		0.00	0.000	0.007	0.1519	0.0000	0.0000	0.00E+00
337		0.00	0.000	0.007	0.1515	0.0000	0.0000	0.00E+00
338		0.00	0.000	0.007	0.1511	0.0000	0.0000	0.00E+00
339		0.00	0.000	0.007	0.1507	0.0000	0.0000	0.00E+00
340		0.00	0.000	0.007	0.1503	0.0000	0.0000	0.00E+00
341		0.00	0.000	0.007	0.1500	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.007	0.1496	0.0000	0.0000	0.00E+00
343		0.00	0.000	0.007	0.1492	0.0000	0.0000	0.00E+00
344		0.00	0.000	0.007	0.1489	0.0000	0.0000	0.00E+00

345		0.00	0.000	0.007	0.1485	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.007	0.1481	0.0000	0.0000	0.00E+00
347		0.00	0.000	0.007	0.1478	0.0000	0.0000	0.00E+00
348		0.00	0.000	0.007	0.1474	0.0000	0.0000	0.00E+00
349		0.00	0.000	0.006	0.1470	0.0000	0.0000	0.00E+00
350		0.00	0.000	0.006	0.1467	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.006	0.1463	0.0000	0.0000	0.00E+00
352		0.00	0.000	0.006	0.1460	0.0000	0.0000	0.00E+00
353		0.00	0.000	0.006	0.1456	0.0000	0.0000	0.00E+00
354	*	0.00	0.000	0.006	0.1453	0.0000	0.0000	0.00E+00
355	*	0.00	0.000	0.000	0.1453	0.0000	0.0000	0.00E+00
356		0.00	0.000	0.007	0.1448	0.0000	0.0000	0.00E+00
357		0.00	0.000	0.008	0.1444	0.0000	0.0000	0.00E+00
358		0.00	0.000	0.008	0.1440	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.008	0.1436	0.0000	0.0000	0.00E+00
360	*	0.00	0.000	0.012	0.1432	0.0000	0.0000	0.00E+00
361	*	0.13	0.000	0.065	0.1442	0.0000	0.0000	0.00E+00
362		0.02	0.000	0.074	0.1438	0.0000	0.0000	0.00E+00
363		0.15	0.000	0.014	0.1513	0.0000	0.0000	0.00E+00
364		0.07	0.000	0.015	0.1543	0.0000	0.0000	0.00E+00
365		0.00	0.000	0.008	0.1538	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 3			
	inches	cubic feet	percent
Precipitation	14.59	52,979.1	100.00
Runoff	0.151	547.7	1.03
Evapotranspiration	14.051	51,003.5	96.27
Drainage Collected from Layer 8	0.0000	0.0000	0.00
Percolation/Leakage through Layer 10	0.000000	0.0000	0.00

Average Head on Top of Layer 9	0.0000	---	---
Change in Water Storage	0.3934	1,427.9	2.70
Soil Water at Start of Year	268.7674	975,625.8	1841.53
Soil Water at End of Year	269.1608	977,053.7	1844.22
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 4

Column key: Head #1: drainage from Layer 9
Drain #1: drainage from Layer 8
Leak #1: leakage thru Layer 10

Title: WST Landfill
Simulated On: 3/23/2026 12:13

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)
1			0.00	0.000	0.008	0.1534	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.008	0.1529	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.010	0.1525	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.008	0.1521	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.008	0.1516	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.008	0.1511	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.006	0.1508	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.006	0.1505	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.006	0.1501	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.006	0.1498	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.006	0.1495	0.0000	0.0000	0.00E+00
12			0.00	0.000	0.006	0.1492	0.0000	0.0000	0.00E+00
13			0.00	0.000	0.006	0.1489	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.006	0.1485	0.0000	0.0000	0.00E+00
15			0.52	0.000	0.013	0.1768	0.0000	0.0000	0.00E+00
16			0.00	0.000	0.073	0.1727	0.0000	0.0000	0.00E+00
17	*		0.00	0.000	0.008	0.1723	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.007	0.1719	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.007	0.1715	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.007	0.1711	0.0000	0.0000	0.00E+00
21			0.48	0.000	0.014	0.1970	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.105	0.1912	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.113	0.1849	0.0000	0.0000	0.00E+00
24			0.00	0.000	0.134	0.1774	0.0000	0.0000	0.00E+00

25		0.00	0.000	0.116	0.1710	0.0000	0.0000	0.00E+00
26		0.00	0.000	0.076	0.1668	0.0000	0.0000	0.00E+00
27		0.00	0.000	0.059	0.1635	0.0000	0.0000	0.00E+00
28		0.04	0.000	0.056	0.1626	0.0000	0.0000	0.00E+00
29		0.14	0.000	0.050	0.1673	0.0000	0.0000	0.00E+00
30		0.02	0.000	0.045	0.1657	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.038	0.1636	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.035	0.1617	0.0000	0.0000	0.00E+00
33		0.00	0.000	0.031	0.1599	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.030	0.1583	0.0000	0.0000	0.00E+00
35		0.00	0.000	0.028	0.1567	0.0000	0.0000	0.00E+00
36		0.00	0.000	0.027	0.1552	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.026	0.1538	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.025	0.1524	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.024	0.1511	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.023	0.1498	0.0000	0.0000	0.00E+00
41		0.27	0.000	0.029	0.1633	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.023	0.1620	0.0000	0.0000	0.00E+00
43		0.00	0.000	0.023	0.1607	0.0000	0.0000	0.00E+00
44		0.00	0.000	0.022	0.1595	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.020	0.1584	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.020	0.1573	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.019	0.1562	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.019	0.1551	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.018	0.1541	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.018	0.1531	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.018	0.1521	0.0000	0.0000	0.00E+00
52		0.00	0.000	0.017	0.1512	0.0000	0.0000	0.00E+00
53		0.00	0.000	0.017	0.1502	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.017	0.1493	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.017	0.1483	0.0000	0.0000	0.00E+00
56	*	0.00	0.000	0.016	0.1474	0.0000	0.0000	0.00E+00

57	0.00	0.000	0.016	0.1465	0.0000	0.0000	0.00E+00
58	0.00	0.000	0.016	0.1457	0.0000	0.0000	0.00E+00
59	0.00	0.000	0.016	0.1448	0.0000	0.0000	0.00E+00
60	0.00	0.000	0.015	0.1440	0.0000	0.0000	0.00E+00
61	0.00	0.000	0.015	0.1431	0.0000	0.0000	0.00E+00
62	0.00	0.000	0.015	0.1423	0.0000	0.0000	0.00E+00
63	0.04	0.000	0.021	0.1433	0.0000	0.0000	0.00E+00
64	0.16	0.000	0.022	0.1511	0.0000	0.0000	0.00E+00
65	0.00	0.000	0.015	0.1503	0.0000	0.0000	0.00E+00
66	0.00	0.000	0.015	0.1494	0.0000	0.0000	0.00E+00
67	0.00	0.000	0.015	0.1486	0.0000	0.0000	0.00E+00
68	0.00	0.000	0.015	0.1478	0.0000	0.0000	0.00E+00
69	0.31	0.000	0.021	0.1636	0.0000	0.0000	0.00E+00
70	0.00	0.000	0.014	0.1628	0.0000	0.0000	0.00E+00
71	0.00	0.000	0.015	0.1620	0.0000	0.0000	0.00E+00
72	0.00	0.000	0.015	0.1611	0.0000	0.0000	0.00E+00
73	0.00	0.000	0.014	0.1604	0.0000	0.0000	0.00E+00
74	0.00	0.000	0.013	0.1597	0.0000	0.0000	0.00E+00
75	0.00	0.000	0.013	0.1589	0.0000	0.0000	0.00E+00
76	0.00	0.000	0.013	0.1582	0.0000	0.0000	0.00E+00
77	0.00	0.000	0.013	0.1575	0.0000	0.0000	0.00E+00
78	0.00	0.000	0.013	0.1568	0.0000	0.0000	0.00E+00
79	0.00	0.000	0.013	0.1561	0.0000	0.0000	0.00E+00
80	0.00	0.000	0.013	0.1554	0.0000	0.0000	0.00E+00
81	0.00	0.000	0.013	0.1547	0.0000	0.0000	0.00E+00
82	0.00	0.000	0.012	0.1540	0.0000	0.0000	0.00E+00
83	0.00	0.000	0.012	0.1533	0.0000	0.0000	0.00E+00
84	0.00	0.000	0.012	0.1527	0.0000	0.0000	0.00E+00
85	0.00	0.000	0.012	0.1520	0.0000	0.0000	0.00E+00
86	0.00	0.000	0.012	0.1513	0.0000	0.0000	0.00E+00
87	0.00	0.000	0.012	0.1507	0.0000	0.0000	0.00E+00
88	0.00	0.000	0.012	0.1500	0.0000	0.0000	0.00E+00

89	*	0.00	0.000	0.012	0.1494	0.0000	0.0000	0.00E+00
90		0.00	0.000	0.012	0.1487	0.0000	0.0000	0.00E+00
91		0.00	0.000	0.012	0.1480	0.0000	0.0000	0.00E+00
92		0.00	0.000	0.012	0.1474	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.012	0.1467	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.012	0.1461	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.012	0.1454	0.0000	0.0000	0.00E+00
96		0.00	0.000	0.012	0.1448	0.0000	0.0000	0.00E+00
97		0.08	0.000	0.018	0.1482	0.0000	0.0000	0.00E+00
98		0.00	0.000	0.012	0.1476	0.0000	0.0000	0.00E+00
99		0.00	0.000	0.011	0.1469	0.0000	0.0000	0.00E+00
100		0.00	0.000	0.011	0.1463	0.0000	0.0000	0.00E+00
101		0.00	0.000	0.012	0.1457	0.0000	0.0000	0.00E+00
102		0.00	0.000	0.012	0.1450	0.0000	0.0000	0.00E+00
103		0.00	0.000	0.012	0.1444	0.0000	0.0000	0.00E+00
104		0.00	0.000	0.012	0.1437	0.0000	0.0000	0.00E+00
105		0.00	0.000	0.012	0.1431	0.0000	0.0000	0.00E+00
106		0.00	0.000	0.011	0.1425	0.0000	0.0000	0.00E+00
107		0.00	0.000	0.012	0.1418	0.0000	0.0000	0.00E+00
108		0.00	0.000	0.012	0.1412	0.0000	0.0000	0.00E+00
109		0.00	0.000	0.012	0.1405	0.0000	0.0000	0.00E+00
110		0.00	0.000	0.011	0.1399	0.0000	0.0000	0.00E+00
111		0.00	0.000	0.011	0.1393	0.0000	0.0000	0.00E+00
112		0.00	0.000	0.011	0.1387	0.0000	0.0000	0.00E+00
113		0.00	0.000	0.011	0.1381	0.0000	0.0000	0.00E+00
114		0.00	0.000	0.011	0.1375	0.0000	0.0000	0.00E+00
115		0.00	0.000	0.011	0.1369	0.0000	0.0000	0.00E+00
116		0.03	0.000	0.018	0.1377	0.0000	0.0000	0.00E+00
117		0.00	0.000	0.011	0.1370	0.0000	0.0000	0.00E+00
118		0.00	0.000	0.011	0.1364	0.0000	0.0000	0.00E+00
119		0.02	0.000	0.017	0.1366	0.0000	0.0000	0.00E+00
120		0.00	0.000	0.011	0.1360	0.0000	0.0000	0.00E+00

121	0.00	0.000	0.011	0.1354	0.0000	0.0000	0.00E+00
122	0.17	0.000	0.019	0.1439	0.0000	0.0000	0.00E+00
123	0.00	0.000	0.011	0.1433	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.012	0.1427	0.0000	0.0000	0.00E+00
125	0.06	0.000	0.019	0.1449	0.0000	0.0000	0.00E+00
126	0.07	0.000	0.020	0.1476	0.0000	0.0000	0.00E+00
127	0.00	0.000	0.010	0.1470	0.0000	0.0000	0.00E+00
128	0.00	0.000	0.010	0.1465	0.0000	0.0000	0.00E+00
129	0.00	0.000	0.010	0.1459	0.0000	0.0000	0.00E+00
130	0.00	0.000	0.011	0.1453	0.0000	0.0000	0.00E+00
131	0.00	0.000	0.010	0.1448	0.0000	0.0000	0.00E+00
132	0.13	0.000	0.017	0.1512	0.0000	0.0000	0.00E+00
133	0.00	0.000	0.011	0.1506	0.0000	0.0000	0.00E+00
134	0.00	0.000	0.012	0.1500	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.011	0.1494	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.012	0.1487	0.0000	0.0000	0.00E+00
137	0.00	0.000	0.012	0.1481	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.010	0.1475	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.009	0.1470	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.010	0.1465	0.0000	0.0000	0.00E+00
141	0.09	0.000	0.017	0.1504	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.011	0.1497	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.011	0.1491	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.011	0.1485	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.010	0.1480	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.010	0.1475	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.009	0.1470	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.009	0.1465	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.008	0.1461	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.009	0.1456	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.008	0.1451	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.010	0.1446	0.0000	0.0000	0.00E+00

153	0.00	0.000	0.010	0.1440	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.008	0.1435	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.009	0.1430	0.0000	0.0000	0.00E+00
156	0.45	0.000	0.017	0.1669	0.0000	0.0000	0.00E+00
157	0.03	0.000	0.020	0.1672	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.010	0.1666	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.009	0.1662	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.010	0.1656	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.012	0.1649	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.012	0.1642	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.013	0.1635	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.013	0.1628	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.011	0.1622	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.010	0.1616	0.0000	0.0000	0.00E+00
167	0.02	0.000	0.020	0.1616	0.0000	0.0000	0.00E+00
168	0.04	0.000	0.020	0.1625	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.012	0.1618	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.013	0.1611	0.0000	0.0000	0.00E+00
171	0.03	0.000	0.021	0.1615	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.014	0.1607	0.0000	0.0000	0.00E+00
173	0.00	0.000	0.013	0.1600	0.0000	0.0000	0.00E+00
174	0.00	0.000	0.016	0.1591	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.015	0.1582	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.013	0.1575	0.0000	0.0000	0.00E+00
177	0.02	0.000	0.020	0.1575	0.0000	0.0000	0.00E+00
178	0.06	0.000	0.020	0.1599	0.0000	0.0000	0.00E+00
179	0.02	0.000	0.020	0.1597	0.0000	0.0000	0.00E+00
180	0.20	0.000	0.021	0.1695	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.013	0.1688	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.013	0.1681	0.0000	0.0000	0.00E+00
183	0.29	0.000	0.020	0.1833	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.302	0.1666	0.0000	0.0000	0.00E+00

185	0.00	0.000	0.015	0.1657	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.015	0.1649	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.015	0.1641	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.013	0.1634	0.0000	0.0000	0.00E+00
189	0.00	0.000	0.013	0.1627	0.0000	0.0000	0.00E+00
190	0.01	0.000	0.017	0.1620	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.018	0.1610	0.0000	0.0000	0.00E+00
192	0.01	0.000	0.021	0.1603	0.0000	0.0000	0.00E+00
193	0.02	0.000	0.020	0.1603	0.0000	0.0000	0.00E+00
194	0.13	0.000	0.021	0.1663	0.0000	0.0000	0.00E+00
195	0.03	0.000	0.027	0.1664	0.0000	0.0000	0.00E+00
196	0.44	0.000	0.024	0.1894	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.358	0.1695	0.0000	0.0000	0.00E+00
198	0.00	0.000	0.016	0.1686	0.0000	0.0000	0.00E+00
199	0.01	0.000	0.020	0.1683	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.013	0.1676	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.013	0.1669	0.0000	0.0000	0.00E+00
202	0.00	0.000	0.016	0.1660	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.016	0.1650	0.0000	0.0000	0.00E+00
204	0.00	0.000	0.016	0.1641	0.0000	0.0000	0.00E+00
205	0.12	0.000	0.023	0.1698	0.0000	0.0000	0.00E+00
206	0.09	0.000	0.028	0.1732	0.0000	0.0000	0.00E+00
207	0.05	0.000	0.027	0.1744	0.0000	0.0000	0.00E+00
208	0.00	0.000	0.020	0.1734	0.0000	0.0000	0.00E+00
209	0.13	0.000	0.022	0.1795	0.0000	0.0000	0.00E+00
210	0.01	0.000	0.354	0.1604	0.0000	0.0000	0.00E+00
211	0.42	0.000	0.027	0.1825	0.0000	0.0000	0.00E+00
212	0.02	0.000	0.300	0.1667	0.0000	0.0000	0.00E+00
213	0.22	0.000	0.029	0.1772	0.0000	0.0000	0.00E+00
214	0.19	0.000	0.028	0.1860	0.0000	0.0000	0.00E+00
215	0.67	0.000	0.422	0.1996	0.0000	0.0000	0.00E+00
216	0.00	0.000	0.218	0.1877	0.0000	0.0000	0.00E+00

217	0.00	0.000	0.406	0.1652	0.0000	0.0000	0.00E+00
218	0.15	0.000	0.185	0.1634	0.0000	0.0000	0.00E+00
219	0.02	0.000	0.095	0.1590	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.065	0.1554	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.057	0.1523	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.050	0.1495	0.0000	0.0000	0.00E+00
223	0.00	0.000	0.057	0.1463	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.052	0.1434	0.0000	0.0000	0.00E+00
225	0.13	0.000	0.060	0.1474	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.048	0.1447	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.045	0.1422	0.0000	0.0000	0.00E+00
228	0.02	0.000	0.050	0.1407	0.0000	0.0000	0.00E+00
229	0.00	0.000	0.033	0.1389	0.0000	0.0000	0.00E+00
230	0.01	0.000	0.040	0.1373	0.0000	0.0000	0.00E+00
231	0.08	0.000	0.045	0.1390	0.0000	0.0000	0.00E+00
232	0.02	0.000	0.046	0.1377	0.0000	0.0000	0.00E+00
233	0.00	0.000	0.038	0.1357	0.0000	0.0000	0.00E+00
234	0.86	0.000	0.046	0.1807	0.0000	0.0000	0.00E+00
235	0.19	0.000	0.042	0.1888	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.313	0.1714	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.036	0.1694	0.0000	0.0000	0.00E+00
238	0.72	0.000	0.044	0.2068	0.0000	0.0000	0.00E+00
239	0.00	0.000	0.272	0.1918	0.0000	0.0000	0.00E+00
240	0.05	0.000	0.278	0.1792	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.199	0.1681	0.0000	0.0000	0.00E+00
242	0.00	0.000	0.090	0.1632	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.072	0.1592	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.061	0.1558	0.0000	0.0000	0.00E+00
245	0.00	0.000	0.054	0.1528	0.0000	0.0000	0.00E+00
246	0.11	0.000	0.058	0.1555	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.047	0.1529	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.053	0.1499	0.0000	0.0000	0.00E+00

249	0.00	0.000	0.043	0.1475	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.039	0.1453	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.041	0.1431	0.0000	0.0000	0.00E+00
252	0.00	0.000	0.044	0.1406	0.0000	0.0000	0.00E+00
253	0.09	0.000	0.049	0.1430	0.0000	0.0000	0.00E+00
254	0.32	0.000	0.042	0.1586	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.032	0.1568	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.034	0.1550	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.031	0.1532	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.031	0.1517	0.0000	0.0000	0.00E+00
259	0.00	0.000	0.026	0.1503	0.0000	0.0000	0.00E+00
260	0.50	0.000	0.035	0.1761	0.0000	0.0000	0.00E+00
261	0.00	0.000	0.029	0.1745	0.0000	0.0000	0.00E+00
262	0.07	0.000	0.035	0.1764	0.0000	0.0000	0.00E+00
263	0.01	0.000	0.031	0.1754	0.0000	0.0000	0.00E+00
264	0.01	0.000	0.029	0.1744	0.0000	0.0000	0.00E+00
265	0.09	0.000	0.035	0.1778	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.235	0.1647	0.0000	0.0000	0.00E+00
267	0.01	0.000	0.033	0.1635	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.023	0.1623	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.021	0.1611	0.0000	0.0000	0.00E+00
270	0.76	0.000	0.032	0.2017	0.0000	0.0000	0.00E+00
271	0.17	0.000	0.163	0.2023	0.0000	0.0000	0.00E+00
272	0.15	0.000	0.248	0.1971	0.0000	0.0000	0.00E+00
273	0.07	0.000	0.243	0.1874	0.0000	0.0000	0.00E+00
274	0.18	0.000	0.270	0.1826	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.353	0.1630	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.193	0.1523	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.078	0.1480	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.065	0.1444	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.056	0.1413	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.045	0.1388	0.0000	0.0000	0.00E+00

281	0.00	0.000	0.041	0.1365	0.0000	0.0000	0.00E+00
282	0.00	0.000	0.038	0.1344	0.0000	0.0000	0.00E+00
283	0.00	0.000	0.035	0.1325	0.0000	0.0000	0.00E+00
284	0.00	0.000	0.032	0.1307	0.0000	0.0000	0.00E+00
285	0.00	0.000	0.030	0.1290	0.0000	0.0000	0.00E+00
286	0.00	0.000	0.030	0.1274	0.0000	0.0000	0.00E+00
287	0.05	0.000	0.038	0.1283	0.0000	0.0000	0.00E+00
288	0.04	0.000	0.037	0.1283	0.0000	0.0000	0.00E+00
289	0.00	0.000	0.026	0.1269	0.0000	0.0000	0.00E+00
290	0.00	0.000	0.026	0.1254	0.0000	0.0000	0.00E+00
291	0.00	0.000	0.025	0.1240	0.0000	0.0000	0.00E+00
292	0.00	0.000	0.024	0.1227	0.0000	0.0000	0.00E+00
293	0.01	0.000	0.028	0.1215	0.0000	0.0000	0.00E+00
294	0.21	0.000	0.033	0.1311	0.0000	0.0000	0.00E+00
295	0.00	0.000	0.022	0.1299	0.0000	0.0000	0.00E+00
296	0.00	0.000	0.022	0.1286	0.0000	0.0000	0.00E+00
297	0.00	0.000	0.022	0.1274	0.0000	0.0000	0.00E+00
298	0.00	0.000	0.021	0.1262	0.0000	0.0000	0.00E+00
299	0.00	0.000	0.016	0.1253	0.0000	0.0000	0.00E+00
300	0.00	0.000	0.013	0.1246	0.0000	0.0000	0.00E+00
301	0.00	0.000	0.013	0.1239	0.0000	0.0000	0.00E+00
302	0.00	0.000	0.013	0.1232	0.0000	0.0000	0.00E+00
303	0.28	0.000	0.023	0.1373	0.0000	0.0000	0.00E+00
304	0.00	0.000	0.009	0.1368	0.0000	0.0000	0.00E+00
305	0.00	0.000	0.011	0.1362	0.0000	0.0000	0.00E+00
306	0.00	0.000	0.012	0.1355	0.0000	0.0000	0.00E+00
307	0.00	0.000	0.012	0.1348	0.0000	0.0000	0.00E+00
308	0.00	0.000	0.012	0.1342	0.0000	0.0000	0.00E+00
309	0.00	0.000	0.012	0.1335	0.0000	0.0000	0.00E+00
310	0.00	0.000	0.011	0.1329	0.0000	0.0000	0.00E+00
311	0.00	0.000	0.011	0.1322	0.0000	0.0000	0.00E+00
312	0.00	0.000	0.011	0.1316	0.0000	0.0000	0.00E+00

313		0.00	0.000	0.011	0.1310	0.0000	0.0000	0.00E+00
314		0.00	0.000	0.011	0.1304	0.0000	0.0000	0.00E+00
315		0.53	0.000	0.021	0.1585	0.0000	0.0000	0.00E+00
316		0.12	0.000	0.022	0.1641	0.0000	0.0000	0.00E+00
317	*	0.00	0.000	0.015	0.1634	0.0000	0.0000	0.00E+00
318		0.00	0.000	0.011	0.1628	0.0000	0.0000	0.00E+00
319		0.00	0.000	0.010	0.1622	0.0000	0.0000	0.00E+00
320		0.00	0.000	0.010	0.1617	0.0000	0.0000	0.00E+00
321		0.21	0.000	0.022	0.1722	0.0000	0.0000	0.00E+00
322		0.02	0.000	0.021	0.1723	0.0000	0.0000	0.00E+00
323		0.00	0.000	0.013	0.1715	0.0000	0.0000	0.00E+00
324		0.00	0.000	0.013	0.1708	0.0000	0.0000	0.00E+00
325		0.00	0.000	0.012	0.1702	0.0000	0.0000	0.00E+00
326		0.00	0.000	0.012	0.1695	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.011	0.1689	0.0000	0.0000	0.00E+00
328		0.00	0.000	0.011	0.1682	0.0000	0.0000	0.00E+00
329		0.00	0.000	0.011	0.1676	0.0000	0.0000	0.00E+00
330		0.00	0.000	0.011	0.1670	0.0000	0.0000	0.00E+00
331		0.00	0.000	0.011	0.1664	0.0000	0.0000	0.00E+00
332		0.00	0.000	0.011	0.1658	0.0000	0.0000	0.00E+00
333		0.00	0.000	0.011	0.1651	0.0000	0.0000	0.00E+00
334		0.00	0.000	0.011	0.1645	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.011	0.1639	0.0000	0.0000	0.00E+00
336	*	0.00	0.000	0.011	0.1633	0.0000	0.0000	0.00E+00
337		0.00	0.000	0.011	0.1627	0.0000	0.0000	0.00E+00
338		0.00	0.000	0.010	0.1622	0.0000	0.0000	0.00E+00
339		0.00	0.000	0.010	0.1616	0.0000	0.0000	0.00E+00
340		0.00	0.000	0.010	0.1610	0.0000	0.0000	0.00E+00
341		0.00	0.000	0.010	0.1605	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.010	0.1599	0.0000	0.0000	0.00E+00
343		0.00	0.000	0.010	0.1593	0.0000	0.0000	0.00E+00
344	*	0.11	0.000	0.051	0.1604	0.0000	0.0000	0.00E+00

345	0.68	0.000	0.008	0.2001	0.0000	0.0000	0.00E+00
346	0.00	0.000	0.094	0.1949	0.0000	0.0000	0.00E+00
347	0.00	0.000	0.088	0.1900	0.0000	0.0000	0.00E+00
348	0.00	0.000	0.124	0.1831	0.0000	0.0000	0.00E+00
349	0.00	0.000	0.076	0.1789	0.0000	0.0000	0.00E+00
350	0.05	0.000	0.068	0.1778	0.0000	0.0000	0.00E+00
351	0.00	0.000	0.049	0.1751	0.0000	0.0000	0.00E+00
352	0.00	0.000	0.045	0.1726	0.0000	0.0000	0.00E+00
353	0.12	0.000	0.049	0.1766	0.0000	0.0000	0.00E+00
354	0.00	0.000	0.036	0.1746	0.0000	0.0000	0.00E+00
355	0.00	0.000	0.034	0.1727	0.0000	0.0000	0.00E+00
356	0.00	0.000	0.032	0.1709	0.0000	0.0000	0.00E+00
357	0.00	0.000	0.030	0.1693	0.0000	0.0000	0.00E+00
358	0.00	0.000	0.028	0.1677	0.0000	0.0000	0.00E+00
359	0.00	0.000	0.027	0.1662	0.0000	0.0000	0.00E+00
360	0.00	0.000	0.026	0.1648	0.0000	0.0000	0.00E+00
361	0.00	0.000	0.025	0.1634	0.0000	0.0000	0.00E+00
362	0.00	0.000	0.024	0.1621	0.0000	0.0000	0.00E+00
363	0.00	0.000	0.023	0.1608	0.0000	0.0000	0.00E+00
364	0.00	0.000	0.023	0.1595	0.0000	0.0000	0.00E+00
365	0.00	0.000	0.022	0.1583	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 4			
	inches	cubic feet	percent
Precipitation	13.59	49,338.6	100.00
Runoff	0.000	0.0013	0.00
Evapotranspiration	13.510	49,040.5	99.40
Drainage Collected from Layer 8	0.0000	0.0000	0.00
Percolation/Leakage through Layer 10	0.000000	0.0000	0.00

Average Head on Top of Layer 9	0.0000	---	---
Change in Water Storage	0.0821	298.1	0.60
Soil Water at Start of Year	269.1608	977,053.7	1980.30
Soil Water at End of Year	269.2429	977,351.9	1980.91
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 5

Column key: Head #1: drainage from Layer 9
Drain #1: drainage from Layer 8
Leak #1: leakage thru Layer 10

Title: WST Landfill
Simulated On: 3/23/2026 12:13

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)
1			0.00	0.000	0.021	0.1571	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.021	0.1560	0.0000	0.0000	0.00E+00
3			0.38	0.000	0.030	0.1752	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.021	0.1740	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.021	0.1729	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.019	0.1718	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.018	0.1708	0.0000	0.0000	0.00E+00
8			0.15	0.000	0.027	0.1777	0.0000	0.0000	0.00E+00
9			0.23	0.000	0.028	0.1892	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.018	0.1881	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.017	0.1872	0.0000	0.0000	0.00E+00
12			0.00	0.000	0.018	0.1862	0.0000	0.0000	0.00E+00
13			0.00	0.000	0.018	0.1852	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.017	0.1842	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.017	0.1833	0.0000	0.0000	0.00E+00
16			0.00	0.000	0.017	0.1824	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.017	0.1815	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.016	0.1805	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.016	0.1797	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.016	0.1788	0.0000	0.0000	0.00E+00
21			0.00	0.000	0.016	0.1779	0.0000	0.0000	0.00E+00
22			0.07	0.000	0.025	0.1802	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.016	0.1793	0.0000	0.0000	0.00E+00
24			0.00	0.000	0.016	0.1785	0.0000	0.0000	0.00E+00

25		0.00	0.000	0.014	0.1777	0.0000	0.0000	0.00E+00
26		0.00	0.000	0.014	0.1769	0.0000	0.0000	0.00E+00
27		0.00	0.000	0.014	0.1761	0.0000	0.0000	0.00E+00
28		0.00	0.000	0.014	0.1754	0.0000	0.0000	0.00E+00
29		0.00	0.000	0.013	0.1746	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.013	0.1739	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.013	0.1732	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.013	0.1724	0.0000	0.0000	0.00E+00
33		0.00	0.000	0.013	0.1717	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.013	0.1710	0.0000	0.0000	0.00E+00
35		0.07	0.000	0.022	0.1737	0.0000	0.0000	0.00E+00
36		0.00	0.000	0.013	0.1729	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.013	0.1722	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.013	0.1715	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.013	0.1707	0.0000	0.0000	0.00E+00
40	*	0.00	0.000	0.013	0.1700	0.0000	0.0000	0.00E+00
41		0.09	0.000	0.021	0.1737	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.012	0.1730	0.0000	0.0000	0.00E+00
43		0.00	0.000	0.012	0.1724	0.0000	0.0000	0.00E+00
44		0.00	0.000	0.012	0.1717	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.012	0.1711	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.011	0.1704	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.011	0.1698	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.011	0.1692	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.011	0.1685	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.011	0.1679	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.011	0.1673	0.0000	0.0000	0.00E+00
52	*	0.00	0.000	0.011	0.1667	0.0000	0.0000	0.00E+00
53	*	0.00	0.000	0.011	0.1661	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.011	0.1655	0.0000	0.0000	0.00E+00
55		0.05	0.000	0.020	0.1670	0.0000	0.0000	0.00E+00
56		0.00	0.000	0.011	0.1664	0.0000	0.0000	0.00E+00

57		0.00	0.000	0.011	0.1658	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.011	0.1652	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.011	0.1646	0.0000	0.0000	0.00E+00
60		0.00	0.000	0.011	0.1639	0.0000	0.0000	0.00E+00
61		0.00	0.000	0.011	0.1633	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.011	0.1627	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.010	0.1621	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.010	0.1616	0.0000	0.0000	0.00E+00
65		0.00	0.000	0.010	0.1610	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.010	0.1605	0.0000	0.0000	0.00E+00
67		0.00	0.000	0.010	0.1599	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.010	0.1594	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.010	0.1588	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.010	0.1583	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.010	0.1577	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.010	0.1572	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.010	0.1567	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.010	0.1561	0.0000	0.0000	0.00E+00
75	*	0.00	0.000	0.010	0.1556	0.0000	0.0000	0.00E+00
76	*	0.00	0.000	0.000	0.1556	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.009	0.1551	0.0000	0.0000	0.00E+00
78		0.03	0.000	0.018	0.1556	0.0000	0.0000	0.00E+00
79	*	0.00	0.000	0.010	0.1550	0.0000	0.0000	0.00E+00
80		0.00	0.000	0.010	0.1545	0.0000	0.0000	0.00E+00
81		0.00	0.000	0.009	0.1540	0.0000	0.0000	0.00E+00
82	*	0.00	0.000	0.009	0.1535	0.0000	0.0000	0.00E+00
83	*	0.00	0.000	0.000	0.1535	0.0000	0.0000	0.00E+00
84	*	0.00	0.000	0.000	0.1535	0.0000	0.0000	0.00E+00
85		0.00	0.000	0.009	0.1530	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.009	0.1525	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.009	0.1520	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.009	0.1515	0.0000	0.0000	0.00E+00

89		0.00	0.000	0.009	0.1510	0.0000	0.0000	0.00E+00
90		0.00	0.000	0.009	0.1505	0.0000	0.0000	0.00E+00
91		0.00	0.000	0.009	0.1500	0.0000	0.0000	0.00E+00
92		0.00	0.000	0.009	0.1495	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.009	0.1490	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.009	0.1485	0.0000	0.0000	0.00E+00
95	*	0.00	0.000	0.009	0.1480	0.0000	0.0000	0.00E+00
96		0.00	0.000	0.009	0.1475	0.0000	0.0000	0.00E+00
97		0.00	0.000	0.009	0.1470	0.0000	0.0000	0.00E+00
98		0.00	0.000	0.009	0.1465	0.0000	0.0000	0.00E+00
99		0.00	0.000	0.008	0.1461	0.0000	0.0000	0.00E+00
100		0.00	0.000	0.009	0.1455	0.0000	0.0000	0.00E+00
101		0.05	0.000	0.019	0.1475	0.0000	0.0000	0.00E+00
102		0.22	0.000	0.019	0.1584	0.0000	0.0000	0.00E+00
103		0.00	0.000	0.010	0.1579	0.0000	0.0000	0.00E+00
104		0.00	0.000	0.009	0.1573	0.0000	0.0000	0.00E+00
105		0.00	0.000	0.009	0.1568	0.0000	0.0000	0.00E+00
106		0.00	0.000	0.009	0.1563	0.0000	0.0000	0.00E+00
107		0.00	0.000	0.009	0.1558	0.0000	0.0000	0.00E+00
108		0.00	0.000	0.009	0.1553	0.0000	0.0000	0.00E+00
109		0.00	0.000	0.009	0.1548	0.0000	0.0000	0.00E+00
110		0.00	0.000	0.009	0.1543	0.0000	0.0000	0.00E+00
111		0.00	0.000	0.009	0.1538	0.0000	0.0000	0.00E+00
112		0.08	0.000	0.018	0.1570	0.0000	0.0000	0.00E+00
113		0.00	0.000	0.008	0.1565	0.0000	0.0000	0.00E+00
114		0.00	0.000	0.009	0.1561	0.0000	0.0000	0.00E+00
115		0.00	0.000	0.009	0.1556	0.0000	0.0000	0.00E+00
116		0.00	0.000	0.009	0.1551	0.0000	0.0000	0.00E+00
117		0.00	0.000	0.009	0.1546	0.0000	0.0000	0.00E+00
118		0.00	0.000	0.010	0.1541	0.0000	0.0000	0.00E+00
119		0.00	0.000	0.009	0.1535	0.0000	0.0000	0.00E+00
120		0.00	0.000	0.009	0.1531	0.0000	0.0000	0.00E+00

121	0.00	0.000	0.009	0.1526	0.0000	0.0000	0.00E+00
122	0.00	0.000	0.009	0.1521	0.0000	0.0000	0.00E+00
123	0.00	0.000	0.009	0.1516	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.009	0.1511	0.0000	0.0000	0.00E+00
125	0.00	0.000	0.009	0.1506	0.0000	0.0000	0.00E+00
126	0.00	0.000	0.009	0.1501	0.0000	0.0000	0.00E+00
127	0.02	0.000	0.017	0.1502	0.0000	0.0000	0.00E+00
128	0.51	0.000	0.019	0.1776	0.0000	0.0000	0.00E+00
129	0.00	0.000	0.009	0.1771	0.0000	0.0000	0.00E+00
130	0.00	0.000	0.010	0.1765	0.0000	0.0000	0.00E+00
131	0.04	0.000	0.019	0.1776	0.0000	0.0000	0.00E+00
132	0.05	0.000	0.019	0.1791	0.0000	0.0000	0.00E+00
133	0.17	0.000	0.019	0.1874	0.0000	0.0000	0.00E+00
134	0.00	0.000	0.010	0.1868	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.010	0.1863	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.009	0.1858	0.0000	0.0000	0.00E+00
137	0.00	0.000	0.010	0.1852	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.011	0.1846	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.010	0.1841	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.011	0.1835	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.011	0.1829	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.011	0.1823	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.010	0.1817	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.010	0.1812	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.010	0.1806	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.011	0.1800	0.0000	0.0000	0.00E+00
147	0.08	0.000	0.021	0.1834	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.011	0.1827	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.011	0.1822	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.012	0.1815	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.010	0.1809	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.009	0.1804	0.0000	0.0000	0.00E+00

153	0.00	0.000	0.010	0.1799	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.011	0.1793	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.009	0.1788	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.010	0.1782	0.0000	0.0000	0.00E+00
157	0.04	0.000	0.020	0.1790	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.010	0.1785	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.010	0.1780	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.012	0.1773	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.013	0.1766	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.011	0.1760	0.0000	0.0000	0.00E+00
163	0.33	0.000	0.021	0.1931	0.0000	0.0000	0.00E+00
164	0.11	0.000	0.022	0.1982	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.010	0.1976	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.011	0.1970	0.0000	0.0000	0.00E+00
167	0.00	0.000	0.010	0.1964	0.0000	0.0000	0.00E+00
168	0.00	0.000	0.010	0.1959	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.011	0.1953	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.012	0.1946	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.012	0.1940	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.012	0.1933	0.0000	0.0000	0.00E+00
173	0.01	0.000	0.019	0.1929	0.0000	0.0000	0.00E+00
174	0.03	0.000	0.021	0.1934	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.012	0.1927	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.012	0.1921	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.010	0.1915	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.010	0.1910	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.011	0.1904	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.011	0.1898	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.010	0.1892	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.009	0.1887	0.0000	0.0000	0.00E+00
183	0.00	0.000	0.009	0.1882	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.011	0.1876	0.0000	0.0000	0.00E+00

185	0.00	0.000	0.009	0.1871	0.0000	0.0000	0.00E+00
186	0.02	0.000	0.017	0.1870	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.010	0.1865	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.011	0.1859	0.0000	0.0000	0.00E+00
189	0.00	0.000	0.011	0.1853	0.0000	0.0000	0.00E+00
190	0.00	0.000	0.010	0.1847	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.010	0.1842	0.0000	0.0000	0.00E+00
192	0.00	0.000	0.010	0.1836	0.0000	0.0000	0.00E+00
193	0.00	0.000	0.011	0.1830	0.0000	0.0000	0.00E+00
194	0.00	0.000	0.012	0.1824	0.0000	0.0000	0.00E+00
195	0.43	0.000	0.022	0.2051	0.0000	0.0000	0.00E+00
196	0.00	0.000	0.281	0.1895	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.012	0.1888	0.0000	0.0000	0.00E+00
198	0.00	0.000	0.012	0.1882	0.0000	0.0000	0.00E+00
199	0.00	0.000	0.011	0.1876	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.013	0.1868	0.0000	0.0000	0.00E+00
201	0.04	0.000	0.024	0.1877	0.0000	0.0000	0.00E+00
202	0.08	0.000	0.024	0.1911	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.012	0.1904	0.0000	0.0000	0.00E+00
204	0.00	0.000	0.014	0.1896	0.0000	0.0000	0.00E+00
205	0.00	0.000	0.014	0.1889	0.0000	0.0000	0.00E+00
206	0.00	0.000	0.013	0.1882	0.0000	0.0000	0.00E+00
207	0.03	0.000	0.024	0.1882	0.0000	0.0000	0.00E+00
208	0.00	0.000	0.015	0.1874	0.0000	0.0000	0.00E+00
209	0.00	0.000	0.015	0.1865	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.015	0.1857	0.0000	0.0000	0.00E+00
211	0.03	0.000	0.026	0.1860	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.013	0.1853	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.014	0.1845	0.0000	0.0000	0.00E+00
214	0.21	0.000	0.027	0.1946	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.256	0.1804	0.0000	0.0000	0.00E+00
216	0.16	0.000	0.024	0.1881	0.0000	0.0000	0.00E+00

217	0.00	0.000	0.394	0.1665	0.0000	0.0000	0.00E+00
218	0.00	0.000	0.020	0.1653	0.0000	0.0000	0.00E+00
219	0.00	0.000	0.018	0.1643	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.020	0.1632	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.013	0.1625	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.015	0.1616	0.0000	0.0000	0.00E+00
223	0.07	0.000	0.031	0.1638	0.0000	0.0000	0.00E+00
224	0.57	0.000	0.030	0.1941	0.0000	0.0000	0.00E+00
225	0.08	0.000	0.203	0.1872	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.191	0.1766	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.205	0.1652	0.0000	0.0000	0.00E+00
228	0.00	0.000	0.090	0.1602	0.0000	0.0000	0.00E+00
229	0.00	0.000	0.076	0.1560	0.0000	0.0000	0.00E+00
230	0.00	0.000	0.062	0.1525	0.0000	0.0000	0.00E+00
231	0.00	0.000	0.056	0.1494	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.051	0.1466	0.0000	0.0000	0.00E+00
233	0.00	0.000	0.050	0.1438	0.0000	0.0000	0.00E+00
234	0.00	0.000	0.046	0.1413	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.048	0.1386	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.044	0.1362	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.041	0.1339	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.040	0.1317	0.0000	0.0000	0.00E+00
239	0.00	0.000	0.038	0.1295	0.0000	0.0000	0.00E+00
240	0.00	0.000	0.038	0.1275	0.0000	0.0000	0.00E+00
241	0.32	0.000	0.046	0.1425	0.0000	0.0000	0.00E+00
242	0.01	0.000	0.046	0.1403	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.037	0.1384	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.037	0.1363	0.0000	0.0000	0.00E+00
245	0.00	0.000	0.035	0.1344	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.032	0.1326	0.0000	0.0000	0.00E+00
247	0.12	0.000	0.040	0.1369	0.0000	0.0000	0.00E+00
248	0.13	0.000	0.042	0.1419	0.0000	0.0000	0.00E+00

249	0.01	0.000	0.032	0.1404	0.0000	0.0000	0.00E+00
250	0.05	0.000	0.038	0.1409	0.0000	0.0000	0.00E+00
251	0.04	0.000	0.037	0.1412	0.0000	0.0000	0.00E+00
252	0.00	0.000	0.028	0.1396	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.026	0.1382	0.0000	0.0000	0.00E+00
254	0.00	0.000	0.024	0.1368	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.026	0.1354	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.022	0.1342	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.023	0.1329	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.022	0.1316	0.0000	0.0000	0.00E+00
259	0.19	0.000	0.032	0.1404	0.0000	0.0000	0.00E+00
260	0.00	0.000	0.021	0.1393	0.0000	0.0000	0.00E+00
261	0.00	0.000	0.014	0.1385	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.013	0.1378	0.0000	0.0000	0.00E+00
263	0.00	0.000	0.012	0.1371	0.0000	0.0000	0.00E+00
264	0.00	0.000	0.012	0.1364	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.013	0.1357	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.013	0.1350	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.012	0.1343	0.0000	0.0000	0.00E+00
268	0.61	0.000	0.024	0.1670	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.014	0.1662	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.015	0.1654	0.0000	0.0000	0.00E+00
271	0.00	0.000	0.014	0.1646	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.013	0.1639	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.013	0.1632	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.013	0.1624	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.013	0.1617	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.013	0.1610	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.012	0.1603	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.012	0.1597	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.012	0.1590	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.012	0.1583	0.0000	0.0000	0.00E+00

281	0.00	0.000	0.012	0.1577	0.0000	0.0000	0.00E+00
282	0.00	0.000	0.012	0.1570	0.0000	0.0000	0.00E+00
283	0.00	0.000	0.011	0.1564	0.0000	0.0000	0.00E+00
284	0.00	0.000	0.014	0.1558	0.0000	0.0000	0.00E+00
285	0.08	0.000	0.023	0.1592	0.0000	0.0000	0.00E+00
286	0.00	0.000	0.011	0.1586	0.0000	0.0000	0.00E+00
287	0.00	0.000	0.011	0.1580	0.0000	0.0000	0.00E+00
288	0.00	0.000	0.011	0.1574	0.0000	0.0000	0.00E+00
289	0.00	0.000	0.011	0.1568	0.0000	0.0000	0.00E+00
290	0.00	0.000	0.011	0.1562	0.0000	0.0000	0.00E+00
291	0.00	0.000	0.011	0.1556	0.0000	0.0000	0.00E+00
292	0.00	0.000	0.010	0.1550	0.0000	0.0000	0.00E+00
293	0.00	0.000	0.010	0.1544	0.0000	0.0000	0.00E+00
294	0.00	0.000	0.010	0.1539	0.0000	0.0000	0.00E+00
295	0.00	0.000	0.010	0.1533	0.0000	0.0000	0.00E+00
296	0.06	0.000	0.022	0.1555	0.0000	0.0000	0.00E+00
297	0.00	0.000	0.010	0.1549	0.0000	0.0000	0.00E+00
298	0.00	0.000	0.010	0.1544	0.0000	0.0000	0.00E+00
299	0.00	0.000	0.010	0.1538	0.0000	0.0000	0.00E+00
300	0.00	0.000	0.010	0.1533	0.0000	0.0000	0.00E+00
301	0.00	0.000	0.010	0.1528	0.0000	0.0000	0.00E+00
302	0.00	0.000	0.010	0.1522	0.0000	0.0000	0.00E+00
303	0.00	0.000	0.010	0.1517	0.0000	0.0000	0.00E+00
304	0.00	0.000	0.010	0.1511	0.0000	0.0000	0.00E+00
305	0.28	0.000	0.022	0.1656	0.0000	0.0000	0.00E+00
306	0.00	0.000	0.010	0.1650	0.0000	0.0000	0.00E+00
307	0.00	0.000	0.010	0.1645	0.0000	0.0000	0.00E+00
308	0.00	0.000	0.010	0.1639	0.0000	0.0000	0.00E+00
309	0.00	0.000	0.010	0.1633	0.0000	0.0000	0.00E+00
310	0.00	0.000	0.010	0.1627	0.0000	0.0000	0.00E+00
311	0.00	0.000	0.010	0.1622	0.0000	0.0000	0.00E+00
312	0.00	0.000	0.010	0.1616	0.0000	0.0000	0.00E+00

313		0.00	0.000	0.011	0.1610	0.0000	0.0000	0.00E+00
314		0.00	0.000	0.011	0.1604	0.0000	0.0000	0.00E+00
315		0.00	0.000	0.010	0.1599	0.0000	0.0000	0.00E+00
316		0.00	0.000	0.009	0.1594	0.0000	0.0000	0.00E+00
317		0.05	0.000	0.020	0.1609	0.0000	0.0000	0.00E+00
318		0.09	0.000	0.020	0.1649	0.0000	0.0000	0.00E+00
319		0.00	0.000	0.009	0.1645	0.0000	0.0000	0.00E+00
320		0.00	0.000	0.009	0.1639	0.0000	0.0000	0.00E+00
321		0.00	0.000	0.009	0.1634	0.0000	0.0000	0.00E+00
322		0.00	0.000	0.009	0.1629	0.0000	0.0000	0.00E+00
323		0.00	0.000	0.010	0.1624	0.0000	0.0000	0.00E+00
324		0.15	0.000	0.021	0.1695	0.0000	0.0000	0.00E+00
325		0.09	0.000	0.020	0.1735	0.0000	0.0000	0.00E+00
326		0.11	0.000	0.021	0.1786	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.086	0.1738	0.0000	0.0000	0.00E+00
328		0.01	0.000	0.016	0.1735	0.0000	0.0000	0.00E+00
329		0.00	0.000	0.010	0.1730	0.0000	0.0000	0.00E+00
330		0.00	0.000	0.010	0.1724	0.0000	0.0000	0.00E+00
331		0.00	0.000	0.010	0.1719	0.0000	0.0000	0.00E+00
332	*	0.00	0.000	0.010	0.1714	0.0000	0.0000	0.00E+00
333	*	0.00	0.000	0.000	0.1714	0.0000	0.0000	0.00E+00
334	*	0.00	0.000	0.009	0.1708	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.009	0.1703	0.0000	0.0000	0.00E+00
336	*	0.00	0.000	0.000	0.1703	0.0000	0.0000	0.00E+00
337	*	0.00	0.000	0.000	0.1703	0.0000	0.0000	0.00E+00
338	*	0.00	0.000	0.000	0.1703	0.0000	0.0000	0.00E+00
339	*	0.01	0.000	0.020	0.1698	0.0000	0.0000	0.00E+00
340		0.13	0.000	0.021	0.1756	0.0000	0.0000	0.00E+00
341		0.16	0.000	0.021	0.1834	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.075	0.1792	0.0000	0.0000	0.00E+00
343		0.00	0.000	0.113	0.1729	0.0000	0.0000	0.00E+00
344		0.00	0.000	0.076	0.1687	0.0000	0.0000	0.00E+00

345		0.00	0.000	0.070	0.1648	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.053	0.1619	0.0000	0.0000	0.00E+00
347	*	0.00	0.000	0.000	0.1619	0.0000	0.0000	0.00E+00
348	*	0.00	0.000	0.000	0.1619	0.0000	0.0000	0.00E+00
349	*	0.00	0.000	0.045	0.1594	0.0000	0.0000	0.00E+00
350		0.00	0.000	0.039	0.1572	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.036	0.1552	0.0000	0.0000	0.00E+00
352		0.00	0.000	0.036	0.1532	0.0000	0.0000	0.00E+00
353		0.00	0.000	0.033	0.1514	0.0000	0.0000	0.00E+00
354		0.00	0.000	0.031	0.1496	0.0000	0.0000	0.00E+00
355	*	0.00	0.000	0.030	0.1480	0.0000	0.0000	0.00E+00
356		0.00	0.000	0.028	0.1464	0.0000	0.0000	0.00E+00
357		0.00	0.000	0.027	0.1449	0.0000	0.0000	0.00E+00
358		0.00	0.000	0.026	0.1435	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.025	0.1421	0.0000	0.0000	0.00E+00
360		0.00	0.000	0.024	0.1408	0.0000	0.0000	0.00E+00
361		0.00	0.000	0.023	0.1395	0.0000	0.0000	0.00E+00
362		0.00	0.000	0.023	0.1382	0.0000	0.0000	0.00E+00
363		0.00	0.000	0.022	0.1370	0.0000	0.0000	0.00E+00
364		0.00	0.000	0.021	0.1358	0.0000	0.0000	0.00E+00
365		0.00	0.000	0.021	0.1347	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 5			
	inches	cubic feet	percent
Precipitation	7.23	26,229.5	100.00
Runoff	0.000	0.0000	0.00
Evapotranspiration	7.650	27,768.6	105.87
Drainage Collected from Layer 8	0.0000	0.0000	0.00
Percolation/Leakage through Layer 10	0.000000	0.0000	0.00

Average Head on Top of Layer 9	0.0000	---	---
Change in Water Storage	-0.4240	-1,539.1	-5.87
Soil Water at Start of Year	269.2429	977,351.9	3726.16
Soil Water at End of Year	268.8189	975,812.7	3720.29
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 6

Column key: Head #1: drainage from Layer 9
Drain #1: drainage from Layer 8
Leak #1: leakage thru Layer 10

Title: WST Landfill
Simulated On: 3/23/2026 12:13

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)
1			0.00	0.000	0.020	0.1336	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.020	0.1325	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.019	0.1314	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.019	0.1303	0.0000	0.0000	0.00E+00
5			0.18	0.000	0.030	0.1384	0.0000	0.0000	0.00E+00
6			0.02	0.000	0.028	0.1380	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.018	0.1371	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.017	0.1361	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.018	0.1351	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.018	0.1341	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.017	0.1331	0.0000	0.0000	0.00E+00
12			0.00	0.000	0.016	0.1322	0.0000	0.0000	0.00E+00
13			0.00	0.000	0.016	0.1313	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.016	0.1305	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.016	0.1296	0.0000	0.0000	0.00E+00
16	*		0.00	0.000	0.015	0.1287	0.0000	0.0000	0.00E+00
17	*		0.00	0.000	0.000	0.1287	0.0000	0.0000	0.00E+00
18	*		0.00	0.000	0.015	0.1279	0.0000	0.0000	0.00E+00
19	*		0.18	0.000	0.043	0.1290	0.0000	0.0000	0.00E+00
20	*		0.00	0.000	0.073	0.1301	0.0000	0.0000	0.00E+00
21			0.00	0.000	0.035	0.1293	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.016	0.1284	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.015	0.1275	0.0000	0.0000	0.00E+00
24			0.00	0.000	0.015	0.1267	0.0000	0.0000	0.00E+00

25		0.00	0.000	0.014	0.1259	0.0000	0.0000	0.00E+00
26		0.00	0.000	0.013	0.1251	0.0000	0.0000	0.00E+00
27		0.00	0.000	0.014	0.1243	0.0000	0.0000	0.00E+00
28		0.00	0.000	0.014	0.1236	0.0000	0.0000	0.00E+00
29		0.00	0.000	0.014	0.1228	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.014	0.1220	0.0000	0.0000	0.00E+00
31	*	0.20	0.000	0.071	0.1231	0.0000	0.0000	0.00E+00
32	*	0.14	0.000	0.050	0.1242	0.0000	0.0000	0.00E+00
33		0.00	0.000	0.091	0.1291	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.014	0.1283	0.0000	0.0000	0.00E+00
35		0.00	0.000	0.014	0.1276	0.0000	0.0000	0.00E+00
36		0.00	0.000	0.013	0.1269	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.013	0.1262	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.013	0.1254	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.013	0.1247	0.0000	0.0000	0.00E+00
40	*	0.00	0.000	0.013	0.1239	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.013	0.1232	0.0000	0.0000	0.00E+00
42		0.03	0.000	0.024	0.1237	0.0000	0.0000	0.00E+00
43		0.03	0.000	0.024	0.1240	0.0000	0.0000	0.00E+00
44		0.12	0.000	0.024	0.1292	0.0000	0.0000	0.00E+00
45		0.05	0.000	0.024	0.1305	0.0000	0.0000	0.00E+00
46		0.13	0.000	0.024	0.1362	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.012	0.1355	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.013	0.1348	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.012	0.1341	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.009	0.1336	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.008	0.1332	0.0000	0.0000	0.00E+00
52		0.00	0.000	0.008	0.1327	0.0000	0.0000	0.00E+00
53		0.00	0.000	0.008	0.1322	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.008	0.1318	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.008	0.1313	0.0000	0.0000	0.00E+00
56		0.00	0.000	0.008	0.1309	0.0000	0.0000	0.00E+00

57		0.00	0.000	0.008	0.1304	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.008	0.1300	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.008	0.1295	0.0000	0.0000	0.00E+00
60		0.00	0.000	0.008	0.1291	0.0000	0.0000	0.00E+00
61		0.00	0.000	0.008	0.1287	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.008	0.1282	0.0000	0.0000	0.00E+00
63		0.06	0.000	0.019	0.1303	0.0000	0.0000	0.00E+00
64		0.05	0.000	0.019	0.1318	0.0000	0.0000	0.00E+00
65		0.03	0.000	0.020	0.1325	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.011	0.1320	0.0000	0.0000	0.00E+00
67		0.01	0.000	0.015	0.1316	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.009	0.1311	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.010	0.1305	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.008	0.1301	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.007	0.1297	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.007	0.1293	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.007	0.1289	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.007	0.1285	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.007	0.1281	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.007	0.1277	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.007	0.1273	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.007	0.1270	0.0000	0.0000	0.00E+00
79		0.00	0.000	0.007	0.1266	0.0000	0.0000	0.00E+00
80		0.00	0.000	0.007	0.1262	0.0000	0.0000	0.00E+00
81	*	0.00	0.000	0.007	0.1258	0.0000	0.0000	0.00E+00
82	*	0.00	0.000	0.000	0.1258	0.0000	0.0000	0.00E+00
83	*	0.00	0.000	0.000	0.1258	0.0000	0.0000	0.00E+00
84		0.00	0.000	0.007	0.1254	0.0000	0.0000	0.00E+00
85		0.00	0.000	0.007	0.1250	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.007	0.1247	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.007	0.1243	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.007	0.1239	0.0000	0.0000	0.00E+00

89	0.00	0.000	0.007	0.1235	0.0000	0.0000	0.00E+00
90	0.00	0.000	0.007	0.1232	0.0000	0.0000	0.00E+00
91	0.00	0.000	0.007	0.1228	0.0000	0.0000	0.00E+00
92	0.00	0.000	0.007	0.1224	0.0000	0.0000	0.00E+00
93	0.00	0.000	0.007	0.1220	0.0000	0.0000	0.00E+00
94	0.00	0.000	0.007	0.1217	0.0000	0.0000	0.00E+00
95	0.00	0.000	0.007	0.1213	0.0000	0.0000	0.00E+00
96	0.00	0.000	0.007	0.1209	0.0000	0.0000	0.00E+00
97	0.00	0.000	0.007	0.1205	0.0000	0.0000	0.00E+00
98	0.00	0.000	0.007	0.1202	0.0000	0.0000	0.00E+00
99	0.00	0.000	0.007	0.1198	0.0000	0.0000	0.00E+00
100	0.00	0.000	0.007	0.1194	0.0000	0.0000	0.00E+00
101	0.00	0.000	0.007	0.1191	0.0000	0.0000	0.00E+00
102	0.00	0.000	0.007	0.1187	0.0000	0.0000	0.00E+00
103	0.00	0.000	0.007	0.1183	0.0000	0.0000	0.00E+00
104	0.00	0.000	0.007	0.1179	0.0000	0.0000	0.00E+00
105	0.00	0.000	0.007	0.1176	0.0000	0.0000	0.00E+00
106	0.00	0.000	0.007	0.1172	0.0000	0.0000	0.00E+00
107	0.00	0.000	0.007	0.1168	0.0000	0.0000	0.00E+00
108	0.00	0.000	0.007	0.1165	0.0000	0.0000	0.00E+00
109	0.00	0.000	0.008	0.1160	0.0000	0.0000	0.00E+00
110	0.00	0.000	0.005	0.1157	0.0000	0.0000	0.00E+00
111	0.00	0.000	0.001	0.1157	0.0000	0.0000	0.00E+00
112	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
113	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
114	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
115	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
116	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
117	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
118	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
119	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
120	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00

121	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
122	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
123	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
125	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
126	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
127	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
128	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
129	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
130	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
131	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
132	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
133	0.00	0.000	0.005	0.1157	0.0000	0.0000	0.00E+00
134	0.01	0.000	0.005	0.1157	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
136	0.01	0.000	0.009	0.1159	0.0000	0.0000	0.00E+00
137	0.00	0.000	0.001	0.1158	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.002	0.1158	0.0000	0.0000	0.00E+00
139	0.05	0.000	0.013	0.1180	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.001	0.1180	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.002	0.1178	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.002	0.1177	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.002	0.1176	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.002	0.1175	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.002	0.1174	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.002	0.1173	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.002	0.1172	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.002	0.1171	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.002	0.1171	0.0000	0.0000	0.00E+00
150	0.14	0.000	0.013	0.1238	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.004	0.1236	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.004	0.1234	0.0000	0.0000	0.00E+00

153	0.00	0.000	0.004	0.1231	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.004	0.1229	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.005	0.1227	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.005	0.1224	0.0000	0.0000	0.00E+00
157	0.02	0.000	0.015	0.1226	0.0000	0.0000	0.00E+00
158	0.06	0.000	0.018	0.1250	0.0000	0.0000	0.00E+00
159	0.30	0.000	0.019	0.1404	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.004	0.1402	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.006	0.1398	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.006	0.1395	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.006	0.1391	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.006	0.1388	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.006	0.1384	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.006	0.1381	0.0000	0.0000	0.00E+00
167	0.00	0.000	0.006	0.1377	0.0000	0.0000	0.00E+00
168	0.00	0.000	0.006	0.1374	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.006	0.1371	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.006	0.1367	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.006	0.1364	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.006	0.1360	0.0000	0.0000	0.00E+00
173	0.00	0.000	0.006	0.1357	0.0000	0.0000	0.00E+00
174	0.00	0.000	0.007	0.1353	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.006	0.1350	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.006	0.1346	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.007	0.1343	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.007	0.1339	0.0000	0.0000	0.00E+00
179	0.04	0.000	0.018	0.1354	0.0000	0.0000	0.00E+00
180	0.16	0.000	0.019	0.1434	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.008	0.1430	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.007	0.1426	0.0000	0.0000	0.00E+00
183	0.03	0.000	0.018	0.1433	0.0000	0.0000	0.00E+00
184	0.01	0.000	0.014	0.1431	0.0000	0.0000	0.00E+00

185	0.07	0.000	0.020	0.1460	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.008	0.1456	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.008	0.1451	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.007	0.1447	0.0000	0.0000	0.00E+00
189	0.51	0.000	0.019	0.1721	0.0000	0.0000	0.00E+00
190	0.31	0.000	0.020	0.1884	0.0000	0.0000	0.00E+00
191	0.19	0.000	0.019	0.1978	0.0000	0.0000	0.00E+00
192	0.00	0.000	0.008	0.1973	0.0000	0.0000	0.00E+00
193	0.00	0.000	0.007	0.1969	0.0000	0.0000	0.00E+00
194	0.00	0.000	0.007	0.1965	0.0000	0.0000	0.00E+00
195	0.14	0.000	0.020	0.2032	0.0000	0.0000	0.00E+00
196	0.60	0.000	0.022	0.2351	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.275	0.2198	0.0000	0.0000	0.00E+00
198	0.04	0.000	0.169	0.2128	0.0000	0.0000	0.00E+00
199	0.00	0.000	0.167	0.2037	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.083	0.1991	0.0000	0.0000	0.00E+00
201	0.32	0.000	0.078	0.2128	0.0000	0.0000	0.00E+00
202	0.00	0.000	0.056	0.2097	0.0000	0.0000	0.00E+00
203	0.51	0.000	0.060	0.2346	0.0000	0.0000	0.00E+00
204	0.00	0.000	0.247	0.2208	0.0000	0.0000	0.00E+00
205	0.00	0.000	0.278	0.2054	0.0000	0.0000	0.00E+00
206	0.00	0.000	0.207	0.1941	0.0000	0.0000	0.00E+00
207	0.01	0.000	0.089	0.1894	0.0000	0.0000	0.00E+00
208	0.00	0.000	0.068	0.1856	0.0000	0.0000	0.00E+00
209	0.00	0.000	0.058	0.1824	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.052	0.1795	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.048	0.1768	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.046	0.1743	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.042	0.1720	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.038	0.1699	0.0000	0.0000	0.00E+00
215	0.81	0.000	0.047	0.2124	0.0000	0.0000	0.00E+00
216	0.02	0.000	0.045	0.2112	0.0000	0.0000	0.00E+00

217	0.00	0.000	0.034	0.2093	0.0000	0.0000	0.00E+00
218	0.00	0.000	0.034	0.2074	0.0000	0.0000	0.00E+00
219	0.21	0.000	0.046	0.2167	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.259	0.2023	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.034	0.2004	0.0000	0.0000	0.00E+00
222	0.12	0.000	0.042	0.2047	0.0000	0.0000	0.00E+00
223	0.19	0.000	0.043	0.2130	0.0000	0.0000	0.00E+00
224	0.23	0.000	0.042	0.2232	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.268	0.2083	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.032	0.2065	0.0000	0.0000	0.00E+00
227	0.08	0.000	0.044	0.2084	0.0000	0.0000	0.00E+00
228	0.00	0.000	0.031	0.2067	0.0000	0.0000	0.00E+00
229	0.07	0.000	0.040	0.2083	0.0000	0.0000	0.00E+00
230	0.00	0.000	0.028	0.2067	0.0000	0.0000	0.00E+00
231	0.00	0.000	0.026	0.2053	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.024	0.2040	0.0000	0.0000	0.00E+00
233	0.00	0.000	0.026	0.2025	0.0000	0.0000	0.00E+00
234	0.01	0.000	0.034	0.2014	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.028	0.2001	0.0000	0.0000	0.00E+00
236	0.17	0.000	0.040	0.2074	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.027	0.2059	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.024	0.2046	0.0000	0.0000	0.00E+00
239	0.05	0.000	0.039	0.2052	0.0000	0.0000	0.00E+00
240	0.00	0.000	0.025	0.2038	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.026	0.2023	0.0000	0.0000	0.00E+00
242	0.00	0.000	0.026	0.2009	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.026	0.1995	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.022	0.1982	0.0000	0.0000	0.00E+00
245	0.20	0.000	0.037	0.2071	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.022	0.2059	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.021	0.2047	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.019	0.2037	0.0000	0.0000	0.00E+00

249	0.00	0.000	0.018	0.2027	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.018	0.2017	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.017	0.2007	0.0000	0.0000	0.00E+00
252	0.00	0.000	0.018	0.1998	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.017	0.1988	0.0000	0.0000	0.00E+00
254	0.40	0.000	0.030	0.2192	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.328	0.2009	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.017	0.1999	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.016	0.1991	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.016	0.1982	0.0000	0.0000	0.00E+00
259	0.00	0.000	0.015	0.1973	0.0000	0.0000	0.00E+00
260	0.00	0.000	0.015	0.1965	0.0000	0.0000	0.00E+00
261	0.00	0.000	0.015	0.1957	0.0000	0.0000	0.00E+00
262	0.62	0.000	0.028	0.2285	0.0000	0.0000	0.00E+00
263	0.00	0.000	0.127	0.2214	0.0000	0.0000	0.00E+00
264	0.07	0.000	0.243	0.2120	0.0000	0.0000	0.00E+00
265	0.11	0.000	0.184	0.2076	0.0000	0.0000	0.00E+00
266	0.03	0.000	0.253	0.1953	0.0000	0.0000	0.00E+00
267	1.86	0.166	0.215	0.2776	0.0000	0.0000	0.00E+00
268	0.13	0.000	0.267	0.2699	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.278	0.2545	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.208	0.2429	0.0000	0.0000	0.00E+00
271	0.00	0.000	0.239	0.2296	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.164	0.2205	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.323	0.2026	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.201	0.1914	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.083	0.1868	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.064	0.1833	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.054	0.1803	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.047	0.1776	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.043	0.1753	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.039	0.1731	0.0000	0.0000	0.00E+00

281	0.00	0.000	0.037	0.1710	0.0000	0.0000	0.00E+00
282	0.00	0.000	0.034	0.1691	0.0000	0.0000	0.00E+00
283	0.00	0.000	0.033	0.1673	0.0000	0.0000	0.00E+00
284	0.00	0.000	0.031	0.1656	0.0000	0.0000	0.00E+00
285	0.00	0.000	0.030	0.1639	0.0000	0.0000	0.00E+00
286	0.00	0.000	0.029	0.1624	0.0000	0.0000	0.00E+00
287	0.00	0.000	0.028	0.1608	0.0000	0.0000	0.00E+00
288	0.00	0.000	0.027	0.1593	0.0000	0.0000	0.00E+00
289	0.00	0.000	0.026	0.1579	0.0000	0.0000	0.00E+00
290	0.00	0.000	0.025	0.1565	0.0000	0.0000	0.00E+00
291	0.00	0.000	0.024	0.1551	0.0000	0.0000	0.00E+00
292	0.00	0.000	0.024	0.1538	0.0000	0.0000	0.00E+00
293	0.00	0.000	0.023	0.1525	0.0000	0.0000	0.00E+00
294	0.00	0.000	0.023	0.1513	0.0000	0.0000	0.00E+00
295	0.00	0.000	0.023	0.1500	0.0000	0.0000	0.00E+00
296	0.00	0.000	0.022	0.1488	0.0000	0.0000	0.00E+00
297	0.00	0.000	0.022	0.1476	0.0000	0.0000	0.00E+00
298	0.00	0.000	0.021	0.1464	0.0000	0.0000	0.00E+00
299	0.00	0.000	0.021	0.1453	0.0000	0.0000	0.00E+00
300	0.00	0.000	0.021	0.1441	0.0000	0.0000	0.00E+00
301	0.00	0.000	0.020	0.1430	0.0000	0.0000	0.00E+00
302	0.00	0.000	0.020	0.1419	0.0000	0.0000	0.00E+00
303	0.00	0.000	0.020	0.1408	0.0000	0.0000	0.00E+00
304	0.00	0.000	0.020	0.1397	0.0000	0.0000	0.00E+00
305	0.00	0.000	0.019	0.1387	0.0000	0.0000	0.00E+00
306	0.00	0.000	0.019	0.1377	0.0000	0.0000	0.00E+00
307	0.00	0.000	0.019	0.1366	0.0000	0.0000	0.00E+00
308	0.00	0.000	0.019	0.1356	0.0000	0.0000	0.00E+00
309	0.00	0.000	0.019	0.1345	0.0000	0.0000	0.00E+00
310	0.00	0.000	0.019	0.1335	0.0000	0.0000	0.00E+00
311	0.00	0.000	0.019	0.1324	0.0000	0.0000	0.00E+00
312	0.04	0.000	0.025	0.1334	0.0000	0.0000	0.00E+00

313		0.00	0.000	0.018	0.1324	0.0000	0.0000	0.00E+00
314		0.00	0.000	0.018	0.1314	0.0000	0.0000	0.00E+00
315		0.00	0.000	0.016	0.1305	0.0000	0.0000	0.00E+00
316		0.00	0.000	0.015	0.1297	0.0000	0.0000	0.00E+00
317		0.00	0.000	0.015	0.1288	0.0000	0.0000	0.00E+00
318		0.00	0.000	0.015	0.1280	0.0000	0.0000	0.00E+00
319		0.00	0.000	0.015	0.1270	0.0000	0.0000	0.00E+00
320		0.00	0.000	0.015	0.1262	0.0000	0.0000	0.00E+00
321		0.00	0.000	0.015	0.1250	0.0000	0.0000	0.00E+00
322		0.00	0.000	0.014	0.1242	0.0000	0.0000	0.00E+00
323		0.00	0.000	0.014	0.1231	0.0000	0.0000	0.00E+00
324	*	0.00	0.000	0.014	0.1223	0.0000	0.0000	0.00E+00
325	*	0.00	0.000	0.000	0.1223	0.0000	0.0000	0.00E+00
326		0.00	0.000	0.014	0.1216	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.014	0.1206	0.0000	0.0000	0.00E+00
328		0.00	0.000	0.014	0.1199	0.0000	0.0000	0.00E+00
329		0.00	0.000	0.014	0.1191	0.0000	0.0000	0.00E+00
330		0.04	0.000	0.018	0.1201	0.0000	0.0000	0.00E+00
331		0.37	0.000	0.018	0.1398	0.0000	0.0000	0.00E+00
332		0.00	0.000	0.013	0.1391	0.0000	0.0000	0.00E+00
333		0.00	0.000	0.013	0.1383	0.0000	0.0000	0.00E+00
334		0.00	0.000	0.013	0.1376	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.013	0.1369	0.0000	0.0000	0.00E+00
336		0.00	0.000	0.013	0.1362	0.0000	0.0000	0.00E+00
337		0.23	0.000	0.018	0.1481	0.0000	0.0000	0.00E+00
338		0.00	0.000	0.013	0.1474	0.0000	0.0000	0.00E+00
339		0.10	0.000	0.017	0.1522	0.0000	0.0000	0.00E+00
340		0.00	0.000	0.012	0.1515	0.0000	0.0000	0.00E+00
341		0.02	0.000	0.015	0.1517	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.010	0.1513	0.0000	0.0000	0.00E+00
343		0.17	0.000	0.013	0.1599	0.0000	0.0000	0.00E+00
344		0.01	0.000	0.013	0.1595	0.0000	0.0000	0.00E+00

345		0.01	0.000	0.013	0.1596	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.008	0.1591	0.0000	0.0000	0.00E+00
347		0.00	0.000	0.008	0.1587	0.0000	0.0000	0.00E+00
348		0.00	0.000	0.008	0.1582	0.0000	0.0000	0.00E+00
349		0.00	0.000	0.008	0.1578	0.0000	0.0000	0.00E+00
350		0.00	0.000	0.008	0.1574	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.009	0.1569	0.0000	0.0000	0.00E+00
352		0.12	0.000	0.014	0.1625	0.0000	0.0000	0.00E+00
353	*	0.07	0.000	0.072	0.1625	0.0000	0.0000	0.00E+00
354		0.00	0.000	0.012	0.1621	0.0000	0.0000	0.00E+00
355		0.23	0.000	0.015	0.1739	0.0000	0.0000	0.00E+00
356		0.25	0.000	0.015	0.1870	0.0000	0.0000	0.00E+00
357		0.00	0.000	0.013	0.1865	0.0000	0.0000	0.00E+00
358		0.00	0.000	0.010	0.1860	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.009	0.1855	0.0000	0.0000	0.00E+00
360		0.00	0.000	0.009	0.1850	0.0000	0.0000	0.00E+00
361		0.00	0.000	0.009	0.1845	0.0000	0.0000	0.00E+00
362		0.00	0.000	0.009	0.1840	0.0000	0.0000	0.00E+00
363		0.00	0.000	0.009	0.1835	0.0000	0.0000	0.00E+00
364		0.00	0.000	0.009	0.1830	0.0000	0.0000	0.00E+00
365		0.00	0.000	0.009	0.1825	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 6			
	inches	cubic feet	percent
Precipitation	11.81	42,884.2	100.00
Runoff	0.166	601.3	1.40
Evapotranspiration	10.766	39,080.8	91.13
Drainage Collected from Layer 8	0.0000	0.0000	0.00
Percolation/Leakage through Layer 10	0.000000	0.0000	0.00

Average Head on Top of Layer 9	0.0000	---	---
Change in Water Storage	0.8821	3,202.1	7.47
Soil Water at Start of Year	268.8189	975,812.7	2275.46
Soil Water at End of Year	269.7011	979,014.8	2282.93
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 7

Column key: Head #1: drainage from Layer 9
Drain #1: drainage from Layer 8
Leak #1: leakage thru Layer 10

Title: WST Landfill
Simulated On: 3/23/2026 12:13

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)
1			0.00	0.000	0.010	0.1820	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.010	0.1814	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.009	0.1809	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.009	0.1804	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.009	0.1799	0.0000	0.0000	0.00E+00
6	*		0.27	0.000	0.054	0.1809	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.113	0.1857	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.009	0.1851	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.009	0.1846	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.009	0.1841	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.009	0.1836	0.0000	0.0000	0.00E+00
12			0.15	0.000	0.014	0.1910	0.0000	0.0000	0.00E+00
13			0.21	0.000	0.015	0.2017	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.009	0.2012	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.009	0.2007	0.0000	0.0000	0.00E+00
16			0.00	0.000	0.010	0.2001	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.009	0.1996	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.010	0.1991	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.009	0.1986	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.009	0.1981	0.0000	0.0000	0.00E+00
21			0.00	0.000	0.009	0.1976	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.009	0.1971	0.0000	0.0000	0.00E+00
23			0.02	0.000	0.013	0.1977	0.0000	0.0000	0.00E+00
24			0.00	0.000	0.009	0.1973	0.0000	0.0000	0.00E+00

25		0.00	0.000	0.009	0.1968	0.0000	0.0000	0.00E+00
26		0.00	0.000	0.009	0.1963	0.0000	0.0000	0.00E+00
27		0.00	0.000	0.009	0.1958	0.0000	0.0000	0.00E+00
28		0.00	0.000	0.008	0.1953	0.0000	0.0000	0.00E+00
29		0.00	0.000	0.008	0.1949	0.0000	0.0000	0.00E+00
30	*	0.21	0.000	0.068	0.1960	0.0000	0.0000	0.00E+00
31		0.04	0.000	0.092	0.1998	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.008	0.1993	0.0000	0.0000	0.00E+00
33	*	0.00	0.000	0.000	0.1993	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.008	0.1988	0.0000	0.0000	0.00E+00
35		0.00	0.000	0.008	0.1984	0.0000	0.0000	0.00E+00
36		0.00	0.000	0.008	0.1979	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.008	0.1974	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.008	0.1970	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.008	0.1965	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.008	0.1961	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.008	0.1956	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.008	0.1952	0.0000	0.0000	0.00E+00
43		0.00	0.000	0.008	0.1947	0.0000	0.0000	0.00E+00
44		0.00	0.000	0.008	0.1943	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.008	0.1938	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.008	0.1934	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.008	0.1930	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.008	0.1925	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.008	0.1921	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.008	0.1916	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.008	0.1912	0.0000	0.0000	0.00E+00
52		0.00	0.000	0.008	0.1908	0.0000	0.0000	0.00E+00
53		0.00	0.000	0.008	0.1903	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.008	0.1899	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.008	0.1895	0.0000	0.0000	0.00E+00
56		0.00	0.000	0.008	0.1890	0.0000	0.0000	0.00E+00

57		0.00	0.000	0.008	0.1886	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.008	0.1882	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.008	0.1878	0.0000	0.0000	0.00E+00
60		0.00	0.000	0.008	0.1873	0.0000	0.0000	0.00E+00
61		0.00	0.000	0.008	0.1869	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.008	0.1865	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.008	0.1860	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.008	0.1856	0.0000	0.0000	0.00E+00
65		0.00	0.000	0.008	0.1851	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.008	0.1847	0.0000	0.0000	0.00E+00
67		0.03	0.000	0.013	0.1855	0.0000	0.0000	0.00E+00
68		0.01	0.000	0.012	0.1856	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.008	0.1852	0.0000	0.0000	0.00E+00
70	*	0.22	0.000	0.048	0.1863	0.0000	0.0000	0.00E+00
71		0.03	0.000	0.074	0.1926	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.008	0.1922	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.008	0.1918	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.008	0.1913	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.008	0.1909	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.008	0.1905	0.0000	0.0000	0.00E+00
77	*	0.00	0.000	0.000	0.1905	0.0000	0.0000	0.00E+00
78	*	0.00	0.000	0.000	0.1905	0.0000	0.0000	0.00E+00
79		0.00	0.000	0.008	0.1900	0.0000	0.0000	0.00E+00
80	*	0.00	0.000	0.008	0.1896	0.0000	0.0000	0.00E+00
81	*	0.00	0.000	0.000	0.1896	0.0000	0.0000	0.00E+00
82	*	0.00	0.000	0.008	0.1892	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.008	0.1888	0.0000	0.0000	0.00E+00
84		0.00	0.000	0.008	0.1883	0.0000	0.0000	0.00E+00
85		0.00	0.000	0.008	0.1879	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.008	0.1875	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.008	0.1871	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.007	0.1867	0.0000	0.0000	0.00E+00

89	0.00	0.000	0.008	0.1862	0.0000	0.0000	0.00E+00
90	0.00	0.000	0.008	0.1858	0.0000	0.0000	0.00E+00
91	0.00	0.000	0.007	0.1854	0.0000	0.0000	0.00E+00
92	0.00	0.000	0.007	0.1850	0.0000	0.0000	0.00E+00
93	0.00	0.000	0.007	0.1846	0.0000	0.0000	0.00E+00
94	0.00	0.000	0.007	0.1842	0.0000	0.0000	0.00E+00
95	0.00	0.000	0.007	0.1838	0.0000	0.0000	0.00E+00
96	0.00	0.000	0.007	0.1834	0.0000	0.0000	0.00E+00
97	0.00	0.000	0.007	0.1829	0.0000	0.0000	0.00E+00
98	0.00	0.000	0.007	0.1825	0.0000	0.0000	0.00E+00
99	0.00	0.000	0.007	0.1821	0.0000	0.0000	0.00E+00
100	0.00	0.000	0.008	0.1817	0.0000	0.0000	0.00E+00
101	0.00	0.000	0.007	0.1813	0.0000	0.0000	0.00E+00
102	0.00	0.000	0.007	0.1809	0.0000	0.0000	0.00E+00
103	0.00	0.000	0.007	0.1805	0.0000	0.0000	0.00E+00
104	0.00	0.000	0.007	0.1800	0.0000	0.0000	0.00E+00
105	0.00	0.000	0.007	0.1796	0.0000	0.0000	0.00E+00
106	0.00	0.000	0.008	0.1792	0.0000	0.0000	0.00E+00
107	0.00	0.000	0.008	0.1788	0.0000	0.0000	0.00E+00
108	0.00	0.000	0.007	0.1784	0.0000	0.0000	0.00E+00
109	0.00	0.000	0.007	0.1780	0.0000	0.0000	0.00E+00
110	0.00	0.000	0.007	0.1776	0.0000	0.0000	0.00E+00
111	0.00	0.000	0.008	0.1771	0.0000	0.0000	0.00E+00
112	0.00	0.000	0.008	0.1767	0.0000	0.0000	0.00E+00
113	0.00	0.000	0.008	0.1763	0.0000	0.0000	0.00E+00
114	0.00	0.000	0.008	0.1758	0.0000	0.0000	0.00E+00
115	0.00	0.000	0.008	0.1754	0.0000	0.0000	0.00E+00
116	0.00	0.000	0.008	0.1749	0.0000	0.0000	0.00E+00
117	0.00	0.000	0.008	0.1745	0.0000	0.0000	0.00E+00
118	0.00	0.000	0.008	0.1741	0.0000	0.0000	0.00E+00
119	0.07	0.000	0.013	0.1773	0.0000	0.0000	0.00E+00
120	0.00	0.000	0.009	0.1769	0.0000	0.0000	0.00E+00

121	0.08	0.000	0.013	0.1805	0.0000	0.0000	0.00E+00
122	0.00	0.000	0.008	0.1801	0.0000	0.0000	0.00E+00
123	0.00	0.000	0.008	0.1796	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.008	0.1792	0.0000	0.0000	0.00E+00
125	0.00	0.000	0.008	0.1787	0.0000	0.0000	0.00E+00
126	0.01	0.000	0.013	0.1787	0.0000	0.0000	0.00E+00
127	0.01	0.000	0.013	0.1785	0.0000	0.0000	0.00E+00
128	0.00	0.000	0.009	0.1780	0.0000	0.0000	0.00E+00
129	0.00	0.000	0.009	0.1775	0.0000	0.0000	0.00E+00
130	0.00	0.000	0.008	0.1770	0.0000	0.0000	0.00E+00
131	0.00	0.000	0.010	0.1765	0.0000	0.0000	0.00E+00
132	0.00	0.000	0.009	0.1760	0.0000	0.0000	0.00E+00
133	0.34	0.000	0.015	0.1938	0.0000	0.0000	0.00E+00
134	0.31	0.000	0.014	0.2104	0.0000	0.0000	0.00E+00
135	0.33	0.000	0.014	0.2280	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.293	0.2118	0.0000	0.0000	0.00E+00
137	0.00	0.000	0.009	0.2114	0.0000	0.0000	0.00E+00
138	0.23	0.000	0.016	0.2234	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.231	0.2107	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.010	0.2102	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.009	0.2097	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.010	0.2091	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.009	0.2086	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.010	0.2081	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.010	0.2075	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.011	0.2069	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.011	0.2063	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.011	0.2056	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.011	0.2050	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.011	0.2044	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.010	0.2038	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.010	0.2033	0.0000	0.0000	0.00E+00

153	0.00	0.000	0.011	0.2027	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.011	0.2021	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.012	0.2014	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.011	0.2008	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.012	0.2002	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.011	0.1995	0.0000	0.0000	0.00E+00
159	0.18	0.000	0.017	0.2087	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.365	0.1884	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.012	0.1878	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.013	0.1870	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.015	0.1862	0.0000	0.0000	0.00E+00
164	0.28	0.000	0.022	0.2003	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.016	0.1994	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.016	0.1985	0.0000	0.0000	0.00E+00
167	0.00	0.000	0.016	0.1976	0.0000	0.0000	0.00E+00
168	0.00	0.000	0.015	0.1967	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.016	0.1958	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.018	0.1948	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.015	0.1940	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.017	0.1931	0.0000	0.0000	0.00E+00
173	0.00	0.000	0.016	0.1922	0.0000	0.0000	0.00E+00
174	0.00	0.000	0.018	0.1911	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.018	0.1901	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.020	0.1890	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.019	0.1879	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.018	0.1869	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.018	0.1859	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.014	0.1851	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.018	0.1841	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.014	0.1833	0.0000	0.0000	0.00E+00
183	0.19	0.000	0.020	0.1927	0.0000	0.0000	0.00E+00
184	0.30	0.000	0.024	0.2077	0.0000	0.0000	0.00E+00

185	0.00	0.000	0.310	0.1905	0.0000	0.0000	0.00E+00
186	0.07	0.000	0.020	0.1932	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.016	0.1924	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.019	0.1913	0.0000	0.0000	0.00E+00
189	0.00	0.000	0.014	0.1905	0.0000	0.0000	0.00E+00
190	0.00	0.000	0.016	0.1896	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.019	0.1886	0.0000	0.0000	0.00E+00
192	0.04	0.000	0.021	0.1899	0.0000	0.0000	0.00E+00
193	0.00	0.000	0.017	0.1889	0.0000	0.0000	0.00E+00
194	0.00	0.000	0.014	0.1881	0.0000	0.0000	0.00E+00
195	0.00	0.000	0.022	0.1869	0.0000	0.0000	0.00E+00
196	0.00	0.000	0.015	0.1861	0.0000	0.0000	0.00E+00
197	0.24	0.000	0.030	0.1980	0.0000	0.0000	0.00E+00
198	0.00	0.000	0.539	0.1681	0.0000	0.0000	0.00E+00
199	0.22	0.000	0.031	0.1784	0.0000	0.0000	0.00E+00
200	0.03	0.000	0.029	0.1782	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.019	0.1773	0.0000	0.0000	0.00E+00
202	0.00	0.000	0.015	0.1765	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.016	0.1756	0.0000	0.0000	0.00E+00
204	0.00	0.000	0.015	0.1747	0.0000	0.0000	0.00E+00
205	0.00	0.000	0.024	0.1736	0.0000	0.0000	0.00E+00
206	0.00	0.000	0.021	0.1724	0.0000	0.0000	0.00E+00
207	0.00	0.000	0.016	0.1716	0.0000	0.0000	0.00E+00
208	0.00	0.000	0.020	0.1705	0.0000	0.0000	0.00E+00
209	0.00	0.000	0.015	0.1696	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.023	0.1684	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.022	0.1672	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.026	0.1658	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.024	0.1644	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.024	0.1631	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.022	0.1618	0.0000	0.0000	0.00E+00
216	0.40	0.000	0.033	0.1822	0.0000	0.0000	0.00E+00

217	0.00	0.000	0.467	0.1561	0.0000	0.0000	0.00E+00
218	0.00	0.000	0.025	0.1547	0.0000	0.0000	0.00E+00
219	0.00	0.000	0.018	0.1537	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.021	0.1526	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.016	0.1517	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.020	0.1506	0.0000	0.0000	0.00E+00
223	0.00	0.000	0.021	0.1494	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.022	0.1482	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.022	0.1470	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.022	0.1458	0.0000	0.0000	0.00E+00
227	0.02	0.000	0.022	0.1458	0.0000	0.0000	0.00E+00
228	0.15	0.000	0.022	0.1528	0.0000	0.0000	0.00E+00
229	0.00	0.000	0.014	0.1520	0.0000	0.0000	0.00E+00
230	0.03	0.000	0.028	0.1520	0.0000	0.0000	0.00E+00
231	0.08	0.000	0.027	0.1551	0.0000	0.0000	0.00E+00
232	0.01	0.000	0.022	0.1543	0.0000	0.0000	0.00E+00
233	0.08	0.000	0.026	0.1573	0.0000	0.0000	0.00E+00
234	0.10	0.000	0.032	0.1612	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.205	0.1498	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.017	0.1489	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.023	0.1476	0.0000	0.0000	0.00E+00
238	0.21	0.000	0.038	0.1570	0.0000	0.0000	0.00E+00
239	0.07	0.000	0.327	0.1427	0.0000	0.0000	0.00E+00
240	0.00	0.000	0.028	0.1412	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.029	0.1396	0.0000	0.0000	0.00E+00
242	0.00	0.000	0.026	0.1381	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.028	0.1367	0.0000	0.0000	0.00E+00
244	0.29	0.000	0.033	0.1511	0.0000	0.0000	0.00E+00
245	0.00	0.000	0.125	0.1441	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.018	0.1431	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.015	0.1423	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.018	0.1413	0.0000	0.0000	0.00E+00

249	0.00	0.000	0.021	0.1401	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.019	0.1390	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.021	0.1379	0.0000	0.0000	0.00E+00
252	0.00	0.000	0.016	0.1370	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.017	0.1360	0.0000	0.0000	0.00E+00
254	0.00	0.000	0.017	0.1351	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.016	0.1342	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.022	0.1329	0.0000	0.0000	0.00E+00
257	0.06	0.000	0.033	0.1342	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.025	0.1328	0.0000	0.0000	0.00E+00
259	0.46	0.000	0.031	0.1567	0.0000	0.0000	0.00E+00
260	0.50	0.000	0.211	0.1725	0.0000	0.0000	0.00E+00
261	0.00	0.000	0.218	0.1604	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.211	0.1487	0.0000	0.0000	0.00E+00
263	0.00	0.000	0.181	0.1386	0.0000	0.0000	0.00E+00
264	0.11	0.000	0.094	0.1395	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.065	0.1359	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.057	0.1328	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.055	0.1297	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.048	0.1271	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.044	0.1246	0.0000	0.0000	0.00E+00
270	0.17	0.000	0.051	0.1314	0.0000	0.0000	0.00E+00
271	0.90	0.000	0.048	0.1790	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.160	0.1701	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.154	0.1615	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.191	0.1509	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.170	0.1415	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.072	0.1375	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.056	0.1344	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.053	0.1315	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.047	0.1288	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.041	0.1266	0.0000	0.0000	0.00E+00

281	0.00	0.000	0.038	0.1244	0.0000	0.0000	0.00E+00
282	0.00	0.000	0.035	0.1225	0.0000	0.0000	0.00E+00
283	0.40	0.000	0.043	0.1421	0.0000	0.0000	0.00E+00
284	0.03	0.000	0.041	0.1416	0.0000	0.0000	0.00E+00
285	0.00	0.000	0.030	0.1400	0.0000	0.0000	0.00E+00
286	0.00	0.000	0.029	0.1383	0.0000	0.0000	0.00E+00
287	0.00	0.000	0.028	0.1368	0.0000	0.0000	0.00E+00
288	0.38	0.000	0.038	0.1558	0.0000	0.0000	0.00E+00
289	0.00	0.000	0.026	0.1543	0.0000	0.0000	0.00E+00
290	0.00	0.000	0.026	0.1529	0.0000	0.0000	0.00E+00
291	0.00	0.000	0.025	0.1515	0.0000	0.0000	0.00E+00
292	0.00	0.000	0.023	0.1502	0.0000	0.0000	0.00E+00
293	0.00	0.000	0.017	0.1493	0.0000	0.0000	0.00E+00
294	0.00	0.000	0.016	0.1484	0.0000	0.0000	0.00E+00
295	0.00	0.000	0.015	0.1476	0.0000	0.0000	0.00E+00
296	0.00	0.000	0.015	0.1467	0.0000	0.0000	0.00E+00
297	0.00	0.000	0.015	0.1459	0.0000	0.0000	0.00E+00
298	0.00	0.000	0.015	0.1451	0.0000	0.0000	0.00E+00
299	0.00	0.000	0.014	0.1443	0.0000	0.0000	0.00E+00
300	0.00	0.000	0.014	0.1436	0.0000	0.0000	0.00E+00
301	0.00	0.000	0.016	0.1427	0.0000	0.0000	0.00E+00
302	0.00	0.000	0.016	0.1418	0.0000	0.0000	0.00E+00
303	0.00	0.000	0.016	0.1409	0.0000	0.0000	0.00E+00
304	0.00	0.000	0.015	0.1401	0.0000	0.0000	0.00E+00
305	0.00	0.000	0.015	0.1392	0.0000	0.0000	0.00E+00
306	0.00	0.000	0.015	0.1384	0.0000	0.0000	0.00E+00
307	0.00	0.000	0.014	0.1376	0.0000	0.0000	0.00E+00
308	0.00	0.000	0.014	0.1368	0.0000	0.0000	0.00E+00
309	0.02	0.000	0.024	0.1367	0.0000	0.0000	0.00E+00
310	0.00	0.000	0.014	0.1360	0.0000	0.0000	0.00E+00
311	0.00	0.000	0.015	0.1351	0.0000	0.0000	0.00E+00
312	0.00	0.000	0.015	0.1343	0.0000	0.0000	0.00E+00

313		0.00	0.000	0.014	0.1335	0.0000	0.0000	0.00E+00
314	*	0.00	0.000	0.013	0.1327	0.0000	0.0000	0.00E+00
315	*	0.00	0.000	0.000	0.1327	0.0000	0.0000	0.00E+00
316	*	0.00	0.000	0.000	0.1327	0.0000	0.0000	0.00E+00
317		0.00	0.000	0.012	0.1321	0.0000	0.0000	0.00E+00
318		0.00	0.000	0.011	0.1315	0.0000	0.0000	0.00E+00
319		0.00	0.000	0.011	0.1309	0.0000	0.0000	0.00E+00
320		0.00	0.000	0.010	0.1303	0.0000	0.0000	0.00E+00
321		0.00	0.000	0.010	0.1298	0.0000	0.0000	0.00E+00
322		0.00	0.000	0.010	0.1292	0.0000	0.0000	0.00E+00
323	*	0.00	0.000	0.010	0.1287	0.0000	0.0000	0.00E+00
324		0.00	0.000	0.010	0.1281	0.0000	0.0000	0.00E+00
325	*	0.00	0.000	0.010	0.1276	0.0000	0.0000	0.00E+00
326		0.00	0.000	0.010	0.1271	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.009	0.1265	0.0000	0.0000	0.00E+00
328		0.00	0.000	0.009	0.1260	0.0000	0.0000	0.00E+00
329		0.00	0.000	0.009	0.1255	0.0000	0.0000	0.00E+00
330		0.00	0.000	0.010	0.1250	0.0000	0.0000	0.00E+00
331		0.00	0.000	0.011	0.1244	0.0000	0.0000	0.00E+00
332		0.00	0.000	0.011	0.1237	0.0000	0.0000	0.00E+00
333		0.00	0.000	0.011	0.1231	0.0000	0.0000	0.00E+00
334		0.00	0.000	0.011	0.1225	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.011	0.1219	0.0000	0.0000	0.00E+00
336		0.00	0.000	0.011	0.1213	0.0000	0.0000	0.00E+00
337		0.00	0.000	0.011	0.1207	0.0000	0.0000	0.00E+00
338		0.00	0.000	0.012	0.1201	0.0000	0.0000	0.00E+00
339		0.00	0.000	0.012	0.1195	0.0000	0.0000	0.00E+00
340		0.00	0.000	0.011	0.1188	0.0000	0.0000	0.00E+00
341		0.00	0.000	0.011	0.1182	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.011	0.1176	0.0000	0.0000	0.00E+00
343		0.00	0.000	0.011	0.1169	0.0000	0.0000	0.00E+00
344		0.00	0.000	0.011	0.1163	0.0000	0.0000	0.00E+00

345		0.00	0.000	0.009	0.1158	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.002	0.1157	0.0000	0.0000	0.00E+00
347		0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
348		0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
349		0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
350		0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
352		0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
353		0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
354		0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
355		0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
356		0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
357		0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
358		0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
360		0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
361	*	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
362	*	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
363		0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
364	*	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
365	*	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 7			
	inches	cubic feet	percent
Precipitation	8.61	31,250.4	100.00
Runoff	0.000	0.1453	0.00
Evapotranspiration	9.809	35,607.4	113.94
Drainage Collected from Layer 8	0.0000	0.0000	0.00
Percolation/Leakage through Layer 10	0.000000	0.0000	0.00

Average Head on Top of Layer 9	0.0000	---	---
Change in Water Storage	-1.2003	-4,357.1	-13.94
Soil Water at Start of Year	269.7011	979,014.8	3132.80
Soil Water at End of Year	268.5008	974,657.7	3118.86
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 8

Column key: Head #1: drainage from Layer 9
Drain #1: drainage from Layer 8
Leak #1: leakage thru Layer 10

Title: WST Landfill
Simulated On: 3/23/2026 12:13

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)
1	*		0.01	0.000	0.008	0.1157	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
5	*		0.02	0.000	0.022	0.1157	0.0000	0.0000	0.00E+00
6	*		0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
8			0.04	0.000	0.010	0.1175	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.001	0.1175	0.0000	0.0000	0.00E+00
10			0.04	0.000	0.010	0.1192	0.0000	0.0000	0.00E+00
11			0.03	0.000	0.009	0.1202	0.0000	0.0000	0.00E+00
12			0.03	0.000	0.012	0.1210	0.0000	0.0000	0.00E+00
13			0.02	0.000	0.012	0.1214	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.004	0.1212	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.004	0.1210	0.0000	0.0000	0.00E+00
16			0.00	0.000	0.004	0.1207	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.004	0.1205	0.0000	0.0000	0.00E+00
18			0.04	0.000	0.014	0.1219	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.006	0.1216	0.0000	0.0000	0.00E+00
20	*		0.00	0.000	0.000	0.1216	0.0000	0.0000	0.00E+00
21	*		0.06	0.000	0.058	0.1216	0.0000	0.0000	0.00E+00
22	*		0.00	0.000	0.005	0.1213	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.004	0.1211	0.0000	0.0000	0.00E+00
24			0.00	0.000	0.005	0.1208	0.0000	0.0000	0.00E+00

25		0.00	0.000	0.005	0.1205	0.0000	0.0000	0.00E+00
26	*	0.00	0.000	0.006	0.1202	0.0000	0.0000	0.00E+00
27		0.00	0.000	0.006	0.1199	0.0000	0.0000	0.00E+00
28		0.00	0.000	0.006	0.1196	0.0000	0.0000	0.00E+00
29		0.00	0.000	0.006	0.1192	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.006	0.1189	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.006	0.1186	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.006	0.1182	0.0000	0.0000	0.00E+00
33		0.00	0.000	0.006	0.1179	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.006	0.1176	0.0000	0.0000	0.00E+00
35	*	0.00	0.000	0.006	0.1172	0.0000	0.0000	0.00E+00
36	*	0.00	0.000	0.003	0.1171	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.002	0.1169	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.002	0.1169	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.002	0.1168	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.002	0.1167	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.002	0.1166	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.002	0.1165	0.0000	0.0000	0.00E+00
43		0.00	0.000	0.002	0.1164	0.0000	0.0000	0.00E+00
44		0.00	0.000	0.001	0.1163	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.001	0.1163	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.001	0.1162	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.001	0.1161	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.001	0.1160	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.001	0.1159	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.001	0.1159	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.001	0.1158	0.0000	0.0000	0.00E+00
52		0.16	0.000	0.010	0.1240	0.0000	0.0000	0.00E+00
53		0.00	0.000	0.004	0.1238	0.0000	0.0000	0.00E+00
54	*	0.00	0.000	0.004	0.1236	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.004	0.1234	0.0000	0.0000	0.00E+00
56		0.00	0.000	0.004	0.1232	0.0000	0.0000	0.00E+00

57	*	0.00	0.000	0.004	0.1230	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.005	0.1227	0.0000	0.0000	0.00E+00
59	*	0.00	0.000	0.000	0.1227	0.0000	0.0000	0.00E+00
60		0.00	0.000	0.005	0.1225	0.0000	0.0000	0.00E+00
61		0.20	0.000	0.014	0.1327	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.005	0.1325	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.004	0.1323	0.0000	0.0000	0.00E+00
64		0.01	0.000	0.008	0.1322	0.0000	0.0000	0.00E+00
65		0.00	0.000	0.007	0.1319	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.005	0.1316	0.0000	0.0000	0.00E+00
67		0.00	0.000	0.005	0.1314	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.006	0.1310	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.005	0.1307	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.005	0.1304	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.005	0.1301	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.005	0.1298	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.005	0.1295	0.0000	0.0000	0.00E+00
74		0.11	0.000	0.014	0.1350	0.0000	0.0000	0.00E+00
75		0.19	0.000	0.015	0.1448	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.007	0.1444	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.006	0.1441	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.005	0.1438	0.0000	0.0000	0.00E+00
79		0.00	0.000	0.005	0.1435	0.0000	0.0000	0.00E+00
80		0.00	0.000	0.005	0.1432	0.0000	0.0000	0.00E+00
81		0.00	0.000	0.005	0.1429	0.0000	0.0000	0.00E+00
82		0.00	0.000	0.005	0.1426	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.005	0.1423	0.0000	0.0000	0.00E+00
84	*	0.29	0.000	0.066	0.1434	0.0000	0.0000	0.00E+00
85		0.39	0.000	0.077	0.1719	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.005	0.1716	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.005	0.1713	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.006	0.1710	0.0000	0.0000	0.00E+00

89	0.00	0.000	0.006	0.1706	0.0000	0.0000	0.00E+00
90	0.00	0.000	0.006	0.1703	0.0000	0.0000	0.00E+00
91	0.00	0.000	0.006	0.1699	0.0000	0.0000	0.00E+00
92	0.00	0.000	0.006	0.1695	0.0000	0.0000	0.00E+00
93	0.00	0.000	0.006	0.1692	0.0000	0.0000	0.00E+00
94	0.00	0.000	0.007	0.1688	0.0000	0.0000	0.00E+00
95	0.00	0.000	0.006	0.1685	0.0000	0.0000	0.00E+00
96	0.00	0.000	0.006	0.1681	0.0000	0.0000	0.00E+00
97	0.00	0.000	0.006	0.1678	0.0000	0.0000	0.00E+00
98	0.00	0.000	0.006	0.1674	0.0000	0.0000	0.00E+00
99	0.00	0.000	0.006	0.1671	0.0000	0.0000	0.00E+00
100	0.00	0.000	0.006	0.1667	0.0000	0.0000	0.00E+00
101	0.00	0.000	0.007	0.1663	0.0000	0.0000	0.00E+00
102	0.15	0.000	0.015	0.1741	0.0000	0.0000	0.00E+00
103	0.02	0.000	0.015	0.1744	0.0000	0.0000	0.00E+00
104	0.00	0.000	0.007	0.1740	0.0000	0.0000	0.00E+00
105	0.00	0.000	0.007	0.1736	0.0000	0.0000	0.00E+00
106	0.00	0.000	0.007	0.1732	0.0000	0.0000	0.00E+00
107	0.00	0.000	0.007	0.1728	0.0000	0.0000	0.00E+00
108	0.00	0.000	0.007	0.1724	0.0000	0.0000	0.00E+00
109	0.00	0.000	0.007	0.1720	0.0000	0.0000	0.00E+00
110	0.00	0.000	0.007	0.1717	0.0000	0.0000	0.00E+00
111	0.00	0.000	0.007	0.1713	0.0000	0.0000	0.00E+00
112	0.00	0.000	0.006	0.1709	0.0000	0.0000	0.00E+00
113	0.00	0.000	0.007	0.1706	0.0000	0.0000	0.00E+00
114	0.00	0.000	0.007	0.1702	0.0000	0.0000	0.00E+00
115	0.00	0.000	0.007	0.1698	0.0000	0.0000	0.00E+00
116	0.00	0.000	0.007	0.1694	0.0000	0.0000	0.00E+00
117	0.00	0.000	0.007	0.1691	0.0000	0.0000	0.00E+00
118	0.00	0.000	0.006	0.1687	0.0000	0.0000	0.00E+00
119	0.00	0.000	0.007	0.1683	0.0000	0.0000	0.00E+00
120	0.00	0.000	0.007	0.1679	0.0000	0.0000	0.00E+00

121	0.03	0.000	0.016	0.1686	0.0000	0.0000	0.00E+00
122	0.07	0.000	0.017	0.1716	0.0000	0.0000	0.00E+00
123	0.00	0.000	0.008	0.1711	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.008	0.1707	0.0000	0.0000	0.00E+00
125	0.00	0.000	0.007	0.1703	0.0000	0.0000	0.00E+00
126	0.00	0.000	0.011	0.1700	0.0000	0.0000	0.00E+00
127	0.00	0.000	0.009	0.1695	0.0000	0.0000	0.00E+00
128	0.00	0.000	0.007	0.1691	0.0000	0.0000	0.00E+00
129	0.00	0.000	0.008	0.1687	0.0000	0.0000	0.00E+00
130	0.01	0.000	0.011	0.1683	0.0000	0.0000	0.00E+00
131	0.00	0.000	0.008	0.1679	0.0000	0.0000	0.00E+00
132	0.20	0.000	0.018	0.1780	0.0000	0.0000	0.00E+00
133	0.07	0.000	0.018	0.1806	0.0000	0.0000	0.00E+00
134	0.08	0.000	0.018	0.1840	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.009	0.1836	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.008	0.1831	0.0000	0.0000	0.00E+00
137	0.00	0.000	0.008	0.1827	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.009	0.1822	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.009	0.1817	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.009	0.1812	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.010	0.1807	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.011	0.1801	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.009	0.1796	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.009	0.1791	0.0000	0.0000	0.00E+00
145	0.01	0.000	0.016	0.1788	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.010	0.1783	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.011	0.1776	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.011	0.1770	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.009	0.1765	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.010	0.1760	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.008	0.1755	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.010	0.1750	0.0000	0.0000	0.00E+00

153	0.00	0.000	0.010	0.1744	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.010	0.1739	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.009	0.1734	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.010	0.1728	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.010	0.1723	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.010	0.1717	0.0000	0.0000	0.00E+00
159	0.01	0.000	0.014	0.1713	0.0000	0.0000	0.00E+00
160	0.04	0.000	0.019	0.1726	0.0000	0.0000	0.00E+00
161	0.16	0.000	0.020	0.1802	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.011	0.1796	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.011	0.1790	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.010	0.1785	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.009	0.1780	0.0000	0.0000	0.00E+00
166	0.14	0.000	0.019	0.1849	0.0000	0.0000	0.00E+00
167	0.01	0.000	0.014	0.1844	0.0000	0.0000	0.00E+00
168	0.06	0.000	0.021	0.1863	0.0000	0.0000	0.00E+00
169	0.04	0.000	0.020	0.1872	0.0000	0.0000	0.00E+00
170	0.02	0.000	0.020	0.1871	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.012	0.1865	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.012	0.1858	0.0000	0.0000	0.00E+00
173	0.00	0.000	0.013	0.1851	0.0000	0.0000	0.00E+00
174	0.13	0.000	0.022	0.1909	0.0000	0.0000	0.00E+00
175	0.21	0.000	0.020	0.2015	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.164	0.1924	0.0000	0.0000	0.00E+00
177	0.28	0.000	0.023	0.2067	0.0000	0.0000	0.00E+00
178	0.02	0.000	0.366	0.1873	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.014	0.1865	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.016	0.1856	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.013	0.1848	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.012	0.1842	0.0000	0.0000	0.00E+00
183	0.00	0.000	0.013	0.1835	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.013	0.1827	0.0000	0.0000	0.00E+00

185	0.00	0.000	0.014	0.1820	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.012	0.1813	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.012	0.1806	0.0000	0.0000	0.00E+00
188	0.16	0.000	0.020	0.1883	0.0000	0.0000	0.00E+00
189	0.01	0.000	0.016	0.1877	0.0000	0.0000	0.00E+00
190	0.00	0.000	0.014	0.1870	0.0000	0.0000	0.00E+00
191	0.21	0.000	0.025	0.1971	0.0000	0.0000	0.00E+00
192	0.22	0.000	0.401	0.1870	0.0000	0.0000	0.00E+00
193	0.18	0.000	0.026	0.1957	0.0000	0.0000	0.00E+00
194	0.11	0.000	0.025	0.2004	0.0000	0.0000	0.00E+00
195	0.00	0.000	0.360	0.1804	0.0000	0.0000	0.00E+00
196	0.00	0.000	0.017	0.1794	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.017	0.1785	0.0000	0.0000	0.00E+00
198	0.00	0.000	0.017	0.1775	0.0000	0.0000	0.00E+00
199	0.00	0.000	0.016	0.1767	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.017	0.1757	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.016	0.1749	0.0000	0.0000	0.00E+00
202	0.01	0.000	0.023	0.1742	0.0000	0.0000	0.00E+00
203	0.46	0.000	0.023	0.1982	0.0000	0.0000	0.00E+00
204	0.31	0.000	0.274	0.2005	0.0000	0.0000	0.00E+00
205	0.00	0.000	0.293	0.1842	0.0000	0.0000	0.00E+00
206	0.11	0.000	0.214	0.1785	0.0000	0.0000	0.00E+00
207	0.17	0.000	0.100	0.1822	0.0000	0.0000	0.00E+00
208	0.25	0.000	0.080	0.1915	0.0000	0.0000	0.00E+00
209	0.50	0.000	0.073	0.2150	0.0000	0.0000	0.00E+00
210	0.31	0.000	0.204	0.2212	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.256	0.2069	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.268	0.1920	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.195	0.1812	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.086	0.1764	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.064	0.1730	0.0000	0.0000	0.00E+00
216	0.10	0.000	0.071	0.1743	0.0000	0.0000	0.00E+00

217	0.00	0.000	0.053	0.1714	0.0000	0.0000	0.00E+00
218	0.00	0.000	0.051	0.1685	0.0000	0.0000	0.00E+00
219	0.03	0.000	0.057	0.1668	0.0000	0.0000	0.00E+00
220	0.04	0.000	0.053	0.1663	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.046	0.1638	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.051	0.1609	0.0000	0.0000	0.00E+00
223	0.00	0.000	0.050	0.1582	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.048	0.1555	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.046	0.1529	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.038	0.1508	0.0000	0.0000	0.00E+00
227	0.01	0.000	0.042	0.1490	0.0000	0.0000	0.00E+00
228	0.00	0.000	0.042	0.1468	0.0000	0.0000	0.00E+00
229	0.00	0.000	0.040	0.1445	0.0000	0.0000	0.00E+00
230	0.00	0.000	0.039	0.1424	0.0000	0.0000	0.00E+00
231	0.00	0.000	0.041	0.1401	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.040	0.1379	0.0000	0.0000	0.00E+00
233	0.00	0.000	0.044	0.1355	0.0000	0.0000	0.00E+00
234	0.00	0.000	0.043	0.1331	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.038	0.1309	0.0000	0.0000	0.00E+00
236	0.16	0.000	0.047	0.1373	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.036	0.1353	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.036	0.1332	0.0000	0.0000	0.00E+00
239	0.00	0.000	0.031	0.1315	0.0000	0.0000	0.00E+00
240	0.00	0.000	0.032	0.1298	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.031	0.1281	0.0000	0.0000	0.00E+00
242	0.00	0.000	0.034	0.1262	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.041	0.1240	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.039	0.1218	0.0000	0.0000	0.00E+00
245	0.00	0.000	0.033	0.1200	0.0000	0.0000	0.00E+00
246	0.01	0.000	0.039	0.1185	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.041	0.1162	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.008	0.1157	0.0000	0.0000	0.00E+00

249	0.00	0.000	0.001	0.1157	0.0000	0.0000	0.00E+00
250	0.06	0.000	0.015	0.1179	0.0000	0.0000	0.00E+00
251	0.02	0.000	0.013	0.1182	0.0000	0.0000	0.00E+00
252	0.45	0.000	0.025	0.1415	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.014	0.1408	0.0000	0.0000	0.00E+00
254	0.00	0.000	0.026	0.1393	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.025	0.1380	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.024	0.1368	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.021	0.1357	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.022	0.1344	0.0000	0.0000	0.00E+00
259	0.14	0.000	0.033	0.1402	0.0000	0.0000	0.00E+00
260	2.03	0.194	0.035	0.2401	0.0000	0.0000	0.00E+00
261	0.40	0.000	0.132	0.2548	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.111	0.2487	0.0000	0.0000	0.00E+00
263	0.08	0.000	0.257	0.2391	0.0000	0.0000	0.00E+00
264	0.19	0.000	0.253	0.2354	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.146	0.2273	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.187	0.2169	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.203	0.2057	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.125	0.1987	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.201	0.1875	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.160	0.1786	0.0000	0.0000	0.00E+00
271	0.00	0.000	0.129	0.1715	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.091	0.1664	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.072	0.1624	0.0000	0.0000	0.00E+00
274	0.01	0.000	0.065	0.1592	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.061	0.1560	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.053	0.1530	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.047	0.1504	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.045	0.1479	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.043	0.1455	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.038	0.1434	0.0000	0.0000	0.00E+00

281		0.00	0.000	0.037	0.1414	0.0000	0.0000	0.00E+00
282		0.00	0.000	0.035	0.1394	0.0000	0.0000	0.00E+00
283		0.00	0.000	0.034	0.1376	0.0000	0.0000	0.00E+00
284		0.00	0.000	0.032	0.1358	0.0000	0.0000	0.00E+00
285		0.01	0.000	0.038	0.1342	0.0000	0.0000	0.00E+00
286		0.00	0.000	0.030	0.1325	0.0000	0.0000	0.00E+00
287		0.00	0.000	0.028	0.1310	0.0000	0.0000	0.00E+00
288		0.00	0.000	0.030	0.1293	0.0000	0.0000	0.00E+00
289		0.00	0.000	0.028	0.1278	0.0000	0.0000	0.00E+00
290		0.00	0.000	0.027	0.1263	0.0000	0.0000	0.00E+00
291		0.00	0.000	0.025	0.1249	0.0000	0.0000	0.00E+00
292		0.00	0.000	0.026	0.1235	0.0000	0.0000	0.00E+00
293		0.04	0.000	0.036	0.1237	0.0000	0.0000	0.00E+00
294		0.06	0.000	0.037	0.1249	0.0000	0.0000	0.00E+00
295		0.00	0.000	0.022	0.1236	0.0000	0.0000	0.00E+00
296		0.00	0.000	0.022	0.1224	0.0000	0.0000	0.00E+00
297		0.00	0.000	0.021	0.1212	0.0000	0.0000	0.00E+00
298		0.00	0.000	0.022	0.1200	0.0000	0.0000	0.00E+00
299		0.00	0.000	0.020	0.1189	0.0000	0.0000	0.00E+00
300		0.00	0.000	0.020	0.1177	0.0000	0.0000	0.00E+00
301		0.00	0.000	0.004	0.1175	0.0000	0.0000	0.00E+00
302		0.00	0.000	0.003	0.1173	0.0000	0.0000	0.00E+00
303		0.22	0.000	0.017	0.1287	0.0000	0.0000	0.00E+00
304		0.00	0.000	0.009	0.1283	0.0000	0.0000	0.00E+00
305	*	0.00	0.000	0.007	0.1279	0.0000	0.0000	0.00E+00
306		0.00	0.000	0.008	0.1274	0.0000	0.0000	0.00E+00
307		0.00	0.000	0.010	0.1268	0.0000	0.0000	0.00E+00
308		0.00	0.000	0.011	0.1262	0.0000	0.0000	0.00E+00
309		0.00	0.000	0.011	0.1256	0.0000	0.0000	0.00E+00
310		0.05	0.000	0.024	0.1270	0.0000	0.0000	0.00E+00
311		0.03	0.000	0.023	0.1273	0.0000	0.0000	0.00E+00
312		0.20	0.000	0.022	0.1374	0.0000	0.0000	0.00E+00

313		0.15	0.000	0.020	0.1445	0.0000	0.0000	0.00E+00
314		0.00	0.000	0.011	0.1439	0.0000	0.0000	0.00E+00
315		0.00	0.000	0.011	0.1433	0.0000	0.0000	0.00E+00
316		0.00	0.000	0.010	0.1428	0.0000	0.0000	0.00E+00
317		0.00	0.000	0.010	0.1422	0.0000	0.0000	0.00E+00
318		0.00	0.000	0.010	0.1417	0.0000	0.0000	0.00E+00
319		0.04	0.000	0.021	0.1430	0.0000	0.0000	0.00E+00
320	*	0.15	0.000	0.057	0.1441	0.0000	0.0000	0.00E+00
321		0.00	0.000	0.084	0.1434	0.0000	0.0000	0.00E+00
322		0.00	0.000	0.011	0.1428	0.0000	0.0000	0.00E+00
323		0.00	0.000	0.010	0.1423	0.0000	0.0000	0.00E+00
324		0.00	0.000	0.009	0.1418	0.0000	0.0000	0.00E+00
325		0.00	0.000	0.009	0.1413	0.0000	0.0000	0.00E+00
326		0.00	0.000	0.009	0.1408	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.009	0.1402	0.0000	0.0000	0.00E+00
328		0.00	0.000	0.009	0.1397	0.0000	0.0000	0.00E+00
329		0.00	0.000	0.009	0.1393	0.0000	0.0000	0.00E+00
330		0.00	0.000	0.009	0.1388	0.0000	0.0000	0.00E+00
331		0.00	0.000	0.009	0.1383	0.0000	0.0000	0.00E+00
332		0.00	0.000	0.009	0.1378	0.0000	0.0000	0.00E+00
333		0.00	0.000	0.009	0.1373	0.0000	0.0000	0.00E+00
334		0.00	0.000	0.009	0.1368	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.008	0.1364	0.0000	0.0000	0.00E+00
336		0.00	0.000	0.008	0.1359	0.0000	0.0000	0.00E+00
337		0.00	0.000	0.008	0.1354	0.0000	0.0000	0.00E+00
338		0.07	0.000	0.020	0.1384	0.0000	0.0000	0.00E+00
339		0.00	0.000	0.009	0.1379	0.0000	0.0000	0.00E+00
340		0.00	0.000	0.010	0.1373	0.0000	0.0000	0.00E+00
341		0.00	0.000	0.010	0.1368	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.010	0.1363	0.0000	0.0000	0.00E+00
343		0.00	0.000	0.010	0.1357	0.0000	0.0000	0.00E+00
344		0.00	0.000	0.010	0.1351	0.0000	0.0000	0.00E+00

345		0.00	0.000	0.009	0.1346	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.008	0.1342	0.0000	0.0000	0.00E+00
347		0.00	0.000	0.008	0.1337	0.0000	0.0000	0.00E+00
348		0.00	0.000	0.008	0.1333	0.0000	0.0000	0.00E+00
349		0.00	0.000	0.008	0.1329	0.0000	0.0000	0.00E+00
350		0.00	0.000	0.008	0.1324	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.008	0.1320	0.0000	0.0000	0.00E+00
352		0.00	0.000	0.008	0.1316	0.0000	0.0000	0.00E+00
353		0.00	0.000	0.007	0.1312	0.0000	0.0000	0.00E+00
354		0.00	0.000	0.007	0.1308	0.0000	0.0000	0.00E+00
355		0.00	0.000	0.007	0.1304	0.0000	0.0000	0.00E+00
356		0.00	0.000	0.007	0.1300	0.0000	0.0000	0.00E+00
357		0.00	0.000	0.007	0.1296	0.0000	0.0000	0.00E+00
358		0.00	0.000	0.007	0.1292	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.007	0.1288	0.0000	0.0000	0.00E+00
360		0.00	0.000	0.007	0.1284	0.0000	0.0000	0.00E+00
361		0.00	0.000	0.007	0.1280	0.0000	0.0000	0.00E+00
362		0.00	0.000	0.007	0.1276	0.0000	0.0000	0.00E+00
363		0.00	0.000	0.007	0.1272	0.0000	0.0000	0.00E+00
364	*	0.00	0.000	0.007	0.1268	0.0000	0.0000	0.00E+00
365		0.00	0.000	0.007	0.1264	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 8			
	inches	cubic feet	percent
Precipitation	11.12	40,356.8	100.00
Runoff	0.194	704.3	1.75
Evapotranspiration	10.729	38,947.7	96.51
Drainage Collected from Layer 8	0.0000	0.0000	0.00
Percolation/Leakage through Layer 10	0.000000	0.0000	0.00

Average Head on Top of Layer 9	0.0000	---	---
Change in Water Storage	0.1942	704.9	1.75
Soil Water at Start of Year	268.5008	974,657.7	2415.10
Soil Water at End of Year	268.6949	975,362.6	2416.85
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 9

Column key: Head #1: drainage from Layer 9
Drain #1: drainage from Layer 8
Leak #1: leakage thru Layer 10

Title: WST Landfill
Simulated On: 3/23/2026 12:13

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)
1			0.23	0.000	0.018	0.1382	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.008	0.1378	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.008	0.1373	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.008	0.1368	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.009	0.1364	0.0000	0.0000	0.00E+00
6	*		0.00	0.000	0.000	0.1364	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.009	0.1359	0.0000	0.0000	0.00E+00
8	*		0.00	0.000	0.000	0.1359	0.0000	0.0000	0.00E+00
9	*		0.11	0.000	0.067	0.1370	0.0000	0.0000	0.00E+00
10	*		0.01	0.000	0.043	0.1365	0.0000	0.0000	0.00E+00
11	*		0.00	0.000	0.000	0.1365	0.0000	0.0000	0.00E+00
12	*		0.00	0.000	0.000	0.1365	0.0000	0.0000	0.00E+00
13	*		0.00	0.000	0.000	0.1365	0.0000	0.0000	0.00E+00
14	*		0.00	0.000	0.008	0.1361	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.008	0.1356	0.0000	0.0000	0.00E+00
16			0.00	0.000	0.007	0.1352	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.007	0.1349	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.007	0.1345	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.007	0.1341	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.007	0.1338	0.0000	0.0000	0.00E+00
21			0.00	0.000	0.006	0.1334	0.0000	0.0000	0.00E+00
22	*		0.00	0.000	0.006	0.1331	0.0000	0.0000	0.00E+00
23	*		0.00	0.000	0.006	0.1327	0.0000	0.0000	0.00E+00
24	*		0.00	0.000	0.000	0.1327	0.0000	0.0000	0.00E+00

25	*		0.00	0.000	0.000	0.1327	0.0000	0.0000	0.00E+00
26	*		0.00	0.000	0.000	0.1327	0.0000	0.0000	0.00E+00
27	*	*	0.00	0.000	0.000	0.1327	0.0000	0.0000	0.00E+00
28	*	*	0.00	0.000	0.000	0.1327	0.0000	0.0000	0.00E+00
29			0.00	0.000	0.006	0.1323	0.0000	0.0000	0.00E+00
30			0.00	0.000	0.006	0.1320	0.0000	0.0000	0.00E+00
31			0.00	0.000	0.006	0.1316	0.0000	0.0000	0.00E+00
32	*	*	0.00	0.000	0.000	0.1316	0.0000	0.0000	0.00E+00
33			0.00	0.000	0.006	0.1313	0.0000	0.0000	0.00E+00
34			0.00	0.000	0.006	0.1309	0.0000	0.0000	0.00E+00
35			0.00	0.000	0.006	0.1306	0.0000	0.0000	0.00E+00
36			0.00	0.000	0.006	0.1303	0.0000	0.0000	0.00E+00
37			0.00	0.000	0.006	0.1299	0.0000	0.0000	0.00E+00
38			0.00	0.000	0.006	0.1296	0.0000	0.0000	0.00E+00
39			0.00	0.000	0.006	0.1292	0.0000	0.0000	0.00E+00
40			0.27	0.000	0.018	0.1430	0.0000	0.0000	0.00E+00
41			0.00	0.000	0.007	0.1426	0.0000	0.0000	0.00E+00
42			0.00	0.000	0.008	0.1422	0.0000	0.0000	0.00E+00
43			0.00	0.000	0.006	0.1418	0.0000	0.0000	0.00E+00
44	*		0.00	0.000	0.006	0.1415	0.0000	0.0000	0.00E+00
45	*		0.00	0.000	0.006	0.1412	0.0000	0.0000	0.00E+00
46			0.00	0.000	0.006	0.1408	0.0000	0.0000	0.00E+00
47			0.00	0.000	0.006	0.1405	0.0000	0.0000	0.00E+00
48			0.08	0.000	0.017	0.1437	0.0000	0.0000	0.00E+00
49			0.05	0.000	0.018	0.1457	0.0000	0.0000	0.00E+00
50			0.00	0.000	0.007	0.1453	0.0000	0.0000	0.00E+00
51			0.00	0.000	0.008	0.1448	0.0000	0.0000	0.00E+00
52			0.00	0.000	0.006	0.1445	0.0000	0.0000	0.00E+00
53			0.00	0.000	0.006	0.1442	0.0000	0.0000	0.00E+00
54			0.00	0.000	0.006	0.1439	0.0000	0.0000	0.00E+00
55			0.00	0.000	0.006	0.1435	0.0000	0.0000	0.00E+00
56			0.00	0.000	0.006	0.1432	0.0000	0.0000	0.00E+00

57	*	0.00	0.000	0.006	0.1429	0.0000	0.0000	0.00E+00
58	*	0.00	0.000	0.000	0.1429	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.006	0.1426	0.0000	0.0000	0.00E+00
60	*	0.00	0.000	0.006	0.1423	0.0000	0.0000	0.00E+00
61		0.00	0.000	0.006	0.1419	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.006	0.1416	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.006	0.1413	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.006	0.1410	0.0000	0.0000	0.00E+00
65		0.00	0.000	0.006	0.1407	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.006	0.1404	0.0000	0.0000	0.00E+00
67		0.00	0.000	0.006	0.1401	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.006	0.1398	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.006	0.1395	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.005	0.1392	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.005	0.1389	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.005	0.1386	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.005	0.1383	0.0000	0.0000	0.00E+00
74	*	0.00	0.000	0.005	0.1380	0.0000	0.0000	0.00E+00
75	*	0.03	0.000	0.032	0.1380	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.005	0.1376	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.005	0.1373	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.005	0.1371	0.0000	0.0000	0.00E+00
79		0.00	0.000	0.005	0.1368	0.0000	0.0000	0.00E+00
80		0.09	0.000	0.017	0.1406	0.0000	0.0000	0.00E+00
81		0.00	0.000	0.006	0.1403	0.0000	0.0000	0.00E+00
82		0.00	0.000	0.006	0.1400	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.006	0.1396	0.0000	0.0000	0.00E+00
84		0.00	0.000	0.006	0.1392	0.0000	0.0000	0.00E+00
85		0.00	0.000	0.006	0.1389	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.007	0.1385	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.007	0.1381	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.007	0.1378	0.0000	0.0000	0.00E+00

89		0.00	0.000	0.006	0.1374	0.0000	0.0000	0.00E+00
90		0.00	0.000	0.006	0.1371	0.0000	0.0000	0.00E+00
91		0.04	0.000	0.017	0.1384	0.0000	0.0000	0.00E+00
92		0.00	0.000	0.005	0.1381	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.006	0.1378	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.006	0.1374	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.006	0.1371	0.0000	0.0000	0.00E+00
96		0.00	0.000	0.006	0.1367	0.0000	0.0000	0.00E+00
97		0.67	0.000	0.018	0.1728	0.0000	0.0000	0.00E+00
98		0.04	0.000	0.018	0.1741	0.0000	0.0000	0.00E+00
99		0.00	0.000	0.007	0.1737	0.0000	0.0000	0.00E+00
100		0.01	0.000	0.014	0.1737	0.0000	0.0000	0.00E+00
101		0.01	0.000	0.014	0.1735	0.0000	0.0000	0.00E+00
102		0.00	0.000	0.006	0.1732	0.0000	0.0000	0.00E+00
103		0.00	0.000	0.006	0.1728	0.0000	0.0000	0.00E+00
104		0.00	0.000	0.006	0.1725	0.0000	0.0000	0.00E+00
105		0.00	0.000	0.006	0.1721	0.0000	0.0000	0.00E+00
106	*	0.00	0.000	0.006	0.1718	0.0000	0.0000	0.00E+00
107		0.00	0.000	0.006	0.1714	0.0000	0.0000	0.00E+00
108		0.05	0.000	0.018	0.1732	0.0000	0.0000	0.00E+00
109		0.00	0.000	0.007	0.1728	0.0000	0.0000	0.00E+00
110		0.00	0.000	0.008	0.1724	0.0000	0.0000	0.00E+00
111		0.00	0.000	0.008	0.1720	0.0000	0.0000	0.00E+00
112		0.00	0.000	0.007	0.1716	0.0000	0.0000	0.00E+00
113		0.02	0.000	0.016	0.1717	0.0000	0.0000	0.00E+00
114		0.03	0.000	0.018	0.1726	0.0000	0.0000	0.00E+00
115		0.02	0.000	0.015	0.1725	0.0000	0.0000	0.00E+00
116		0.19	0.000	0.019	0.1822	0.0000	0.0000	0.00E+00
117		0.00	0.000	0.007	0.1817	0.0000	0.0000	0.00E+00
118		0.13	0.000	0.019	0.1880	0.0000	0.0000	0.00E+00
119		0.00	0.000	0.008	0.1875	0.0000	0.0000	0.00E+00
120		0.00	0.000	0.008	0.1871	0.0000	0.0000	0.00E+00

121	0.00	0.000	0.008	0.1867	0.0000	0.0000	0.00E+00
122	0.00	0.000	0.007	0.1862	0.0000	0.0000	0.00E+00
123	0.00	0.000	0.007	0.1859	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.007	0.1854	0.0000	0.0000	0.00E+00
125	0.00	0.000	0.008	0.1850	0.0000	0.0000	0.00E+00
126	0.00	0.000	0.009	0.1845	0.0000	0.0000	0.00E+00
127	0.00	0.000	0.008	0.1841	0.0000	0.0000	0.00E+00
128	0.00	0.000	0.008	0.1836	0.0000	0.0000	0.00E+00
129	0.17	0.000	0.019	0.1922	0.0000	0.0000	0.00E+00
130	0.04	0.000	0.019	0.1933	0.0000	0.0000	0.00E+00
131	0.00	0.000	0.008	0.1928	0.0000	0.0000	0.00E+00
132	0.00	0.000	0.008	0.1924	0.0000	0.0000	0.00E+00
133	0.00	0.000	0.008	0.1919	0.0000	0.0000	0.00E+00
134	0.00	0.000	0.008	0.1915	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.009	0.1910	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.009	0.1905	0.0000	0.0000	0.00E+00
137	0.05	0.000	0.020	0.1924	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.011	0.1920	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.009	0.1915	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.008	0.1911	0.0000	0.0000	0.00E+00
141	0.33	0.000	0.021	0.2084	0.0000	0.0000	0.00E+00
142	0.03	0.000	0.250	0.1959	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.010	0.1953	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.010	0.1948	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.011	0.1942	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.011	0.1936	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.010	0.1931	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.012	0.1924	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.013	0.1917	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.014	0.1909	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.013	0.1902	0.0000	0.0000	0.00E+00
152	0.11	0.000	0.023	0.1949	0.0000	0.0000	0.00E+00

153	0.23	0.000	0.023	0.2067	0.0000	0.0000	0.00E+00
154	0.27	0.000	0.179	0.2116	0.0000	0.0000	0.00E+00
155	0.28	0.000	0.150	0.2186	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.336	0.2000	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.200	0.1889	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.088	0.1840	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.071	0.1801	0.0000	0.0000	0.00E+00
160	0.08	0.000	0.070	0.1807	0.0000	0.0000	0.00E+00
161	0.03	0.000	0.061	0.1791	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.048	0.1765	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.044	0.1740	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.037	0.1719	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.036	0.1699	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.036	0.1679	0.0000	0.0000	0.00E+00
167	0.08	0.000	0.047	0.1698	0.0000	0.0000	0.00E+00
168	0.00	0.000	0.033	0.1680	0.0000	0.0000	0.00E+00
169	0.05	0.000	0.045	0.1684	0.0000	0.0000	0.00E+00
170	0.30	0.000	0.045	0.1825	0.0000	0.0000	0.00E+00
171	0.03	0.000	0.043	0.1818	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.032	0.1801	0.0000	0.0000	0.00E+00
173	0.02	0.000	0.039	0.1788	0.0000	0.0000	0.00E+00
174	0.15	0.000	0.042	0.1847	0.0000	0.0000	0.00E+00
175	0.37	0.000	0.043	0.2031	0.0000	0.0000	0.00E+00
176	0.13	0.000	0.225	0.1980	0.0000	0.0000	0.00E+00
177	0.02	0.000	0.038	0.1972	0.0000	0.0000	0.00E+00
178	0.01	0.000	0.034	0.1959	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.026	0.1944	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.028	0.1929	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.025	0.1915	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.026	0.1900	0.0000	0.0000	0.00E+00
183	0.00	0.000	0.024	0.1887	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.028	0.1871	0.0000	0.0000	0.00E+00

185	0.03	0.000	0.039	0.1867	0.0000	0.0000	0.00E+00
186	0.03	0.000	0.035	0.1861	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.027	0.1847	0.0000	0.0000	0.00E+00
188	0.09	0.000	0.037	0.1875	0.0000	0.0000	0.00E+00
189	0.01	0.000	0.028	0.1865	0.0000	0.0000	0.00E+00
190	0.01	0.000	0.032	0.1853	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.027	0.1839	0.0000	0.0000	0.00E+00
192	0.00	0.000	0.028	0.1823	0.0000	0.0000	0.00E+00
193	0.00	0.000	0.025	0.1809	0.0000	0.0000	0.00E+00
194	0.00	0.000	0.023	0.1797	0.0000	0.0000	0.00E+00
195	0.00	0.000	0.024	0.1783	0.0000	0.0000	0.00E+00
196	0.00	0.000	0.024	0.1770	0.0000	0.0000	0.00E+00
197	0.04	0.000	0.033	0.1774	0.0000	0.0000	0.00E+00
198	0.08	0.000	0.036	0.1799	0.0000	0.0000	0.00E+00
199	0.00	0.000	0.023	0.1786	0.0000	0.0000	0.00E+00
200	0.02	0.000	0.033	0.1779	0.0000	0.0000	0.00E+00
201	0.23	0.000	0.038	0.1885	0.0000	0.0000	0.00E+00
202	0.10	0.000	0.036	0.1918	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.208	0.1802	0.0000	0.0000	0.00E+00
204	0.11	0.000	0.038	0.1840	0.0000	0.0000	0.00E+00
205	0.00	0.000	0.022	0.1829	0.0000	0.0000	0.00E+00
206	0.00	0.000	0.028	0.1813	0.0000	0.0000	0.00E+00
207	0.00	0.000	0.024	0.1800	0.0000	0.0000	0.00E+00
208	0.00	0.000	0.026	0.1785	0.0000	0.0000	0.00E+00
209	0.24	0.000	0.042	0.1895	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.345	0.1704	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.025	0.1690	0.0000	0.0000	0.00E+00
212	0.12	0.000	0.039	0.1732	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.025	0.1719	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.022	0.1706	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.024	0.1693	0.0000	0.0000	0.00E+00
216	0.10	0.000	0.043	0.1725	0.0000	0.0000	0.00E+00

217	0.00	0.000	0.031	0.1709	0.0000	0.0000	0.00E+00
218	0.09	0.000	0.041	0.1737	0.0000	0.0000	0.00E+00
219	0.04	0.000	0.040	0.1736	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.025	0.1723	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.029	0.1707	0.0000	0.0000	0.00E+00
222	0.23	0.000	0.045	0.1808	0.0000	0.0000	0.00E+00
223	0.07	0.000	0.396	0.1626	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.024	0.1613	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.032	0.1597	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.024	0.1584	0.0000	0.0000	0.00E+00
227	0.01	0.000	0.032	0.1569	0.0000	0.0000	0.00E+00
228	0.02	0.000	0.039	0.1559	0.0000	0.0000	0.00E+00
229	0.55	0.000	0.042	0.1841	0.0000	0.0000	0.00E+00
230	0.83	0.004	0.263	0.2155	0.0000	0.0000	0.00E+00
231	0.33	0.000	0.185	0.2238	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.213	0.2119	0.0000	0.0000	0.00E+00
233	0.00	0.000	0.161	0.2030	0.0000	0.0000	0.00E+00
234	0.00	0.000	0.177	0.1932	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.186	0.1829	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.257	0.1686	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.165	0.1594	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.099	0.1538	0.0000	0.0000	0.00E+00
239	0.00	0.000	0.079	0.1494	0.0000	0.0000	0.00E+00
240	0.00	0.000	0.064	0.1459	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.061	0.1425	0.0000	0.0000	0.00E+00
242	0.00	0.000	0.061	0.1391	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.050	0.1364	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.051	0.1335	0.0000	0.0000	0.00E+00
245	0.00	0.000	0.048	0.1308	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.046	0.1283	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.053	0.1253	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.049	0.1226	0.0000	0.0000	0.00E+00

249	0.00	0.000	0.040	0.1204	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.043	0.1180	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.038	0.1159	0.0000	0.0000	0.00E+00
252	0.00	0.000	0.004	0.1157	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
254	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
258	0.11	0.000	0.018	0.1207	0.0000	0.0000	0.00E+00
259	0.18	0.000	0.024	0.1294	0.0000	0.0000	0.00E+00
260	0.07	0.000	0.031	0.1315	0.0000	0.0000	0.00E+00
261	0.05	0.000	0.034	0.1327	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.015	0.1319	0.0000	0.0000	0.00E+00
263	0.23	0.000	0.027	0.1429	0.0000	0.0000	0.00E+00
264	0.00	0.000	0.013	0.1422	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.020	0.1411	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.018	0.1401	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.017	0.1391	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.016	0.1383	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.016	0.1374	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.015	0.1366	0.0000	0.0000	0.00E+00
271	0.00	0.000	0.016	0.1357	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.016	0.1348	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.016	0.1339	0.0000	0.0000	0.00E+00
274	0.06	0.000	0.029	0.1355	0.0000	0.0000	0.00E+00
275	0.15	0.000	0.029	0.1424	0.0000	0.0000	0.00E+00
276	0.90	0.001	0.031	0.1909	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.072	0.1869	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.175	0.1772	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.099	0.1717	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.070	0.1678	0.0000	0.0000	0.00E+00

281	0.00	0.000	0.055	0.1648	0.0000	0.0000	0.00E+00
282	0.00	0.000	0.051	0.1620	0.0000	0.0000	0.00E+00
283	0.00	0.000	0.045	0.1595	0.0000	0.0000	0.00E+00
284	0.00	0.000	0.041	0.1572	0.0000	0.0000	0.00E+00
285	0.00	0.000	0.038	0.1551	0.0000	0.0000	0.00E+00
286	0.02	0.000	0.048	0.1537	0.0000	0.0000	0.00E+00
287	0.40	0.000	0.049	0.1733	0.0000	0.0000	0.00E+00
288	0.09	0.000	0.048	0.1759	0.0000	0.0000	0.00E+00
289	0.00	0.000	0.030	0.1742	0.0000	0.0000	0.00E+00
290	0.00	0.000	0.029	0.1726	0.0000	0.0000	0.00E+00
291	0.00	0.000	0.027	0.1711	0.0000	0.0000	0.00E+00
292	0.00	0.000	0.026	0.1696	0.0000	0.0000	0.00E+00
293	0.00	0.000	0.025	0.1682	0.0000	0.0000	0.00E+00
294	0.00	0.000	0.024	0.1669	0.0000	0.0000	0.00E+00
295	0.00	0.000	0.024	0.1656	0.0000	0.0000	0.00E+00
296	0.00	0.000	0.024	0.1642	0.0000	0.0000	0.00E+00
297	0.00	0.000	0.023	0.1629	0.0000	0.0000	0.00E+00
298	0.00	0.000	0.023	0.1617	0.0000	0.0000	0.00E+00
299	0.00	0.000	0.022	0.1605	0.0000	0.0000	0.00E+00
300	0.00	0.000	0.022	0.1592	0.0000	0.0000	0.00E+00
301	0.00	0.000	0.021	0.1581	0.0000	0.0000	0.00E+00
302	0.00	0.000	0.021	0.1569	0.0000	0.0000	0.00E+00
303	0.00	0.000	0.021	0.1557	0.0000	0.0000	0.00E+00
304	0.00	0.000	0.018	0.1547	0.0000	0.0000	0.00E+00
305	0.00	0.000	0.016	0.1538	0.0000	0.0000	0.00E+00
306	0.00	0.000	0.016	0.1529	0.0000	0.0000	0.00E+00
307	0.00	0.000	0.016	0.1521	0.0000	0.0000	0.00E+00
308	0.00	0.000	0.015	0.1512	0.0000	0.0000	0.00E+00
309	0.00	0.000	0.015	0.1504	0.0000	0.0000	0.00E+00
310	0.00	0.000	0.015	0.1495	0.0000	0.0000	0.00E+00
311	0.00	0.000	0.015	0.1487	0.0000	0.0000	0.00E+00
312	0.00	0.000	0.014	0.1479	0.0000	0.0000	0.00E+00

313	0.00	0.000	0.014	0.1471	0.0000	0.0000	0.00E+00
314	0.00	0.000	0.014	0.1464	0.0000	0.0000	0.00E+00
315	0.00	0.000	0.014	0.1456	0.0000	0.0000	0.00E+00
316	0.00	0.000	0.014	0.1448	0.0000	0.0000	0.00E+00
317	0.00	0.000	0.011	0.1442	0.0000	0.0000	0.00E+00
318	0.00	0.000	0.013	0.1435	0.0000	0.0000	0.00E+00
319	0.00	0.000	0.013	0.1427	0.0000	0.0000	0.00E+00
320	0.00	0.000	0.013	0.1420	0.0000	0.0000	0.00E+00
321	0.00	0.000	0.013	0.1413	0.0000	0.0000	0.00E+00
322	0.00	0.000	0.013	0.1406	0.0000	0.0000	0.00E+00
323	0.00	0.000	0.013	0.1399	0.0000	0.0000	0.00E+00
324	0.00	0.000	0.014	0.1391	0.0000	0.0000	0.00E+00
325	0.00	0.000	0.013	0.1384	0.0000	0.0000	0.00E+00
326	0.00	0.000	0.013	0.1376	0.0000	0.0000	0.00E+00
327	0.00	0.000	0.013	0.1369	0.0000	0.0000	0.00E+00
328	0.00	0.000	0.013	0.1362	0.0000	0.0000	0.00E+00
329	0.00	0.000	0.013	0.1355	0.0000	0.0000	0.00E+00
330	0.00	0.000	0.013	0.1348	0.0000	0.0000	0.00E+00
331	0.11	0.000	0.027	0.1393	0.0000	0.0000	0.00E+00
332	0.09	0.000	0.027	0.1426	0.0000	0.0000	0.00E+00
333	0.00	0.000	0.012	0.1419	0.0000	0.0000	0.00E+00
334	0.00	0.000	0.012	0.1412	0.0000	0.0000	0.00E+00
335	0.04	0.000	0.026	0.1421	0.0000	0.0000	0.00E+00
336	0.00	0.000	0.015	0.1414	0.0000	0.0000	0.00E+00
337	0.13	0.000	0.026	0.1473	0.0000	0.0000	0.00E+00
338	0.00	0.000	0.015	0.1467	0.0000	0.0000	0.00E+00
339	0.56	0.000	0.026	0.1761	0.0000	0.0000	0.00E+00
340	0.03	0.000	0.024	0.1764	0.0000	0.0000	0.00E+00
341	0.00	0.000	0.014	0.1757	0.0000	0.0000	0.00E+00
342	0.02	0.000	0.023	0.1757	0.0000	0.0000	0.00E+00
343	0.00	0.000	0.012	0.1750	0.0000	0.0000	0.00E+00
344	0.00	0.000	0.012	0.1743	0.0000	0.0000	0.00E+00

345		0.00	0.000	0.012	0.1737	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.012	0.1730	0.0000	0.0000	0.00E+00
347		0.00	0.000	0.012	0.1724	0.0000	0.0000	0.00E+00
348		0.00	0.000	0.012	0.1717	0.0000	0.0000	0.00E+00
349		0.00	0.000	0.012	0.1711	0.0000	0.0000	0.00E+00
350		0.00	0.000	0.011	0.1704	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.012	0.1698	0.0000	0.0000	0.00E+00
352		0.00	0.000	0.012	0.1691	0.0000	0.0000	0.00E+00
353	*	0.00	0.000	0.012	0.1685	0.0000	0.0000	0.00E+00
354		0.00	0.000	0.010	0.1680	0.0000	0.0000	0.00E+00
355		0.00	0.000	0.009	0.1674	0.0000	0.0000	0.00E+00
356		0.55	0.000	0.024	0.1967	0.0000	0.0000	0.00E+00
357		0.02	0.000	0.103	0.1919	0.0000	0.0000	0.00E+00
358		0.00	0.000	0.143	0.1840	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.125	0.1771	0.0000	0.0000	0.00E+00
360		0.02	0.000	0.086	0.1733	0.0000	0.0000	0.00E+00
361		0.00	0.000	0.061	0.1701	0.0000	0.0000	0.00E+00
362		0.06	0.000	0.063	0.1699	0.0000	0.0000	0.00E+00
363		0.04	0.000	0.059	0.1687	0.0000	0.0000	0.00E+00
364		0.00	0.000	0.043	0.1663	0.0000	0.0000	0.00E+00
365		0.00	0.000	0.037	0.1642	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 9			
	inches	cubic feet	percent
Precipitation	12.20	44,272.0	100.00
Runoff	0.005	17.0	0.04
Evapotranspiration	11.508	41,773.2	94.36
Drainage Collected from Layer 8	0.0000	0.0000	0.00
Percolation/Leakage through Layer 10	0.000000	0.0000	0.00

Average Head on Top of Layer 9	0.0000	---	---
Change in Water Storage	0.6837	2,481.7	5.61
Soil Water at Start of Year	268.6949	975,362.6	2203.12
Soil Water at End of Year	269.3786	977,844.3	2208.72
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 10

Column key: Head #1: drainage from Layer 9
Drain #1: drainage from Layer 8
Leak #1: leakage thru Layer 10

Title: WST Landfill
Simulated On: 3/23/2026 12:13

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)
1			0.00	0.000	0.034	0.1623	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.031	0.1606	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.030	0.1590	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.028	0.1574	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.027	0.1559	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.026	0.1544	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.025	0.1531	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.024	0.1517	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.023	0.1504	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.021	0.1493	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.023	0.1480	0.0000	0.0000	0.00E+00
12			0.00	0.000	0.022	0.1468	0.0000	0.0000	0.00E+00
13			0.00	0.000	0.021	0.1456	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.020	0.1445	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.020	0.1434	0.0000	0.0000	0.00E+00
16			0.00	0.000	0.019	0.1424	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.019	0.1413	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.018	0.1403	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.018	0.1393	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.018	0.1383	0.0000	0.0000	0.00E+00
21			0.00	0.000	0.017	0.1373	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.017	0.1364	0.0000	0.0000	0.00E+00
23	*		0.00	0.000	0.017	0.1354	0.0000	0.0000	0.00E+00
24	*		0.00	0.000	0.017	0.1345	0.0000	0.0000	0.00E+00

25	*	0.00	0.000	0.000	0.1345	0.0000	0.0000	0.00E+00
26	*	0.04	0.000	0.060	0.1336	0.0000	0.0000	0.00E+00
27		0.15	0.000	0.030	0.1404	0.0000	0.0000	0.00E+00
28		0.00	0.000	0.016	0.1395	0.0000	0.0000	0.00E+00
29		0.00	0.000	0.016	0.1386	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.016	0.1377	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.016	0.1368	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.015	0.1360	0.0000	0.0000	0.00E+00
33		0.00	0.000	0.015	0.1352	0.0000	0.0000	0.00E+00
34		0.15	0.000	0.029	0.1419	0.0000	0.0000	0.00E+00
35		0.00	0.000	0.014	0.1411	0.0000	0.0000	0.00E+00
36		0.00	0.000	0.014	0.1404	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.014	0.1396	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.015	0.1387	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.015	0.1379	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.014	0.1372	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.013	0.1364	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.013	0.1357	0.0000	0.0000	0.00E+00
43		0.00	0.000	0.013	0.1349	0.0000	0.0000	0.00E+00
44	*	0.00	0.000	0.017	0.1342	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.013	0.1335	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.013	0.1328	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.013	0.1321	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.013	0.1314	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.014	0.1307	0.0000	0.0000	0.00E+00
50		0.05	0.000	0.026	0.1320	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.012	0.1313	0.0000	0.0000	0.00E+00
52		0.00	0.000	0.013	0.1306	0.0000	0.0000	0.00E+00
53		0.00	0.000	0.012	0.1299	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.012	0.1292	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.012	0.1286	0.0000	0.0000	0.00E+00
56		0.00	0.000	0.012	0.1279	0.0000	0.0000	0.00E+00

57		0.00	0.000	0.012	0.1273	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.011	0.1266	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.011	0.1260	0.0000	0.0000	0.00E+00
60		0.00	0.000	0.011	0.1254	0.0000	0.0000	0.00E+00
61		0.00	0.000	0.010	0.1248	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.012	0.1242	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.012	0.1236	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.012	0.1229	0.0000	0.0000	0.00E+00
65		0.00	0.000	0.012	0.1223	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.011	0.1216	0.0000	0.0000	0.00E+00
67		0.00	0.000	0.011	0.1210	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.011	0.1204	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.011	0.1197	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.011	0.1191	0.0000	0.0000	0.00E+00
71	*	0.00	0.000	0.011	0.1185	0.0000	0.0000	0.00E+00
72	*	0.00	0.000	0.000	0.1185	0.0000	0.0000	0.00E+00
73	*	0.00	0.000	0.011	0.1179	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.011	0.1173	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.011	0.1167	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.011	0.1160	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.006	0.1157	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.000	0.1157	0.0000	0.0000	0.00E+00
79		0.08	0.000	0.015	0.1192	0.0000	0.0000	0.00E+00
80	*	0.00	0.000	0.001	0.1191	0.0000	0.0000	0.00E+00
81		0.10	0.000	0.019	0.1236	0.0000	0.0000	0.00E+00
82		0.00	0.000	0.007	0.1233	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.005	0.1230	0.0000	0.0000	0.00E+00
84		0.00	0.000	0.005	0.1227	0.0000	0.0000	0.00E+00
85		0.02	0.000	0.016	0.1232	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.007	0.1228	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.005	0.1225	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.005	0.1223	0.0000	0.0000	0.00E+00

89		0.00	0.000	0.005	0.1220	0.0000	0.0000	0.00E+00
90		0.45	0.000	0.020	0.1458	0.0000	0.0000	0.00E+00
91		0.35	0.000	0.019	0.1640	0.0000	0.0000	0.00E+00
92		0.01	0.000	0.016	0.1638	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.007	0.1635	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.007	0.1631	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.007	0.1627	0.0000	0.0000	0.00E+00
96		0.01	0.000	0.016	0.1624	0.0000	0.0000	0.00E+00
97		0.08	0.000	0.023	0.1655	0.0000	0.0000	0.00E+00
98		0.22	0.000	0.023	0.1765	0.0000	0.0000	0.00E+00
99		0.43	0.000	0.023	0.1993	0.0000	0.0000	0.00E+00
100		0.00	0.000	0.009	0.1988	0.0000	0.0000	0.00E+00
101		0.00	0.000	0.008	0.1984	0.0000	0.0000	0.00E+00
102		0.00	0.000	0.008	0.1979	0.0000	0.0000	0.00E+00
103		0.00	0.000	0.008	0.1975	0.0000	0.0000	0.00E+00
104		0.00	0.000	0.009	0.1970	0.0000	0.0000	0.00E+00
105	*	0.00	0.000	0.010	0.1965	0.0000	0.0000	0.00E+00
106		0.00	0.000	0.009	0.1960	0.0000	0.0000	0.00E+00
107		0.01	0.000	0.014	0.1955	0.0000	0.0000	0.00E+00
108		0.04	0.000	0.023	0.1964	0.0000	0.0000	0.00E+00
109		0.00	0.000	0.009	0.1959	0.0000	0.0000	0.00E+00
110		0.00	0.000	0.009	0.1954	0.0000	0.0000	0.00E+00
111		0.00	0.000	0.009	0.1949	0.0000	0.0000	0.00E+00
112		0.00	0.000	0.009	0.1944	0.0000	0.0000	0.00E+00
113		0.00	0.000	0.009	0.1939	0.0000	0.0000	0.00E+00
114		0.00	0.000	0.009	0.1934	0.0000	0.0000	0.00E+00
115		0.00	0.000	0.009	0.1929	0.0000	0.0000	0.00E+00
116		0.00	0.000	0.009	0.1924	0.0000	0.0000	0.00E+00
117		0.00	0.000	0.009	0.1919	0.0000	0.0000	0.00E+00
118		0.00	0.000	0.009	0.1914	0.0000	0.0000	0.00E+00
119		0.00	0.000	0.009	0.1909	0.0000	0.0000	0.00E+00
120		0.00	0.000	0.009	0.1904	0.0000	0.0000	0.00E+00

121	0.00	0.000	0.009	0.1899	0.0000	0.0000	0.00E+00
122	0.00	0.000	0.009	0.1894	0.0000	0.0000	0.00E+00
123	0.00	0.000	0.010	0.1889	0.0000	0.0000	0.00E+00
124	0.35	0.000	0.024	0.2070	0.0000	0.0000	0.00E+00
125	0.00	0.000	0.330	0.1887	0.0000	0.0000	0.00E+00
126	0.36	0.000	0.024	0.2075	0.0000	0.0000	0.00E+00
127	0.00	0.000	0.010	0.2069	0.0000	0.0000	0.00E+00
128	0.00	0.000	0.011	0.2063	0.0000	0.0000	0.00E+00
129	0.05	0.000	0.025	0.2079	0.0000	0.0000	0.00E+00
130	0.00	0.000	0.300	0.1912	0.0000	0.0000	0.00E+00
131	0.00	0.000	0.011	0.1906	0.0000	0.0000	0.00E+00
132	0.00	0.000	0.012	0.1899	0.0000	0.0000	0.00E+00
133	0.00	0.000	0.011	0.1893	0.0000	0.0000	0.00E+00
134	0.00	0.000	0.011	0.1887	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.010	0.1881	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.010	0.1876	0.0000	0.0000	0.00E+00
137	0.08	0.000	0.026	0.1904	0.0000	0.0000	0.00E+00
138	0.04	0.000	0.025	0.1910	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.010	0.1904	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.010	0.1899	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.011	0.1893	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.010	0.1887	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.010	0.1881	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.011	0.1875	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.010	0.1870	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.011	0.1864	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.011	0.1858	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.010	0.1852	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.012	0.1845	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.011	0.1839	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.011	0.1833	0.0000	0.0000	0.00E+00
152	0.19	0.000	0.026	0.1922	0.0000	0.0000	0.00E+00

153	0.05	0.000	0.026	0.1934	0.0000	0.0000	0.00E+00
154	0.06	0.000	0.027	0.1951	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.012	0.1945	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.012	0.1938	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.011	0.1932	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.010	0.1926	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.010	0.1921	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.011	0.1915	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.012	0.1908	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.012	0.1902	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.011	0.1895	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.011	0.1889	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.011	0.1883	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.014	0.1875	0.0000	0.0000	0.00E+00
167	0.00	0.000	0.012	0.1869	0.0000	0.0000	0.00E+00
168	0.00	0.000	0.012	0.1862	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.013	0.1855	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.012	0.1848	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.012	0.1841	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.014	0.1833	0.0000	0.0000	0.00E+00
173	0.24	0.000	0.032	0.1949	0.0000	0.0000	0.00E+00
174	0.01	0.000	0.021	0.1945	0.0000	0.0000	0.00E+00
175	0.02	0.000	0.027	0.1939	0.0000	0.0000	0.00E+00
176	0.01	0.000	0.024	0.1934	0.0000	0.0000	0.00E+00
177	0.02	0.000	0.024	0.1929	0.0000	0.0000	0.00E+00
178	0.32	0.000	0.029	0.2092	0.0000	0.0000	0.00E+00
179	0.35	0.000	0.393	0.2068	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.394	0.1849	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.205	0.1735	0.0000	0.0000	0.00E+00
182	0.59	0.000	0.102	0.2005	0.0000	0.0000	0.00E+00
183	0.16	0.000	0.163	0.2004	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.309	0.1833	0.0000	0.0000	0.00E+00

185	0.00	0.000	0.206	0.1718	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.088	0.1670	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.075	0.1628	0.0000	0.0000	0.00E+00
188	0.04	0.000	0.077	0.1606	0.0000	0.0000	0.00E+00
189	0.00	0.000	0.057	0.1574	0.0000	0.0000	0.00E+00
190	0.00	0.000	0.052	0.1545	0.0000	0.0000	0.00E+00
191	0.04	0.000	0.060	0.1535	0.0000	0.0000	0.00E+00
192	0.08	0.000	0.058	0.1545	0.0000	0.0000	0.00E+00
193	0.00	0.000	0.040	0.1523	0.0000	0.0000	0.00E+00
194	0.00	0.000	0.044	0.1498	0.0000	0.0000	0.00E+00
195	0.00	0.000	0.037	0.1477	0.0000	0.0000	0.00E+00
196	0.00	0.000	0.033	0.1459	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.032	0.1441	0.0000	0.0000	0.00E+00
198	0.00	0.000	0.033	0.1423	0.0000	0.0000	0.00E+00
199	0.00	0.000	0.032	0.1405	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.028	0.1389	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.029	0.1373	0.0000	0.0000	0.00E+00
202	0.00	0.000	0.029	0.1357	0.0000	0.0000	0.00E+00
203	0.30	0.000	0.046	0.1499	0.0000	0.0000	0.00E+00
204	0.00	0.000	0.029	0.1483	0.0000	0.0000	0.00E+00
205	0.01	0.000	0.038	0.1470	0.0000	0.0000	0.00E+00
206	0.00	0.000	0.026	0.1456	0.0000	0.0000	0.00E+00
207	0.02	0.000	0.040	0.1444	0.0000	0.0000	0.00E+00
208	0.25	0.000	0.043	0.1556	0.0000	0.0000	0.00E+00
209	0.00	0.000	0.028	0.1541	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.026	0.1526	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.028	0.1510	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.027	0.1498	0.0000	0.0000	0.00E+00
213	0.01	0.000	0.028	0.1486	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.025	0.1473	0.0000	0.0000	0.00E+00
215	0.35	0.000	0.040	0.1646	0.0000	0.0000	0.00E+00
216	0.10	0.000	0.042	0.1677	0.0000	0.0000	0.00E+00

217	0.00	0.000	0.029	0.1662	0.0000	0.0000	0.00E+00
218	0.00	0.000	0.030	0.1645	0.0000	0.0000	0.00E+00
219	0.00	0.000	0.030	0.1628	0.0000	0.0000	0.00E+00
220	0.01	0.000	0.032	0.1614	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.036	0.1594	0.0000	0.0000	0.00E+00
222	0.25	0.000	0.053	0.1703	0.0000	0.0000	0.00E+00
223	0.19	0.000	0.050	0.1779	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.036	0.1759	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.032	0.1741	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.025	0.1728	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.028	0.1712	0.0000	0.0000	0.00E+00
228	0.00	0.000	0.023	0.1699	0.0000	0.0000	0.00E+00
229	0.00	0.000	0.026	0.1684	0.0000	0.0000	0.00E+00
230	0.00	0.000	0.032	0.1667	0.0000	0.0000	0.00E+00
231	0.11	0.000	0.042	0.1702	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.025	0.1689	0.0000	0.0000	0.00E+00
233	0.00	0.000	0.026	0.1674	0.0000	0.0000	0.00E+00
234	0.00	0.000	0.025	0.1660	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.030	0.1644	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.025	0.1630	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.032	0.1612	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.032	0.1594	0.0000	0.0000	0.00E+00
239	0.00	0.000	0.030	0.1577	0.0000	0.0000	0.00E+00
240	0.00	0.000	0.022	0.1565	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.020	0.1554	0.0000	0.0000	0.00E+00
242	0.00	0.000	0.025	0.1542	0.0000	0.0000	0.00E+00
243	0.04	0.000	0.042	0.1540	0.0000	0.0000	0.00E+00
244	0.02	0.000	0.036	0.1531	0.0000	0.0000	0.00E+00
245	0.00	0.000	0.023	0.1518	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.021	0.1507	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.026	0.1492	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.020	0.1481	0.0000	0.0000	0.00E+00

249	0.00	0.000	0.025	0.1467	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.022	0.1455	0.0000	0.0000	0.00E+00
251	0.01	0.000	0.029	0.1443	0.0000	0.0000	0.00E+00
252	0.04	0.000	0.034	0.1444	0.0000	0.0000	0.00E+00
253	0.23	0.000	0.036	0.1549	0.0000	0.0000	0.00E+00
254	0.01	0.000	0.024	0.1542	0.0000	0.0000	0.00E+00
255	0.02	0.000	0.030	0.1537	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.018	0.1526	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.016	0.1517	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.014	0.1510	0.0000	0.0000	0.00E+00
259	0.00	0.000	0.015	0.1502	0.0000	0.0000	0.00E+00
260	0.02	0.000	0.025	0.1497	0.0000	0.0000	0.00E+00
261	0.00	0.000	0.013	0.1490	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.014	0.1482	0.0000	0.0000	0.00E+00
263	0.00	0.000	0.015	0.1474	0.0000	0.0000	0.00E+00
264	0.00	0.000	0.014	0.1466	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.013	0.1459	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.012	0.1452	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.013	0.1445	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.012	0.1439	0.0000	0.0000	0.00E+00
269	0.34	0.000	0.030	0.1612	0.0000	0.0000	0.00E+00
270	0.19	0.000	0.123	0.1649	0.0000	0.0000	0.00E+00
271	0.45	0.000	0.196	0.1792	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.120	0.1725	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.144	0.1645	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.093	0.1593	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.105	0.1535	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.070	0.1496	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.055	0.1466	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.045	0.1440	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.040	0.1418	0.0000	0.0000	0.00E+00
280	0.02	0.000	0.048	0.1402	0.0000	0.0000	0.00E+00

281	0.00	0.000	0.033	0.1383	0.0000	0.0000	0.00E+00
282	0.00	0.000	0.031	0.1366	0.0000	0.0000	0.00E+00
283	0.00	0.000	0.029	0.1350	0.0000	0.0000	0.00E+00
284	0.00	0.000	0.028	0.1335	0.0000	0.0000	0.00E+00
285	0.00	0.000	0.029	0.1319	0.0000	0.0000	0.00E+00
286	0.00	0.000	0.028	0.1303	0.0000	0.0000	0.00E+00
287	0.00	0.000	0.028	0.1289	0.0000	0.0000	0.00E+00
288	0.00	0.000	0.025	0.1275	0.0000	0.0000	0.00E+00
289	0.00	0.000	0.024	0.1261	0.0000	0.0000	0.00E+00
290	0.00	0.000	0.024	0.1248	0.0000	0.0000	0.00E+00
291	0.31	0.000	0.041	0.1399	0.0000	0.0000	0.00E+00
292	0.00	0.000	0.022	0.1387	0.0000	0.0000	0.00E+00
293	0.00	0.000	0.022	0.1374	0.0000	0.0000	0.00E+00
294	0.00	0.000	0.022	0.1362	0.0000	0.0000	0.00E+00
295	0.00	0.000	0.021	0.1351	0.0000	0.0000	0.00E+00
296	0.00	0.000	0.020	0.1340	0.0000	0.0000	0.00E+00
297	0.00	0.000	0.019	0.1329	0.0000	0.0000	0.00E+00
298	0.11	0.000	0.038	0.1368	0.0000	0.0000	0.00E+00
299	0.23	0.000	0.038	0.1474	0.0000	0.0000	0.00E+00
300	0.00	0.000	0.019	0.1463	0.0000	0.0000	0.00E+00
301	0.00	0.000	0.018	0.1453	0.0000	0.0000	0.00E+00
302	0.00	0.000	0.017	0.1443	0.0000	0.0000	0.00E+00
303	0.00	0.000	0.018	0.1433	0.0000	0.0000	0.00E+00
304	0.00	0.000	0.018	0.1423	0.0000	0.0000	0.00E+00
305	0.00	0.000	0.018	0.1414	0.0000	0.0000	0.00E+00
306	0.00	0.000	0.017	0.1404	0.0000	0.0000	0.00E+00
307	0.00	0.000	0.015	0.1396	0.0000	0.0000	0.00E+00
308	0.00	0.000	0.012	0.1389	0.0000	0.0000	0.00E+00
309	0.08	0.000	0.030	0.1419	0.0000	0.0000	0.00E+00
310	0.00	0.000	0.014	0.1412	0.0000	0.0000	0.00E+00
311	0.00	0.000	0.014	0.1404	0.0000	0.0000	0.00E+00
312	0.00	0.000	0.014	0.1396	0.0000	0.0000	0.00E+00

313	0.00	0.000	0.012	0.1390	0.0000	0.0000	0.00E+00
314	0.05	0.000	0.029	0.1404	0.0000	0.0000	0.00E+00
315	0.00	0.000	0.011	0.1397	0.0000	0.0000	0.00E+00
316	0.00	0.000	0.013	0.1390	0.0000	0.0000	0.00E+00
317	0.00	0.000	0.013	0.1383	0.0000	0.0000	0.00E+00
318	0.00	0.000	0.012	0.1376	0.0000	0.0000	0.00E+00
319	0.00	0.000	0.010	0.1370	0.0000	0.0000	0.00E+00
320	0.00	0.000	0.010	0.1365	0.0000	0.0000	0.00E+00
321	0.00	0.000	0.010	0.1359	0.0000	0.0000	0.00E+00
322	0.00	0.000	0.010	0.1354	0.0000	0.0000	0.00E+00
323	0.00	0.000	0.010	0.1349	0.0000	0.0000	0.00E+00
324	0.00	0.000	0.011	0.1343	0.0000	0.0000	0.00E+00
325	0.00	0.000	0.009	0.1338	0.0000	0.0000	0.00E+00
326	0.00	0.000	0.009	0.1333	0.0000	0.0000	0.00E+00
327	0.00	0.000	0.009	0.1328	0.0000	0.0000	0.00E+00
328	0.00	0.000	0.009	0.1322	0.0000	0.0000	0.00E+00
329	0.00	0.000	0.009	0.1317	0.0000	0.0000	0.00E+00
330	0.00	0.000	0.009	0.1312	0.0000	0.0000	0.00E+00
331	0.00	0.000	0.009	0.1307	0.0000	0.0000	0.00E+00
332	0.00	0.000	0.009	0.1302	0.0000	0.0000	0.00E+00
333	0.00	0.000	0.009	0.1298	0.0000	0.0000	0.00E+00
334	0.00	0.000	0.009	0.1293	0.0000	0.0000	0.00E+00
335	0.00	0.000	0.009	0.1288	0.0000	0.0000	0.00E+00
336	0.00	0.000	0.009	0.1283	0.0000	0.0000	0.00E+00
337	0.00	0.000	0.009	0.1278	0.0000	0.0000	0.00E+00
338	0.00	0.000	0.008	0.1274	0.0000	0.0000	0.00E+00
339	0.00	0.000	0.008	0.1269	0.0000	0.0000	0.00E+00
340	0.00	0.000	0.008	0.1264	0.0000	0.0000	0.00E+00
341	0.00	0.000	0.008	0.1260	0.0000	0.0000	0.00E+00
342	0.00	0.000	0.008	0.1255	0.0000	0.0000	0.00E+00
343	0.00	0.000	0.008	0.1251	0.0000	0.0000	0.00E+00
344	0.00	0.000	0.008	0.1246	0.0000	0.0000	0.00E+00

345		0.00	0.000	0.008	0.1242	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.008	0.1237	0.0000	0.0000	0.00E+00
347		0.00	0.000	0.008	0.1233	0.0000	0.0000	0.00E+00
348		0.11	0.000	0.025	0.1281	0.0000	0.0000	0.00E+00
349		0.32	0.000	0.027	0.1444	0.0000	0.0000	0.00E+00
350		0.00	0.000	0.009	0.1438	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.010	0.1433	0.0000	0.0000	0.00E+00
352		0.00	0.000	0.010	0.1427	0.0000	0.0000	0.00E+00
353		0.00	0.000	0.008	0.1423	0.0000	0.0000	0.00E+00
354		0.00	0.000	0.008	0.1419	0.0000	0.0000	0.00E+00
355	*	0.00	0.000	0.008	0.1415	0.0000	0.0000	0.00E+00
356		0.00	0.000	0.007	0.1411	0.0000	0.0000	0.00E+00
357	*	0.00	0.000	0.000	0.1411	0.0000	0.0000	0.00E+00
358		0.00	0.000	0.007	0.1406	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.007	0.1402	0.0000	0.0000	0.00E+00
360		0.00	0.000	0.007	0.1398	0.0000	0.0000	0.00E+00
361		0.00	0.000	0.007	0.1394	0.0000	0.0000	0.00E+00
362		0.00	0.000	0.007	0.1390	0.0000	0.0000	0.00E+00
363		0.00	0.000	0.007	0.1386	0.0000	0.0000	0.00E+00
364		0.00	0.000	0.007	0.1382	0.0000	0.0000	0.00E+00
365		0.00	0.000	0.007	0.1378	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 10			
	inches	cubic feet	percent
Precipitation	9.44	34,271.5	100.00
Runoff	0.000	0.0000	0.00
Evapotranspiration	9.914	35,988.4	105.01
Drainage Collected from Layer 8	0.0000	0.0000	0.00
Percolation/Leakage through Layer 10	0.000000	0.0000	0.00

Average Head on Top of Layer 9	0.0000	---	---
Change in Water Storage	-0.4730	-1,716.9	-5.01
Soil Water at Start of Year	269.3786	977,844.3	2853.23
Soil Water at End of Year	268.9056	976,127.4	2848.22
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Average Annual Totals Summary

Title: WST Landfill
Simulated on: 3/23/2026 12:13

	Average Annual Totals for Years 1 - 10*			
	(inches)	[std dev]	(cubic feet)	(percent)
Precipitation	10.68	[2.39]	38,767.2	100.00
Runoff	0.057	[0.081]	207.7	0.54
Evapotranspiration	10.727	[1.927]	38,938.1	100.44
Subprofile1				
Lateral drainage collected from Layer 8	0.0000	[0]	0.0000	0.00
Percolation/leakage through Layer 10	0.000000	[0]	0.0000	0.00
Average Head on Top of Layer 9	0.0000	[0]	---	---
Water storage				
Change in water storage	-0.1043	[0.6592]	-378.7	-0.98

* Note: Average inches are converted to volume based on the user-specified area.

Peak Values Summary

Title: WST Landfill
Simulated on: 3/23/2026 12:14

	Peak Values for Years 1 - 10*		
	(inches)		(cubic feet)
Precipitation	2.03		7,359.5
Runoff	0.194		704.3
Subprofile1			
Drainage collected from Layer 8	0.0000		0.0000
Percolation/leakage through Layer 10	0.000000		0.0000
Average head on Layer 9	0.0000		---
Maximum head on Layer 9	0.0000		---
Location of maximum head in Layer 8	0.00	(feet from drain)	
Other Parameters			
Snow water	0.2660		965.7
Maximum vegetation soil water	0.3293	(vol/vol)	
Minimum vegetation soil water	0.1157	(vol/vol)	

Final Water Storage in Landfill Profile at End of Simulation Period

Title: WST Landfill
Simulated on: 3/23/2026 12:14
Simulation period: 10 years

	Final Water Storage	
Layer	(inches)	(vol/vol)
1	2.0188	0.1682
2	188.1478	0.2800
3	1.6725	0.2788
4	33.8216	0.2818
5	1.6912	0.2819
6	34.5488	0.2879
7	6.8160	0.2840
8	0.0014	0.0100
9	0.0000	0.0000
10	0.1875	0.7500
Snow water	0.0000	---

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Attachment III-4-B2-5

HELP Results, Closed (152 feet of Waste)

DBS&A
a Geo-Logic Company

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HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE
HELP MODEL VERSION 4.0 BETA (2018)
DEVELOPED BY USEPA NATIONAL RISK MANAGEMENT RESEARCH LABORATORY

Title: WST Landfill **Simulated On:** 3/13/2026 15:53

Layer 1

Type 1 - Vertical Percolation Layer (Cover Soil)
SiL - Silty Loam
Material Texture Number 9

Thickness	=	6	inches
Porosity	=	0.501	vol/vol
Field Capacity	=	0.284	vol/vol
Wilting Point	=	0.135	vol/vol
Initial Soil Water Content	=	0.284	vol/vol
Effective Sat. Hyd. Conductivity	=	1.90E-04	cm/sec

Layer 2

Type 2 - Lateral Drainage Layer
Drainage Net (0.5 cm)
Material Texture Number 20

Thickness	=	0.2	inches
Porosity	=	0.85	vol/vol
Field Capacity	=	0.01	vol/vol
Wilting Point	=	0.005	vol/vol
Initial Soil Water Content	=	0.01	vol/vol
Effective Sat. Hyd. Conductivity	=	1.00E+01	cm/sec
Slope	=	2.8	%
Drainage Length	=	422	ft

Layer 3

Type 4 - Flexible Membrane Liner
LDPE Membrane
Material Texture Number 36

Thickness	=	0.04	inches
Effective Sat. Hyd. Conductivity	=	4.00E-13	cm/sec
FML Pinhole Density	=	2	Holes/Acre
FML Installation Defects	=	3	Holes/Acre
FML Placement Quality	=	3	Good

Layer 4

Type 3 - Barrier Soil Liner

Barrier Soil Liner
Material Texture Number 48

Thickness	=	18	inches
Porosity	=	0.451	vol/vol
Field Capacity	=	0.411	vol/vol
Wilting Point	=	0.311	vol/vol
Initial Soil Water Content	=	0.451	vol/vol
Effective Sat. Hyd. Conductivity	=	1.00E-05	cm/sec

Layer 5

Type 1 - Vertical Percolation Layer
SiL - Silty Loam
Material Texture Number 9

Thickness	=	12	inches
Porosity	=	0.501	vol/vol
Field Capacity	=	0.284	vol/vol
Wilting Point	=	0.135	vol/vol
Initial Soil Water Content	=	0.284	vol/vol
Effective Sat. Hyd. Conductivity	=	1.90E-04	cm/sec

Layer 6

Type 1 - Vertical Percolation Layer (Waste)
Municipal Solid Waste (MSW) (900 pcy)
Material Texture Number 18

Thickness	=	912	inches
Porosity	=	0.671	vol/vol
Field Capacity	=	0.292	vol/vol
Wilting Point	=	0.077	vol/vol
Initial Soil Water Content	=	0.28	vol/vol
Effective Sat. Hyd. Conductivity	=	1.00E-03	cm/sec

Layer 7

Type 1 - Vertical Percolation Layer
SiL - Silty Loam
Material Texture Number 9

Thickness	=	12	inches
Porosity	=	0.501	vol/vol
Field Capacity	=	0.284	vol/vol
Wilting Point	=	0.135	vol/vol
Initial Soil Water Content	=	0.284	vol/vol
Effective Sat. Hyd. Conductivity	=	1.90E-04	cm/sec

Layer 8

Type 1 - Vertical Percolation Layer (Waste)

Municipal Solid Waste (MSW) (900 pcy)
Material Texture Number 18

Thickness	=	672	inches
Porosity	=	0.671	vol/vol
Field Capacity	=	0.292	vol/vol
Wilting Point	=	0.077	vol/vol
Initial Soil Water Content	=	0.28	vol/vol
Effective Sat. Hyd. Conductivity	=	1.00E-03	cm/sec

Layer 9

Type 1 - Vertical Percolation Layer
SiL - Silty Loam
Material Texture Number 9

Thickness	=	6	inches
Porosity	=	0.501	vol/vol
Field Capacity	=	0.284	vol/vol
Wilting Point	=	0.135	vol/vol
Initial Soil Water Content	=	0.284	vol/vol
Effective Sat. Hyd. Conductivity	=	1.90E-04	cm/sec

Layer 10

Type 1 - Vertical Percolation Layer (Waste)
Municipal Solid Waste (MSW) (900 pcy)
Material Texture Number 18

Thickness	=	120	inches
Porosity	=	0.671	vol/vol
Field Capacity	=	0.292	vol/vol
Wilting Point	=	0.077	vol/vol
Initial Soil Water Content	=	0.2818	vol/vol
Effective Sat. Hyd. Conductivity	=	1.00E-03	cm/sec

Layer 11

Type 1 - Vertical Percolation Layer
SiL - Silty Loam
Material Texture Number 9

Thickness	=	6	inches
Porosity	=	0.501	vol/vol
Field Capacity	=	0.284	vol/vol
Wilting Point	=	0.135	vol/vol
Initial Soil Water Content	=	0.284	vol/vol
Effective Sat. Hyd. Conductivity	=	1.90E-04	cm/sec

Layer 12

Type 1 - Vertical Percolation Layer (Waste)

Municipal Solid Waste (MSW) (900 pcy)
Material Texture Number 18

Thickness	=	120	inches
Porosity	=	0.671	vol/vol
Field Capacity	=	0.292	vol/vol
Wilting Point	=	0.077	vol/vol
Initial Soil Water Content	=	0.2879	vol/vol
Effective Sat. Hyd. Conductivity	=	1.00E-03	cm/sec

Layer 13

Type 1 - Vertical Percolation Layer
SiL - Silty Loam
Material Texture Number 9

Thickness	=	24	inches
Porosity	=	0.501	vol/vol
Field Capacity	=	0.284	vol/vol
Wilting Point	=	0.135	vol/vol
Initial Soil Water Content	=	0.284	vol/vol
Effective Sat. Hyd. Conductivity	=	1.90E-04	cm/sec

Layer 14

Type 2 - Lateral Drainage Layer
Drainage Net
Material Texture Number 123

Thickness	=	0.135	inches
Porosity	=	0.85	vol/vol
Field Capacity	=	0.01	vol/vol
Wilting Point	=	0.005	vol/vol
Initial Soil Water Content	=	0.01	vol/vol
Effective Sat. Hyd. Conductivity	=	1.82E+00	cm/sec
Slope	=	2.8	%
Drainage Length	=	550	ft

Layer 15

Type 4 - Flexible Membrane Liner
HDPE Membrane
Material Texture Number 35

Thickness	=	0.06	inches
Effective Sat. Hyd. Conductivity	=	2.00E-13	cm/sec
FML Pinhole Density	=	2	Holes/Acre
FML Installation Defects	=	3	Holes/Acre
FML Placement Quality	=	3	Good

Layer 16

Type 3 - Barrier Soil Liner
Bentonite (High)
Material Texture Number 17

Thickness	=	0.25	inches
Porosity	=	0.75	vol/vol
Field Capacity	=	0.747	vol/vol
Wilting Point	=	0.4	vol/vol
Initial Soil Water Content	=	0.75	vol/vol
Effective Sat. Hyd. Conductivity	=	3.00E-09	cm/sec

Note: Initial moisture content of the layers and snow water were specified by the user.

General Design and Evaporative Zone Data

SCS Runoff Curve Number	=	85	
Fraction of Area Allowing Runoff	=	100	%
Area projected on a horizontal plane	=	1	acres
Evaporative Zone Depth	=	6	inches
Initial Water in Evaporative Zone	=	1.704	inches
Upper Limit of Evaporative Storage	=	3.006	inches
Lower Limit of Evaporative Storage	=	0.81	inches
Initial Snow Water	=	0	inches
Initial Water in Layer Materials	=	538.937	inches
Total Initial Water	=	538.937	inches
Total Subsurface Inflow	=	0	inches/year

Note: SCS Runoff Curve Number was User-Specified.

Evapotranspiration and Weather Data

Station Latitude	=	31.43	Degrees
Maximum Leaf Area Index	=	1.2	
Start of Growing Season (Julian Date)	=	88	days
End of Growing Season (Julian Date)	=	314	days
Average Wind Speed	=	8.22	mph
Average 1st Quarter Relative Humidity	=	42	%
Average 2nd Quarter Relative Humidity	=	35	%
Average 3rd Quarter Relative Humidity	=	41	%
Average 4th Quarter Relative Humidity	=	46	%

Note: Evapotranspiration data was obtained for Reeves County, Texas

Normal Mean Monthly Precipitation (inches)

Jan/Jul	Feb/Aug	Mar/Sep	Apr/Oct	May/Nov	Jun/Dec
0.480294	0.37877	0.41867	0.499307	1.107455	0.847711
1.962765	1.766718	1.510229	0.881425	0.376923	0.558686

Note: Precipitation was simulated based on HELP V4 weather simulation for:
Lat/Long: 31.43/-103.59

Normal Mean Monthly Temperature (Degrees Fahrenheit)

Jan/Jul	Feb/Aug	Mar/Sep	Apr/Oct	May/Nov	Jun/Dec
57.5	59.3	67.6	74	85.5	94.1
94.5	92.5	85.8	75.7	67.9	63.4

Note: Temperature was simulated based on HELP V4 weather simulation for:
Lat/Long: 31.43/-103.59
Solar radiation was simulated based on HELP V4 weather simulation for:
Lat/Long: 31.43/-103.59

Daily Output for Year 1

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Column key: Head #1: drainage from Layer 3; Drain #1: drainage from Layer 2; Leak #1: leakage thru Layer 4; Head #2: drainage from Layer 15; Drain #2: drainage from Layer 14; Leak #2: leakage thru Layer 16

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.00	0.000	0.012	0.2821	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.012	0.2801	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.011	0.2782	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.011	0.2763	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.011	0.2744	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.011	0.2726	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.011	0.2707	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.011	0.2688	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.011	0.2670	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.011	0.2652	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.011	0.2634	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
12	*		0.00	0.000	0.011	0.2616	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
13	*		0.00	0.000	0.000	0.2616	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
14	*		0.00	0.000	0.003	0.2616	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
15	*		0.00	0.000	0.000	0.2616	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
16	*		0.00	0.000	0.000	0.2616	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.011	0.2598	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.011	0.2580	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.011	0.2562	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
20	*		0.02	0.000	0.019	0.2562	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
21			0.23	0.000	0.013	0.2923	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.011	0.2905	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.010	0.2885	0.0004	0.0013	6.33E-08	0.0000	0.0000	0.00E+00
24	*		0.00	0.000	0.010	0.2868	0.0001	0.0003	2.76E-08	0.0000	0.0000	0.00E+00
25			0.00	0.000	0.010	0.2821	0.0032	0.0119	4.15E-07	0.0000	0.0000	0.00E+00
26			0.00	0.000	0.010	0.2774	0.0057	0.0215	7.12E-07	0.0000	0.0000	0.00E+00
27			0.00	0.000	0.010	0.2757	0.0005	0.0020	8.92E-08	0.0000	0.0000	0.00E+00
28			0.00	0.000	0.010	0.2740	0.0000	0.0000	8.86E-09	0.0000	0.0000	0.00E+00

29		0.00	0.000	0.010	0.2723	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.010	0.2706	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.010	0.2690	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.010	0.2673	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
33		0.00	0.000	0.010	0.2656	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.010	0.2640	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
35		0.00	0.000	0.010	0.2623	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
36		0.00	0.000	0.010	0.2607	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
37		0.01	0.000	0.011	0.2611	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.010	0.2591	0.0004	0.0013	5.52E-08	0.0000	0.0000	0.00E+00
39	*	0.00	0.000	0.010	0.2565	0.0015	0.0056	2.21E-07	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.010	0.2537	0.0019	0.0071	2.73E-07	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.010	0.2511	0.0016	0.0060	2.34E-07	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.010	0.2488	0.0012	0.0045	1.84E-07	0.0000	0.0000	0.00E+00
43		0.22	0.000	0.011	0.2844	0.0002	0.0009	4.92E-08	0.0000	0.0000	0.00E+00
44		0.00	0.000	0.009	0.2829	0.0000	0.0000	7.48E-09	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.009	0.2813	0.0001	0.0003	1.97E-08	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.009	0.2796	0.0002	0.0006	3.77E-08	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.009	0.2774	0.0011	0.0040	1.64E-07	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.009	0.2758	0.0000	0.0000	1.62E-08	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.009	0.2743	0.0000	0.0000	2.52E-09	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.009	0.2727	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.009	0.2712	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
52	*	0.00	0.000	0.009	0.2697	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
53	*	0.00	0.000	0.000	0.2697	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.009	0.2682	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.009	0.2667	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
56	*	0.00	0.000	0.009	0.2651	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
57	*	0.00	0.000	0.009	0.2636	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
58	*	0.00	0.000	0.000	0.2636	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
59	*	0.00	0.000	0.000	0.2636	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60	*	0.00	0.000	0.000	0.2636	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
61	*	0.00	0.000	0.009	0.2622	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
62	*	0.00	0.000	0.000	0.2622	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.009	0.2607	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.009	0.2592	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

65	0.00	0.000	0.009	0.2577	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
66	0.00	0.000	0.009	0.2562	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
67	0.00	0.000	0.009	0.2548	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
68	0.00	0.000	0.009	0.2533	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
69	0.00	0.000	0.009	0.2519	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
70	0.00	0.000	0.009	0.2504	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
71	0.00	0.000	0.009	0.2490	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
72	0.00	0.000	0.009	0.2475	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
73	0.00	0.000	0.009	0.2461	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
74	0.00	0.000	0.009	0.2447	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
75	0.00	0.000	0.009	0.2433	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
76	0.00	0.000	0.008	0.2419	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
77	0.00	0.000	0.008	0.2404	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
78	0.00	0.000	0.008	0.2390	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
79	0.00	0.000	0.008	0.2376	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
80	0.00	0.000	0.008	0.2362	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
81	0.00	0.000	0.008	0.2348	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
82	0.00	0.000	0.008	0.2335	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
83	0.00	0.000	0.008	0.2321	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
84	0.00	0.000	0.008	0.2307	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
85	0.00	0.000	0.008	0.2293	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
86	0.00	0.000	0.009	0.2284	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
87	0.00	0.000	0.008	0.2271	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
88	0.00	0.000	0.009	0.2260	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
89	0.14	0.000	0.009	0.2470	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
90	0.09	0.000	0.009	0.2606	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
91	0.00	0.000	0.008	0.2592	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
92	0.00	0.000	0.008	0.2578	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
93	0.00	0.000	0.008	0.2564	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
94	0.00	0.000	0.008	0.2550	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
95	0.00	0.000	0.008	0.2531	0.0006	0.0024	1.04E-07	0.0000	0.0000	0.00E+00
96	0.00	0.000	0.008	0.2517	0.0003	0.0011	5.86E-08	0.0000	0.0000	0.00E+00
97	0.00	0.000	0.008	0.2503	0.0000	0.0000	9.02E-09	0.0000	0.0000	0.00E+00
98	0.00	0.000	0.008	0.2489	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99	0.00	0.000	0.008	0.2475	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100	0.00	0.000	0.008	0.2455	0.0008	0.0030	1.33E-07	0.0000	0.0000	0.00E+00

101		0.00	0.000	0.009	0.2434	0.0010	0.0038	1.62E-07	0.0000	0.0000	0.00E+00
102		0.00	0.000	0.009	0.2414	0.0010	0.0039	1.64E-07	0.0000	0.0000	0.00E+00
103		0.00	0.000	0.009	0.2393	0.0009	0.0036	1.52E-07	0.0000	0.0000	0.00E+00
104		0.00	0.000	0.009	0.2373	0.0008	0.0031	1.37E-07	0.0000	0.0000	0.00E+00
105		0.00	0.000	0.009	0.2355	0.0007	0.0027	1.21E-07	0.0000	0.0000	0.00E+00
106		0.00	0.000	0.008	0.2337	0.0006	0.0022	1.03E-07	0.0000	0.0000	0.00E+00
107		0.00	0.000	0.008	0.2320	0.0005	0.0018	8.91E-08	0.0000	0.0000	0.00E+00
108		0.00	0.000	0.009	0.2303	0.0004	0.0015	7.75E-08	0.0000	0.0000	0.00E+00
109		0.03	0.000	0.010	0.2328	0.0002	0.0009	5.25E-08	0.0000	0.0000	0.00E+00
110		0.10	0.000	0.010	0.2468	0.0004	0.0013	6.88E-08	0.0000	0.0000	0.00E+00
111		0.00	0.000	0.009	0.2453	0.0000	0.0000	1.58E-08	0.0000	0.0000	0.00E+00
112	*	0.00	0.000	0.009	0.2439	0.0000	0.0000	2.16E-09	0.0000	0.0000	0.00E+00
113		0.00	0.000	0.009	0.2422	0.0001	0.0005	2.75E-08	0.0000	0.0000	0.00E+00
114		0.00	0.000	0.009	0.2404	0.0005	0.0019	9.32E-08	0.0000	0.0000	0.00E+00
115		0.00	0.000	0.009	0.2389	0.0001	0.0003	2.87E-08	0.0000	0.0000	0.00E+00
116		0.00	0.000	0.010	0.2372	0.0000	0.0000	6.02E-09	0.0000	0.0000	0.00E+00
117		0.00	0.000	0.010	0.2356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
118		0.00	0.000	0.010	0.2339	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
119		0.00	0.000	0.012	0.2319	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
120		0.00	0.000	0.011	0.2300	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
121		0.00	0.000	0.011	0.2282	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
122		0.14	0.000	0.010	0.2502	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
123		0.00	0.000	0.011	0.2484	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
124		0.00	0.000	0.011	0.2466	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
125		0.00	0.000	0.011	0.2447	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
126		0.00	0.000	0.012	0.2428	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
127		0.00	0.000	0.012	0.2408	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
128		0.68	0.000	0.013	0.3365	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
129		0.02	0.000	0.012	0.3146	0.0546	0.2051	5.30E-06	0.0000	0.0000	0.00E+00
130		0.00	0.000	0.010	0.3039	0.0162	0.0610	1.79E-06	0.0000	0.0000	0.00E+00
131		0.00	0.000	0.010	0.2926	0.0160	0.0601	1.78E-06	0.0000	0.0000	0.00E+00
132		1.19	0.063	0.010	0.3913	0.3096	0.3718	2.38E-05	0.0000	0.0000	0.00E+00
133		0.00	0.000	0.258	0.2740	0.9446	0.5964	6.78E-05	0.0000	0.0000	0.00E+00
134		0.00	0.000	0.219	0.2337	0.0085	0.0320	9.93E-07	0.0000	0.0000	0.00E+00
135		0.00	0.000	0.295	0.1829	0.0047	0.0178	5.82E-07	0.0000	0.0000	0.00E+00
136		0.00	0.000	0.184	0.1522	0.0000	0.0000	1.54E-08	0.0000	0.0000	0.00E+00

137	0.00	0.000	0.087	0.1377	0.0000	0.0000	1.97E-09	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.016	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
149	0.02	0.000	0.004	0.1373	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.003	0.1368	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.006	0.1359	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.004	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
153	0.00	0.000	0.001	0.1350	0.0000	0.0000	2.27E-09	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.000	0.1350	0.0000	0.0000	2.13E-09	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
167	0.07	0.000	0.003	0.1461	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
168	0.19	0.000	0.010	0.1760	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
169	0.10	0.000	0.015	0.1898	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
170	0.02	0.000	0.019	0.1895	0.0000	0.0000	5.41E-09	0.0000	0.0000	0.00E+00
171	0.14	0.000	0.022	0.2084	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.023	0.2054	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

173	0.00	0.000	0.020	0.2021	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
174	0.00	0.000	0.021	0.1986	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.022	0.1950	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.019	0.1918	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.020	0.1885	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.021	0.1850	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.024	0.1811	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.022	0.1774	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.022	0.1737	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.021	0.1702	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
183	0.00	0.000	0.023	0.1663	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.021	0.1628	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
185	0.00	0.000	0.021	0.1593	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.021	0.1558	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.019	0.1526	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.019	0.1494	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
189	0.00	0.000	0.023	0.1456	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
190	0.00	0.000	0.023	0.1418	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.021	0.1383	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
192	0.11	0.000	0.024	0.1525	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
193	0.08	0.000	0.019	0.1623	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
194	0.19	0.000	0.016	0.1907	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
195	0.00	0.000	0.017	0.1879	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
196	0.46	0.000	0.021	0.2613	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.023	0.2575	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
198	0.01	0.000	0.027	0.2554	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
199	0.12	0.000	0.021	0.2716	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
200	0.03	0.000	0.021	0.2738	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.028	0.2691	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
202	0.04	0.000	0.028	0.2705	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.027	0.2660	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
204	0.04	0.000	0.028	0.2678	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
205	0.00	0.000	0.023	0.2639	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
206	0.00	0.000	0.032	0.2586	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
207	0.00	0.000	0.030	0.2536	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
208	0.00	0.000	0.027	0.2491	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

209	0.00	0.000	0.026	0.2446	0.0001	0.0004	3.30E-08	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.030	0.2395	0.0001	0.0005	3.59E-08	0.0000	0.0000	0.00E+00
211	0.09	0.000	0.031	0.2491	0.0001	0.0004	3.32E-08	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.029	0.2442	0.0001	0.0005	3.53E-08	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.024	0.2401	0.0002	0.0007	4.66E-08	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.028	0.2354	0.0000	0.0001	1.85E-08	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.031	0.2303	0.0000	0.0000	3.93E-09	0.0000	0.0000	0.00E+00
216	0.00	0.000	0.022	0.2267	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
217	0.24	0.000	0.023	0.2634	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
218	0.00	0.000	0.357	0.2039	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
219	0.00	0.000	0.031	0.1987	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.027	0.1942	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.029	0.1893	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.030	0.1844	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
223	0.16	0.000	0.024	0.2068	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.027	0.2023	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.025	0.1982	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.031	0.1930	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.030	0.1880	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
228	0.00	0.000	0.028	0.1833	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
229	0.09	0.000	0.027	0.1944	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
230	0.02	0.000	0.026	0.1928	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.00	0.000	0.026	0.1885	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.028	0.1838	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
233	0.00	0.000	0.027	0.1792	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
234	0.06	0.000	0.040	0.1820	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.032	0.1766	0.0001	0.0002	1.35E-08	0.0000	0.0000	0.00E+00
236	0.20	0.000	0.038	0.2031	0.0000	0.0000	1.50E-08	0.0000	0.0000	0.00E+00
237	0.04	0.000	0.024	0.2051	0.0000	0.0000	1.61E-09	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.373	0.1404	0.0033	0.0124	3.87E-07	0.0000	0.0000	0.00E+00
239	0.00	0.000	0.017	0.1377	0.0007	0.0025	1.06E-07	0.0000	0.0000	0.00E+00
240	0.00	0.000	0.012	0.1356	0.0000	0.0000	9.07E-09	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.002	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
242	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

245	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
249	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
252	0.09	0.000	0.009	0.1489	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
253	0.13	0.000	0.011	0.1692	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.09	0.000	0.012	0.1828	0.0000	0.0000	1.99E-09	0.0000	0.0000	0.00E+00
255	0.02	0.000	0.014	0.1844	0.0000	0.0000	1.99E-09	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.011	0.1825	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.010	0.1808	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
258	0.01	0.000	0.012	0.1807	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
259	0.23	0.000	0.012	0.2170	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
260	0.03	0.000	0.012	0.2197	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
261	0.09	0.000	0.013	0.2324	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.010	0.2308	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
263	0.00	0.000	0.010	0.2292	0.0000	0.0000	1.17E-08	0.0000	0.0000	0.00E+00
264	0.00	0.000	0.009	0.2277	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.009	0.2262	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.009	0.2246	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.009	0.2231	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
268	0.04	0.000	0.012	0.2284	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.009	0.2269	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.009	0.2254	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
271	0.00	0.000	0.009	0.2239	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.009	0.2225	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.009	0.2210	0.0000	0.0000	1.32E-08	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.009	0.2196	0.0000	0.0000	4.30E-09	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.008	0.2182	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.008	0.2168	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.008	0.2154	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.008	0.2140	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.008	0.2127	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.008	0.2113	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

281	*	0.10	0.000	0.065	0.2146	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282	*	0.10	0.000	0.054	0.2179	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
283		0.52	0.000	0.022	0.3082	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
284		0.00	0.000	0.093	0.2927	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
285		0.00	0.000	0.104	0.2755	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
286		0.00	0.000	0.083	0.2570	0.0060	0.0225	7.38E-07	0.0000	0.0000	0.00E+00
287		0.00	0.000	0.139	0.2284	0.0093	0.0351	1.10E-06	0.0000	0.0000	0.00E+00
288		0.07	0.000	0.137	0.2169	0.0022	0.0084	2.95E-07	0.0000	0.0000	0.00E+00
289		0.49	0.000	0.204	0.2648	0.0000	0.0000	1.29E-08	0.0000	0.0000	0.00E+00
290		0.00	0.000	0.215	0.2290	0.0000	0.0000	4.34E-19	0.0000	0.0000	0.00E+00
291		0.00	0.000	0.249	0.1874	0.0002	0.0007	3.99E-08	0.0000	0.0000	0.00E+00
292		0.00	0.000	0.201	0.1540	0.0000	0.0000	9.13E-09	0.0000	0.0000	0.00E+00
293		0.39	0.000	0.086	0.2042	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
294		0.00	0.000	0.064	0.1936	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
295		0.00	0.000	0.054	0.1846	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
296		0.00	0.000	0.047	0.1767	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
297		0.00	0.000	0.043	0.1696	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
298	*	0.00	0.000	0.039	0.1630	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
299		0.00	0.000	0.037	0.1569	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
300		0.00	0.000	0.034	0.1511	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
301		0.00	0.000	0.033	0.1457	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
302		0.00	0.000	0.031	0.1405	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
303		0.00	0.000	0.025	0.1363	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
304		0.00	0.000	0.007	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
305		0.02	0.000	0.006	0.1379	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
306		0.23	0.000	0.014	0.1739	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
307		0.00	0.000	0.017	0.1710	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
308		0.00	0.000	0.017	0.1682	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
309		0.00	0.000	0.016	0.1655	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
310		0.00	0.000	0.016	0.1628	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
311		0.00	0.000	0.016	0.1602	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
312		0.00	0.000	0.016	0.1575	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
313		0.00	0.000	0.016	0.1548	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
314		0.02	0.000	0.019	0.1542	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
315		0.00	0.000	0.016	0.1515	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
316		0.00	0.000	0.018	0.1486	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

317	0.00	0.000	0.017	0.1458	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318	0.00	0.000	0.016	0.1431	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319	0.00	0.000	0.017	0.1404	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320	0.00	0.000	0.017	0.1375	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
321	0.00	0.000	0.013	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
322	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
323	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
325	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
326	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
327	0.20	0.000	0.009	0.1663	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328	0.00	0.000	0.007	0.1651	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
329	0.00	0.000	0.011	0.1633	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330	0.00	0.000	0.012	0.1615	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331	0.00	0.000	0.011	0.1597	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
332	0.00	0.000	0.011	0.1580	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333	0.00	0.000	0.010	0.1562	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
334	0.00	0.000	0.010	0.1545	0.0000	0.0000	5.51E-17	0.0000	0.0000	0.00E+00
335	0.00	0.000	0.013	0.1524	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
336	0.00	0.000	0.012	0.1503	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
337	0.00	0.000	0.012	0.1483	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
338	0.00	0.000	0.012	0.1463	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
339	0.00	0.000	0.012	0.1443	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
340	0.00	0.000	0.012	0.1423	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
341	0.00	0.000	0.012	0.1404	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
342	0.00	0.000	0.012	0.1384	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
343	0.00	0.000	0.013	0.1363	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
344	0.00	0.000	0.007	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
346	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
347	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
348	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
349	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
350	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
351	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
352	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

353		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
354		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
355		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
356		0.03	0.000	0.003	0.1400	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
357		0.00	0.000	0.006	0.1394	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
358	*	0.00	0.000	0.005	0.1386	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.007	0.1375	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
360		0.00	0.000	0.004	0.1369	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
361		0.06	0.000	0.005	0.1466	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
362		0.02	0.000	0.008	0.1480	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
363		0.00	0.000	0.005	0.1471	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
364		0.00	0.000	0.005	0.1462	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
365		0.00	0.000	0.007	0.1450	0.0000	0.0000	4.99E-09	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 1			
	inches	cubic feet	percent
Precipitation	8.37	30,382.5	100.00
Runoff	0.063	228.8	0.75
Evapotranspiration	7.610	27,624.5	90.92
Drainage Collected from Layer 2	1.5305	5,555.8	18.29
Percolation/Leakage through Layer 4	0.000109	0.3967	0.00
Average Head on Top of Layer 3	0.0038	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	-0.8338	-3,026.6	-9.96
Soil Water at Start of Year	538.9368	1,956,340.8	6439.04
Soil Water at End of Year	538.1031	1,953,314.2	6429.08
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 2

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Column key: Head #1: drainage from Layer 3; Drain #1: drainage from Layer 2; Leak #1: leakage thru Layer 4; Head #2: drainage from Layer 15; Drain #2: drainage from Layer 14; Leak #2: leakage thru Layer 16

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.00	0.000	0.008	0.1438	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.008	0.1425	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.008	0.1412	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.008	0.1399	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.008	0.1386	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.008	0.1374	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.008	0.1361	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
8	*		0.00	0.000	0.000	0.1361	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.005	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
11	*		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
12			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
13	*		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
14	*		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
16			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
21			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
24			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
25			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
26			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
27			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
28			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

29		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
32		0.02	0.000	0.003	0.1374	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
33		0.00	0.000	0.001	0.1372	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.002	0.1368	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
35		0.04	0.000	0.004	0.1433	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
36	*	0.11	0.000	0.067	0.1466	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.032	0.1459	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.004	0.1452	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.005	0.1443	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.006	0.1433	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
41		0.08	0.000	0.008	0.1545	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.006	0.1535	0.0000	0.0000	3.88E-09	0.0000	0.0000	0.00E+00
43		0.00	0.000	0.007	0.1524	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
44		0.00	0.000	0.006	0.1514	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.006	0.1503	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.006	0.1493	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.006	0.1482	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.006	0.1472	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.006	0.1462	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.006	0.1451	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.006	0.1441	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
52		0.00	0.000	0.006	0.1431	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
53		0.00	0.000	0.006	0.1421	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.006	0.1411	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.006	0.1401	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
56		0.00	0.000	0.006	0.1391	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
57		0.00	0.000	0.006	0.1381	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.005	0.1373	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.007	0.1360	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60		0.00	0.000	0.005	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
61		0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
63		0.02	0.000	0.003	0.1371	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
64		0.10	0.000	0.006	0.1534	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

65		0.00	0.000	0.004	0.1528	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.006	0.1518	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
67	*	0.00	0.000	0.006	0.1509	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.006	0.1499	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.006	0.1490	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.006	0.1480	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.006	0.1471	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.006	0.1461	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.006	0.1452	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.006	0.1442	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.006	0.1433	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.006	0.1424	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.006	0.1415	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.006	0.1405	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
79		0.00	0.000	0.006	0.1396	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
80		0.00	0.000	0.006	0.1387	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
81		0.00	0.000	0.005	0.1378	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
82		0.00	0.000	0.005	0.1369	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
83	*	0.00	0.000	0.007	0.1358	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
84		0.00	0.000	0.004	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
85		0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
89		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
90		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
91		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
92		0.33	0.000	0.005	0.1898	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.006	0.1887	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.007	0.1876	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.007	0.1865	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
96		0.00	0.000	0.007	0.1854	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
97		0.00	0.000	0.006	0.1844	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
98		0.00	0.000	0.007	0.1833	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99		0.00	0.000	0.006	0.1822	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100		0.15	0.000	0.009	0.2058	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

101	0.05	0.000	0.009	0.2123	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
102	0.00	0.000	0.007	0.2111	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
103	0.00	0.000	0.007	0.2099	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
104	0.00	0.000	0.007	0.2086	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
105	0.00	0.000	0.007	0.2074	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
106	0.00	0.000	0.007	0.2062	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
107	0.00	0.000	0.008	0.2049	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
108	0.00	0.000	0.008	0.2037	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
109	0.00	0.000	0.008	0.2023	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
110	0.00	0.000	0.008	0.2010	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
111	0.00	0.000	0.008	0.1998	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
112	0.00	0.000	0.008	0.1985	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
113	0.00	0.000	0.008	0.1972	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
114	0.00	0.000	0.008	0.1960	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
115	0.00	0.000	0.008	0.1947	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
116	0.00	0.000	0.008	0.1933	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
117	0.00	0.000	0.008	0.1919	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
118	0.00	0.000	0.008	0.1906	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
119	0.00	0.000	0.008	0.1893	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
120	0.04	0.000	0.010	0.1938	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
121	0.00	0.000	0.009	0.1923	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
122	0.00	0.000	0.009	0.1908	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
123	0.05	0.000	0.012	0.1974	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
124	0.02	0.000	0.013	0.1987	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
125	0.27	0.000	0.014	0.2409	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
126	0.00	0.000	0.013	0.2388	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
127	0.21	0.000	0.013	0.2711	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
128	0.00	0.000	0.012	0.2694	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
129	0.09	0.000	0.013	0.2826	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
130	0.48	0.000	0.013	0.3268	0.0152	0.0571	1.42E-06	0.0000	0.0000	0.00E+00
131	0.00	0.000	0.014	0.3123	0.0528	0.1984	5.01E-06	0.0000	0.0000	0.00E+00
132	0.00	0.000	0.015	0.3009	0.0143	0.0539	1.61E-06	0.0000	0.0000	0.00E+00
133	0.00	0.000	0.016	0.2893	0.0160	0.0601	1.78E-06	0.0000	0.0000	0.00E+00
134	0.00	0.000	0.018	0.2805	0.0097	0.0365	1.14E-06	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.019	0.2739	0.0067	0.0251	8.16E-07	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.013	0.2716	0.0009	0.0035	1.36E-07	0.0000	0.0000	0.00E+00

137	0.00	0.000	0.015	0.2691	0.0000	0.0000	9.96E-09	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.015	0.2667	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.013	0.2646	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.014	0.2622	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.014	0.2598	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
142	0.21	0.000	0.016	0.2915	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
143	0.05	0.000	0.014	0.2968	0.0002	0.0006	2.59E-08	0.0000	0.0000	0.00E+00
144	0.01	0.000	0.014	0.2965	0.0001	0.0002	2.33E-08	0.0000	0.0000	0.00E+00
145	0.06	0.000	0.017	0.3032	0.0003	0.0011	5.74E-08	0.0000	0.0000	0.00E+00
146	0.14	0.000	0.345	0.2661	0.0024	0.0089	3.19E-07	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.014	0.2610	0.0045	0.0170	5.76E-07	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.014	0.2563	0.0052	0.0195	6.53E-07	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.016	0.2536	0.0002	0.0006	4.06E-08	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.022	0.2497	0.0002	0.0008	4.79E-08	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.020	0.2465	0.0000	0.0000	1.45E-08	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.022	0.2429	0.0000	0.0000	6.24E-10	0.0000	0.0000	0.00E+00
153	0.03	0.000	0.025	0.2440	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
154	0.05	0.000	0.018	0.2487	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.015	0.2460	0.0002	0.0009	4.15E-08	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.018	0.2430	0.0000	0.0000	1.45E-08	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.021	0.2395	0.0000	0.0000	6.61E-10	0.0000	0.0000	0.00E+00
158	0.17	0.000	0.020	0.2653	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
159	0.05	0.000	0.019	0.2711	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.444	0.1972	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.027	0.1927	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.026	0.1884	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.023	0.1845	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.021	0.1811	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.022	0.1774	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.020	0.1740	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
167	0.00	0.000	0.019	0.1709	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
168	0.00	0.000	0.022	0.1673	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.026	0.1631	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.021	0.1597	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.019	0.1565	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.023	0.1527	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

173	0.00	0.000	0.036	0.1456	0.0017	0.0062	2.19E-07	0.0000	0.0000	0.00E+00
174	0.00	0.000	0.025	0.1415	0.0000	0.0000	1.35E-08	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.024	0.1375	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.015	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
179	0.15	0.000	0.011	0.1579	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.011	0.1560	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.020	0.1526	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.022	0.1489	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
183	0.00	0.000	0.026	0.1446	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.029	0.1397	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
185	0.00	0.000	0.021	0.1362	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.005	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.002	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
188	0.63	0.000	0.023	0.2370	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
189	0.23	0.000	0.503	0.1914	0.0000	0.0000	4.00E-09	0.0000	0.0000	0.00E+00
190	0.01	0.000	0.031	0.1878	0.0000	0.0000	1.43E-08	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.028	0.1831	0.0000	0.0000	2.96E-11	0.0000	0.0000	0.00E+00
192	0.00	0.000	0.044	0.1757	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
193	0.00	0.000	0.043	0.1685	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
194	0.02	0.000	0.048	0.1637	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
195	0.00	0.000	0.046	0.1562	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
196	0.14	0.000	0.043	0.1731	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.044	0.1661	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
198	0.00	0.000	0.050	0.1577	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
199	0.00	0.000	0.057	0.1483	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.039	0.1418	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.030	0.1368	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
202	0.00	0.000	0.010	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
204	0.26	0.000	0.025	0.1737	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
205	0.00	0.000	0.186	0.1427	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
206	0.00	0.000	0.035	0.1368	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
207	0.00	0.000	0.007	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
208	0.19	0.000	0.028	0.1635	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

209	0.01	0.000	0.023	0.1611	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.032	0.1557	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.032	0.1503	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.023	0.1465	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.026	0.1422	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
214	0.27	0.000	0.042	0.1798	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
215	0.30	0.000	0.166	0.2029	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
216	0.04	0.000	0.147	0.1858	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
217	0.00	0.000	0.238	0.1462	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
218	0.01	0.000	0.063	0.1374	0.0000	0.0001	4.91E-09	0.0000	0.0000	0.00E+00
219	0.00	0.000	0.010	0.1358	0.0000	0.0000	1.47E-08	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.005	0.1350	0.0000	0.0000	1.16E-09	0.0000	0.0000	0.00E+00
221	0.05	0.000	0.012	0.1419	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.01	0.000	0.027	0.1393	0.0000	0.0000	4.50E-09	0.0000	0.0000	0.00E+00
223	0.00	0.000	0.014	0.1370	0.0000	0.0000	8.69E-09	0.0000	0.0000	0.00E+00
224	0.37	0.000	0.038	0.1923	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
225	0.11	0.000	0.063	0.2001	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
226	0.59	0.000	0.079	0.2856	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
227	0.01	0.000	0.377	0.2241	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
228	0.00	0.000	0.101	0.2074	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
229	0.20	0.000	0.071	0.2285	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
230	0.08	0.000	0.409	0.1739	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.09	0.000	0.068	0.1775	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.074	0.1654	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
233	0.06	0.000	0.062	0.1659	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
234	0.00	0.000	0.054	0.1574	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
235	0.08	0.000	0.075	0.1590	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.061	0.1489	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.049	0.1408	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
238	0.10	0.000	0.051	0.1481	0.0009	0.0033	1.19E-07	0.0000	0.0000	0.00E+00
239	0.08	0.000	0.029	0.1567	0.0001	0.0002	2.42E-08	0.0000	0.0000	0.00E+00
240	0.41	0.000	0.035	0.2186	0.0000	0.0000	5.26E-09	0.0000	0.0000	0.00E+00
241	0.72	0.001	0.245	0.2969	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
242	0.03	0.000	0.228	0.2639	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
243	0.01	0.000	0.282	0.2183	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.219	0.1818	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

245	0.00	0.000	0.232	0.1432	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.049	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
247	0.03	0.000	0.016	0.1370	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.007	0.1359	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
249	0.00	0.000	0.003	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
252	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
259	0.09	0.000	0.012	0.1483	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
260	0.06	0.000	0.027	0.1545	0.0000	0.0000	4.54E-09	0.0000	0.0000	0.00E+00
261	0.00	0.000	0.029	0.1497	0.0000	0.0000	4.01E-09	0.0000	0.0000	0.00E+00
262	0.02	0.000	0.035	0.1470	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
263	0.29	0.000	0.032	0.1894	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
264	0.52	0.000	0.047	0.2685	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.170	0.2401	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.042	0.2332	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.047	0.2254	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.036	0.2194	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.034	0.2137	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.036	0.2077	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
271	0.07	0.000	0.035	0.2130	0.0000	0.0001	1.59E-08	0.0000	0.0000	0.00E+00
272	0.01	0.000	0.042	0.2073	0.0000	0.0000	6.10E-09	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.031	0.2021	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.039	0.1956	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.036	0.1897	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.029	0.1849	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.031	0.1798	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.027	0.1753	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.027	0.1708	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.029	0.1659	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

281		0.00	0.000	0.029	0.1611	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282		0.00	0.000	0.028	0.1565	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
283		0.00	0.000	0.023	0.1527	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
284		0.29	0.000	0.027	0.1960	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
285		0.00	0.000	0.022	0.1923	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
286		0.00	0.000	0.022	0.1886	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
287		0.00	0.000	0.023	0.1848	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
288		0.00	0.000	0.020	0.1815	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
289		0.00	0.000	0.019	0.1783	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
290		0.00	0.000	0.018	0.1754	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
291		0.00	0.000	0.017	0.1725	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
292		0.00	0.000	0.018	0.1696	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
293		0.00	0.000	0.017	0.1667	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
294		0.00	0.000	0.016	0.1640	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
295		0.00	0.000	0.017	0.1612	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
296	*	0.00	0.000	0.016	0.1585	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
297	*	0.00	0.000	0.016	0.1559	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
298		0.00	0.000	0.016	0.1531	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
299		0.00	0.000	0.016	0.1505	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
300		0.00	0.000	0.016	0.1479	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
301		0.00	0.000	0.017	0.1451	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
302		0.00	0.000	0.015	0.1426	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
303		0.00	0.000	0.016	0.1399	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
304		0.00	0.000	0.016	0.1368	0.0007	0.0026	1.08E-07	0.0000	0.0000	0.00E+00
305		0.00	0.000	0.011	0.1350	0.0000	0.0000	1.15E-08	0.0000	0.0000	0.00E+00
306		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
307	*	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
308		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
309		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
310		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
311		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
312		0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
313		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
314		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
315		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
316		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

317		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
321		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
322		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
323		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324		0.09	0.000	0.009	0.1488	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
325		0.02	0.000	0.010	0.1498	0.0000	0.0000	2.27E-09	0.0000	0.0000	0.00E+00
326		0.02	0.000	0.011	0.1512	0.0000	0.0000	3.65E-09	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.005	0.1504	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328		0.00	0.000	0.005	0.1495	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
329		0.00	0.000	0.007	0.1483	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330		0.03	0.000	0.012	0.1515	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331		0.11	0.000	0.013	0.1671	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
332		0.00	0.000	0.008	0.1659	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333		0.00	0.000	0.007	0.1646	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
334		0.00	0.000	0.007	0.1634	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.007	0.1622	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
336		0.00	0.000	0.007	0.1610	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
337		0.00	0.000	0.007	0.1599	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
338		0.00	0.000	0.007	0.1587	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
339		0.00	0.000	0.007	0.1575	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
340		0.00	0.000	0.007	0.1564	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
341		0.00	0.000	0.007	0.1552	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.007	0.1541	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
343	*	0.00	0.000	0.007	0.1529	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
344		0.00	0.000	0.007	0.1518	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345		0.00	0.000	0.007	0.1506	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
346	*	0.00	0.000	0.008	0.1492	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
347		0.05	0.000	0.013	0.1545	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
348		0.00	0.000	0.008	0.1531	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
349		0.00	0.000	0.008	0.1518	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
350		0.00	0.000	0.008	0.1504	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.009	0.1489	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
352		0.00	0.000	0.008	0.1475	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

353		0.00	0.000	0.007	0.1462	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
354		0.00	0.000	0.007	0.1451	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
355		0.00	0.000	0.007	0.1440	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
356		0.00	0.000	0.007	0.1429	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
357		0.00	0.000	0.006	0.1419	0.0000	0.0000	6.87E-09	0.0000	0.0000	0.00E+00
358		0.00	0.000	0.008	0.1406	0.0000	0.0000	4.26E-09	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.008	0.1393	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
360		0.02	0.000	0.013	0.1411	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
361	*	0.02	0.000	0.021	0.1411	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
362	*	0.00	0.000	0.009	0.1397	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
363		0.00	0.000	0.008	0.1384	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
364		0.00	0.000	0.008	0.1370	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
365		0.00	0.000	0.003	0.1365	0.0000	0.0000	5.30E-09	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 2			
	inches	cubic feet	percent
Precipitation	9.84	35,706.9	100.00
Runoff	0.001	2.3446	0.01
Evapotranspiration	9.390	34,085.9	95.46
Drainage Collected from Layer 2	0.4968	1,803.5	5.05
Percolation/Leakage through Layer 4	0.000014	0.0521	0.00
Average Head on Top of Layer 3	0.0004	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	-0.0509	-184.9	-0.52
Soil Water at Start of Year	538.1031	1,953,314.2	5470.40
Soil Water at End of Year	538.0522	1,953,129.3	5469.89
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 3

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Column key: Head #1: drainage from Layer 3; Drain #1: drainage from Layer 2; Leak #1: leakage thru Layer 4; Head #2: drainage from Layer 15; Drain #2: drainage from Layer 14; Leak #2: leakage thru Layer 16

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.00	0.000	0.002	0.1362	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.002	0.1359	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.002	0.1357	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.002	0.1354	0.0000	0.0000	2.33E-09	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.002	0.1351	0.0000	0.0000	7.75E-09	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.001	0.1350	0.0000	0.0000	2.28E-09	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.000	0.1350	0.0000	0.0000	5.37E-09	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.000	0.1350	0.0000	0.0000	2.27E-09	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.000	0.1350	0.0000	0.0000	4.51E-09	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
12			0.11	0.000	0.009	0.1526	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
13			0.07	0.000	0.009	0.1631	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.008	0.1622	0.0000	0.0000	6.81E-09	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.006	0.1612	0.0000	0.0000	7.11E-09	0.0000	0.0000	0.00E+00
16	*		0.00	0.000	0.006	0.1602	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.006	0.1593	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.006	0.1583	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
19	*		0.00	0.000	0.009	0.1573	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
20	*		0.01	0.000	0.017	0.1564	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
21	*		0.07	0.000	0.053	0.1587	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
22			0.36	0.000	0.011	0.2171	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.007	0.2159	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
24	*		0.01	0.000	0.020	0.2146	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
25			0.00	0.000	0.008	0.2134	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
26			0.00	0.000	0.008	0.2121	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
27			0.00	0.000	0.008	0.2108	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
28			0.00	0.000	0.008	0.2095	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

29		0.00	0.000	0.008	0.2083	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.008	0.2070	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
31	*	0.00	0.000	0.008	0.2057	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.008	0.2045	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
33	*	0.00	0.000	0.007	0.2032	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.007	0.2020	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
35		0.00	0.000	0.007	0.2008	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
36		0.00	0.000	0.007	0.1995	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.007	0.1983	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
38		0.02	0.000	0.012	0.1993	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.008	0.1980	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.008	0.1967	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.008	0.1954	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
42		0.30	0.000	0.013	0.2425	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
43		0.07	0.000	0.013	0.2527	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
44		0.03	0.000	0.013	0.2558	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.008	0.2545	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.008	0.2532	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
47	*	0.00	0.000	0.000	0.2532	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
48	*	0.00	0.000	0.008	0.2519	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.008	0.2506	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.008	0.2493	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.008	0.2480	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
52		0.00	0.000	0.008	0.2467	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
53		0.00	0.000	0.008	0.2455	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.008	0.2442	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.008	0.2429	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
56		0.06	0.000	0.012	0.2516	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
57		0.00	0.000	0.008	0.2503	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.008	0.2490	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.008	0.2478	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60		0.00	0.000	0.008	0.2465	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
61		0.00	0.000	0.008	0.2452	0.0000	0.0000	8.45E-09	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.008	0.2440	0.0000	0.0000	8.73E-09	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.008	0.2427	0.0000	0.0000	8.22E-09	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.007	0.2415	0.0000	0.0000	8.51E-09	0.0000	0.0000	0.00E+00

65		0.07	0.000	0.012	0.2510	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.007	0.2497	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
67		0.00	0.000	0.007	0.2485	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.007	0.2473	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.007	0.2460	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.007	0.2448	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.007	0.2436	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.007	0.2423	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.007	0.2411	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.007	0.2399	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.007	0.2387	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.007	0.2375	0.0000	0.0000	1.56E-08	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.007	0.2363	0.0000	0.0000	2.08E-09	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.007	0.2351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
79	*	0.00	0.000	0.007	0.2339	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
80		0.00	0.000	0.007	0.2327	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
81	*	0.00	0.000	0.007	0.2315	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
82	*	0.00	0.000	0.000	0.2315	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.007	0.2303	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
84	*	0.00	0.000	0.007	0.2291	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
85	*	0.00	0.000	0.000	0.2291	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
86	*	0.00	0.000	0.007	0.2279	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.007	0.2268	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.007	0.2256	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
89		0.00	0.000	0.007	0.2244	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
90		0.00	0.000	0.007	0.2233	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
91		0.00	0.000	0.007	0.2221	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
92		0.00	0.000	0.007	0.2209	0.0001	0.0002	1.39E-08	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.007	0.2196	0.0001	0.0002	2.51E-08	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.007	0.2183	0.0001	0.0003	2.82E-08	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.008	0.2169	0.0001	0.0005	3.68E-08	0.0000	0.0000	0.00E+00
96		0.00	0.000	0.008	0.2155	0.0002	0.0006	3.99E-08	0.0000	0.0000	0.00E+00
97		0.00	0.000	0.008	0.2141	0.0001	0.0005	3.83E-08	0.0000	0.0000	0.00E+00
98		0.00	0.000	0.008	0.2127	0.0000	0.0000	1.20E-08	0.0000	0.0000	0.00E+00
99		0.00	0.000	0.008	0.2113	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100		0.00	0.000	0.008	0.2099	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

101	0.00	0.000	0.008	0.2086	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
102	0.00	0.000	0.009	0.2071	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
103	0.00	0.000	0.009	0.2057	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
104	0.00	0.000	0.008	0.2043	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
105	0.00	0.000	0.009	0.2028	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
106	0.00	0.000	0.009	0.2013	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
107	0.00	0.000	0.008	0.1999	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
108	0.00	0.000	0.008	0.1985	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
109	0.00	0.000	0.009	0.1970	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
110	0.01	0.000	0.011	0.1967	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
111	0.00	0.000	0.010	0.1951	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
112	0.00	0.000	0.009	0.1936	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
113	0.00	0.000	0.009	0.1921	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
114	0.00	0.000	0.008	0.1907	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
115	0.00	0.000	0.009	0.1892	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
116	0.00	0.000	0.010	0.1876	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
117	0.00	0.000	0.011	0.1858	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
118	0.00	0.000	0.011	0.1839	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
119	0.00	0.000	0.010	0.1823	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
120	0.00	0.000	0.013	0.1801	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
121	0.00	0.000	0.012	0.1782	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
122	0.07	0.000	0.012	0.1882	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
123	0.01	0.000	0.015	0.1867	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.012	0.1847	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
125	0.00	0.000	0.011	0.1828	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
126	0.00	0.000	0.010	0.1811	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
127	0.05	0.000	0.012	0.1871	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
128	0.00	0.000	0.011	0.1853	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
129	0.00	0.000	0.013	0.1830	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
130	0.04	0.000	0.015	0.1867	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
131	0.09	0.000	0.013	0.1996	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
132	0.00	0.000	0.011	0.1978	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
133	0.00	0.000	0.013	0.1957	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
134	0.00	0.000	0.013	0.1935	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.012	0.1915	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.013	0.1894	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

137	0.00	0.000	0.013	0.1872	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.015	0.1847	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
139	0.10	0.000	0.013	0.1989	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.014	0.1966	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
141	0.03	0.000	0.017	0.1982	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
142	0.69	0.000	0.021	0.3102	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
143	0.68	0.003	0.288	0.3200	0.0501	0.1884	4.57E-06	0.0000	0.0000	0.00E+00
144	0.03	0.000	0.364	0.2566	0.0479	0.1800	4.53E-06	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.352	0.1918	0.0098	0.0369	1.14E-06	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.209	0.1563	0.0032	0.0119	3.97E-07	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.097	0.1374	0.0044	0.0164	5.09E-07	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.014	0.1350	0.0000	0.0000	1.46E-08	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.000	0.1350	0.0000	0.0000	1.07E-09	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
153	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
154	0.01	0.000	0.007	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.002	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
162	0.14	0.000	0.019	0.1559	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
163	0.02	0.000	0.017	0.1566	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
164	0.35	0.000	0.023	0.2106	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
165	0.01	0.000	0.037	0.2052	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.031	0.2000	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
167	0.00	0.000	0.036	0.1940	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
168	0.00	0.000	0.034	0.1882	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.035	0.1824	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.034	0.1768	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.039	0.1702	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.036	0.1642	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

173	0.01	0.000	0.033	0.1599	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
174	0.08	0.000	0.036	0.1667	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.039	0.1602	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.040	0.1536	0.0000	0.0001	1.55E-08	0.0000	0.0000	0.00E+00
177	0.43	0.000	0.042	0.2178	0.0000	0.0000	6.63E-09	0.0000	0.0000	0.00E+00
178	0.11	0.000	0.043	0.2298	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.031	0.2246	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.043	0.2174	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.16	0.000	0.045	0.2372	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.01	0.000	0.339	0.1820	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
183	0.03	0.000	0.046	0.1793	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
184	0.10	0.000	0.034	0.1907	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
185	0.08	0.000	0.033	0.1983	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
186	0.27	0.000	0.043	0.2357	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
187	0.42	0.000	0.349	0.2482	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.391	0.1829	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
189	0.00	0.000	0.225	0.1454	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
190	0.00	0.000	0.052	0.1367	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.009	0.1350	0.0005	0.0017	7.74E-08	0.0000	0.0000	0.00E+00
192	0.00	0.000	0.000	0.1350	0.0000	0.0000	1.11E-08	0.0000	0.0000	0.00E+00
193	0.00	0.000	0.002	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
194	0.04	0.000	0.009	0.1394	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
195	0.06	0.000	0.009	0.1479	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
196	0.98	0.001	0.053	0.3024	0.0000	0.0000	8.87E-09	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.191	0.2711	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
198	0.00	0.000	0.393	0.2057	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
199	0.00	0.000	0.227	0.1679	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.093	0.1523	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.089	0.1376	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
202	0.00	0.000	0.015	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
204	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
205	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
206	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
207	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
208	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

209	0.76	0.000	0.051	0.2537	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
210	1.62	0.240	0.060	0.4085	0.1611	0.2262	1.25E-05	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.393	0.2469	1.2560	0.7073	8.93E-05	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.473	0.1626	0.0188	0.0706	2.00E-06	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.165	0.1350	0.0001	0.0005	3.52E-08	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.000	0.1350	0.0000	0.0000	6.53E-09	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
216	0.06	0.000	0.013	0.1431	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
217	0.00	0.000	0.027	0.1386	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
218	0.92	0.000	0.051	0.2840	0.0000	0.0000	3.90E-18	0.0000	0.0000	0.00E+00
219	0.03	0.000	0.170	0.2614	0.0000	0.0000	4.34E-19	0.0000	0.0000	0.00E+00
220	0.13	0.000	0.363	0.2234	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
221	0.09	0.000	0.424	0.1679	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.165	0.1404	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
223	0.00	0.000	0.031	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
226	0.59	0.000	0.060	0.2242	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
227	0.01	0.000	0.063	0.2148	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
228	0.14	0.000	0.064	0.2269	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
229	0.10	0.000	0.071	0.2313	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
230	0.43	0.000	0.217	0.2667	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.93	0.036	0.191	0.3213	0.0553	0.2078	4.85E-06	0.0000	0.0000	0.00E+00
232	0.01	0.000	0.168	0.2854	0.0553	0.2077	5.14E-06	0.0000	0.0000	0.00E+00
233	0.05	0.000	0.206	0.2538	0.0092	0.0345	1.08E-06	0.0000	0.0000	0.00E+00
234	0.00	0.000	0.354	0.1915	0.0076	0.0284	8.99E-07	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.255	0.1490	0.0001	0.0002	2.36E-08	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.083	0.1352	0.0000	0.0000	5.11E-09	0.0000	0.0000	0.00E+00
237	0.01	0.000	0.010	0.1351	0.0000	0.0000	5.51E-17	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
239	0.02	0.000	0.014	0.1355	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
240	0.02	0.000	0.012	0.1365	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.006	0.1357	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
242	0.20	0.000	0.043	0.1627	0.0000	0.0000	4.54E-09	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.043	0.1556	0.0000	0.0000	9.00E-09	0.0000	0.0000	0.00E+00
244	0.04	0.000	0.053	0.1526	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

245	0.00	0.000	0.063	0.1422	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.035	0.1363	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.005	0.1355	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.002	0.1351	0.0001	0.0003	1.86E-08	0.0000	0.0000	0.00E+00
249	0.00	0.000	0.000	0.1350	0.0000	0.0000	1.42E-08	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.000	0.1350	0.0000	0.0000	4.34E-19	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
252	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
258	0.01	0.000	0.005	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
259	0.05	0.000	0.009	0.1413	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
260	0.00	0.000	0.016	0.1386	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
261	0.04	0.000	0.016	0.1433	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
262	0.07	0.000	0.028	0.1511	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
263	0.02	0.000	0.034	0.1488	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
264	0.00	0.000	0.033	0.1434	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.027	0.1389	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
266	0.16	0.000	0.028	0.1616	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
267	0.14	0.000	0.026	0.1802	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.030	0.1751	0.0000	0.0001	1.17E-08	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.033	0.1696	0.0000	0.0000	1.25E-08	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.034	0.1641	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
271	0.00	0.000	0.027	0.1602	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
272	0.02	0.000	0.037	0.1581	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.027	0.1535	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.029	0.1487	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.022	0.1451	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.021	0.1415	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.026	0.1373	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.012	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

281		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
283		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
284		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
285		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
286		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
287		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
288		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
289		0.16	0.000	0.015	0.1599	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
290		0.00	0.000	0.009	0.1583	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
291		0.00	0.000	0.012	0.1563	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
292		0.00	0.000	0.011	0.1544	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
293		0.00	0.000	0.012	0.1524	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
294		0.00	0.000	0.011	0.1505	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
295		0.00	0.000	0.012	0.1485	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
296		0.00	0.000	0.013	0.1464	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
297		0.00	0.000	0.012	0.1443	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
298		0.20	0.000	0.018	0.1739	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
299		0.17	0.000	0.020	0.1995	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
300		0.00	0.000	0.012	0.1975	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
301		0.01	0.000	0.019	0.1966	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
302		0.00	0.000	0.012	0.1946	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
303		0.00	0.000	0.013	0.1925	0.0000	0.0000	2.27E-09	0.0000	0.0000	0.00E+00
304		0.00	0.000	0.014	0.1903	0.0000	0.0000	2.69E-09	0.0000	0.0000	0.00E+00
305		0.00	0.000	0.013	0.1881	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
306		0.00	0.000	0.012	0.1861	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
307		0.00	0.000	0.012	0.1841	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
308	*	0.28	0.000	0.046	0.1873	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
309	*	0.00	0.000	0.062	0.1906	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
310		0.00	0.000	0.098	0.1957	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
311		0.00	0.000	0.012	0.1937	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
312		0.00	0.000	0.013	0.1916	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
313		0.00	0.000	0.012	0.1895	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
314		0.00	0.000	0.013	0.1874	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
315		0.00	0.000	0.011	0.1856	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
316		0.00	0.000	0.011	0.1837	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

317		0.00	0.000	0.011	0.1819	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318		0.00	0.000	0.011	0.1800	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319		0.00	0.000	0.011	0.1782	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320	*	0.00	0.000	0.011	0.1763	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
321		0.00	0.000	0.011	0.1745	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
322		0.00	0.000	0.010	0.1728	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
323		0.00	0.000	0.010	0.1711	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324		0.00	0.000	0.010	0.1695	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
325		0.00	0.000	0.010	0.1678	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
326		0.00	0.000	0.010	0.1662	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.010	0.1645	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328		0.01	0.000	0.013	0.1632	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
329		0.04	0.000	0.015	0.1679	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330		0.00	0.000	0.010	0.1663	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331		0.00	0.000	0.010	0.1647	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
332		0.02	0.000	0.015	0.1661	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333		0.35	0.000	0.014	0.2217	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
334		0.00	0.000	0.010	0.2201	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.010	0.2185	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
336		0.00	0.000	0.009	0.2169	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
337		0.00	0.000	0.009	0.2154	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
338		0.00	0.000	0.009	0.2138	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
339		0.00	0.000	0.009	0.2123	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
340		0.00	0.000	0.009	0.2108	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
341		0.00	0.000	0.009	0.2093	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.009	0.2078	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
343		0.00	0.000	0.009	0.2063	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
344		0.00	0.000	0.009	0.2048	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345		0.00	0.000	0.009	0.2032	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.009	0.2016	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
347		0.00	0.000	0.009	0.2001	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
348		0.00	0.000	0.009	0.1985	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
349		0.00	0.000	0.009	0.1970	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
350		0.00	0.000	0.009	0.1954	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.009	0.1939	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
352		0.00	0.000	0.009	0.1924	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

353		0.00	0.000	0.009	0.1909	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
354	*	0.00	0.000	0.009	0.1894	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
355	*	0.00	0.000	0.000	0.1894	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
356		0.00	0.000	0.009	0.1879	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
357		0.00	0.000	0.009	0.1864	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
358		0.00	0.000	0.009	0.1849	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.009	0.1834	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
360	*	0.00	0.000	0.014	0.1819	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
361	*	0.13	0.000	0.065	0.1852	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
362		0.02	0.000	0.076	0.1837	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
363		0.15	0.000	0.014	0.2062	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
364		0.07	0.000	0.014	0.2153	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
365		0.00	0.000	0.009	0.2138	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 3			
	inches	cubic feet	percent
Precipitation	14.59	52,979.1	100.00
Runoff	0.281	1,019.2	1.92
Evapotranspiration	11.929	43,300.5	81.73
Drainage Collected from Layer 2	1.9215	6,975.2	13.17
Percolation/Leakage through Layer 4	0.000127	0.4625	0.00
Average Head on Top of Layer 3	0.0046	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	0.4640	1,684.3	3.18
Soil Water at Start of Year	538.0522	1,953,129.3	3686.60
Soil Water at End of Year	538.5161	1,954,813.6	3689.78
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 4

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Column key: Head #1: drainage from Layer 3; Drain #1: drainage from Layer 2; Leak #1: leakage thru Layer 4; Head #2: drainage from Layer 15; Drain #2: drainage from Layer 14; Leak #2: leakage thru Layer 16

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.00	0.000	0.009	0.2124	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.009	0.2109	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.010	0.2096	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.009	0.2081	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.009	0.2067	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.009	0.2053	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.009	0.2038	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.009	0.2023	0.0000	0.0000	1.02E-08	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.009	0.2009	0.0000	0.0000	1.59E-08	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.009	0.1994	0.0000	0.0001	1.66E-08	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.009	0.1980	0.0000	0.0001	1.67E-08	0.0000	0.0000	0.00E+00
12			0.00	0.000	0.009	0.1965	0.0000	0.0000	1.36E-08	0.0000	0.0000	0.00E+00
13			0.00	0.000	0.009	0.1951	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.009	0.1937	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
15			0.52	0.000	0.013	0.2783	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
16			0.00	0.000	0.106	0.2606	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
17	*		0.00	0.000	0.008	0.2592	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.008	0.2578	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.008	0.2564	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.008	0.2550	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
21			0.48	0.000	0.013	0.3326	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.134	0.2830	0.0406	0.1526	3.92E-06	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.145	0.2540	0.0083	0.0311	9.85E-07	0.0000	0.0000	0.00E+00
24			0.00	0.000	0.172	0.2223	0.0071	0.0266	8.51E-07	0.0000	0.0000	0.00E+00
25			0.00	0.000	0.138	0.1993	0.0001	0.0003	2.74E-08	0.0000	0.0000	0.00E+00
26			0.00	0.000	0.083	0.1854	0.0000	0.0000	5.85E-09	0.0000	0.0000	0.00E+00
27			0.00	0.000	0.058	0.1758	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
28			0.04	0.000	0.058	0.1727	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

29		0.14	0.000	0.051	0.1867	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
30		0.02	0.000	0.047	0.1816	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.039	0.1751	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.036	0.1690	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
33		0.00	0.000	0.034	0.1633	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.033	0.1579	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
35		0.00	0.000	0.027	0.1533	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
36		0.00	0.000	0.023	0.1495	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.027	0.1449	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.027	0.1404	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.026	0.1352	0.0012	0.0044	1.63E-07	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.001	0.1350	0.0000	0.0000	1.28E-08	0.0000	0.0000	0.00E+00
41		0.27	0.000	0.014	0.1781	0.0000	0.0000	4.34E-19	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.016	0.1754	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
43		0.00	0.000	0.019	0.1722	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
44		0.00	0.000	0.019	0.1691	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.018	0.1661	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.018	0.1631	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.017	0.1602	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.017	0.1574	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.017	0.1546	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.016	0.1519	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.016	0.1492	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
52		0.00	0.000	0.016	0.1466	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
53		0.00	0.000	0.017	0.1437	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.017	0.1409	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.017	0.1382	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
56	*	0.00	0.000	0.015	0.1357	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
57		0.00	0.000	0.004	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
61		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
63		0.04	0.000	0.005	0.1408	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
64		0.16	0.000	0.010	0.1664	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

65		0.00	0.000	0.007	0.1653	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.010	0.1635	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
67		0.00	0.000	0.010	0.1618	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.010	0.1601	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
69		0.31	0.000	0.013	0.2088	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.012	0.2067	0.0000	0.0000	3.51E-09	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.013	0.2045	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.013	0.2023	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.013	0.2001	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.013	0.1979	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.013	0.1958	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.013	0.1937	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.013	0.1915	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.013	0.1895	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
79		0.00	0.000	0.012	0.1874	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
80		0.00	0.000	0.012	0.1853	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
81		0.00	0.000	0.012	0.1833	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
82		0.00	0.000	0.012	0.1813	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.012	0.1793	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
84		0.00	0.000	0.012	0.1773	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
85		0.00	0.000	0.012	0.1754	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.012	0.1734	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.012	0.1715	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.011	0.1696	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
89	*	0.00	0.000	0.011	0.1677	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
90		0.00	0.000	0.012	0.1657	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
91		0.00	0.000	0.012	0.1637	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
92		0.00	0.000	0.012	0.1617	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.012	0.1597	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.012	0.1577	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.012	0.1558	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
96		0.00	0.000	0.012	0.1538	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
97		0.08	0.000	0.015	0.1646	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
98		0.00	0.000	0.012	0.1627	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99		0.00	0.000	0.012	0.1607	0.0000	0.0000	9.77E-09	0.0000	0.0000	0.00E+00
100		0.00	0.000	0.012	0.1586	0.0000	0.0000	7.53E-09	0.0000	0.0000	0.00E+00

101	0.00	0.000	0.013	0.1565	0.0000	0.0000	1.26E-08	0.0000	0.0000	0.00E+00
102	0.00	0.000	0.012	0.1546	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
103	0.00	0.000	0.012	0.1525	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
104	0.00	0.000	0.012	0.1505	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
105	0.00	0.000	0.012	0.1484	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
106	0.00	0.000	0.012	0.1464	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
107	0.00	0.000	0.012	0.1444	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
108	0.00	0.000	0.012	0.1425	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
109	0.00	0.000	0.012	0.1405	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
110	0.00	0.000	0.012	0.1385	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
111	0.00	0.000	0.011	0.1366	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
112	0.00	0.000	0.007	0.1355	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
113	0.00	0.000	0.003	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
114	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
115	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
116	0.03	0.000	0.005	0.1395	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
117	0.00	0.000	0.002	0.1392	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
118	0.00	0.000	0.005	0.1384	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
119	0.02	0.000	0.011	0.1401	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
120	0.00	0.000	0.006	0.1391	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
121	0.00	0.000	0.005	0.1382	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
122	0.17	0.000	0.010	0.1651	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
123	0.00	0.000	0.006	0.1642	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.009	0.1626	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
125	0.06	0.000	0.013	0.1705	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
126	0.07	0.000	0.015	0.1793	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
127	0.00	0.000	0.011	0.1775	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
128	0.00	0.000	0.010	0.1758	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
129	0.00	0.000	0.012	0.1739	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
130	0.00	0.000	0.011	0.1721	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
131	0.00	0.000	0.011	0.1703	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
132	0.13	0.000	0.014	0.1904	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
133	0.00	0.000	0.012	0.1884	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
134	0.00	0.000	0.012	0.1864	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.011	0.1845	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.013	0.1824	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

137	0.00	0.000	0.014	0.1800	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.014	0.1776	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.014	0.1752	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.016	0.1726	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
141	0.09	0.000	0.018	0.1840	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.016	0.1814	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.016	0.1786	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.016	0.1759	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.018	0.1729	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.017	0.1701	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.014	0.1677	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.014	0.1654	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.013	0.1632	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.016	0.1605	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.015	0.1581	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.021	0.1545	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
153	0.00	0.000	0.021	0.1511	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.016	0.1485	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.018	0.1455	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
156	0.45	0.000	0.022	0.2161	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
157	0.03	0.000	0.025	0.2162	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.017	0.2133	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.016	0.2106	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.015	0.2081	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.022	0.2044	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.022	0.2007	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.022	0.1970	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.023	0.1931	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.018	0.1901	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.016	0.1874	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
167	0.02	0.000	0.028	0.1858	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
168	0.04	0.000	0.026	0.1875	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.022	0.1838	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.027	0.1793	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
171	0.03	0.000	0.029	0.1790	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.027	0.1745	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

173	0.00	0.000	0.028	0.1698	0.0000	0.0001	1.12E-08	0.0000	0.0000	0.00E+00
174	0.00	0.000	0.029	0.1649	0.0000	0.0000	1.07E-08	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.028	0.1602	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.023	0.1564	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
177	0.02	0.000	0.026	0.1554	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
178	0.06	0.000	0.029	0.1610	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
179	0.02	0.000	0.032	0.1586	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
180	0.20	0.000	0.033	0.1861	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.028	0.1814	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.023	0.1775	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
183	0.29	0.000	0.027	0.2221	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.356	0.1628	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
185	0.00	0.000	0.029	0.1580	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.028	0.1534	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.027	0.1489	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.022	0.1452	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
189	0.00	0.000	0.021	0.1416	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
190	0.01	0.000	0.026	0.1382	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.015	0.1357	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
192	0.01	0.000	0.011	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
193	0.02	0.000	0.007	0.1374	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
194	0.13	0.000	0.015	0.1565	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
195	0.03	0.000	0.022	0.1576	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
196	0.44	0.000	0.027	0.2260	0.0000	0.0000	8.53E-09	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.327	0.1715	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
198	0.00	0.000	0.030	0.1665	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
199	0.01	0.000	0.028	0.1640	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.023	0.1602	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.023	0.1564	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
202	0.00	0.000	0.033	0.1509	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.034	0.1452	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
204	0.00	0.000	0.034	0.1396	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
205	0.12	0.000	0.033	0.1549	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
206	0.09	0.000	0.035	0.1637	0.0001	0.0004	2.97E-08	0.0000	0.0000	0.00E+00
207	0.05	0.000	0.038	0.1657	0.0000	0.0000	8.62E-09	0.0000	0.0000	0.00E+00
208	0.00	0.000	0.125	0.1449	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

209	0.13	0.000	0.031	0.1617	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
210	0.01	0.000	0.043	0.1564	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
211	0.42	0.000	0.044	0.2197	0.0000	0.0000	3.28E-09	0.0000	0.0000	0.00E+00
212	0.02	0.000	0.274	0.1766	0.0000	0.0000	1.34E-08	0.0000	0.0000	0.00E+00
213	0.22	0.000	0.049	0.2047	0.0000	0.0002	1.24E-08	0.0000	0.0000	0.00E+00
214	0.19	0.000	0.049	0.2277	0.0000	0.0000	1.43E-08	0.0000	0.0000	0.00E+00
215	0.67	0.000	0.437	0.2658	0.0000	0.0000	1.24E-10	0.0000	0.0000	0.00E+00
216	0.00	0.000	0.259	0.2234	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
217	0.00	0.000	0.451	0.1484	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
218	0.15	0.000	0.150	0.1487	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
219	0.02	0.000	0.064	0.1409	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.019	0.1377	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.010	0.1359	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.003	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
223	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
225	0.13	0.000	0.042	0.1500	0.0000	0.0000	5.02E-09	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.036	0.1440	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.043	0.1369	0.0000	0.0000	4.54E-09	0.0000	0.0000	0.00E+00
228	0.02	0.000	0.022	0.1371	0.0000	0.0000	3.99E-09	0.0000	0.0000	0.00E+00
229	0.00	0.000	0.006	0.1361	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
230	0.01	0.000	0.014	0.1357	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.08	0.000	0.014	0.1460	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
232	0.02	0.000	0.037	0.1436	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
233	0.00	0.000	0.027	0.1397	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
234	0.86	0.000	0.063	0.2719	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
235	0.19	0.000	0.060	0.2929	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.385	0.2288	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.067	0.2177	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
238	0.72	0.000	0.067	0.3263	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
239	0.00	0.000	0.339	0.2656	0.0037	0.0139	4.40E-07	0.0000	0.0000	0.00E+00
240	0.05	0.000	0.360	0.2046	0.0165	0.0619	1.82E-06	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.249	0.1621	0.0038	0.0143	4.66E-07	0.0000	0.0000	0.00E+00
242	0.00	0.000	0.118	0.1425	0.0000	0.0000	1.39E-08	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.037	0.1351	0.0019	0.0072	2.47E-07	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.000	0.1350	0.0000	0.0000	1.37E-08	0.0000	0.0000	0.00E+00

245	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
246	0.11	0.000	0.029	0.1479	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.038	0.1415	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.035	0.1357	0.0000	0.0000	2.11E-09	0.0000	0.0000	0.00E+00
249	0.00	0.000	0.003	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
252	0.00	0.000	0.000	0.1350	0.0000	0.0000	2.78E-17	0.0000	0.0000	0.00E+00
253	0.09	0.000	0.017	0.1478	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.32	0.000	0.030	0.1965	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.038	0.1902	0.0000	0.0000	5.41E-09	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.049	0.1820	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.045	0.1745	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.044	0.1679	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
259	0.00	0.000	0.036	0.1619	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
260	0.50	0.000	0.045	0.2377	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
261	0.00	0.000	0.045	0.2302	0.0001	0.0002	1.59E-08	0.0000	0.0000	0.00E+00
262	0.07	0.000	0.042	0.2347	0.0000	0.0000	1.38E-08	0.0000	0.0000	0.00E+00
263	0.01	0.000	0.039	0.2304	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
264	0.01	0.000	0.037	0.2262	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
265	0.09	0.000	0.047	0.2340	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.039	0.2275	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
267	0.01	0.000	0.044	0.2222	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.032	0.2169	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.028	0.2123	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
270	0.76	0.000	0.036	0.3334	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
271	0.17	0.000	0.184	0.3121	0.0271	0.1020	2.74E-06	0.0000	0.0000	0.00E+00
272	0.15	0.000	0.279	0.2845	0.0130	0.0489	1.47E-06	0.0000	0.0000	0.00E+00
273	0.07	0.000	0.281	0.2455	0.0075	0.0281	9.02E-07	0.0000	0.0000	0.00E+00
274	0.18	0.000	0.342	0.2192	0.0003	0.0011	5.72E-08	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.365	0.1574	0.0011	0.0041	1.42E-07	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.124	0.1367	0.0004	0.0014	6.76E-08	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.007	0.1356	0.0000	0.0000	8.38E-09	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.002	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

281	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
283	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
284	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
285	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
286	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
287	0.05	0.000	0.010	0.1424	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
288	0.04	0.000	0.020	0.1452	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
289	0.00	0.000	0.014	0.1428	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
290	0.00	0.000	0.015	0.1403	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
291	0.00	0.000	0.018	0.1373	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
292	0.00	0.000	0.009	0.1358	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
293	0.01	0.000	0.010	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
294	0.21	0.000	0.019	0.1665	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
295	0.00	0.000	0.010	0.1648	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
296	0.00	0.000	0.015	0.1622	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
297	0.00	0.000	0.015	0.1597	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
298	0.00	0.000	0.015	0.1573	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
299	0.00	0.000	0.014	0.1549	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
300	0.00	0.000	0.014	0.1526	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
301	0.00	0.000	0.013	0.1504	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
302	0.00	0.000	0.013	0.1482	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
303	0.28	0.000	0.021	0.1910	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
304	0.00	0.000	0.015	0.1884	0.0000	0.0000	7.53E-09	0.0000	0.0000	0.00E+00
305	0.00	0.000	0.015	0.1859	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
306	0.00	0.000	0.015	0.1834	0.0000	0.0000	2.78E-17	0.0000	0.0000	0.00E+00
307	0.00	0.000	0.015	0.1809	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
308	0.00	0.000	0.014	0.1785	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
309	0.00	0.000	0.014	0.1762	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
310	0.00	0.000	0.014	0.1738	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
311	0.00	0.000	0.014	0.1715	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
312	0.00	0.000	0.014	0.1692	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
313	0.00	0.000	0.015	0.1667	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
314	0.00	0.000	0.015	0.1641	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
315	0.53	0.000	0.023	0.2483	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
316	0.12	0.000	0.021	0.2652	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

317	*	0.00	0.000	0.019	0.2627	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318		0.00	0.000	0.015	0.2602	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319		0.00	0.000	0.015	0.2577	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320		0.00	0.000	0.015	0.2552	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
321		0.21	0.000	0.021	0.2870	0.0000	0.0000	4.60E-09	0.0000	0.0000	0.00E+00
322		0.02	0.000	0.021	0.2871	0.0000	0.0000	4.95E-09	0.0000	0.0000	0.00E+00
323		0.00	0.000	0.015	0.2847	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324		0.00	0.000	0.014	0.2823	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
325		0.00	0.000	0.014	0.2799	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
326		0.00	0.000	0.014	0.2761	0.0022	0.0084	3.02E-07	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.014	0.2738	0.0001	0.0003	2.70E-08	0.0000	0.0000	0.00E+00
328		0.00	0.000	0.014	0.2715	0.0000	0.0000	5.79E-09	0.0000	0.0000	0.00E+00
329		0.00	0.000	0.014	0.2692	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330		0.00	0.000	0.014	0.2670	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331		0.00	0.000	0.013	0.2647	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
332		0.00	0.000	0.013	0.2625	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333		0.00	0.000	0.013	0.2603	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
334		0.00	0.000	0.013	0.2581	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.013	0.2559	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
336	*	0.00	0.000	0.013	0.2538	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
337		0.00	0.000	0.013	0.2516	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
338		0.00	0.000	0.013	0.2495	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
339		0.00	0.000	0.013	0.2474	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
340		0.00	0.000	0.012	0.2453	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
341		0.00	0.000	0.012	0.2433	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.012	0.2412	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
343		0.00	0.000	0.012	0.2392	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
344	*	0.11	0.000	0.051	0.2425	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345		0.68	0.000	0.008	0.3269	0.0109	0.0408	1.04E-06	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.131	0.2898	0.1263	0.2479	1.05E-05	0.0000	0.0000	0.00E+00
347		0.00	0.000	0.122	0.2628	0.0112	0.0421	1.29E-06	0.0000	0.0000	0.00E+00
348		0.00	0.000	0.173	0.2287	0.0098	0.0367	1.14E-06	0.0000	0.0000	0.00E+00
349		0.00	0.000	0.131	0.2069	0.0013	0.0047	1.75E-07	0.0000	0.0000	0.00E+00
350		0.05	0.000	0.079	0.2017	0.0000	0.0000	1.05E-08	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.064	0.1911	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
352		0.00	0.000	0.052	0.1824	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

353	0.12	0.000	0.045	0.1948	0.0002	0.0007	3.20E-08	0.0000	0.0000	0.00E+00
354	0.00	0.000	0.043	0.1877	0.0000	0.0000	1.62E-08	0.0000	0.0000	0.00E+00
355	0.00	0.000	0.039	0.1811	0.0000	0.0000	2.44E-09	0.0000	0.0000	0.00E+00
356	0.00	0.000	0.037	0.1750	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
357	0.00	0.000	0.030	0.1700	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
358	0.00	0.000	0.031	0.1648	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
359	0.00	0.000	0.031	0.1596	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
360	0.00	0.000	0.030	0.1547	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
361	0.00	0.000	0.028	0.1491	0.0014	0.0051	1.85E-07	0.0000	0.0000	0.00E+00
362	0.00	0.000	0.027	0.1446	0.0000	0.0000	1.31E-08	0.0000	0.0000	0.00E+00
363	0.00	0.000	0.026	0.1402	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
364	0.00	0.000	0.025	0.1359	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
365	0.00	0.000	0.006	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 4			
	inches	cubic feet	percent
Precipitation	13.59	49,338.6	100.00
Runoff	0.000	1.0053	0.00
Evapotranspiration	13.179	47,839.8	96.96
Drainage Collected from Layer 2	0.8856	3,214.9	6.52
Percolation/Leakage through Layer 4	0.000029	0.1069	0.00
Average Head on Top of Layer 3	0.0008	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	-0.4730	-1,717.0	-3.48
Soil Water at Start of Year	538.5161	1,954,813.6	3962.03
Soil Water at End of Year	538.0431	1,953,096.6	3958.55
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 5

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Column key: Head #1: drainage from Layer 3; Drain #1: drainage from Layer 2; Leak #1: leakage thru Layer 4; Head #2: drainage from Layer 15; Drain #2: drainage from Layer 14; Leak #2: leakage thru Layer 16

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
3			0.38	0.000	0.012	0.1955	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.015	0.1930	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.018	0.1901	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.017	0.1872	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.017	0.1843	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
8			0.15	0.000	0.020	0.2064	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
9			0.23	0.000	0.021	0.2419	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.018	0.2388	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.018	0.2359	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
12			0.00	0.000	0.018	0.2328	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
13			0.00	0.000	0.018	0.2299	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.018	0.2269	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.017	0.2240	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
16			0.00	0.000	0.017	0.2212	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.017	0.2184	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.017	0.2156	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.016	0.2129	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.016	0.2102	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
21			0.00	0.000	0.016	0.2076	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
22			0.07	0.000	0.019	0.2157	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.015	0.2131	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
24			0.00	0.000	0.015	0.2106	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
25			0.00	0.000	0.015	0.2080	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
26			0.00	0.000	0.015	0.2054	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
27			0.00	0.000	0.015	0.2029	0.0000	0.0001	1.22E-08	0.0000	0.0000	0.00E+00
28			0.00	0.000	0.015	0.2003	0.0001	0.0003	2.68E-08	0.0000	0.0000	0.00E+00

29		0.00	0.000	0.015	0.1978	0.0001	0.0003	2.92E-08	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.014	0.1955	0.0000	0.0000	1.31E-08	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.014	0.1931	0.0000	0.0000	1.21E-08	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.014	0.1908	0.0000	0.0000	1.38E-08	0.0000	0.0000	0.00E+00
33		0.00	0.000	0.012	0.1888	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.014	0.1865	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
35		0.07	0.000	0.016	0.1956	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
36		0.00	0.000	0.013	0.1934	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.014	0.1911	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.014	0.1888	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.013	0.1866	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
40	*	0.00	0.000	0.013	0.1843	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
41		0.09	0.000	0.016	0.1962	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.013	0.1940	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
43		0.00	0.000	0.013	0.1919	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
44		0.00	0.000	0.013	0.1898	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.012	0.1877	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.012	0.1857	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.012	0.1836	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.012	0.1816	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.012	0.1796	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.012	0.1776	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.012	0.1756	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
52	*	0.00	0.000	0.012	0.1736	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
53	*	0.00	0.000	0.012	0.1716	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.012	0.1696	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
55		0.05	0.000	0.015	0.1751	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
56		0.00	0.000	0.012	0.1732	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
57		0.00	0.000	0.012	0.1712	0.0000	0.0001	1.47E-08	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.012	0.1693	0.0000	0.0000	6.22E-09	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.012	0.1673	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60		0.00	0.000	0.011	0.1654	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
61		0.00	0.000	0.011	0.1636	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.011	0.1617	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.011	0.1598	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.009	0.1582	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

65		0.00	0.000	0.011	0.1564	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.011	0.1546	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
67		0.00	0.000	0.011	0.1527	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.011	0.1509	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.011	0.1491	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.011	0.1473	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.011	0.1455	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.011	0.1437	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.011	0.1420	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.011	0.1402	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
75	*	0.00	0.000	0.010	0.1385	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
76	*	0.00	0.000	0.000	0.1385	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.010	0.1367	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
78		0.03	0.000	0.013	0.1392	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
79	*	0.00	0.000	0.002	0.1389	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
80		0.00	0.000	0.004	0.1382	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
81		0.00	0.000	0.006	0.1372	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
82	*	0.00	0.000	0.002	0.1368	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
83	*	0.00	0.000	0.000	0.1368	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
84	*	0.00	0.000	0.000	0.1368	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
85		0.00	0.000	0.003	0.1364	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.002	0.1361	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.002	0.1358	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.002	0.1355	0.0000	0.0000	5.10E-09	0.0000	0.0000	0.00E+00
89		0.00	0.000	0.002	0.1352	0.0000	0.0000	9.03E-09	0.0000	0.0000	0.00E+00
90		0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
91		0.00	0.000	0.000	0.1350	0.0000	0.0000	4.98E-09	0.0000	0.0000	0.00E+00
92		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
95	*	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
96		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
97		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
98		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

101	0.05	0.000	0.004	0.1433	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
102	0.22	0.000	0.007	0.1781	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
103	0.00	0.000	0.006	0.1771	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
104	0.00	0.000	0.006	0.1760	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
105	0.00	0.000	0.007	0.1749	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
106	0.00	0.000	0.008	0.1736	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
107	0.00	0.000	0.008	0.1724	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
108	0.00	0.000	0.008	0.1711	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
109	0.00	0.000	0.008	0.1698	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
110	0.00	0.000	0.008	0.1685	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
111	0.00	0.000	0.008	0.1672	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
112	0.08	0.000	0.010	0.1780	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
113	0.00	0.000	0.008	0.1767	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
114	0.00	0.000	0.008	0.1753	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
115	0.00	0.000	0.009	0.1739	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
116	0.00	0.000	0.008	0.1725	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
117	0.00	0.000	0.008	0.1712	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
118	0.00	0.000	0.008	0.1699	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
119	0.00	0.000	0.008	0.1686	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
120	0.00	0.000	0.008	0.1672	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
121	0.00	0.000	0.008	0.1659	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
122	0.00	0.000	0.008	0.1646	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
123	0.00	0.000	0.008	0.1633	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.008	0.1620	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
125	0.00	0.000	0.008	0.1607	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
126	0.00	0.000	0.008	0.1593	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
127	0.02	0.000	0.011	0.1605	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
128	0.51	0.000	0.011	0.2440	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
129	0.00	0.000	0.009	0.2426	0.0000	0.0000	7.05E-09	0.0000	0.0000	0.00E+00
130	0.00	0.000	0.010	0.2409	0.0000	0.0000	6.60E-09	0.0000	0.0000	0.00E+00
131	0.04	0.000	0.013	0.2450	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
132	0.05	0.000	0.013	0.2506	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
133	0.17	0.000	0.013	0.2766	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
134	0.00	0.000	0.011	0.2748	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.011	0.2729	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.010	0.2712	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

137	0.00	0.000	0.011	0.2693	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.012	0.2672	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.011	0.2654	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.012	0.2634	0.0000	0.0001	1.10E-08	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.013	0.2612	0.0000	0.0001	1.98E-08	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.012	0.2591	0.0002	0.0006	3.88E-08	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.012	0.2570	0.0001	0.0003	2.82E-08	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.012	0.2548	0.0003	0.0011	6.07E-08	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.011	0.2528	0.0002	0.0007	4.38E-08	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.012	0.2507	0.0002	0.0009	5.13E-08	0.0000	0.0000	0.00E+00
147	0.08	0.000	0.015	0.2617	0.0000	0.0000	8.51E-09	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.012	0.2597	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.012	0.2575	0.0002	0.0007	4.28E-08	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.015	0.2547	0.0005	0.0020	9.51E-08	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.013	0.2521	0.0005	0.0020	9.69E-08	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.012	0.2500	0.0003	0.0013	6.80E-08	0.0000	0.0000	0.00E+00
153	0.00	0.000	0.011	0.2480	0.0000	0.0001	1.95E-08	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.013	0.2459	0.0000	0.0000	4.17E-09	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.011	0.2441	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.012	0.2420	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
157	0.04	0.000	0.015	0.2454	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.012	0.2433	0.0001	0.0004	2.43E-08	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.012	0.2414	0.0000	0.0000	1.41E-08	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.016	0.2388	0.0000	0.0000	4.34E-19	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.017	0.2358	0.0002	0.0007	4.57E-08	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.013	0.2332	0.0005	0.0020	9.46E-08	0.0000	0.0000	0.00E+00
163	0.33	0.000	0.018	0.2852	0.0003	0.0010	5.47E-08	0.0000	0.0000	0.00E+00
164	0.11	0.000	0.501	0.2204	0.0000	0.0000	1.39E-08	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.014	0.2180	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.016	0.2154	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
167	0.00	0.000	0.013	0.2133	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
168	0.00	0.000	0.013	0.2112	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.014	0.2087	0.0001	0.0005	3.28E-08	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.016	0.2060	0.0002	0.0007	4.43E-08	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.017	0.2030	0.0002	0.0007	4.44E-08	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.017	0.2001	0.0002	0.0006	4.15E-08	0.0000	0.0000	0.00E+00

173	0.01	0.000	0.020	0.1988	0.0000	0.0000	1.49E-08	0.0000	0.0000	0.00E+00
174	0.03	0.000	0.019	0.2004	0.0000	0.0000	1.43E-09	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.017	0.1975	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.017	0.1947	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.014	0.1922	0.0002	0.0009	4.97E-08	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.013	0.1900	0.0000	0.0001	1.99E-08	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.016	0.1873	0.0000	0.0000	4.26E-09	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.017	0.1845	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.014	0.1822	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.013	0.1800	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
183	0.00	0.000	0.013	0.1778	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.016	0.1752	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
185	0.00	0.000	0.013	0.1730	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
186	0.02	0.000	0.013	0.1734	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.014	0.1710	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.016	0.1684	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
189	0.00	0.000	0.017	0.1656	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
190	0.00	0.000	0.015	0.1631	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.015	0.1607	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
192	0.00	0.000	0.016	0.1580	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
193	0.00	0.000	0.018	0.1550	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
194	0.00	0.000	0.020	0.1517	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
195	0.43	0.000	0.020	0.2202	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
196	0.00	0.000	0.020	0.2168	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.020	0.2135	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
198	0.00	0.000	0.019	0.2103	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
199	0.00	0.000	0.019	0.2072	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.024	0.2032	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
201	0.04	0.000	0.026	0.2056	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
202	0.08	0.000	0.026	0.2154	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.020	0.2120	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
204	0.00	0.000	0.025	0.2078	0.0001	0.0002	2.28E-08	0.0000	0.0000	0.00E+00
205	0.00	0.000	0.026	0.2035	0.0000	0.0000	4.85E-09	0.0000	0.0000	0.00E+00
206	0.00	0.000	0.021	0.2000	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
207	0.03	0.000	0.028	0.1995	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
208	0.00	0.000	0.029	0.1946	0.0000	0.0001	1.32E-08	0.0000	0.0000	0.00E+00

209	0.00	0.000	0.030	0.1896	0.0000	0.0000	1.13E-08	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.028	0.1849	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
211	0.03	0.000	0.034	0.1846	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.023	0.1808	0.0000	0.0000	4.48E-09	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.027	0.1762	0.0000	0.0000	1.45E-08	0.0000	0.0000	0.00E+00
214	0.21	0.000	0.034	0.2056	0.0000	0.0000	7.46E-10	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.326	0.1512	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
216	0.16	0.000	0.025	0.1741	0.0000	0.0000	1.35E-08	0.0000	0.0000	0.00E+00
217	0.00	0.000	0.040	0.1681	0.0000	0.0000	4.45E-09	0.0000	0.0000	0.00E+00
218	0.00	0.000	0.044	0.1608	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
219	0.00	0.000	0.041	0.1539	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.045	0.1464	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.020	0.1431	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.022	0.1394	0.0000	0.0000	2.27E-09	0.0000	0.0000	0.00E+00
223	0.07	0.000	0.026	0.1469	0.0000	0.0000	3.32E-09	0.0000	0.0000	0.00E+00
224	0.57	0.000	0.038	0.2363	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
225	0.08	0.000	0.211	0.2144	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.198	0.1814	0.0001	0.0003	2.19E-08	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.243	0.1409	0.0000	0.0000	1.15E-08	0.0000	0.0000	0.00E+00
228	0.00	0.000	0.025	0.1366	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
229	0.00	0.000	0.010	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
230	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
233	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
234	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
239	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
240	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
241	0.32	0.000	0.027	0.1833	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
242	0.01	0.000	0.050	0.1759	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.045	0.1689	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.052	0.1602	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

245	0.00	0.000	0.054	0.1513	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.047	0.1435	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
247	0.12	0.000	0.046	0.1555	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
248	0.13	0.000	0.044	0.1702	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
249	0.01	0.000	0.037	0.1651	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
250	0.05	0.000	0.031	0.1678	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
251	0.04	0.000	0.032	0.1693	0.0000	0.0000	1.08E-08	0.0000	0.0000	0.00E+00
252	0.00	0.000	0.032	0.1639	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.027	0.1595	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.00	0.000	0.024	0.1555	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.027	0.1509	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.020	0.1475	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.023	0.1437	0.0000	0.0000	2.27E-09	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.024	0.1396	0.0000	0.0000	3.47E-09	0.0000	0.0000	0.00E+00
259	0.19	0.000	0.027	0.1669	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
260	0.00	0.000	0.023	0.1633	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
261	0.00	0.000	0.021	0.1598	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.017	0.1570	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
263	0.00	0.000	0.014	0.1546	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
264	0.00	0.000	0.015	0.1521	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.018	0.1491	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.020	0.1457	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.018	0.1427	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
268	0.61	0.000	0.022	0.2410	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.018	0.2380	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.018	0.2351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
271	0.00	0.000	0.018	0.2320	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.017	0.2292	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.017	0.2264	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.017	0.2236	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.017	0.2208	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.016	0.2182	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.015	0.2156	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.016	0.2130	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.015	0.2105	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.016	0.2079	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

281	0.00	0.000	0.015	0.2054	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282	0.00	0.000	0.015	0.2030	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
283	0.00	0.000	0.014	0.2007	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
284	0.00	0.000	0.016	0.1985	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
285	0.08	0.000	0.018	0.2095	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
286	0.00	0.000	0.014	0.2072	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
287	0.00	0.000	0.013	0.2050	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
288	0.00	0.000	0.013	0.2029	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
289	0.00	0.000	0.013	0.2007	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
290	0.00	0.000	0.013	0.1985	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
291	0.00	0.000	0.013	0.1964	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
292	0.00	0.000	0.013	0.1943	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
293	0.00	0.000	0.012	0.1922	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
294	0.00	0.000	0.012	0.1902	0.0000	0.0000	2.28E-09	0.0000	0.0000	0.00E+00
295	0.00	0.000	0.012	0.1881	0.0000	0.0000	1.56E-08	0.0000	0.0000	0.00E+00
296	0.06	0.000	0.017	0.1955	0.0000	0.0000	1.43E-08	0.0000	0.0000	0.00E+00
297	0.00	0.000	0.012	0.1935	0.0000	0.0000	4.60E-11	0.0000	0.0000	0.00E+00
298	0.00	0.000	0.012	0.1915	0.0000	0.0000	4.03E-09	0.0000	0.0000	0.00E+00
299	0.00	0.000	0.012	0.1895	0.0000	0.0000	1.63E-08	0.0000	0.0000	0.00E+00
300	0.00	0.000	0.012	0.1875	0.0000	0.0000	3.64E-09	0.0000	0.0000	0.00E+00
301	0.00	0.000	0.012	0.1855	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
302	0.00	0.000	0.012	0.1836	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
303	0.00	0.000	0.012	0.1816	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
304	0.00	0.000	0.012	0.1796	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
305	0.28	0.000	0.017	0.2239	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
306	0.00	0.000	0.012	0.2219	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
307	0.00	0.000	0.012	0.2199	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
308	0.00	0.000	0.012	0.2179	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
309	0.00	0.000	0.012	0.2159	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
310	0.00	0.000	0.012	0.2140	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
311	0.00	0.000	0.012	0.2120	0.0000	0.0000	4.69E-09	0.0000	0.0000	0.00E+00
312	0.00	0.000	0.012	0.2101	0.0000	0.0000	6.63E-09	0.0000	0.0000	0.00E+00
313	0.00	0.000	0.012	0.2081	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
314	0.00	0.000	0.011	0.2062	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
315	0.00	0.000	0.011	0.2044	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
316	0.00	0.000	0.011	0.2026	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

317		0.05	0.000	0.014	0.2083	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318		0.09	0.000	0.014	0.2214	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319		0.00	0.000	0.010	0.2197	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320		0.00	0.000	0.010	0.2179	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
321		0.00	0.000	0.010	0.2162	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
322		0.00	0.000	0.010	0.2145	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
323		0.00	0.000	0.010	0.2128	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324		0.15	0.000	0.013	0.2356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
325		0.09	0.000	0.013	0.2487	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
326		0.11	0.000	0.160	0.2406	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.010	0.2389	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328		0.01	0.000	0.013	0.2385	0.0000	0.0000	5.73E-09	0.0000	0.0000	0.00E+00
329		0.00	0.000	0.010	0.2369	0.0000	0.0000	1.07E-08	0.0000	0.0000	0.00E+00
330		0.00	0.000	0.010	0.2352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331		0.00	0.000	0.010	0.2336	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
332	*	0.00	0.000	0.010	0.2319	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333	*	0.00	0.000	0.000	0.2319	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
334	*	0.00	0.000	0.010	0.2303	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.010	0.2287	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
336	*	0.00	0.000	0.000	0.2287	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
337	*	0.00	0.000	0.000	0.2287	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
338	*	0.00	0.000	0.000	0.2287	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
339	*	0.01	0.000	0.020	0.2270	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
340		0.13	0.000	0.013	0.2460	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
341		0.16	0.000	0.130	0.2510	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.112	0.2324	0.0000	0.0000	1.39E-08	0.0000	0.0000	0.00E+00
343		0.00	0.000	0.160	0.2057	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
344		0.00	0.000	0.083	0.1918	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345		0.00	0.000	0.064	0.1812	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.054	0.1722	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
347	*	0.00	0.000	0.000	0.1722	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
348	*	0.00	0.000	0.000	0.1722	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
349	*	0.00	0.000	0.047	0.1643	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
350		0.00	0.000	0.043	0.1572	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.039	0.1506	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
352		0.00	0.000	0.032	0.1453	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

353		0.00	0.000	0.034	0.1396	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
354		0.00	0.000	0.027	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
355	*	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
356		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
357		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
358		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
360		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
361		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
362		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
363		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
364		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
365		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 5			
	inches	cubic feet	percent
Precipitation	7.23	26,229.5	100.00
Runoff	0.000	0.0000	0.00
Evapotranspiration	7.207	26,159.6	99.73
Drainage Collected from Layer 2	0.0192	69.9	0.27
Percolation/Leakage through Layer 4	0.000001	0.0054	0.00
Average Head on Top of Layer 3	0.0000	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	0.0000	0.0054	0.00
Soil Water at Start of Year	538.0431	1,953,096.6	7446.18
Soil Water at End of Year	538.0431	1,953,096.6	7446.18
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 6

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Column key: Head #1: drainage from Layer 3; Drain #1: drainage from Layer 2; Leak #1: leakage thru Layer 4; Head #2: drainage from Layer 15; Drain #2: drainage from Layer 14; Leak #2: leakage thru Layer 16

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
5			0.18	0.000	0.011	0.1624	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
6			0.02	0.000	0.011	0.1640	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.013	0.1619	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.013	0.1598	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.012	0.1577	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.012	0.1557	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.012	0.1537	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
12			0.00	0.000	0.012	0.1517	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
13			0.00	0.000	0.012	0.1497	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.011	0.1478	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.011	0.1459	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
16	*		0.00	0.000	0.011	0.1441	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
17	*		0.00	0.000	0.000	0.1441	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
18	*		0.00	0.000	0.011	0.1423	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
19	*		0.18	0.000	0.043	0.1456	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
20	*		0.00	0.000	0.073	0.1488	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
21			0.00	0.000	0.033	0.1466	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.013	0.1444	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.014	0.1420	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
24			0.00	0.000	0.014	0.1397	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
25			0.00	0.000	0.013	0.1375	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
26			0.00	0.000	0.011	0.1357	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
27			0.00	0.000	0.003	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
28			0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

29		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
31	*	0.20	0.000	0.071	0.1383	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
32	*	0.14	0.000	0.050	0.1416	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
33		0.00	0.000	0.091	0.1564	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.007	0.1553	0.0000	0.0000	4.90E-09	0.0000	0.0000	0.00E+00
35		0.00	0.000	0.010	0.1537	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
36		0.00	0.000	0.010	0.1521	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.009	0.1505	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.009	0.1489	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.009	0.1474	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
40	*	0.00	0.000	0.009	0.1459	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.009	0.1444	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
42		0.03	0.000	0.012	0.1479	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
43		0.03	0.000	0.013	0.1506	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
44		0.12	0.000	0.014	0.1679	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
45		0.05	0.000	0.014	0.1735	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
46		0.13	0.000	0.014	0.1922	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.009	0.1907	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.011	0.1889	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.010	0.1872	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.010	0.1855	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.010	0.1838	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
52		0.00	0.000	0.010	0.1821	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
53		0.00	0.000	0.010	0.1804	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.010	0.1787	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.010	0.1771	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
56		0.00	0.000	0.010	0.1754	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
57		0.00	0.000	0.010	0.1738	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.011	0.1720	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.011	0.1702	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60		0.00	0.000	0.011	0.1685	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
61		0.00	0.000	0.011	0.1667	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.010	0.1650	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
63		0.06	0.000	0.013	0.1719	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
64		0.05	0.000	0.013	0.1774	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

65		0.03	0.000	0.014	0.1806	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.012	0.1789	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
67		0.01	0.000	0.013	0.1780	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.010	0.1763	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.010	0.1746	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.010	0.1730	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.010	0.1713	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.010	0.1697	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.010	0.1681	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.010	0.1664	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.010	0.1648	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.010	0.1632	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.010	0.1616	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.010	0.1600	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
79		0.00	0.000	0.010	0.1584	0.0000	0.0000	9.16E-09	0.0000	0.0000	0.00E+00
80		0.00	0.000	0.010	0.1568	0.0000	0.0000	3.90E-09	0.0000	0.0000	0.00E+00
81	*	0.00	0.000	0.009	0.1552	0.0000	0.0000	9.18E-09	0.0000	0.0000	0.00E+00
82	*	0.00	0.000	0.000	0.1552	0.0000	0.0000	3.34E-09	0.0000	0.0000	0.00E+00
83	*	0.00	0.000	0.000	0.1552	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
84		0.00	0.000	0.009	0.1537	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
85		0.00	0.000	0.010	0.1520	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.010	0.1504	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.010	0.1488	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.010	0.1472	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
89		0.00	0.000	0.010	0.1455	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
90		0.00	0.000	0.009	0.1439	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
91		0.00	0.000	0.009	0.1424	0.0000	0.0000	5.51E-17	0.0000	0.0000	0.00E+00
92		0.00	0.000	0.009	0.1409	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.009	0.1393	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.009	0.1377	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.010	0.1361	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
96		0.00	0.000	0.005	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
97		0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
98		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

101	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
102	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
103	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
104	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
105	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
106	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
107	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
108	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
109	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
110	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
111	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
112	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
113	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
114	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
115	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
116	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
117	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
118	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
119	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
120	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
121	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
122	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
123	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
125	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
126	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
127	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
128	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
129	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
130	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
131	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
132	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
133	0.00	0.000	0.003	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
134	0.01	0.000	0.003	0.1357	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.001	0.1355	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
136	0.01	0.000	0.004	0.1368	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

137	0.00	0.000	0.001	0.1367	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.002	0.1364	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
139	0.05	0.000	0.005	0.1446	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.004	0.1439	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.006	0.1429	0.0000	0.0000	6.91E-09	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.006	0.1420	0.0000	0.0000	5.18E-09	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.006	0.1409	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.006	0.1399	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.006	0.1388	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.006	0.1378	0.0000	0.0000	3.73E-09	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.007	0.1367	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.006	0.1357	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.003	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
150	0.14	0.000	0.008	0.1564	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.004	0.1557	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.007	0.1546	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
153	0.00	0.000	0.007	0.1535	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.007	0.1523	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.007	0.1512	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.007	0.1501	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
157	0.02	0.000	0.011	0.1515	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
158	0.06	0.000	0.011	0.1600	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
159	0.30	0.000	0.012	0.2072	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.009	0.2058	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.008	0.2044	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.010	0.2028	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.009	0.2013	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.010	0.1996	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.009	0.1981	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.010	0.1964	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
167	0.00	0.000	0.010	0.1948	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
168	0.00	0.000	0.009	0.1934	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.009	0.1918	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.010	0.1903	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.010	0.1886	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.010	0.1869	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

173	0.00	0.000	0.009	0.1854	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
174	0.00	0.000	0.011	0.1836	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.010	0.1819	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.011	0.1801	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.011	0.1783	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.012	0.1762	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
179	0.04	0.000	0.015	0.1812	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
180	0.16	0.000	0.016	0.2060	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.011	0.2041	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.012	0.2020	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
183	0.03	0.000	0.016	0.2043	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
184	0.01	0.000	0.014	0.2038	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
185	0.07	0.000	0.016	0.2133	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.013	0.2112	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.014	0.2088	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.014	0.2064	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
189	0.51	0.000	0.018	0.2888	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
190	0.31	0.000	0.018	0.3333	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
191	0.19	0.000	0.017	0.3478	0.0279	0.1049	2.91E-06	0.0000	0.0000	0.00E+00
192	0.00	0.000	0.012	0.3175	0.0398	0.1495	3.95E-06	0.0000	0.0000	0.00E+00
193	0.00	0.000	0.012	0.3021	0.0242	0.0909	2.57E-06	0.0000	0.0000	0.00E+00
194	0.00	0.000	0.011	0.2910	0.0166	0.0624	1.84E-06	0.0000	0.0000	0.00E+00
195	0.14	0.000	0.015	0.3061	0.0099	0.0371	1.16E-06	0.0000	0.0000	0.00E+00
196	0.60	0.000	0.018	0.3435	0.0810	0.3046	7.23E-06	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.358	0.2619	0.0449	0.1686	4.44E-06	0.0000	0.0000	0.00E+00
198	0.04	0.000	0.221	0.2220	0.0179	0.0674	1.97E-06	0.0000	0.0000	0.00E+00
199	0.00	0.000	0.203	0.1861	0.0071	0.0269	8.54E-07	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.086	0.1717	0.0001	0.0002	2.38E-08	0.0000	0.0000	0.00E+00
201	0.32	0.000	0.077	0.2130	0.0000	0.0000	5.16E-09	0.0000	0.0000	0.00E+00
202	0.00	0.000	0.064	0.2024	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
203	0.51	0.000	0.055	0.2778	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
204	0.00	0.000	0.281	0.2310	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
205	0.00	0.000	0.343	0.1738	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
206	0.00	0.000	0.212	0.1391	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
207	0.01	0.000	0.029	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
208	0.00	0.000	0.000	0.1350	0.0000	0.0000	1.11E-16	0.0000	0.0000	0.00E+00

209	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
215	0.81	0.000	0.028	0.2657	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
216	0.02	0.000	0.039	0.2630	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
217	0.00	0.000	0.038	0.2566	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
218	0.00	0.000	0.041	0.2497	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
219	0.21	0.000	0.044	0.2779	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.334	0.2222	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.042	0.2152	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.12	0.000	0.037	0.2290	0.0000	0.0001	1.75E-08	0.0000	0.0000	0.00E+00
223	0.19	0.000	0.039	0.2546	0.0000	0.0000	6.52E-09	0.0000	0.0000	0.00E+00
224	0.23	0.000	0.038	0.2858	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.326	0.2315	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.042	0.2246	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
227	0.08	0.000	0.044	0.2301	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
228	0.00	0.000	0.041	0.2233	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
229	0.07	0.000	0.036	0.2289	0.0000	0.0000	8.65E-09	0.0000	0.0000	0.00E+00
230	0.00	0.000	0.037	0.2226	0.0000	0.0001	1.89E-08	0.0000	0.0000	0.00E+00
231	0.00	0.000	0.031	0.2174	0.0000	0.0000	8.60E-09	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.030	0.2124	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
233	0.00	0.000	0.033	0.2069	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
234	0.01	0.000	0.036	0.2032	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.034	0.1982	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
236	0.17	0.000	0.041	0.2200	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.037	0.2138	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.030	0.2087	0.0000	0.0000	1.38E-08	0.0000	0.0000	0.00E+00
239	0.05	0.000	0.039	0.2106	0.0000	0.0000	1.09E-08	0.0000	0.0000	0.00E+00
240	0.00	0.000	0.036	0.2046	0.0000	0.0001	1.87E-08	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.038	0.1984	0.0000	0.0000	8.54E-09	0.0000	0.0000	0.00E+00
242	0.00	0.000	0.038	0.1921	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.037	0.1859	0.0000	0.0000	2.82E-09	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.025	0.1817	0.0001	0.0003	2.68E-08	0.0000	0.0000	0.00E+00

245	0.20	0.000	0.037	0.2084	0.0000	0.0000	6.33E-09	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.029	0.2036	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.028	0.1990	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.022	0.1953	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
249	0.00	0.000	0.020	0.1919	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.022	0.1882	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.019	0.1850	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
252	0.00	0.000	0.021	0.1815	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.020	0.1781	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.40	0.000	0.023	0.2404	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.403	0.1733	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.020	0.1700	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.017	0.1672	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.018	0.1641	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
259	0.00	0.000	0.017	0.1612	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
260	0.00	0.000	0.016	0.1586	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
261	0.00	0.000	0.015	0.1560	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
262	0.62	0.000	0.018	0.2560	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
263	0.00	0.000	0.161	0.2292	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
264	0.07	0.000	0.294	0.1923	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
265	0.11	0.000	0.205	0.1757	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
266	0.03	0.000	0.088	0.1660	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
267	1.86	0.172	0.068	0.4142	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
268	0.13	0.000	0.331	0.2835	0.9202	0.6818	6.66E-05	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.330	0.2194	0.0203	0.0762	2.17E-06	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.275	0.1708	0.0077	0.0288	9.04E-07	0.0000	0.0000	0.00E+00
271	0.00	0.000	0.214	0.1351	0.0000	0.0002	2.12E-08	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.000	0.1350	0.0000	0.0000	4.46E-09	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

281	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
283	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
284	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
285	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
286	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
287	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
288	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
289	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
290	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
291	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
292	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
293	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
294	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
295	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
296	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
297	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
298	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
299	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
300	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
301	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
302	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
303	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
304	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
305	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
306	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
307	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
308	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
309	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
310	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
311	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
312	0.04	0.000	0.005	0.1413	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
313	0.00	0.000	0.009	0.1398	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
314	0.00	0.000	0.010	0.1381	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
315	0.00	0.000	0.008	0.1367	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
316	0.00	0.000	0.003	0.1363	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

317		0.00	0.000	0.003	0.1358	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318		0.00	0.000	0.003	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319		0.00	0.000	0.002	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
321		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
322		0.00	0.000	0.000	0.1350	0.0000	0.0000	6.83E-09	0.0000	0.0000	0.00E+00
323		0.00	0.000	0.000	0.1350	0.0000	0.0000	2.68E-09	0.0000	0.0000	0.00E+00
324	*	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
325	*	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
326		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
329		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330		0.04	0.000	0.003	0.1405	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331		0.37	0.000	0.008	0.2014	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
332		0.00	0.000	0.010	0.1997	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333		0.00	0.000	0.011	0.1979	0.0000	0.0000	3.67E-09	0.0000	0.0000	0.00E+00
334		0.00	0.000	0.011	0.1962	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.011	0.1944	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
336		0.00	0.000	0.011	0.1925	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
337		0.23	0.000	0.014	0.2288	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
338		0.00	0.000	0.013	0.2269	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
339		0.10	0.000	0.014	0.2419	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
340		0.00	0.000	0.012	0.2399	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
341		0.02	0.000	0.014	0.2408	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.013	0.2389	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
343		0.17	0.000	0.014	0.2644	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
344		0.01	0.000	0.014	0.2631	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345		0.01	0.000	0.014	0.2631	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.011	0.2612	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
347		0.00	0.000	0.012	0.2593	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
348		0.00	0.000	0.012	0.2573	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
349		0.00	0.000	0.012	0.2554	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
350		0.00	0.000	0.011	0.2535	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.011	0.2516	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
352		0.12	0.000	0.014	0.2688	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

353	*	0.07	0.000	0.072	0.2686	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
354		0.00	0.000	0.013	0.2672	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
355		0.23	0.000	0.013	0.3031	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
356		0.25	0.000	0.013	0.3266	0.0228	0.0858	2.16E-06	0.0000	0.0000	0.00E+00
357		0.00	0.000	0.013	0.3177	0.0089	0.0336	1.04E-06	0.0000	0.0000	0.00E+00
358		0.00	0.000	0.011	0.3025	0.0234	0.0880	2.50E-06	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.011	0.2911	0.0159	0.0599	1.77E-06	0.0000	0.0000	0.00E+00
360		0.00	0.000	0.011	0.2831	0.0109	0.0411	1.26E-06	0.0000	0.0000	0.00E+00
361		0.00	0.000	0.011	0.2768	0.0079	0.0297	9.48E-07	0.0000	0.0000	0.00E+00
362		0.00	0.000	0.011	0.2740	0.0028	0.0107	3.76E-07	0.0000	0.0000	0.00E+00
363		0.00	0.000	0.011	0.2723	0.0000	0.0000	1.53E-08	0.0000	0.0000	0.00E+00
364		0.00	0.000	0.011	0.2705	0.0000	0.0000	1.93E-09	0.0000	0.0000	0.00E+00
365		0.00	0.000	0.010	0.2687	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 6			
	inches	cubic feet	percent
Precipitation	11.81	42,884.2	100.00
Runoff	0.172	623.4	1.45
Evapotranspiration	8.690	31,546.2	73.56
Drainage Collected from Layer 2	2.1491	7,801.2	18.19
Percolation/Leakage through Layer 4	0.000107	0.3883	0.00
Average Head on Top of Layer 3	0.0036	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	0.8026	2,913.4	6.79
Soil Water at Start of Year	538.0431	1,953,096.6	4554.35
Soil Water at End of Year	538.8457	1,956,010.0	4561.15
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 7

Column key: Head #1: drainage from Layer 3 | Head #2: drainage from Layer 15
Drain #1: drainage from Layer 2 | Drain #2: drainage from Layer 14
Leak #1: leakage thru Layer 4 | Leak #2: leakage thru Layer 16

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.00	0.000	0.010	0.2670	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.010	0.2653	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.010	0.2636	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.010	0.2618	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.010	0.2601	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
6	*		0.27	0.000	0.054	0.2634	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.113	0.2776	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.010	0.2757	0.0001	0.0003	1.45E-08	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.010	0.2728	0.0018	0.0069	2.64E-07	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.010	0.2705	0.0011	0.0040	1.67E-07	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.010	0.2676	0.0018	0.0068	2.61E-07	0.0000	0.0000	0.00E+00
12			0.15	0.000	0.012	0.2901	0.0005	0.0018	8.32E-08	0.0000	0.0000	0.00E+00
13			0.21	0.000	0.012	0.3227	0.0000	0.0000	8.76E-09	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.010	0.3167	0.0020	0.0075	2.28E-07	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.010	0.3018	0.0218	0.0819	2.35E-06	0.0000	0.0000	0.00E+00
16			0.00	0.000	0.010	0.2912	0.0165	0.0618	1.82E-06	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.010	0.2839	0.0097	0.0364	1.14E-06	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.010	0.2784	0.0069	0.0258	8.36E-07	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.010	0.2766	0.0014	0.0052	1.94E-07	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.010	0.2750	0.0000	0.0000	1.15E-08	0.0000	0.0000	0.00E+00
21			0.00	0.000	0.010	0.2734	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.010	0.2718	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
23			0.02	0.000	0.011	0.2740	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
24			0.00	0.000	0.009	0.2723	0.0002	0.0009	4.41E-08	0.0000	0.0000	0.00E+00
25			0.00	0.000	0.009	0.2707	0.0000	0.0000	1.46E-08	0.0000	0.0000	0.00E+00
26			0.00	0.000	0.009	0.2692	0.0000	0.0000	8.44E-10	0.0000	0.0000	0.00E+00
27			0.00	0.000	0.009	0.2676	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
28			0.00	0.000	0.009	0.2661	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

29		0.00	0.000	0.009	0.2646	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
30	*	0.21	0.000	0.068	0.2678	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
31		0.04	0.000	0.092	0.2792	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.009	0.2777	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
33	*	0.00	0.000	0.000	0.2769	0.0010	0.0037	1.46E-07	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.009	0.2744	0.0014	0.0052	2.09E-07	0.0000	0.0000	0.00E+00
35		0.00	0.000	0.009	0.2717	0.0019	0.0070	2.68E-07	0.0000	0.0000	0.00E+00
36		0.00	0.000	0.009	0.2691	0.0019	0.0071	2.71E-07	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.009	0.2671	0.0010	0.0038	1.59E-07	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.009	0.2654	0.0003	0.0011	6.27E-08	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.009	0.2636	0.0004	0.0016	8.14E-08	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.009	0.2613	0.0011	0.0041	1.71E-07	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.009	0.2587	0.0017	0.0064	2.50E-07	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.009	0.2559	0.0021	0.0077	2.91E-07	0.0000	0.0000	0.00E+00
43		0.00	0.000	0.009	0.2531	0.0021	0.0081	3.03E-07	0.0000	0.0000	0.00E+00
44		0.00	0.000	0.009	0.2503	0.0021	0.0079	2.98E-07	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.009	0.2476	0.0020	0.0076	2.87E-07	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.009	0.2450	0.0019	0.0071	2.72E-07	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.009	0.2425	0.0018	0.0067	2.57E-07	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.009	0.2400	0.0017	0.0062	2.43E-07	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.009	0.2376	0.0015	0.0058	2.29E-07	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.009	0.2353	0.0014	0.0054	2.17E-07	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.009	0.2330	0.0014	0.0051	2.05E-07	0.0000	0.0000	0.00E+00
52		0.00	0.000	0.008	0.2316	0.0003	0.0011	5.72E-08	0.0000	0.0000	0.00E+00
53		0.00	0.000	0.008	0.2302	0.0000	0.0000	7.97E-09	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.008	0.2288	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.008	0.2274	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
56		0.00	0.000	0.008	0.2260	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
57		0.00	0.000	0.008	0.2246	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.008	0.2232	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.008	0.2218	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60		0.00	0.000	0.008	0.2204	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
61		0.00	0.000	0.008	0.2191	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.008	0.2177	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.008	0.2163	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.008	0.2150	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

65		0.00	0.000	0.008	0.2136	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.008	0.2122	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
67		0.03	0.000	0.009	0.2153	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
68		0.01	0.000	0.009	0.2162	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.008	0.2149	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
70	*	0.22	0.000	0.048	0.2182	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
71		0.03	0.000	0.074	0.2373	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.008	0.2360	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.008	0.2346	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.008	0.2333	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.008	0.2320	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.008	0.2307	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
77	*	0.00	0.000	0.000	0.2306	0.0002	0.0007	3.91E-08	0.0000	0.0000	0.00E+00
78	*	0.00	0.000	0.000	0.2306	0.0000	0.0000	9.11E-09	0.0000	0.0000	0.00E+00
79		0.00	0.000	0.008	0.2292	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
80	*	0.00	0.000	0.008	0.2279	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
81	*	0.00	0.000	0.000	0.2278	0.0002	0.0006	3.60E-08	0.0000	0.0000	0.00E+00
82	*	0.00	0.000	0.008	0.2265	0.0000	0.0000	1.15E-08	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.008	0.2252	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
84		0.00	0.000	0.008	0.2239	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
85		0.00	0.000	0.008	0.2226	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.008	0.2213	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.008	0.2200	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.008	0.2188	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
89		0.00	0.000	0.008	0.2175	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
90		0.00	0.000	0.008	0.2162	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
91		0.00	0.000	0.008	0.2149	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
92		0.00	0.000	0.008	0.2136	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.008	0.2123	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.008	0.2110	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.007	0.2098	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
96		0.00	0.000	0.008	0.2085	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
97		0.00	0.000	0.008	0.2072	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
98		0.00	0.000	0.008	0.2060	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99		0.00	0.000	0.008	0.2046	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100		0.00	0.000	0.008	0.2033	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

101	0.00	0.000	0.008	0.2019	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
102	0.00	0.000	0.008	0.2006	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
103	0.00	0.000	0.008	0.1993	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
104	0.00	0.000	0.008	0.1980	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
105	0.00	0.000	0.008	0.1966	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
106	0.00	0.000	0.008	0.1953	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
107	0.00	0.000	0.008	0.1939	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
108	0.00	0.000	0.008	0.1925	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
109	0.00	0.000	0.008	0.1912	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
110	0.00	0.000	0.008	0.1898	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
111	0.00	0.000	0.009	0.1884	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
112	0.00	0.000	0.008	0.1870	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
113	0.00	0.000	0.009	0.1855	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
114	0.00	0.000	0.010	0.1839	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
115	0.00	0.000	0.010	0.1823	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
116	0.00	0.000	0.010	0.1807	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
117	0.00	0.000	0.010	0.1791	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
118	0.00	0.000	0.010	0.1775	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
119	0.07	0.000	0.009	0.1879	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
120	0.00	0.000	0.009	0.1867	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
121	0.08	0.000	0.009	0.1981	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
122	0.00	0.000	0.010	0.1965	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
123	0.00	0.000	0.011	0.1947	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.010	0.1930	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
125	0.00	0.000	0.010	0.1913	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
126	0.01	0.000	0.011	0.1916	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
127	0.01	0.000	0.011	0.1911	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
128	0.00	0.000	0.011	0.1892	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
129	0.00	0.000	0.012	0.1872	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
130	0.00	0.000	0.011	0.1854	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
131	0.00	0.000	0.014	0.1832	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
132	0.00	0.000	0.013	0.1811	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
133	0.34	0.000	0.015	0.2345	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
134	0.31	0.000	0.012	0.2847	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
135	0.33	0.000	0.354	0.2804	0.0006	0.0021	8.40E-08	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.320	0.2273	0.0005	0.0020	8.96E-08	0.0000	0.0000	0.00E+00

137	0.00	0.000	0.206	0.1931	0.0000	0.0001	1.90E-08	0.0000	0.0000	0.00E+00
138	0.23	0.000	0.093	0.2164	0.0000	0.0000	4.07E-09	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.070	0.2052	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.061	0.1950	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.052	0.1863	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.051	0.1778	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.044	0.1705	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.045	0.1630	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.043	0.1559	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.045	0.1484	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.043	0.1412	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.037	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
153	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
159	0.18	0.000	0.013	0.1632	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.013	0.1610	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.020	0.1577	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.021	0.1542	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.023	0.1503	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
164	0.28	0.000	0.025	0.1922	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.029	0.1874	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.030	0.1824	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
167	0.00	0.000	0.029	0.1776	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
168	0.00	0.000	0.028	0.1729	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.029	0.1681	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.031	0.1629	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.027	0.1584	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.034	0.1528	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

173	0.00	0.000	0.032	0.1475	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
174	0.00	0.000	0.036	0.1416	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.032	0.1362	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.005	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.002	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
183	0.19	0.000	0.014	0.1641	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
184	0.30	0.000	0.017	0.2105	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
185	0.00	0.000	0.025	0.2063	0.0000	0.0000	2.25E-09	0.0000	0.0000	0.00E+00
186	0.07	0.000	0.026	0.2133	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.030	0.2083	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.035	0.2026	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
189	0.00	0.000	0.026	0.1983	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
190	0.00	0.000	0.029	0.1935	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.034	0.1879	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
192	0.04	0.000	0.028	0.1905	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
193	0.00	0.000	0.031	0.1854	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
194	0.00	0.000	0.027	0.1809	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
195	0.00	0.000	0.039	0.1744	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
196	0.00	0.000	0.027	0.1699	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
197	0.24	0.000	0.044	0.2034	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
198	0.00	0.000	0.048	0.1955	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
199	0.22	0.000	0.049	0.2234	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
200	0.03	0.000	0.047	0.2197	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.034	0.2144	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
202	0.00	0.000	0.029	0.2096	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.030	0.2046	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
204	0.00	0.000	0.029	0.1999	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
205	0.00	0.000	0.042	0.1936	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
206	0.00	0.000	0.040	0.1869	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
207	0.00	0.000	0.032	0.1816	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
208	0.00	0.000	0.040	0.1749	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

209	0.00	0.000	0.029	0.1700	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.046	0.1624	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.044	0.1551	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.052	0.1465	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.046	0.1389	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.016	0.1362	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.007	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
216	0.40	0.000	0.026	0.1972	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
217	0.00	0.000	0.258	0.1543	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
218	0.00	0.000	0.047	0.1465	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
219	0.00	0.000	0.035	0.1407	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.024	0.1367	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.008	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.002	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
223	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
227	0.02	0.000	0.006	0.1378	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
228	0.15	0.000	0.014	0.1602	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
229	0.00	0.000	0.011	0.1584	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
230	0.03	0.000	0.028	0.1584	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.08	0.000	0.031	0.1668	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
232	0.01	0.000	0.028	0.1632	0.0000	0.0000	4.26E-09	0.0000	0.0000	0.00E+00
233	0.08	0.000	0.026	0.1724	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
234	0.10	0.000	0.037	0.1830	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.029	0.1782	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.026	0.1739	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.036	0.1679	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
238	0.21	0.000	0.050	0.1941	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
239	0.07	0.000	0.257	0.1629	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
240	0.00	0.000	0.050	0.1546	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.047	0.1468	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
242	0.00	0.000	0.042	0.1398	0.0000	0.0000	2.73E-17	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.027	0.1357	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
244	0.29	0.000	0.031	0.1791	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

245	0.00	0.000	0.140	0.1558	0.0001	0.0002	1.95E-08	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.042	0.1487	0.0000	0.0000	9.84E-09	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.038	0.1424	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.038	0.1360	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
249	0.00	0.000	0.004	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.002	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
252	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
257	0.06	0.000	0.011	0.1425	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.025	0.1383	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
259	0.46	0.000	0.038	0.2088	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
260	0.50	0.000	0.266	0.2471	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
261	0.00	0.000	0.271	0.2020	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.307	0.1507	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
263	0.00	0.000	0.078	0.1377	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
264	0.11	0.000	0.052	0.1472	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.041	0.1404	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.026	0.1361	0.0000	0.0000	4.26E-09	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.004	0.1353	0.0000	0.0000	9.67E-09	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.000	0.1350	0.0000	0.0000	1.41E-08	0.0000	0.0000	0.00E+00
270	0.17	0.000	0.028	0.1591	0.0000	0.0000	5.99E-09	0.0000	0.0000	0.00E+00
271	0.90	0.001	0.042	0.3027	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.213	0.2672	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.247	0.2261	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.212	0.1907	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.095	0.1749	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.073	0.1628	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.061	0.1527	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.057	0.1432	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.049	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.000	0.1350	0.0000	0.0000	2.73E-17	0.0000	0.0000	0.00E+00

281		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
283		0.40	0.000	0.021	0.1976	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
284		0.03	0.000	0.029	0.1981	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
285		0.00	0.000	0.027	0.1936	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
286		0.00	0.000	0.026	0.1893	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
287		0.00	0.000	0.024	0.1854	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
288		0.38	0.000	0.029	0.2439	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
289		0.00	0.000	0.025	0.2397	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
290		0.00	0.000	0.026	0.2354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
291		0.00	0.000	0.025	0.2313	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
292		0.00	0.000	0.024	0.2274	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
293		0.00	0.000	0.023	0.2236	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
294		0.00	0.000	0.022	0.2199	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
295		0.00	0.000	0.022	0.2163	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
296		0.00	0.000	0.021	0.2127	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
297		0.00	0.000	0.021	0.2092	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
298		0.00	0.000	0.022	0.2058	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
299		0.00	0.000	0.021	0.2022	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
300		0.00	0.000	0.021	0.1988	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
301		0.00	0.000	0.019	0.1955	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
302		0.00	0.000	0.019	0.1924	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
303		0.00	0.000	0.018	0.1894	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
304		0.00	0.000	0.018	0.1865	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
305		0.00	0.000	0.017	0.1836	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
306		0.00	0.000	0.017	0.1807	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
307		0.00	0.000	0.017	0.1779	0.0000	0.0000	9.28E-09	0.0000	0.0000	0.00E+00
308		0.00	0.000	0.017	0.1751	0.0000	0.0000	2.36E-09	0.0000	0.0000	0.00E+00
309		0.02	0.000	0.023	0.1750	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
310		0.00	0.000	0.017	0.1722	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
311		0.00	0.000	0.017	0.1694	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
312		0.00	0.000	0.016	0.1667	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
313		0.00	0.000	0.016	0.1640	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
314	*	0.00	0.000	0.016	0.1614	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
315	*	0.00	0.000	0.000	0.1614	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
316	*	0.00	0.000	0.000	0.1614	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

317		0.00	0.000	0.015	0.1588	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318		0.00	0.000	0.015	0.1563	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319		0.00	0.000	0.015	0.1537	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320		0.00	0.000	0.015	0.1512	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
321		0.00	0.000	0.015	0.1488	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
322		0.00	0.000	0.015	0.1463	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
323	*	0.00	0.000	0.015	0.1439	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324		0.00	0.000	0.014	0.1415	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
325	*	0.00	0.000	0.014	0.1391	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
326		0.00	0.000	0.014	0.1368	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.011	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
329		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
332		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
334		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
336		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
337		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
338		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
339		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
340		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
341		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
343		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
344		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
347		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
348		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
349		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
350		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
352		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

353		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
354		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
355		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
356		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
357		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
358		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
360		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
361	*	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
362	*	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
363		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
364	*	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
365	*	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 7			
	inches	cubic feet	percent
Precipitation	8.61	31,250.4	100.00
Runoff	0.001	3.7761	0.01
Evapotranspiration	9.056	32,875.0	105.20
Drainage Collected from Layer 2	0.3539	1,284.6	4.11
Percolation/Leakage through Layer 4	0.000012	0.0439	0.00
Average Head on Top of Layer 3	0.0003	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	-0.8025	-2,913.0	-9.32
Soil Water at Start of Year	538.8457	1,956,010.0	6259.15
Soil Water at End of Year	538.0432	1,953,097.0	6249.82
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 8

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Column key: Head #1: drainage from Layer 3; Drain #1: drainage from Layer 2; Leak #1: leakage thru Layer 4; Head #2: drainage from Layer 15; Drain #2: drainage from Layer 14; Leak #2: leakage thru Layer 16

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1	*		0.01	0.000	0.008	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
5	*		0.02	0.000	0.022	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
6	*		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
8			0.04	0.000	0.005	0.1414	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.004	0.1407	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
10			0.04	0.000	0.008	0.1460	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
11			0.03	0.000	0.009	0.1491	0.0000	0.0000	8.86E-09	0.0000	0.0000	0.00E+00
12			0.03	0.000	0.009	0.1521	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
13			0.02	0.000	0.008	0.1540	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.004	0.1533	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.007	0.1521	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
16			0.00	0.000	0.007	0.1510	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.007	0.1499	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
18			0.04	0.000	0.011	0.1547	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.008	0.1533	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
20	*		0.00	0.000	0.000	0.1533	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
21	*		0.06	0.000	0.058	0.1534	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
22	*		0.00	0.000	0.007	0.1522	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.007	0.1511	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
24			0.00	0.000	0.007	0.1500	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
25			0.00	0.000	0.006	0.1489	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
26	*		0.00	0.000	0.006	0.1478	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
27			0.00	0.000	0.006	0.1468	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
28			0.00	0.000	0.006	0.1457	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

29		0.00	0.000	0.006	0.1447	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.006	0.1436	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.006	0.1426	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.006	0.1415	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
33		0.00	0.000	0.006	0.1405	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.006	0.1395	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
35	*	0.00	0.000	0.006	0.1385	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
36	*	0.00	0.000	0.005	0.1376	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.007	0.1363	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.006	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
43		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
44		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
52		0.16	0.000	0.008	0.1602	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
53		0.00	0.000	0.004	0.1596	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
54	*	0.00	0.000	0.006	0.1587	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.006	0.1577	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
56		0.00	0.000	0.006	0.1568	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
57	*	0.00	0.000	0.006	0.1558	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.006	0.1549	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
59	*	0.00	0.000	0.000	0.1549	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60		0.00	0.000	0.006	0.1540	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
61		0.20	0.000	0.010	0.1853	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.008	0.1842	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.007	0.1830	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
64		0.01	0.000	0.010	0.1824	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

65		0.00	0.000	0.008	0.1813	0.0000	0.0000	7.72E-09	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.007	0.1802	0.0000	0.0000	8.99E-09	0.0000	0.0000	0.00E+00
67		0.00	0.000	0.007	0.1791	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.007	0.1780	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.007	0.1768	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.007	0.1757	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.007	0.1746	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.007	0.1735	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.007	0.1724	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
74		0.11	0.000	0.011	0.1895	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
75		0.19	0.000	0.011	0.2195	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.007	0.2183	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.007	0.2171	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.007	0.2159	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
79		0.00	0.000	0.007	0.2147	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
80		0.00	0.000	0.007	0.2135	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
81		0.00	0.000	0.007	0.2123	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
82		0.00	0.000	0.007	0.2111	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.007	0.2099	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
84	*	0.29	0.000	0.066	0.2132	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
85		0.39	0.000	0.077	0.2986	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.007	0.2973	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.008	0.2960	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.008	0.2913	0.0038	0.0142	4.66E-07	0.0000	0.0000	0.00E+00
89		0.00	0.000	0.008	0.2846	0.0087	0.0327	1.03E-06	0.0000	0.0000	0.00E+00
90		0.00	0.000	0.008	0.2795	0.0068	0.0255	8.26E-07	0.0000	0.0000	0.00E+00
91		0.00	0.000	0.008	0.2780	0.0014	0.0051	1.93E-07	0.0000	0.0000	0.00E+00
92		0.00	0.000	0.008	0.2767	0.0000	0.0000	1.15E-08	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.008	0.2754	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.008	0.2740	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.008	0.2727	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
96		0.00	0.000	0.008	0.2714	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
97		0.00	0.000	0.008	0.2700	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
98		0.00	0.000	0.008	0.2687	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99		0.00	0.000	0.008	0.2673	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100		0.00	0.000	0.008	0.2659	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

101	0.00	0.000	0.009	0.2644	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
102	0.15	0.000	0.012	0.2882	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
103	0.02	0.000	0.012	0.2893	0.0003	0.0012	5.09E-08	0.0000	0.0000	0.00E+00
104	0.00	0.000	0.009	0.2878	0.0000	0.0001	1.79E-08	0.0000	0.0000	0.00E+00
105	0.00	0.000	0.009	0.2861	0.0004	0.0017	7.48E-08	0.0000	0.0000	0.00E+00
106	0.00	0.000	0.009	0.2839	0.0005	0.0017	7.91E-08	0.0000	0.0000	0.00E+00
107	0.00	0.000	0.009	0.2793	0.0047	0.0175	5.93E-07	0.0000	0.0000	0.00E+00
108	0.00	0.000	0.010	0.2776	0.0010	0.0037	1.45E-07	0.0000	0.0000	0.00E+00
109	0.00	0.000	0.009	0.2761	0.0000	0.0000	1.05E-08	0.0000	0.0000	0.00E+00
110	0.00	0.000	0.010	0.2744	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
111	0.00	0.000	0.009	0.2728	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
112	0.00	0.000	0.009	0.2714	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
113	0.00	0.000	0.009	0.2698	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
114	0.00	0.000	0.010	0.2682	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
115	0.00	0.000	0.010	0.2666	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
116	0.00	0.000	0.010	0.2649	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
117	0.00	0.000	0.010	0.2633	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
118	0.00	0.000	0.009	0.2618	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
119	0.00	0.000	0.011	0.2600	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
120	0.00	0.000	0.012	0.2581	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
121	0.03	0.000	0.015	0.2603	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
122	0.07	0.000	0.017	0.2691	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
123	0.00	0.000	0.014	0.2668	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.013	0.2636	0.0011	0.0043	1.72E-07	0.0000	0.0000	0.00E+00
125	0.00	0.000	0.011	0.2609	0.0016	0.0059	2.32E-07	0.0000	0.0000	0.00E+00
126	0.00	0.000	0.014	0.2586	0.0011	0.0042	1.75E-07	0.0000	0.0000	0.00E+00
127	0.00	0.000	0.015	0.2555	0.0010	0.0039	1.64E-07	0.0000	0.0000	0.00E+00
128	0.00	0.000	0.011	0.2527	0.0014	0.0052	2.08E-07	0.0000	0.0000	0.00E+00
129	0.00	0.000	0.013	0.2497	0.0014	0.0054	2.17E-07	0.0000	0.0000	0.00E+00
130	0.01	0.000	0.014	0.2480	0.0006	0.0021	9.66E-08	0.0000	0.0000	0.00E+00
131	0.00	0.000	0.013	0.2452	0.0009	0.0033	1.41E-07	0.0000	0.0000	0.00E+00
132	0.20	0.000	0.016	0.2754	0.0009	0.0034	1.45E-07	0.0000	0.0000	0.00E+00
133	0.07	0.000	0.016	0.2836	0.0003	0.0011	5.56E-08	0.0000	0.0000	0.00E+00
134	0.08	0.000	0.017	0.2939	0.0000	0.0000	7.89E-09	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.015	0.2916	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.012	0.2895	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

137	0.00	0.000	0.011	0.2875	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.014	0.2813	0.0048	0.0179	5.98E-07	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.014	0.2748	0.0072	0.0272	8.77E-07	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.015	0.2715	0.0023	0.0088	3.13E-07	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.016	0.2688	0.0000	0.0000	1.44E-08	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.019	0.2656	0.0000	0.0000	2.38E-10	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.015	0.2630	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.014	0.2607	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
145	0.01	0.000	0.017	0.2598	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.021	0.2563	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.021	0.2527	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.020	0.2495	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.017	0.2467	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.019	0.2434	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.015	0.2409	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.020	0.2376	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
153	0.00	0.000	0.020	0.2343	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.021	0.2308	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.017	0.2281	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.021	0.2246	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.023	0.2208	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.023	0.2170	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
159	0.01	0.000	0.020	0.2149	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
160	0.04	0.000	0.020	0.2185	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
161	0.16	0.000	0.021	0.2412	0.0001	0.0004	3.22E-08	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.023	0.2373	0.0000	0.0000	6.34E-09	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.024	0.2333	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.020	0.2299	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.018	0.2270	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
166	0.14	0.000	0.021	0.2471	0.0002	0.0007	3.89E-08	0.0000	0.0000	0.00E+00
167	0.01	0.000	0.022	0.2443	0.0000	0.0000	9.10E-09	0.0000	0.0000	0.00E+00
168	0.06	0.000	0.028	0.2488	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
169	0.04	0.000	0.024	0.2508	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
170	0.02	0.000	0.028	0.2494	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.026	0.2453	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.030	0.2402	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

173	0.00	0.000	0.032	0.2349	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
174	0.13	0.000	0.030	0.2509	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
175	0.21	0.000	0.253	0.2437	0.0005	0.0018	7.81E-08	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.222	0.2066	0.0000	0.0000	1.38E-08	0.0000	0.0000	0.00E+00
177	0.28	0.000	0.227	0.2154	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
178	0.02	0.000	0.117	0.1987	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.093	0.1832	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.089	0.1683	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.064	0.1576	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.064	0.1470	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
183	0.00	0.000	0.066	0.1360	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.006	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
185	0.00	0.000	0.000	0.1350	0.0000	0.0000	2.73E-17	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
188	0.16	0.000	0.021	0.1578	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
189	0.01	0.000	0.022	0.1552	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
190	0.00	0.000	0.038	0.1488	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
191	0.21	0.000	0.046	0.1757	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
192	0.22	0.000	0.055	0.2032	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
193	0.18	0.000	0.048	0.2256	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
194	0.11	0.000	0.271	0.1985	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
195	0.00	0.000	0.059	0.1886	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
196	0.00	0.000	0.060	0.1787	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.053	0.1699	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
198	0.00	0.000	0.059	0.1600	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
199	0.00	0.000	0.054	0.1510	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.058	0.1414	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.028	0.1368	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
202	0.01	0.000	0.018	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
203	0.46	0.000	0.023	0.2076	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
204	0.31	0.000	0.270	0.2150	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
205	0.00	0.000	0.323	0.1611	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
206	0.11	0.000	0.189	0.1483	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
207	0.17	0.000	0.069	0.1644	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
208	0.25	0.000	0.042	0.1987	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

209	0.50	0.000	0.062	0.2711	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
210	0.31	0.000	0.233	0.2847	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.306	0.2336	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.345	0.1761	0.0002	0.0006	4.05E-08	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.214	0.1404	0.0000	0.0000	6.77E-09	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.027	0.1350	0.0014	0.0054	1.93E-07	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.001	0.1350	0.0000	0.0000	1.32E-08	0.0000	0.0000	0.00E+00
216	0.10	0.000	0.021	0.1475	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
217	0.00	0.000	0.041	0.1407	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
218	0.00	0.000	0.027	0.1362	0.0000	0.0000	6.68E-09	0.0000	0.0000	0.00E+00
219	0.03	0.000	0.017	0.1377	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
220	0.04	0.000	0.013	0.1430	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.031	0.1379	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.011	0.1361	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
223	0.00	0.000	0.004	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
227	0.01	0.000	0.009	0.1350	0.0000	0.0000	4.99E-09	0.0000	0.0000	0.00E+00
228	0.00	0.000	0.002	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
229	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
230	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
233	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
234	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
236	0.16	0.000	0.033	0.1564	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.030	0.1514	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.049	0.1433	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
239	0.00	0.000	0.031	0.1382	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
240	0.00	0.000	0.017	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.003	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
242	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

245	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
246	0.01	0.000	0.010	0.1355	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.002	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
249	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
250	0.06	0.000	0.010	0.1425	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
251	0.02	0.000	0.030	0.1404	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
252	0.45	0.000	0.040	0.2080	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.053	0.1992	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.00	0.000	0.068	0.1878	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.070	0.1761	0.0000	0.0000	9.08E-09	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.058	0.1671	0.0000	0.0000	4.47E-09	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.057	0.1575	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.061	0.1473	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
259	0.14	0.000	0.061	0.1598	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
260	2.03	0.234	0.055	0.4273	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
261	0.40	0.014	0.187	0.3334	1.5768	0.7256	1.10E-04	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.156	0.2979	0.0807	0.2138	7.11E-06	0.0000	0.0000	0.00E+00
263	0.08	0.000	0.306	0.2511	0.0162	0.0611	1.80E-06	0.0000	0.0000	0.00E+00
264	0.19	0.000	0.302	0.2257	0.0112	0.0422	1.30E-06	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.162	0.1988	0.0009	0.0032	1.29E-07	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.226	0.1611	0.0000	0.0000	9.64E-09	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.153	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.002	0.1352	0.0000	0.0000	5.82E-09	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
271	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
274	0.01	0.000	0.008	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.003	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

281		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
283		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
284		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
285		0.01	0.000	0.009	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
286		0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
287		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
288		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
289		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
290		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
291		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
292		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
293		0.04	0.000	0.010	0.1400	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
294		0.06	0.000	0.014	0.1474	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
295		0.00	0.000	0.011	0.1455	0.0000	0.0000	6.81E-09	0.0000	0.0000	0.00E+00
296		0.00	0.000	0.018	0.1426	0.0000	0.0000	1.73E-09	0.0000	0.0000	0.00E+00
297		0.00	0.000	0.017	0.1397	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
298		0.00	0.000	0.019	0.1365	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
299		0.00	0.000	0.007	0.1355	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
300		0.00	0.000	0.002	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
301		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
302		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
303		0.22	0.000	0.016	0.1693	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
304		0.00	0.000	0.009	0.1680	0.0000	0.0000	4.04E-09	0.0000	0.0000	0.00E+00
305	*	0.00	0.000	0.012	0.1659	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
306		0.00	0.000	0.012	0.1638	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
307		0.00	0.000	0.013	0.1616	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
308		0.00	0.000	0.014	0.1593	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
309		0.00	0.000	0.016	0.1567	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
310		0.05	0.000	0.023	0.1610	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
311		0.03	0.000	0.023	0.1619	0.0000	0.0000	2.04E-09	0.0000	0.0000	0.00E+00
312		0.20	0.000	0.024	0.1919	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
313		0.15	0.000	0.023	0.2127	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
314		0.00	0.000	0.014	0.2104	0.0000	0.0000	5.16E-09	0.0000	0.0000	0.00E+00
315		0.00	0.000	0.014	0.2081	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
316		0.00	0.000	0.013	0.2059	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

317		0.00	0.000	0.013	0.2036	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318		0.00	0.000	0.013	0.2014	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319		0.04	0.000	0.018	0.2057	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320	*	0.15	0.000	0.057	0.2090	0.0000	0.0000	5.05E-09	0.0000	0.0000	0.00E+00
321		0.00	0.000	0.086	0.2068	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
322		0.00	0.000	0.013	0.2046	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
323		0.00	0.000	0.013	0.2024	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324		0.00	0.000	0.013	0.2002	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
325		0.00	0.000	0.013	0.1980	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
326		0.00	0.000	0.012	0.1960	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.012	0.1940	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328		0.00	0.000	0.012	0.1919	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
329		0.00	0.000	0.012	0.1899	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330		0.00	0.000	0.012	0.1880	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331		0.00	0.000	0.012	0.1860	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
332		0.00	0.000	0.012	0.1841	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333		0.00	0.000	0.012	0.1821	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
334		0.00	0.000	0.011	0.1804	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.012	0.1784	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
336		0.00	0.000	0.012	0.1765	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
337		0.00	0.000	0.011	0.1746	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
338		0.07	0.000	0.017	0.1840	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
339		0.00	0.000	0.012	0.1821	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
340		0.00	0.000	0.011	0.1802	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
341		0.00	0.000	0.011	0.1783	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.011	0.1765	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
343		0.00	0.000	0.011	0.1748	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
344		0.00	0.000	0.011	0.1729	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345		0.00	0.000	0.011	0.1710	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.011	0.1691	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
347		0.00	0.000	0.010	0.1674	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
348		0.00	0.000	0.011	0.1656	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
349		0.00	0.000	0.011	0.1637	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
350		0.00	0.000	0.011	0.1619	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.011	0.1601	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
352		0.00	0.000	0.011	0.1583	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

353		0.00	0.000	0.011	0.1565	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
354		0.00	0.000	0.011	0.1548	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
355		0.00	0.000	0.011	0.1530	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
356		0.00	0.000	0.011	0.1513	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
357		0.00	0.000	0.010	0.1495	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
358		0.00	0.000	0.010	0.1478	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.010	0.1461	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
360		0.00	0.000	0.010	0.1444	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
361		0.00	0.000	0.010	0.1427	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
362		0.00	0.000	0.010	0.1410	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
363		0.00	0.000	0.010	0.1392	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
364	*	0.00	0.000	0.010	0.1375	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
365		0.00	0.000	0.009	0.1360	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 8			
	inches	cubic feet	percent
Precipitation	11.12	40,356.8	100.00
Runoff	0.248	899.4	2.23
Evapotranspiration	9.612	34,893.1	86.46
Drainage Collected from Layer 2	1.2510	4,541.1	11.25
Percolation/Leakage through Layer 4	0.000127	0.4624	0.00
Average Head on Top of Layer 3	0.0048	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	0.0064	23.2	0.06
Soil Water at Start of Year	538.0432	1,953,097.0	4839.57
Soil Water at End of Year	538.0496	1,953,120.2	4839.63
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 9

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Column key: Head #1: drainage from Layer 3; Drain #1: drainage from Layer 2; Leak #1: leakage thru Layer 4; Head #2: drainage from Layer 15; Drain #2: drainage from Layer 14; Leak #2: leakage thru Layer 16

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.23	0.000	0.016	0.1721	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.007	0.1709	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.007	0.1697	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.007	0.1686	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.007	0.1675	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
6	*		0.00	0.000	0.000	0.1675	0.0000	0.0000	4.54E-09	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.007	0.1663	0.0000	0.0000	3.86E-09	0.0000	0.0000	0.00E+00
8	*		0.00	0.000	0.000	0.1663	0.0000	0.0000	2.27E-09	0.0000	0.0000	0.00E+00
9	*		0.11	0.000	0.067	0.1696	0.0000	0.0000	4.63E-09	0.0000	0.0000	0.00E+00
10	*		0.01	0.000	0.044	0.1682	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
11	*		0.00	0.000	0.000	0.1682	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
12	*		0.00	0.000	0.000	0.1682	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
13	*		0.00	0.000	0.000	0.1682	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
14	*		0.00	0.000	0.009	0.1667	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.009	0.1652	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
16			0.00	0.000	0.008	0.1640	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.008	0.1626	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.008	0.1613	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.008	0.1601	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.008	0.1588	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
21			0.00	0.000	0.008	0.1575	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
22	*		0.00	0.000	0.008	0.1562	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
23	*		0.00	0.000	0.008	0.1550	0.0000	0.0000	2.30E-09	0.0000	0.0000	0.00E+00
24	*		0.00	0.000	0.000	0.1550	0.0000	0.0000	6.49E-09	0.0000	0.0000	0.00E+00
25	*		0.00	0.000	0.000	0.1550	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
26	*		0.00	0.000	0.000	0.1550	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
27	*	*	0.00	0.000	0.000	0.1550	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
28	*	*	0.00	0.000	0.000	0.1550	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

29			0.00	0.000	0.008	0.1537	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
30			0.00	0.000	0.008	0.1523	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
31			0.00	0.000	0.008	0.1509	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
32	*	*	0.00	0.000	0.000	0.1509	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
33			0.00	0.000	0.007	0.1497	0.0000	0.0000	4.61E-09	0.0000	0.0000	0.00E+00
34			0.00	0.000	0.008	0.1484	0.0000	0.0000	6.01E-09	0.0000	0.0000	0.00E+00
35			0.00	0.000	0.008	0.1472	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
36			0.00	0.000	0.008	0.1459	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
37			0.00	0.000	0.008	0.1446	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
38			0.00	0.000	0.008	0.1434	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
39			0.00	0.000	0.008	0.1421	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
40			0.27	0.000	0.014	0.1841	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
41			0.00	0.000	0.008	0.1828	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
42			0.00	0.000	0.009	0.1814	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
43			0.00	0.000	0.008	0.1801	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
44	*		0.00	0.000	0.007	0.1789	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
45	*		0.00	0.000	0.007	0.1777	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
46			0.00	0.000	0.007	0.1764	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
47			0.00	0.000	0.007	0.1752	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
48			0.08	0.000	0.013	0.1857	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
49			0.05	0.000	0.013	0.1925	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
50			0.00	0.000	0.008	0.1911	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
51			0.00	0.000	0.008	0.1898	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
52			0.00	0.000	0.007	0.1886	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
53			0.00	0.000	0.007	0.1874	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
54			0.00	0.000	0.007	0.1863	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
55			0.00	0.000	0.007	0.1851	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
56			0.00	0.000	0.007	0.1839	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
57	*		0.00	0.000	0.007	0.1828	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
58	*		0.00	0.000	0.000	0.1828	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
59			0.00	0.000	0.007	0.1816	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60	*		0.00	0.000	0.008	0.1803	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
61			0.00	0.000	0.008	0.1790	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
62			0.00	0.000	0.008	0.1778	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
63			0.00	0.000	0.008	0.1765	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
64			0.00	0.000	0.008	0.1752	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

65		0.00	0.000	0.008	0.1740	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.008	0.1727	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
67		0.00	0.000	0.008	0.1715	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.007	0.1702	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.007	0.1690	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.007	0.1677	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.007	0.1665	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.007	0.1653	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.007	0.1640	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
74	*	0.00	0.000	0.007	0.1628	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
75	*	0.03	0.000	0.032	0.1628	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.007	0.1616	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.007	0.1604	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.007	0.1592	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
79		0.00	0.000	0.007	0.1580	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
80		0.09	0.000	0.013	0.1704	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
81		0.00	0.000	0.007	0.1692	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
82		0.00	0.000	0.007	0.1679	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.007	0.1667	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
84		0.00	0.000	0.007	0.1655	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
85		0.00	0.000	0.007	0.1643	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.007	0.1631	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.007	0.1619	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.007	0.1608	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
89		0.00	0.000	0.007	0.1596	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
90		0.00	0.000	0.007	0.1584	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
91		0.04	0.000	0.012	0.1631	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
92		0.00	0.000	0.008	0.1618	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.008	0.1605	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.008	0.1593	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.008	0.1580	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
96		0.00	0.000	0.007	0.1568	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
97		0.67	0.000	0.012	0.2659	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
98		0.04	0.000	0.013	0.2707	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99		0.00	0.000	0.008	0.2694	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100		0.01	0.000	0.013	0.2694	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

101		0.01	0.000	0.013	0.2691	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
102		0.00	0.000	0.008	0.2677	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
103		0.00	0.000	0.008	0.2664	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
104		0.00	0.000	0.008	0.2650	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
105		0.00	0.000	0.008	0.2636	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
106	*	0.00	0.000	0.008	0.2623	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
107		0.00	0.000	0.008	0.2608	0.0000	0.0000	1.16E-08	0.0000	0.0000	0.00E+00
108		0.05	0.000	0.015	0.2668	0.0001	0.0002	2.44E-08	0.0000	0.0000	0.00E+00
109		0.00	0.000	0.009	0.2652	0.0000	0.0000	7.55E-09	0.0000	0.0000	0.00E+00
110		0.00	0.000	0.010	0.2633	0.0003	0.0012	6.44E-08	0.0000	0.0000	0.00E+00
111		0.00	0.000	0.010	0.2617	0.0000	0.0001	1.65E-08	0.0000	0.0000	0.00E+00
112		0.00	0.000	0.010	0.2597	0.0003	0.0010	5.65E-08	0.0000	0.0000	0.00E+00
113		0.02	0.000	0.014	0.2602	0.0001	0.0005	3.48E-08	0.0000	0.0000	0.00E+00
114		0.03	0.000	0.016	0.2632	0.0003	0.0011	5.99E-08	0.0000	0.0000	0.00E+00
115		0.02	0.000	0.015	0.2633	0.0001	0.0003	2.75E-08	0.0000	0.0000	0.00E+00
116		0.19	0.000	0.015	0.2927	0.0001	0.0004	3.19E-08	0.0000	0.0000	0.00E+00
117		0.00	0.000	0.010	0.2909	0.0002	0.0006	3.83E-08	0.0000	0.0000	0.00E+00
118		0.13	0.000	0.013	0.3106	0.0000	0.0000	8.78E-09	0.0000	0.0000	0.00E+00
119		0.00	0.000	0.010	0.3090	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
120		0.00	0.000	0.010	0.3010	0.0057	0.0216	6.56E-07	0.0000	0.0000	0.00E+00
121		0.00	0.000	0.012	0.2902	0.0162	0.0608	1.79E-06	0.0000	0.0000	0.00E+00
122		0.00	0.000	0.012	0.2824	0.0097	0.0365	1.14E-06	0.0000	0.0000	0.00E+00
123		0.00	0.000	0.011	0.2768	0.0068	0.0256	8.30E-07	0.0000	0.0000	0.00E+00
124		0.00	0.000	0.012	0.2747	0.0013	0.0047	1.80E-07	0.0000	0.0000	0.00E+00
125		0.00	0.000	0.012	0.2727	0.0000	0.0000	1.13E-08	0.0000	0.0000	0.00E+00
126		0.00	0.000	0.012	0.2708	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
127		0.00	0.000	0.010	0.2691	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
128		0.00	0.000	0.011	0.2672	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
129		0.17	0.000	0.013	0.2939	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
130		0.04	0.000	0.014	0.2982	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
131		0.00	0.000	0.012	0.2957	0.0008	0.0029	1.22E-07	0.0000	0.0000	0.00E+00
132		0.00	0.000	0.011	0.2938	0.0002	0.0007	4.22E-08	0.0000	0.0000	0.00E+00
133		0.00	0.000	0.012	0.2882	0.0040	0.0151	5.05E-07	0.0000	0.0000	0.00E+00
134		0.00	0.000	0.011	0.2813	0.0084	0.0314	9.98E-07	0.0000	0.0000	0.00E+00
135		0.00	0.000	0.012	0.2767	0.0056	0.0210	6.97E-07	0.0000	0.0000	0.00E+00
136		0.00	0.000	0.013	0.2745	0.0002	0.0008	4.55E-08	0.0000	0.0000	0.00E+00

137	0.05	0.000	0.015	0.2810	0.0000	0.0000	7.18E-09	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.014	0.2782	0.0013	0.0050	1.88E-07	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.015	0.2750	0.0014	0.0053	2.09E-07	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.012	0.2731	0.0001	0.0005	3.39E-08	0.0000	0.0000	0.00E+00
141	0.33	0.000	0.017	0.3257	0.0000	0.0000	6.46E-09	0.0000	0.0000	0.00E+00
142	0.03	0.000	0.301	0.2790	0.0012	0.0044	1.52E-07	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.017	0.2690	0.0088	0.0331	1.03E-06	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.016	0.2602	0.0108	0.0404	1.25E-06	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.018	0.2539	0.0061	0.0230	7.50E-07	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.020	0.2472	0.0055	0.0206	6.84E-07	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.016	0.2443	0.0014	0.0051	1.93E-07	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.022	0.2406	0.0000	0.0000	1.14E-08	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.025	0.2364	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.028	0.2318	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.027	0.2272	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
152	0.11	0.000	0.022	0.2416	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
153	0.23	0.000	0.022	0.2771	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
154	0.27	0.000	0.235	0.2822	0.0007	0.0026	1.07E-07	0.0000	0.0000	0.00E+00
155	0.28	0.000	0.200	0.2951	0.0000	0.0000	1.58E-08	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.428	0.2237	0.0000	0.0000	2.19E-09	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.218	0.1873	0.0002	0.0009	5.28E-08	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.097	0.1710	0.0000	0.0000	1.40E-08	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.086	0.1566	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
160	0.08	0.000	0.066	0.1586	0.0012	0.0044	1.63E-07	0.0000	0.0000	0.00E+00
161	0.03	0.000	0.060	0.1531	0.0014	0.0054	1.96E-07	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.059	0.1432	0.0000	0.0001	1.82E-08	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.036	0.1373	0.0000	0.0000	3.83E-09	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.009	0.1357	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.003	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
167	0.08	0.000	0.008	0.1472	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
168	0.00	0.000	0.021	0.1438	0.0000	0.0000	4.90E-09	0.0000	0.0000	0.00E+00
169	0.05	0.000	0.032	0.1473	0.0000	0.0000	8.40E-09	0.0000	0.0000	0.00E+00
170	0.30	0.000	0.035	0.1911	0.0000	0.0000	4.56E-09	0.0000	0.0000	0.00E+00
171	0.03	0.000	0.040	0.1896	0.0000	0.0000	3.16E-09	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.045	0.1821	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

173	0.02	0.000	0.046	0.1771	0.0000	0.0000	8.82E-09	0.0000	0.0000	0.00E+00
174	0.15	0.000	0.044	0.1946	0.0000	0.0000	8.97E-09	0.0000	0.0000	0.00E+00
175	0.37	0.000	0.045	0.2495	0.0000	0.0000	5.83E-09	0.0000	0.0000	0.00E+00
176	0.13	0.000	0.270	0.2264	0.0000	0.0000	1.08E-08	0.0000	0.0000	0.00E+00
177	0.02	0.000	0.042	0.2235	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
178	0.01	0.000	0.042	0.2181	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.038	0.2118	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.044	0.2044	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.037	0.1982	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.036	0.1921	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
183	0.00	0.000	0.037	0.1860	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.050	0.1777	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
185	0.03	0.000	0.050	0.1747	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
186	0.03	0.000	0.039	0.1724	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.044	0.1651	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
188	0.09	0.000	0.040	0.1732	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
189	0.01	0.000	0.035	0.1688	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
190	0.01	0.000	0.045	0.1632	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.048	0.1552	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
192	0.00	0.000	0.053	0.1464	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
193	0.00	0.000	0.041	0.1397	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
194	0.00	0.000	0.027	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
195	0.00	0.000	0.000	0.1350	0.0000	0.0000	2.78E-17	0.0000	0.0000	0.00E+00
196	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
197	0.04	0.000	0.008	0.1405	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
198	0.08	0.000	0.022	0.1503	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
199	0.00	0.000	0.021	0.1469	0.0000	0.0000	6.81E-09	0.0000	0.0000	0.00E+00
200	0.02	0.000	0.033	0.1449	0.0000	0.0000	6.24E-09	0.0000	0.0000	0.00E+00
201	0.23	0.000	0.034	0.1773	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
202	0.10	0.000	0.188	0.1619	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.041	0.1550	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
204	0.11	0.000	0.054	0.1639	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
205	0.00	0.000	0.034	0.1585	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
206	0.00	0.000	0.049	0.1503	0.0000	0.0000	1.49E-08	0.0000	0.0000	0.00E+00
207	0.00	0.000	0.039	0.1438	0.0000	0.0000	1.53E-09	0.0000	0.0000	0.00E+00
208	0.00	0.000	0.047	0.1361	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

209	0.24	0.000	0.038	0.1697	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.115	0.1506	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.038	0.1443	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
212	0.12	0.000	0.049	0.1554	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.052	0.1468	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.035	0.1410	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.028	0.1363	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
216	0.10	0.000	0.029	0.1481	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
217	0.00	0.000	0.036	0.1427	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
218	0.09	0.000	0.048	0.1497	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
219	0.04	0.000	0.044	0.1488	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.032	0.1435	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.038	0.1372	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.23	0.000	0.050	0.1667	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
223	0.07	0.000	0.153	0.1526	0.0000	0.0000	5.01E-09	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.040	0.1460	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.058	0.1369	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.008	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
227	0.01	0.000	0.008	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
228	0.02	0.000	0.014	0.1365	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
229	0.55	0.000	0.056	0.2187	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
230	0.83	0.007	0.261	0.3128	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.33	0.000	0.218	0.3315	0.0010	0.0037	1.37E-07	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.283	0.2744	0.0139	0.0521	1.47E-06	0.0000	0.0000	0.00E+00
233	0.00	0.000	0.228	0.2280	0.0125	0.0470	1.43E-06	0.0000	0.0000	0.00E+00
234	0.00	0.000	0.258	0.1821	0.0078	0.0293	9.22E-07	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.271	0.1370	0.0001	0.0002	2.43E-08	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.010	0.1350	0.0005	0.0020	8.67E-08	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.000	0.1350	0.0000	0.0000	1.12E-08	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
239	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
240	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
242	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

245	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
249	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
252	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
258	0.11	0.000	0.030	0.1481	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
259	0.18	0.000	0.034	0.1727	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
260	0.07	0.000	0.046	0.1765	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
261	0.05	0.000	0.052	0.1769	0.0000	0.0000	1.99E-09	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.047	0.1691	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
263	0.23	0.000	0.042	0.1998	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
264	0.00	0.000	0.034	0.1941	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.044	0.1870	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.041	0.1802	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.036	0.1742	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.033	0.1687	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.035	0.1629	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.030	0.1579	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
271	0.00	0.000	0.036	0.1519	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.037	0.1458	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.036	0.1398	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
274	0.06	0.000	0.031	0.1440	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
275	0.15	0.000	0.026	0.1652	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
276	0.90	0.003	0.032	0.3102	0.0001	0.0004	2.60E-08	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.128	0.2889	0.0000	0.0000	1.09E-08	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.259	0.2450	0.0002	0.0008	3.15E-08	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.147	0.2153	0.0079	0.0297	9.47E-07	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.091	0.1999	0.0016	0.0060	2.18E-07	0.0000	0.0000	0.00E+00

281	0.00	0.000	0.073	0.1877	0.0000	0.0000	1.14E-08	0.0000	0.0000	0.00E+00
282	0.00	0.000	0.060	0.1778	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
283	0.00	0.000	0.053	0.1686	0.0004	0.0016	6.83E-08	0.0000	0.0000	0.00E+00
284	0.00	0.000	0.050	0.1602	0.0000	0.0000	1.35E-08	0.0000	0.0000	0.00E+00
285	0.00	0.000	0.048	0.1522	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
286	0.02	0.000	0.053	0.1473	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
287	0.40	0.000	0.051	0.2058	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
288	0.09	0.000	0.052	0.2128	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
289	0.00	0.000	0.038	0.2065	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
290	0.00	0.000	0.036	0.2005	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
291	0.00	0.000	0.034	0.1948	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
292	0.00	0.000	0.032	0.1895	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
293	0.00	0.000	0.030	0.1845	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
294	0.00	0.000	0.027	0.1799	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
295	0.00	0.000	0.025	0.1757	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
296	0.00	0.000	0.025	0.1716	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
297	0.00	0.000	0.023	0.1677	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
298	0.00	0.000	0.024	0.1638	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
299	0.00	0.000	0.022	0.1601	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
300	0.00	0.000	0.022	0.1564	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
301	0.00	0.000	0.022	0.1528	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
302	0.00	0.000	0.021	0.1493	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
303	0.00	0.000	0.021	0.1458	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
304	0.00	0.000	0.020	0.1425	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
305	0.00	0.000	0.020	0.1392	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
306	0.00	0.000	0.017	0.1364	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
307	0.00	0.000	0.006	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
308	0.00	0.000	0.003	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
309	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
310	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
311	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
312	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
313	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
314	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
315	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
316	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

317	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
321	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
322	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
323	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
325	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
326	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
327	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
329	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331	0.11	0.000	0.012	0.1512	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
332	0.09	0.000	0.011	0.1635	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333	0.00	0.000	0.009	0.1620	0.0000	0.0000	7.68E-09	0.0000	0.0000	0.00E+00
334	0.00	0.000	0.009	0.1605	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
335	0.04	0.000	0.015	0.1649	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
336	0.00	0.000	0.014	0.1632	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
337	0.13	0.000	0.016	0.1828	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
338	0.00	0.000	0.012	0.1813	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
339	0.56	0.000	0.016	0.2711	0.0000	0.0000	3.82E-09	0.0000	0.0000	0.00E+00
340	0.03	0.000	0.017	0.2731	0.0000	0.0000	1.41E-08	0.0000	0.0000	0.00E+00
341	0.00	0.000	0.015	0.2710	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
342	0.02	0.000	0.018	0.2716	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
343	0.00	0.000	0.012	0.2695	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
344	0.00	0.000	0.012	0.2674	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345	0.00	0.000	0.012	0.2654	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
346	0.00	0.000	0.012	0.2633	0.0001	0.0002	1.60E-08	0.0000	0.0000	0.00E+00
347	0.00	0.000	0.012	0.2612	0.0000	0.0000	1.38E-08	0.0000	0.0000	0.00E+00
348	0.00	0.000	0.012	0.2591	0.0001	0.0005	3.67E-08	0.0000	0.0000	0.00E+00
349	0.00	0.000	0.012	0.2570	0.0002	0.0007	4.43E-08	0.0000	0.0000	0.00E+00
350	0.00	0.000	0.012	0.2548	0.0004	0.0015	7.76E-08	0.0000	0.0000	0.00E+00
351	0.00	0.000	0.012	0.2528	0.0002	0.0006	3.99E-08	0.0000	0.0000	0.00E+00
352	0.00	0.000	0.012	0.2507	0.0002	0.0008	4.75E-08	0.0000	0.0000	0.00E+00

353	*	0.00	0.000	0.012	0.2488	0.0000	0.0000	1.13E-08	0.0000	0.0000	0.00E+00
354		0.00	0.000	0.012	0.2468	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
355		0.00	0.000	0.011	0.2449	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
356		0.55	0.000	0.016	0.3340	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
357		0.02	0.000	0.153	0.2892	0.0307	0.1153	3.10E-06	0.0000	0.0000	0.00E+00
358		0.00	0.000	0.210	0.2462	0.0149	0.0560	1.66E-06	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.197	0.2076	0.0106	0.0399	1.23E-06	0.0000	0.0000	0.00E+00
360		0.02	0.000	0.087	0.1959	0.0013	0.0050	1.83E-07	0.0000	0.0000	0.00E+00
361		0.00	0.000	0.065	0.1856	0.0000	0.0000	1.06E-08	0.0000	0.0000	0.00E+00
362		0.06	0.000	0.057	0.1862	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
363		0.04	0.000	0.051	0.1840	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
364		0.00	0.000	0.043	0.1768	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
365		0.00	0.000	0.039	0.1702	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 9			
	inches	cubic feet	percent
Precipitation	12.20	44,272.0	100.00
Runoff	0.010	36.3	0.08
Evapotranspiration	11.210	40,693.0	91.92
Drainage Collected from Layer 2	0.7707	2,797.6	6.32
Percolation/Leakage through Layer 4	0.000025	0.0890	0.00
Average Head on Top of Layer 3	0.0006	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	0.2053	745.1	1.68
Soil Water at Start of Year	538.0496	1,953,120.2	4411.64
Soil Water at End of Year	538.2549	1,953,865.3	4413.33
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 10

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Column key: Head #1: drainage from Layer 3; Drain #1: drainage from Layer 2; Leak #1: leakage thru Layer 4; Head #2: drainage from Layer 15; Drain #2: drainage from Layer 14; Leak #2: leakage thru Layer 16

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.00	0.000	0.033	0.1648	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.032	0.1595	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.032	0.1541	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.031	0.1489	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.030	0.1440	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.028	0.1393	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.026	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.000	0.1350	0.0000	0.0000	2.73E-17	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
12			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
13			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
16			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
21			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
23	*		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
24	*		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
25	*		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
26	*		0.04	0.000	0.044	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
27			0.15	0.000	0.010	0.1588	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
28			0.00	0.000	0.007	0.1576	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

29		0.00	0.000	0.011	0.1557	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.011	0.1538	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.011	0.1519	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.011	0.1501	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
33		0.00	0.000	0.011	0.1483	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
34		0.15	0.000	0.013	0.1712	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
35		0.00	0.000	0.013	0.1691	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
36		0.00	0.000	0.011	0.1672	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.011	0.1655	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.010	0.1638	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.010	0.1621	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.010	0.1604	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.010	0.1588	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.010	0.1571	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
43		0.00	0.000	0.010	0.1555	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
44	*	0.00	0.000	0.014	0.1538	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.010	0.1522	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.010	0.1505	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.008	0.1492	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.011	0.1473	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.012	0.1455	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
50		0.05	0.000	0.014	0.1513	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.011	0.1495	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
52		0.00	0.000	0.011	0.1476	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
53		0.00	0.000	0.012	0.1456	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.012	0.1437	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.012	0.1417	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
56		0.00	0.000	0.012	0.1397	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
57		0.00	0.000	0.011	0.1379	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.012	0.1360	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.005	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60		0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
61		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

65		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
67		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
71	*	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
72	*	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
73	*	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
79		0.08	0.000	0.004	0.1474	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
80	*	0.00	0.000	0.005	0.1466	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
81		0.10	0.000	0.007	0.1622	0.0000	0.0000	1.99E-09	0.0000	0.0000	0.00E+00
82		0.00	0.000	0.006	0.1611	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.007	0.1599	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
84		0.00	0.000	0.007	0.1587	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
85		0.02	0.000	0.010	0.1611	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.008	0.1597	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.008	0.1584	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.007	0.1572	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
89		0.00	0.000	0.007	0.1560	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
90		0.45	0.000	0.010	0.2292	0.0000	0.0000	2.27E-09	0.0000	0.0000	0.00E+00
91		0.35	0.000	0.012	0.2849	0.0000	0.0000	7.26E-10	0.0000	0.0000	0.00E+00
92		0.01	0.000	0.013	0.2850	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.011	0.2832	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.010	0.2815	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.011	0.2797	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
96		0.01	0.000	0.013	0.2782	0.0011	0.0040	1.55E-07	0.0000	0.0000	0.00E+00
97		0.08	0.000	0.013	0.2876	0.0024	0.0088	3.26E-07	0.0000	0.0000	0.00E+00
98		0.22	0.000	0.013	0.3218	0.0011	0.0040	1.64E-07	0.0000	0.0000	0.00E+00
99		0.43	0.000	0.013	0.3235	0.0711	0.2671	6.44E-06	0.0000	0.0000	0.00E+00
100		0.00	0.000	0.168	0.2853	0.0527	0.1981	4.99E-06	0.0000	0.0000	0.00E+00

101		0.00	0.000	0.010	0.2754	0.0127	0.0478	1.45E-06	0.0000	0.0000	0.00E+00
102		0.00	0.000	0.011	0.2678	0.0098	0.0368	1.15E-06	0.0000	0.0000	0.00E+00
103		0.00	0.000	0.010	0.2624	0.0067	0.0253	8.23E-07	0.0000	0.0000	0.00E+00
104		0.00	0.000	0.010	0.2605	0.0012	0.0045	1.72E-07	0.0000	0.0000	0.00E+00
105	*	0.00	0.000	0.011	0.2589	0.0000	0.0000	1.12E-08	0.0000	0.0000	0.00E+00
106		0.00	0.000	0.011	0.2571	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
107		0.01	0.000	0.013	0.2559	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
108		0.04	0.000	0.013	0.2600	0.0002	0.0007	3.54E-08	0.0000	0.0000	0.00E+00
109		0.00	0.000	0.011	0.2576	0.0005	0.0017	7.88E-08	0.0000	0.0000	0.00E+00
110		0.00	0.000	0.011	0.2547	0.0018	0.0067	2.60E-07	0.0000	0.0000	0.00E+00
111		0.00	0.000	0.011	0.2518	0.0018	0.0067	2.57E-07	0.0000	0.0000	0.00E+00
112		0.00	0.000	0.011	0.2491	0.0016	0.0059	2.31E-07	0.0000	0.0000	0.00E+00
113		0.00	0.000	0.011	0.2464	0.0013	0.0048	1.96E-07	0.0000	0.0000	0.00E+00
114		0.00	0.000	0.012	0.2437	0.0012	0.0044	1.82E-07	0.0000	0.0000	0.00E+00
115		0.00	0.000	0.011	0.2411	0.0012	0.0045	1.85E-07	0.0000	0.0000	0.00E+00
116		0.00	0.000	0.011	0.2385	0.0013	0.0047	1.93E-07	0.0000	0.0000	0.00E+00
117		0.00	0.000	0.011	0.2358	0.0013	0.0049	1.99E-07	0.0000	0.0000	0.00E+00
118		0.00	0.000	0.011	0.2332	0.0013	0.0050	2.02E-07	0.0000	0.0000	0.00E+00
119		0.00	0.000	0.011	0.2305	0.0013	0.0049	2.00E-07	0.0000	0.0000	0.00E+00
120		0.00	0.000	0.010	0.2288	0.0003	0.0011	5.71E-08	0.0000	0.0000	0.00E+00
121		0.00	0.000	0.012	0.2268	0.0000	0.0000	7.97E-09	0.0000	0.0000	0.00E+00
122		0.00	0.000	0.012	0.2247	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
123		0.00	0.000	0.013	0.2225	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
124		0.35	0.000	0.015	0.2786	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
125		0.00	0.000	0.440	0.2049	0.0006	0.0024	8.92E-08	0.0000	0.0000	0.00E+00
126		0.36	0.000	0.014	0.2630	0.0000	0.0002	2.15E-08	0.0000	0.0000	0.00E+00
127		0.00	0.000	0.013	0.2608	0.0000	0.0000	4.49E-09	0.0000	0.0000	0.00E+00
128		0.00	0.000	0.014	0.2585	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
129		0.05	0.000	0.017	0.2644	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
130		0.00	0.000	0.015	0.2619	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
131		0.00	0.000	0.016	0.2593	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
132		0.00	0.000	0.017	0.2564	0.0001	0.0003	1.85E-08	0.0000	0.0000	0.00E+00
133		0.00	0.000	0.016	0.2537	0.0000	0.0000	1.49E-08	0.0000	0.0000	0.00E+00
134		0.00	0.000	0.015	0.2509	0.0003	0.0013	6.90E-08	0.0000	0.0000	0.00E+00
135		0.00	0.000	0.013	0.2486	0.0003	0.0011	5.94E-08	0.0000	0.0000	0.00E+00
136		0.00	0.000	0.014	0.2461	0.0003	0.0012	6.34E-08	0.0000	0.0000	0.00E+00

137	0.08	0.000	0.017	0.2560	0.0001	0.0004	2.92E-08	0.0000	0.0000	0.00E+00
138	0.04	0.000	0.018	0.2590	0.0001	0.0002	2.40E-08	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.014	0.2566	0.0001	0.0003	2.83E-08	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.016	0.2540	0.0000	0.0000	1.03E-08	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.017	0.2510	0.0002	0.0006	3.51E-08	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.017	0.2482	0.0000	0.0000	1.36E-08	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.017	0.2454	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.018	0.2424	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.015	0.2397	0.0001	0.0005	3.52E-08	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.020	0.2361	0.0004	0.0015	7.53E-08	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.019	0.2329	0.0002	0.0009	5.28E-08	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.017	0.2300	0.0000	0.0000	1.11E-08	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.019	0.2268	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.019	0.2236	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.021	0.2201	0.0001	0.0003	1.89E-08	0.0000	0.0000	0.00E+00
152	0.19	0.000	0.020	0.2478	0.0001	0.0005	3.53E-08	0.0000	0.0000	0.00E+00
153	0.05	0.000	0.334	0.1999	0.0000	0.0001	2.06E-08	0.0000	0.0000	0.00E+00
154	0.06	0.000	0.021	0.2057	0.0000	0.0001	1.75E-08	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.019	0.2026	0.0000	0.0001	1.68E-08	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.021	0.1990	0.0000	0.0001	1.65E-08	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.020	0.1957	0.0000	0.0000	2.80E-09	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.019	0.1925	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.017	0.1898	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.020	0.1863	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.023	0.1825	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.024	0.1786	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.021	0.1752	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.021	0.1717	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.019	0.1684	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.030	0.1634	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
167	0.00	0.000	0.023	0.1595	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
168	0.00	0.000	0.024	0.1555	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.026	0.1512	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.024	0.1472	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.026	0.1422	0.0011	0.0043	1.60E-07	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.031	0.1370	0.0000	0.0000	1.28E-08	0.0000	0.0000	0.00E+00

173	0.24	0.000	0.031	0.1719	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
174	0.01	0.000	0.019	0.1709	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
175	0.02	0.000	0.029	0.1689	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
176	0.01	0.000	0.026	0.1671	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
177	0.02	0.000	0.027	0.1653	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
178	0.32	0.000	0.027	0.2144	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
179	0.35	0.000	0.436	0.2000	0.0000	0.0000	4.75E-09	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.349	0.1419	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.037	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.59	0.000	0.076	0.2208	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
183	0.16	0.000	0.067	0.2366	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.074	0.2243	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
185	0.00	0.000	0.071	0.2125	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.068	0.2012	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.078	0.1882	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
188	0.04	0.000	0.070	0.1827	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
189	0.00	0.000	0.067	0.1716	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
190	0.00	0.000	0.058	0.1620	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
191	0.04	0.000	0.053	0.1599	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
192	0.08	0.000	0.053	0.1638	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
193	0.00	0.000	0.047	0.1558	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
194	0.00	0.000	0.065	0.1450	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
195	0.00	0.000	0.044	0.1376	0.0000	0.0000	5.61E-09	0.0000	0.0000	0.00E+00
196	0.00	0.000	0.014	0.1353	0.0000	0.0000	1.05E-08	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
198	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
199	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
202	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
203	0.30	0.000	0.023	0.1816	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
204	0.00	0.000	0.033	0.1761	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
205	0.01	0.000	0.045	0.1711	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
206	0.00	0.000	0.037	0.1650	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
207	0.02	0.000	0.051	0.1595	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
208	0.25	0.000	0.047	0.1926	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

209	0.00	0.000	0.050	0.1843	0.0000	0.0000	4.67E-09	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.044	0.1770	0.0000	0.0000	1.46E-08	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.050	0.1686	0.0000	0.0000	9.47E-10	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.037	0.1631	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
213	0.01	0.000	0.038	0.1580	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.043	0.1509	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
215	0.35	0.000	0.046	0.2018	0.0000	0.0001	1.03E-08	0.0000	0.0000	0.00E+00
216	0.10	0.000	0.208	0.1836	0.0000	0.0000	1.39E-08	0.0000	0.0000	0.00E+00
217	0.00	0.000	0.264	0.1395	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
218	0.00	0.000	0.019	0.1363	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
219	0.00	0.000	0.007	0.1351	0.0001	0.0003	2.33E-08	0.0000	0.0000	0.00E+00
220	0.01	0.000	0.008	0.1350	0.0000	0.0000	1.06E-08	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.25	0.000	0.056	0.1673	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
223	0.19	0.000	0.050	0.1900	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.076	0.1774	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.082	0.1637	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.059	0.1538	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.072	0.1419	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
228	0.00	0.000	0.037	0.1358	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
229	0.00	0.000	0.003	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
230	0.00	0.000	0.002	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.11	0.000	0.028	0.1480	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.031	0.1428	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
233	0.00	0.000	0.035	0.1370	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
234	0.00	0.000	0.011	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
239	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
240	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
242	0.00	0.000	0.002	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
243	0.04	0.000	0.012	0.1394	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
244	0.02	0.000	0.012	0.1406	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

245	0.00	0.000	0.017	0.1378	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.013	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.003	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
249	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
251	0.01	0.000	0.007	0.1350	0.0000	0.0000	4.99E-09	0.0000	0.0000	0.00E+00
252	0.04	0.000	0.009	0.1393	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
253	0.23	0.000	0.024	0.1730	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.01	0.000	0.031	0.1698	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
255	0.02	0.000	0.039	0.1666	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.032	0.1612	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.029	0.1563	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.020	0.1530	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
259	0.00	0.000	0.022	0.1492	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
260	0.02	0.000	0.028	0.1472	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
261	0.00	0.000	0.022	0.1435	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.023	0.1397	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
263	0.00	0.000	0.024	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
264	0.00	0.000	0.003	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
269	0.34	0.000	0.015	0.1895	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
270	0.19	0.000	0.021	0.2178	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
271	0.45	0.000	0.025	0.2890	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.178	0.2593	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.020	0.2560	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.018	0.2531	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.018	0.2500	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.019	0.2469	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.018	0.2440	0.0000	0.0001	1.00E-08	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.016	0.2413	0.0000	0.0000	1.52E-08	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.017	0.2385	0.0000	0.0001	1.88E-08	0.0000	0.0000	0.00E+00
280	0.02	0.000	0.022	0.2379	0.0000	0.0000	1.35E-08	0.0000	0.0000	0.00E+00

281	0.00	0.000	0.015	0.2354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282	0.00	0.000	0.015	0.2327	0.0001	0.0003	2.04E-08	0.0000	0.0000	0.00E+00
283	0.00	0.000	0.014	0.2301	0.0004	0.0015	7.84E-08	0.0000	0.0000	0.00E+00
284	0.00	0.000	0.016	0.2272	0.0004	0.0016	8.14E-08	0.0000	0.0000	0.00E+00
285	0.00	0.000	0.014	0.2248	0.0002	0.0008	5.13E-08	0.0000	0.0000	0.00E+00
286	0.00	0.000	0.014	0.2223	0.0000	0.0000	1.44E-08	0.0000	0.0000	0.00E+00
287	0.00	0.000	0.015	0.2200	0.0001	0.0005	3.78E-08	0.0000	0.0000	0.00E+00
288	0.00	0.000	0.013	0.2177	0.0001	0.0005	3.67E-08	0.0000	0.0000	0.00E+00
289	0.00	0.000	0.013	0.2154	0.0001	0.0003	2.81E-08	0.0000	0.0000	0.00E+00
290	0.00	0.000	0.013	0.2131	0.0003	0.0011	6.02E-08	0.0000	0.0000	0.00E+00
291	0.31	0.000	0.019	0.2620	0.0001	0.0004	3.05E-08	0.0000	0.0000	0.00E+00
292	0.00	0.000	0.013	0.2599	0.0000	0.0000	7.97E-09	0.0000	0.0000	0.00E+00
293	0.00	0.000	0.012	0.2579	0.0000	0.0000	6.65E-09	0.0000	0.0000	0.00E+00
294	0.00	0.000	0.012	0.2559	0.0000	0.0001	1.77E-08	0.0000	0.0000	0.00E+00
295	0.00	0.000	0.012	0.2538	0.0001	0.0003	2.80E-08	0.0000	0.0000	0.00E+00
296	0.00	0.000	0.011	0.2519	0.0001	0.0003	2.55E-08	0.0000	0.0000	0.00E+00
297	0.00	0.000	0.011	0.2500	0.0000	0.0000	1.26E-08	0.0000	0.0000	0.00E+00
298	0.11	0.000	0.018	0.2648	0.0000	0.0002	1.78E-08	0.0000	0.0000	0.00E+00
299	0.23	0.000	0.018	0.2999	0.0002	0.0009	5.42E-08	0.0000	0.0000	0.00E+00
300	0.00	0.000	0.139	0.2767	0.0000	0.0001	1.71E-08	0.0000	0.0000	0.00E+00
301	0.00	0.000	0.011	0.2748	0.0001	0.0005	3.40E-08	0.0000	0.0000	0.00E+00
302	0.00	0.000	0.011	0.2722	0.0005	0.0018	7.74E-08	0.0000	0.0000	0.00E+00
303	0.00	0.000	0.011	0.2672	0.0048	0.0182	6.13E-07	0.0000	0.0000	0.00E+00
304	0.00	0.000	0.011	0.2652	0.0012	0.0046	1.74E-07	0.0000	0.0000	0.00E+00
305	0.00	0.000	0.011	0.2634	0.0000	0.0000	1.12E-08	0.0000	0.0000	0.00E+00
306	0.00	0.000	0.011	0.2616	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
307	0.00	0.000	0.011	0.2598	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
308	0.00	0.000	0.011	0.2580	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
309	0.08	0.000	0.017	0.2692	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
310	0.00	0.000	0.011	0.2674	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
311	0.00	0.000	0.011	0.2649	0.0006	0.0021	8.79E-08	0.0000	0.0000	0.00E+00
312	0.00	0.000	0.011	0.2618	0.0020	0.0074	2.81E-07	0.0000	0.0000	0.00E+00
313	0.00	0.000	0.011	0.2590	0.0015	0.0057	2.26E-07	0.0000	0.0000	0.00E+00
314	0.05	0.000	0.018	0.2649	0.0006	0.0021	9.52E-08	0.0000	0.0000	0.00E+00
315	0.00	0.000	0.010	0.2630	0.0002	0.0009	4.78E-08	0.0000	0.0000	0.00E+00
316	0.00	0.000	0.010	0.2609	0.0006	0.0022	1.01E-07	0.0000	0.0000	0.00E+00

317	0.00	0.000	0.010	0.2593	0.0000	0.0001	1.66E-08	0.0000	0.0000	0.00E+00
318	0.00	0.000	0.010	0.2576	0.0000	0.0000	2.95E-09	0.0000	0.0000	0.00E+00
319	0.00	0.000	0.010	0.2559	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320	0.00	0.000	0.010	0.2542	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
321	0.00	0.000	0.010	0.2526	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
322	0.00	0.000	0.010	0.2509	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
323	0.00	0.000	0.010	0.2493	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324	0.00	0.000	0.011	0.2471	0.0007	0.0028	1.20E-07	0.0000	0.0000	0.00E+00
325	0.00	0.000	0.010	0.2455	0.0003	0.0010	5.42E-08	0.0000	0.0000	0.00E+00
326	0.00	0.000	0.010	0.2438	0.0000	0.0000	7.81E-09	0.0000	0.0000	0.00E+00
327	0.00	0.000	0.010	0.2422	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328	0.00	0.000	0.010	0.2406	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
329	0.00	0.000	0.010	0.2390	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330	0.00	0.000	0.010	0.2374	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331	0.00	0.000	0.010	0.2358	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
332	0.00	0.000	0.009	0.2343	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333	0.00	0.000	0.009	0.2327	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
334	0.00	0.000	0.009	0.2311	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
335	0.00	0.000	0.009	0.2296	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
336	0.00	0.000	0.009	0.2280	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
337	0.00	0.000	0.009	0.2265	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
338	0.00	0.000	0.009	0.2250	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
339	0.00	0.000	0.009	0.2234	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
340	0.00	0.000	0.009	0.2219	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
341	0.00	0.000	0.009	0.2204	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
342	0.00	0.000	0.009	0.2189	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
343	0.00	0.000	0.009	0.2174	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
344	0.00	0.000	0.009	0.2159	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345	0.00	0.000	0.009	0.2144	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
346	0.00	0.000	0.009	0.2129	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
347	0.00	0.000	0.009	0.2114	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
348	0.11	0.000	0.010	0.2284	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
349	0.32	0.000	0.010	0.2798	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
350	0.00	0.000	0.195	0.2473	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
351	0.00	0.000	0.009	0.2457	0.0002	0.0008	3.92E-08	0.0000	0.0000	0.00E+00
352	0.00	0.000	0.009	0.2440	0.0003	0.0011	5.83E-08	0.0000	0.0000	0.00E+00

353		0.00	0.000	0.009	0.2422	0.0004	0.0015	7.75E-08	0.0000	0.0000	0.00E+00
354		0.00	0.000	0.009	0.2406	0.0005	0.0017	8.36E-08	0.0000	0.0000	0.00E+00
355	*	0.00	0.000	0.009	0.2391	0.0000	0.0000	1.15E-08	0.0000	0.0000	0.00E+00
356		0.00	0.000	0.009	0.2377	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
357	*	0.00	0.000	0.000	0.2377	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
358		0.00	0.000	0.009	0.2363	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.009	0.2349	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
360		0.00	0.000	0.009	0.2334	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
361		0.00	0.000	0.008	0.2320	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
362		0.00	0.000	0.008	0.2306	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
363		0.00	0.000	0.008	0.2292	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
364		0.00	0.000	0.008	0.2278	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
365		0.00	0.000	0.008	0.2264	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 10			
	inches	cubic feet	percent
Precipitation	9.44	34,271.5	100.00
Runoff	0.000	0.0000	0.00
Evapotranspiration	8.371	30,387.7	88.67
Drainage Collected from Layer 2	0.7330	2,660.6	7.76
Percolation/Leakage through Layer 4	0.000022	0.0796	0.00
Average Head on Top of Layer 3	0.0005	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	0.3369	1,223.1	3.57
Soil Water at Start of Year	538.2549	1,953,865.3	5701.14
Soil Water at End of Year	538.5918	1,955,088.4	5704.71
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 11

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Column key: Head #1: drainage from Layer 3; Drain #1: drainage from Layer 2; Leak #1: leakage thru Layer 4; Head #2: drainage from Layer 15; Drain #2: drainage from Layer 14; Leak #2: leakage thru Layer 16

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.00	0.000	0.008	0.2250	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2	*		0.00	0.000	0.008	0.2236	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.008	0.2222	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.008	0.2209	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.008	0.2195	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.009	0.2186	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.008	0.2172	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
8	*		0.00	0.000	0.008	0.2160	0.0001	0.0002	2.27E-08	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.008	0.2146	0.0000	0.0000	4.81E-09	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.008	0.2132	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.008	0.2119	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
12			0.00	0.000	0.008	0.2106	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
13			0.00	0.000	0.008	0.2092	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.008	0.2079	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.008	0.2066	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
16			0.01	0.000	0.009	0.2066	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
17			0.05	0.000	0.009	0.2140	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.008	0.2127	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.008	0.2111	0.0003	0.0013	6.31E-08	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.008	0.2096	0.0004	0.0014	7.49E-08	0.0000	0.0000	0.00E+00
21			0.06	0.000	0.009	0.2189	0.0001	0.0003	2.61E-08	0.0000	0.0000	0.00E+00
22			0.01	0.000	0.008	0.2190	0.0000	0.0000	5.65E-09	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.008	0.2177	0.0001	0.0002	1.62E-08	0.0000	0.0000	0.00E+00
24			0.00	0.000	0.008	0.2164	0.0000	0.0000	1.20E-08	0.0000	0.0000	0.00E+00
25			0.00	0.000	0.008	0.2151	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
26			0.02	0.000	0.008	0.2177	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
27			0.01	0.000	0.008	0.2173	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
28			0.00	0.000	0.008	0.2160	0.0002	0.0007	4.35E-08	0.0000	0.0000	0.00E+00

29		0.00	0.000	0.008	0.2147	0.0000	0.0000	1.08E-08	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.008	0.2134	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.008	0.2122	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.008	0.2109	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
33		0.00	0.000	0.008	0.2096	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.008	0.2089	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
35		0.00	0.000	0.008	0.2074	0.0002	0.0009	5.11E-08	0.0000	0.0000	0.00E+00
36		0.00	0.000	0.007	0.2061	0.0002	0.0009	5.40E-08	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.007	0.2048	0.0000	0.0000	1.62E-08	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.007	0.2036	0.0000	0.0000	2.53E-09	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.007	0.2023	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.008	0.2011	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
41		0.01	0.000	0.008	0.2023	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.007	0.2010	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
43		0.12	0.000	0.008	0.2198	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
44		0.00	0.000	0.007	0.2186	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.007	0.2173	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.007	0.2161	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.007	0.2149	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
48		0.76	0.000	0.008	0.3396	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.184	0.2842	0.0381	0.1431	3.59E-06	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.172	0.2483	0.0102	0.0385	1.19E-06	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.129	0.2227	0.0089	0.0334	1.05E-06	0.0000	0.0000	0.00E+00
52		0.00	0.000	0.176	0.1934	0.0005	0.0020	8.79E-08	0.0000	0.0000	0.00E+00
53		0.20	0.000	0.083	0.2133	0.0000	0.0000	8.84E-09	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.064	0.2027	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.054	0.1937	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
56		0.00	0.000	0.047	0.1858	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
57		0.00	0.000	0.043	0.1787	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.039	0.1722	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.032	0.1669	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60		0.00	0.000	0.034	0.1611	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
61	*	0.00	0.000	0.033	0.1557	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.031	0.1505	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.030	0.1456	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.028	0.1409	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

65	*	0.00	0.000	0.000	0.1409	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.027	0.1363	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
67		0.00	0.000	0.008	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.000	0.1350	0.0000	0.0000	5.55E-17	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
77		0.13	0.000	0.009	0.1548	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.009	0.1536	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
79		0.00	0.000	0.013	0.1514	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
80		0.00	0.000	0.013	0.1493	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
81		0.00	0.000	0.013	0.1471	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
82		0.00	0.000	0.012	0.1451	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.012	0.1430	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
84		0.00	0.000	0.012	0.1410	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
85		0.00	0.000	0.012	0.1391	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.009	0.1375	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.011	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.003	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
89		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
90		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
91		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
92		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
96		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
97		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
98		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99		0.04	0.000	0.002	0.1409	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100		0.02	0.000	0.006	0.1426	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

101		0.00	0.000	0.006	0.1416	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
102		0.00	0.000	0.007	0.1406	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
103	*	0.00	0.000	0.009	0.1391	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
104		0.00	0.000	0.009	0.1376	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
105	*	0.00	0.000	0.008	0.1362	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
106		0.00	0.000	0.003	0.1357	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
107		0.00	0.000	0.003	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
108		0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
109		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
110		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
111		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
112		0.05	0.000	0.001	0.1423	0.0000	0.0000	4.06E-09	0.0000	0.0000	0.00E+00
113		0.00	0.000	0.005	0.1414	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
114		0.00	0.000	0.006	0.1404	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
115		0.00	0.000	0.008	0.1391	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
116		0.00	0.000	0.008	0.1377	0.0000	0.0000	5.55E-17	0.0000	0.0000	0.00E+00
117		0.00	0.000	0.008	0.1363	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
118		0.00	0.000	0.003	0.1358	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
119		0.00	0.000	0.003	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
120		0.00	0.000	0.002	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
121		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
122		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
123		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
124		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
125		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
126		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
127		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
128		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
129		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
130		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
131		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
132		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
133		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
134		0.02	0.000	0.001	0.1376	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
135		0.05	0.000	0.001	0.1454	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
136		0.00	0.000	0.005	0.1446	0.0000	0.0000	2.27E-09	0.0000	0.0000	0.00E+00

137	0.00	0.000	0.005	0.1438	0.0000	0.0000	5.49E-09	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.007	0.1426	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.007	0.1414	0.0000	0.0000	2.78E-17	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.007	0.1402	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.008	0.1390	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
142	0.11	0.000	0.008	0.1557	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.005	0.1548	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.008	0.1535	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.008	0.1522	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.008	0.1509	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.008	0.1497	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
148	0.10	0.000	0.008	0.1658	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.009	0.1642	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.008	0.1628	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.008	0.1615	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.008	0.1601	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
153	0.00	0.000	0.009	0.1586	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
154	0.01	0.000	0.009	0.1588	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.009	0.1573	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.010	0.1557	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.009	0.1541	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
158	0.12	0.000	0.009	0.1720	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.011	0.1701	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.010	0.1686	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.010	0.1671	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.010	0.1655	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.011	0.1637	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.011	0.1619	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.011	0.1600	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.012	0.1581	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
167	0.00	0.000	0.013	0.1560	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
168	0.00	0.000	0.013	0.1539	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.015	0.1514	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.013	0.1492	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
171	0.07	0.000	0.015	0.1584	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.015	0.1559	0.0000	0.0000	4.33E-09	0.0000	0.0000	0.00E+00

173	0.00	0.000	0.013	0.1537	0.0000	0.0000	1.98E-09	0.0000	0.0000	0.00E+00
174	0.00	0.000	0.013	0.1516	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.017	0.1489	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.013	0.1467	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
177	0.02	0.000	0.012	0.1485	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.012	0.1465	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.012	0.1444	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
180	0.02	0.000	0.013	0.1452	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.012	0.1432	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.014	0.1408	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
183	0.00	0.000	0.012	0.1388	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.011	0.1370	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
185	0.00	0.000	0.006	0.1360	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.004	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
187	0.52	0.000	0.015	0.2196	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
188	0.64	0.000	0.016	0.3237	0.0000	0.0000	7.72E-09	0.0000	0.0000	0.00E+00
189	0.00	0.000	0.020	0.3062	0.0172	0.0647	1.86E-06	0.0000	0.0000	0.00E+00
190	0.00	0.000	0.017	0.2957	0.0152	0.0572	1.69E-06	0.0000	0.0000	0.00E+00
191	0.02	0.000	0.018	0.2890	0.0111	0.0416	1.28E-06	0.0000	0.0000	0.00E+00
192	0.00	0.000	0.020	0.2813	0.0079	0.0296	9.44E-07	0.0000	0.0000	0.00E+00
193	0.06	0.000	0.024	0.2846	0.0039	0.0147	5.10E-07	0.0000	0.0000	0.00E+00
194	0.12	0.000	0.026	0.2965	0.0035	0.0130	4.53E-07	0.0000	0.0000	0.00E+00
195	0.04	0.000	0.025	0.2963	0.0045	0.0168	5.69E-07	0.0000	0.0000	0.00E+00
196	0.23	0.000	0.019	0.3309	0.0009	0.0033	1.35E-07	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.581	0.2257	0.0091	0.0341	1.03E-06	0.0000	0.0000	0.00E+00
198	0.00	0.000	0.023	0.2150	0.0144	0.0540	1.61E-06	0.0000	0.0000	0.00E+00
199	0.00	0.000	0.019	0.2104	0.0038	0.0144	4.93E-07	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.026	0.2061	0.0000	0.0001	1.86E-08	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.023	0.2023	0.0000	0.0000	3.94E-09	0.0000	0.0000	0.00E+00
202	0.01	0.000	0.029	0.1987	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
203	0.14	0.000	0.020	0.2187	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
204	0.00	0.000	0.024	0.2153	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
205	0.15	0.000	0.019	0.2370	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
206	0.22	0.000	0.024	0.2697	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
207	0.34	0.000	0.029	0.3223	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
208	0.13	0.000	0.272	0.2760	0.0357	0.1344	3.43E-06	0.0000	0.0000	0.00E+00

209	0.00	0.000	0.461	0.1981	0.0028	0.0107	3.75E-07	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.214	0.1624	0.0000	0.0001	1.86E-08	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.100	0.1458	0.0000	0.0000	3.96E-09	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.064	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
214	0.07	0.000	0.008	0.1452	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
215	0.20	0.000	0.031	0.1727	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
216	0.00	0.000	0.038	0.1663	0.0000	0.0000	2.55E-09	0.0000	0.0000	0.00E+00
217	0.16	0.000	0.039	0.1867	0.0000	0.0000	7.31E-09	0.0000	0.0000	0.00E+00
218	0.09	0.000	0.048	0.1939	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
219	0.00	0.000	0.050	0.1856	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.040	0.1789	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.038	0.1726	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.05	0.000	0.042	0.1735	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
223	0.00	0.000	0.040	0.1668	0.0000	0.0000	9.07E-09	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.039	0.1603	0.0000	0.0000	1.53E-09	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.035	0.1544	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
226	0.01	0.000	0.035	0.1495	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.039	0.1430	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
228	0.00	0.000	0.037	0.1369	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
229	0.00	0.000	0.009	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
230	0.00	0.000	0.002	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.32	0.000	0.024	0.1849	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
232	0.01	0.000	0.039	0.1798	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
233	0.11	0.000	0.045	0.1911	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
234	0.74	0.000	0.049	0.3066	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
235	0.03	0.000	0.446	0.2380	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
236	0.09	0.000	0.043	0.2459	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
237	0.28	0.000	0.450	0.2180	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
238	0.01	0.000	0.055	0.2108	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
239	0.03	0.000	0.053	0.2065	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
240	0.15	0.000	0.040	0.2256	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.036	0.2196	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
242	0.00	0.000	0.041	0.2128	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.038	0.2065	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.046	0.1988	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

245	0.00	0.000	0.039	0.1923	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.036	0.1864	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.038	0.1801	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.051	0.1715	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
249	0.20	0.000	0.052	0.1962	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
250	0.26	0.000	0.320	0.1853	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
251	0.07	0.000	0.037	0.1906	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
252	0.00	0.000	0.162	0.1635	0.0000	0.0000	3.12E-09	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.029	0.1587	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.00	0.000	0.034	0.1529	0.0000	0.0000	5.51E-17	0.0000	0.0000	0.00E+00
255	0.06	0.000	0.032	0.1568	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
256	0.19	0.000	0.029	0.1830	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
257	0.28	0.000	0.041	0.2224	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.148	0.1977	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
259	0.00	0.000	0.273	0.1523	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
260	0.00	0.000	0.094	0.1366	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
261	0.00	0.000	0.007	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.002	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
263	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
264	0.81	0.000	0.057	0.2606	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
265	0.59	0.000	0.244	0.3188	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.271	0.2714	0.0024	0.0090	2.92E-07	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.257	0.2235	0.0071	0.0265	8.47E-07	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.408	0.1546	0.0037	0.0138	4.53E-07	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.098	0.1350	0.0053	0.0197	6.00E-07	0.0000	0.0000	0.00E+00
270	0.28	0.000	0.057	0.1721	0.0000	0.0000	1.48E-08	0.0000	0.0000	0.00E+00
271	0.00	0.000	0.060	0.1621	0.0000	0.0000	1.41E-09	0.0000	0.0000	0.00E+00
272	0.16	0.000	0.066	0.1785	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.074	0.1662	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.053	0.1574	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.041	0.1505	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.042	0.1435	0.0000	0.0001	1.50E-08	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.039	0.1370	0.0000	0.0000	8.87E-09	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.008	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.003	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

281		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
283		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
284		0.06	0.000	0.011	0.1440	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
285		0.00	0.000	0.023	0.1401	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
286		0.00	0.000	0.022	0.1365	0.0000	0.0000	7.92E-09	0.0000	0.0000	0.00E+00
287		0.13	0.000	0.029	0.1540	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
288		0.00	0.000	0.020	0.1506	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
289		0.00	0.000	0.025	0.1466	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
290		0.00	0.000	0.026	0.1422	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
291		0.00	0.000	0.027	0.1376	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
292		0.00	0.000	0.013	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
293		0.00	0.000	0.002	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
294	*	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
295	*	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
296		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
297		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
298		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
299		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
300		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
301		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
302		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
303		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
304		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
305		0.03	0.000	0.009	0.1377	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
306		0.00	0.000	0.002	0.1373	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
307		0.00	0.000	0.006	0.1363	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
308		0.00	0.000	0.005	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
309		0.00	0.000	0.002	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
310		0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
311		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
312		0.00	0.000	0.000	0.1350	0.0000	0.0000	7.11E-09	0.0000	0.0000	0.00E+00
313		0.00	0.000	0.000	0.1350	0.0000	0.0000	6.82E-09	0.0000	0.0000	0.00E+00
314		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
315	*	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
316		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

317		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
321		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
322		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
323		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
325		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
326		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
329		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
332		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
334		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
336		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
337		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
338		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
339		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
340		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
341		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
343		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
344		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
347		0.66	0.000	0.012	0.2433	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
348		0.00	0.000	0.010	0.2416	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
349		0.00	0.000	0.010	0.2399	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
350		0.00	0.000	0.011	0.2381	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
351	*	0.00	0.000	0.000	0.2381	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
352	*	0.00	0.000	0.011	0.2363	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

353	0.00	0.000	0.011	0.2345	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
354	0.14	0.000	0.015	0.2560	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
355	0.00	0.000	0.011	0.2542	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
356	0.00	0.000	0.011	0.2524	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
357	0.00	0.000	0.011	0.2506	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
358	0.00	0.000	0.010	0.2489	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
359	0.00	0.000	0.011	0.2471	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
360	0.00	0.000	0.011	0.2453	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
361	0.00	0.000	0.011	0.2436	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
362	0.00	0.000	0.010	0.2418	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
363	0.00	0.000	0.010	0.2401	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
364	0.00	0.000	0.010	0.2384	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
365	0.00	0.000	0.010	0.2366	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 11			
	inches	cubic feet	percent
Precipitation	10.91	39,590.1	100.00
Runoff	0.000	0.0436	0.00
Evapotranspiration	10.064	36,532.6	92.28
Drainage Collected from Layer 2	0.7809	2,834.5	7.16
Percolation/Leakage through Layer 4	0.000023	0.0837	0.00
Average Head on Top of Layer 3	0.0006	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	0.0614	223.0	0.56
Soil Water at Start of Year	538.5918	1,955,088.4	4938.32
Soil Water at End of Year	538.6533	1,955,311.4	4938.89
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 12

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Column key: Head #1: drainage from Layer 3; Drain #1: drainage from Layer 2; Leak #1: leakage thru Layer 4; Head #2: drainage from Layer 15; Drain #2: drainage from Layer 14; Leak #2: leakage thru Layer 16

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.00	0.000	0.010	0.2349	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.010	0.2332	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.010	0.2315	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.013	0.2301	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
5			0.14	0.000	0.014	0.2512	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.010	0.2495	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.010	0.2478	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.010	0.2462	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.010	0.2445	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.010	0.2429	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.010	0.2413	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
12			0.00	0.000	0.010	0.2396	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
13			0.00	0.000	0.010	0.2380	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.010	0.2364	0.0000	0.0000	2.60E-09	0.0000	0.0000	0.00E+00
15			0.20	0.000	0.013	0.2677	0.0000	0.0000	1.10E-08	0.0000	0.0000	0.00E+00
16			0.00	0.000	0.010	0.2661	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.010	0.2645	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.009	0.2630	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
19	*		0.00	0.000	0.009	0.2614	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.009	0.2598	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
21			0.00	0.000	0.009	0.2583	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
22	*		0.05	0.000	0.046	0.2583	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
23	*		0.00	0.000	0.000	0.2583	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
24	*		0.00	0.000	0.009	0.2567	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
25			0.03	0.000	0.013	0.2592	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
26			0.12	0.000	0.013	0.2763	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
27			0.05	0.000	0.012	0.2819	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
28			0.00	0.000	0.009	0.2804	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

29		0.14	0.000	0.012	0.3010	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.009	0.2994	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.009	0.2979	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
32		0.08	0.000	0.012	0.3040	0.0064	0.0242	7.67E-07	0.0000	0.0000	0.00E+00
33		0.00	0.000	0.009	0.2978	0.0090	0.0337	1.06E-06	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.009	0.2929	0.0068	0.0254	8.24E-07	0.0000	0.0000	0.00E+00
35		0.00	0.000	0.009	0.2891	0.0026	0.0098	3.46E-07	0.0000	0.0000	0.00E+00
36		0.00	0.000	0.009	0.2826	0.0076	0.0285	9.14E-07	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.009	0.2775	0.0065	0.0246	8.01E-07	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.009	0.2759	0.0011	0.0042	1.63E-07	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.009	0.2745	0.0000	0.0000	1.10E-08	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.009	0.2730	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.009	0.2716	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.009	0.2701	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
43		0.00	0.000	0.009	0.2687	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
44		0.00	0.000	0.009	0.2673	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.009	0.2658	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
46	*	0.00	0.000	0.009	0.2644	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.008	0.2630	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.008	0.2616	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.008	0.2602	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
50		0.05	0.000	0.011	0.2668	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
51		0.02	0.000	0.011	0.2672	0.0007	0.0026	1.17E-07	0.0000	0.0000	0.00E+00
52		0.00	0.000	0.008	0.2653	0.0010	0.0038	1.59E-07	0.0000	0.0000	0.00E+00
53		0.00	0.000	0.008	0.2631	0.0009	0.0035	1.45E-07	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.008	0.2606	0.0019	0.0071	2.72E-07	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.008	0.2585	0.0013	0.0050	2.02E-07	0.0000	0.0000	0.00E+00
56		0.00	0.000	0.008	0.2565	0.0010	0.0038	1.60E-07	0.0000	0.0000	0.00E+00
57		0.00	0.000	0.008	0.2545	0.0010	0.0037	1.58E-07	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.008	0.2524	0.0011	0.0041	1.70E-07	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.008	0.2503	0.0012	0.0044	1.80E-07	0.0000	0.0000	0.00E+00
60		0.00	0.000	0.008	0.2482	0.0012	0.0045	1.84E-07	0.0000	0.0000	0.00E+00
61		0.00	0.000	0.008	0.2462	0.0012	0.0044	1.81E-07	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.008	0.2441	0.0011	0.0042	1.74E-07	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.008	0.2421	0.0011	0.0040	1.66E-07	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.008	0.2402	0.0010	0.0037	1.58E-07	0.0000	0.0000	0.00E+00

65	0.00	0.000	0.008	0.2383	0.0009	0.0035	1.51E-07	0.0000	0.0000	0.00E+00
66	0.00	0.000	0.008	0.2364	0.0009	0.0033	1.44E-07	0.0000	0.0000	0.00E+00
67	0.00	0.000	0.008	0.2345	0.0008	0.0032	1.38E-07	0.0000	0.0000	0.00E+00
68	0.00	0.000	0.008	0.2327	0.0008	0.0030	1.33E-07	0.0000	0.0000	0.00E+00
69	0.00	0.000	0.008	0.2309	0.0008	0.0029	1.29E-07	0.0000	0.0000	0.00E+00
70	0.00	0.000	0.008	0.2291	0.0007	0.0028	1.26E-07	0.0000	0.0000	0.00E+00
71	0.00	0.000	0.008	0.2275	0.0007	0.0027	1.23E-07	0.0000	0.0000	0.00E+00
72	0.00	0.000	0.008	0.2262	0.0000	0.0002	2.10E-08	0.0000	0.0000	0.00E+00
73	0.00	0.000	0.008	0.2249	0.0000	0.0000	4.43E-09	0.0000	0.0000	0.00E+00
74	0.00	0.000	0.008	0.2236	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
75	0.10	0.000	0.009	0.2396	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
76	0.00	0.000	0.008	0.2381	0.0001	0.0004	1.82E-08	0.0000	0.0000	0.00E+00
77	0.00	0.000	0.008	0.2368	0.0001	0.0006	3.71E-08	0.0000	0.0000	0.00E+00
78	0.00	0.000	0.008	0.2356	0.0000	0.0000	6.63E-09	0.0000	0.0000	0.00E+00
79	0.00	0.000	0.008	0.2343	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
80	0.00	0.000	0.008	0.2330	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
81	0.00	0.000	0.008	0.2317	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
82	0.00	0.000	0.008	0.2301	0.0004	0.0015	7.21E-08	0.0000	0.0000	0.00E+00
83	0.00	0.000	0.008	0.2285	0.0006	0.0023	1.06E-07	0.0000	0.0000	0.00E+00
84	0.00	0.000	0.008	0.2268	0.0007	0.0024	1.13E-07	0.0000	0.0000	0.00E+00
85	0.00	0.000	0.008	0.2252	0.0007	0.0025	1.13E-07	0.0000	0.0000	0.00E+00
86	0.00	0.000	0.008	0.2235	0.0006	0.0024	1.10E-07	0.0000	0.0000	0.00E+00
87	0.00	0.000	0.007	0.2219	0.0006	0.0023	1.06E-07	0.0000	0.0000	0.00E+00
88	0.00	0.000	0.007	0.2203	0.0006	0.0021	1.01E-07	0.0000	0.0000	0.00E+00
89	0.00	0.000	0.008	0.2187	0.0005	0.0020	9.69E-08	0.0000	0.0000	0.00E+00
90	0.00	0.000	0.008	0.2171	0.0005	0.0019	9.29E-08	0.0000	0.0000	0.00E+00
91	0.00	0.000	0.008	0.2155	0.0005	0.0018	8.92E-08	0.0000	0.0000	0.00E+00
92	0.00	0.000	0.008	0.2140	0.0005	0.0017	8.64E-08	0.0000	0.0000	0.00E+00
93	0.00	0.000	0.008	0.2124	0.0004	0.0017	8.43E-08	0.0000	0.0000	0.00E+00
94	0.00	0.000	0.008	0.2112	0.0001	0.0004	2.99E-08	0.0000	0.0000	0.00E+00
95	0.00	0.000	0.008	0.2099	0.0000	0.0000	6.14E-09	0.0000	0.0000	0.00E+00
96	0.24	0.000	0.008	0.2491	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
97	0.09	0.000	0.008	0.2633	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
98	0.00	0.000	0.008	0.2620	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99	0.00	0.000	0.008	0.2608	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100	0.00	0.000	0.008	0.2594	0.0000	0.0001	1.38E-08	0.0000	0.0000	0.00E+00

101	0.00	0.000	0.008	0.2581	0.0001	0.0002	2.27E-08	0.0000	0.0000	0.00E+00
102	0.00	0.000	0.008	0.2568	0.0001	0.0004	3.31E-08	0.0000	0.0000	0.00E+00
103	0.00	0.000	0.008	0.2554	0.0000	0.0000	1.47E-08	0.0000	0.0000	0.00E+00
104	0.00	0.000	0.008	0.2539	0.0002	0.0007	4.61E-08	0.0000	0.0000	0.00E+00
105	0.00	0.000	0.008	0.2525	0.0001	0.0005	3.80E-08	0.0000	0.0000	0.00E+00
106	0.00	0.000	0.008	0.2511	0.0001	0.0003	2.56E-08	0.0000	0.0000	0.00E+00
107	0.00	0.000	0.008	0.2497	0.0001	0.0004	3.13E-08	0.0000	0.0000	0.00E+00
108	0.00	0.000	0.009	0.2481	0.0003	0.0011	6.05E-08	0.0000	0.0000	0.00E+00
109	0.00	0.000	0.008	0.2467	0.0001	0.0004	3.01E-08	0.0000	0.0000	0.00E+00
110	0.00	0.000	0.008	0.2453	0.0000	0.0000	1.07E-08	0.0000	0.0000	0.00E+00
111	0.00	0.000	0.008	0.2439	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
112	0.00	0.000	0.009	0.2427	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
113	0.00	0.000	0.008	0.2413	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
114	0.00	0.000	0.008	0.2400	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
115	0.00	0.000	0.008	0.2386	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
116	0.00	0.000	0.008	0.2372	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
117	0.00	0.000	0.009	0.2357	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
118	0.00	0.000	0.008	0.2343	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
119	0.00	0.000	0.008	0.2329	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
120	0.00	0.000	0.009	0.2314	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
121	0.00	0.000	0.009	0.2300	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
122	0.00	0.000	0.008	0.2286	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
123	0.00	0.000	0.009	0.2271	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.009	0.2255	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
125	0.00	0.000	0.011	0.2238	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
126	0.00	0.000	0.010	0.2220	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
127	0.00	0.000	0.011	0.2203	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
128	0.00	0.000	0.011	0.2184	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
129	0.00	0.000	0.011	0.2166	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
130	0.00	0.000	0.009	0.2150	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
131	0.00	0.000	0.011	0.2132	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
132	0.00	0.000	0.009	0.2116	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
133	0.00	0.000	0.010	0.2099	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
134	0.00	0.000	0.012	0.2079	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.011	0.2061	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.011	0.2043	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

137	0.00	0.000	0.011	0.2025	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.010	0.2007	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.013	0.1986	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.014	0.1963	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.014	0.1939	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.015	0.1915	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.012	0.1894	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
144	0.12	0.000	0.011	0.2080	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.013	0.2058	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.013	0.2036	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.012	0.2016	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.015	0.1992	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.015	0.1966	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
150	0.56	0.000	0.015	0.2878	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
151	0.19	0.000	0.017	0.3160	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
152	0.16	0.000	0.458	0.2660	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
153	0.00	0.000	0.015	0.2635	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
154	0.10	0.000	0.016	0.2764	0.0007	0.0028	1.19E-07	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.017	0.2698	0.0049	0.0185	6.21E-07	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.018	0.2632	0.0063	0.0239	7.80E-07	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.018	0.2602	0.0009	0.0035	1.36E-07	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.021	0.2568	0.0000	0.0000	9.98E-09	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.023	0.2529	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.019	0.2498	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.018	0.2468	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.022	0.2432	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.021	0.2397	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
164	0.13	0.000	0.022	0.2571	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
165	0.07	0.000	0.023	0.2655	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.023	0.2615	0.0002	0.0009	3.46E-08	0.0000	0.0000	0.00E+00
167	0.00	0.000	0.022	0.2576	0.0004	0.0014	6.96E-08	0.0000	0.0000	0.00E+00
168	0.04	0.000	0.021	0.2604	0.0004	0.0015	7.38E-08	0.0000	0.0000	0.00E+00
169	0.46	0.000	0.426	0.2657	0.0001	0.0002	2.41E-08	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.355	0.2065	0.0000	0.0000	5.23E-09	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.216	0.1705	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.097	0.1542	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

173	0.00	0.000	0.072	0.1391	0.0048	0.0182	5.76E-07	0.0000	0.0000	0.00E+00
174	0.00	0.000	0.025	0.1350	0.0000	0.0000	1.62E-08	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.000	0.1350	0.0000	0.0000	2.48E-09	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
183	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
185	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
189	0.29	0.000	0.021	0.1802	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
190	0.07	0.000	0.025	0.1883	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.033	0.1829	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
192	0.11	0.000	0.039	0.1949	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
193	0.12	0.000	0.041	0.2085	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
194	0.00	0.000	0.031	0.2033	0.0000	0.0000	1.19E-08	0.0000	0.0000	0.00E+00
195	0.00	0.000	0.031	0.1981	0.0000	0.0000	1.97E-09	0.0000	0.0000	0.00E+00
196	0.00	0.000	0.031	0.1928	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.036	0.1869	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
198	0.00	0.000	0.039	0.1804	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
199	0.04	0.000	0.040	0.1801	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.030	0.1759	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
201	0.10	0.000	0.037	0.1868	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
202	0.00	0.000	0.046	0.1792	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.044	0.1717	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
204	0.00	0.000	0.041	0.1649	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
205	0.00	0.000	0.054	0.1560	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
206	0.04	0.000	0.037	0.1566	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
207	0.00	0.000	0.042	0.1497	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
208	0.15	0.000	0.053	0.1661	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

209	0.11	0.000	0.054	0.1761	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.039	0.1702	0.0001	0.0002	1.84E-08	0.0000	0.0000	0.00E+00
211	0.16	0.000	0.040	0.1895	0.0000	0.0000	9.52E-09	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.050	0.1814	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.046	0.1737	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.040	0.1671	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.033	0.1617	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
216	0.14	0.000	0.028	0.1808	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
217	0.09	0.000	0.035	0.1899	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
218	0.00	0.000	0.041	0.1831	0.0000	0.0000	3.47E-09	0.0000	0.0000	0.00E+00
219	0.00	0.000	0.051	0.1745	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.047	0.1667	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.042	0.1596	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.039	0.1531	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
223	0.00	0.000	0.042	0.1462	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.050	0.1379	0.0000	0.0000	5.55E-17	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.014	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.003	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
228	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
229	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
230	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.21	0.000	0.033	0.1649	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
232	0.04	0.000	0.028	0.1678	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
233	0.09	0.000	0.032	0.1777	0.0000	0.0000	6.70E-09	0.0000	0.0000	0.00E+00
234	0.01	0.000	0.040	0.1733	0.0000	0.0000	2.25E-09	0.0000	0.0000	0.00E+00
235	0.05	0.000	0.047	0.1737	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
236	0.21	0.000	0.044	0.2013	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.202	0.1676	0.0000	0.0001	1.16E-08	0.0000	0.0000	0.00E+00
238	0.13	0.000	0.037	0.1831	0.0000	0.0000	1.24E-08	0.0000	0.0000	0.00E+00
239	0.05	0.000	0.060	0.1819	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
240	0.00	0.000	0.059	0.1722	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
241	0.32	0.000	0.042	0.2182	0.0000	0.0001	1.17E-08	0.0000	0.0000	0.00E+00
242	0.16	0.000	0.182	0.2148	0.0000	0.0000	1.25E-08	0.0000	0.0000	0.00E+00
243	0.26	0.000	0.372	0.1965	0.0000	0.0001	1.31E-08	0.0000	0.0000	0.00E+00
244	0.34	0.000	0.199	0.2196	0.0000	0.0000	1.13E-08	0.0000	0.0000	0.00E+00

245	0.00	0.000	0.190	0.1880	0.0002	0.0008	3.51E-08	0.0000	0.0000	0.00E+00
246	0.08	0.000	0.247	0.1604	0.0001	0.0002	2.44E-08	0.0000	0.0000	0.00E+00
247	0.17	0.000	0.137	0.1662	0.0000	0.0000	5.32E-09	0.0000	0.0000	0.00E+00
248	0.05	0.000	0.103	0.1580	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
249	0.00	0.000	0.073	0.1459	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.052	0.1372	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
251	0.01	0.000	0.016	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
252	0.00	0.000	0.002	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.07	0.000	0.018	0.1433	0.0000	0.0000	2.73E-17	0.0000	0.0000	0.00E+00
255	0.11	0.000	0.062	0.1513	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.070	0.1395	0.0000	0.0000	9.08E-09	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.017	0.1367	0.0000	0.0000	2.00E-09	0.0000	0.0000	0.00E+00
258	0.04	0.000	0.023	0.1396	0.0000	0.0000	8.38E-09	0.0000	0.0000	0.00E+00
259	0.05	0.000	0.016	0.1446	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
260	0.03	0.000	0.041	0.1426	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
261	0.11	0.000	0.045	0.1528	0.0000	0.0000	4.40E-09	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.037	0.1467	0.0000	0.0000	4.34E-19	0.0000	0.0000	0.00E+00
263	0.00	0.000	0.042	0.1397	0.0000	0.0000	6.85E-09	0.0000	0.0000	0.00E+00
264	0.00	0.000	0.022	0.1360	0.0000	0.0000	3.87E-09	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.004	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
271	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
274	0.05	0.000	0.012	0.1418	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.017	0.1390	0.0000	0.0000	4.54E-09	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.016	0.1364	0.0000	0.0000	5.13E-09	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.005	0.1355	0.0000	0.0000	2.27E-09	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.002	0.1352	0.0000	0.0000	1.37E-09	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

281	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
283	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
284	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
285	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
286	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
287	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
288	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
289	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
290	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
291	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
292	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
293	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
294	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
295	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
296	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
297	0.09	0.000	0.009	0.1483	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
298	0.02	0.000	0.015	0.1490	0.0000	0.0000	3.51E-09	0.0000	0.0000	0.00E+00
299	0.01	0.000	0.014	0.1490	0.0000	0.0000	4.34E-19	0.0000	0.0000	0.00E+00
300	0.00	0.000	0.007	0.1478	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
301	0.00	0.000	0.009	0.1464	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
302	0.00	0.000	0.011	0.1446	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
303	0.00	0.000	0.010	0.1429	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
304	0.00	0.000	0.011	0.1412	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
305	0.00	0.000	0.011	0.1393	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
306	0.00	0.000	0.010	0.1376	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
307	0.00	0.000	0.009	0.1361	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
308	0.22	0.000	0.019	0.1703	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
309	0.00	0.000	0.008	0.1690	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
310	0.00	0.000	0.009	0.1675	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
311	0.00	0.000	0.009	0.1659	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
312	0.00	0.000	0.009	0.1644	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
313	0.00	0.000	0.009	0.1629	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
314	0.00	0.000	0.009	0.1614	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
315	0.00	0.000	0.008	0.1601	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
316	0.00	0.000	0.008	0.1587	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

317		0.00	0.000	0.008	0.1573	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318		0.00	0.000	0.008	0.1559	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319		0.00	0.000	0.008	0.1545	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320		0.00	0.000	0.008	0.1531	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
321		0.00	0.000	0.008	0.1517	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
322		0.00	0.000	0.008	0.1503	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
323		0.00	0.000	0.007	0.1492	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324		0.00	0.000	0.009	0.1476	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
325		0.00	0.000	0.009	0.1461	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
326		0.00	0.000	0.009	0.1445	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.009	0.1430	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328		0.00	0.000	0.010	0.1414	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
329	*	0.00	0.000	0.000	0.1414	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330		0.00	0.000	0.010	0.1397	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331		0.00	0.000	0.010	0.1380	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
332		0.00	0.000	0.010	0.1364	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333	*	0.09	0.000	0.059	0.1397	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
334	*	0.19	0.000	0.000	0.1430	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.120	0.1533	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
336		0.00	0.000	0.010	0.1516	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
337		0.00	0.000	0.007	0.1503	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
338		0.00	0.000	0.008	0.1490	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
339	*	0.00	0.000	0.000	0.1490	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
340	*	0.00	0.000	0.001	0.1490	0.0000	0.0000	1.13E-08	0.0000	0.0000	0.00E+00
341		0.12	0.000	0.012	0.1677	0.0000	0.0000	6.11E-09	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.008	0.1663	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
343		0.00	0.000	0.007	0.1651	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
344		0.00	0.000	0.007	0.1639	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345	*	0.30	0.000	0.047	0.1672	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
346	*	0.00	0.000	0.055	0.1705	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
347		0.00	0.000	0.082	0.1837	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
348		0.00	0.000	0.008	0.1824	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
349		0.00	0.000	0.009	0.1809	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
350		0.00	0.000	0.009	0.1795	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.008	0.1781	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
352		0.00	0.000	0.008	0.1767	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

353		0.00	0.000	0.008	0.1753	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
354		0.00	0.000	0.008	0.1739	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
355		0.00	0.000	0.008	0.1725	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
356		0.05	0.000	0.013	0.1785	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
357		0.24	0.000	0.013	0.2154	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
358		0.02	0.000	0.014	0.2166	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.009	0.2151	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
360		0.00	0.000	0.009	0.2136	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
361		0.00	0.000	0.009	0.2121	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
362		0.00	0.000	0.009	0.2106	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
363		0.00	0.000	0.009	0.2092	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
364		0.00	0.000	0.009	0.2077	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
365		0.00	0.000	0.009	0.2062	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 12			
	inches	cubic feet	percent
Precipitation	8.59	31,169.7	100.00
Runoff	0.000	0.0000	0.00
Evapotranspiration	8.436	30,621.6	98.24
Drainage Collected from Layer 2	0.3334	1,210.2	3.88
Percolation/Leakage through Layer 4	0.000013	0.0458	0.00
Average Head on Top of Layer 3	0.0002	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	-0.1824	-662.1	-2.12
Soil Water at Start of Year	538.6533	1,955,311.4	6273.11
Soil Water at End of Year	538.4709	1,954,649.2	6270.99
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 13

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Column key: Head #1: drainage from Layer 3; Drain #1: drainage from Layer 2; Leak #1: leakage thru Layer 4; Head #2: drainage from Layer 15; Drain #2: drainage from Layer 14; Leak #2: leakage thru Layer 16

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.00	0.000	0.009	0.2048	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.009	0.2033	0.0000	0.0000	6.83E-09	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.009	0.2019	0.0000	0.0000	2.68E-09	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.009	0.2004	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.009	0.1990	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.009	0.1975	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
7			0.07	0.000	0.014	0.2075	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
8			0.04	0.000	0.014	0.2121	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.009	0.2106	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
10	*		0.00	0.000	0.000	0.2106	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
11	*		0.00	0.000	0.000	0.2106	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
12			0.00	0.000	0.009	0.2091	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
13			0.09	0.000	0.014	0.2212	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.009	0.2197	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.009	0.2182	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
16			0.00	0.000	0.009	0.2167	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.009	0.2152	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.009	0.2137	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.009	0.2122	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.009	0.2107	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
21			0.00	0.000	0.009	0.2093	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.009	0.2078	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.009	0.2063	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
24			0.00	0.000	0.008	0.2049	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
25			0.00	0.000	0.008	0.2035	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
26			0.00	0.000	0.008	0.2021	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
27			0.00	0.000	0.008	0.2007	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
28			0.12	0.000	0.013	0.2181	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

29		0.00	0.000	0.008	0.2167	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.008	0.2153	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
31		0.04	0.000	0.013	0.2190	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
32		0.01	0.000	0.013	0.2185	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
33	*	0.09	0.000	0.054	0.2218	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
34	*	0.03	0.000	0.044	0.2218	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
35	*	0.00	0.000	0.010	0.2204	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
36		0.00	0.000	0.008	0.2190	0.0000	0.0000	1.20E-08	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.008	0.2176	0.0000	0.0000	2.23E-09	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.008	0.2162	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.008	0.2148	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.008	0.2134	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.008	0.2120	0.0000	0.0000	9.82E-09	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.008	0.2106	0.0000	0.0000	4.75E-09	0.0000	0.0000	0.00E+00
43		0.00	0.000	0.008	0.2093	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
44		0.00	0.000	0.008	0.2079	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.008	0.2065	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.008	0.2052	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.008	0.2039	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.008	0.2026	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.008	0.2013	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.008	0.2000	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.008	0.1987	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
52		0.00	0.000	0.008	0.1974	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
53		0.00	0.000	0.008	0.1961	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.007	0.1950	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
55		0.13	0.000	0.013	0.2153	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
56		0.00	0.000	0.008	0.2140	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
57		0.00	0.000	0.008	0.2127	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.008	0.2115	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.008	0.2102	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60		0.00	0.000	0.008	0.2089	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
61		0.23	0.000	0.013	0.2453	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
62		0.13	0.000	0.013	0.2647	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
63		0.03	0.000	0.013	0.2677	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.008	0.2665	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

65		0.00	0.000	0.007	0.2652	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.008	0.2639	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
67		0.00	0.000	0.008	0.2627	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.008	0.2614	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.008	0.2601	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.008	0.2589	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.008	0.2576	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.008	0.2563	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.008	0.2551	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.007	0.2538	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.007	0.2526	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
76		0.09	0.000	0.012	0.2656	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.007	0.2644	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.007	0.2631	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
79		0.00	0.000	0.007	0.2619	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
80		0.00	0.000	0.007	0.2607	0.0000	0.0001	1.81E-08	0.0000	0.0000	0.00E+00
81		0.00	0.000	0.009	0.2595	0.0000	0.0000	3.79E-09	0.0000	0.0000	0.00E+00
82		0.00	0.000	0.007	0.2583	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.007	0.2570	0.0000	0.0000	3.18E-09	0.0000	0.0000	0.00E+00
84		0.00	0.000	0.007	0.2558	0.0000	0.0000	1.40E-08	0.0000	0.0000	0.00E+00
85		0.00	0.000	0.007	0.2545	0.0001	0.0005	3.47E-08	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.007	0.2533	0.0000	0.0000	1.50E-08	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.007	0.2520	0.0001	0.0005	3.14E-08	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.007	0.2508	0.0001	0.0004	3.22E-08	0.0000	0.0000	0.00E+00
89		0.00	0.000	0.007	0.2494	0.0001	0.0005	3.57E-08	0.0000	0.0000	0.00E+00
90		0.04	0.000	0.011	0.2532	0.0004	0.0015	7.84E-08	0.0000	0.0000	0.00E+00
91		0.00	0.000	0.008	0.2518	0.0003	0.0010	5.74E-08	0.0000	0.0000	0.00E+00
92		0.00	0.000	0.008	0.2506	0.0000	0.0001	1.70E-08	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.008	0.2493	0.0000	0.0000	3.23E-09	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.008	0.2480	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.008	0.2467	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
96		0.00	0.000	0.008	0.2454	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
97	*	0.00	0.000	0.007	0.2442	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
98	*	0.00	0.000	0.000	0.2442	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99	*	0.00	0.000	0.000	0.2442	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100	*	0.00	0.000	0.007	0.2429	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

101		0.00	0.000	0.008	0.2417	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
102		0.00	0.000	0.008	0.2404	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
103	*	0.00	0.000	0.007	0.2392	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
104		0.00	0.000	0.008	0.2379	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
105		0.00	0.000	0.008	0.2366	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
106		0.03	0.000	0.012	0.2396	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
107		0.06	0.000	0.012	0.2481	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
108		0.00	0.000	0.011	0.2470	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
109		0.00	0.000	0.009	0.2454	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
110		0.00	0.000	0.010	0.2437	0.0001	0.0003	1.95E-08	0.0000	0.0000	0.00E+00
111		0.00	0.000	0.009	0.2420	0.0002	0.0007	4.35E-08	0.0000	0.0000	0.00E+00
112		0.00	0.000	0.010	0.2403	0.0001	0.0003	2.92E-08	0.0000	0.0000	0.00E+00
113		0.00	0.000	0.010	0.2387	0.0000	0.0000	7.92E-09	0.0000	0.0000	0.00E+00
114		0.00	0.000	0.011	0.2370	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
115		0.00	0.000	0.011	0.2351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
116		0.00	0.000	0.012	0.2330	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
117		0.00	0.000	0.011	0.2312	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
118		0.00	0.000	0.013	0.2289	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
119		0.00	0.000	0.013	0.2268	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
120		0.00	0.000	0.014	0.2246	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
121		0.03	0.000	0.016	0.2275	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
122		0.00	0.000	0.012	0.2254	0.0001	0.0003	1.32E-08	0.0000	0.0000	0.00E+00
123		0.00	0.000	0.011	0.2235	0.0002	0.0008	5.09E-08	0.0000	0.0000	0.00E+00
124		0.00	0.000	0.012	0.2216	0.0000	0.0000	1.50E-08	0.0000	0.0000	0.00E+00
125		0.00	0.000	0.011	0.2197	0.0000	0.0000	1.65E-09	0.0000	0.0000	0.00E+00
126		0.00	0.000	0.010	0.2181	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
127		1.62	0.099	0.012	0.4225	0.0306	0.1150	2.66E-06	0.0000	0.0000	0.00E+00
128		0.05	0.000	0.165	0.2913	1.7361	0.7511	1.21E-04	0.0000	0.0000	0.00E+00
129		0.08	0.000	0.134	0.2736	0.0333	0.1250	3.31E-06	0.0000	0.0000	0.00E+00
130		0.00	0.000	0.343	0.2106	0.0114	0.0427	1.31E-06	0.0000	0.0000	0.00E+00
131		0.00	0.000	0.290	0.1622	0.0007	0.0026	1.09E-07	0.0000	0.0000	0.00E+00
132		0.00	0.000	0.163	0.1350	0.0000	0.0000	9.11E-09	0.0000	0.0000	0.00E+00
133		0.55	0.000	0.144	0.2028	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
134		0.02	0.000	0.174	0.1773	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
135		0.00	0.000	0.194	0.1451	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
136		0.00	0.000	0.040	0.1384	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

137	0.04	0.000	0.024	0.1412	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.018	0.1383	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.015	0.1358	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.003	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
143	0.08	0.000	0.006	0.1465	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.017	0.1436	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.027	0.1391	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.020	0.1357	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.003	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
150	0.13	0.000	0.018	0.1540	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.015	0.1515	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.024	0.1474	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
153	0.00	0.000	0.025	0.1433	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.023	0.1395	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.020	0.1363	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.006	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
162	0.04	0.000	0.006	0.1405	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
163	0.36	0.000	0.015	0.1978	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
164	0.11	0.000	0.020	0.2134	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.023	0.2097	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.025	0.2059	0.0000	0.0000	5.55E-17	0.0000	0.0000	0.00E+00
167	0.08	0.000	0.033	0.2137	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
168	0.27	0.000	0.027	0.2548	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.028	0.2501	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.029	0.2453	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.025	0.2410	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.029	0.2363	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

173	0.00	0.000	0.032	0.2309	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
174	0.00	0.000	0.032	0.2256	0.0000	0.0000	1.60E-08	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.034	0.2199	0.0000	0.0000	2.25E-09	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.035	0.2141	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.038	0.2077	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.038	0.2014	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.037	0.1953	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.030	0.1903	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.037	0.1841	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.45	0.000	0.038	0.2524	0.0000	0.0000	1.16E-08	0.0000	0.0000	0.00E+00
183	0.00	0.000	0.483	0.1719	0.0000	0.0000	7.98E-10	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.039	0.1655	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
185	0.00	0.000	0.044	0.1582	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.038	0.1519	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
187	0.01	0.000	0.043	0.1466	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
188	0.07	0.000	0.046	0.1505	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
189	0.09	0.000	0.043	0.1569	0.0010	0.0039	1.43E-07	0.0000	0.0000	0.00E+00
190	0.56	0.000	0.022	0.2466	0.0000	0.0001	1.71E-08	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.212	0.2112	0.0000	0.0000	4.27E-09	0.0000	0.0000	0.00E+00
192	0.00	0.000	0.031	0.2060	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
193	0.00	0.000	0.028	0.2014	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
194	0.00	0.000	0.027	0.1971	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
195	0.00	0.000	0.027	0.1926	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
196	0.00	0.000	0.031	0.1874	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.028	0.1828	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
198	0.00	0.000	0.029	0.1780	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
199	0.52	0.000	0.038	0.2576	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.338	0.2012	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.246	0.1602	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
202	0.05	0.000	0.145	0.1440	0.0000	0.0002	1.94E-08	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.036	0.1379	0.0000	0.0000	6.79E-09	0.0000	0.0000	0.00E+00
204	0.00	0.000	0.012	0.1359	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
205	0.07	0.000	0.015	0.1456	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
206	0.12	0.000	0.034	0.1596	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
207	0.29	0.000	0.038	0.2017	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
208	0.56	0.000	0.052	0.2862	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

209	0.00	0.000	0.318	0.2332	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.327	0.1787	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.209	0.1439	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.045	0.1350	0.0024	0.0089	2.98E-07	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.000	0.1350	0.0000	0.0000	1.41E-08	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
216	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
217	0.44	0.000	0.032	0.2034	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
218	0.02	0.000	0.041	0.1995	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
219	0.31	0.000	0.059	0.2414	0.0000	0.0000	1.98E-09	0.0000	0.0000	0.00E+00
220	0.04	0.000	0.064	0.2382	0.0000	0.0000	1.35E-09	0.0000	0.0000	0.00E+00
221	0.03	0.000	0.065	0.2329	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.054	0.2239	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
223	0.00	0.000	0.064	0.2133	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
224	0.04	0.000	0.071	0.2078	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.055	0.1986	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.067	0.1874	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.076	0.1746	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
228	0.02	0.000	0.077	0.1647	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
229	0.33	0.000	0.078	0.2069	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
230	0.04	0.000	0.348	0.1557	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.05	0.000	0.067	0.1525	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.060	0.1432	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
233	0.01	0.000	0.041	0.1379	0.0004	0.0014	5.85E-08	0.0000	0.0000	0.00E+00
234	0.40	0.000	0.048	0.1957	0.0000	0.0001	1.86E-08	0.0000	0.0000	0.00E+00
235	0.33	0.000	0.259	0.2075	0.0000	0.0001	1.35E-08	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.400	0.1408	0.0000	0.0000	1.36E-08	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.025	0.1366	0.0000	0.0001	1.09E-08	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.006	0.1355	0.0000	0.0000	1.20E-08	0.0000	0.0000	0.00E+00
239	0.00	0.000	0.003	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
240	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
241	0.03	0.000	0.016	0.1379	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
242	0.07	0.000	0.014	0.1467	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.034	0.1411	0.0000	0.0000	2.25E-09	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.032	0.1357	0.0000	0.0000	6.81E-09	0.0000	0.0000	0.00E+00

245	0.00	0.000	0.003	0.1352	0.0000	0.0000	5.24E-10	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
249	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.002	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
251	0.01	0.000	0.012	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
252	0.01	0.000	0.007	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
259	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
260	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
261	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
263	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
264	0.04	0.000	0.012	0.1396	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.006	0.1385	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.016	0.1359	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.003	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
271	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
273	0.01	0.000	0.009	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
274	0.01	0.000	0.009	0.1365	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
275	0.17	0.000	0.020	0.1612	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.011	0.1594	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.023	0.1555	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.026	0.1519	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.027	0.1479	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.028	0.1433	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

281		0.00	0.000	0.023	0.1395	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282		0.00	0.000	0.023	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
283		0.00	0.000	0.003	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
284		0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
285		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
286		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
287		0.04	0.000	0.009	0.1405	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
288		0.00	0.000	0.009	0.1391	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
289		0.00	0.000	0.010	0.1374	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
290		0.00	0.000	0.004	0.1367	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
291		0.00	0.000	0.004	0.1360	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
292		0.00	0.000	0.003	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
293		0.00	0.000	0.002	0.1351	0.0000	0.0000	7.36E-09	0.0000	0.0000	0.00E+00
294		0.00	0.000	0.000	0.1350	0.0000	0.0000	8.29E-09	0.0000	0.0000	0.00E+00
295		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
296		0.00	0.000	0.000	0.1350	0.0000	0.0000	7.06E-09	0.0000	0.0000	0.00E+00
297		0.00	0.000	0.000	0.1350	0.0000	0.0000	6.64E-09	0.0000	0.0000	0.00E+00
298		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
299		0.05	0.000	0.009	0.1418	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
300		0.00	0.000	0.007	0.1406	0.0000	0.0000	5.47E-10	0.0000	0.0000	0.00E+00
301		0.00	0.000	0.007	0.1393	0.0000	0.0000	1.36E-08	0.0000	0.0000	0.00E+00
302		0.00	0.000	0.010	0.1377	0.0000	0.0000	7.54E-12	0.0000	0.0000	0.00E+00
303		0.25	0.000	0.017	0.1757	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
304		0.00	0.000	0.013	0.1740	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
305		0.03	0.000	0.017	0.1759	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
306		0.38	0.000	0.019	0.2364	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
307		0.04	0.000	0.021	0.2398	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
308		0.00	0.000	0.013	0.2377	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
309		0.00	0.000	0.012	0.2356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
310	*	0.00	0.000	0.012	0.2336	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
311		0.00	0.000	0.013	0.2314	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
312		0.00	0.000	0.013	0.2293	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
313		0.00	0.000	0.013	0.2271	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
314		0.00	0.000	0.012	0.2251	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
315		0.00	0.000	0.013	0.2233	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
316		0.06	0.000	0.017	0.2301	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

317	0.00	0.000	0.011	0.2283	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318	0.00	0.000	0.011	0.2265	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319	0.00	0.000	0.011	0.2247	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320	0.00	0.000	0.011	0.2229	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
321	0.00	0.000	0.011	0.2211	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
322	0.00	0.000	0.011	0.2193	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
323	0.00	0.000	0.010	0.2176	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324	0.00	0.000	0.010	0.2159	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
325	0.00	0.000	0.010	0.2141	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
326	0.00	0.000	0.010	0.2124	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
327	0.00	0.000	0.010	0.2107	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328	0.00	0.000	0.010	0.2090	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
329	0.00	0.000	0.010	0.2073	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330	0.00	0.000	0.010	0.2056	0.0000	0.0000	9.34E-09	0.0000	0.0000	0.00E+00
331	0.00	0.000	0.010	0.2040	0.0000	0.0000	3.07E-09	0.0000	0.0000	0.00E+00
332	0.00	0.000	0.010	0.2023	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333	0.00	0.000	0.010	0.2007	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
334	0.00	0.000	0.010	0.1990	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
335	0.00	0.000	0.010	0.1974	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
336	0.00	0.000	0.010	0.1958	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
337	0.00	0.000	0.010	0.1941	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
338	0.48	0.000	0.015	0.2718	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
339	0.06	0.000	0.015	0.2796	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
340	0.00	0.000	0.010	0.2780	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
341	0.00	0.000	0.010	0.2763	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
342	0.00	0.000	0.010	0.2747	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
343	0.00	0.000	0.012	0.2732	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
344	0.00	0.000	0.010	0.2716	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345	0.00	0.000	0.010	0.2699	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
346	0.00	0.000	0.010	0.2682	0.0003	0.0012	6.31E-08	0.0000	0.0000	0.00E+00
347	0.00	0.000	0.010	0.2662	0.0006	0.0023	1.04E-07	0.0000	0.0000	0.00E+00
348	0.00	0.000	0.010	0.2641	0.0008	0.0028	1.24E-07	0.0000	0.0000	0.00E+00
349	0.00	0.000	0.009	0.2617	0.0011	0.0042	1.75E-07	0.0000	0.0000	0.00E+00
350	0.00	0.000	0.009	0.2598	0.0008	0.0030	1.30E-07	0.0000	0.0000	0.00E+00
351	0.00	0.000	0.009	0.2582	0.0000	0.0000	1.54E-08	0.0000	0.0000	0.00E+00
352	0.00	0.000	0.011	0.2564	0.0004	0.0016	7.75E-08	0.0000	0.0000	0.00E+00

353		0.02	0.000	0.014	0.2577	0.0002	0.0008	4.48E-08	0.0000	0.0000	0.00E+00
354		0.04	0.000	0.014	0.2619	0.0000	0.0000	7.11E-09	0.0000	0.0000	0.00E+00
355		0.40	0.000	0.014	0.3265	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
356		0.00	0.000	0.009	0.3068	0.0257	0.0965	2.59E-06	0.0000	0.0000	0.00E+00
357		0.02	0.000	0.014	0.3006	0.0119	0.0447	1.36E-06	0.0000	0.0000	0.00E+00
358		0.04	0.000	0.013	0.2978	0.0118	0.0442	1.35E-06	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.009	0.2915	0.0076	0.0285	9.14E-07	0.0000	0.0000	0.00E+00
360		0.00	0.000	0.009	0.2865	0.0063	0.0238	7.76E-07	0.0000	0.0000	0.00E+00
361		0.00	0.000	0.009	0.2812	0.0065	0.0243	7.93E-07	0.0000	0.0000	0.00E+00
362		0.00	0.000	0.009	0.2790	0.0021	0.0078	2.82E-07	0.0000	0.0000	0.00E+00
363		0.00	0.000	0.009	0.2775	0.0000	0.0000	1.41E-08	0.0000	0.0000	0.00E+00
364		0.00	0.000	0.009	0.2761	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
365		0.00	0.000	0.009	0.2746	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 13			
	inches	cubic feet	percent
Precipitation	11.82	42,921.0	100.00
Runoff	0.099	359.6	0.84
Evapotranspiration	9.971	36,193.7	84.33
Drainage Collected from Layer 2	1.3440	4,878.8	11.37
Percolation/Leakage through Layer 4	0.000138	0.5012	0.00
Average Head on Top of Layer 3	0.0052	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	0.4102	1,489.0	3.47
Soil Water at Start of Year	538.4709	1,954,649.2	4554.06
Soil Water at End of Year	538.8811	1,956,138.2	4557.53
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 14

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Column key: Head #1: drainage from Layer 3; Drain #1: drainage from Layer 2; Leak #1: leakage thru Layer 4; Head #2: drainage from Layer 15; Drain #2: drainage from Layer 14; Leak #2: leakage thru Layer 16

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.00	0.000	0.009	0.2731	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.009	0.2716	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.009	0.2702	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.009	0.2687	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.009	0.2673	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.009	0.2658	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.009	0.2644	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.009	0.2630	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
9			0.01	0.000	0.012	0.2631	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
10			0.18	0.000	0.012	0.2908	0.0001	0.0004	3.14E-08	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.008	0.2894	0.0000	0.0000	6.28E-09	0.0000	0.0000	0.00E+00
12			0.00	0.000	0.008	0.2880	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
13			0.00	0.000	0.010	0.2863	0.0004	0.0017	7.91E-08	0.0000	0.0000	0.00E+00
14	*		0.00	0.000	0.008	0.2843	0.0011	0.0042	1.73E-07	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.008	0.2796	0.0037	0.0141	4.85E-07	0.0000	0.0000	0.00E+00
16			0.00	0.000	0.008	0.2757	0.0053	0.0200	6.68E-07	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.008	0.2744	0.0002	0.0007	4.42E-08	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.008	0.2730	0.0000	0.0000	7.05E-09	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.008	0.2716	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.008	0.2702	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
21			0.00	0.000	0.008	0.2689	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.008	0.2675	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.008	0.2661	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
24	*		0.10	0.000	0.055	0.2694	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
25	*		0.00	0.000	0.030	0.2675	0.0005	0.0019	8.08E-08	0.0000	0.0000	0.00E+00
26			0.00	0.000	0.008	0.2649	0.0020	0.0074	2.82E-07	0.0000	0.0000	0.00E+00
27			0.00	0.000	0.008	0.2625	0.0018	0.0068	2.62E-07	0.0000	0.0000	0.00E+00
28			0.00	0.000	0.008	0.2603	0.0014	0.0051	2.06E-07	0.0000	0.0000	0.00E+00

29		0.00	0.000	0.008	0.2582	0.0012	0.0045	1.84E-07	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.008	0.2561	0.0012	0.0045	1.85E-07	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.008	0.2540	0.0013	0.0047	1.93E-07	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.008	0.2519	0.0013	0.0050	2.01E-07	0.0000	0.0000	0.00E+00
33		0.00	0.000	0.008	0.2497	0.0014	0.0051	2.06E-07	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.008	0.2475	0.0014	0.0051	2.07E-07	0.0000	0.0000	0.00E+00
35		0.00	0.000	0.008	0.2453	0.0014	0.0051	2.05E-07	0.0000	0.0000	0.00E+00
36		0.00	0.000	0.008	0.2432	0.0013	0.0050	2.01E-07	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.008	0.2411	0.0013	0.0048	1.96E-07	0.0000	0.0000	0.00E+00
38		0.04	0.000	0.010	0.2456	0.0003	0.0011	5.57E-08	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.008	0.2443	0.0000	0.0000	7.90E-09	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.008	0.2422	0.0010	0.0039	1.59E-07	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.008	0.2403	0.0010	0.0038	1.60E-07	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.008	0.2383	0.0010	0.0039	1.66E-07	0.0000	0.0000	0.00E+00
43		0.16	0.000	0.010	0.2631	0.0002	0.0009	5.07E-08	0.0000	0.0000	0.00E+00
44		0.03	0.000	0.010	0.2671	0.0000	0.0000	7.59E-09	0.0000	0.0000	0.00E+00
45		0.05	0.000	0.009	0.2735	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
46		0.04	0.000	0.009	0.2790	0.0001	0.0006	3.00E-08	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.008	0.2777	0.0000	0.0000	1.40E-08	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.008	0.2765	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.008	0.2752	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
50	*	0.00	0.000	0.008	0.2735	0.0005	0.0017	8.16E-08	0.0000	0.0000	0.00E+00
51	*	0.00	0.000	0.008	0.2716	0.0009	0.0035	1.50E-07	0.0000	0.0000	0.00E+00
52	*	0.00	0.000	0.000	0.2715	0.0004	0.0016	7.64E-08	0.0000	0.0000	0.00E+00
53	*	0.00	0.000	0.000	0.2715	0.0000	0.0000	8.95E-09	0.0000	0.0000	0.00E+00
54	*	0.00	0.000	0.000	0.2715	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
55	*	0.00	0.000	0.000	0.2715	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
56		0.00	0.000	0.007	0.2703	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
57		0.00	0.000	0.007	0.2690	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.007	0.2678	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.007	0.2666	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60		0.06	0.000	0.009	0.2758	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
61		0.00	0.000	0.008	0.2745	0.0002	0.0009	4.43E-08	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.007	0.2732	0.0000	0.0000	1.46E-08	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.007	0.2716	0.0004	0.0015	7.06E-08	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.007	0.2698	0.0008	0.0031	1.36E-07	0.0000	0.0000	0.00E+00

65	0.00	0.000	0.007	0.2685	0.0005	0.0019	8.70E-08	0.0000	0.0000	0.00E+00
66	0.05	0.000	0.009	0.2745	0.0000	0.0000	9.70E-09	0.0000	0.0000	0.00E+00
67	0.05	0.000	0.009	0.2818	0.0001	0.0006	3.04E-08	0.0000	0.0000	0.00E+00
68	0.28	0.000	0.009	0.3267	0.0000	0.0000	1.40E-08	0.0000	0.0000	0.00E+00
69	0.00	0.000	0.007	0.3058	0.0271	0.1020	2.75E-06	0.0000	0.0000	0.00E+00
70	0.02	0.000	0.009	0.2965	0.0181	0.0680	1.98E-06	0.0000	0.0000	0.00E+00
71	0.00	0.000	0.007	0.2894	0.0112	0.0420	1.29E-06	0.0000	0.0000	0.00E+00
72	0.02	0.000	0.008	0.2884	0.0057	0.0214	7.09E-07	0.0000	0.0000	0.00E+00
73	0.00	0.000	0.007	0.2832	0.0061	0.0230	7.57E-07	0.0000	0.0000	0.00E+00
74	0.00	0.000	0.007	0.2795	0.0045	0.0170	5.80E-07	0.0000	0.0000	0.00E+00
75	0.00	0.000	0.007	0.2763	0.0034	0.0128	4.54E-07	0.0000	0.0000	0.00E+00
76	0.00	0.000	0.007	0.2734	0.0029	0.0109	3.94E-07	0.0000	0.0000	0.00E+00
77	0.00	0.000	0.007	0.2708	0.0023	0.0085	3.17E-07	0.0000	0.0000	0.00E+00
78	0.00	0.000	0.007	0.2684	0.0020	0.0074	2.82E-07	0.0000	0.0000	0.00E+00
79	0.00	0.000	0.007	0.2659	0.0021	0.0078	2.94E-07	0.0000	0.0000	0.00E+00
80	0.00	0.000	0.007	0.2633	0.0023	0.0085	3.18E-07	0.0000	0.0000	0.00E+00
81	0.00	0.000	0.007	0.2606	0.0024	0.0089	3.31E-07	0.0000	0.0000	0.00E+00
82	0.11	0.000	0.008	0.2759	0.0027	0.0100	3.61E-07	0.0000	0.0000	0.00E+00
83	0.01	0.000	0.008	0.2762	0.0003	0.0011	5.78E-08	0.0000	0.0000	0.00E+00
84	0.12	0.000	0.008	0.2942	0.0010	0.0039	1.58E-07	0.0000	0.0000	0.00E+00
85	0.12	0.000	0.223	0.2767	0.0000	0.0000	1.33E-08	0.0000	0.0000	0.00E+00
86	0.06	0.000	0.008	0.2846	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
87	0.00	0.000	0.007	0.2832	0.0004	0.0016	7.69E-08	0.0000	0.0000	0.00E+00
88	0.00	0.000	0.007	0.2820	0.0000	0.0000	1.29E-08	0.0000	0.0000	0.00E+00
89	0.00	0.000	0.007	0.2800	0.0010	0.0039	1.57E-07	0.0000	0.0000	0.00E+00
90	0.00	0.000	0.007	0.2785	0.0009	0.0035	1.47E-07	0.0000	0.0000	0.00E+00
91	0.00	0.000	0.007	0.2773	0.0000	0.0000	1.51E-08	0.0000	0.0000	0.00E+00
92	0.00	0.000	0.007	0.2761	0.0000	0.0000	1.74E-09	0.0000	0.0000	0.00E+00
93	0.00	0.000	0.007	0.2749	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
94	0.00	0.000	0.007	0.2737	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
95	0.00	0.000	0.008	0.2724	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
96	0.00	0.000	0.008	0.2712	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
97	0.00	0.000	0.007	0.2699	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
98	0.08	0.000	0.008	0.2822	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99	0.00	0.000	0.008	0.2809	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100	0.00	0.000	0.008	0.2794	0.0003	0.0010	4.78E-08	0.0000	0.0000	0.00E+00

101	0.00	0.000	0.008	0.2775	0.0007	0.0027	1.17E-07	0.0000	0.0000	0.00E+00
102	0.00	0.000	0.008	0.2759	0.0009	0.0033	1.38E-07	0.0000	0.0000	0.00E+00
103	0.00	0.000	0.008	0.2746	0.0000	0.0000	1.39E-08	0.0000	0.0000	0.00E+00
104	0.00	0.000	0.007	0.2734	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
105	0.00	0.000	0.008	0.2721	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
106	0.00	0.000	0.008	0.2707	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
107	0.00	0.000	0.009	0.2693	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
108	0.00	0.000	0.008	0.2679	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
109	0.00	0.000	0.008	0.2666	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
110	0.00	0.000	0.008	0.2654	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
111	0.00	0.000	0.007	0.2641	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
112	0.00	0.000	0.008	0.2628	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
113	0.00	0.000	0.008	0.2615	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
114	0.00	0.000	0.008	0.2602	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
115	0.00	0.000	0.009	0.2587	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
116	0.00	0.000	0.009	0.2573	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
117	0.02	0.000	0.009	0.2599	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
118	0.03	0.000	0.010	0.2629	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
119	0.00	0.000	0.010	0.2613	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
120	0.18	0.000	0.009	0.2899	0.0001	0.0005	2.94E-08	0.0000	0.0000	0.00E+00
121	0.02	0.000	0.389	0.2277	0.0001	0.0005	3.40E-08	0.0000	0.0000	0.00E+00
122	0.18	0.000	0.009	0.2569	0.0000	0.0000	1.38E-08	0.0000	0.0000	0.00E+00
123	0.15	0.000	0.009	0.2797	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.010	0.2781	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
125	0.00	0.000	0.011	0.2763	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
126	0.00	0.000	0.011	0.2744	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
127	0.00	0.000	0.010	0.2727	0.0002	0.0009	4.87E-08	0.0000	0.0000	0.00E+00
128	0.00	0.000	0.011	0.2706	0.0003	0.0011	5.84E-08	0.0000	0.0000	0.00E+00
129	0.00	0.000	0.011	0.2684	0.0006	0.0021	9.72E-08	0.0000	0.0000	0.00E+00
130	0.01	0.000	0.011	0.2680	0.0010	0.0036	1.52E-07	0.0000	0.0000	0.00E+00
131	0.00	0.000	0.009	0.2662	0.0006	0.0023	1.04E-07	0.0000	0.0000	0.00E+00
132	0.00	0.000	0.010	0.2645	0.0001	0.0002	2.25E-08	0.0000	0.0000	0.00E+00
133	0.00	0.000	0.010	0.2628	0.0000	0.0000	4.76E-09	0.0000	0.0000	0.00E+00
134	0.00	0.000	0.012	0.2608	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
135	0.02	0.000	0.011	0.2621	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
136	0.16	0.000	0.011	0.2865	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

137	0.08	0.000	0.218	0.2636	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
138	0.29	0.000	0.013	0.3101	0.0002	0.0007	4.10E-08	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.409	0.2415	0.0003	0.0010	5.43E-08	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.013	0.2354	0.0056	0.0210	6.92E-07	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.012	0.2329	0.0020	0.0076	2.76E-07	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.010	0.2312	0.0000	0.0000	1.39E-08	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.011	0.2293	0.0000	0.0000	4.34E-19	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.013	0.2272	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.014	0.2249	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.015	0.2224	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
147	0.02	0.000	0.014	0.2236	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.015	0.2210	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.015	0.2185	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.018	0.2156	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.015	0.2130	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.014	0.2107	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
153	0.00	0.000	0.019	0.2076	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.019	0.2044	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.019	0.2013	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
156	0.13	0.000	0.014	0.2214	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
157	0.38	0.000	0.017	0.2818	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.367	0.2201	0.0006	0.0024	9.29E-08	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.012	0.2181	0.0000	0.0000	1.58E-08	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.018	0.2152	0.0000	0.0000	2.17E-09	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.014	0.2128	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.017	0.2099	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.018	0.2069	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
164	0.01	0.000	0.016	0.2065	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.019	0.2034	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.015	0.2009	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
167	0.00	0.000	0.020	0.1975	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
168	0.00	0.000	0.017	0.1947	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.019	0.1914	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.021	0.1879	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.023	0.1840	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.026	0.1797	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

173	0.00	0.000	0.033	0.1742	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
174	0.00	0.000	0.031	0.1691	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
175	0.85	0.000	0.024	0.3060	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.433	0.2337	0.0000	0.0001	1.35E-08	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.404	0.1663	0.0000	0.0000	1.13E-08	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.176	0.1355	0.0022	0.0084	2.84E-07	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.003	0.1350	0.0000	0.0000	1.40E-08	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
183	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
184	0.10	0.000	0.023	0.1480	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
185	0.00	0.000	0.033	0.1425	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.033	0.1370	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.008	0.1355	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.003	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
189	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
190	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.000	0.1350	0.0000	0.0000	1.10E-08	0.0000	0.0000	0.00E+00
192	0.50	0.000	0.021	0.2152	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
193	0.00	0.000	0.036	0.2092	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
194	0.00	0.000	0.047	0.2015	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
195	0.00	0.000	0.041	0.1947	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
196	0.45	0.000	0.045	0.2620	0.0000	0.0000	2.42E-09	0.0000	0.0000	0.00E+00
197	0.06	0.000	0.056	0.2629	0.0000	0.0000	9.19E-09	0.0000	0.0000	0.00E+00
198	0.07	0.000	0.058	0.2655	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
199	0.21	0.000	0.219	0.2639	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.201	0.2311	0.0002	0.0007	2.96E-08	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.194	0.1987	0.0001	0.0002	2.48E-08	0.0000	0.0000	0.00E+00
202	0.09	0.000	0.108	0.1955	0.0000	0.0000	5.41E-09	0.0000	0.0000	0.00E+00
203	0.46	0.000	0.089	0.2578	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
204	0.00	0.000	0.310	0.2061	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
205	0.41	0.000	0.079	0.2607	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
206	0.00	0.000	0.202	0.2269	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
207	0.00	0.000	0.096	0.2109	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
208	0.00	0.000	0.084	0.1968	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

209	0.00	0.000	0.071	0.1850	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.074	0.1727	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.071	0.1609	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
212	0.05	0.000	0.084	0.1556	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.075	0.1431	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.041	0.1355	0.0012	0.0045	1.63E-07	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.003	0.1351	0.0000	0.0000	1.47E-08	0.0000	0.0000	0.00E+00
216	0.00	0.000	0.000	0.1350	0.0000	0.0000	1.49E-09	0.0000	0.0000	0.00E+00
217	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
218	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
219	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
223	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
224	0.04	0.000	0.011	0.1398	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
225	0.09	0.000	0.036	0.1491	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.044	0.1418	0.0000	0.0000	9.08E-09	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.032	0.1364	0.0000	0.0000	2.00E-09	0.0000	0.0000	0.00E+00
228	0.00	0.000	0.008	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
229	0.52	0.000	0.056	0.2117	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
230	0.00	0.000	0.078	0.1988	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.42	0.000	0.067	0.2574	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
232	0.03	0.000	0.298	0.2120	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
233	0.13	0.000	0.298	0.1844	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
234	0.00	0.000	0.193	0.1523	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.073	0.1401	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.030	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
239	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
240	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
242	0.03	0.000	0.013	0.1371	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.006	0.1361	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
244	0.04	0.000	0.018	0.1389	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

245	0.00	0.000	0.009	0.1374	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.011	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
247	0.36	0.000	0.046	0.1887	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.062	0.1785	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
249	0.00	0.000	0.093	0.1630	0.0000	0.0000	7.78E-09	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.083	0.1490	0.0000	0.0000	9.06E-09	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.071	0.1372	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
252	0.57	0.000	0.058	0.2221	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.053	0.2133	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.04	0.000	0.061	0.2096	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.071	0.1978	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.068	0.1864	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.056	0.1771	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.068	0.1658	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
259	0.04	0.000	0.081	0.1582	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
260	0.15	0.000	0.068	0.1717	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
261	0.66	0.000	0.069	0.2698	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
262	0.71	0.002	0.165	0.3335	0.0011	0.0040	1.32E-07	0.0000	0.0000	0.00E+00
263	0.00	0.000	0.257	0.2721	0.0664	0.2494	6.22E-06	0.0000	0.0000	0.00E+00
264	0.00	0.000	0.152	0.2377	0.0161	0.0604	1.78E-06	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.193	0.2028	0.0071	0.0267	8.51E-07	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.279	0.1562	0.0001	0.0003	2.54E-08	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.106	0.1350	0.0057	0.0215	6.46E-07	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.000	0.1350	0.0000	0.0000	1.49E-08	0.0000	0.0000	0.00E+00
269	0.06	0.000	0.025	0.1411	0.0000	0.0000	1.54E-09	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.026	0.1367	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
271	0.39	0.000	0.060	0.1924	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.096	0.1764	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.191	0.1445	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.046	0.1368	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.007	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.004	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

281	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
283	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
284	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
285	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
286	0.04	0.000	0.013	0.1390	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
287	0.02	0.000	0.012	0.1406	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
288	0.04	0.000	0.022	0.1442	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
289	0.02	0.000	0.024	0.1436	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
290	0.00	0.000	0.019	0.1411	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
291	0.09	0.000	0.027	0.1509	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
292	0.17	0.000	0.027	0.1748	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
293	0.02	0.000	0.028	0.1727	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
294	0.00	0.000	0.019	0.1695	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
295	0.00	0.000	0.022	0.1658	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
296	0.00	0.000	0.020	0.1626	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
297	0.00	0.000	0.021	0.1591	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
298	0.20	0.000	0.028	0.1871	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
299	0.16	0.000	0.030	0.2092	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
300	0.77	0.003	0.032	0.3323	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
301	0.00	0.000	0.138	0.2904	0.0266	0.0998	2.71E-06	0.0000	0.0000	0.00E+00
302	0.00	0.000	0.132	0.2624	0.0105	0.0396	1.22E-06	0.0000	0.0000	0.00E+00
303	0.00	0.000	0.118	0.2370	0.0104	0.0390	1.21E-06	0.0000	0.0000	0.00E+00
304	0.00	0.000	0.088	0.2216	0.0027	0.0103	3.58E-07	0.0000	0.0000	0.00E+00
305	0.00	0.000	0.069	0.2101	0.0000	0.0000	1.44E-08	0.0000	0.0000	0.00E+00
306	0.00	0.000	0.058	0.2005	0.0000	0.0000	2.81E-10	0.0000	0.0000	0.00E+00
307	0.00	0.000	0.052	0.1919	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
308	0.00	0.000	0.046	0.1843	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
309	0.08	0.000	0.052	0.1885	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
310	0.00	0.000	0.039	0.1820	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
311	0.00	0.000	0.037	0.1758	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
312	0.00	0.000	0.030	0.1708	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
313	0.00	0.000	0.031	0.1655	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
314	0.00	0.000	0.032	0.1602	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
315	0.00	0.000	0.028	0.1555	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
316	0.00	0.000	0.027	0.1509	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

317	0.00	0.000	0.026	0.1466	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318	0.00	0.000	0.025	0.1423	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319	0.00	0.000	0.025	0.1382	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320	0.00	0.000	0.019	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
321	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
322	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
323	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
325	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
326	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
327	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
329	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
332	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
334	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
335	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
336	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
337	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
338	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
339	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
340	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
341	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
342	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
343	0.00	0.000	0.004	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
344	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
346	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
347	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
348	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
349	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
350	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
351	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
352	0.33	0.000	0.011	0.1883	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

353		0.00	0.000	0.011	0.1865	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
354		0.01	0.000	0.017	0.1861	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
355		0.00	0.000	0.011	0.1842	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
356		0.00	0.000	0.011	0.1823	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
357		0.31	0.000	0.016	0.2308	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
358		0.00	0.000	0.012	0.2288	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.012	0.2267	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
360		0.00	0.000	0.012	0.2247	0.0000	0.0000	1.04E-08	0.0000	0.0000	0.00E+00
361		0.00	0.000	0.013	0.2226	0.0000	0.0000	7.45E-09	0.0000	0.0000	0.00E+00
362		0.00	0.000	0.013	0.2205	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
363		0.67	0.000	0.018	0.3287	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
364		0.00	0.000	0.013	0.3137	0.0161	0.0605	1.65E-06	0.0000	0.0000	0.00E+00
365		0.00	0.000	0.013	0.3012	0.0168	0.0632	1.86E-06	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 14			
	inches	cubic feet	percent
Precipitation	13.72	49,820.1	100.00
Runoff	0.005	19.8	0.04
Evapotranspiration	12.306	44,670.5	89.66
Drainage Collected from Layer 2	1.2376	4,492.5	9.02
Percolation/Leakage through Layer 4	0.000038	0.1392	0.00
Average Head on Top of Layer 3	0.0009	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	0.1756	637.3	1.28
Soil Water at Start of Year	538.8811	1,956,138.2	3926.40
Soil Water at End of Year	539.0566	1,956,775.6	3927.68
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 15

Column key: Head #1: drainage from Layer 3 | Head #2: drainage from Layer 15
Drain #1: drainage from Layer 2 | Drain #2: drainage from Layer 14
Leak #1: leakage thru Layer 4 | Leak #2: leakage thru Layer 16

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.00	0.000	0.013	0.2903	0.0161	0.0603	1.78E-06	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.012	0.2824	0.0097	0.0363	1.13E-06	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.012	0.2767	0.0067	0.0254	8.24E-07	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.012	0.2745	0.0012	0.0044	1.68E-07	0.0000	0.0000	0.00E+00
5			0.09	0.000	0.017	0.2873	0.0000	0.0000	1.11E-08	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.012	0.2852	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
7	*		0.00	0.000	0.012	0.2829	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.012	0.2806	0.0009	0.0032	1.35E-07	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.012	0.2770	0.0027	0.0101	3.63E-07	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.012	0.2751	0.0000	0.0002	2.09E-08	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.012	0.2731	0.0000	0.0000	4.42E-09	0.0000	0.0000	0.00E+00
12			0.00	0.000	0.012	0.2712	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
13	*		0.00	0.000	0.012	0.2692	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
14			0.06	0.000	0.016	0.2767	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
15			0.12	0.000	0.016	0.2940	0.0002	0.0006	2.47E-08	0.0000	0.0000	0.00E+00
16	*		0.13	0.000	0.058	0.2971	0.0001	0.0002	2.28E-08	0.0000	0.0000	0.00E+00
17			0.28	0.000	0.044	0.3226	0.0003	0.0010	5.54E-08	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.161	0.2797	0.0572	0.2152	5.44E-06	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.126	0.2500	0.0165	0.0621	1.83E-06	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.154	0.2203	0.0087	0.0325	1.03E-06	0.0000	0.0000	0.00E+00
21			0.00	0.000	0.083	0.2064	0.0003	0.0012	5.93E-08	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.064	0.1958	0.0000	0.0000	8.07E-09	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.054	0.1868	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
24			0.00	0.000	0.047	0.1789	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
25			0.00	0.000	0.043	0.1718	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
26			0.00	0.000	0.039	0.1652	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
27			0.00	0.000	0.037	0.1591	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
28			0.00	0.000	0.034	0.1534	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

29	0.00	0.000	0.033	0.1480	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
30	0.00	0.000	0.031	0.1428	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
31	0.00	0.000	0.030	0.1379	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
32	0.00	0.000	0.017	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
33	0.00	0.000	0.000	0.1350	0.0000	0.0000	1.66E-16	0.0000	0.0000	0.00E+00
34	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
35	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
36	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
37	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
38	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
39	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
40	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
41	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
42	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
43	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
44	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
45	0.16	0.000	0.011	0.1606	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
46	0.00	0.000	0.008	0.1592	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
47	0.00	0.000	0.013	0.1571	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
48	0.00	0.000	0.013	0.1550	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
49	0.00	0.000	0.012	0.1529	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
50	0.00	0.000	0.012	0.1509	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
51	0.00	0.000	0.012	0.1488	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
52	0.00	0.000	0.012	0.1469	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
53	0.00	0.000	0.012	0.1449	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
54	0.00	0.000	0.011	0.1430	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
55	0.00	0.000	0.011	0.1411	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
56	0.06	0.000	0.014	0.1494	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
57	0.00	0.000	0.013	0.1471	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
58	0.00	0.000	0.014	0.1448	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
59	0.00	0.000	0.014	0.1425	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60	0.00	0.000	0.012	0.1405	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
61	0.00	0.000	0.011	0.1387	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
62	0.00	0.000	0.010	0.1371	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
63	0.00	0.000	0.009	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
64	0.00	0.000	0.002	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

65		0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
66		0.02	0.000	0.004	0.1373	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
67		0.00	0.000	0.001	0.1371	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.003	0.1366	0.0000	0.0000	4.54E-09	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.002	0.1362	0.0000	0.0000	5.55E-17	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.003	0.1358	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.002	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.002	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.000	0.1350	0.0000	0.0000	2.33E-09	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.000	0.1350	0.0000	0.0000	7.71E-09	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.000	0.1350	0.0000	0.0000	6.84E-09	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.000	0.1350	0.0000	0.0000	3.27E-09	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
79	*	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
80		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
81		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
82		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
84		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
85		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
89		0.05	0.000	0.004	0.1429	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
90		0.00	0.000	0.005	0.1421	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
91		0.00	0.000	0.005	0.1412	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
92		0.00	0.000	0.007	0.1401	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.008	0.1388	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.008	0.1375	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.008	0.1362	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
96		0.00	0.000	0.003	0.1358	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
97		0.00	0.000	0.003	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
98		0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99		0.24	0.000	0.008	0.1736	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100		0.02	0.000	0.011	0.1753	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

101	0.00	0.000	0.008	0.1740	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
102	0.00	0.000	0.008	0.1728	0.0000	0.0000	6.80E-09	0.0000	0.0000	0.00E+00
103	0.00	0.000	0.008	0.1715	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
104	0.00	0.000	0.009	0.1700	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
105	0.18	0.000	0.013	0.1979	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
106	0.02	0.000	0.013	0.1993	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
107	0.00	0.000	0.010	0.1976	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
108	0.00	0.000	0.010	0.1960	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
109	0.00	0.000	0.009	0.1944	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
110	0.00	0.000	0.009	0.1929	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
111	0.00	0.000	0.010	0.1913	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
112	0.00	0.000	0.011	0.1895	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
113	0.00	0.000	0.011	0.1877	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
114	0.08	0.000	0.013	0.1991	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
115	0.02	0.000	0.014	0.2004	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
116	0.00	0.000	0.012	0.1984	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
117	0.13	0.000	0.015	0.2177	0.0000	0.0000	9.04E-09	0.0000	0.0000	0.00E+00
118	0.05	0.000	0.015	0.2235	0.0000	0.0000	1.09E-08	0.0000	0.0000	0.00E+00
119	0.00	0.000	0.012	0.2214	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
120	0.00	0.000	0.012	0.2194	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
121	0.00	0.000	0.011	0.2175	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
122	0.00	0.000	0.012	0.2155	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
123	0.00	0.000	0.013	0.2133	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.014	0.2109	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
125	0.00	0.000	0.016	0.2082	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
126	0.08	0.000	0.016	0.2197	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
127	0.00	0.000	0.013	0.2175	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
128	0.00	0.000	0.014	0.2152	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
129	0.00	0.000	0.013	0.2130	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
130	0.00	0.000	0.012	0.2110	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
131	0.00	0.000	0.012	0.2090	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
132	0.00	0.000	0.012	0.2070	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
133	0.00	0.000	0.012	0.2049	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
134	0.00	0.000	0.014	0.2027	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
135	0.42	0.000	0.015	0.2704	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.015	0.2679	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

137	0.08	0.000	0.019	0.2773	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.017	0.2745	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.019	0.2714	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.019	0.2683	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.018	0.2652	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.020	0.2619	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.018	0.2590	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.015	0.2564	0.0000	0.0001	8.68E-09	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.017	0.2536	0.0000	0.0000	1.53E-08	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.015	0.2510	0.0001	0.0004	2.93E-08	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.017	0.2482	0.0001	0.0002	2.46E-08	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.018	0.2450	0.0002	0.0007	4.47E-08	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.019	0.2418	0.0002	0.0007	4.50E-08	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.017	0.2390	0.0000	0.0000	1.12E-08	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.021	0.2355	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.022	0.2317	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
153	0.00	0.000	0.019	0.2286	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.018	0.2257	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.018	0.2227	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
156	0.03	0.000	0.023	0.2247	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.023	0.2206	0.0002	0.0008	3.94E-08	0.0000	0.0000	0.00E+00
158	0.07	0.000	0.030	0.2275	0.0000	0.0001	1.73E-08	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.024	0.2236	0.0000	0.0000	3.42E-09	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.026	0.2192	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
161	0.25	0.000	0.024	0.2573	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
162	0.26	0.000	0.023	0.2974	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
163	0.06	0.000	0.029	0.3017	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
164	0.01	0.000	0.036	0.2971	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
165	0.01	0.000	0.035	0.2920	0.0002	0.0006	2.70E-08	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.026	0.2824	0.0073	0.0273	8.77E-07	0.0000	0.0000	0.00E+00
167	0.00	0.000	0.028	0.2730	0.0078	0.0294	9.40E-07	0.0000	0.0000	0.00E+00
168	0.00	0.000	0.044	0.2623	0.0056	0.0212	7.02E-07	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.032	0.2525	0.0071	0.0267	8.63E-07	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.036	0.2454	0.0031	0.0118	4.11E-07	0.0000	0.0000	0.00E+00
171	0.02	0.000	0.046	0.2414	0.0000	0.0000	1.56E-08	0.0000	0.0000	0.00E+00
172	0.07	0.000	0.034	0.2475	0.0000	0.0000	2.09E-09	0.0000	0.0000	0.00E+00

173	0.12	0.000	0.045	0.2600	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
174	0.00	0.000	0.038	0.2538	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.037	0.2473	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.038	0.2410	0.0004	0.0013	6.57E-08	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.046	0.2332	0.0000	0.0000	8.32E-09	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.047	0.2253	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.035	0.2196	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.052	0.2109	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.059	0.2011	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.87	0.000	0.039	0.3401	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
183	1.25	0.151	0.546	0.3388	0.2350	0.5064	1.92E-05	0.0000	0.0000	0.00E+00
184	0.07	0.000	0.431	0.2615	0.0390	0.1465	3.89E-06	0.0000	0.0000	0.00E+00
185	0.05	0.000	0.576	0.1669	0.0122	0.0459	1.38E-06	0.0000	0.0000	0.00E+00
186	0.61	0.000	0.275	0.2223	0.0002	0.0006	3.77E-08	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.267	0.1764	0.0021	0.0079	2.72E-07	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.230	0.1380	0.0000	0.0000	1.39E-08	0.0000	0.0000	0.00E+00
189	0.08	0.000	0.063	0.1408	0.0000	0.0000	4.34E-19	0.0000	0.0000	0.00E+00
190	0.05	0.000	0.038	0.1422	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
191	0.01	0.000	0.033	0.1391	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
192	0.00	0.000	0.015	0.1366	0.0000	0.0000	2.27E-09	0.0000	0.0000	0.00E+00
193	0.41	0.000	0.051	0.1964	0.0000	0.0000	1.49E-09	0.0000	0.0000	0.00E+00
194	0.07	0.000	0.059	0.1980	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
195	0.09	0.000	0.083	0.1988	0.0000	0.0000	4.64E-09	0.0000	0.0000	0.00E+00
196	0.09	0.000	0.087	0.1999	0.0000	0.0000	1.49E-08	0.0000	0.0000	0.00E+00
197	0.03	0.000	0.078	0.1915	0.0000	0.0000	8.53E-09	0.0000	0.0000	0.00E+00
198	0.00	0.000	0.067	0.1805	0.0001	0.0002	1.40E-08	0.0000	0.0000	0.00E+00
199	0.00	0.000	0.067	0.1693	0.0000	0.0001	1.82E-08	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.077	0.1564	0.0000	0.0000	1.38E-08	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.084	0.1425	0.0000	0.0000	2.27E-09	0.0000	0.0000	0.00E+00
202	0.11	0.000	0.065	0.1495	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.038	0.1433	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
204	0.00	0.000	0.038	0.1369	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
205	0.00	0.000	0.010	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
206	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
207	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
208	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

209	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
210	0.83	0.000	0.066	0.2626	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
211	0.01	0.000	0.425	0.1928	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
212	0.01	0.000	0.330	0.1395	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
213	0.03	0.000	0.054	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
214	0.39	0.000	0.068	0.1885	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.088	0.1739	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
216	0.00	0.000	0.080	0.1605	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
217	0.00	0.000	0.090	0.1455	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
218	0.00	0.000	0.059	0.1357	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
219	0.00	0.000	0.003	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
223	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
228	0.02	0.000	0.014	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
229	0.02	0.000	0.012	0.1373	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
230	0.21	0.000	0.033	0.1673	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.00	0.000	0.043	0.1600	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.059	0.1503	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
233	0.00	0.000	0.048	0.1422	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
234	0.13	0.000	0.081	0.1512	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.049	0.1431	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.040	0.1365	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
237	0.51	0.000	0.053	0.2126	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
238	0.04	0.000	0.079	0.2064	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
239	0.00	0.000	0.075	0.1939	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
240	0.00	0.000	0.060	0.1840	0.0000	0.0000	6.88E-09	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.080	0.1707	0.0000	0.0000	1.17E-08	0.0000	0.0000	0.00E+00
242	0.00	0.000	0.070	0.1590	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.069	0.1475	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.062	0.1371	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

245	0.00	0.000	0.008	0.1357	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.004	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
249	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
251	0.10	0.000	0.026	0.1472	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
252	0.20	0.000	0.042	0.1736	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
253	0.41	0.000	0.080	0.2280	0.0000	0.0000	1.99E-09	0.0000	0.0000	0.00E+00
254	0.00	0.000	0.320	0.1747	0.0000	0.0000	1.99E-09	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.209	0.1398	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.019	0.1366	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.009	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
259	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
260	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
261	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
263	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
264	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
266	0.08	0.000	0.013	0.1461	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
267	0.06	0.000	0.029	0.1520	0.0000	0.0000	4.36E-09	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.026	0.1477	0.0000	0.0000	1.37E-09	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.031	0.1433	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.026	0.1390	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
271	0.16	0.000	0.031	0.1607	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
272	0.03	0.000	0.030	0.1599	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.028	0.1553	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.028	0.1506	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.025	0.1464	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.024	0.1425	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
277	0.13	0.000	0.028	0.1598	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
278	0.03	0.000	0.035	0.1591	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.021	0.1556	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.019	0.1525	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

281		0.00	0.000	0.018	0.1495	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282		0.00	0.000	0.017	0.1466	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
283		0.00	0.000	0.017	0.1438	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
284		0.00	0.000	0.016	0.1412	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
285		0.00	0.000	0.015	0.1387	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
286		0.00	0.000	0.015	0.1362	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
287		0.00	0.000	0.008	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
288		0.00	0.000	0.002	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
289		0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
290		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
291		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
292		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
293		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
294		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
295		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
296		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
297		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
298		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
299		0.73	0.000	0.020	0.2534	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
300	*	0.07	0.000	0.061	0.2558	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
301	*	0.03	0.000	0.027	0.2558	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
302	*	0.26	0.000	0.056	0.2591	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
303	*	0.00	0.000	0.067	0.2624	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
304		0.00	0.000	0.107	0.2605	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
305		0.00	0.000	0.016	0.2578	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
306		0.00	0.000	0.015	0.2553	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
307	*	0.00	0.000	0.000	0.2553	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
308	*	0.00	0.000	0.000	0.2553	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
309		0.00	0.000	0.016	0.2527	0.0000	0.0000	4.84E-09	0.0000	0.0000	0.00E+00
310		0.00	0.000	0.015	0.2501	0.0000	0.0000	8.07E-09	0.0000	0.0000	0.00E+00
311		0.00	0.000	0.015	0.2476	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
312	*	0.00	0.000	0.015	0.2452	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
313		0.00	0.000	0.015	0.2427	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
314		0.00	0.000	0.015	0.2402	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
315		0.00	0.000	0.014	0.2379	0.0000	0.0000	1.24E-08	0.0000	0.0000	0.00E+00
316		0.00	0.000	0.014	0.2357	0.0000	0.0000	3.30E-09	0.0000	0.0000	0.00E+00

317		0.00	0.000	0.013	0.2334	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318		0.00	0.000	0.013	0.2312	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319		0.00	0.000	0.013	0.2290	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320		0.00	0.000	0.013	0.2268	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
321		0.00	0.000	0.013	0.2246	0.0000	0.0000	1.09E-08	0.0000	0.0000	0.00E+00
322		0.00	0.000	0.013	0.2225	0.0000	0.0000	1.59E-08	0.0000	0.0000	0.00E+00
323		0.00	0.000	0.013	0.2203	0.0000	0.0000	1.46E-08	0.0000	0.0000	0.00E+00
324		0.05	0.000	0.018	0.2256	0.0000	0.0000	9.89E-09	0.0000	0.0000	0.00E+00
325		0.00	0.000	0.013	0.2235	0.0000	0.0000	9.90E-09	0.0000	0.0000	0.00E+00
326		0.00	0.000	0.012	0.2214	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.012	0.2193	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328		0.00	0.000	0.012	0.2173	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
329		0.07	0.000	0.017	0.2261	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330		0.00	0.000	0.012	0.2241	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331		0.00	0.000	0.012	0.2221	0.0000	0.0000	8.46E-09	0.0000	0.0000	0.00E+00
332		0.00	0.000	0.012	0.2201	0.0000	0.0000	1.49E-08	0.0000	0.0000	0.00E+00
333		0.00	0.000	0.012	0.2181	0.0000	0.0000	4.52E-09	0.0000	0.0000	0.00E+00
334		0.00	0.000	0.012	0.2162	0.0000	0.0000	1.58E-08	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.012	0.2142	0.0000	0.0000	1.55E-08	0.0000	0.0000	0.00E+00
336		0.06	0.000	0.016	0.2212	0.0000	0.0000	4.19E-09	0.0000	0.0000	0.00E+00
337		0.13	0.000	0.016	0.2404	0.0000	0.0000	2.34E-09	0.0000	0.0000	0.00E+00
338		0.00	0.000	0.011	0.2385	0.0000	0.0000	1.41E-08	0.0000	0.0000	0.00E+00
339		0.00	0.000	0.011	0.2366	0.0000	0.0000	1.56E-08	0.0000	0.0000	0.00E+00
340		0.00	0.000	0.011	0.2347	0.0000	0.0000	1.47E-08	0.0000	0.0000	0.00E+00
341	*	0.00	0.000	0.011	0.2328	0.0000	0.0001	1.76E-08	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.011	0.2309	0.0000	0.0001	1.86E-08	0.0000	0.0000	0.00E+00
343		0.00	0.000	0.011	0.2290	0.0000	0.0000	1.06E-08	0.0000	0.0000	0.00E+00
344		0.00	0.000	0.011	0.2272	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345		0.00	0.000	0.011	0.2254	0.0000	0.0000	8.15E-09	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.011	0.2235	0.0000	0.0001	1.75E-08	0.0000	0.0000	0.00E+00
347		0.00	0.000	0.011	0.2217	0.0000	0.0001	1.76E-08	0.0000	0.0000	0.00E+00
348		0.01	0.000	0.014	0.2217	0.0000	0.0001	2.06E-08	0.0000	0.0000	0.00E+00
349	*	0.00	0.000	0.011	0.2199	0.0000	0.0001	1.81E-08	0.0000	0.0000	0.00E+00
350		0.35	0.000	0.014	0.2754	0.0000	0.0001	2.06E-08	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.011	0.2736	0.0000	0.0000	1.34E-08	0.0000	0.0000	0.00E+00
352		0.00	0.000	0.011	0.2719	0.0000	0.0000	4.34E-19	0.0000	0.0000	0.00E+00

353		0.00	0.000	0.010	0.2701	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
354		0.16	0.000	0.014	0.2949	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
355	*	0.01	0.000	0.025	0.2932	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
356	*	0.03	0.000	0.040	0.2915	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
357	*	0.22	0.000	0.031	0.2942	0.0002	0.0009	3.44E-08	0.0000	0.0000	0.00E+00
358	*	0.00	0.000	0.050	0.2943	0.0048	0.0179	6.06E-07	0.0000	0.0000	0.00E+00
359	*	0.00	0.000	0.058	0.2947	0.0045	0.0168	5.75E-07	0.0000	0.0000	0.00E+00
360		0.00	0.000	0.034	0.2895	0.0052	0.0197	6.58E-07	0.0000	0.0000	0.00E+00
361		0.00	0.000	0.010	0.2862	0.0033	0.0124	4.34E-07	0.0000	0.0000	0.00E+00
362		0.00	0.000	0.010	0.2810	0.0052	0.0194	6.49E-07	0.0000	0.0000	0.00E+00
363		0.00	0.000	0.010	0.2784	0.0025	0.0095	3.38E-07	0.0000	0.0000	0.00E+00
364		0.00	0.000	0.010	0.2768	0.0000	0.0000	1.47E-08	0.0000	0.0000	0.00E+00
365		0.14	0.000	0.013	0.2979	0.0000	0.0000	1.14E-09	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 15			
	inches	cubic feet	percent
Precipitation	12.74	46,233.2	100.00
Runoff	0.151	548.7	1.19
Evapotranspiration	11.241	40,806.4	88.26
Drainage Collected from Layer 2	1.3796	5,008.0	10.83
Percolation/Leakage through Layer 4	0.000046	0.1659	0.00
Average Head on Top of Layer 3	0.0013	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	-0.0358	-129.9	-0.28
Soil Water at Start of Year	539.0566	1,956,775.6	4232.40
Soil Water at End of Year	539.0208	1,956,645.7	4232.12
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 16

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Column key: Head #1: drainage from Layer 3; Drain #1: drainage from Layer 2; Leak #1: leakage thru Layer 4; Head #2: drainage from Layer 15; Drain #2: drainage from Layer 14; Leak #2: leakage thru Layer 16

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.00	0.000	0.010	0.2962	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.010	0.2944	0.0003	0.0011	4.56E-08	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.010	0.2902	0.0025	0.0095	3.25E-07	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.010	0.2833	0.0082	0.0309	9.83E-07	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.010	0.2779	0.0067	0.0253	8.23E-07	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.010	0.2761	0.0013	0.0049	1.86E-07	0.0000	0.0000	0.00E+00
7			0.04	0.000	0.013	0.2796	0.0006	0.0023	9.91E-08	0.0000	0.0000	0.00E+00
8			0.06	0.000	0.012	0.2881	0.0004	0.0014	6.68E-08	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.010	0.2852	0.0019	0.0071	2.69E-07	0.0000	0.0000	0.00E+00
10	*		0.23	0.000	0.057	0.2877	0.0015	0.0057	2.24E-07	0.0000	0.0000	0.00E+00
11	*		0.00	0.000	0.058	0.2906	0.0005	0.0019	8.96E-08	0.0000	0.0000	0.00E+00
12	*		0.00	0.000	0.039	0.2938	0.0001	0.0002	2.44E-08	0.0000	0.0000	0.00E+00
13	*		0.01	0.000	0.024	0.2923	0.0019	0.0073	2.73E-07	0.0000	0.0000	0.00E+00
14	*		0.09	0.000	0.038	0.2934	0.0033	0.0125	4.42E-07	0.0000	0.0000	0.00E+00
15	*		0.00	0.000	0.034	0.2920	0.0027	0.0102	3.69E-07	0.0000	0.0000	0.00E+00
16	*		0.03	0.000	0.029	0.2896	0.0029	0.0111	3.95E-07	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.010	0.2847	0.0053	0.0201	6.72E-07	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.010	0.2805	0.0043	0.0162	5.56E-07	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.009	0.2765	0.0039	0.0148	5.14E-07	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.009	0.2725	0.0039	0.0146	5.07E-07	0.0000	0.0000	0.00E+00
21			0.04	0.000	0.012	0.2744	0.0032	0.0121	4.29E-07	0.0000	0.0000	0.00E+00
22			0.07	0.000	0.012	0.2807	0.0051	0.0193	6.48E-07	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.009	0.2780	0.0024	0.0090	3.26E-07	0.0000	0.0000	0.00E+00
24			0.00	0.000	0.009	0.2757	0.0016	0.0059	2.31E-07	0.0000	0.0000	0.00E+00
25			0.00	0.000	0.009	0.2731	0.0014	0.0051	2.04E-07	0.0000	0.0000	0.00E+00
26			0.00	0.000	0.009	0.2699	0.0025	0.0095	3.49E-07	0.0000	0.0000	0.00E+00
27			0.00	0.000	0.009	0.2671	0.0023	0.0087	3.22E-07	0.0000	0.0000	0.00E+00
28			0.00	0.000	0.009	0.2648	0.0014	0.0054	2.15E-07	0.0000	0.0000	0.00E+00

29		0.00	0.000	0.009	0.2628	0.0008	0.0031	1.36E-07	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.009	0.2607	0.0008	0.0030	1.34E-07	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.009	0.2585	0.0012	0.0044	1.81E-07	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.009	0.2559	0.0016	0.0059	2.31E-07	0.0000	0.0000	0.00E+00
33		0.00	0.000	0.009	0.2533	0.0018	0.0068	2.62E-07	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.009	0.2506	0.0019	0.0072	2.74E-07	0.0000	0.0000	0.00E+00
35		0.00	0.000	0.009	0.2480	0.0019	0.0071	2.72E-07	0.0000	0.0000	0.00E+00
36		0.00	0.000	0.009	0.2454	0.0018	0.0069	2.64E-07	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.009	0.2428	0.0017	0.0065	2.53E-07	0.0000	0.0000	0.00E+00
38	*	0.00	0.000	0.009	0.2403	0.0016	0.0062	2.41E-07	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.009	0.2379	0.0015	0.0058	2.29E-07	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.009	0.2356	0.0015	0.0055	2.17E-07	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.009	0.2333	0.0014	0.0051	2.06E-07	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.008	0.2319	0.0003	0.0011	5.74E-08	0.0000	0.0000	0.00E+00
43		0.00	0.000	0.009	0.2305	0.0000	0.0000	7.98E-09	0.0000	0.0000	0.00E+00
44		0.00	0.000	0.009	0.2290	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.009	0.2276	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.008	0.2262	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.008	0.2248	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.008	0.2234	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.008	0.2220	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.008	0.2206	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.008	0.2192	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
52		0.00	0.000	0.008	0.2178	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
53		0.00	0.000	0.008	0.2164	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.008	0.2151	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.008	0.2137	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
56		0.00	0.000	0.008	0.2123	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
57		0.00	0.000	0.008	0.2110	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
58		0.07	0.000	0.008	0.2217	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
59		0.02	0.000	0.009	0.2228	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60		0.10	0.000	0.009	0.2386	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
61		0.00	0.000	0.008	0.2372	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.008	0.2359	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.008	0.2346	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.008	0.2332	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

65	0.00	0.000	0.008	0.2319	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
66	0.00	0.000	0.008	0.2306	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
67	0.00	0.000	0.008	0.2293	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
68	0.00	0.000	0.008	0.2279	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
69	0.00	0.000	0.008	0.2266	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
70	0.00	0.000	0.008	0.2253	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
71	0.00	0.000	0.008	0.2240	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
72	0.00	0.000	0.008	0.2227	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
73	0.10	0.000	0.008	0.2375	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
74	0.00	0.000	0.008	0.2362	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
75	0.00	0.000	0.008	0.2350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
76	0.00	0.000	0.008	0.2337	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
77	0.00	0.000	0.008	0.2324	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
78	0.00	0.000	0.008	0.2311	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
79	0.00	0.000	0.008	0.2298	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
80	0.00	0.000	0.008	0.2286	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
81	0.00	0.000	0.008	0.2273	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
82	0.00	0.000	0.008	0.2260	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
83	0.00	0.000	0.008	0.2248	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
84	0.00	0.000	0.008	0.2235	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
85	0.00	0.000	0.008	0.2223	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
86	0.00	0.000	0.007	0.2210	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
87	0.00	0.000	0.007	0.2198	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
88	0.00	0.000	0.007	0.2185	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
89	0.00	0.000	0.008	0.2173	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
90	0.00	0.000	0.008	0.2160	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
91	0.00	0.000	0.008	0.2147	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
92	0.00	0.000	0.008	0.2134	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
93	0.00	0.000	0.008	0.2121	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
94	0.00	0.000	0.008	0.2108	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
95	0.00	0.000	0.008	0.2096	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
96	0.00	0.000	0.008	0.2083	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
97	0.00	0.000	0.008	0.2070	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
98	0.00	0.000	0.008	0.2057	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99	0.00	0.000	0.008	0.2044	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100	0.00	0.000	0.008	0.2032	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

101	0.00	0.000	0.008	0.2019	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
102	0.00	0.000	0.008	0.2006	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
103	0.00	0.000	0.008	0.1993	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
104	0.00	0.000	0.008	0.1979	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
105	0.00	0.000	0.008	0.1966	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
106	0.00	0.000	0.008	0.1952	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
107	0.00	0.000	0.008	0.1938	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
108	0.00	0.000	0.008	0.1925	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
109	0.00	0.000	0.009	0.1910	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
110	0.00	0.000	0.009	0.1896	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
111	0.00	0.000	0.009	0.1881	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
112	0.00	0.000	0.009	0.1865	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
113	0.00	0.000	0.009	0.1850	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
114	0.00	0.000	0.010	0.1832	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
115	0.00	0.000	0.010	0.1815	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
116	0.00	0.000	0.009	0.1800	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
117	0.00	0.000	0.010	0.1784	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
118	0.00	0.000	0.010	0.1767	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
119	0.00	0.000	0.009	0.1751	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
120	0.00	0.000	0.010	0.1735	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
121	0.00	0.000	0.009	0.1719	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
122	0.00	0.000	0.010	0.1703	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
123	0.00	0.000	0.011	0.1684	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.011	0.1665	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
125	0.00	0.000	0.011	0.1646	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
126	0.00	0.000	0.011	0.1627	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
127	0.00	0.000	0.010	0.1611	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
128	0.00	0.000	0.011	0.1593	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
129	0.00	0.000	0.011	0.1575	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
130	0.00	0.000	0.011	0.1557	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
131	0.11	0.000	0.012	0.1725	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
132	0.00	0.000	0.013	0.1704	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
133	0.00	0.000	0.013	0.1681	0.0003	0.0010	5.18E-08	0.0000	0.0000	0.00E+00
134	0.00	0.000	0.014	0.1658	0.0000	0.0000	1.01E-08	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.014	0.1635	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.015	0.1610	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

137	0.00	0.000	0.012	0.1589	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.013	0.1567	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.013	0.1545	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.015	0.1520	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.015	0.1495	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.013	0.1473	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.013	0.1451	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.012	0.1431	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.015	0.1406	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.014	0.1383	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.014	0.1360	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.006	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
153	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
154	0.10	0.000	0.007	0.1505	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
155	0.01	0.000	0.006	0.1505	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.007	0.1493	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.009	0.1479	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.011	0.1460	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.010	0.1444	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.013	0.1422	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
161	0.15	0.000	0.014	0.1649	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
162	0.01	0.000	0.011	0.1640	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.010	0.1623	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.014	0.1599	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.015	0.1574	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
166	0.30	0.000	0.011	0.2059	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
167	0.03	0.000	0.012	0.2083	0.0000	0.0000	3.70E-09	0.0000	0.0000	0.00E+00
168	0.10	0.000	0.015	0.2221	0.0000	0.0000	9.07E-09	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.015	0.2197	0.0000	0.0000	2.25E-09	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.016	0.2170	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
171	0.01	0.000	0.019	0.2148	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
172	0.31	0.000	0.019	0.2633	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

173	0.00	0.000	0.200	0.2300	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
174	0.00	0.000	0.254	0.1877	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.204	0.1537	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.086	0.1393	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.026	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
183	0.00	0.000	0.003	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
184	0.07	0.000	0.006	0.1464	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
185	0.00	0.000	0.022	0.1427	0.0000	0.0000	4.36E-09	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.033	0.1371	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.009	0.1356	0.0000	0.0000	1.11E-16	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.003	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
189	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
190	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
192	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
193	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
194	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
195	0.04	0.000	0.005	0.1415	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
196	0.00	0.000	0.016	0.1388	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.013	0.1366	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
198	0.00	0.000	0.007	0.1355	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
199	0.00	0.000	0.002	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
202	0.00	0.000	0.000	0.1350	0.0000	0.0000	4.99E-09	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
204	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
205	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
206	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
207	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
208	0.18	0.000	0.018	0.1618	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

209	0.30	0.000	0.016	0.2092	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.026	0.2050	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
211	0.14	0.000	0.027	0.2231	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.032	0.2177	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.037	0.2116	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.033	0.2060	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.033	0.2005	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
216	0.00	0.000	0.033	0.1950	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
217	0.00	0.000	0.032	0.1897	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
218	0.00	0.000	0.034	0.1840	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
219	0.00	0.000	0.036	0.1781	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
220	0.01	0.000	0.051	0.1705	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.047	0.1626	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.035	0.1567	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
223	0.00	0.000	0.029	0.1518	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.044	0.1445	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.036	0.1384	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.014	0.1361	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.006	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
228	0.01	0.000	0.006	0.1362	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
229	0.00	0.000	0.003	0.1357	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
230	0.00	0.000	0.004	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
233	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
234	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
239	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
240	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
242	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

245	0.39	0.000	0.013	0.1974	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
246	0.37	0.000	0.026	0.2552	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.028	0.2506	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
248	0.07	0.000	0.030	0.2575	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
249	0.00	0.000	0.027	0.2530	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.025	0.2488	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.022	0.2452	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
252	0.00	0.000	0.021	0.2416	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
253	0.53	0.000	0.025	0.3261	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.27	0.000	0.258	0.3216	0.0054	0.0203	6.27E-07	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.182	0.2812	0.0193	0.0724	2.09E-06	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.210	0.2437	0.0048	0.0179	5.94E-07	0.0000	0.0000	0.00E+00
257	1.05	0.009	0.092	0.3556	0.0309	0.1163	2.95E-06	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.271	0.2820	0.2014	0.3259	1.62E-05	0.0000	0.0000	0.00E+00
259	0.12	0.000	0.267	0.2467	0.0176	0.0662	1.94E-06	0.0000	0.0000	0.00E+00
260	0.00	0.000	0.241	0.2031	0.0088	0.0332	1.03E-06	0.0000	0.0000	0.00E+00
261	0.00	0.000	0.254	0.1608	0.0001	0.0003	2.82E-08	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.155	0.1350	0.0000	0.0000	5.95E-09	0.0000	0.0000	0.00E+00
263	0.00	0.000	0.000	0.1350	0.0000	0.0000	8.24E-17	0.0000	0.0000	0.00E+00
264	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
271	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
273	0.26	0.000	0.016	0.1751	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.021	0.1716	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
275	0.03	0.000	0.024	0.1723	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.027	0.1687	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
277	0.43	0.000	0.026	0.2367	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
278	0.06	0.000	0.028	0.2423	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.023	0.2384	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.023	0.2346	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

281		0.00	0.000	0.023	0.2308	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282		0.00	0.000	0.023	0.2270	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
283		0.00	0.000	0.021	0.2235	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
284		0.00	0.000	0.021	0.2200	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
285		0.00	0.000	0.020	0.2166	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
286		0.00	0.000	0.020	0.2132	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
287		0.00	0.000	0.019	0.2100	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
288		0.00	0.000	0.019	0.2068	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
289		0.00	0.000	0.019	0.2037	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
290		0.00	0.000	0.018	0.2007	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
291		0.00	0.000	0.018	0.1977	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
292		0.00	0.000	0.018	0.1948	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
293		0.00	0.000	0.017	0.1919	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
294		0.00	0.000	0.017	0.1890	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
295		0.00	0.000	0.017	0.1862	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
296		0.00	0.000	0.017	0.1834	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
297		0.20	0.000	0.020	0.2133	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
298		0.39	0.000	0.020	0.2756	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
299		0.00	0.000	0.016	0.2729	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
300		0.00	0.000	0.016	0.2702	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
301		0.00	0.000	0.016	0.2676	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
302		0.00	0.000	0.016	0.2649	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
303		0.00	0.000	0.016	0.2623	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
304	*	0.00	0.000	0.015	0.2597	0.0000	0.0002	1.19E-08	0.0000	0.0000	0.00E+00
305		0.00	0.000	0.015	0.2572	0.0000	0.0000	1.52E-08	0.0000	0.0000	0.00E+00
306		0.00	0.000	0.015	0.2547	0.0000	0.0000	1.81E-09	0.0000	0.0000	0.00E+00
307		0.00	0.000	0.015	0.2521	0.0000	0.0002	1.66E-08	0.0000	0.0000	0.00E+00
308		0.00	0.000	0.015	0.2496	0.0001	0.0003	2.82E-08	0.0000	0.0000	0.00E+00
309		0.00	0.000	0.015	0.2472	0.0001	0.0002	2.53E-08	0.0000	0.0000	0.00E+00
310		0.00	0.000	0.015	0.2447	0.0002	0.0006	4.11E-08	0.0000	0.0000	0.00E+00
311		0.00	0.000	0.014	0.2422	0.0001	0.0005	3.70E-08	0.0000	0.0000	0.00E+00
312		0.00	0.000	0.014	0.2397	0.0002	0.0007	4.35E-08	0.0000	0.0000	0.00E+00
313		0.00	0.000	0.014	0.2373	0.0000	0.0000	1.61E-08	0.0000	0.0000	0.00E+00
314		0.00	0.000	0.014	0.2349	0.0000	0.0000	2.30E-09	0.0000	0.0000	0.00E+00
315		0.00	0.000	0.014	0.2327	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
316		0.00	0.000	0.014	0.2304	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

317		0.00	0.000	0.013	0.2282	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318		0.00	0.000	0.013	0.2259	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319		0.00	0.000	0.013	0.2237	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320		0.00	0.000	0.013	0.2215	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
321		0.00	0.000	0.013	0.2194	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
322		0.00	0.000	0.013	0.2172	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
323		0.00	0.000	0.013	0.2151	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324		0.00	0.000	0.013	0.2130	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
325		0.00	0.000	0.013	0.2109	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
326		0.00	0.000	0.012	0.2088	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.012	0.2067	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328		0.00	0.000	0.012	0.2047	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
329	*	0.00	0.000	0.000	0.2047	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330		0.00	0.000	0.012	0.2026	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331		0.00	0.000	0.012	0.2006	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
332		0.00	0.000	0.012	0.1986	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333		0.00	0.000	0.012	0.1966	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
334		0.00	0.000	0.012	0.1946	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.012	0.1927	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
336		0.00	0.000	0.012	0.1907	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
337	*	0.00	0.000	0.012	0.1888	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
338	*	0.00	0.000	0.012	0.1869	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
339	*	0.00	0.000	0.000	0.1869	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
340		0.00	0.000	0.011	0.1850	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
341	*	0.00	0.000	0.000	0.1850	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.011	0.1831	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
343		0.00	0.000	0.011	0.1812	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
344		0.00	0.000	0.011	0.1793	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345		0.00	0.000	0.011	0.1774	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.011	0.1756	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
347		0.00	0.000	0.011	0.1737	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
348		0.00	0.000	0.011	0.1719	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
349		0.00	0.000	0.011	0.1701	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
350		0.02	0.000	0.013	0.1714	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.011	0.1696	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
352	*	0.16	0.000	0.057	0.1728	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

353	*	0.00	0.000	0.044	0.1761	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
354	*	0.00	0.000	0.029	0.1743	0.0000	0.0001	2.00E-08	0.0000	0.0000	0.00E+00
355		0.00	0.000	0.011	0.1725	0.0000	0.0000	4.28E-09	0.0000	0.0000	0.00E+00
356		0.00	0.000	0.011	0.1708	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
357	*	0.00	0.000	0.000	0.1708	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
358		0.00	0.000	0.011	0.1690	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.010	0.1673	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
360		0.00	0.000	0.010	0.1655	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
361		0.00	0.000	0.010	0.1638	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
362		0.00	0.000	0.010	0.1621	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
363	*	0.07	0.000	0.050	0.1652	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
364		0.26	0.000	0.012	0.2065	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
365		0.00	0.000	0.011	0.2050	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 16			
	inches	cubic feet	percent
Precipitation	7.42	26,940.5	100.00
Runoff	0.009	31.4	0.12
Evapotranspiration	6.967	25,290.8	93.88
Drainage Collected from Layer 2	1.0031	3,641.2	13.52
Percolation/Leakage through Layer 4	0.000038	0.1393	0.00
Average Head on Top of Layer 3	0.0010	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	-0.5573	-2,022.9	-7.51
Soil Water at Start of Year	539.0208	1,956,645.7	7262.84
Soil Water at End of Year	538.4636	1,954,622.7	7255.33
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 17

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Column key: Head #1: drainage from Layer 3; Drain #1: drainage from Layer 2; Leak #1: leakage thru Layer 4; Head #2: drainage from Layer 15; Drain #2: drainage from Layer 14; Leak #2: leakage thru Layer 16

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.00	0.000	0.010	0.2033	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2			0.07	0.000	0.012	0.2122	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
3			0.10	0.000	0.011	0.2274	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.010	0.2257	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.010	0.2240	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.010	0.2224	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.010	0.2208	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
8	*		0.00	0.000	0.010	0.2191	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.010	0.2175	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
10			0.07	0.000	0.011	0.2271	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
11			0.03	0.000	0.011	0.2305	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
12			0.00	0.000	0.010	0.2289	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
13	*		0.00	0.000	0.000	0.2289	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
14	*		0.00	0.000	0.000	0.2289	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
15	*		0.00	0.000	0.010	0.2273	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
16	*		0.00	0.000	0.000	0.2273	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.010	0.2257	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.010	0.2241	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
19	*		0.00	0.000	0.000	0.2241	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
20	*		0.00	0.000	0.000	0.2241	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
21	*		0.00	0.000	0.000	0.2241	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.009	0.2226	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
23	*		0.00	0.000	0.009	0.2210	0.0000	0.0001	6.87E-09	0.0000	0.0000	0.00E+00
24			0.09	0.000	0.011	0.2350	0.0000	0.0001	2.12E-08	0.0000	0.0000	0.00E+00
25			0.00	0.000	0.009	0.2335	0.0000	0.0000	8.75E-09	0.0000	0.0000	0.00E+00
26			0.00	0.000	0.009	0.2319	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
27			0.00	0.000	0.009	0.2303	0.0000	0.0001	7.75E-09	0.0000	0.0000	0.00E+00
28			0.00	0.000	0.009	0.2288	0.0000	0.0000	1.59E-08	0.0000	0.0000	0.00E+00

29	0.00	0.000	0.009	0.2273	0.0000	0.0000	2.20E-09	0.0000	0.0000	0.00E+00
30	0.00	0.000	0.009	0.2257	0.0000	0.0002	1.41E-08	0.0000	0.0000	0.00E+00
31	0.00	0.000	0.009	0.2242	0.0000	0.0002	2.11E-08	0.0000	0.0000	0.00E+00
32	0.00	0.000	0.009	0.2226	0.0000	0.0001	2.05E-08	0.0000	0.0000	0.00E+00
33	0.00	0.000	0.009	0.2211	0.0000	0.0000	4.37E-09	0.0000	0.0000	0.00E+00
34	0.00	0.000	0.009	0.2196	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
35	0.00	0.000	0.009	0.2181	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
36	0.00	0.000	0.009	0.2167	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
37	0.00	0.000	0.009	0.2152	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
38	0.00	0.000	0.009	0.2137	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
39	0.00	0.000	0.009	0.2122	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
40	0.00	0.000	0.009	0.2108	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
41	0.00	0.000	0.009	0.2093	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
42	0.00	0.000	0.009	0.2079	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
43	0.12	0.000	0.010	0.2265	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
44	0.19	0.000	0.010	0.2571	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
45	0.00	0.000	0.009	0.2556	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
46	0.00	0.000	0.009	0.2542	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
47	0.00	0.000	0.009	0.2528	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
48	0.00	0.000	0.009	0.2513	0.0000	0.0001	1.29E-08	0.0000	0.0000	0.00E+00
49	0.00	0.000	0.008	0.2499	0.0001	0.0002	2.55E-08	0.0000	0.0000	0.00E+00
50	0.00	0.000	0.008	0.2485	0.0000	0.0000	1.11E-08	0.0000	0.0000	0.00E+00
51	0.00	0.000	0.008	0.2471	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
52	0.02	0.000	0.009	0.2481	0.0000	0.0001	1.42E-08	0.0000	0.0000	0.00E+00
53	0.00	0.000	0.008	0.2467	0.0000	0.0000	8.57E-09	0.0000	0.0000	0.00E+00
54	0.00	0.000	0.008	0.2453	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
55	0.00	0.000	0.008	0.2439	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
56	0.01	0.000	0.009	0.2437	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
57	0.09	0.000	0.009	0.2567	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
58	0.00	0.000	0.008	0.2554	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
59	0.35	0.000	0.009	0.3122	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60	0.10	0.000	0.341	0.2621	0.0163	0.0612	1.71E-06	0.0000	0.0000	0.00E+00
61	0.00	0.000	0.008	0.2580	0.0043	0.0162	5.54E-07	0.0000	0.0000	0.00E+00
62	0.00	0.000	0.008	0.2545	0.0033	0.0124	4.40E-07	0.0000	0.0000	0.00E+00
63	0.00	0.000	0.008	0.2531	0.0010	0.0039	1.52E-07	0.0000	0.0000	0.00E+00
64	0.00	0.000	0.008	0.2517	0.0000	0.0000	1.08E-08	0.0000	0.0000	0.00E+00

65		0.00	0.000	0.008	0.2504	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
66		0.20	0.000	0.009	0.2831	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
67		0.54	0.000	0.336	0.3172	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
68		0.11	0.000	0.391	0.2712	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.249	0.2265	0.0031	0.0116	3.93E-07	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.201	0.1911	0.0052	0.0197	6.45E-07	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.074	0.1787	0.0000	0.0001	1.75E-08	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.064	0.1681	0.0000	0.0000	3.51E-09	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.054	0.1592	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.047	0.1513	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.043	0.1441	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.039	0.1376	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.015	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.000	0.1350	0.0000	0.0000	2.73E-17	0.0000	0.0000	0.00E+00
79		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
80		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
81		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
82		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
84		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
85		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
89		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
90		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
91		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
92		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
94	*	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
96		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
97		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
98		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

101	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
102	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
103	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
104	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
105	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
106	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
107	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
108	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
109	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
110	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
111	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
112	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
113	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
114	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
115	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
116	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
117	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
118	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
119	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
120	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
121	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
122	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
123	0.09	0.000	0.006	0.1488	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
124	0.16	0.000	0.008	0.1750	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
125	0.00	0.000	0.010	0.1734	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
126	0.00	0.000	0.009	0.1718	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
127	0.00	0.000	0.009	0.1703	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
128	0.00	0.000	0.009	0.1688	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
129	0.00	0.000	0.010	0.1671	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
130	0.00	0.000	0.011	0.1653	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
131	0.11	0.000	0.011	0.1816	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
132	0.00	0.000	0.011	0.1797	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
133	0.00	0.000	0.012	0.1777	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
134	0.01	0.000	0.012	0.1774	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.012	0.1755	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.011	0.1736	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

137	0.00	0.000	0.011	0.1717	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
138	0.01	0.000	0.011	0.1715	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.011	0.1697	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.011	0.1679	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.011	0.1662	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.012	0.1641	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.012	0.1621	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.012	0.1602	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
145	0.14	0.000	0.013	0.1807	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.013	0.1790	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.013	0.1768	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
148	0.11	0.000	0.014	0.1931	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.014	0.1907	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.013	0.1886	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.012	0.1865	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.012	0.1845	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
153	0.10	0.000	0.013	0.1998	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.013	0.1977	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
155	0.05	0.000	0.013	0.2043	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
156	0.01	0.000	0.013	0.2041	0.0000	0.0000	1.05E-08	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.012	0.2022	0.0000	0.0000	6.52E-09	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.014	0.1999	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.014	0.1975	0.0000	0.0000	5.02E-09	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.014	0.1952	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.013	0.1931	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.014	0.1908	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.013	0.1886	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.013	0.1865	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
165	0.03	0.000	0.014	0.1897	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
166	0.22	0.000	0.013	0.2244	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
167	0.01	0.000	0.013	0.2242	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
168	0.02	0.000	0.014	0.2254	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
169	0.36	0.000	0.014	0.2827	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.015	0.2802	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.017	0.2774	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
172	0.12	0.000	0.018	0.2940	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

173	0.19	0.000	0.020	0.3221	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
174	0.02	0.000	0.020	0.3199	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.019	0.3030	0.0209	0.0785	2.25E-06	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.019	0.2902	0.0162	0.0608	1.80E-06	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.016	0.2814	0.0107	0.0401	1.24E-06	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.017	0.2743	0.0075	0.0281	9.03E-07	0.0000	0.0000	0.00E+00
179	0.12	0.000	0.015	0.2912	0.0020	0.0074	2.68E-07	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.018	0.2881	0.0000	0.0000	1.37E-08	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.020	0.2842	0.0005	0.0018	7.76E-08	0.0000	0.0000	0.00E+00
182	0.06	0.000	0.017	0.2920	0.0005	0.0020	9.10E-08	0.0000	0.0000	0.00E+00
183	0.00	0.000	0.021	0.2866	0.0025	0.0095	3.45E-07	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.021	0.2809	0.0040	0.0149	5.13E-07	0.0000	0.0000	0.00E+00
185	0.00	0.000	0.020	0.2755	0.0029	0.0110	3.90E-07	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.021	0.2721	0.0004	0.0013	6.56E-08	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.023	0.2683	0.0000	0.0000	8.31E-09	0.0000	0.0000	0.00E+00
188	0.08	0.000	0.022	0.2771	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
189	0.46	0.000	0.024	0.3288	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
190	0.00	0.000	0.519	0.2206	0.0659	0.2475	6.16E-06	0.0000	0.0000	0.00E+00
191	0.06	0.000	0.024	0.2243	0.0043	0.0160	5.42E-07	0.0000	0.0000	0.00E+00
192	1.45	0.071	0.023	0.4025	0.0319	0.1199	2.78E-06	0.0000	0.0000	0.00E+00
193	0.04	0.000	0.428	0.2506	1.0268	0.6672	7.40E-05	0.0000	0.0000	0.00E+00
194	0.00	0.000	0.595	0.1477	0.0128	0.0483	1.37E-06	0.0000	0.0000	0.00E+00
195	0.06	0.000	0.084	0.1415	0.0033	0.0123	3.98E-07	0.0000	0.0000	0.00E+00
196	0.03	0.000	0.022	0.1423	0.0000	0.0000	1.44E-08	0.0000	0.0000	0.00E+00
197	0.02	0.000	0.027	0.1408	0.0000	0.0000	4.19E-10	0.0000	0.0000	0.00E+00
198	0.00	0.000	0.016	0.1387	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
199	0.01	0.000	0.014	0.1373	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.008	0.1360	0.0000	0.0000	4.78E-09	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.004	0.1353	0.0000	0.0000	7.75E-09	0.0000	0.0000	0.00E+00
202	0.00	0.000	0.001	0.1351	0.0000	0.0000	5.75E-09	0.0000	0.0000	0.00E+00
203	0.27	0.000	0.022	0.1757	0.0000	0.0000	1.07E-08	0.0000	0.0000	0.00E+00
204	0.00	0.000	0.030	0.1710	0.0000	0.0000	3.29E-09	0.0000	0.0000	0.00E+00
205	0.00	0.000	0.030	0.1659	0.0000	0.0000	1.34E-08	0.0000	0.0000	0.00E+00
206	0.00	0.000	0.038	0.1595	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
207	0.00	0.000	0.035	0.1539	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
208	0.01	0.000	0.036	0.1498	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

209	0.06	0.000	0.032	0.1540	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
210	0.27	0.000	0.034	0.1926	0.0000	0.0001	8.27E-09	0.0000	0.0000	0.00E+00
211	0.38	0.000	0.032	0.2505	0.0000	0.0000	1.30E-08	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.347	0.1934	0.0000	0.0000	4.34E-19	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.034	0.1877	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
214	0.17	0.000	0.034	0.2106	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
215	0.13	0.000	0.034	0.2271	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
216	0.02	0.000	0.034	0.2253	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
217	0.01	0.000	0.034	0.2211	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
218	0.00	0.000	0.032	0.2158	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
219	0.34	0.000	0.040	0.2657	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
220	0.26	0.000	0.404	0.2415	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.362	0.1811	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.212	0.1457	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
223	0.00	0.000	0.048	0.1377	0.0000	0.0000	1.35E-08	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.016	0.1350	0.0000	0.0000	7.84E-09	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
228	0.00	0.000	0.003	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
229	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
230	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.003	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
233	0.00	0.000	0.004	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
234	0.47	0.000	0.019	0.2109	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
235	0.11	0.000	0.037	0.2236	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
236	0.18	0.000	0.036	0.2482	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
237	0.42	0.000	0.041	0.3116	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.243	0.2709	0.0003	0.0009	3.73E-08	0.0000	0.0000	0.00E+00
239	0.06	0.000	0.038	0.2744	0.0001	0.0003	2.95E-08	0.0000	0.0000	0.00E+00
240	0.10	0.000	0.045	0.2793	0.0046	0.0173	5.78E-07	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.043	0.2693	0.0063	0.0235	7.69E-07	0.0000	0.0000	0.00E+00
242	0.12	0.000	0.037	0.2833	0.0011	0.0042	1.70E-07	0.0000	0.0000	0.00E+00
243	0.31	0.000	0.035	0.3285	0.0004	0.0016	7.48E-08	0.0000	0.0000	0.00E+00
244	0.42	0.000	0.379	0.3089	0.0390	0.1466	3.71E-06	0.0000	0.0000	0.00E+00

245	0.00	0.000	0.227	0.2640	0.0117	0.0439	1.34E-06	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.368	0.2003	0.0063	0.0239	7.61E-07	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.224	0.1629	0.0000	0.0001	1.77E-08	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.109	0.1447	0.0000	0.0000	3.61E-09	0.0000	0.0000	0.00E+00
249	0.01	0.000	0.046	0.1350	0.0052	0.0194	6.09E-07	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.000	0.1350	0.0000	0.0001	1.63E-08	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.000	0.1350	0.0000	0.0000	2.66E-09	0.0000	0.0000	0.00E+00
252	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
259	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
260	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
261	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
262	0.27	0.000	0.015	0.1773	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
263	0.00	0.000	0.020	0.1740	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
264	0.12	0.000	0.025	0.1897	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.024	0.1858	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.022	0.1821	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.024	0.1781	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.023	0.1742	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.022	0.1706	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
270	0.04	0.000	0.022	0.1739	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
271	0.00	0.000	0.018	0.1708	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.021	0.1674	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.020	0.1640	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
274	0.38	0.000	0.022	0.2234	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
275	0.01	0.000	0.022	0.2211	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.019	0.2180	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.018	0.2150	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.017	0.2121	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.017	0.2093	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.017	0.2065	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

281	0.00	0.000	0.016	0.2038	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282	0.00	0.000	0.017	0.2010	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
283	0.00	0.000	0.017	0.1982	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
284	0.00	0.000	0.016	0.1955	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
285	0.00	0.000	0.016	0.1928	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
286	0.54	0.000	0.019	0.2793	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
287	0.00	0.000	0.016	0.2767	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
288	0.00	0.000	0.016	0.2740	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
289	0.00	0.000	0.016	0.2714	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
290	0.00	0.000	0.015	0.2688	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
291	0.00	0.000	0.015	0.2662	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
292	0.00	0.000	0.015	0.2637	0.0000	0.0001	1.48E-08	0.0000	0.0000	0.00E+00
293	0.00	0.000	0.015	0.2612	0.0001	0.0004	3.28E-08	0.0000	0.0000	0.00E+00
294	0.00	0.000	0.015	0.2585	0.0003	0.0010	5.61E-08	0.0000	0.0000	0.00E+00
295	0.00	0.000	0.015	0.2558	0.0003	0.0011	6.02E-08	0.0000	0.0000	0.00E+00
296	0.00	0.000	0.014	0.2532	0.0004	0.0015	7.37E-08	0.0000	0.0000	0.00E+00
297	0.00	0.000	0.014	0.2508	0.0002	0.0009	4.94E-08	0.0000	0.0000	0.00E+00
298	0.00	0.000	0.014	0.2484	0.0000	0.0000	9.46E-09	0.0000	0.0000	0.00E+00
299	0.00	0.000	0.014	0.2461	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
300	0.00	0.000	0.014	0.2438	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
301	0.00	0.000	0.014	0.2416	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
302	0.00	0.000	0.014	0.2393	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
303	0.00	0.000	0.013	0.2371	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
304	0.00	0.000	0.013	0.2348	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
305	0.01	0.000	0.016	0.2343	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
306	0.02	0.000	0.016	0.2344	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
307	0.00	0.000	0.013	0.2321	0.0002	0.0007	3.16E-08	0.0000	0.0000	0.00E+00
308	0.00	0.000	0.013	0.2298	0.0003	0.0012	6.64E-08	0.0000	0.0000	0.00E+00
309	0.00	0.000	0.013	0.2273	0.0004	0.0017	8.40E-08	0.0000	0.0000	0.00E+00
310	0.00	0.000	0.013	0.2247	0.0006	0.0023	1.08E-07	0.0000	0.0000	0.00E+00
311	0.00	0.000	0.013	0.2221	0.0007	0.0026	1.19E-07	0.0000	0.0000	0.00E+00
312	0.00	0.000	0.013	0.2196	0.0007	0.0026	1.20E-07	0.0000	0.0000	0.00E+00
313	0.00	0.000	0.012	0.2172	0.0007	0.0025	1.13E-07	0.0000	0.0000	0.00E+00
314	0.00	0.000	0.015	0.2151	0.0001	0.0005	3.44E-08	0.0000	0.0000	0.00E+00
315	0.00	0.000	0.012	0.2132	0.0000	0.0000	1.53E-08	0.0000	0.0000	0.00E+00
316	0.00	0.000	0.012	0.2112	0.0000	0.0000	1.91E-09	0.0000	0.0000	0.00E+00

317		0.00	0.000	0.012	0.2092	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318		0.00	0.000	0.012	0.2072	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319		0.00	0.000	0.012	0.2052	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320	*	0.00	0.000	0.012	0.2033	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
321		0.00	0.000	0.012	0.2014	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
322		0.00	0.000	0.012	0.1994	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
323		0.00	0.000	0.011	0.1975	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324		0.00	0.000	0.011	0.1956	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
325		0.00	0.000	0.011	0.1937	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
326		0.00	0.000	0.011	0.1919	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.011	0.1900	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328		0.00	0.000	0.011	0.1881	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
329		0.00	0.000	0.011	0.1863	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330		0.00	0.000	0.011	0.1845	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331		0.00	0.000	0.011	0.1826	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
332		0.00	0.000	0.011	0.1808	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333	*	0.01	0.000	0.019	0.1790	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
334	*	0.29	0.000	0.029	0.1823	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
335	*	0.77	0.000	0.043	0.1856	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
336		0.00	0.000	0.041	0.2145	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
337		0.00	0.000	0.038	0.3307	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
338		0.00	0.000	0.168	0.2828	0.0299	0.1124	2.97E-06	0.0000	0.0000	0.00E+00
339		0.00	0.000	0.011	0.2760	0.0078	0.0294	9.40E-07	0.0000	0.0000	0.00E+00
340		0.00	0.000	0.011	0.2690	0.0087	0.0328	1.04E-06	0.0000	0.0000	0.00E+00
341		0.00	0.000	0.011	0.2650	0.0052	0.0195	6.50E-07	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.011	0.2632	0.0001	0.0006	3.75E-08	0.0000	0.0000	0.00E+00
343		0.00	0.000	0.010	0.2615	0.0000	0.0000	6.65E-09	0.0000	0.0000	0.00E+00
344		0.00	0.000	0.010	0.2597	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345		0.00	0.000	0.010	0.2580	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.010	0.2563	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
347		0.00	0.000	0.010	0.2546	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
348		0.00	0.000	0.010	0.2529	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
349		0.00	0.000	0.010	0.2512	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
350		0.00	0.000	0.010	0.2495	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.010	0.2478	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
352		0.00	0.000	0.010	0.2462	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

353	0.00	0.000	0.010	0.2445	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
354	0.00	0.000	0.010	0.2428	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
355	0.00	0.000	0.010	0.2412	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
356	0.00	0.000	0.010	0.2396	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
357	0.00	0.000	0.010	0.2379	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
358	0.25	0.000	0.011	0.2786	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
359	0.02	0.000	0.202	0.2479	0.0005	0.0018	7.16E-08	0.0000	0.0000	0.00E+00
360	0.00	0.000	0.010	0.2462	0.0002	0.0007	4.16E-08	0.0000	0.0000	0.00E+00
361	0.00	0.000	0.010	0.2442	0.0006	0.0023	1.04E-07	0.0000	0.0000	0.00E+00
362	0.00	0.000	0.010	0.2424	0.0002	0.0006	3.96E-08	0.0000	0.0000	0.00E+00
363	0.00	0.000	0.010	0.2401	0.0010	0.0039	1.63E-07	0.0000	0.0000	0.00E+00
364	0.00	0.000	0.010	0.2382	0.0006	0.0023	1.04E-07	0.0000	0.0000	0.00E+00
365	0.00	0.000	0.009	0.2361	0.0008	0.0032	1.38E-07	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 17			
	inches	cubic feet	percent
Precipitation	13.12	47,629.3	100.00
Runoff	0.071	256.4	0.54
Evapotranspiration	10.859	39,419.9	82.76
Drainage Collected from Layer 2	2.0035	7,272.8	15.27
Percolation/Leakage through Layer 4	0.000113	0.4097	0.00
Average Head on Top of Layer 3	0.0038	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	0.1874	680.3	1.43
Soil Water at Start of Year	538.4636	1,954,622.7	4103.82
Soil Water at End of Year	538.6510	1,955,303.0	4105.25
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 18

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Column key: Head #1: drainage from Layer 3; Drain #1: drainage from Layer 2; Leak #1: leakage thru Layer 4; Head #2: drainage from Layer 15; Drain #2: drainage from Layer 14; Leak #2: leakage thru Layer 16

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.00	0.000	0.009	0.2343	0.0005	0.0019	8.79E-08	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.009	0.2322	0.0007	0.0026	1.18E-07	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.009	0.2303	0.0005	0.0018	8.57E-08	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.009	0.2285	0.0007	0.0026	1.18E-07	0.0000	0.0000	0.00E+00
5			0.02	0.000	0.010	0.2299	0.0000	0.0001	1.71E-08	0.0000	0.0000	0.00E+00
6			0.04	0.000	0.010	0.2354	0.0000	0.0000	3.31E-09	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.009	0.2339	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.009	0.2324	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.009	0.2303	0.0006	0.0022	1.00E-07	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.009	0.2282	0.0010	0.0038	1.61E-07	0.0000	0.0000	0.00E+00
11			0.03	0.000	0.010	0.2322	0.0002	0.0009	4.93E-08	0.0000	0.0000	0.00E+00
12			0.08	0.000	0.009	0.2447	0.0000	0.0000	7.50E-09	0.0000	0.0000	0.00E+00
13			0.02	0.000	0.009	0.2462	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
14			0.08	0.000	0.009	0.2581	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
15			0.20	0.000	0.009	0.2904	0.0002	0.0007	3.53E-08	0.0000	0.0000	0.00E+00
16			0.00	0.000	0.129	0.2690	0.0000	0.0000	1.43E-08	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.123	0.2485	0.0000	0.0000	7.52E-11	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.130	0.2268	0.0001	0.0005	3.13E-08	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.083	0.2129	0.0000	0.0000	1.55E-08	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.061	0.2028	0.0000	0.0000	2.04E-09	0.0000	0.0000	0.00E+00
21			0.05	0.000	0.054	0.2019	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.047	0.1940	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.038	0.1877	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
24			0.00	0.000	0.038	0.1813	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
25			0.00	0.000	0.036	0.1752	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
26			0.00	0.000	0.034	0.1695	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
27			0.00	0.000	0.033	0.1641	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
28			0.00	0.000	0.031	0.1589	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

29		0.21	0.000	0.030	0.1885	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
30		0.24	0.000	0.029	0.2241	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.027	0.2193	0.0003	0.0011	5.49E-08	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.026	0.2149	0.0000	0.0000	1.03E-08	0.0000	0.0000	0.00E+00
33		0.00	0.000	0.025	0.2107	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.025	0.2066	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
35	*	0.00	0.000	0.024	0.2026	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
36	*	0.00	0.000	0.000	0.2026	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.023	0.1987	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.023	0.1949	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.022	0.1912	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.022	0.1876	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.021	0.1841	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.021	0.1807	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
43		0.01	0.000	0.021	0.1792	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
44		0.04	0.000	0.020	0.1821	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
45		0.02	0.000	0.020	0.1821	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
46		0.03	0.000	0.019	0.1833	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
47		0.01	0.000	0.019	0.1820	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.018	0.1790	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.018	0.1759	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.018	0.1730	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
51	*	0.00	0.000	0.018	0.1700	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
52	*	0.00	0.000	0.017	0.1671	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
53	*	0.00	0.000	0.000	0.1671	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
54	*	0.18	0.000	0.076	0.1704	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
55		0.02	0.000	0.109	0.1693	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
56		0.30	0.000	0.017	0.2168	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
57		0.00	0.000	0.017	0.2140	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.016	0.2113	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.016	0.2086	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60		0.00	0.000	0.016	0.2059	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
61		0.00	0.000	0.016	0.2033	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.016	0.2007	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.015	0.1981	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.015	0.1956	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

65	0.00	0.000	0.015	0.1931	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
66	0.05	0.000	0.015	0.1984	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
67	0.00	0.000	0.015	0.1960	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
68	0.00	0.000	0.015	0.1936	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
69	0.00	0.000	0.014	0.1912	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
70	0.00	0.000	0.014	0.1888	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
71	0.00	0.000	0.014	0.1864	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
72	0.00	0.000	0.014	0.1841	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
73	0.00	0.000	0.014	0.1818	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
74	0.00	0.000	0.014	0.1795	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
75	0.00	0.000	0.014	0.1773	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
76	0.08	0.000	0.014	0.1883	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
77	0.12	0.000	0.014	0.2065	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
78	0.00	0.000	0.013	0.2043	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
79	0.00	0.000	0.013	0.2021	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
80	0.00	0.000	0.013	0.2000	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
81	0.00	0.000	0.013	0.1978	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
82	0.00	0.000	0.013	0.1957	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
83	0.00	0.000	0.013	0.1936	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
84	0.00	0.000	0.013	0.1915	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
85	0.00	0.000	0.012	0.1894	0.0000	0.0000	7.05E-09	0.0000	0.0000	0.00E+00
86	0.00	0.000	0.012	0.1873	0.0000	0.0000	5.18E-09	0.0000	0.0000	0.00E+00
87	0.00	0.000	0.012	0.1853	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
88	0.00	0.000	0.012	0.1832	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
89	0.00	0.000	0.012	0.1812	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
90	0.00	0.000	0.012	0.1792	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
91	0.00	0.000	0.012	0.1772	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
92	0.00	0.000	0.012	0.1751	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
93	0.00	0.000	0.012	0.1731	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
94	0.09	0.000	0.012	0.1862	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
95	0.00	0.000	0.012	0.1842	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
96	0.00	0.000	0.012	0.1822	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
97	0.00	0.000	0.012	0.1802	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
98	0.00	0.000	0.012	0.1781	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99	0.00	0.000	0.012	0.1761	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100	0.00	0.000	0.012	0.1741	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

101	0.00	0.000	0.013	0.1720	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
102	0.00	0.000	0.013	0.1698	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
103	0.00	0.000	0.013	0.1677	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
104	0.00	0.000	0.013	0.1656	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
105	0.00	0.000	0.013	0.1633	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
106	0.00	0.000	0.014	0.1610	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
107	0.00	0.000	0.012	0.1590	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
108	0.00	0.000	0.014	0.1566	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
109	0.00	0.000	0.014	0.1543	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
110	0.00	0.000	0.014	0.1519	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
111	0.00	0.000	0.013	0.1498	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
112	0.00	0.000	0.013	0.1476	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
113	0.00	0.000	0.014	0.1453	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
114	0.00	0.000	0.016	0.1427	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
115	0.23	0.000	0.016	0.1788	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
116	0.00	0.000	0.015	0.1763	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
117	0.03	0.000	0.014	0.1791	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
118	0.22	0.000	0.015	0.2125	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
119	0.35	0.000	0.013	0.2679	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
120	0.16	0.000	0.223	0.2582	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
121	0.00	0.000	0.166	0.2305	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
122	0.00	0.000	0.204	0.1965	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
123	0.00	0.000	0.087	0.1820	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.069	0.1705	0.0000	0.0001	1.69E-08	0.0000	0.0000	0.00E+00
125	0.00	0.000	0.057	0.1609	0.0000	0.0000	6.38E-09	0.0000	0.0000	0.00E+00
126	0.00	0.000	0.051	0.1524	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
127	0.00	0.000	0.047	0.1445	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
128	0.00	0.000	0.045	0.1371	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
129	0.00	0.000	0.013	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
130	0.33	0.000	0.018	0.1868	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
131	0.00	0.000	0.026	0.1825	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
132	0.00	0.000	0.031	0.1774	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
133	0.00	0.000	0.031	0.1723	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
134	0.00	0.000	0.030	0.1673	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
135	0.05	0.000	0.030	0.1711	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.030	0.1662	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

137	0.00	0.000	0.029	0.1613	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.027	0.1567	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.026	0.1524	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.029	0.1476	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.025	0.1434	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.024	0.1394	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.022	0.1358	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.004	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
152	0.07	0.000	0.004	0.1453	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
153	0.00	0.000	0.011	0.1435	0.0000	0.0000	4.36E-09	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.018	0.1406	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.019	0.1375	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.013	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.005	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
166	0.12	0.000	0.011	0.1528	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
167	0.01	0.000	0.011	0.1520	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
168	0.12	0.000	0.016	0.1694	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.022	0.1658	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.020	0.1624	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.021	0.1588	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.021	0.1554	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

173	0.14	0.000	0.021	0.1753	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
174	0.19	0.000	0.021	0.2036	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.023	0.1997	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.020	0.1964	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.019	0.1933	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.022	0.1896	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.026	0.1854	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.030	0.1803	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.025	0.1761	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.01	0.000	0.033	0.1727	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
183	0.00	0.000	0.025	0.1685	0.0000	0.0000	8.34E-09	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.021	0.1650	0.0000	0.0000	1.02E-08	0.0000	0.0000	0.00E+00
185	0.00	0.000	0.022	0.1614	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.025	0.1572	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.029	0.1523	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.031	0.1472	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
189	0.00	0.000	0.028	0.1425	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
190	0.00	0.000	0.032	0.1371	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.009	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
192	0.06	0.000	0.010	0.1442	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
193	0.44	0.000	0.024	0.2128	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
194	0.19	0.000	0.040	0.2377	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
195	0.00	0.000	0.029	0.2328	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
196	0.00	0.000	0.049	0.2246	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.045	0.2171	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
198	0.08	0.000	0.042	0.2229	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
199	0.06	0.000	0.053	0.2239	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
200	0.11	0.000	0.055	0.2334	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
201	0.70	0.000	0.040	0.3439	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
202	0.06	0.000	0.302	0.2762	0.0388	0.1458	3.74E-06	0.0000	0.0000	0.00E+00
203	0.03	0.000	0.485	0.1934	0.0131	0.0493	1.46E-06	0.0000	0.0000	0.00E+00
204	0.43	0.000	0.251	0.2173	0.0111	0.0419	1.28E-06	0.0000	0.0000	0.00E+00
205	0.00	0.000	0.294	0.1683	0.0007	0.0025	1.06E-07	0.0000	0.0000	0.00E+00
206	0.00	0.000	0.101	0.1514	0.0000	0.0000	9.07E-09	0.0000	0.0000	0.00E+00
207	0.00	0.000	0.087	0.1368	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
208	0.00	0.000	0.007	0.1356	0.0000	0.0000	1.33E-08	0.0000	0.0000	0.00E+00

209	0.00	0.000	0.004	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
210	0.11	0.000	0.030	0.1487	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.030	0.1437	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.038	0.1373	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.012	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
216	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
217	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
218	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
219	0.02	0.000	0.009	0.1375	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
220	0.12	0.000	0.034	0.1513	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.034	0.1457	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.048	0.1377	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
223	0.04	0.000	0.023	0.1408	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
224	0.05	0.000	0.016	0.1462	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.025	0.1421	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.031	0.1369	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.009	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
228	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
229	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
230	0.20	0.000	0.028	0.1634	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.00	0.000	0.029	0.1586	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.036	0.1526	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
233	0.44	0.000	0.044	0.2180	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
234	0.04	0.000	0.041	0.2170	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
235	0.13	0.000	0.194	0.2057	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.051	0.1972	0.0000	0.0000	5.55E-17	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.056	0.1878	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
238	0.20	0.000	0.056	0.2120	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
239	0.00	0.000	0.431	0.1402	0.0000	0.0000	2.78E-17	0.0000	0.0000	0.00E+00
240	0.00	0.000	0.026	0.1359	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
241	0.07	0.000	0.015	0.1453	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
242	0.30	0.000	0.032	0.1904	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.034	0.1855	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
244	0.29	0.000	0.057	0.2249	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

245	0.00	0.000	0.282	0.1779	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.054	0.1689	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.062	0.1586	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.061	0.1484	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
249	0.00	0.000	0.059	0.1385	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
250	0.80	0.000	0.045	0.2636	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.367	0.2024	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
252	0.00	0.000	0.327	0.1480	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.058	0.1384	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.00	0.000	0.020	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
257	0.22	0.000	0.036	0.1660	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
258	0.01	0.000	0.028	0.1636	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
259	0.55	0.000	0.041	0.2488	0.0000	0.0000	3.66E-09	0.0000	0.0000	0.00E+00
260	0.07	0.000	0.210	0.2252	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
261	0.00	0.000	0.051	0.2167	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.050	0.2084	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
263	0.00	0.000	0.047	0.2005	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
264	0.00	0.000	0.043	0.1932	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.045	0.1858	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.041	0.1790	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.037	0.1728	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
268	0.36	0.000	0.041	0.2267	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.187	0.1956	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.036	0.1897	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
271	0.00	0.000	0.031	0.1846	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
272	0.27	0.000	0.036	0.2240	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.205	0.1899	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.028	0.1852	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.028	0.1805	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.029	0.1757	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.027	0.1713	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.025	0.1672	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
279	0.07	0.000	0.030	0.1730	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
280	0.07	0.000	0.031	0.1795	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

281		0.00	0.000	0.024	0.1755	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282		0.01	0.000	0.029	0.1728	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
283		0.27	0.000	0.027	0.2131	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
284		0.01	0.000	0.173	0.1859	0.0002	0.0006	3.83E-08	0.0000	0.0000	0.00E+00
285		0.18	0.000	0.028	0.2119	0.0000	0.0000	9.08E-09	0.0000	0.0000	0.00E+00
286		0.02	0.000	0.246	0.1746	0.0004	0.0013	6.46E-08	0.0000	0.0000	0.00E+00
287		0.35	0.000	0.026	0.2290	0.0003	0.0010	5.41E-08	0.0000	0.0000	0.00E+00
288		0.04	0.000	0.170	0.2079	0.0000	0.0000	1.41E-08	0.0000	0.0000	0.00E+00
289		0.00	0.000	0.204	0.1738	0.0000	0.0002	1.48E-08	0.0000	0.0000	0.00E+00
290		0.00	0.000	0.158	0.1475	0.0000	0.0000	1.36E-08	0.0000	0.0000	0.00E+00
291		0.00	0.000	0.066	0.1365	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
292		0.00	0.000	0.009	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
293	*	0.12	0.000	0.066	0.1383	0.0000	0.0000	5.55E-17	0.0000	0.0000	0.00E+00
294	*	0.15	0.000	0.056	0.1416	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
295		0.00	0.000	0.116	0.1390	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
296		0.00	0.000	0.014	0.1367	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
297		0.00	0.000	0.008	0.1355	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
298		0.00	0.000	0.002	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
299		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
300		0.00	0.000	0.000	0.1350	0.0000	0.0000	3.22E-09	0.0000	0.0000	0.00E+00
301		0.06	0.000	0.009	0.1427	0.0000	0.0000	1.33E-08	0.0000	0.0000	0.00E+00
302		0.05	0.000	0.020	0.1476	0.0000	0.0000	2.40E-09	0.0000	0.0000	0.00E+00
303		0.00	0.000	0.017	0.1448	0.0000	0.0000	9.04E-09	0.0000	0.0000	0.00E+00
304		0.00	0.000	0.015	0.1423	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
305		0.00	0.000	0.019	0.1392	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
306		0.00	0.000	0.018	0.1362	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
307		0.00	0.000	0.005	0.1354	0.0000	0.0000	1.19E-08	0.0000	0.0000	0.00E+00
308		0.00	0.000	0.002	0.1351	0.0000	0.0000	2.10E-09	0.0000	0.0000	0.00E+00
309		0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
310		0.00	0.000	0.000	0.1350	0.0000	0.0000	8.11E-09	0.0000	0.0000	0.00E+00
311		0.00	0.000	0.000	0.1350	0.0000	0.0000	9.78E-09	0.0000	0.0000	0.00E+00
312		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
313		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
314		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
315		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
316		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

317		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
321		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
322		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
323		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
325		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
326		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
329		0.07	0.000	0.006	0.1459	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330		0.02	0.000	0.011	0.1480	0.0000	0.0000	4.36E-09	0.0000	0.0000	0.00E+00
331		0.09	0.000	0.014	0.1611	0.0000	0.0000	6.81E-09	0.0000	0.0000	0.00E+00
332		0.23	0.000	0.016	0.1968	0.0000	0.0000	1.22E-08	0.0000	0.0000	0.00E+00
333		0.00	0.000	0.013	0.1946	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
334		0.00	0.000	0.013	0.1924	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.013	0.1903	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
336		0.00	0.000	0.015	0.1884	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
337	*	0.17	0.000	0.070	0.1916	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
338		0.00	0.000	0.080	0.1914	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
339	*	0.00	0.000	0.000	0.1914	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
340		0.00	0.000	0.013	0.1893	0.0000	0.0000	7.61E-09	0.0000	0.0000	0.00E+00
341		0.00	0.000	0.012	0.1873	0.0000	0.0000	8.84E-09	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.013	0.1851	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
343		0.00	0.000	0.013	0.1829	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
344		0.00	0.000	0.013	0.1807	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345		0.00	0.000	0.013	0.1786	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.013	0.1765	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
347		0.00	0.000	0.013	0.1744	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
348	*	0.00	0.000	0.012	0.1724	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
349	*	0.00	0.000	0.012	0.1703	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
350	*	0.00	0.000	0.000	0.1703	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
351	*	0.00	0.000	0.000	0.1703	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
352		0.00	0.000	0.012	0.1683	0.0000	0.0000	6.20E-09	0.0000	0.0000	0.00E+00

353		0.01	0.000	0.016	0.1669	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
354		0.04	0.000	0.016	0.1709	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
355		0.03	0.000	0.016	0.1724	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
356		0.00	0.000	0.012	0.1705	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
357		0.00	0.000	0.012	0.1685	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
358		0.00	0.000	0.012	0.1665	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.011	0.1646	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
360		0.00	0.000	0.011	0.1627	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
361		0.00	0.000	0.011	0.1608	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
362		0.00	0.000	0.011	0.1590	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
363		0.00	0.000	0.011	0.1571	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
364		0.00	0.000	0.011	0.1553	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
365	*	0.00	0.000	0.011	0.1534	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 18			
	inches	cubic feet	percent
Precipitation	12.47	45,280.9	100.00
Runoff	0.000	0.3439	0.00
Evapotranspiration	12.709	46,135.0	101.89
Drainage Collected from Layer 2	0.2611	947.8	2.09
Percolation/Leakage through Layer 4	0.000008	0.0287	0.00
Average Head on Top of Layer 3	0.0002	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	-0.4965	-1,802.3	-3.98
Soil Water at Start of Year	538.6510	1,955,303.0	4318.16
Soil Water at End of Year	538.1545	1,953,500.7	4314.18
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 19

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Column key: Head #1: drainage from Layer 3; Drain #1: drainage from Layer 2; Leak #1: leakage thru Layer 4; Head #2: drainage from Layer 15; Drain #2: drainage from Layer 14; Leak #2: leakage thru Layer 16

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.00	0.000	0.012	0.1515	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.011	0.1496	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.011	0.1477	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.011	0.1458	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.011	0.1439	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
6			0.04	0.000	0.015	0.1484	0.0000	0.0000	5.55E-17	0.0000	0.0000	0.00E+00
7	*		0.01	0.000	0.011	0.1484	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.010	0.1466	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
9			0.01	0.000	0.015	0.1459	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.011	0.1441	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.011	0.1423	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
12			0.00	0.000	0.011	0.1405	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
13			0.00	0.000	0.011	0.1387	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.011	0.1369	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.005	0.1361	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
16			0.03	0.000	0.007	0.1406	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.008	0.1400	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.005	0.1392	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.006	0.1383	0.0000	0.0000	6.88E-09	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.007	0.1372	0.0000	0.0000	4.43E-09	0.0000	0.0000	0.00E+00
21			0.00	0.000	0.003	0.1367	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.003	0.1362	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.002	0.1359	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
24			0.00	0.000	0.002	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
25	*		0.08	0.000	0.079	0.1363	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
26			0.00	0.000	0.002	0.1360	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
27			0.00	0.000	0.002	0.1357	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
28			0.00	0.000	0.002	0.1355	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

29		0.00	0.000	0.002	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
32	*	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
33	*	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
35		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
36		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
42	*	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
43		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
44		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
51		0.23	0.000	0.008	0.1721	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
52		0.00	0.000	0.006	0.1711	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
53		0.00	0.000	0.006	0.1701	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
54		0.25	0.000	0.011	0.2092	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
55		0.02	0.000	0.012	0.2099	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
56		0.09	0.000	0.013	0.2221	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
57	*	0.04	0.000	0.041	0.2221	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
58	*	0.05	0.000	0.046	0.2221	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
59		0.03	0.000	0.013	0.2244	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60		0.00	0.000	0.008	0.2230	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
61		0.00	0.000	0.008	0.2216	0.0000	0.0000	5.55E-17	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.008	0.2203	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.008	0.2189	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
64		0.03	0.000	0.013	0.2212	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

65	0.49	0.000	0.013	0.3015	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
66	0.00	0.000	0.009	0.3001	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
67	0.00	0.000	0.009	0.2986	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
68	0.00	0.000	0.009	0.2911	0.0076	0.0285	8.93E-07	0.0000	0.0000	0.00E+00
69	0.00	0.000	0.009	0.2841	0.0093	0.0350	1.10E-06	0.0000	0.0000	0.00E+00
70	0.00	0.000	0.009	0.2789	0.0068	0.0254	8.25E-07	0.0000	0.0000	0.00E+00
71	0.00	0.000	0.009	0.2773	0.0013	0.0049	1.85E-07	0.0000	0.0000	0.00E+00
72	0.00	0.000	0.009	0.2758	0.0000	0.0000	1.14E-08	0.0000	0.0000	0.00E+00
73	0.00	0.000	0.009	0.2744	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
74	0.00	0.000	0.008	0.2730	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
75	0.00	0.000	0.008	0.2716	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
76	0.00	0.000	0.008	0.2702	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
77	0.00	0.000	0.008	0.2688	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
78	0.00	0.000	0.008	0.2674	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
79	0.00	0.000	0.008	0.2660	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
80	0.00	0.000	0.008	0.2646	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
81	0.00	0.000	0.008	0.2632	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
82	0.00	0.000	0.008	0.2618	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
83	0.00	0.000	0.008	0.2605	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
84	0.00	0.000	0.008	0.2591	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
85	0.00	0.000	0.008	0.2577	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
86	0.74	0.000	0.011	0.3303	0.0905	0.1252	7.07E-06	0.0000	0.0000	0.00E+00
87	0.00	0.000	0.008	0.3109	0.1342	0.2586	1.12E-05	0.0000	0.0000	0.00E+00
88	0.00	0.000	0.008	0.3030	0.0123	0.0461	1.39E-06	0.0000	0.0000	0.00E+00
89	0.00	0.000	0.008	0.2924	0.0149	0.0562	1.67E-06	0.0000	0.0000	0.00E+00
90	0.00	0.000	0.008	0.2853	0.0101	0.0380	1.18E-06	0.0000	0.0000	0.00E+00
91	0.00	0.000	0.008	0.2798	0.0073	0.0274	8.83E-07	0.0000	0.0000	0.00E+00
92	0.00	0.000	0.008	0.2779	0.0020	0.0076	2.77E-07	0.0000	0.0000	0.00E+00
93	0.00	0.000	0.008	0.2765	0.0000	0.0000	1.40E-08	0.0000	0.0000	0.00E+00
94	0.00	0.000	0.008	0.2751	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
95	0.00	0.000	0.008	0.2737	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
96	0.00	0.000	0.008	0.2723	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
97	0.00	0.000	0.008	0.2709	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
98	0.00	0.000	0.008	0.2696	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99	0.00	0.000	0.008	0.2682	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100	0.00	0.000	0.008	0.2668	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

101	0.00	0.000	0.009	0.2654	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
102	0.00	0.000	0.009	0.2639	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
103	0.00	0.000	0.008	0.2625	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
104	0.00	0.000	0.009	0.2611	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
105	0.00	0.000	0.008	0.2596	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
106	0.09	0.000	0.011	0.2728	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
107	0.00	0.000	0.009	0.2712	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
108	0.00	0.000	0.009	0.2688	0.0015	0.0057	2.24E-07	0.0000	0.0000	0.00E+00
109	0.00	0.000	0.009	0.2672	0.0006	0.0021	9.69E-08	0.0000	0.0000	0.00E+00
110	0.00	0.000	0.008	0.2658	0.0000	0.0000	1.19E-08	0.0000	0.0000	0.00E+00
111	0.00	0.000	0.009	0.2644	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
112	0.00	0.000	0.009	0.2630	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
113	0.05	0.000	0.011	0.2690	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
114	0.00	0.000	0.010	0.2670	0.0004	0.0016	6.35E-08	0.0000	0.0000	0.00E+00
115	0.00	0.000	0.009	0.2649	0.0007	0.0026	1.17E-07	0.0000	0.0000	0.00E+00
116	1.84	0.240	0.012	0.4597	0.4597	0.2531	3.27E-05	0.0000	0.0000	0.00E+00
117	0.00	0.000	0.200	0.3010	3.2425	0.7512	2.15E-04	0.0000	0.0000	0.00E+00
118	0.00	0.000	0.257	0.2295	0.2631	0.3284	2.04E-05	0.0000	0.0000	0.00E+00
119	0.00	0.000	0.167	0.1962	0.0107	0.0402	1.24E-06	0.0000	0.0000	0.00E+00
120	0.12	0.000	0.311	0.1645	0.0012	0.0044	1.65E-07	0.0000	0.0000	0.00E+00
121	0.39	0.000	0.153	0.2048	0.0000	0.0000	1.03E-08	0.0000	0.0000	0.00E+00
122	0.87	0.007	0.226	0.3112	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
123	0.05	0.000	0.224	0.2826	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.197	0.2462	0.0044	0.0165	5.46E-07	0.0000	0.0000	0.00E+00
125	0.00	0.000	0.303	0.1917	0.0074	0.0279	8.96E-07	0.0000	0.0000	0.00E+00
126	0.00	0.000	0.326	0.1352	0.0035	0.0133	4.31E-07	0.0000	0.0000	0.00E+00
127	0.00	0.000	0.001	0.1350	0.0000	0.0000	1.44E-08	0.0000	0.0000	0.00E+00
128	0.00	0.000	0.000	0.1350	0.0000	0.0000	4.66E-10	0.0000	0.0000	0.00E+00
129	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
130	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
131	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
132	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
133	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
134	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

137	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.004	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
147	0.18	0.000	0.014	0.1626	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.012	0.1607	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.017	0.1577	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.017	0.1548	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.017	0.1519	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.018	0.1490	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
153	0.00	0.000	0.017	0.1462	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.016	0.1435	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.014	0.1412	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.021	0.1377	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.013	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
158	0.11	0.000	0.015	0.1512	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
159	0.06	0.000	0.013	0.1596	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.013	0.1575	0.0000	0.0000	2.27E-09	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.019	0.1543	0.0000	0.0000	9.80E-09	0.0000	0.0000	0.00E+00
162	0.02	0.000	0.022	0.1538	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.019	0.1507	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.021	0.1473	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.018	0.1442	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.017	0.1413	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
167	0.00	0.000	0.015	0.1389	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
168	0.00	0.000	0.017	0.1359	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.005	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
170	0.49	0.000	0.016	0.2146	0.0000	0.0000	5.17E-09	0.0000	0.0000	0.00E+00
171	0.23	0.000	0.027	0.2484	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.026	0.2441	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

173	0.00	0.000	0.025	0.2400	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
174	0.00	0.000	0.026	0.2356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.027	0.2312	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
176	0.04	0.000	0.028	0.2323	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.031	0.2277	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.031	0.2224	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.027	0.2179	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.026	0.2137	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.023	0.2098	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.022	0.2061	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
183	0.00	0.000	0.025	0.2019	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.027	0.1974	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
185	0.00	0.000	0.029	0.1927	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.026	0.1884	0.0000	0.0000	1.33E-08	0.0000	0.0000	0.00E+00
187	0.01	0.000	0.030	0.1849	0.0000	0.0000	4.34E-09	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.028	0.1803	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
189	0.00	0.000	0.024	0.1762	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
190	0.00	0.000	0.028	0.1715	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.034	0.1658	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
192	0.02	0.000	0.039	0.1623	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
193	0.02	0.000	0.037	0.1594	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
194	0.12	0.000	0.028	0.1753	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
195	0.30	0.000	0.038	0.2196	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
196	0.00	0.000	0.033	0.2141	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.030	0.2091	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
198	0.15	0.000	0.035	0.2288	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
199	0.00	0.000	0.034	0.2231	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.035	0.2173	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.040	0.2107	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
202	0.00	0.000	0.044	0.2034	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.042	0.1964	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
204	0.09	0.000	0.045	0.2035	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
205	0.06	0.000	0.043	0.2063	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
206	0.02	0.000	0.052	0.2010	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
207	0.01	0.000	0.053	0.1932	0.0000	0.0001	1.85E-08	0.0000	0.0000	0.00E+00
208	0.01	0.000	0.039	0.1874	0.0001	0.0005	3.43E-08	0.0000	0.0000	0.00E+00

209	0.00	0.000	0.037	0.1812	0.0001	0.0002	2.37E-08	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.038	0.1749	0.0000	0.0000	5.14E-09	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.049	0.1669	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.048	0.1589	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.071	0.1471	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
214	0.24	0.000	0.050	0.1792	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.149	0.1544	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
216	0.00	0.000	0.044	0.1471	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
217	0.00	0.000	0.045	0.1397	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
218	0.00	0.000	0.023	0.1359	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
219	0.00	0.000	0.004	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
223	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
225	0.02	0.000	0.010	0.1361	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
226	0.36	0.000	0.029	0.1909	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.264	0.1470	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
228	0.00	0.000	0.046	0.1394	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
229	0.00	0.000	0.020	0.1360	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
230	0.16	0.000	0.039	0.1557	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.33	0.000	0.028	0.2062	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.209	0.1713	0.0000	0.0000	2.25E-09	0.0000	0.0000	0.00E+00
233	0.00	0.000	0.063	0.1608	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
234	0.00	0.000	0.057	0.1513	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.064	0.1407	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.027	0.1362	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.005	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.002	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
239	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
240	0.61	0.000	0.039	0.2299	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
241	0.05	0.000	0.161	0.2110	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
242	0.03	0.000	0.195	0.1830	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.235	0.1438	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.038	0.1375	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

245	0.00	0.000	0.014	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
249	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
252	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
259	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
260	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
261	0.04	0.000	0.016	0.1397	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
262	0.38	0.000	0.034	0.1974	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
263	0.11	0.000	0.051	0.2078	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
264	0.11	0.000	0.076	0.2135	0.0000	0.0000	7.28E-09	0.0000	0.0000	0.00E+00
265	0.08	0.000	0.058	0.2170	0.0000	0.0000	1.54E-09	0.0000	0.0000	0.00E+00
266	0.05	0.000	0.063	0.2151	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.052	0.2072	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.066	0.1963	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.054	0.1874	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.041	0.1806	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
271	0.00	0.000	0.041	0.1737	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.040	0.1671	0.0000	0.0000	5.55E-17	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.038	0.1608	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.040	0.1542	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.034	0.1485	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.034	0.1428	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.033	0.1372	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
278	0.39	0.000	0.035	0.1960	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.025	0.1919	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.029	0.1871	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

281	0.02	0.000	0.031	0.1855	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282	0.18	0.000	0.037	0.2100	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
283	0.24	0.000	0.131	0.2282	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
284	0.09	0.000	0.122	0.2221	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
285	0.04	0.000	0.196	0.1955	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
286	0.00	0.000	0.119	0.1757	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
287	0.00	0.000	0.091	0.1606	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
288	0.00	0.000	0.074	0.1482	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
289	0.00	0.000	0.058	0.1385	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
290	0.00	0.000	0.015	0.1360	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
291	0.00	0.000	0.006	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
292	0.00	0.000	0.002	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
293	0.13	0.000	0.028	0.1512	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
294	0.32	0.000	0.027	0.1996	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
295	0.63	0.000	0.038	0.2977	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
296	0.00	0.000	0.143	0.2742	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
297	0.09	0.000	0.136	0.2664	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
298	0.26	0.000	0.165	0.2814	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
299	0.00	0.000	0.143	0.2570	0.0004	0.0015	5.58E-08	0.0000	0.0000	0.00E+00
300	0.00	0.000	0.138	0.2332	0.0018	0.0069	2.64E-07	0.0000	0.0000	0.00E+00
301	0.00	0.000	0.195	0.2007	0.0000	0.0001	1.76E-08	0.0000	0.0000	0.00E+00
302	0.00	0.000	0.168	0.1727	0.0000	0.0000	3.58E-09	0.0000	0.0000	0.00E+00
303	0.00	0.000	0.087	0.1582	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
304	0.00	0.000	0.066	0.1472	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
305	0.00	0.000	0.056	0.1379	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
306	0.00	0.000	0.018	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
307	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
308	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
309	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
310	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
311	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
312	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
313	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
314	0.33	0.000	0.022	0.1859	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
315	0.00	0.000	0.018	0.1828	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
316	0.00	0.000	0.022	0.1792	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

317		0.00	0.000	0.021	0.1757	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318		0.00	0.000	0.020	0.1724	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319		0.01	0.000	0.024	0.1695	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320		0.00	0.000	0.019	0.1664	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
321		0.00	0.000	0.019	0.1632	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
322		0.00	0.000	0.018	0.1602	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
323		0.01	0.000	0.023	0.1583	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324		0.00	0.000	0.018	0.1554	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
325		0.07	0.000	0.026	0.1622	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
326		0.00	0.000	0.019	0.1590	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.017	0.1562	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328		0.00	0.000	0.018	0.1532	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
329		0.00	0.000	0.017	0.1503	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330		0.00	0.000	0.017	0.1474	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331		0.00	0.000	0.017	0.1446	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
332		0.00	0.000	0.014	0.1423	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333		0.00	0.000	0.017	0.1394	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
334	*	0.00	0.000	0.017	0.1365	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.007	0.1353	0.0000	0.0001	7.73E-09	0.0000	0.0000	0.00E+00
336		0.00	0.000	0.001	0.1351	0.0000	0.0000	1.40E-08	0.0000	0.0000	0.00E+00
337		0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
338		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
339		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
340		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
341		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
343		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
344		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
347		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
348		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
349		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
350		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
352		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

353		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
354	*	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
355	*	0.03	0.000	0.033	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
356	*	0.04	0.000	0.044	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
357		0.08	0.000	0.008	0.1465	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
358		0.00	0.000	0.006	0.1456	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.008	0.1442	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
360		0.00	0.000	0.009	0.1428	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
361		0.00	0.000	0.009	0.1414	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
362		0.00	0.000	0.009	0.1399	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
363		0.00	0.000	0.009	0.1385	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
364		0.00	0.000	0.009	0.1370	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
365		0.00	0.000	0.008	0.1358	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 19			
	inches	cubic feet	percent
Precipitation	13.01	47,226.4	100.00
Runoff	0.247	896.8	1.90
Evapotranspiration	10.759	39,056.7	82.70
Drainage Collected from Layer 2	2.1093	7,656.7	16.21
Percolation/Leakage through Layer 4	0.000299	1.0848	0.00
Average Head on Top of Layer 3	0.0118	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	-0.1057	-383.9	-0.81
Soil Water at Start of Year	538.1545	1,953,500.7	4136.46
Soil Water at End of Year	538.0487	1,953,116.8	4135.65
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 20

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Column key: Head #1: drainage from Layer 3; Drain #1: drainage from Layer 2; Leak #1: leakage thru Layer 4; Head #2: drainage from Layer 15; Drain #2: drainage from Layer 14; Leak #2: leakage thru Layer 16

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.00	0.000	0.004	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
9	*		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
11			0.11	0.000	0.012	0.1513	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
12			0.00	0.000	0.005	0.1505	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
13			0.00	0.000	0.006	0.1495	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.008	0.1483	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
15			0.12	0.000	0.015	0.1662	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
16			0.00	0.000	0.009	0.1648	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.008	0.1634	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.008	0.1622	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.008	0.1609	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.007	0.1597	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
21			0.00	0.000	0.007	0.1584	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.007	0.1572	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.007	0.1560	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
24			0.00	0.000	0.007	0.1548	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
25			0.03	0.000	0.014	0.1580	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
26			0.00	0.000	0.009	0.1565	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
27			0.00	0.000	0.009	0.1551	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
28	*		0.00	0.000	0.009	0.1536	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

29	*	0.00	0.000	0.009	0.1521	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.007	0.1508	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.007	0.1496	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.007	0.1485	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
33	*	0.00	0.000	0.007	0.1473	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
34	*	0.00	0.000	0.000	0.1473	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
35		0.00	0.000	0.007	0.1462	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
36	*	0.00	0.000	0.007	0.1450	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.005	0.1441	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
38	*	0.00	0.000	0.008	0.1428	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
39		0.05	0.000	0.015	0.1482	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
40		0.27	0.000	0.015	0.1913	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.009	0.1899	0.0000	0.0000	2.15E-09	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.009	0.1885	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
43		0.00	0.000	0.008	0.1871	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
44		0.00	0.000	0.008	0.1858	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
45		0.28	0.000	0.015	0.2297	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.008	0.2283	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.009	0.2269	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.009	0.2253	0.0000	0.0000	2.45E-09	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.009	0.2238	0.0000	0.0000	5.55E-09	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.009	0.2222	0.0000	0.0000	1.04E-08	0.0000	0.0000	0.00E+00
51		0.01	0.000	0.014	0.2215	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
52		0.00	0.000	0.009	0.2200	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
53		0.00	0.000	0.009	0.2185	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.009	0.2170	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.009	0.2155	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
56		0.00	0.000	0.009	0.2140	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
57		0.00	0.000	0.009	0.2125	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
58	*	0.00	0.000	0.009	0.2110	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.009	0.2095	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60		0.00	0.000	0.009	0.2081	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
61		0.11	0.000	0.016	0.2238	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.010	0.2223	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.009	0.2209	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.009	0.2194	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

65		0.00	0.000	0.009	0.2180	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.009	0.2165	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
67		0.00	0.000	0.009	0.2150	0.0000	0.0000	7.52E-09	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.009	0.2135	0.0000	0.0000	6.97E-09	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.009	0.2121	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.009	0.2106	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.008	0.2092	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.008	0.2078	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.008	0.2064	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.008	0.2050	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.008	0.2036	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.008	0.2023	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.008	0.2009	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.008	0.1995	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
79		0.13	0.000	0.015	0.2189	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
80	*	0.00	0.000	0.008	0.2175	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
81		0.00	0.000	0.008	0.2161	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
82		0.00	0.000	0.008	0.2148	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.008	0.2134	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
84		0.00	0.000	0.008	0.2121	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
85		0.00	0.000	0.008	0.2107	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.008	0.2093	0.0000	0.0000	8.92E-09	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.008	0.2079	0.0000	0.0000	1.62E-08	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.008	0.2066	0.0000	0.0000	8.05E-09	0.0000	0.0000	0.00E+00
89	*	0.00	0.000	0.008	0.2052	0.0000	0.0000	1.61E-08	0.0000	0.0000	0.00E+00
90		0.00	0.000	0.008	0.2039	0.0000	0.0000	1.38E-08	0.0000	0.0000	0.00E+00
91		0.00	0.000	0.008	0.2025	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
92		0.00	0.000	0.008	0.2011	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
93	*	0.00	0.000	0.008	0.1998	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.008	0.1985	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.008	0.1972	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
96		0.00	0.000	0.008	0.1959	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
97		0.00	0.000	0.008	0.1946	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
98		0.00	0.000	0.008	0.1933	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99		0.00	0.000	0.008	0.1919	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100		0.00	0.000	0.008	0.1906	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

101	0.00	0.000	0.008	0.1893	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
102	0.00	0.000	0.008	0.1880	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
103	0.00	0.000	0.008	0.1866	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
104	0.00	0.000	0.008	0.1853	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
105	0.00	0.000	0.008	0.1839	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
106	0.01	0.000	0.014	0.1832	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
107	0.36	0.000	0.016	0.2399	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
108	0.00	0.000	0.009	0.2383	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
109	0.00	0.000	0.009	0.2368	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
110	0.00	0.000	0.010	0.2352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
111	0.06	0.000	0.016	0.2428	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
112	0.00	0.000	0.010	0.2412	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
113	0.00	0.000	0.010	0.2396	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
114	0.00	0.000	0.009	0.2380	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
115	0.00	0.000	0.009	0.2365	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
116	0.00	0.000	0.009	0.2350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
117	0.00	0.000	0.010	0.2334	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
118	0.00	0.000	0.009	0.2319	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
119	0.00	0.000	0.009	0.2303	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
120	0.00	0.000	0.010	0.2287	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
121	0.68	0.000	0.017	0.3389	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
122	0.00	0.000	0.010	0.3128	0.0339	0.1272	3.39E-06	0.0000	0.0000	0.00E+00
123	0.00	0.000	0.011	0.3017	0.0160	0.0603	1.78E-06	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.011	0.2910	0.0156	0.0585	1.74E-06	0.0000	0.0000	0.00E+00
125	0.51	0.000	0.017	0.3301	0.0309	0.1162	3.09E-06	0.0000	0.0000	0.00E+00
126	0.02	0.000	0.339	0.2630	0.0566	0.2127	5.35E-06	0.0000	0.0000	0.00E+00
127	0.02	0.000	0.016	0.2567	0.0130	0.0488	1.47E-06	0.0000	0.0000	0.00E+00
128	0.43	0.000	0.016	0.3202	0.0093	0.0351	1.10E-06	0.0000	0.0000	0.00E+00
129	0.27	0.000	0.203	0.3173	0.0208	0.0780	2.17E-06	0.0000	0.0000	0.00E+00
130	0.00	0.000	0.351	0.2536	0.0101	0.0380	1.18E-06	0.0000	0.0000	0.00E+00
131	0.10	0.000	0.201	0.2341	0.0050	0.0187	6.26E-07	0.0000	0.0000	0.00E+00
132	0.10	0.000	0.092	0.2354	0.0002	0.0006	3.84E-08	0.0000	0.0000	0.00E+00
133	0.01	0.000	0.073	0.2254	0.0000	0.0000	6.69E-09	0.0000	0.0000	0.00E+00
134	0.00	0.000	0.057	0.2157	0.0004	0.0015	7.07E-08	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.049	0.2075	0.0000	0.0000	1.22E-08	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.049	0.1993	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

137	1.13	0.012	0.049	0.3583	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.338	0.2717	0.1303	0.2963	1.10E-05	0.0000	0.0000	0.00E+00
139	0.01	0.000	0.265	0.2215	0.0113	0.0424	1.28E-06	0.0000	0.0000	0.00E+00
140	0.01	0.000	0.272	0.1733	0.0077	0.0291	9.24E-07	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.191	0.1401	0.0023	0.0085	2.93E-07	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.031	0.1350	0.0000	0.0000	1.39E-08	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
148	0.10	0.000	0.019	0.1484	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
149	0.02	0.000	0.024	0.1480	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.025	0.1439	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.021	0.1405	0.0000	0.0000	2.27E-09	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.024	0.1365	0.0000	0.0000	8.98E-10	0.0000	0.0000	0.00E+00
153	0.00	0.000	0.006	0.1355	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.002	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
156	0.09	0.000	0.013	0.1485	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
157	0.15	0.000	0.021	0.1707	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.024	0.1667	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
159	0.17	0.000	0.028	0.1894	0.0000	0.0000	4.59E-09	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.028	0.1847	0.0000	0.0000	5.35E-09	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.027	0.1802	0.0000	0.0000	7.91E-09	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.029	0.1753	0.0000	0.0000	9.29E-09	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.029	0.1706	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
164	0.06	0.000	0.029	0.1752	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
165	0.01	0.000	0.028	0.1714	0.0000	0.0000	2.76E-09	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.033	0.1659	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
167	0.00	0.000	0.034	0.1602	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
168	0.00	0.000	0.025	0.1561	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.024	0.1521	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
170	0.02	0.000	0.030	0.1503	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.023	0.1465	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.025	0.1423	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

173	0.00	0.000	0.029	0.1375	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
174	0.00	0.000	0.011	0.1357	0.0000	0.0001	5.68E-09	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.003	0.1352	0.0000	0.0000	1.50E-08	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.001	0.1350	0.0000	0.0000	1.62E-09	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
183	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
184	0.02	0.000	0.007	0.1368	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
185	0.01	0.000	0.007	0.1375	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.002	0.1371	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.005	0.1362	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
188	0.04	0.000	0.011	0.1416	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
189	0.04	0.000	0.019	0.1445	0.0000	0.0000	9.08E-09	0.0000	0.0000	0.00E+00
190	0.00	0.000	0.013	0.1423	0.0000	0.0000	1.98E-09	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.016	0.1396	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
192	0.00	0.000	0.017	0.1367	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
193	0.00	0.000	0.007	0.1355	0.0000	0.0000	2.78E-17	0.0000	0.0000	0.00E+00
194	0.00	0.000	0.002	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
195	0.09	0.000	0.009	0.1485	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
196	0.02	0.000	0.016	0.1483	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.017	0.1455	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
198	0.07	0.000	0.021	0.1544	0.0000	0.0000	4.54E-09	0.0000	0.0000	0.00E+00
199	0.06	0.000	0.024	0.1607	0.0000	0.0000	7.79E-10	0.0000	0.0000	0.00E+00
200	0.04	0.000	0.027	0.1622	0.0000	0.0000	4.99E-09	0.0000	0.0000	0.00E+00
201	0.30	0.000	0.026	0.2084	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
202	0.08	0.000	0.033	0.2168	0.0000	0.0000	9.47E-09	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.031	0.2117	0.0000	0.0000	1.12E-08	0.0000	0.0000	0.00E+00
204	0.00	0.000	0.035	0.2060	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
205	0.27	0.000	0.037	0.2446	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
206	0.00	0.000	0.030	0.2397	0.0000	0.0000	5.27E-09	0.0000	0.0000	0.00E+00
207	0.10	0.000	0.031	0.2509	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
208	0.00	0.000	0.028	0.2462	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

209	0.00	0.000	0.026	0.2419	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.032	0.2365	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.024	0.2324	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
212	0.15	0.000	0.040	0.2500	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.031	0.2448	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.031	0.2397	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
215	0.17	0.000	0.033	0.2622	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
216	0.00	0.000	0.241	0.2221	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
217	0.00	0.000	0.026	0.2177	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
218	0.00	0.000	0.032	0.2123	0.0000	0.0001	1.08E-08	0.0000	0.0000	0.00E+00
219	0.00	0.000	0.033	0.2069	0.0000	0.0001	2.04E-08	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.033	0.2014	0.0001	0.0002	2.30E-08	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.040	0.1947	0.0000	0.0000	1.14E-08	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.038	0.1883	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
223	0.05	0.000	0.034	0.1903	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
224	0.27	0.000	0.036	0.2290	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
225	0.07	0.000	0.244	0.2002	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.040	0.1935	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.028	0.1889	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
228	0.00	0.000	0.026	0.1845	0.0000	0.0000	1.17E-08	0.0000	0.0000	0.00E+00
229	0.00	0.000	0.031	0.1793	0.0000	0.0000	1.47E-09	0.0000	0.0000	0.00E+00
230	0.17	0.000	0.043	0.1997	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.00	0.000	0.306	0.1485	0.0003	0.0011	5.12E-08	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.031	0.1435	0.0000	0.0000	1.47E-08	0.0000	0.0000	0.00E+00
233	0.17	0.000	0.037	0.1655	0.0000	0.0000	1.23E-09	0.0000	0.0000	0.00E+00
234	0.00	0.000	0.040	0.1588	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.042	0.1518	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.025	0.1477	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.025	0.1435	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.019	0.1404	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
239	0.00	0.000	0.022	0.1367	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
240	0.00	0.000	0.007	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.002	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
242	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
243	0.38	0.000	0.015	0.1967	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.016	0.1941	0.0000	0.0000	4.39E-09	0.0000	0.0000	0.00E+00

245	0.00	0.000	0.019	0.1909	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.021	0.1874	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.019	0.1841	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.022	0.1805	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
249	0.00	0.000	0.017	0.1777	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.018	0.1747	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
251	0.09	0.000	0.021	0.1855	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
252	0.29	0.000	0.026	0.2295	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
253	0.01	0.000	0.206	0.1973	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.00	0.000	0.234	0.1583	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.109	0.1402	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.021	0.1367	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.010	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
258	0.12	0.000	0.031	0.1504	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
259	0.22	0.000	0.027	0.1830	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
260	0.12	0.000	0.037	0.1967	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
261	0.00	0.000	0.035	0.1909	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.032	0.1855	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
263	0.00	0.000	0.032	0.1802	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
264	0.00	0.000	0.031	0.1751	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.028	0.1704	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.029	0.1656	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.028	0.1610	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.027	0.1564	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.028	0.1518	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.026	0.1475	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
271	0.47	0.000	0.030	0.2206	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
272	0.10	0.000	0.030	0.2317	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
273	0.05	0.000	0.030	0.2356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.022	0.2319	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.021	0.2284	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.022	0.2247	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.022	0.2211	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.021	0.2176	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
279	0.02	0.000	0.026	0.2159	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.020	0.2127	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

281	0.07	0.000	0.026	0.2196	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282	0.09	0.000	0.025	0.2300	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
283	0.00	0.000	0.019	0.2269	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
284	0.00	0.000	0.018	0.2239	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
285	0.61	0.000	0.025	0.3210	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
286	0.01	0.000	0.189	0.2854	0.0043	0.0162	4.98E-07	0.0000	0.0000	0.00E+00
287	0.09	0.000	0.137	0.2700	0.0143	0.0537	1.61E-06	0.0000	0.0000	0.00E+00
288	0.16	0.000	0.172	0.2622	0.0111	0.0417	1.28E-06	0.0000	0.0000	0.00E+00
289	0.07	0.000	0.174	0.2444	0.0023	0.0087	3.05E-07	0.0000	0.0000	0.00E+00
290	0.00	0.000	0.140	0.2209	0.0003	0.0011	5.80E-08	0.0000	0.0000	0.00E+00
291	0.17	0.000	0.131	0.2273	0.0000	0.0000	1.03E-08	0.0000	0.0000	0.00E+00
292	0.02	0.000	0.188	0.1987	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
293	0.00	0.000	0.071	0.1868	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
294	0.00	0.000	0.062	0.1764	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
295	0.00	0.000	0.053	0.1676	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
296	0.00	0.000	0.047	0.1597	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
297	0.00	0.000	0.043	0.1525	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
298	0.00	0.000	0.039	0.1459	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
299	0.00	0.000	0.037	0.1398	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
300	0.00	0.000	0.029	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
301	0.00	0.000	0.000	0.1350	0.0000	0.0000	1.11E-16	0.0000	0.0000	0.00E+00
302	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
303	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
304	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
305	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
306	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
307	0.07	0.000	0.008	0.1448	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
308	0.14	0.000	0.016	0.1661	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
309	0.17	0.000	0.017	0.1917	0.0000	0.0000	2.14E-09	0.0000	0.0000	0.00E+00
310	0.49	0.000	0.022	0.2699	0.0000	0.0000	4.07E-09	0.0000	0.0000	0.00E+00
311	0.00	0.000	0.179	0.2402	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
312	0.00	0.000	0.023	0.2363	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
313	0.00	0.000	0.022	0.2325	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
314	0.00	0.000	0.023	0.2288	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
315	0.00	0.000	0.021	0.2253	0.0000	0.0000	4.18E-09	0.0000	0.0000	0.00E+00
316	0.00	0.000	0.021	0.2218	0.0000	0.0000	1.44E-08	0.0000	0.0000	0.00E+00

317	0.00	0.000	0.020	0.2184	0.0000	0.0000	3.32E-10	0.0000	0.0000	0.00E+00
318	0.00	0.000	0.020	0.2151	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319	0.00	0.000	0.019	0.2119	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320	0.00	0.000	0.019	0.2087	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
321	0.00	0.000	0.019	0.2056	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
322	0.00	0.000	0.018	0.2025	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
323	0.00	0.000	0.018	0.1994	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324	0.00	0.000	0.018	0.1965	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
325	0.08	0.000	0.022	0.2053	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
326	0.01	0.000	0.020	0.2028	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
327	0.03	0.000	0.021	0.2049	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328	0.00	0.000	0.017	0.2021	0.0000	0.0000	6.92E-09	0.0000	0.0000	0.00E+00
329	0.00	0.000	0.017	0.1993	0.0000	0.0000	1.18E-08	0.0000	0.0000	0.00E+00
330	0.00	0.000	0.016	0.1966	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331	0.14	0.000	0.020	0.2166	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
332	0.23	0.000	0.020	0.2514	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333	0.01	0.000	0.019	0.2498	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
334	0.00	0.000	0.016	0.2472	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
335	0.00	0.000	0.015	0.2447	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
336	0.00	0.000	0.015	0.2421	0.0000	0.0000	9.26E-09	0.0000	0.0000	0.00E+00
337	0.00	0.000	0.015	0.2396	0.0000	0.0000	9.26E-09	0.0000	0.0000	0.00E+00
338	0.00	0.000	0.015	0.2371	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
339	0.00	0.000	0.015	0.2347	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
340	0.00	0.000	0.015	0.2322	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
341	0.00	0.000	0.014	0.2298	0.0000	0.0000	1.15E-08	0.0000	0.0000	0.00E+00
342	0.00	0.000	0.014	0.2275	0.0000	0.0000	6.82E-09	0.0000	0.0000	0.00E+00
343	0.00	0.000	0.014	0.2251	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
344	0.00	0.000	0.014	0.2228	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345	0.00	0.000	0.014	0.2205	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
346	0.00	0.000	0.014	0.2182	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
347	0.00	0.000	0.014	0.2159	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
348	0.00	0.000	0.013	0.2137	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
349	0.00	0.000	0.013	0.2115	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
350	0.00	0.000	0.013	0.2092	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
351	0.00	0.000	0.013	0.2071	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
352	0.00	0.000	0.013	0.2049	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

353		0.87	0.000	0.016	0.3476	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
354		0.00	0.000	0.110	0.3024	0.0403	0.1517	3.82E-06	0.0000	0.0000	0.00E+00
355		0.00	0.000	0.142	0.2686	0.0152	0.0571	1.69E-06	0.0000	0.0000	0.00E+00
356		0.00	0.000	0.137	0.2384	0.0133	0.0502	1.51E-06	0.0000	0.0000	0.00E+00
357		0.00	0.000	0.109	0.2183	0.0050	0.0188	6.21E-07	0.0000	0.0000	0.00E+00
358		0.00	0.000	0.170	0.1900	0.0000	0.0001	1.88E-08	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.083	0.1762	0.0000	0.0000	4.02E-09	0.0000	0.0000	0.00E+00
360		0.00	0.000	0.064	0.1655	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
361		0.00	0.000	0.054	0.1566	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
362		0.00	0.000	0.047	0.1487	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
363		0.00	0.000	0.043	0.1416	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
364		0.00	0.000	0.039	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
365		0.03	0.000	0.006	0.1397	0.0000	0.0000	2.73E-17	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 20			
	inches	cubic feet	percent
Precipitation	13.04	47,338.6	100.00
Runoff	0.012	44.6	0.09
Evapotranspiration	11.432	41,496.6	87.66
Drainage Collected from Layer 2	1.5734	5,711.4	12.07
Percolation/Leakage through Layer 4	0.000047	0.1719	0.00
Average Head on Top of Layer 3	0.0013	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	0.0237	85.9	0.18
Soil Water at Start of Year	538.0487	1,953,116.8	4125.85
Soil Water at End of Year	538.0724	1,953,202.7	4126.03
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 21

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Column key: Head #1: drainage from Layer 3; Drain #1: drainage from Layer 2; Leak #1: leakage thru Layer 4; Head #2: drainage from Layer 15; Drain #2: drainage from Layer 14; Leak #2: leakage thru Layer 16

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.00	0.000	0.012	0.1376	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.006	0.1366	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
3	*		0.21	0.000	0.055	0.1399	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
4			0.28	0.000	0.060	0.1996	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.025	0.1959	0.0000	0.0000	6.81E-09	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.024	0.1919	0.0000	0.0000	2.25E-09	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.023	0.1880	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.025	0.1838	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.024	0.1798	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.023	0.1759	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.023	0.1722	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
12			0.00	0.000	0.022	0.1685	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
13			0.00	0.000	0.021	0.1650	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.021	0.1615	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.020	0.1582	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
16			0.00	0.000	0.020	0.1549	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.019	0.1517	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.019	0.1485	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.018	0.1454	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.018	0.1424	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
21			0.17	0.000	0.021	0.1672	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
22			0.02	0.000	0.021	0.1664	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
23			0.02	0.000	0.021	0.1656	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
24			0.21	0.000	0.021	0.1964	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
25			0.02	0.000	0.021	0.1970	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
26			0.21	0.000	0.020	0.2295	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
27			0.00	0.000	0.018	0.2266	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
28			0.00	0.000	0.017	0.2237	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

29		0.00	0.000	0.017	0.2209	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.016	0.2183	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.015	0.2157	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.016	0.2131	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
33		0.00	0.000	0.016	0.2105	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.015	0.2079	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
35		0.00	0.000	0.015	0.2053	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
36		0.00	0.000	0.015	0.2028	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.015	0.2003	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.015	0.1979	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.015	0.1955	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.014	0.1931	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.014	0.1907	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.014	0.1883	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
43		0.00	0.000	0.014	0.1860	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
44	*	0.00	0.000	0.014	0.1837	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
45	*	0.15	0.000	0.059	0.1870	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
46	*	0.07	0.000	0.000	0.1903	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
47	*	0.00	0.000	0.077	0.1936	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
48	*	0.00	0.000	0.024	0.1936	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
49		0.34	0.000	0.017	0.2478	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.113	0.2289	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.014	0.2266	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
52	*	0.00	0.000	0.014	0.2243	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
53	*	0.00	0.000	0.014	0.2220	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.014	0.2197	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
55	*	0.00	0.000	0.013	0.2175	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
56		0.00	0.000	0.013	0.2153	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
57		0.00	0.000	0.013	0.2130	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.013	0.2109	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.013	0.2087	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60		0.00	0.000	0.013	0.2065	0.0000	0.0001	7.80E-09	0.0000	0.0000	0.00E+00
61		0.00	0.000	0.013	0.2044	0.0000	0.0000	1.27E-08	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.013	0.2023	0.0000	0.0001	1.48E-08	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.012	0.2002	0.0000	0.0000	5.54E-09	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.012	0.1982	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

65		0.00	0.000	0.012	0.1962	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.012	0.1942	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
67		0.00	0.000	0.012	0.1922	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.012	0.1903	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.012	0.1883	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.012	0.1864	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
71		0.26	0.000	0.014	0.2277	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.011	0.2258	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.011	0.2240	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.012	0.2220	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.012	0.2201	0.0000	0.0000	1.08E-08	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.011	0.2182	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.011	0.2163	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.011	0.2144	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
79		0.00	0.000	0.011	0.2125	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
80		0.00	0.000	0.011	0.2107	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
81		0.31	0.000	0.014	0.2607	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
82		0.01	0.000	0.135	0.2392	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.011	0.2374	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
84	*	0.00	0.000	0.011	0.2356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
85		0.00	0.000	0.011	0.2337	0.0000	0.0001	1.66E-08	0.0000	0.0000	0.00E+00
86		0.36	0.000	0.014	0.2917	0.0000	0.0000	2.95E-09	0.0000	0.0000	0.00E+00
87		0.05	0.000	0.226	0.2631	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.169	0.2349	0.0000	0.0001	1.47E-08	0.0000	0.0000	0.00E+00
89		0.00	0.000	0.201	0.2014	0.0000	0.0000	5.45E-09	0.0000	0.0000	0.00E+00
90		0.00	0.000	0.083	0.1876	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
91		0.00	0.000	0.064	0.1769	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
92		0.00	0.000	0.054	0.1680	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.047	0.1600	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.043	0.1529	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.040	0.1452	0.0018	0.0068	2.35E-07	0.0000	0.0000	0.00E+00
96		0.00	0.000	0.037	0.1390	0.0000	0.0000	1.36E-08	0.0000	0.0000	0.00E+00
97		0.00	0.000	0.024	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
98		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

101	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
102	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
103	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
104	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
105	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
106	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
107	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
108	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
109	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
110	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
111	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
112	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
113	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
114	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
115	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
116	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
117	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
118	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
119	0.11	0.000	0.010	0.1518	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
120	0.10	0.000	0.010	0.1672	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
121	0.00	0.000	0.014	0.1653	0.0000	0.0000	4.30E-09	0.0000	0.0000	0.00E+00
122	0.02	0.000	0.015	0.1662	0.0000	0.0000	4.15E-09	0.0000	0.0000	0.00E+00
123	0.09	0.000	0.016	0.1788	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.014	0.1764	0.0000	0.0000	6.49E-09	0.0000	0.0000	0.00E+00
125	0.00	0.000	0.012	0.1745	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
126	0.00	0.000	0.012	0.1724	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
127	0.01	0.000	0.017	0.1709	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
128	0.11	0.000	0.017	0.1858	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
129	0.00	0.000	0.015	0.1833	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
130	0.00	0.000	0.015	0.1807	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
131	0.00	0.000	0.014	0.1784	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
132	0.00	0.000	0.014	0.1760	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
133	0.00	0.000	0.014	0.1737	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
134	0.00	0.000	0.014	0.1713	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.015	0.1688	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.015	0.1664	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

137	0.00	0.000	0.014	0.1641	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.014	0.1618	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.015	0.1593	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.014	0.1570	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.014	0.1546	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.016	0.1520	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
143	0.06	0.000	0.018	0.1587	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.016	0.1560	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
145	0.05	0.000	0.020	0.1605	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
146	0.01	0.000	0.020	0.1582	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.016	0.1555	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.018	0.1526	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.018	0.1496	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.016	0.1468	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.020	0.1435	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.014	0.1412	0.0000	0.0001	1.24E-08	0.0000	0.0000	0.00E+00
153	0.00	0.000	0.010	0.1395	0.0000	0.0000	7.73E-09	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.015	0.1370	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.009	0.1355	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.002	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
165	0.04	0.000	0.006	0.1404	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
166	0.05	0.000	0.012	0.1461	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
167	0.02	0.000	0.012	0.1482	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
168	0.18	0.000	0.011	0.1759	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
169	0.04	0.000	0.015	0.1808	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.015	0.1783	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.013	0.1762	0.0000	0.0000	7.23E-09	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.019	0.1730	0.0000	0.0000	7.78E-09	0.0000	0.0000	0.00E+00

173	0.00	0.000	0.020	0.1696	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
174	0.00	0.000	0.020	0.1661	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.020	0.1628	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.019	0.1596	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.022	0.1560	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.024	0.1520	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
179	0.04	0.000	0.025	0.1540	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
180	0.01	0.000	0.025	0.1514	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.019	0.1482	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.04	0.000	0.026	0.1501	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
183	0.17	0.000	0.027	0.1744	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.018	0.1716	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
185	0.01	0.000	0.028	0.1681	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.020	0.1647	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.023	0.1608	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.021	0.1572	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
189	0.00	0.000	0.015	0.1548	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
190	0.00	0.000	0.017	0.1520	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
191	0.03	0.000	0.023	0.1528	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
192	0.35	0.000	0.021	0.2077	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
193	0.00	0.000	0.016	0.2049	0.0000	0.0000	6.85E-09	0.0000	0.0000	0.00E+00
194	0.00	0.000	0.022	0.2012	0.0000	0.0000	3.89E-09	0.0000	0.0000	0.00E+00
195	0.00	0.000	0.028	0.1966	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
196	0.00	0.000	0.028	0.1919	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.028	0.1872	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
198	0.06	0.000	0.033	0.1920	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
199	0.00	0.000	0.023	0.1881	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.026	0.1837	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.022	0.1800	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
202	0.54	0.000	0.022	0.2669	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
203	0.32	0.000	0.029	0.3161	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
204	0.00	0.000	0.267	0.2716	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
205	0.00	0.000	0.031	0.2603	0.0071	0.0266	8.21E-07	0.0000	0.0000	0.00E+00
206	0.00	0.000	0.036	0.2483	0.0102	0.0383	1.19E-06	0.0000	0.0000	0.00E+00
207	0.00	0.000	0.032	0.2406	0.0056	0.0209	6.91E-07	0.0000	0.0000	0.00E+00
208	0.00	0.000	0.032	0.2353	0.0001	0.0005	3.68E-08	0.0000	0.0000	0.00E+00

209	0.00	0.000	0.039	0.2288	0.0000	0.0000	6.62E-09	0.0000	0.0000	0.00E+00
210	0.36	0.000	0.029	0.2835	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
211	0.16	0.000	0.188	0.2777	0.0005	0.0020	7.68E-08	0.0000	0.0000	0.00E+00
212	0.02	0.000	0.171	0.2522	0.0005	0.0018	8.25E-08	0.0000	0.0000	0.00E+00
213	0.05	0.000	0.171	0.2315	0.0003	0.0011	5.59E-08	0.0000	0.0000	0.00E+00
214	0.14	0.000	0.103	0.2371	0.0000	0.0000	7.90E-09	0.0000	0.0000	0.00E+00
215	0.28	0.000	0.096	0.2685	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
216	0.06	0.000	0.342	0.2207	0.0004	0.0017	6.68E-08	0.0000	0.0000	0.00E+00
217	0.00	0.000	0.077	0.2078	0.0000	0.0001	1.94E-08	0.0000	0.0000	0.00E+00
218	0.13	0.000	0.070	0.2172	0.0000	0.0000	4.15E-09	0.0000	0.0000	0.00E+00
219	0.00	0.000	0.070	0.2055	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.069	0.1940	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.069	0.1825	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.074	0.1701	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
223	0.00	0.000	0.057	0.1606	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.073	0.1485	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.052	0.1399	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.029	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
228	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
229	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
230	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
233	0.14	0.000	0.023	0.1553	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
234	0.00	0.000	0.022	0.1517	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.040	0.1450	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.041	0.1383	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.014	0.1359	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.005	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
239	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
240	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
241	0.05	0.000	0.009	0.1420	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
242	0.00	0.000	0.022	0.1383	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.010	0.1367	0.0000	0.0000	8.13E-09	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.008	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

245	0.12	0.000	0.028	0.1514	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.020	0.1480	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.033	0.1425	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
248	0.09	0.000	0.032	0.1530	0.0000	0.0000	5.00E-09	0.0000	0.0000	0.00E+00
249	0.00	0.000	0.027	0.1484	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.025	0.1443	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.031	0.1391	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
252	0.25	0.000	0.030	0.1758	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.027	0.1712	0.0000	0.0000	2.25E-09	0.0000	0.0000	0.00E+00
254	0.00	0.000	0.028	0.1665	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.035	0.1606	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.039	0.1546	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.032	0.1500	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
258	0.19	0.000	0.033	0.1761	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
259	0.00	0.000	0.037	0.1699	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
260	0.00	0.000	0.028	0.1652	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
261	0.00	0.000	0.024	0.1612	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.018	0.1582	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
263	0.00	0.000	0.019	0.1551	0.0000	0.0000	4.65E-09	0.0000	0.0000	0.00E+00
264	0.00	0.000	0.018	0.1522	0.0000	0.0000	6.81E-09	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.015	0.1497	0.0000	0.0000	2.25E-09	0.0000	0.0000	0.00E+00
266	0.10	0.000	0.023	0.1628	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.018	0.1598	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.020	0.1564	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.018	0.1535	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
270	0.02	0.000	0.022	0.1532	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
271	0.10	0.000	0.024	0.1653	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.019	0.1628	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
273	0.01	0.000	0.019	0.1611	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.017	0.1587	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.014	0.1563	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.013	0.1542	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.012	0.1522	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
278	0.15	0.000	0.017	0.1738	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
279	0.13	0.000	0.019	0.1919	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
280	0.03	0.000	0.017	0.1941	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

281	0.06	0.000	0.149	0.1795	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282	0.15	0.000	0.018	0.2008	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
283	1.48	0.136	0.203	0.3683	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
284	0.01	0.000	0.207	0.2776	0.3068	0.4772	2.42E-05	0.0000	0.0000	0.00E+00
285	0.14	0.000	0.144	0.2696	0.0095	0.0356	1.11E-06	0.0000	0.0000	0.00E+00
286	0.06	0.000	0.214	0.2389	0.0094	0.0355	1.11E-06	0.0000	0.0000	0.00E+00
287	0.25	0.000	0.160	0.2541	0.0020	0.0076	2.69E-07	0.0000	0.0000	0.00E+00
288	0.12	0.000	0.163	0.2463	0.0000	0.0000	1.23E-08	0.0000	0.0000	0.00E+00
289	0.00	0.000	0.270	0.2014	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
290	0.00	0.000	0.260	0.1580	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
291	0.00	0.000	0.120	0.1350	0.0048	0.0179	5.49E-07	0.0000	0.0000	0.00E+00
292	0.00	0.000	0.000	0.1350	0.0000	0.0000	1.47E-08	0.0000	0.0000	0.00E+00
293	0.00	0.000	0.000	0.1350	0.0000	0.0000	1.24E-09	0.0000	0.0000	0.00E+00
294	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
295	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
296	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
297	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
298	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
299	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
300	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
301	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
302	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
303	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
304	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
305	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
306	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
307	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
308	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
309	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
310	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
311	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
312	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
313	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
314	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
315	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
316	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

317	*	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318	*	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
321		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
322		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
323		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
325		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
326		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
329		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
332		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
334		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
336		0.23	0.000	0.011	0.1709	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
337		0.00	0.000	0.010	0.1692	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
338		0.00	0.000	0.010	0.1676	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
339		0.00	0.000	0.010	0.1659	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
340		0.00	0.000	0.010	0.1643	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
341		0.00	0.000	0.010	0.1627	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.010	0.1611	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
343		0.00	0.000	0.010	0.1595	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
344		0.00	0.000	0.010	0.1579	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345		0.00	0.000	0.010	0.1563	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.010	0.1546	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
347		0.00	0.000	0.010	0.1530	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
348		0.00	0.000	0.010	0.1514	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
349		0.00	0.000	0.009	0.1499	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
350		0.00	0.000	0.010	0.1482	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.011	0.1464	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
352		0.00	0.000	0.011	0.1446	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

353	0.00	0.000	0.011	0.1429	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
354	0.00	0.000	0.011	0.1409	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
355	0.00	0.000	0.012	0.1390	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
356	0.00	0.000	0.011	0.1371	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
357	0.00	0.000	0.010	0.1355	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
358	0.00	0.000	0.002	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
359	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
360	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
361	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
362	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
363	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
364	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
365	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 21			
	inches	cubic feet	percent
Precipitation	10.23	37,143.3	100.00
Runoff	0.136	493.1	1.33
Evapotranspiration	9.451	34,306.2	92.36
Drainage Collected from Layer 2	0.6739	2,446.2	6.59
Percolation/Leakage through Layer 4	0.000031	0.1117	0.00
Average Head on Top of Layer 3	0.0010	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	-0.0282	-102.2	-0.28
Soil Water at Start of Year	538.0724	1,953,202.7	5258.55
Soil Water at End of Year	538.0442	1,953,100.5	5258.28
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 22

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Column key: Head #1: drainage from Layer 3; Drain #1: drainage from Layer 2; Leak #1: leakage thru Layer 4; Head #2: drainage from Layer 15; Drain #2: drainage from Layer 14; Leak #2: leakage thru Layer 16

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
4			0.07	0.000	0.005	0.1451	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
5	*		0.00	0.000	0.005	0.1443	0.0000	0.0000	4.36E-09	0.0000	0.0000	0.00E+00
6	*		0.00	0.000	0.000	0.1443	0.0000	0.0000	4.34E-19	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.006	0.1432	0.0000	0.0000	4.46E-09	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.007	0.1420	0.0000	0.0000	1.18E-08	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.007	0.1408	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
10	*		0.00	0.000	0.007	0.1396	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.007	0.1383	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
12			0.00	0.000	0.007	0.1371	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
13			0.00	0.000	0.007	0.1359	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.007	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.002	0.1351	0.0000	0.0000	5.55E-17	0.0000	0.0000	0.00E+00
16			0.33	0.000	0.009	0.1878	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.008	0.1865	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.009	0.1850	0.0000	0.0000	8.16E-09	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.009	0.1835	0.0000	0.0000	9.89E-09	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.009	0.1821	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
21			0.00	0.000	0.009	0.1806	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.009	0.1792	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
23			0.07	0.000	0.013	0.1896	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
24			0.00	0.000	0.009	0.1881	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
25			0.00	0.000	0.009	0.1865	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
26			0.00	0.000	0.009	0.1851	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
27			0.00	0.000	0.008	0.1837	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
28			0.00	0.000	0.008	0.1823	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

29		0.00	0.000	0.008	0.1809	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.008	0.1795	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.008	0.1782	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.008	0.1768	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
33		0.06	0.000	0.012	0.1856	0.0000	0.0000	7.01E-09	0.0000	0.0000	0.00E+00
34	*	0.00	0.000	0.009	0.1841	0.0000	0.0000	6.36E-09	0.0000	0.0000	0.00E+00
35	*	0.00	0.000	0.009	0.1826	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
36		0.00	0.000	0.009	0.1811	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.009	0.1796	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.009	0.1782	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.009	0.1767	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
40	*	0.00	0.000	0.009	0.1752	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.009	0.1737	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.009	0.1722	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
43		0.00	0.000	0.009	0.1707	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
44		0.00	0.000	0.008	0.1693	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.008	0.1680	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.008	0.1667	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.008	0.1653	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
48		0.27	0.000	0.012	0.2084	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
49		0.02	0.000	0.012	0.2103	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.008	0.2090	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.008	0.2077	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
52		0.00	0.000	0.008	0.2063	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
53		0.00	0.000	0.008	0.2049	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.008	0.2036	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.008	0.2022	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
56		0.00	0.000	0.008	0.2009	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
57		0.00	0.000	0.008	0.1995	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.008	0.1982	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.008	0.1968	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60		0.00	0.000	0.008	0.1955	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
61		0.00	0.000	0.008	0.1942	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
62		0.05	0.000	0.012	0.2009	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.008	0.1996	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.008	0.1983	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

65	*	0.00	0.000	0.000	0.1983	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
66	*	0.00	0.000	0.000	0.1983	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
67	*	0.00	0.000	0.000	0.1983	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
68	*	0.00	0.000	0.000	0.1983	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
69	*	0.00	0.000	0.000	0.1983	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.008	0.1969	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.008	0.1956	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.008	0.1942	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.008	0.1928	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.008	0.1915	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.008	0.1901	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.008	0.1887	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.008	0.1874	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.008	0.1860	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
79		0.00	0.000	0.008	0.1847	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
80		0.00	0.000	0.008	0.1834	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
81		0.03	0.000	0.012	0.1865	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
82		0.00	0.000	0.008	0.1851	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.008	0.1838	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
84		0.00	0.000	0.008	0.1825	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
85		0.00	0.000	0.008	0.1811	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.008	0.1797	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.008	0.1784	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.008	0.1771	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
89		0.00	0.000	0.008	0.1757	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
90		0.00	0.000	0.008	0.1743	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
91		0.00	0.000	0.008	0.1730	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
92		0.00	0.000	0.008	0.1716	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.008	0.1702	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.008	0.1688	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.009	0.1674	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
96		0.00	0.000	0.009	0.1659	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
97		0.00	0.000	0.009	0.1644	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
98		0.00	0.000	0.009	0.1630	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99		0.00	0.000	0.009	0.1614	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100		0.00	0.000	0.009	0.1600	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

101	0.00	0.000	0.009	0.1585	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
102	0.00	0.000	0.009	0.1571	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
103	0.00	0.000	0.009	0.1555	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
104	0.00	0.000	0.010	0.1540	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
105	0.00	0.000	0.010	0.1523	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
106	0.00	0.000	0.009	0.1509	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
107	0.00	0.000	0.009	0.1494	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
108	0.00	0.000	0.008	0.1480	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
109	0.00	0.000	0.009	0.1465	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
110	0.00	0.000	0.010	0.1447	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
111	0.00	0.000	0.010	0.1431	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
112	0.00	0.000	0.010	0.1414	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
113	0.00	0.000	0.012	0.1394	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
114	0.00	0.000	0.011	0.1375	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
115	0.07	0.000	0.015	0.1465	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
116	0.00	0.000	0.011	0.1449	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
117	0.39	0.000	0.011	0.2081	0.0000	0.0000	8.94E-09	0.0000	0.0000	0.00E+00
118	0.00	0.000	0.008	0.2068	0.0000	0.0000	1.22E-08	0.0000	0.0000	0.00E+00
119	0.00	0.000	0.010	0.2051	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
120	0.00	0.000	0.011	0.2033	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
121	0.00	0.000	0.012	0.2014	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
122	0.32	0.000	0.014	0.2520	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
123	0.04	0.000	0.016	0.2555	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
124	0.69	0.001	0.015	0.3198	0.0327	0.1230	2.82E-06	0.0000	0.0000	0.00E+00
125	0.14	0.000	0.018	0.3292	0.1078	0.2202	9.08E-06	0.0000	0.0000	0.00E+00
126	0.07	0.000	0.016	0.3270	0.0121	0.0454	1.35E-06	0.0000	0.0000	0.00E+00
127	0.23	0.000	0.017	0.3382	0.0225	0.0847	2.38E-06	0.0000	0.0000	0.00E+00
128	0.05	0.000	0.342	0.2733	0.0455	0.1710	4.46E-06	0.0000	0.0000	0.00E+00
129	0.00	0.000	0.013	0.2632	0.0147	0.0552	1.65E-06	0.0000	0.0000	0.00E+00
130	0.39	0.000	0.017	0.3205	0.0098	0.0367	1.14E-06	0.0000	0.0000	0.00E+00
131	0.48	0.000	0.302	0.3192	0.0272	0.1024	2.74E-06	0.0000	0.0000	0.00E+00
132	0.00	0.000	0.357	0.2499	0.0378	0.1422	3.73E-06	0.0000	0.0000	0.00E+00
133	0.00	0.000	0.326	0.1911	0.0089	0.0335	1.05E-06	0.0000	0.0000	0.00E+00
134	0.00	0.000	0.209	0.1563	0.0001	0.0005	3.49E-08	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.091	0.1386	0.0041	0.0154	4.84E-07	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.022	0.1350	0.0000	0.0000	1.46E-08	0.0000	0.0000	0.00E+00

137	0.00	0.000	0.000	0.1350	0.0000	0.0000	9.52E-10	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
144	0.07	0.000	0.007	0.1460	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
145	0.26	0.000	0.018	0.1862	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.024	0.1822	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.027	0.1778	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.027	0.1733	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.028	0.1687	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.028	0.1640	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.026	0.1596	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.029	0.1548	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
153	0.11	0.000	0.028	0.1688	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
154	0.04	0.000	0.031	0.1704	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
155	0.46	0.000	0.037	0.2408	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.030	0.2358	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.026	0.2314	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.029	0.2266	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
159	0.07	0.000	0.029	0.2327	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.029	0.2278	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.029	0.2229	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.027	0.2185	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.028	0.2138	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.029	0.2090	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.033	0.2035	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.035	0.1976	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
167	0.00	0.000	0.032	0.1923	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
168	0.00	0.000	0.039	0.1859	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.034	0.1803	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.032	0.1749	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.031	0.1697	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.035	0.1639	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

173	0.06	0.000	0.039	0.1673	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
174	0.01	0.000	0.038	0.1619	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.031	0.1567	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.030	0.1517	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.028	0.1471	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.026	0.1428	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
179	0.04	0.000	0.037	0.1440	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.029	0.1392	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.06	0.000	0.018	0.1455	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.014	0.1433	0.0000	0.0000	2.25E-09	0.0000	0.0000	0.00E+00
183	0.04	0.000	0.025	0.1450	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
184	0.02	0.000	0.025	0.1437	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
185	0.03	0.000	0.017	0.1462	0.0000	0.0000	8.08E-09	0.0000	0.0000	0.00E+00
186	0.25	0.000	0.021	0.1840	0.0000	0.0000	9.72E-09	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.023	0.1801	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.028	0.1754	0.0000	0.0000	4.99E-09	0.0000	0.0000	0.00E+00
189	0.00	0.000	0.030	0.1704	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
190	0.00	0.000	0.029	0.1655	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.023	0.1618	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
192	0.13	0.000	0.030	0.1786	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
193	0.00	0.000	0.031	0.1741	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
194	0.00	0.000	0.032	0.1687	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
195	0.23	0.000	0.038	0.2008	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
196	0.10	0.000	0.031	0.2124	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.035	0.2065	0.0001	0.0002	1.91E-08	0.0000	0.0000	0.00E+00
198	0.04	0.000	0.039	0.2072	0.0000	0.0000	1.45E-08	0.0000	0.0000	0.00E+00
199	0.00	0.000	0.316	0.1545	0.0000	0.0000	7.99E-10	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.038	0.1483	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.035	0.1425	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
202	0.00	0.000	0.029	0.1376	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.011	0.1357	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
204	0.15	0.000	0.026	0.1570	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
205	0.19	0.000	0.021	0.1850	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
206	0.23	0.000	0.031	0.2181	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
207	0.57	0.000	0.204	0.2783	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
208	0.07	0.000	0.263	0.2460	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

209	0.00	0.000	0.485	0.1651	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
210	0.01	0.000	0.175	0.1384	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.020	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
213	0.09	0.000	0.016	0.1479	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
214	0.25	0.000	0.042	0.1829	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
215	0.02	0.000	0.050	0.1775	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
216	0.00	0.000	0.049	0.1692	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
217	0.00	0.000	0.056	0.1599	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
218	0.00	0.000	0.050	0.1516	0.0000	0.0000	7.09E-09	0.0000	0.0000	0.00E+00
219	0.00	0.000	0.059	0.1418	0.0000	0.0000	6.74E-09	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.032	0.1364	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.006	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.002	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
223	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
226	0.02	0.000	0.011	0.1358	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.003	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
228	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
229	0.10	0.000	0.026	0.1481	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
230	0.19	0.000	0.035	0.1742	0.0000	0.0000	6.78E-09	0.0000	0.0000	0.00E+00
231	0.04	0.000	0.045	0.1737	0.0000	0.0000	1.22E-09	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.036	0.1676	0.0000	0.0000	4.34E-19	0.0000	0.0000	0.00E+00
233	0.00	0.000	0.042	0.1606	0.0000	0.0000	6.98E-09	0.0000	0.0000	0.00E+00
234	0.00	0.000	0.047	0.1527	0.0000	0.0000	4.43E-09	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.044	0.1453	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.050	0.1370	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.009	0.1355	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.002	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
239	0.16	0.000	0.030	0.1562	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
240	0.00	0.000	0.024	0.1524	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
241	0.21	0.000	0.043	0.1801	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
242	0.67	0.000	0.052	0.2826	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.430	0.2109	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.086	0.1966	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

245	0.00	0.000	0.061	0.1865	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.078	0.1734	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.055	0.1643	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.069	0.1528	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
249	0.06	0.000	0.079	0.1495	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.053	0.1399	0.0014	0.0051	1.85E-07	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.020	0.1366	0.0000	0.0000	1.31E-08	0.0000	0.0000	0.00E+00
252	0.00	0.000	0.006	0.1355	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.002	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.000	0.1350	0.0000	0.0000	5.00E-09	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
259	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
260	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
261	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
263	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
264	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
271	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
275	0.04	0.000	0.012	0.1390	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.003	0.1386	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.009	0.1370	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.005	0.1362	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.005	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.002	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

281	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282	0.00	0.000	0.000	0.1350	0.0000	0.0000	4.98E-09	0.0000	0.0000	0.00E+00
283	0.00	0.000	0.000	0.1350	0.0000	0.0000	8.76E-09	0.0000	0.0000	0.00E+00
284	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
285	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
286	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
287	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
288	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
289	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
290	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
291	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
292	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
293	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
294	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
295	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
296	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
297	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
298	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
299	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
300	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
301	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
302	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
303	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
304	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
305	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
306	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
307	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
308	0.03	0.000	0.010	0.1386	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
309	0.00	0.000	0.001	0.1384	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
310	0.00	0.000	0.005	0.1376	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
311	0.00	0.000	0.003	0.1371	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
312	0.00	0.000	0.003	0.1366	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
313	0.00	0.000	0.002	0.1362	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
314	0.00	0.000	0.003	0.1358	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
315	0.00	0.000	0.002	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
316	0.00	0.000	0.002	0.1351	0.0000	0.0000	4.98E-09	0.0000	0.0000	0.00E+00

317		0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320		0.00	0.000	0.000	0.1350	0.0000	0.0000	2.43E-09	0.0000	0.0000	0.00E+00
321		0.00	0.000	0.000	0.1350	0.0000	0.0000	9.56E-09	0.0000	0.0000	0.00E+00
322		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
323		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
325		0.00	0.000	0.002	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
326	*	0.15	0.000	0.073	0.1383	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.057	0.1381	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328		0.00	0.000	0.004	0.1375	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
329		0.00	0.000	0.002	0.1371	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330		0.00	0.000	0.002	0.1367	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331		0.00	0.000	0.002	0.1364	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
332		0.00	0.000	0.002	0.1361	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333		0.00	0.000	0.002	0.1359	0.0000	0.0000	2.49E-09	0.0000	0.0000	0.00E+00
334		0.00	0.000	0.002	0.1356	0.0000	0.0000	1.03E-08	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.002	0.1354	0.0000	0.0000	2.32E-09	0.0000	0.0000	0.00E+00
336		0.00	0.000	0.002	0.1351	0.0000	0.0000	7.52E-09	0.0000	0.0000	0.00E+00
337		0.00	0.000	0.001	0.1350	0.0000	0.0000	2.28E-09	0.0000	0.0000	0.00E+00
338		0.00	0.000	0.000	0.1350	0.0000	0.0000	5.09E-09	0.0000	0.0000	0.00E+00
339		0.00	0.000	0.000	0.1350	0.0000	0.0000	6.81E-09	0.0000	0.0000	0.00E+00
340		0.00	0.000	0.000	0.1350	0.0000	0.0000	5.18E-09	0.0000	0.0000	0.00E+00
341		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
343		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
344		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
347		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
348		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
349		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
350		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
352		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

353	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
354	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
355	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
356	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
357	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
358	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
359	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
360	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
361	0.10	0.000	0.010	0.1493	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
362	0.00	0.000	0.004	0.1486	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
363	0.00	0.000	0.004	0.1480	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
364	0.00	0.000	0.005	0.1472	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
365	0.00	0.000	0.005	0.1463	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 22			
	inches	cubic feet	percent
Precipitation	9.14	33,182.8	100.00
Runoff	0.001	2.7403	0.01
Evapotranspiration	8.037	29,175.0	87.92
Drainage Collected from Layer 2	1.0356	3,759.1	11.33
Percolation/Leakage through Layer 4	0.000031	0.1139	0.00
Average Head on Top of Layer 3	0.0009	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	0.0678	246.0	0.74
Soil Water at Start of Year	538.0442	1,953,100.5	5885.88
Soil Water at End of Year	538.1120	1,953,346.5	5886.62
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 23

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Column key: Head #1: drainage from Layer 3; Drain #1: drainage from Layer 2; Leak #1: leakage thru Layer 4; Head #2: drainage from Layer 15; Drain #2: drainage from Layer 14; Leak #2: leakage thru Layer 16

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.00	0.000	0.005	0.1454	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.005	0.1445	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.005	0.1436	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.005	0.1427	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.005	0.1418	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.005	0.1409	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.005	0.1400	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.005	0.1391	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.005	0.1383	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
10			0.07	0.000	0.012	0.1484	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
11			0.05	0.000	0.013	0.1547	0.0000	0.0000	2.82E-09	0.0000	0.0000	0.00E+00
12			0.00	0.000	0.006	0.1536	0.0000	0.0000	4.34E-19	0.0000	0.0000	0.00E+00
13			0.00	0.000	0.005	0.1527	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.005	0.1518	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
15			0.07	0.000	0.012	0.1613	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
16			0.00	0.000	0.006	0.1603	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.005	0.1594	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.005	0.1586	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.005	0.1577	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.005	0.1569	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
21	*		0.00	0.000	0.000	0.1569	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.005	0.1560	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
23	*		0.00	0.000	0.000	0.1560	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
24	*		0.00	0.000	0.000	0.1560	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
25			0.00	0.000	0.005	0.1552	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
26			0.00	0.000	0.005	0.1543	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
27			0.00	0.000	0.005	0.1535	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
28			0.01	0.000	0.011	0.1539	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

29		0.13	0.000	0.013	0.1736	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.006	0.1726	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.006	0.1717	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.005	0.1708	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
33		0.00	0.000	0.005	0.1700	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.006	0.1690	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
35		0.00	0.000	0.006	0.1680	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
36	*	0.00	0.000	0.006	0.1670	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
37		0.13	0.000	0.013	0.1869	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
38		0.03	0.000	0.013	0.1890	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.006	0.1879	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.006	0.1869	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.006	0.1859	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.006	0.1849	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
43		0.03	0.000	0.013	0.1881	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
44		0.00	0.000	0.006	0.1872	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.006	0.1861	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.006	0.1851	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.006	0.1841	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.006	0.1831	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.006	0.1822	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
50		0.19	0.000	0.013	0.2119	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
51	*	0.13	0.000	0.051	0.2151	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
52		0.24	0.000	0.076	0.2533	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
53		0.00	0.000	0.006	0.2523	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.007	0.2511	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.007	0.2500	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
56		0.00	0.000	0.007	0.2489	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
57		0.00	0.000	0.007	0.2477	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.007	0.2465	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.007	0.2454	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60		0.05	0.000	0.014	0.2516	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
61		0.01	0.000	0.012	0.2509	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
62		0.03	0.000	0.014	0.2538	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.007	0.2527	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.007	0.2516	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

65		0.00	0.000	0.007	0.2504	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.007	0.2493	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
67		0.19	0.000	0.014	0.2790	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.007	0.2778	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.007	0.2767	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.007	0.2756	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.007	0.2744	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.007	0.2733	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.007	0.2722	0.0000	0.0002	2.20E-08	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.007	0.2709	0.0001	0.0003	2.65E-08	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.007	0.2695	0.0004	0.0014	7.16E-08	0.0000	0.0000	0.00E+00
76	*	0.00	0.000	0.007	0.2683	0.0004	0.0013	6.92E-08	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.007	0.2669	0.0005	0.0017	8.30E-08	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.007	0.2658	0.0001	0.0002	2.35E-08	0.0000	0.0000	0.00E+00
79		0.00	0.000	0.007	0.2646	0.0000	0.0000	5.08E-09	0.0000	0.0000	0.00E+00
80		0.00	0.000	0.007	0.2635	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
81		0.00	0.000	0.007	0.2624	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
82		0.00	0.000	0.007	0.2613	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.007	0.2602	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
84		0.00	0.000	0.007	0.2591	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
85		0.08	0.000	0.012	0.2697	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
86		0.02	0.000	0.012	0.2713	0.0001	0.0004	3.02E-08	0.0000	0.0000	0.00E+00
87		0.01	0.000	0.011	0.2714	0.0005	0.0018	8.34E-08	0.0000	0.0000	0.00E+00
88		0.01	0.000	0.010	0.2706	0.0004	0.0015	7.23E-08	0.0000	0.0000	0.00E+00
89		0.23	0.000	0.012	0.3067	0.0000	0.0000	9.82E-09	0.0000	0.0000	0.00E+00
90		0.00	0.000	0.008	0.3055	0.0003	0.0010	4.98E-08	0.0000	0.0000	0.00E+00
91		0.01	0.000	0.010	0.3029	0.0008	0.0030	1.13E-07	0.0000	0.0000	0.00E+00
92		0.70	0.000	0.012	0.3379	0.3109	0.3938	2.42E-05	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.221	0.2829	0.0510	0.1918	4.92E-06	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.260	0.2295	0.0151	0.0568	1.69E-06	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.192	0.1941	0.0088	0.0329	1.03E-06	0.0000	0.0000	0.00E+00
96		0.00	0.000	0.084	0.1802	0.0001	0.0005	3.51E-08	0.0000	0.0000	0.00E+00
97		0.00	0.000	0.064	0.1694	0.0000	0.0000	6.53E-09	0.0000	0.0000	0.00E+00
98		0.00	0.000	0.055	0.1603	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99		0.00	0.000	0.049	0.1522	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100		0.00	0.000	0.044	0.1449	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

101	0.00	0.000	0.042	0.1380	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
102	0.00	0.000	0.018	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
103	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
104	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
105	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
106	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
107	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
108	0.01	0.000	0.006	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
109	0.04	0.000	0.007	0.1416	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
110	0.00	0.000	0.011	0.1397	0.0000	0.0000	4.54E-09	0.0000	0.0000	0.00E+00
111	0.00	0.000	0.014	0.1375	0.0000	0.0000	6.56E-09	0.0000	0.0000	0.00E+00
112	0.00	0.000	0.006	0.1365	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
113	0.00	0.000	0.006	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
114	0.00	0.000	0.002	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
115	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
116	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
117	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
118	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
119	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
120	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
121	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
122	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
123	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
125	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
126	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
127	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
128	0.22	0.000	0.012	0.1700	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
129	0.03	0.000	0.012	0.1734	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
130	0.03	0.000	0.017	0.1758	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
131	0.00	0.000	0.013	0.1736	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
132	0.00	0.000	0.013	0.1715	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
133	0.00	0.000	0.013	0.1693	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
134	0.00	0.000	0.014	0.1669	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.015	0.1644	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
136	0.27	0.000	0.019	0.2060	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

137	0.82	0.003	0.019	0.3384	0.0000	0.0000	1.98E-09	0.0000	0.0000	0.00E+00
138	0.47	0.000	0.022	0.3343	0.1138	0.4276	1.01E-05	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.329	0.2706	0.0254	0.0955	2.65E-06	0.0000	0.0000	0.00E+00
140	0.06	0.000	0.427	0.2007	0.0124	0.0465	1.40E-06	0.0000	0.0000	0.00E+00
141	0.01	0.000	0.205	0.1667	0.0042	0.0157	5.15E-07	0.0000	0.0000	0.00E+00
142	0.04	0.000	0.086	0.1594	0.0004	0.0016	7.67E-08	0.0000	0.0000	0.00E+00
143	0.08	0.000	0.073	0.1606	0.0000	0.0000	1.10E-08	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.059	0.1507	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.050	0.1425	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.041	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.003	0.1351	0.0000	0.0000	2.73E-17	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
150	0.01	0.000	0.006	0.1361	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.003	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.002	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
153	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
160	0.01	0.000	0.005	0.1360	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
161	0.42	0.000	0.014	0.2042	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
162	0.04	0.000	0.021	0.2078	0.0000	0.0000	1.98E-09	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.022	0.2041	0.0000	0.0000	4.49E-09	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.023	0.2002	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.024	0.1962	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.027	0.1923	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
167	0.00	0.000	0.024	0.1882	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
168	0.00	0.000	0.024	0.1843	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.024	0.1803	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.024	0.1763	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.021	0.1727	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.021	0.1693	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

173	0.00	0.000	0.020	0.1660	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
174	0.00	0.000	0.021	0.1624	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.022	0.1588	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
176	0.05	0.000	0.025	0.1631	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
177	0.09	0.000	0.027	0.1733	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.026	0.1697	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
179	0.03	0.000	0.027	0.1709	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
180	0.14	0.000	0.025	0.1903	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.02	0.000	0.027	0.1894	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.023	0.1857	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
183	0.00	0.000	0.022	0.1820	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.023	0.1781	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
185	0.00	0.000	0.026	0.1737	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.027	0.1692	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.031	0.1645	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.023	0.1606	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
189	0.01	0.000	0.023	0.1579	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
190	0.00	0.000	0.021	0.1543	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.020	0.1510	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
192	0.00	0.000	0.028	0.1464	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
193	0.00	0.000	0.027	0.1419	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
194	0.00	0.000	0.028	0.1372	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
195	0.02	0.000	0.017	0.1384	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
196	0.07	0.000	0.010	0.1486	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
197	0.01	0.000	0.017	0.1479	0.0000	0.0002	1.97E-08	0.0000	0.0000	0.00E+00
198	0.00	0.000	0.021	0.1445	0.0000	0.0000	1.04E-08	0.0000	0.0000	0.00E+00
199	0.00	0.000	0.018	0.1415	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.019	0.1383	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.017	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
202	0.00	0.000	0.002	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
203	0.06	0.000	0.008	0.1435	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
204	0.00	0.000	0.012	0.1416	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
205	0.01	0.000	0.023	0.1396	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
206	0.00	0.000	0.016	0.1369	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
207	0.00	0.000	0.008	0.1362	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
208	0.19	0.000	0.019	0.1647	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

209	0.12	0.000	0.019	0.1811	0.0000	0.0000	9.29E-09	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.025	0.1769	0.0000	0.0000	2.51E-09	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.032	0.1716	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.033	0.1661	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.033	0.1606	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.032	0.1552	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.035	0.1494	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
216	0.00	0.000	0.036	0.1434	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
217	0.00	0.000	0.033	0.1379	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
218	0.00	0.000	0.016	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
219	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
223	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
228	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
229	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
230	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
233	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
234	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
239	0.80	0.000	0.027	0.2631	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
240	0.51	0.000	0.027	0.3331	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.276	0.2754	0.0368	0.1382	3.66E-06	0.0000	0.0000	0.00E+00
242	0.00	0.000	0.296	0.2198	0.0071	0.0268	8.37E-07	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.218	0.1805	0.0081	0.0305	9.58E-07	0.0000	0.0000	0.00E+00
244	0.38	0.000	0.111	0.2245	0.0017	0.0063	2.34E-07	0.0000	0.0000	0.00E+00

245	0.05	0.000	0.088	0.2180	0.0000	0.0001	1.67E-08	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.075	0.2056	0.0000	0.0000	3.03E-09	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.067	0.1943	0.0001	0.0004	1.70E-08	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.054	0.1852	0.0002	0.0006	3.87E-08	0.0000	0.0000	0.00E+00
249	0.00	0.000	0.054	0.1762	0.0000	0.0000	1.37E-08	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.049	0.1680	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
251	0.20	0.000	0.050	0.1932	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
252	0.04	0.000	0.050	0.1920	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
253	0.04	0.000	0.048	0.1900	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.02	0.000	0.044	0.1853	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
255	0.21	0.000	0.044	0.2130	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
256	0.27	0.000	0.323	0.1982	0.0097	0.0364	1.09E-06	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.035	0.1924	0.0003	0.0013	6.28E-08	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.034	0.1867	0.0000	0.0000	8.21E-09	0.0000	0.0000	0.00E+00
259	0.00	0.000	0.029	0.1818	0.0000	0.0000	9.39E-09	0.0000	0.0000	0.00E+00
260	0.00	0.000	0.027	0.1772	0.0000	0.0000	3.47E-09	0.0000	0.0000	0.00E+00
261	0.00	0.000	0.028	0.1726	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
262	0.10	0.000	0.035	0.1829	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
263	0.01	0.000	0.037	0.1790	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
264	0.04	0.000	0.032	0.1801	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.028	0.1754	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.030	0.1712	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.026	0.1669	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
268	0.14	0.000	0.031	0.1855	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.024	0.1815	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.023	0.1776	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
271	0.00	0.000	0.022	0.1740	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.022	0.1703	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.021	0.1667	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.018	0.1636	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.018	0.1606	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.016	0.1579	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.017	0.1550	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.017	0.1521	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.016	0.1494	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.016	0.1468	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

281		0.00	0.000	0.016	0.1441	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282		0.00	0.000	0.016	0.1415	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
283		0.00	0.000	0.016	0.1389	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
284		0.00	0.000	0.015	0.1364	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
285		0.00	0.000	0.007	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
286		0.00	0.000	0.002	0.1350	0.0000	0.0000	1.32E-08	0.0000	0.0000	0.00E+00
287		0.00	0.000	0.000	0.1350	0.0000	0.0000	4.25E-09	0.0000	0.0000	0.00E+00
288		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
289		0.09	0.000	0.008	0.1487	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
290		0.00	0.000	0.006	0.1476	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
291		0.00	0.000	0.007	0.1465	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
292		0.00	0.000	0.009	0.1449	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
293		0.00	0.000	0.010	0.1433	0.0000	0.0000	3.13E-09	0.0000	0.0000	0.00E+00
294		0.00	0.000	0.010	0.1417	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
295	*	0.22	0.000	0.051	0.1450	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
296		0.00	0.000	0.134	0.1482	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
297		0.01	0.000	0.015	0.1479	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
298		0.00	0.000	0.007	0.1467	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
299		0.00	0.000	0.007	0.1455	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
300		0.00	0.000	0.009	0.1441	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
301	*	0.00	0.000	0.009	0.1426	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
302	*	0.00	0.000	0.000	0.1426	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
303		0.00	0.000	0.009	0.1411	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
304		0.00	0.000	0.009	0.1396	0.0000	0.0000	4.06E-09	0.0000	0.0000	0.00E+00
305		0.00	0.000	0.009	0.1381	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
306		0.00	0.000	0.009	0.1366	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
307		0.00	0.000	0.007	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
308		0.00	0.000	0.002	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
309		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
310		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
311		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
312		0.31	0.000	0.012	0.1842	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
313		0.18	0.000	0.015	0.2125	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
314		0.00	0.000	0.010	0.2108	0.0000	0.0000	3.58E-09	0.0000	0.0000	0.00E+00
315		0.00	0.000	0.010	0.2091	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
316		0.00	0.000	0.011	0.2073	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

317		0.00	0.000	0.011	0.2055	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318		0.00	0.000	0.011	0.2037	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319		0.00	0.000	0.011	0.2019	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320		0.00	0.000	0.011	0.2001	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
321		0.00	0.000	0.011	0.1983	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
322		0.00	0.000	0.011	0.1965	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
323		0.00	0.000	0.010	0.1948	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324		0.00	0.000	0.010	0.1931	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
325		0.00	0.000	0.010	0.1913	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
326		0.00	0.000	0.010	0.1896	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.010	0.1879	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328	*	0.00	0.000	0.000	0.1879	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
329	*	0.00	0.000	0.010	0.1862	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330		0.00	0.000	0.010	0.1846	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331		0.00	0.000	0.010	0.1829	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
332		0.00	0.000	0.010	0.1812	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333	*	0.00	0.000	0.010	0.1796	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
334	*	0.00	0.000	0.000	0.1796	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.010	0.1778	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
336		0.00	0.000	0.010	0.1761	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
337		0.00	0.000	0.010	0.1744	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
338		0.00	0.000	0.010	0.1727	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
339		0.00	0.000	0.010	0.1710	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
340		0.00	0.000	0.010	0.1693	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
341		0.00	0.000	0.010	0.1676	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.010	0.1659	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
343		0.00	0.000	0.010	0.1643	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
344		0.00	0.000	0.010	0.1626	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345		0.00	0.000	0.010	0.1610	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.010	0.1593	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
347		0.00	0.000	0.010	0.1577	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
348		0.00	0.000	0.010	0.1561	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
349		0.00	0.000	0.010	0.1545	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
350		0.00	0.000	0.010	0.1528	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.010	0.1512	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
352		0.00	0.000	0.010	0.1497	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

353		0.00	0.000	0.010	0.1481	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
354		0.00	0.000	0.009	0.1465	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
355	*	0.00	0.000	0.000	0.1465	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
356	*	0.00	0.000	0.000	0.1465	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
357	*	0.00	0.000	0.000	0.1465	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
358	*	0.00	0.000	0.000	0.1465	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.010	0.1449	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
360		0.00	0.000	0.009	0.1434	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
361	*	0.00	0.000	0.009	0.1418	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
362		0.00	0.000	0.009	0.1403	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
363		0.00	0.000	0.009	0.1387	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
364		0.00	0.000	0.010	0.1371	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
365		0.09	0.000	0.014	0.1499	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 23			
	inches	cubic feet	percent
Precipitation	9.57	34,756.6	100.00
Runoff	0.003	10.3	0.03
Evapotranspiration	8.034	29,162.9	83.91
Drainage Collected from Layer 2	1.5161	5,503.6	15.83
Percolation/Leakage through Layer 4	0.000054	0.1973	0.00
Average Head on Top of Layer 3	0.0017	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	0.0220	79.8	0.23
Soil Water at Start of Year	538.1120	1,953,346.5	5620.07
Soil Water at End of Year	538.1340	1,953,426.3	5620.30
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 24

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Column key: Head #1: drainage from Layer 3; Drain #1: drainage from Layer 2; Leak #1: leakage thru Layer 4; Head #2: drainage from Layer 15; Drain #2: drainage from Layer 14; Leak #2: leakage thru Layer 16

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1	*		0.00	0.000	0.009	0.1484	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.007	0.1473	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
3	*		0.00	0.000	0.000	0.1473	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.006	0.1464	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.006	0.1453	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.006	0.1443	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.006	0.1432	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.006	0.1422	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.006	0.1412	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.006	0.1402	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.006	0.1391	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
12			0.00	0.000	0.006	0.1381	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
13			0.00	0.000	0.006	0.1371	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.006	0.1361	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
15			0.02	0.000	0.010	0.1374	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
16			0.04	0.000	0.007	0.1431	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
17			0.10	0.000	0.009	0.1577	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.008	0.1568	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.006	0.1558	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.006	0.1548	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
21			0.01	0.000	0.010	0.1553	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.006	0.1543	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.007	0.1531	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
24			0.00	0.000	0.006	0.1521	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
25			0.00	0.000	0.006	0.1512	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
26			0.00	0.000	0.006	0.1502	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
27			0.11	0.000	0.011	0.1665	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
28			0.00	0.000	0.009	0.1655	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

29		0.53	0.000	0.011	0.2515	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.159	0.2250	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.008	0.2236	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.008	0.2223	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
33		0.10	0.000	0.013	0.2362	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
34		0.01	0.000	0.013	0.2363	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
35		0.00	0.000	0.008	0.2349	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
36		0.00	0.000	0.008	0.2335	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.008	0.2322	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.008	0.2308	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.008	0.2295	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.008	0.2282	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.008	0.2269	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.008	0.2256	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
43		0.00	0.000	0.008	0.2242	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
44		0.00	0.000	0.008	0.2229	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.008	0.2216	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
46		0.01	0.000	0.012	0.2219	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
47	*	0.00	0.000	0.000	0.2219	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.008	0.2206	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.008	0.2193	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
50	*	0.00	0.000	0.008	0.2180	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.008	0.2167	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
52		0.00	0.000	0.008	0.2153	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
53		0.00	0.000	0.008	0.2140	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.008	0.2127	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.008	0.2114	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
56		0.00	0.000	0.008	0.2101	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
57		0.40	0.000	0.013	0.2754	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.197	0.2425	0.0000	0.0002	1.24E-08	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.008	0.2412	0.0000	0.0000	1.43E-08	0.0000	0.0000	0.00E+00
60		0.00	0.000	0.008	0.2399	0.0000	0.0000	9.37E-11	0.0000	0.0000	0.00E+00
61		0.00	0.000	0.008	0.2386	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.008	0.2374	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.008	0.2361	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.008	0.2348	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

65		0.00	0.000	0.008	0.2335	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.008	0.2323	0.0000	0.0000	2.40E-09	0.0000	0.0000	0.00E+00
67		0.00	0.000	0.008	0.2310	0.0000	0.0000	9.06E-09	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.008	0.2297	0.0000	0.0001	2.08E-08	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.008	0.2284	0.0000	0.0002	2.19E-08	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.008	0.2272	0.0000	0.0002	2.29E-08	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.007	0.2259	0.0001	0.0002	2.41E-08	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.007	0.2246	0.0001	0.0002	2.52E-08	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.007	0.2233	0.0001	0.0003	2.63E-08	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.007	0.2220	0.0001	0.0003	2.69E-08	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.007	0.2208	0.0001	0.0002	2.58E-08	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.007	0.2195	0.0001	0.0002	2.44E-08	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.007	0.2182	0.0000	0.0002	2.15E-08	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.007	0.2170	0.0001	0.0003	2.78E-08	0.0000	0.0000	0.00E+00
79		0.00	0.000	0.007	0.2157	0.0001	0.0002	2.44E-08	0.0000	0.0000	0.00E+00
80		0.00	0.000	0.007	0.2144	0.0001	0.0003	2.82E-08	0.0000	0.0000	0.00E+00
81		0.00	0.000	0.007	0.2131	0.0001	0.0003	3.00E-08	0.0000	0.0000	0.00E+00
82		0.08	0.000	0.010	0.2245	0.0000	0.0001	1.99E-08	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.007	0.2233	0.0000	0.0000	4.26E-09	0.0000	0.0000	0.00E+00
84		0.00	0.000	0.007	0.2220	0.0001	0.0004	3.07E-08	0.0000	0.0000	0.00E+00
85		0.00	0.000	0.007	0.2208	0.0000	0.0001	2.03E-08	0.0000	0.0000	0.00E+00
86	*	0.00	0.000	0.007	0.2196	0.0001	0.0003	2.85E-08	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.007	0.2183	0.0002	0.0006	4.11E-08	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.007	0.2170	0.0001	0.0003	2.77E-08	0.0000	0.0000	0.00E+00
89		0.30	0.000	0.010	0.2646	0.0000	0.0000	6.85E-09	0.0000	0.0000	0.00E+00
90		0.36	0.000	0.346	0.2668	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
91		0.10	0.000	0.190	0.2516	0.0003	0.0010	4.72E-08	0.0000	0.0000	0.00E+00
92		0.00	0.000	0.247	0.2105	0.0000	0.0000	1.46E-08	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.201	0.1770	0.0000	0.0000	1.03E-09	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.083	0.1631	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.064	0.1524	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
96		0.00	0.000	0.048	0.1443	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
97		0.00	0.000	0.048	0.1364	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
98		0.00	0.000	0.008	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

101		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
102	*	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
103		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
104	*	0.07	0.000	0.068	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
105		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
106		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
107		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
108		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
109		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
110		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
111		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
112		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
113		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
114		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
115		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
116		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
117		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
118		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
119		0.01	0.000	0.004	0.1359	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
120		0.00	0.000	0.002	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
121		0.00	0.000	0.003	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
122		0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
123		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
124		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
125		0.18	0.000	0.010	0.1629	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
126		0.00	0.000	0.007	0.1616	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
127		0.00	0.000	0.012	0.1596	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
128		0.00	0.000	0.012	0.1577	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
129		0.00	0.000	0.012	0.1557	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
130		0.00	0.000	0.012	0.1537	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
131		0.67	0.000	0.014	0.2622	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
132		0.05	0.000	0.018	0.2672	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
133		0.02	0.000	0.019	0.2672	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
134		0.00	0.000	0.017	0.2644	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
135		0.00	0.000	0.018	0.2615	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
136		0.00	0.000	0.017	0.2587	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

137	0.00	0.000	0.017	0.2559	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.017	0.2530	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.018	0.2499	0.0000	0.0000	2.84E-09	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.018	0.2470	0.0000	0.0000	1.20E-08	0.0000	0.0000	0.00E+00
141	0.15	0.000	0.020	0.2692	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.018	0.2662	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.017	0.2634	0.0000	0.0001	1.09E-08	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.016	0.2606	0.0000	0.0001	1.64E-08	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.016	0.2579	0.0000	0.0000	9.60E-09	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.018	0.2549	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
147	0.19	0.000	0.021	0.2836	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
148	0.25	0.000	0.020	0.3209	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
149	0.62	0.001	0.022	0.3347	0.1653	0.4527	1.40E-05	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.277	0.2668	0.0499	0.1875	4.87E-06	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.325	0.2034	0.0174	0.0654	1.91E-06	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.188	0.1712	0.0036	0.0134	4.48E-07	0.0000	0.0000	0.00E+00
153	0.00	0.000	0.090	0.1561	0.0000	0.0000	1.44E-08	0.0000	0.0000	0.00E+00
154	0.07	0.000	0.071	0.1554	0.0000	0.0000	4.55E-10	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.060	0.1454	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.052	0.1366	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.008	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
161	0.02	0.000	0.005	0.1370	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.003	0.1365	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.006	0.1355	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
164	0.02	0.000	0.007	0.1370	0.0000	0.0000	2.27E-09	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.003	0.1364	0.0000	0.0000	1.77E-09	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.006	0.1355	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
167	0.00	0.000	0.002	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
168	0.26	0.000	0.016	0.1762	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.021	0.1726	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.022	0.1690	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.026	0.1646	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.026	0.1604	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

173	0.00	0.000	0.028	0.1558	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
174	0.01	0.000	0.027	0.1522	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.025	0.1480	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.026	0.1437	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.025	0.1396	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.023	0.1358	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.004	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
183	0.03	0.000	0.004	0.1387	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.002	0.1384	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
185	0.00	0.000	0.008	0.1370	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.004	0.1364	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
187	0.41	0.000	0.014	0.2029	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
188	0.09	0.000	0.021	0.2138	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
189	0.00	0.000	0.021	0.2103	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
190	0.23	0.000	0.029	0.2432	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
191	0.17	0.000	0.024	0.2675	0.0000	0.0000	9.86E-09	0.0000	0.0000	0.00E+00
192	0.00	0.000	0.026	0.2632	0.0000	0.0000	4.92E-09	0.0000	0.0000	0.00E+00
193	0.00	0.000	0.027	0.2586	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
194	0.00	0.000	0.028	0.2539	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
195	0.20	0.000	0.030	0.2821	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
196	0.00	0.000	0.029	0.2774	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.024	0.2733	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
198	0.00	0.000	0.033	0.2678	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
199	0.00	0.000	0.032	0.2625	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.036	0.2565	0.0000	0.0001	6.07E-09	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.039	0.2499	0.0001	0.0003	2.81E-08	0.0000	0.0000	0.00E+00
202	0.00	0.000	0.034	0.2441	0.0002	0.0007	4.25E-08	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.027	0.2395	0.0002	0.0007	4.59E-08	0.0000	0.0000	0.00E+00
204	0.01	0.000	0.037	0.2345	0.0001	0.0004	3.06E-08	0.0000	0.0000	0.00E+00
205	0.18	0.000	0.030	0.2600	0.0000	0.0000	6.21E-09	0.0000	0.0000	0.00E+00
206	0.03	0.000	0.030	0.2593	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
207	0.00	0.000	0.028	0.2547	0.0002	0.0006	4.16E-08	0.0000	0.0000	0.00E+00
208	0.08	0.000	0.033	0.2623	0.0001	0.0004	3.25E-08	0.0000	0.0000	0.00E+00

209	0.87	0.007	0.419	0.3362	0.0000	0.0000	1.37E-08	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.415	0.2408	0.0413	0.1554	3.78E-06	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.455	0.1613	0.0065	0.0243	7.77E-07	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.136	0.1350	0.0060	0.0225	6.75E-07	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.000	0.1350	0.0000	0.0000	1.50E-08	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.000	0.1350	0.0000	0.0000	1.60E-09	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
216	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
217	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
218	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
219	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
223	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
228	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
229	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
230	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
233	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
234	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
239	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
240	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
241	0.20	0.000	0.016	0.1665	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
242	0.13	0.000	0.017	0.1854	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
243	0.02	0.000	0.022	0.1847	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
244	0.22	0.000	0.031	0.2158	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

245	0.08	0.000	0.027	0.2240	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
246	0.03	0.000	0.031	0.2240	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.032	0.2186	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.035	0.2128	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
249	0.00	0.000	0.026	0.2084	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
250	0.43	0.000	0.030	0.2746	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.037	0.2684	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
252	0.00	0.000	0.033	0.2628	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.034	0.2572	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.00	0.000	0.034	0.2515	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.033	0.2460	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.029	0.2412	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.029	0.2364	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.024	0.2324	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
259	0.00	0.000	0.029	0.2276	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
260	0.00	0.000	0.024	0.2237	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
261	0.00	0.000	0.021	0.2202	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
262	0.05	0.000	0.022	0.2242	0.0000	0.0001	1.05E-08	0.0000	0.0000	0.00E+00
263	0.09	0.000	0.021	0.2362	0.0000	0.0001	2.06E-08	0.0000	0.0000	0.00E+00
264	0.00	0.000	0.021	0.2327	0.0000	0.0000	1.57E-08	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.020	0.2293	0.0000	0.0002	2.13E-08	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.019	0.2262	0.0000	0.0000	1.50E-08	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.021	0.2226	0.0000	0.0000	1.56E-08	0.0000	0.0000	0.00E+00
268	0.34	0.000	0.025	0.2756	0.0000	0.0002	2.13E-08	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.022	0.2719	0.0000	0.0000	1.52E-08	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.022	0.2682	0.0000	0.0000	1.78E-09	0.0000	0.0000	0.00E+00
271	0.00	0.000	0.022	0.2645	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.028	0.2599	0.0001	0.0002	2.28E-08	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.023	0.2560	0.0001	0.0002	2.41E-08	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.023	0.2520	0.0001	0.0003	2.63E-08	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.017	0.2491	0.0001	0.0004	3.20E-08	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.017	0.2462	0.0001	0.0005	3.49E-08	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.015	0.2435	0.0001	0.0004	3.21E-08	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.016	0.2408	0.0003	0.0009	5.48E-08	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.016	0.2381	0.0001	0.0005	3.61E-08	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.016	0.2355	0.0000	0.0000	8.56E-09	0.0000	0.0000	0.00E+00

281	0.00	0.000	0.014	0.2331	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282	0.00	0.000	0.014	0.2307	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
283	0.00	0.000	0.014	0.2283	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
284	0.00	0.000	0.014	0.2258	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
285	0.00	0.000	0.015	0.2233	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
286	0.00	0.000	0.015	0.2209	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
287	0.00	0.000	0.015	0.2184	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
288	0.00	0.000	0.014	0.2161	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
289	0.00	0.000	0.014	0.2138	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
290	0.28	0.000	0.017	0.2575	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
291	0.21	0.000	0.017	0.2901	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
292	0.10	0.000	0.016	0.3037	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
293	0.00	0.000	0.013	0.3016	0.0000	0.0001	1.07E-08	0.0000	0.0000	0.00E+00
294	0.00	0.000	0.012	0.2993	0.0000	0.0000	1.42E-08	0.0000	0.0000	0.00E+00
295	0.00	0.000	0.012	0.2903	0.0095	0.0359	1.11E-06	0.0000	0.0000	0.00E+00
296	0.00	0.000	0.011	0.2827	0.0095	0.0357	1.12E-06	0.0000	0.0000	0.00E+00
297	0.00	0.000	0.011	0.2772	0.0067	0.0253	8.22E-07	0.0000	0.0000	0.00E+00
298	0.00	0.000	0.011	0.2752	0.0012	0.0045	1.71E-07	0.0000	0.0000	0.00E+00
299	0.00	0.000	0.011	0.2734	0.0000	0.0000	1.12E-08	0.0000	0.0000	0.00E+00
300	0.00	0.000	0.011	0.2716	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
301	0.00	0.000	0.011	0.2698	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
302	0.00	0.000	0.011	0.2681	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
303	0.00	0.000	0.010	0.2663	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
304	0.00	0.000	0.010	0.2646	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
305	0.00	0.000	0.010	0.2628	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
306	0.00	0.000	0.010	0.2611	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
307	0.00	0.000	0.010	0.2594	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
308	0.00	0.000	0.010	0.2576	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
309	0.00	0.000	0.010	0.2559	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
310	0.00	0.000	0.010	0.2542	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
311	0.00	0.000	0.010	0.2525	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
312	0.00	0.000	0.010	0.2507	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
313	0.00	0.000	0.010	0.2490	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
314	0.00	0.000	0.010	0.2473	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
315	0.00	0.000	0.010	0.2457	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
316	0.00	0.000	0.010	0.2440	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

317		0.00	0.000	0.010	0.2424	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318		0.00	0.000	0.010	0.2408	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319		0.00	0.000	0.010	0.2392	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320		0.00	0.000	0.010	0.2376	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
321		0.00	0.000	0.010	0.2360	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
322		0.00	0.000	0.010	0.2344	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
323		0.00	0.000	0.010	0.2328	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324		0.00	0.000	0.009	0.2312	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
325		0.00	0.000	0.009	0.2296	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
326		0.00	0.000	0.009	0.2281	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.009	0.2265	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328		0.00	0.000	0.009	0.2250	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
329		0.00	0.000	0.009	0.2234	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330		0.00	0.000	0.009	0.2219	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331		0.00	0.000	0.009	0.2204	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
332		0.00	0.000	0.009	0.2188	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333		0.00	0.000	0.009	0.2173	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
334		0.00	0.000	0.009	0.2158	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.009	0.2143	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
336		0.00	0.000	0.009	0.2128	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
337		0.00	0.000	0.009	0.2113	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
338		0.00	0.000	0.009	0.2098	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
339		0.00	0.000	0.009	0.2084	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
340		0.00	0.000	0.009	0.2069	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
341		0.00	0.000	0.009	0.2054	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.009	0.2039	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
343		0.00	0.000	0.009	0.2025	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
344		0.00	0.000	0.009	0.2010	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345		0.00	0.000	0.009	0.1996	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.009	0.1981	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
347	*	0.00	0.000	0.009	0.1967	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
348		0.00	0.000	0.009	0.1953	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
349		0.00	0.000	0.009	0.1938	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
350		0.00	0.000	0.009	0.1924	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.008	0.1910	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
352		0.00	0.000	0.008	0.1896	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

353	0.00	0.000	0.008	0.1882	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
354	0.00	0.000	0.008	0.1868	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
355	0.00	0.000	0.008	0.1854	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
356	0.08	0.000	0.009	0.1974	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
357	0.00	0.000	0.008	0.1960	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
358	0.00	0.000	0.008	0.1947	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
359	0.00	0.000	0.008	0.1933	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
360	0.00	0.000	0.008	0.1919	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
361	0.00	0.000	0.008	0.1905	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
362	0.00	0.000	0.008	0.1892	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
363	0.00	0.000	0.008	0.1878	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
364	0.00	0.000	0.008	0.1865	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
365	0.00	0.000	0.008	0.1851	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 24			
	inches	cubic feet	percent
Precipitation	9.30	33,751.5	100.00
Runoff	0.008	27.8	0.08
Evapotranspiration	8.043	29,195.1	86.50
Drainage Collected from Layer 2	1.0365	3,762.3	11.15
Percolation/Leakage through Layer 4	0.000031	0.1130	0.00
Average Head on Top of Layer 3	0.0009	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	0.2111	766.3	2.27
Soil Water at Start of Year	538.1340	1,953,426.3	5787.67
Soil Water at End of Year	538.3451	1,954,192.6	5789.94
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 25

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Column key: Head #1: drainage from Layer 3; Drain #1: drainage from Layer 2; Leak #1: leakage thru Layer 4; Head #2: drainage from Layer 15; Drain #2: drainage from Layer 14; Leak #2: leakage thru Layer 16

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.06	0.000	0.009	0.1939	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.008	0.1926	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.008	0.1912	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.008	0.1899	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.008	0.1886	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.008	0.1873	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.008	0.1859	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.008	0.1846	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.008	0.1833	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.008	0.1820	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.008	0.1807	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
12			0.00	0.000	0.008	0.1794	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
13			0.00	0.000	0.008	0.1781	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.008	0.1768	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.008	0.1755	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
16			0.00	0.000	0.008	0.1742	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.007	0.1730	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.007	0.1718	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.007	0.1707	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.008	0.1694	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
21			0.00	0.000	0.008	0.1681	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.008	0.1669	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.008	0.1656	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
24			0.00	0.000	0.008	0.1644	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
25			0.00	0.000	0.008	0.1631	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
26			0.00	0.000	0.007	0.1619	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
27			0.00	0.000	0.007	0.1606	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
28			0.00	0.000	0.007	0.1594	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

29		0.00	0.000	0.007	0.1581	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.007	0.1569	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
31	*	0.00	0.000	0.007	0.1557	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
32	*	0.00	0.000	0.000	0.1557	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
33	*	0.00	0.000	0.007	0.1545	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
34	*	0.00	0.000	0.007	0.1532	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
35		0.00	0.000	0.007	0.1520	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
36	*	0.00	0.000	0.007	0.1508	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.007	0.1496	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
38	*	0.00	0.000	0.007	0.1484	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
39	*	0.00	0.000	0.000	0.1484	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
40	*	0.00	0.000	0.000	0.1484	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.007	0.1472	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.007	0.1459	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
43		0.00	0.000	0.007	0.1447	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
44		0.00	0.000	0.007	0.1435	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.007	0.1424	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.007	0.1412	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.007	0.1400	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.007	0.1388	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.007	0.1376	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
50		0.02	0.000	0.007	0.1397	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
51		0.02	0.000	0.007	0.1417	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
52		0.03	0.000	0.006	0.1460	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
53		0.05	0.000	0.003	0.1544	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
54		0.02	0.000	0.004	0.1570	0.0000	0.0000	6.81E-09	0.0000	0.0000	0.00E+00
55		0.33	0.000	0.005	0.2117	0.0000	0.0000	1.77E-09	0.0000	0.0000	0.00E+00
56		0.00	0.000	0.006	0.2107	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
57		0.00	0.000	0.006	0.2097	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.006	0.2086	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.006	0.2076	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60		0.01	0.000	0.007	0.2080	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
61		0.00	0.000	0.006	0.2070	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.006	0.2059	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.006	0.2049	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.006	0.2039	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

65		0.00	0.000	0.006	0.2028	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
66		0.02	0.000	0.007	0.2058	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
67		0.00	0.000	0.006	0.2048	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.006	0.2038	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.006	0.2027	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.006	0.2016	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.007	0.2006	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.007	0.1995	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
73	*	0.00	0.000	0.007	0.1984	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.006	0.1973	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.006	0.1963	0.0000	0.0000	5.55E-17	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.006	0.1953	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.006	0.1942	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.006	0.1932	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
79		0.00	0.000	0.006	0.1922	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
80		0.00	0.000	0.006	0.1912	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
81		0.00	0.000	0.006	0.1902	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
82		0.00	0.000	0.006	0.1892	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.006	0.1882	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
84		0.00	0.000	0.006	0.1872	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
85		0.00	0.000	0.006	0.1862	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.006	0.1852	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.006	0.1842	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.006	0.1831	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
89		0.00	0.000	0.006	0.1820	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
90		0.00	0.000	0.006	0.1810	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
91		0.00	0.000	0.006	0.1799	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
92		0.00	0.000	0.007	0.1788	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.007	0.1777	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.007	0.1765	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.007	0.1753	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
96		0.00	0.000	0.007	0.1742	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
97		0.00	0.000	0.007	0.1731	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
98		0.00	0.000	0.007	0.1720	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99		0.00	0.000	0.007	0.1709	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100		0.00	0.000	0.007	0.1698	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

101		0.00	0.000	0.007	0.1686	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
102		0.00	0.000	0.007	0.1675	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
103		0.00	0.000	0.007	0.1664	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
104		0.02	0.000	0.007	0.1690	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
105		0.00	0.000	0.007	0.1679	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
106		0.00	0.000	0.007	0.1667	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
107		0.00	0.000	0.007	0.1655	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
108		0.00	0.000	0.007	0.1643	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
109		0.00	0.000	0.007	0.1631	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
110		0.00	0.000	0.007	0.1619	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
111		0.00	0.000	0.008	0.1605	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
112		0.00	0.000	0.008	0.1593	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
113		0.00	0.000	0.008	0.1580	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
114		0.00	0.000	0.007	0.1568	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
115	*	0.30	0.000	0.067	0.1601	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
116	*	0.00	0.000	0.061	0.1634	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
117	*	0.00	0.000	0.081	0.1666	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
118		0.00	0.000	0.044	0.1653	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
119		0.00	0.000	0.008	0.1640	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
120		0.00	0.000	0.008	0.1626	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
121		0.00	0.000	0.008	0.1613	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
122		0.00	0.000	0.009	0.1598	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
123		0.00	0.000	0.008	0.1584	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
124		0.00	0.000	0.008	0.1570	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
125		0.00	0.000	0.009	0.1556	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
126		0.00	0.000	0.009	0.1540	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
127		0.00	0.000	0.010	0.1523	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
128		0.00	0.000	0.009	0.1507	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
129		0.00	0.000	0.009	0.1493	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
130		0.00	0.000	0.008	0.1479	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
131		0.00	0.000	0.009	0.1464	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
132		0.00	0.000	0.011	0.1446	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
133		0.00	0.000	0.011	0.1428	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
134		0.00	0.000	0.011	0.1409	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
135		0.00	0.000	0.013	0.1388	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
136		0.00	0.000	0.013	0.1366	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

137	0.00	0.000	0.010	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
138	0.07	0.000	0.002	0.1457	0.0000	0.0000	2.78E-17	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.006	0.1454	0.0000	0.0000	4.36E-09	0.0000	0.0000	0.00E+00
140	0.48	0.000	0.008	0.2240	0.0000	0.0000	2.27E-09	0.0000	0.0000	0.00E+00
141	0.32	0.000	0.012	0.2752	0.0000	0.0000	4.09E-09	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.010	0.2736	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.011	0.2717	0.0000	0.0000	7.91E-09	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.012	0.2697	0.0000	0.0000	8.07E-09	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.013	0.2676	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.011	0.2657	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.013	0.2636	0.0000	0.0001	1.19E-08	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.017	0.2608	0.0000	0.0000	1.05E-08	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.013	0.2585	0.0000	0.0000	1.57E-08	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.012	0.2565	0.0001	0.0002	2.33E-08	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.011	0.2545	0.0001	0.0004	3.13E-08	0.0000	0.0000	0.00E+00
152	0.01	0.000	0.014	0.2533	0.0001	0.0004	3.20E-08	0.0000	0.0000	0.00E+00
153	0.00	0.000	0.019	0.2503	0.0000	0.0000	1.56E-08	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.014	0.2478	0.0001	0.0003	1.80E-08	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.016	0.2450	0.0002	0.0009	5.31E-08	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.017	0.2421	0.0001	0.0005	3.65E-08	0.0000	0.0000	0.00E+00
157	0.07	0.000	0.013	0.2517	0.0000	0.0000	1.08E-08	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.013	0.2495	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
159	0.01	0.000	0.012	0.2496	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.017	0.2467	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
161	0.02	0.000	0.014	0.2475	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.013	0.2454	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.019	0.2423	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.022	0.2385	0.0002	0.0007	4.33E-08	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.018	0.2352	0.0006	0.0021	9.91E-08	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.023	0.2311	0.0004	0.0017	8.38E-08	0.0000	0.0000	0.00E+00
167	0.00	0.000	0.026	0.2266	0.0004	0.0015	7.79E-08	0.0000	0.0000	0.00E+00
168	0.00	0.000	0.019	0.2233	0.0004	0.0017	8.27E-08	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.021	0.2195	0.0004	0.0017	8.33E-08	0.0000	0.0000	0.00E+00
170	0.09	0.000	0.026	0.2302	0.0001	0.0003	2.91E-08	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.025	0.2265	0.0002	0.0009	5.12E-08	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.024	0.2224	0.0002	0.0009	5.27E-08	0.0000	0.0000	0.00E+00

173	0.00	0.000	0.021	0.2188	0.0002	0.0007	4.67E-08	0.0000	0.0000	0.00E+00
174	0.00	0.000	0.020	0.2158	0.0001	0.0005	3.75E-08	0.0000	0.0000	0.00E+00
175	0.23	0.000	0.020	0.2507	0.0000	0.0000	1.50E-08	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.346	0.1931	0.0000	0.0000	1.59E-09	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.024	0.1892	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.025	0.1849	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
179	0.02	0.000	0.021	0.1854	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.032	0.1801	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.029	0.1752	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.023	0.1713	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
183	0.06	0.000	0.036	0.1751	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
184	0.01	0.000	0.037	0.1700	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
185	0.00	0.000	0.037	0.1639	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.036	0.1578	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.040	0.1511	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.040	0.1445	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
189	0.00	0.000	0.034	0.1388	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
190	0.00	0.000	0.023	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
192	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
193	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
194	0.40	0.000	0.012	0.1997	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
195	0.00	0.000	0.145	0.1755	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
196	0.00	0.000	0.177	0.1459	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.053	0.1370	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
198	1.30	0.029	0.100	0.3318	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
199	0.38	0.000	0.202	0.3341	0.0423	0.1589	3.95E-06	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.211	0.2889	0.0163	0.0614	1.78E-06	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.430	0.2066	0.0158	0.0595	1.76E-06	0.0000	0.0000	0.00E+00
202	0.00	0.000	0.411	0.1381	0.0033	0.0123	3.96E-07	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.019	0.1350	0.0000	0.0000	1.20E-08	0.0000	0.0000	0.00E+00
204	0.00	0.000	0.000	0.1350	0.0000	0.0000	2.82E-17	0.0000	0.0000	0.00E+00
205	0.00	0.000	0.004	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
206	0.03	0.000	0.011	0.1388	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
207	0.24	0.000	0.039	0.1718	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
208	0.23	0.000	0.056	0.2006	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

209	0.05	0.000	0.067	0.1979	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
210	0.12	0.000	0.068	0.2061	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.065	0.1954	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
212	0.33	0.000	0.064	0.2392	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.344	0.1818	0.0001	0.0002	1.88E-08	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.072	0.1698	0.0000	0.0000	1.12E-08	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.062	0.1595	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
216	0.00	0.000	0.065	0.1487	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
217	0.00	0.000	0.055	0.1395	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
218	0.03	0.000	0.028	0.1389	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
219	0.00	0.000	0.013	0.1368	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
220	0.33	0.000	0.027	0.1874	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
221	0.06	0.000	0.046	0.1902	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.09	0.000	0.044	0.1973	0.0000	0.0000	6.24E-09	0.0000	0.0000	0.00E+00
223	0.00	0.000	0.041	0.1905	0.0000	0.0000	2.05E-09	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.052	0.1818	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
225	0.01	0.000	0.063	0.1721	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.050	0.1638	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.057	0.1544	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
228	0.00	0.000	0.065	0.1436	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
229	0.00	0.000	0.046	0.1360	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
230	0.00	0.000	0.004	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.00	0.000	0.002	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
233	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
234	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
239	0.14	0.000	0.027	0.1541	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
240	0.18	0.000	0.027	0.1792	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.044	0.1719	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
242	0.20	0.000	0.048	0.1978	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
243	0.40	0.000	0.182	0.2334	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
244	0.28	0.000	0.249	0.2383	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

245	0.01	0.000	0.252	0.1977	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.238	0.1582	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
247	0.02	0.000	0.134	0.1389	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
248	0.01	0.000	0.027	0.1355	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
249	0.00	0.000	0.003	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
252	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
253	0.01	0.000	0.007	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.35	0.000	0.041	0.1869	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
255	0.10	0.000	0.066	0.1921	0.0000	0.0000	2.27E-09	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.064	0.1814	0.0000	0.0000	2.67E-09	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.070	0.1698	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
258	0.40	0.000	0.073	0.2242	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
259	0.21	0.000	0.259	0.2158	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
260	0.00	0.000	0.191	0.1839	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
261	0.00	0.000	0.233	0.1451	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.053	0.1363	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
263	0.00	0.000	0.008	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
264	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
265	0.24	0.000	0.041	0.1688	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.029	0.1640	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.048	0.1559	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.046	0.1482	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.045	0.1407	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.025	0.1364	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
271	0.00	0.000	0.006	0.1355	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.002	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.004	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
276	0.82	0.000	0.036	0.2661	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.102	0.2491	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.240	0.2091	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.161	0.1823	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.101	0.1655	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

281		0.00	0.000	0.074	0.1531	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282	*	0.00	0.000	0.062	0.1428	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
283	*	0.00	0.000	0.047	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
284		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
285		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
286		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
287		0.04	0.000	0.012	0.1395	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
288		0.13	0.000	0.031	0.1566	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
289		0.00	0.000	0.023	0.1527	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
290		0.00	0.000	0.032	0.1475	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
291		0.00	0.000	0.033	0.1420	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
292		0.00	0.000	0.022	0.1383	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
293		0.24	0.000	0.040	0.1714	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
294		0.06	0.000	0.031	0.1769	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
295		0.00	0.000	0.030	0.1718	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
296		0.00	0.000	0.029	0.1670	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
297		0.00	0.000	0.035	0.1613	0.0000	0.0000	5.03E-09	0.0000	0.0000	0.00E+00
298		0.39	0.000	0.037	0.2200	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
299		0.02	0.000	0.042	0.2159	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
300		0.00	0.000	0.030	0.2108	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
301		0.00	0.000	0.033	0.2054	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
302		0.00	0.000	0.035	0.1996	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
303		0.00	0.000	0.032	0.1942	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
304		0.00	0.000	0.025	0.1901	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
305		0.00	0.000	0.026	0.1857	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
306		0.00	0.000	0.026	0.1814	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
307		0.00	0.000	0.026	0.1771	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
308		0.00	0.000	0.025	0.1730	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
309		0.00	0.000	0.023	0.1691	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
310		0.00	0.000	0.022	0.1654	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
311		0.00	0.000	0.023	0.1615	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
312		0.00	0.000	0.022	0.1579	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
313		0.00	0.000	0.021	0.1543	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
314		0.00	0.000	0.020	0.1509	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
315		0.00	0.000	0.016	0.1482	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
316		0.00	0.000	0.016	0.1456	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

317	0.00	0.000	0.016	0.1430	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318	0.00	0.000	0.016	0.1404	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319	0.00	0.000	0.016	0.1377	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320	0.00	0.000	0.014	0.1353	0.0000	0.0000	1.25E-08	0.0000	0.0000	0.00E+00
321	0.00	0.000	0.002	0.1350	0.0000	0.0000	3.51E-09	0.0000	0.0000	0.00E+00
322	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
323	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
325	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
326	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
327	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
329	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
332	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
334	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
335	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
336	0.04	0.000	0.007	0.1402	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
337	0.11	0.000	0.011	0.1568	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
338	0.00	0.000	0.006	0.1559	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
339	0.16	0.000	0.014	0.1803	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
340	0.41	0.000	0.016	0.2457	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
341	0.00	0.000	0.012	0.2438	0.0000	0.0000	5.44E-09	0.0000	0.0000	0.00E+00
342	0.00	0.000	0.012	0.2418	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
343	0.00	0.000	0.012	0.2398	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
344	0.00	0.000	0.012	0.2378	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345	0.00	0.000	0.012	0.2358	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
346	0.00	0.000	0.012	0.2338	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
347	0.00	0.000	0.012	0.2318	0.0000	0.0000	1.27E-08	0.0000	0.0000	0.00E+00
348	0.00	0.000	0.012	0.2299	0.0000	0.0000	3.83E-09	0.0000	0.0000	0.00E+00
349	0.00	0.000	0.012	0.2280	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
350	0.00	0.000	0.012	0.2260	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
351	0.00	0.000	0.011	0.2241	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
352	0.00	0.000	0.011	0.2222	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

353		0.00	0.000	0.011	0.2203	0.0000	0.0000	1.12E-08	0.0000	0.0000	0.00E+00
354		0.00	0.000	0.011	0.2185	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
355		0.00	0.000	0.011	0.2166	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
356		0.00	0.000	0.011	0.2147	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
357		0.00	0.000	0.011	0.2128	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
358		0.00	0.000	0.011	0.2110	0.0000	0.0001	1.79E-08	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.011	0.2092	0.0000	0.0000	1.14E-08	0.0000	0.0000	0.00E+00
360		0.00	0.000	0.011	0.2073	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
361		0.00	0.000	0.011	0.2055	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
362		0.00	0.000	0.011	0.2036	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
363		0.00	0.000	0.011	0.2018	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
364		0.00	0.000	0.011	0.2000	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
365		0.00	0.000	0.011	0.1982	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 25			
	inches	cubic feet	percent
Precipitation	10.85	39,388.8	100.00
Runoff	0.029	106.8	0.27
Evapotranspiration	10.435	37,879.0	96.17
Drainage Collected from Layer 2	0.3080	1,117.9	2.84
Percolation/Leakage through Layer 4	0.000009	0.0327	0.00
Average Head on Top of Layer 3	0.0002	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	0.0785	285.1	0.72
Soil Water at Start of Year	538.3451	1,954,192.6	4961.29
Soil Water at End of Year	538.4236	1,954,477.7	4962.01
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 26

Column key: Head #1: drainage from Layer 3 | Head #2: drainage from Layer 15
Drain #1: drainage from Layer 2 | Drain #2: drainage from Layer 14
Leak #1: leakage thru Layer 4 | Leak #2: leakage thru Layer 16

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.00	0.000	0.011	0.1964	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.011	0.1946	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.011	0.1929	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.011	0.1911	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.010	0.1894	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.010	0.1876	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.010	0.1859	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.010	0.1842	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
9			0.42	0.000	0.016	0.2518	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.010	0.2501	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.010	0.2484	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
12			0.00	0.000	0.010	0.2467	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
13			0.00	0.000	0.010	0.2450	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.010	0.2433	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.010	0.2417	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
16			0.10	0.000	0.015	0.2566	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
17			0.05	0.000	0.015	0.2623	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
18			0.01	0.000	0.015	0.2619	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.010	0.2602	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.010	0.2586	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
21			0.00	0.000	0.010	0.2570	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.010	0.2554	0.0000	0.0000	8.37E-09	0.0000	0.0000	0.00E+00
23	*		0.00	0.000	0.010	0.2538	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
24	*		0.00	0.000	0.010	0.2522	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
25	*		0.00	0.000	0.010	0.2506	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
26			0.00	0.000	0.009	0.2490	0.0000	0.0000	1.47E-08	0.0000	0.0000	0.00E+00
27			0.00	0.000	0.009	0.2475	0.0000	0.0000	1.17E-09	0.0000	0.0000	0.00E+00
28			0.00	0.000	0.009	0.2459	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

29		0.00	0.000	0.009	0.2443	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.009	0.2428	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.009	0.2413	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.009	0.2397	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
33		0.00	0.000	0.009	0.2382	0.0000	0.0000	1.28E-08	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.009	0.2367	0.0000	0.0000	1.58E-08	0.0000	0.0000	0.00E+00
35		0.00	0.000	0.009	0.2351	0.0000	0.0000	6.72E-09	0.0000	0.0000	0.00E+00
36	*	0.00	0.000	0.009	0.2336	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.009	0.2321	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
38	*	0.00	0.000	0.009	0.2306	0.0000	0.0000	8.87E-09	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.009	0.2291	0.0000	0.0000	8.99E-09	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.009	0.2276	0.0000	0.0000	8.42E-09	0.0000	0.0000	0.00E+00
41	*	0.00	0.000	0.009	0.2262	0.0000	0.0000	1.48E-08	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.009	0.2247	0.0000	0.0000	1.46E-08	0.0000	0.0000	0.00E+00
43		0.00	0.000	0.009	0.2232	0.0000	0.0000	1.44E-08	0.0000	0.0000	0.00E+00
44	*	0.00	0.000	0.000	0.2232	0.0000	0.0000	1.61E-08	0.0000	0.0000	0.00E+00
45	*	0.00	0.000	0.000	0.2232	0.0000	0.0000	1.43E-08	0.0000	0.0000	0.00E+00
46	*	0.00	0.000	0.000	0.2232	0.0000	0.0000	1.61E-08	0.0000	0.0000	0.00E+00
47	*	0.01	0.000	0.010	0.2232	0.0000	0.0001	1.75E-08	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.009	0.2217	0.0000	0.0000	1.46E-08	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.009	0.2202	0.0000	0.0001	1.13E-08	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.009	0.2188	0.0000	0.0001	1.91E-08	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.009	0.2173	0.0000	0.0001	1.69E-08	0.0000	0.0000	0.00E+00
52		0.00	0.000	0.009	0.2159	0.0000	0.0001	1.74E-08	0.0000	0.0000	0.00E+00
53		0.00	0.000	0.009	0.2144	0.0000	0.0001	1.83E-08	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.009	0.2129	0.0001	0.0002	2.34E-08	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.009	0.2115	0.0001	0.0002	2.36E-08	0.0000	0.0000	0.00E+00
56		0.00	0.000	0.009	0.2100	0.0000	0.0001	2.09E-08	0.0000	0.0000	0.00E+00
57		0.48	0.000	0.012	0.2879	0.0001	0.0003	2.75E-08	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.172	0.2592	0.0000	0.0000	8.82E-09	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.008	0.2578	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60		0.00	0.000	0.008	0.2563	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
61		0.00	0.000	0.008	0.2549	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.008	0.2535	0.0001	0.0002	1.34E-08	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.008	0.2521	0.0001	0.0003	2.84E-08	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.008	0.2505	0.0003	0.0012	6.25E-08	0.0000	0.0000	0.00E+00

65		0.00	0.000	0.008	0.2490	0.0001	0.0006	3.81E-08	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.008	0.2473	0.0006	0.0022	1.01E-07	0.0000	0.0000	0.00E+00
67		0.00	0.000	0.008	0.2459	0.0000	0.0001	1.86E-08	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.008	0.2445	0.0000	0.0000	3.94E-09	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.008	0.2432	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.008	0.2418	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
71	*	0.00	0.000	0.000	0.2418	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.008	0.2404	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
73		0.09	0.000	0.011	0.2540	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.008	0.2527	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.008	0.2513	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.008	0.2500	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.008	0.2484	0.0003	0.0012	6.16E-08	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.008	0.2465	0.0008	0.0029	1.30E-07	0.0000	0.0000	0.00E+00
79		0.00	0.000	0.008	0.2447	0.0008	0.0030	1.31E-07	0.0000	0.0000	0.00E+00
80		0.00	0.000	0.008	0.2430	0.0007	0.0025	1.16E-07	0.0000	0.0000	0.00E+00
81		0.00	0.000	0.008	0.2414	0.0006	0.0021	9.91E-08	0.0000	0.0000	0.00E+00
82		0.00	0.000	0.008	0.2398	0.0005	0.0018	8.75E-08	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.008	0.2382	0.0004	0.0016	8.13E-08	0.0000	0.0000	0.00E+00
84		0.00	0.000	0.008	0.2366	0.0004	0.0016	7.95E-08	0.0000	0.0000	0.00E+00
85		0.00	0.000	0.008	0.2351	0.0004	0.0016	8.04E-08	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.008	0.2335	0.0004	0.0016	8.29E-08	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.008	0.2319	0.0005	0.0017	8.57E-08	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.008	0.2303	0.0005	0.0018	8.85E-08	0.0000	0.0000	0.00E+00
89		0.00	0.000	0.008	0.2287	0.0005	0.0018	9.05E-08	0.0000	0.0000	0.00E+00
90		0.00	0.000	0.008	0.2271	0.0005	0.0019	9.24E-08	0.0000	0.0000	0.00E+00
91	*	0.00	0.000	0.008	0.2255	0.0005	0.0019	9.34E-08	0.0000	0.0000	0.00E+00
92	*	0.00	0.000	0.000	0.2255	0.0001	0.0004	3.24E-08	0.0000	0.0000	0.00E+00
93	*	0.00	0.000	0.000	0.2255	0.0000	0.0000	6.36E-09	0.0000	0.0000	0.00E+00
94	*	0.00	0.000	0.008	0.2239	0.0004	0.0014	6.94E-08	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.007	0.2225	0.0004	0.0017	8.35E-08	0.0000	0.0000	0.00E+00
96	*	0.00	0.000	0.008	0.2212	0.0000	0.0000	1.52E-08	0.0000	0.0000	0.00E+00
97		0.00	0.000	0.008	0.2199	0.0000	0.0000	1.82E-09	0.0000	0.0000	0.00E+00
98		0.00	0.000	0.008	0.2187	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99		0.00	0.000	0.008	0.2174	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100		0.19	0.000	0.010	0.2475	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

101	0.00	0.000	0.008	0.2462	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
102	0.00	0.000	0.008	0.2449	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
103	0.00	0.000	0.008	0.2433	0.0003	0.0010	4.80E-08	0.0000	0.0000	0.00E+00
104	0.00	0.000	0.008	0.2419	0.0000	0.0002	2.09E-08	0.0000	0.0000	0.00E+00
105	0.00	0.000	0.009	0.2405	0.0000	0.0000	4.41E-09	0.0000	0.0000	0.00E+00
106	0.00	0.000	0.008	0.2391	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
107	0.00	0.000	0.008	0.2377	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
108	0.00	0.000	0.009	0.2362	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
109	0.00	0.000	0.009	0.2347	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
110	0.00	0.000	0.009	0.2329	0.0004	0.0014	6.62E-08	0.0000	0.0000	0.00E+00
111	0.00	0.000	0.009	0.2312	0.0005	0.0018	8.71E-08	0.0000	0.0000	0.00E+00
112	0.11	0.000	0.010	0.2483	0.0001	0.0003	2.85E-08	0.0000	0.0000	0.00E+00
113	0.00	0.000	0.008	0.2468	0.0001	0.0005	3.42E-08	0.0000	0.0000	0.00E+00
114	0.00	0.000	0.009	0.2454	0.0000	0.0000	1.45E-08	0.0000	0.0000	0.00E+00
115	0.01	0.000	0.010	0.2459	0.0000	0.0000	8.12E-10	0.0000	0.0000	0.00E+00
116	0.00	0.000	0.010	0.2446	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
117	0.00	0.000	0.010	0.2429	0.0000	0.0002	1.01E-08	0.0000	0.0000	0.00E+00
118	0.07	0.000	0.012	0.2519	0.0001	0.0004	2.97E-08	0.0000	0.0000	0.00E+00
119	0.31	0.000	0.012	0.3016	0.0000	0.0000	8.14E-09	0.0000	0.0000	0.00E+00
120	0.00	0.000	0.497	0.2181	0.0008	0.0031	1.27E-07	0.0000	0.0000	0.00E+00
121	0.00	0.000	0.012	0.2161	0.0001	0.0004	3.00E-08	0.0000	0.0000	0.00E+00
122	0.00	0.000	0.011	0.2143	0.0000	0.0000	6.15E-09	0.0000	0.0000	0.00E+00
123	0.00	0.000	0.011	0.2124	0.0001	0.0005	3.72E-08	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.010	0.2106	0.0002	0.0006	3.98E-08	0.0000	0.0000	0.00E+00
125	0.00	0.000	0.012	0.2084	0.0003	0.0012	6.58E-08	0.0000	0.0000	0.00E+00
126	0.00	0.000	0.012	0.2063	0.0003	0.0011	5.95E-08	0.0000	0.0000	0.00E+00
127	0.00	0.000	0.011	0.2044	0.0000	0.0000	1.38E-08	0.0000	0.0000	0.00E+00
128	0.00	0.000	0.011	0.2026	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
129	0.00	0.000	0.010	0.2009	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
130	0.20	0.000	0.010	0.2319	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
131	0.00	0.000	0.012	0.2303	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
132	0.00	0.000	0.010	0.2287	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
133	0.07	0.000	0.013	0.2385	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
134	0.00	0.000	0.012	0.2364	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.012	0.2343	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.013	0.2321	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

137	0.00	0.000	0.013	0.2300	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.015	0.2275	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.014	0.2252	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
140	0.33	0.000	0.016	0.2783	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.470	0.1996	0.0004	0.0016	6.50E-08	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.014	0.1972	0.0000	0.0001	1.92E-08	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.012	0.1952	0.0000	0.0000	4.11E-09	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.011	0.1934	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.014	0.1910	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.015	0.1885	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.016	0.1860	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.016	0.1834	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.016	0.1807	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.016	0.1781	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.019	0.1749	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.019	0.1717	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
153	0.00	0.000	0.017	0.1688	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.019	0.1656	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.019	0.1624	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
156	0.09	0.000	0.019	0.1738	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.020	0.1708	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.021	0.1673	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
159	0.51	0.000	0.016	0.2490	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
160	0.08	0.000	0.298	0.2129	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.015	0.2105	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.014	0.2081	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.017	0.2053	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
164	0.04	0.000	0.017	0.2098	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.015	0.2074	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.018	0.2045	0.0000	0.0001	1.66E-08	0.0000	0.0000	0.00E+00
167	0.00	0.000	0.018	0.2014	0.0000	0.0000	6.95E-09	0.0000	0.0000	0.00E+00
168	0.00	0.000	0.019	0.1981	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.022	0.1945	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.022	0.1908	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.020	0.1875	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.018	0.1845	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

173	0.00	0.000	0.021	0.1810	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
174	0.00	0.000	0.020	0.1776	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.021	0.1741	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.026	0.1698	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
177	0.08	0.000	0.020	0.1804	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
178	0.02	0.000	0.021	0.1799	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.026	0.1756	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
180	0.01	0.000	0.019	0.1743	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.02	0.000	0.020	0.1744	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.18	0.000	0.028	0.2001	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
183	0.30	0.000	0.273	0.2043	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
184	0.37	0.000	0.378	0.2025	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
185	0.00	0.000	0.353	0.1436	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.045	0.1361	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.005	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.002	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
189	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
190	0.01	0.000	0.006	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
191	0.10	0.000	0.016	0.1482	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
192	0.00	0.000	0.027	0.1438	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
193	0.00	0.000	0.032	0.1385	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
194	0.00	0.000	0.017	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
195	0.09	0.000	0.015	0.1484	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
196	0.00	0.000	0.022	0.1447	0.0000	0.0000	7.41E-09	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.026	0.1404	0.0000	0.0000	8.46E-09	0.0000	0.0000	0.00E+00
198	0.00	0.000	0.024	0.1363	0.0000	0.0000	5.77E-09	0.0000	0.0000	0.00E+00
199	0.17	0.000	0.026	0.1595	0.0000	0.0000	1.08E-08	0.0000	0.0000	0.00E+00
200	0.11	0.000	0.021	0.1745	0.0000	0.0000	7.09E-09	0.0000	0.0000	0.00E+00
201	0.01	0.000	0.035	0.1709	0.0000	0.0000	6.77E-09	0.0000	0.0000	0.00E+00
202	0.24	0.000	0.031	0.2050	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.039	0.1984	0.0000	0.0000	3.38E-09	0.0000	0.0000	0.00E+00
204	0.00	0.000	0.039	0.1920	0.0000	0.0000	4.54E-09	0.0000	0.0000	0.00E+00
205	0.03	0.000	0.040	0.1901	0.0000	0.0000	8.16E-09	0.0000	0.0000	0.00E+00
206	0.00	0.000	0.039	0.1835	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
207	0.00	0.000	0.043	0.1764	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
208	0.00	0.000	0.040	0.1698	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

209	0.01	0.000	0.052	0.1625	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
210	0.15	0.000	0.059	0.1775	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
211	0.13	0.000	0.051	0.1909	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
212	0.01	0.000	0.044	0.1846	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
213	0.27	0.000	0.043	0.2226	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.043	0.2155	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.044	0.2080	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
216	0.00	0.000	0.033	0.2025	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
217	0.00	0.000	0.040	0.1958	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
218	0.00	0.000	0.055	0.1867	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
219	0.00	0.000	0.066	0.1757	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.039	0.1692	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
221	0.23	0.000	0.052	0.1995	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.19	0.000	0.049	0.2235	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
223	0.04	0.000	0.257	0.1867	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.045	0.1792	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.051	0.1706	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.055	0.1614	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.057	0.1520	0.0001	0.0002	2.46E-08	0.0000	0.0000	0.00E+00
228	0.00	0.000	0.047	0.1442	0.0000	0.0000	5.36E-09	0.0000	0.0000	0.00E+00
229	0.00	0.000	0.043	0.1371	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
230	0.00	0.000	0.009	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.00	0.000	0.003	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
233	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
234	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
239	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
240	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
242	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
243	0.07	0.000	0.008	0.1448	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.017	0.1419	0.0000	0.0000	4.36E-09	0.0000	0.0000	0.00E+00

245	0.00	0.000	0.029	0.1372	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.009	0.1357	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.003	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
248	0.20	0.000	0.024	0.1652	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
249	0.55	0.000	0.032	0.2518	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.186	0.2208	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.288	0.1728	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
252	0.00	0.000	0.187	0.1417	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.036	0.1357	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.00	0.000	0.004	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
258	0.33	0.000	0.032	0.1845	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
259	0.00	0.000	0.035	0.1786	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
260	0.00	0.000	0.038	0.1723	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
261	0.00	0.000	0.043	0.1651	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.037	0.1589	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
263	0.00	0.000	0.038	0.1526	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
264	0.00	0.000	0.038	0.1462	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.035	0.1404	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.029	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.002	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
269	0.14	0.000	0.023	0.1539	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
270	0.08	0.000	0.023	0.1633	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
271	0.00	0.000	0.026	0.1590	0.0000	0.0000	4.52E-09	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.026	0.1548	0.0000	0.0000	1.88E-09	0.0000	0.0000	0.00E+00
273	0.14	0.000	0.034	0.1732	0.0000	0.0000	1.11E-16	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.026	0.1688	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.024	0.1648	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
276	0.04	0.000	0.027	0.1678	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.030	0.1635	0.0000	0.0000	1.38E-08	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.023	0.1597	0.0000	0.0000	4.57E-09	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.020	0.1563	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.019	0.1531	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

281	0.00	0.000	0.020	0.1498	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282	0.00	0.000	0.015	0.1473	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
283	0.00	0.000	0.018	0.1442	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
284	0.00	0.000	0.019	0.1411	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
285	0.00	0.000	0.023	0.1373	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
286	0.00	0.000	0.011	0.1355	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
287	0.00	0.000	0.002	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
288	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
289	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
290	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
291	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
292	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
293	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
294	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
295	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
296	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
297	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
298	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
299	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
300	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
301	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
302	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
303	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
304	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
305	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
306	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
307	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
308	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
309	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
310	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
311	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
312	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
313	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
314	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
315	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
316	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

317	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
321	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
322	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
323	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
325	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
326	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
327	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
329	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
332	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
334	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
335	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
336	0.02	0.000	0.005	0.1371	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
337	0.01	0.000	0.005	0.1387	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
338	0.00	0.000	0.001	0.1385	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
339	0.00	0.000	0.004	0.1378	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
340	0.00	0.000	0.005	0.1370	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
341	0.00	0.000	0.002	0.1367	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
342	0.00	0.000	0.002	0.1363	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
343	0.00	0.000	0.002	0.1360	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
344	0.00	0.000	0.002	0.1357	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345	0.00	0.000	0.002	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
346	0.00	0.000	0.002	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
347	0.00	0.000	0.001	0.1350	0.0000	0.0000	2.29E-09	0.0000	0.0000	0.00E+00
348	0.00	0.000	0.000	0.1350	0.0000	0.0000	6.26E-09	0.0000	0.0000	0.00E+00
349	0.00	0.000	0.000	0.1350	0.0000	0.0000	6.82E-09	0.0000	0.0000	0.00E+00
350	0.04	0.000	0.005	0.1400	0.0000	0.0000	4.74E-09	0.0000	0.0000	0.00E+00
351	0.01	0.000	0.008	0.1402	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
352	0.00	0.000	0.004	0.1395	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

353		0.00	0.000	0.004	0.1388	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
354		0.00	0.000	0.006	0.1379	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
355		0.07	0.000	0.010	0.1483	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
356		0.00	0.000	0.006	0.1474	0.0000	0.0000	9.54E-18	0.0000	0.0000	0.00E+00
357		0.00	0.000	0.004	0.1466	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
358		0.00	0.000	0.006	0.1457	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
359	*	0.00	0.000	0.006	0.1447	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
360		0.00	0.000	0.008	0.1437	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
361		0.13	0.000	0.011	0.1636	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
362		0.29	0.000	0.009	0.2101	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
363		0.01	0.000	0.012	0.2098	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
364		0.00	0.000	0.009	0.2083	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
365		0.00	0.000	0.009	0.2069	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 26			
	inches	cubic feet	percent
Precipitation	8.09	29,357.6	100.00
Runoff	0.000	0.0000	0.00
Evapotranspiration	7.982	28,973.9	98.69
Drainage Collected from Layer 2	0.0535	194.1	0.66
Percolation/Leakage through Layer 4	0.000003	0.0118	0.00
Average Head on Top of Layer 3	0.0000	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	0.0522	189.6	0.65
Soil Water at Start of Year	538.4236	1,954,477.7	6657.49
Soil Water at End of Year	538.4758	1,954,667.3	6658.14
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 27

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Column key: Head #1: drainage from Layer 3; Drain #1: drainage from Layer 2; Leak #1: leakage thru Layer 4; Head #2: drainage from Layer 15; Drain #2: drainage from Layer 14; Leak #2: leakage thru Layer 16

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.00	0.000	0.009	0.2055	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.009	0.2041	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.008	0.2027	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.008	0.2012	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
5	*		0.00	0.000	0.000	0.2012	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.008	0.1998	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.008	0.1985	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.008	0.1971	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.008	0.1957	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.008	0.1943	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.008	0.1929	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
12			0.09	0.000	0.012	0.2051	0.0000	0.0000	2.28E-09	0.0000	0.0000	0.00E+00
13			0.00	0.000	0.008	0.2037	0.0000	0.0000	4.87E-09	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.008	0.2023	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.009	0.2009	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
16			0.00	0.000	0.009	0.1994	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.009	0.1980	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.009	0.1966	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.009	0.1951	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.009	0.1937	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
21			0.00	0.000	0.009	0.1922	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.008	0.1909	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.008	0.1896	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
24			0.00	0.000	0.008	0.1883	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
25			0.00	0.000	0.008	0.1870	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
26			0.00	0.000	0.008	0.1857	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
27			0.00	0.000	0.008	0.1843	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
28			0.00	0.000	0.008	0.1829	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

29	0.00	0.000	0.008	0.1816	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
30	0.00	0.000	0.008	0.1802	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
31	0.00	0.000	0.008	0.1789	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
32	0.00	0.000	0.008	0.1775	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
33	0.00	0.000	0.008	0.1762	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
34	0.00	0.000	0.008	0.1748	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
35	0.00	0.000	0.008	0.1735	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
36	0.00	0.000	0.008	0.1722	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
37	0.00	0.000	0.008	0.1708	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
38	0.00	0.000	0.008	0.1695	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
39	0.00	0.000	0.008	0.1682	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
40	0.00	0.000	0.008	0.1669	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
41	0.00	0.000	0.008	0.1656	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
42	0.00	0.000	0.008	0.1643	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
43	0.00	0.000	0.008	0.1630	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
44	0.00	0.000	0.008	0.1617	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
45	0.00	0.000	0.008	0.1604	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
46	0.00	0.000	0.008	0.1591	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
47	0.00	0.000	0.008	0.1578	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
48	0.00	0.000	0.008	0.1566	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
49	0.00	0.000	0.008	0.1553	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
50	0.00	0.000	0.008	0.1540	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
51	0.00	0.000	0.008	0.1527	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
52	0.00	0.000	0.008	0.1515	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
53	0.00	0.000	0.008	0.1502	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
54	0.05	0.000	0.012	0.1560	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
55	0.06	0.000	0.012	0.1637	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
56	0.00	0.000	0.007	0.1624	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
57	0.00	0.000	0.008	0.1612	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
58	0.00	0.000	0.007	0.1599	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
59	0.00	0.000	0.007	0.1587	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60	0.00	0.000	0.007	0.1575	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
61	0.00	0.000	0.007	0.1562	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
62	0.00	0.000	0.007	0.1550	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
63	0.00	0.000	0.007	0.1538	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
64	0.00	0.000	0.007	0.1526	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

65		0.00	0.000	0.007	0.1513	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.007	0.1501	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
67		0.00	0.000	0.007	0.1489	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.007	0.1477	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.007	0.1465	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.007	0.1453	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
71	*	0.00	0.000	0.007	0.1441	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.006	0.1431	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.007	0.1419	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.007	0.1407	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
75	*	0.00	0.000	0.007	0.1395	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.007	0.1383	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
77		0.04	0.000	0.011	0.1436	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
78		0.07	0.000	0.011	0.1541	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
79		0.26	0.000	0.011	0.1952	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
80		0.00	0.000	0.009	0.1941	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
81		0.00	0.000	0.007	0.1929	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
82		0.00	0.000	0.007	0.1917	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.007	0.1905	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
84		0.00	0.000	0.007	0.1893	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
85		0.00	0.000	0.006	0.1883	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.006	0.1873	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.006	0.1863	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.007	0.1852	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
89		0.00	0.000	0.006	0.1841	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
90		0.00	0.000	0.007	0.1830	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
91		0.00	0.000	0.007	0.1819	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
92		0.00	0.000	0.007	0.1808	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.007	0.1797	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.007	0.1786	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.007	0.1775	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
96		0.00	0.000	0.007	0.1764	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
97		0.00	0.000	0.007	0.1753	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
98		0.00	0.000	0.007	0.1741	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99		0.00	0.000	0.007	0.1730	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100		0.00	0.000	0.007	0.1718	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

101	0.00	0.000	0.008	0.1705	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
102	0.00	0.000	0.007	0.1693	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
103	0.00	0.000	0.007	0.1680	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
104	0.00	0.000	0.007	0.1668	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
105	0.00	0.000	0.007	0.1657	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
106	0.00	0.000	0.007	0.1645	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
107	0.00	0.000	0.008	0.1632	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
108	0.00	0.000	0.008	0.1619	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
109	0.82	0.000	0.012	0.2967	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
110	0.00	0.000	0.008	0.2954	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
111	0.00	0.000	0.008	0.2940	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
112	0.00	0.000	0.009	0.2915	0.0006	0.0022	8.23E-08	0.0000	0.0000	0.00E+00
113	0.00	0.000	0.010	0.2849	0.0073	0.0275	8.84E-07	0.0000	0.0000	0.00E+00
114	0.00	0.000	0.009	0.2794	0.0072	0.0270	8.72E-07	0.0000	0.0000	0.00E+00
115	0.00	0.000	0.009	0.2773	0.0020	0.0077	2.78E-07	0.0000	0.0000	0.00E+00
116	0.00	0.000	0.010	0.2756	0.0000	0.0000	1.40E-08	0.0000	0.0000	0.00E+00
117	0.00	0.000	0.011	0.2738	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
118	0.00	0.000	0.011	0.2720	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
119	0.00	0.000	0.011	0.2701	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
120	0.00	0.000	0.010	0.2684	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
121	0.00	0.000	0.009	0.2669	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
122	0.00	0.000	0.010	0.2652	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
123	0.99	0.010	0.015	0.3622	0.1379	0.2132	1.08E-05	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.290	0.2783	0.2783	0.3682	2.18E-05	0.0000	0.0000	0.00E+00
125	0.03	0.000	0.207	0.2380	0.0170	0.0640	1.88E-06	0.0000	0.0000	0.00E+00
126	0.00	0.000	0.199	0.2009	0.0091	0.0343	1.07E-06	0.0000	0.0000	0.00E+00
127	0.00	0.000	0.086	0.1866	0.0002	0.0008	4.55E-08	0.0000	0.0000	0.00E+00
128	0.00	0.000	0.067	0.1755	0.0000	0.0000	7.18E-09	0.0000	0.0000	0.00E+00
129	0.00	0.000	0.057	0.1660	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
130	0.00	0.000	0.052	0.1574	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
131	0.00	0.000	0.048	0.1494	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
132	0.00	0.000	0.045	0.1419	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
133	0.00	0.000	0.041	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
134	0.00	0.000	0.000	0.1350	0.0000	0.0000	1.11E-16	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

137	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
141	0.01	0.000	0.006	0.1359	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
142	0.16	0.000	0.017	0.1594	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.014	0.1570	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
144	0.21	0.000	0.025	0.1879	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.024	0.1838	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.026	0.1796	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.028	0.1748	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.024	0.1708	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.022	0.1672	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.024	0.1632	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.021	0.1596	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.023	0.1558	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
153	0.00	0.000	0.024	0.1518	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
154	0.04	0.000	0.029	0.1544	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
155	0.04	0.000	0.030	0.1563	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.030	0.1514	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.029	0.1466	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.027	0.1421	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.028	0.1374	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.010	0.1357	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
161	0.09	0.000	0.017	0.1486	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
162	0.13	0.000	0.019	0.1665	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.023	0.1626	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.022	0.1589	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.022	0.1553	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.024	0.1512	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
167	0.12	0.000	0.022	0.1675	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
168	0.00	0.000	0.024	0.1635	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.025	0.1593	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
170	0.92	0.000	0.026	0.3077	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
171	0.04	0.000	0.365	0.2544	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.032	0.2490	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

173	0.00	0.000	0.033	0.2433	0.0002	0.0007	3.32E-08	0.0000	0.0000	0.00E+00
174	0.00	0.000	0.032	0.2368	0.0017	0.0062	2.43E-07	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.028	0.2317	0.0012	0.0046	1.76E-07	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.027	0.2272	0.0000	0.0000	1.17E-08	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.032	0.2219	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.033	0.2165	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.038	0.2101	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
180	0.03	0.000	0.037	0.2084	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.027	0.2040	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.13	0.000	0.029	0.2201	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
183	0.18	0.000	0.031	0.2448	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.349	0.1867	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
185	0.00	0.000	0.034	0.1811	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
186	0.01	0.000	0.047	0.1746	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
187	0.11	0.000	0.042	0.1867	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.042	0.1797	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
189	0.00	0.000	0.033	0.1745	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
190	0.19	0.000	0.047	0.1989	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
191	0.03	0.000	0.032	0.1989	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
192	0.00	0.000	0.047	0.1912	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
193	0.00	0.000	0.052	0.1825	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
194	0.00	0.000	0.051	0.1740	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
195	0.00	0.000	0.042	0.1671	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
196	0.00	0.000	0.033	0.1615	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.038	0.1554	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
198	0.00	0.000	0.037	0.1495	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
199	0.02	0.000	0.053	0.1444	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
200	0.11	0.000	0.038	0.1571	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
201	0.71	0.000	0.035	0.2698	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
202	0.00	0.000	0.224	0.2320	0.0005	0.0017	7.68E-08	0.0000	0.0000	0.00E+00
203	0.09	0.000	0.276	0.2007	0.0003	0.0009	5.15E-08	0.0000	0.0000	0.00E+00
204	0.20	0.000	0.182	0.2033	0.0000	0.0000	7.65E-09	0.0000	0.0000	0.00E+00
205	0.15	0.000	0.232	0.1904	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
206	0.07	0.000	0.295	0.1528	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
207	0.00	0.000	0.076	0.1402	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
208	0.00	0.000	0.025	0.1360	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

209	0.00	0.000	0.004	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.002	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
216	0.09	0.000	0.015	0.1479	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
217	0.00	0.000	0.028	0.1439	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
218	0.05	0.000	0.046	0.1452	0.0000	0.0000	1.99E-09	0.0000	0.0000	0.00E+00
219	0.14	0.000	0.046	0.1609	0.0000	0.0000	1.99E-09	0.0000	0.0000	0.00E+00
220	0.06	0.000	0.036	0.1644	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
221	0.09	0.000	0.038	0.1730	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.036	0.1671	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
223	0.04	0.000	0.034	0.1685	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.050	0.1603	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.038	0.1541	0.0000	0.0001	1.17E-08	0.0000	0.0000	0.00E+00
226	0.53	0.000	0.043	0.2348	0.0000	0.0000	1.25E-08	0.0000	0.0000	0.00E+00
227	0.20	0.000	0.238	0.2282	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
228	0.16	0.000	0.059	0.2443	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
229	0.00	0.000	0.397	0.1781	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
230	0.00	0.000	0.073	0.1660	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.00	0.000	0.054	0.1570	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.070	0.1452	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
233	0.00	0.000	0.052	0.1366	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
234	0.00	0.000	0.010	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
236	0.26	0.000	0.025	0.1749	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
237	0.07	0.000	0.035	0.1808	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.035	0.1750	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
239	0.78	0.000	0.053	0.2966	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
240	0.10	0.000	0.417	0.2431	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.398	0.1768	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
242	0.00	0.000	0.238	0.1372	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.013	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

245	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
249	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
252	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
259	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
260	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
261	0.08	0.000	0.008	0.1474	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.012	0.1453	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
263	0.36	0.000	0.021	0.2021	0.0000	0.0000	1.99E-09	0.0000	0.0000	0.00E+00
264	0.05	0.000	0.027	0.2062	0.0000	0.0000	1.99E-09	0.0000	0.0000	0.00E+00
265	0.24	0.000	0.029	0.2414	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.025	0.2375	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.023	0.2336	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.024	0.2297	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.022	0.2260	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
270	0.03	0.000	0.027	0.2269	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
271	0.08	0.000	0.025	0.2354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.019	0.2323	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.020	0.2290	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.020	0.2257	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.021	0.2223	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.019	0.2191	0.0000	0.0001	1.59E-08	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.019	0.2160	0.0000	0.0000	7.69E-09	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.018	0.2130	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.017	0.2102	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.016	0.2074	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

281	0.00	0.000	0.016	0.2047	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282	0.06	0.000	0.022	0.2102	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
283	0.03	0.000	0.022	0.2117	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
284	0.00	0.000	0.016	0.2091	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
285	0.00	0.000	0.015	0.2065	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
286	0.00	0.000	0.015	0.2040	0.0000	0.0000	2.42E-09	0.0000	0.0000	0.00E+00
287	0.00	0.000	0.015	0.2015	0.0000	0.0002	2.32E-08	0.0000	0.0000	0.00E+00
288	0.00	0.000	0.015	0.1990	0.0000	0.0000	1.43E-08	0.0000	0.0000	0.00E+00
289	0.00	0.000	0.014	0.1966	0.0000	0.0000	8.72E-11	0.0000	0.0000	0.00E+00
290	0.00	0.000	0.013	0.1944	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
291	0.00	0.000	0.014	0.1921	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
292	0.00	0.000	0.014	0.1898	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
293	0.00	0.000	0.014	0.1875	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
294	0.00	0.000	0.013	0.1852	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
295	0.00	0.000	0.013	0.1830	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
296	0.00	0.000	0.013	0.1808	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
297	0.01	0.000	0.018	0.1793	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
298	0.00	0.000	0.013	0.1771	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
299	0.00	0.000	0.010	0.1754	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
300	0.00	0.000	0.013	0.1732	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
301	0.00	0.000	0.013	0.1710	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
302	0.00	0.000	0.013	0.1689	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
303	0.00	0.000	0.013	0.1668	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
304	0.00	0.000	0.013	0.1646	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
305	0.00	0.000	0.013	0.1625	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
306	0.00	0.000	0.013	0.1604	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
307	0.10	0.000	0.019	0.1737	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
308	0.00	0.000	0.012	0.1716	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
309	0.00	0.000	0.013	0.1695	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
310	0.17	0.000	0.019	0.1945	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
311	0.06	0.000	0.019	0.2016	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
312	0.00	0.000	0.013	0.1995	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
313	0.00	0.000	0.013	0.1974	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
314	0.00	0.000	0.012	0.1954	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
315	0.00	0.000	0.012	0.1934	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
316	0.00	0.000	0.012	0.1915	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

317		0.00	0.000	0.012	0.1895	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318		0.00	0.000	0.011	0.1876	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319		0.00	0.000	0.011	0.1857	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320		0.00	0.000	0.011	0.1838	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
321		0.00	0.000	0.011	0.1820	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
322		0.00	0.000	0.011	0.1801	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
323		0.00	0.000	0.011	0.1783	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324		0.00	0.000	0.011	0.1764	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
325		0.00	0.000	0.011	0.1746	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
326		0.00	0.000	0.011	0.1728	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.011	0.1710	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328		0.00	0.000	0.011	0.1692	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
329		0.00	0.000	0.011	0.1674	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330		0.00	0.000	0.011	0.1656	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331		0.00	0.000	0.011	0.1638	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
332		0.00	0.000	0.011	0.1621	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333	*	0.00	0.000	0.010	0.1603	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
334		0.00	0.000	0.010	0.1586	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.010	0.1569	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
336		0.00	0.000	0.010	0.1551	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
337		0.00	0.000	0.010	0.1534	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
338		0.00	0.000	0.010	0.1517	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
339		0.00	0.000	0.010	0.1500	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
340		0.00	0.000	0.010	0.1483	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
341		0.00	0.000	0.010	0.1467	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
342		0.29	0.000	0.014	0.1926	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
343		0.00	0.000	0.010	0.1909	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
344		0.00	0.000	0.010	0.1893	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345		0.00	0.000	0.010	0.1876	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.010	0.1860	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
347		0.00	0.000	0.010	0.1844	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
348		0.83	0.000	0.013	0.3207	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
349		0.00	0.000	0.190	0.2873	0.0022	0.0082	2.68E-07	0.0000	0.0000	0.00E+00
350		0.00	0.000	0.010	0.2780	0.0103	0.0389	1.19E-06	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.010	0.2706	0.0100	0.0375	1.17E-06	0.0000	0.0000	0.00E+00
352		0.00	0.000	0.010	0.2651	0.0069	0.0260	8.43E-07	0.0000	0.0000	0.00E+00

353	0.00	0.000	0.010	0.2632	0.0014	0.0054	2.01E-07	0.0000	0.0000	0.00E+00
354	0.00	0.000	0.010	0.2616	0.0000	0.0000	1.16E-08	0.0000	0.0000	0.00E+00
355	0.00	0.000	0.009	0.2600	0.0000	0.0000	4.34E-19	0.0000	0.0000	0.00E+00
356	0.00	0.000	0.009	0.2585	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
357	0.00	0.000	0.009	0.2569	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
358	0.00	0.000	0.009	0.2553	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
359	0.00	0.000	0.009	0.2538	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
360	0.00	0.000	0.009	0.2523	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
361	0.00	0.000	0.009	0.2507	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
362	0.00	0.000	0.009	0.2492	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
363	0.00	0.000	0.009	0.2477	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
364	0.00	0.000	0.009	0.2462	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
365	0.00	0.000	0.009	0.2446	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 27			
	inches	cubic feet	percent
Precipitation	11.17	40,558.3	100.00
Runoff	0.010	37.2	0.09
Evapotranspiration	10.061	36,521.0	90.05
Drainage Collected from Layer 2	0.8755	3,178.2	7.84
Percolation/Leakage through Layer 4	0.000042	0.1529	0.00
Average Head on Top of Layer 3	0.0014	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	0.2264	821.9	2.03
Soil Water at Start of Year	538.4758	1,954,667.3	4819.41
Soil Water at End of Year	538.7022	1,955,489.1	4821.43
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 28

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Column key: Head #1: drainage from Layer 3; Drain #1: drainage from Layer 2; Leak #1: leakage thru Layer 4; Head #2: drainage from Layer 15; Drain #2: drainage from Layer 14; Leak #2: leakage thru Layer 16

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.02	0.000	0.011	0.2466	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.009	0.2446	0.0004	0.0016	6.44E-08	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.009	0.2422	0.0014	0.0054	2.16E-07	0.0000	0.0000	0.00E+00
4			0.00	0.000	0.009	0.2397	0.0015	0.0058	2.29E-07	0.0000	0.0000	0.00E+00
5			0.08	0.000	0.011	0.2516	0.0003	0.0013	6.37E-08	0.0000	0.0000	0.00E+00
6			0.00	0.000	0.009	0.2502	0.0000	0.0000	8.25E-09	0.0000	0.0000	0.00E+00
7			0.00	0.000	0.009	0.2487	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.009	0.2472	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.009	0.2458	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.009	0.2435	0.0011	0.0040	1.61E-07	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.009	0.2412	0.0013	0.0050	2.01E-07	0.0000	0.0000	0.00E+00
12			0.00	0.000	0.009	0.2390	0.0012	0.0045	1.83E-07	0.0000	0.0000	0.00E+00
13			0.00	0.000	0.009	0.2369	0.0011	0.0040	1.67E-07	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.009	0.2349	0.0010	0.0037	1.56E-07	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.009	0.2329	0.0009	0.0034	1.48E-07	0.0000	0.0000	0.00E+00
16			0.00	0.000	0.009	0.2310	0.0009	0.0033	1.44E-07	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.008	0.2290	0.0009	0.0032	1.41E-07	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.008	0.2271	0.0008	0.0032	1.39E-07	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.008	0.2251	0.0008	0.0031	1.36E-07	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.008	0.2232	0.0008	0.0030	1.34E-07	0.0000	0.0000	0.00E+00
21			0.00	0.000	0.008	0.2213	0.0008	0.0030	1.31E-07	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.007	0.2201	0.0002	0.0007	4.09E-08	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.008	0.2187	0.0000	0.0000	6.78E-09	0.0000	0.0000	0.00E+00
24			0.12	0.000	0.010	0.2379	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
25			0.02	0.000	0.010	0.2393	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
26			0.00	0.000	0.009	0.2383	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
27			0.01	0.000	0.009	0.2391	0.0001	0.0005	2.86E-08	0.0000	0.0000	0.00E+00
28			0.00	0.000	0.008	0.2377	0.0000	0.0000	1.39E-08	0.0000	0.0000	0.00E+00

29		0.11	0.000	0.009	0.2542	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
30		0.09	0.000	0.009	0.2673	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
31		0.13	0.000	0.133	0.2665	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.093	0.2511	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
33		0.00	0.000	0.127	0.2299	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.083	0.2160	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
35		0.00	0.000	0.064	0.2054	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
36		0.00	0.000	0.054	0.1964	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.047	0.1885	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.043	0.1814	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.039	0.1748	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
40	*	0.00	0.000	0.037	0.1687	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
41	*	0.00	0.000	0.034	0.1630	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.033	0.1576	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
43	*	0.00	0.000	0.031	0.1524	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
44		0.13	0.000	0.031	0.1698	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.029	0.1651	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
46		0.07	0.000	0.028	0.1727	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
47		0.01	0.000	0.026	0.1696	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.025	0.1654	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.025	0.1613	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.024	0.1573	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
51		0.15	0.000	0.024	0.1788	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
52		0.00	0.000	0.023	0.1751	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
53	*	0.00	0.000	0.000	0.1751	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.022	0.1715	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.022	0.1677	0.0002	0.0009	4.10E-08	0.0000	0.0000	0.00E+00
56		0.00	0.000	0.021	0.1642	0.0000	0.0001	1.70E-08	0.0000	0.0000	0.00E+00
57		0.00	0.000	0.017	0.1614	0.0000	0.0000	3.21E-09	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.015	0.1589	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.015	0.1565	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60	*	0.00	0.000	0.014	0.1541	0.0000	0.0000	9.07E-09	0.0000	0.0000	0.00E+00
61		0.00	0.000	0.014	0.1517	0.0000	0.0000	4.52E-09	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.015	0.1492	0.0000	0.0000	2.40E-09	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.015	0.1467	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.015	0.1442	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

65		0.00	0.000	0.016	0.1416	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.016	0.1389	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
67		0.00	0.000	0.016	0.1363	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.006	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.002	0.1350	0.0000	0.0001	1.22E-08	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.000	0.1350	0.0000	0.0000	7.61E-09	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
76	*	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
79		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
80		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
81		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
82		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
84		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
85		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
89		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
90		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
91		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
92		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
96		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
97		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
98		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100		0.14	0.000	0.006	0.1572	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

101		0.00	0.000	0.005	0.1564	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
102		0.00	0.000	0.008	0.1550	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
103		0.06	0.000	0.009	0.1637	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
104		0.41	0.000	0.011	0.2307	0.0000	0.0000	4.94E-09	0.0000	0.0000	0.00E+00
105		0.00	0.000	0.010	0.2290	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
106	*	0.00	0.000	0.011	0.2272	0.0000	0.0000	2.27E-09	0.0000	0.0000	0.00E+00
107		0.00	0.000	0.011	0.2253	0.0000	0.0000	3.01E-09	0.0000	0.0000	0.00E+00
108		0.00	0.000	0.012	0.2234	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
109		0.00	0.000	0.011	0.2215	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
110		0.00	0.000	0.011	0.2196	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
111		0.00	0.000	0.011	0.2177	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
112		0.00	0.000	0.011	0.2158	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
113		0.03	0.000	0.012	0.2181	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
114		0.00	0.000	0.011	0.2162	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
115		0.00	0.000	0.011	0.2143	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
116		0.00	0.000	0.012	0.2124	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
117		0.72	0.000	0.013	0.3295	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
118		0.02	0.000	0.013	0.3120	0.0257	0.0964	2.63E-06	0.0000	0.0000	0.00E+00
119		0.00	0.000	0.012	0.3035	0.0130	0.0489	1.46E-06	0.0000	0.0000	0.00E+00
120		0.00	0.000	0.012	0.2939	0.0120	0.0451	1.38E-06	0.0000	0.0000	0.00E+00
121		0.00	0.000	0.012	0.2862	0.0098	0.0367	1.14E-06	0.0000	0.0000	0.00E+00
122		0.00	0.000	0.012	0.2798	0.0076	0.0285	9.14E-07	0.0000	0.0000	0.00E+00
123		0.00	0.000	0.012	0.2742	0.0061	0.0231	7.59E-07	0.0000	0.0000	0.00E+00
124		0.00	0.000	0.012	0.2691	0.0051	0.0192	6.46E-07	0.0000	0.0000	0.00E+00
125		0.00	0.000	0.012	0.2646	0.0043	0.0163	5.60E-07	0.0000	0.0000	0.00E+00
126		0.00	0.000	0.012	0.2602	0.0038	0.0141	4.93E-07	0.0000	0.0000	0.00E+00
127		0.00	0.000	0.013	0.2560	0.0033	0.0124	4.39E-07	0.0000	0.0000	0.00E+00
128		0.00	0.000	0.013	0.2521	0.0029	0.0109	3.94E-07	0.0000	0.0000	0.00E+00
129		0.00	0.000	0.013	0.2485	0.0026	0.0097	3.55E-07	0.0000	0.0000	0.00E+00
130		0.00	0.000	0.012	0.2450	0.0023	0.0087	3.24E-07	0.0000	0.0000	0.00E+00
131		0.00	0.000	0.013	0.2416	0.0021	0.0079	2.98E-07	0.0000	0.0000	0.00E+00
132		0.00	0.000	0.012	0.2383	0.0019	0.0073	2.79E-07	0.0000	0.0000	0.00E+00
133		0.00	0.000	0.012	0.2364	0.0004	0.0015	7.25E-08	0.0000	0.0000	0.00E+00
134		0.00	0.000	0.012	0.2343	0.0000	0.0000	8.52E-09	0.0000	0.0000	0.00E+00
135		0.00	0.000	0.014	0.2321	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
136		0.00	0.000	0.014	0.2297	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

137	0.12	0.000	0.016	0.2469	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
138	0.05	0.000	0.013	0.2525	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
139	0.19	0.000	0.014	0.2820	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.440	0.2086	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.014	0.2063	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.013	0.2042	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.012	0.2022	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
144	0.09	0.000	0.013	0.2144	0.0002	0.0006	2.87E-08	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.012	0.2129	0.0003	0.0011	5.86E-08	0.0000	0.0000	0.00E+00
146	0.06	0.000	0.012	0.2208	0.0002	0.0007	4.42E-08	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.012	0.2187	0.0000	0.0000	7.05E-09	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.012	0.2167	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
149	0.41	0.000	0.013	0.2825	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.303	0.2320	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.013	0.2298	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
152	0.40	0.000	0.015	0.2943	0.0001	0.0005	3.09E-08	0.0000	0.0000	0.00E+00
153	0.00	0.000	0.268	0.2495	0.0002	0.0007	3.93E-08	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.015	0.2474	0.0001	0.0003	2.52E-08	0.0000	0.0000	0.00E+00
155	0.27	0.000	0.014	0.2901	0.0001	0.0004	3.10E-08	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.423	0.2192	0.0010	0.0038	1.51E-07	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.015	0.2166	0.0000	0.0000	1.44E-08	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.016	0.2139	0.0000	0.0000	4.70E-10	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.016	0.2113	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.016	0.2085	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.019	0.2054	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.018	0.2025	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.018	0.1995	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.017	0.1967	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.016	0.1941	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.017	0.1913	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
167	0.00	0.000	0.015	0.1888	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
168	0.00	0.000	0.014	0.1863	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
169	0.02	0.000	0.017	0.1864	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.018	0.1833	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.019	0.1802	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.017	0.1773	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

173	0.00	0.000	0.019	0.1741	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
174	0.00	0.000	0.023	0.1703	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.025	0.1662	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.023	0.1624	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.025	0.1583	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.024	0.1542	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.025	0.1500	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.024	0.1461	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.021	0.1425	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.024	0.1385	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
183	0.00	0.000	0.021	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
185	0.01	0.000	0.004	0.1364	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
186	0.23	0.000	0.012	0.1730	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.014	0.1707	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
188	0.17	0.000	0.018	0.1962	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
189	0.16	0.000	0.022	0.2186	0.0000	0.0000	2.27E-09	0.0000	0.0000	0.00E+00
190	0.10	0.000	0.026	0.2313	0.0000	0.0000	4.44E-09	0.0000	0.0000	0.00E+00
191	0.02	0.000	0.349	0.1772	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
192	0.01	0.000	0.027	0.1751	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
193	0.00	0.000	0.027	0.1706	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
194	0.00	0.000	0.022	0.1669	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
195	0.00	0.000	0.028	0.1622	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
196	0.00	0.000	0.028	0.1575	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.024	0.1535	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
198	0.00	0.000	0.024	0.1494	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
199	0.00	0.000	0.027	0.1450	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
200	0.00	0.000	0.021	0.1415	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.027	0.1370	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
202	0.00	0.000	0.011	0.1351	0.0000	0.0002	1.89E-08	0.0000	0.0000	0.00E+00
203	0.26	0.000	0.014	0.1760	0.0000	0.0000	6.74E-09	0.0000	0.0000	0.00E+00
204	0.07	0.000	0.016	0.1853	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
205	0.08	0.000	0.023	0.1948	0.0000	0.0000	2.27E-09	0.0000	0.0000	0.00E+00
206	0.10	0.000	0.028	0.2077	0.0000	0.0000	5.44E-09	0.0000	0.0000	0.00E+00
207	0.72	0.000	0.220	0.2916	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
208	0.00	0.000	0.470	0.2136	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

209	0.00	0.000	0.400	0.1469	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.060	0.1350	0.0032	0.0119	3.84E-07	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.000	0.1350	0.0000	0.0000	1.44E-08	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.000	0.1350	0.0000	0.0000	3.38E-10	0.0000	0.0000	0.00E+00
213	0.12	0.000	0.033	0.1496	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
214	0.01	0.000	0.037	0.1453	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
215	0.53	0.000	0.057	0.2239	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
216	0.40	0.000	0.067	0.2800	0.0000	0.0000	2.09E-09	0.0000	0.0000	0.00E+00
217	0.00	0.000	0.059	0.2701	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
218	0.01	0.000	0.063	0.2613	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
219	0.00	0.000	0.065	0.2505	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.064	0.2397	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.068	0.2283	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.068	0.2170	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
223	0.04	0.000	0.067	0.2124	0.0000	0.0000	2.44E-09	0.0000	0.0000	0.00E+00
224	0.67	0.000	0.049	0.3152	0.0000	0.0000	1.56E-08	0.0000	0.0000	0.00E+00
225	0.01	0.000	0.251	0.2687	0.0098	0.0370	1.10E-06	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.232	0.2252	0.0065	0.0243	7.89E-07	0.0000	0.0000	0.00E+00
227	0.07	0.000	0.229	0.1948	0.0078	0.0295	9.34E-07	0.0000	0.0000	0.00E+00
228	0.06	0.000	0.108	0.1864	0.0001	0.0003	2.89E-08	0.0000	0.0000	0.00E+00
229	0.38	0.000	0.086	0.2359	0.0000	0.0000	6.04E-09	0.0000	0.0000	0.00E+00
230	0.03	0.000	0.289	0.1924	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.00	0.000	0.084	0.1783	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.086	0.1640	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
233	0.00	0.000	0.078	0.1510	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
234	0.00	0.000	0.070	0.1394	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
235	0.06	0.000	0.039	0.1423	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
236	0.17	0.000	0.040	0.1646	0.0000	0.0000	2.73E-17	0.0000	0.0000	0.00E+00
237	0.11	0.000	0.035	0.1772	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
238	0.14	0.000	0.051	0.1914	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
239	0.56	0.000	0.252	0.2432	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
240	0.07	0.000	0.194	0.2221	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.269	0.1772	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
242	0.00	0.000	0.182	0.1470	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.060	0.1370	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.012	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

245	0.06	0.000	0.014	0.1429	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.031	0.1383	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.012	0.1363	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.005	0.1355	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
249	0.00	0.000	0.002	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
252	0.00	0.000	0.000	0.1350	0.0000	0.0000	5.00E-09	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
255	0.12	0.000	0.032	0.1493	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.032	0.1439	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.036	0.1379	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.015	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
259	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
260	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
261	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
263	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
264	0.37	0.000	0.031	0.1922	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
265	0.03	0.000	0.045	0.1901	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
266	0.80	0.000	0.048	0.3146	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
267	0.00	0.000	0.274	0.2685	0.0006	0.0022	8.42E-08	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.046	0.2554	0.0068	0.0254	8.09E-07	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.041	0.2444	0.0078	0.0295	9.41E-07	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.044	0.2366	0.0017	0.0065	2.36E-07	0.0000	0.0000	0.00E+00
271	0.00	0.000	0.035	0.2307	0.0000	0.0000	1.23E-08	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.047	0.2228	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.041	0.2160	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.044	0.2086	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.045	0.2010	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.035	0.1953	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.033	0.1898	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
278	0.14	0.000	0.037	0.2072	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
279	0.24	0.000	0.030	0.2417	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.150	0.2168	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

281		0.00	0.000	0.022	0.2132	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282	*	0.00	0.000	0.020	0.2098	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
283		0.00	0.000	0.021	0.2064	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
284		0.00	0.000	0.023	0.2026	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
285		0.00	0.000	0.024	0.1987	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
286		0.00	0.000	0.021	0.1952	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
287		0.01	0.000	0.028	0.1925	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
288		0.02	0.000	0.027	0.1907	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
289		0.02	0.000	0.032	0.1894	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
290		0.00	0.000	0.021	0.1855	0.0003	0.0011	4.83E-08	0.0000	0.0000	0.00E+00
291		0.00	0.000	0.022	0.1819	0.0002	0.0007	4.14E-08	0.0000	0.0000	0.00E+00
292		0.00	0.000	0.022	0.1782	0.0000	0.0000	6.80E-09	0.0000	0.0000	0.00E+00
293		0.00	0.000	0.020	0.1749	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
294		0.00	0.000	0.020	0.1716	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
295		0.00	0.000	0.017	0.1688	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
296		0.00	0.000	0.016	0.1661	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
297		0.00	0.000	0.017	0.1633	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
298		0.00	0.000	0.016	0.1605	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
299		0.00	0.000	0.016	0.1579	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
300		0.00	0.000	0.017	0.1551	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
301		0.00	0.000	0.016	0.1525	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
302		0.00	0.000	0.016	0.1498	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
303		0.00	0.000	0.016	0.1471	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
304		0.00	0.000	0.015	0.1446	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
305		0.00	0.000	0.015	0.1421	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
306		0.00	0.000	0.016	0.1395	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
307		0.00	0.000	0.015	0.1370	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
308		0.00	0.000	0.012	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
309		0.00	0.000	0.000	0.1350	0.0000	0.0000	5.51E-17	0.0000	0.0000	0.00E+00
310		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
311		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
312		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
313		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
314		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
315	*	0.07	0.000	0.071	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
316	*	0.03	0.000	0.031	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

317		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
321		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
322		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
323	*	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
325		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
326		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
329		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
332		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
334		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
336		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
337	*	0.56	0.000	0.045	0.1383	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
338	*	0.00	0.000	0.033	0.1416	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
339	*	0.00	0.000	0.023	0.1448	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
340	*	0.00	0.000	0.048	0.1481	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
341		0.00	0.000	0.066	0.1925	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.008	0.1913	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
343		0.30	0.000	0.013	0.2397	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
344		0.00	0.000	0.009	0.2381	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345		0.00	0.000	0.010	0.2365	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.010	0.2349	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
347		0.00	0.000	0.010	0.2332	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
348		0.00	0.000	0.010	0.2316	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
349		0.00	0.000	0.010	0.2299	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
350		0.00	0.000	0.010	0.2283	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.010	0.2267	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
352		0.00	0.000	0.010	0.2251	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

353	0.00	0.000	0.010	0.2235	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
354	0.00	0.000	0.010	0.2219	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
355	0.00	0.000	0.009	0.2204	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
356	0.00	0.000	0.009	0.2188	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
357	0.00	0.000	0.009	0.2172	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
358	0.00	0.000	0.009	0.2157	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
359	0.00	0.000	0.009	0.2141	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
360	0.00	0.000	0.009	0.2126	0.0000	0.0000	7.01E-09	0.0000	0.0000	0.00E+00
361	0.00	0.000	0.009	0.2110	0.0000	0.0000	4.69E-09	0.0000	0.0000	0.00E+00
362	0.00	0.000	0.009	0.2095	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
363	0.00	0.000	0.009	0.2080	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
364	0.00	0.000	0.009	0.2065	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
365	0.00	0.000	0.009	0.2050	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 28			
	inches	cubic feet	percent
Precipitation	12.12	43,987.8	100.00
Runoff	0.001	2.3232	0.01
Evapotranspiration	11.732	42,586.8	96.81
Drainage Collected from Layer 2	0.6233	2,262.5	5.14
Percolation/Leakage through Layer 4	0.000021	0.0752	0.00
Average Head on Top of Layer 3	0.0005	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	-0.2380	-863.8	-1.96
Soil Water at Start of Year	538.7022	1,955,489.1	4445.53
Soil Water at End of Year	538.4643	1,954,625.3	4443.56
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 29

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Column key: Head #1: drainage from Layer 3; Drain #1: drainage from Layer 2; Leak #1: leakage thru Layer 4; Head #2: drainage from Layer 15; Drain #2: drainage from Layer 14; Leak #2: leakage thru Layer 16

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.05	0.000	0.014	0.2114	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.009	0.2099	0.0000	0.0000	7.45E-09	0.0000	0.0000	0.00E+00
3			0.00	0.000	0.009	0.2084	0.0000	0.0000	1.40E-08	0.0000	0.0000	0.00E+00
4	*		0.00	0.000	0.009	0.2069	0.0000	0.0000	6.00E-09	0.0000	0.0000	0.00E+00
5			0.00	0.000	0.009	0.2054	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
6	*		0.00	0.000	0.009	0.2039	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
7	*		0.00	0.000	0.009	0.2023	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
8	*		0.00	0.000	0.000	0.2023	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.009	0.2008	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
10			0.00	0.000	0.009	0.1993	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.009	0.1979	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
12			0.00	0.000	0.009	0.1964	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
13			0.00	0.000	0.009	0.1949	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.009	0.1934	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.009	0.1920	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
16	*		0.00	0.000	0.009	0.1905	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.009	0.1890	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.009	0.1876	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
19	*		0.00	0.000	0.000	0.1876	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
20			0.00	0.000	0.009	0.1861	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
21			0.00	0.000	0.009	0.1847	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.009	0.1833	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
23			0.02	0.000	0.013	0.1849	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
24			0.00	0.000	0.009	0.1835	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
25			0.03	0.000	0.013	0.1858	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
26			0.00	0.000	0.008	0.1844	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
27	*		0.00	0.000	0.000	0.1844	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
28	*		0.00	0.000	0.000	0.1844	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

29	*	0.00	0.000	0.000	0.1844	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
30	*	0.00	0.000	0.000	0.1844	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.008	0.1830	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
32	*	0.00	0.000	0.002	0.1830	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
33	*	0.00	0.000	0.000	0.1830	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
34	*	0.02	0.000	0.030	0.1816	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
35	*	0.02	0.000	0.020	0.1816	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
36	*	0.00	0.000	0.008	0.1802	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.008	0.1788	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
38		0.00	0.000	0.008	0.1774	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.008	0.1760	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.008	0.1746	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.008	0.1733	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.008	0.1719	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
43		0.00	0.000	0.008	0.1706	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
44		0.03	0.000	0.012	0.1735	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.008	0.1721	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.008	0.1708	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.008	0.1694	0.0000	0.0000	1.53E-08	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.008	0.1681	0.0000	0.0000	2.50E-09	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.008	0.1667	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.008	0.1654	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.008	0.1640	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
52		0.00	0.000	0.008	0.1627	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
53		0.00	0.000	0.008	0.1614	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
54		0.00	0.000	0.008	0.1601	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.008	0.1588	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
56		0.00	0.000	0.008	0.1575	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
57		0.00	0.000	0.008	0.1562	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.008	0.1549	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.008	0.1536	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60		0.00	0.000	0.008	0.1523	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
61		0.00	0.000	0.008	0.1510	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
62	*	0.00	0.000	0.008	0.1497	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.008	0.1484	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.008	0.1471	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

65		0.00	0.000	0.008	0.1459	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.008	0.1446	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
67		0.00	0.000	0.008	0.1433	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.008	0.1421	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
69		0.00	0.000	0.008	0.1408	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
70		0.00	0.000	0.008	0.1395	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.008	0.1383	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
72		0.00	0.000	0.008	0.1370	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.007	0.1358	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
74		0.38	0.000	0.011	0.1966	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.006	0.1957	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.006	0.1947	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.006	0.1937	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
78	*	0.05	0.000	0.056	0.1926	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
79	*	0.00	0.000	0.000	0.1926	0.0000	0.0000	4.54E-09	0.0000	0.0000	0.00E+00
80	*	0.00	0.000	0.007	0.1915	0.0000	0.0000	2.88E-10	0.0000	0.0000	0.00E+00
81		0.00	0.000	0.007	0.1904	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
82		0.00	0.000	0.007	0.1893	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
83		0.00	0.000	0.007	0.1882	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
84		0.00	0.000	0.007	0.1871	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
85		0.00	0.000	0.007	0.1860	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
86		0.00	0.000	0.007	0.1849	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.007	0.1838	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
88		0.22	0.000	0.010	0.2184	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
89		0.00	0.000	0.007	0.2173	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
90		0.00	0.000	0.007	0.2161	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
91		0.00	0.000	0.007	0.2150	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
92		0.00	0.000	0.007	0.2139	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.007	0.2127	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.007	0.2115	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
95		0.00	0.000	0.007	0.2104	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
96		0.00	0.000	0.007	0.2092	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
97		0.00	0.000	0.007	0.2081	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
98		0.06	0.000	0.011	0.2165	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99		0.71	0.000	0.011	0.3325	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100		0.00	0.000	0.249	0.2779	0.0169	0.0636	1.79E-06	0.0000	0.0000	0.00E+00

101	0.00	0.000	0.244	0.2274	0.0166	0.0624	1.84E-06	0.0000	0.0000	0.00E+00
102	0.00	0.000	0.202	0.1907	0.0079	0.0297	9.35E-07	0.0000	0.0000	0.00E+00
103	0.00	0.000	0.076	0.1781	0.0001	0.0003	2.75E-08	0.0000	0.0000	0.00E+00
104	0.00	0.000	0.065	0.1673	0.0000	0.0000	5.86E-09	0.0000	0.0000	0.00E+00
105	0.00	0.000	0.055	0.1581	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
106	0.00	0.000	0.049	0.1499	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
107	0.00	0.000	0.045	0.1425	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
108	0.00	0.000	0.041	0.1356	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
109	0.00	0.000	0.004	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
110	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
111	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
112	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
113	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
114	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
115	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
116	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
117	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
118	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
119	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
120	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
121	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
122	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
123	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
124	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
125	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
126	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
127	0.03	0.000	0.005	0.1383	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
128	0.00	0.000	0.002	0.1380	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
129	0.00	0.000	0.006	0.1370	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
130	0.00	0.000	0.003	0.1364	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
131	0.00	0.000	0.004	0.1358	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
132	0.00	0.000	0.003	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
133	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
134	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
135	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
136	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

137	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
140	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
148	0.10	0.000	0.011	0.1499	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
149	0.11	0.000	0.011	0.1665	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
150	0.01	0.000	0.014	0.1665	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
151	0.12	0.000	0.014	0.1845	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
152	0.00	0.000	0.011	0.1827	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
153	0.00	0.000	0.013	0.1805	0.0000	0.0000	7.19E-09	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.013	0.1783	0.0000	0.0000	7.52E-09	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.014	0.1761	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
156	0.00	0.000	0.013	0.1739	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
157	0.00	0.000	0.013	0.1717	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.014	0.1694	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
159	0.15	0.000	0.018	0.1907	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.016	0.1881	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
161	0.00	0.000	0.016	0.1854	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.017	0.1826	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.016	0.1799	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.017	0.1770	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.017	0.1742	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.016	0.1714	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
167	0.00	0.000	0.015	0.1690	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
168	0.00	0.000	0.016	0.1663	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
169	0.00	0.000	0.017	0.1634	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.020	0.1601	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.019	0.1569	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.020	0.1535	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

173	0.00	0.000	0.021	0.1501	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
174	0.17	0.000	0.020	0.1752	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
175	0.12	0.000	0.025	0.1909	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.020	0.1876	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.022	0.1838	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.022	0.1801	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
179	0.00	0.000	0.020	0.1768	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
180	0.00	0.000	0.017	0.1740	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.017	0.1711	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.00	0.000	0.017	0.1682	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
183	0.00	0.000	0.019	0.1649	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.021	0.1614	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
185	0.00	0.000	0.021	0.1579	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
186	0.00	0.000	0.019	0.1546	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
187	0.13	0.000	0.028	0.1713	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.024	0.1673	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
189	0.03	0.000	0.028	0.1679	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
190	0.55	0.000	0.028	0.2544	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.019	0.2512	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
192	0.01	0.000	0.021	0.2490	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
193	0.04	0.000	0.025	0.2520	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
194	0.01	0.000	0.025	0.2487	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
195	0.01	0.000	0.026	0.2464	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
196	0.00	0.000	0.023	0.2425	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.023	0.2387	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
198	0.00	0.000	0.024	0.2347	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
199	0.00	0.000	0.027	0.2302	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
200	0.01	0.000	0.036	0.2252	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
201	0.06	0.000	0.038	0.2290	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
202	0.04	0.000	0.035	0.2296	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.032	0.2242	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
204	0.00	0.000	0.040	0.2175	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
205	0.12	0.000	0.033	0.2323	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
206	0.10	0.000	0.042	0.2412	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
207	0.00	0.000	0.035	0.2354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
208	0.00	0.000	0.034	0.2297	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

209	0.00	0.000	0.034	0.2240	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.036	0.2180	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.035	0.2122	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.027	0.2077	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
213	0.13	0.000	0.039	0.2235	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
214	0.00	0.000	0.038	0.2172	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.040	0.2105	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
216	0.00	0.000	0.042	0.2035	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
217	0.00	0.000	0.041	0.1968	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
218	0.44	0.000	0.039	0.2632	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
219	0.23	0.000	0.344	0.2442	0.0002	0.0008	3.77E-08	0.0000	0.0000	0.00E+00
220	0.27	0.000	0.207	0.2550	0.0002	0.0009	4.89E-08	0.0000	0.0000	0.00E+00
221	0.00	0.000	0.208	0.2203	0.0002	0.0009	4.83E-08	0.0000	0.0000	0.00E+00
222	0.56	0.000	0.226	0.2761	0.0001	0.0002	2.49E-08	0.0000	0.0000	0.00E+00
223	0.00	0.000	0.231	0.2376	0.0000	0.0000	1.00E-08	0.0000	0.0000	0.00E+00
224	0.00	0.000	0.406	0.1699	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
225	0.00	0.000	0.178	0.1397	0.0008	0.0028	1.08E-07	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.024	0.1350	0.0013	0.0048	1.77E-07	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.000	0.1350	0.0000	0.0000	1.30E-08	0.0000	0.0000	0.00E+00
228	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
229	0.14	0.000	0.035	0.1522	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
230	0.00	0.000	0.036	0.1468	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.00	0.000	0.055	0.1377	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
232	0.00	0.000	0.010	0.1360	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
233	0.00	0.000	0.004	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
234	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
235	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
236	0.00	0.000	0.000	0.1350	0.0000	0.0000	5.01E-09	0.0000	0.0000	0.00E+00
237	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
239	0.12	0.000	0.025	0.1503	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
240	0.00	0.000	0.025	0.1463	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.038	0.1400	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
242	0.00	0.000	0.024	0.1359	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.004	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

245	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
248	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
249	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
250	0.19	0.000	0.022	0.1631	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
251	0.01	0.000	0.022	0.1615	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
252	0.02	0.000	0.028	0.1602	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
253	0.29	0.000	0.035	0.2021	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.10	0.000	0.037	0.2123	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
255	0.05	0.000	0.037	0.2144	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.044	0.2069	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.039	0.2004	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.033	0.1949	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
259	0.00	0.000	0.026	0.1905	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
260	0.00	0.000	0.029	0.1857	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
261	0.09	0.000	0.029	0.1962	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.022	0.1925	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
263	0.02	0.000	0.028	0.1909	0.0000	0.0000	3.71E-09	0.0000	0.0000	0.00E+00
264	0.17	0.000	0.027	0.2140	0.0000	0.0000	1.40E-08	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.022	0.2104	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
266	0.00	0.000	0.023	0.2066	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
267	0.08	0.000	0.026	0.2150	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
268	0.48	0.000	0.026	0.2912	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
269	0.01	0.000	0.152	0.2671	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.021	0.2637	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
271	0.15	0.000	0.029	0.2840	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
272	0.10	0.000	0.277	0.2545	0.0004	0.0015	6.56E-08	0.0000	0.0000	0.00E+00
273	0.00	0.000	0.023	0.2507	0.0000	0.0000	1.34E-08	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.020	0.2473	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.022	0.2437	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.019	0.2401	0.0004	0.0016	7.56E-08	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.020	0.2362	0.0008	0.0032	1.39E-07	0.0000	0.0000	0.00E+00
278	0.00	0.000	0.020	0.2323	0.0009	0.0035	1.50E-07	0.0000	0.0000	0.00E+00
279	0.00	0.000	0.020	0.2284	0.0009	0.0032	1.41E-07	0.0000	0.0000	0.00E+00
280	0.00	0.000	0.020	0.2246	0.0008	0.0029	1.27E-07	0.0000	0.0000	0.00E+00

281		0.00	0.000	0.019	0.2215	0.0002	0.0006	3.86E-08	0.0000	0.0000	0.00E+00
282		0.00	0.000	0.023	0.2176	0.0000	0.0000	6.70E-09	0.0000	0.0000	0.00E+00
283		0.00	0.000	0.020	0.2142	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
284		0.00	0.000	0.018	0.2112	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
285		0.73	0.000	0.022	0.3296	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
286		0.00	0.000	0.277	0.2678	0.0232	0.0870	2.32E-06	0.0000	0.0000	0.00E+00
287		0.06	0.000	0.200	0.2359	0.0123	0.0461	1.40E-06	0.0000	0.0000	0.00E+00
288		0.00	0.000	0.134	0.2119	0.0046	0.0172	5.69E-07	0.0000	0.0000	0.00E+00
289		0.00	0.000	0.089	0.1970	0.0000	0.0001	1.66E-08	0.0000	0.0000	0.00E+00
290		0.00	0.000	0.082	0.1832	0.0000	0.0000	2.87E-09	0.0000	0.0000	0.00E+00
291		0.00	0.000	0.065	0.1723	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
292		0.00	0.000	0.055	0.1632	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
293	*	0.00	0.000	0.048	0.1552	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
294		0.00	0.000	0.044	0.1478	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
295		0.00	0.000	0.041	0.1409	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
296		0.00	0.000	0.035	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
297		0.00	0.000	0.000	0.1350	0.0000	0.0000	2.73E-17	0.0000	0.0000	0.00E+00
298		0.01	0.000	0.008	0.1360	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
299		0.11	0.000	0.019	0.1512	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
300		0.06	0.000	0.018	0.1577	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
301		0.00	0.000	0.019	0.1545	0.0000	0.0000	8.51E-09	0.0000	0.0000	0.00E+00
302		0.00	0.000	0.019	0.1513	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
303		0.00	0.000	0.018	0.1483	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
304		0.00	0.000	0.017	0.1454	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
305		0.00	0.000	0.017	0.1426	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
306		0.00	0.000	0.016	0.1399	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
307		0.00	0.000	0.013	0.1377	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
308		0.00	0.000	0.012	0.1358	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
309		0.00	0.000	0.004	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
310		0.05	0.000	0.008	0.1416	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
311		0.00	0.000	0.009	0.1401	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
312		0.00	0.000	0.010	0.1384	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
313		0.03	0.000	0.016	0.1414	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
314		0.00	0.000	0.012	0.1399	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
315		0.00	0.000	0.010	0.1383	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
316		0.00	0.000	0.009	0.1368	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

317		0.00	0.000	0.003	0.1363	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318		0.00	0.000	0.004	0.1357	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319		0.00	0.000	0.003	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320		0.00	0.000	0.001	0.1350	0.0000	0.0000	9.80E-09	0.0000	0.0000	0.00E+00
321		0.00	0.000	0.000	0.1350	0.0000	0.0000	4.66E-09	0.0000	0.0000	0.00E+00
322		0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
323		0.01	0.000	0.005	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324		0.01	0.000	0.005	0.1357	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
325		0.06	0.000	0.006	0.1449	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
326		0.06	0.000	0.011	0.1536	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.008	0.1523	0.0000	0.0000	3.75E-09	0.0000	0.0000	0.00E+00
328		0.00	0.000	0.011	0.1505	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
329		0.00	0.000	0.011	0.1487	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330		0.43	0.000	0.015	0.2184	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331		0.31	0.000	0.017	0.2670	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
332		0.06	0.000	0.019	0.2737	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333		0.00	0.000	0.015	0.2712	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
334		0.00	0.000	0.015	0.2687	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.015	0.2663	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
336		0.00	0.000	0.015	0.2638	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
337		0.00	0.000	0.014	0.2614	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
338		0.00	0.000	0.014	0.2591	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
339		0.00	0.000	0.014	0.2567	0.0000	0.0001	4.84E-09	0.0000	0.0000	0.00E+00
340		0.00	0.000	0.014	0.2544	0.0000	0.0000	1.47E-08	0.0000	0.0000	0.00E+00
341		0.00	0.000	0.014	0.2521	0.0000	0.0000	1.10E-09	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.014	0.2498	0.0000	0.0000	3.89E-09	0.0000	0.0000	0.00E+00
343		0.04	0.000	0.017	0.2539	0.0000	0.0001	1.94E-08	0.0000	0.0000	0.00E+00
344		0.00	0.000	0.013	0.2517	0.0000	0.0000	7.66E-09	0.0000	0.0000	0.00E+00
345		0.00	0.000	0.013	0.2494	0.0000	0.0002	1.23E-08	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.013	0.2469	0.0003	0.0013	6.97E-08	0.0000	0.0000	0.00E+00
347	*	0.00	0.000	0.013	0.2446	0.0003	0.0013	6.87E-08	0.0000	0.0000	0.00E+00
348	*	0.00	0.000	0.000	0.2445	0.0001	0.0005	3.74E-08	0.0000	0.0000	0.00E+00
349	*	0.00	0.000	0.013	0.2423	0.0001	0.0003	2.57E-08	0.0000	0.0000	0.00E+00
350	*	0.00	0.000	0.013	0.2401	0.0001	0.0003	2.89E-08	0.0000	0.0000	0.00E+00
351	*	0.00	0.000	0.000	0.2400	0.0001	0.0004	3.00E-08	0.0000	0.0000	0.00E+00
352	*	0.00	0.000	0.013	0.2378	0.0002	0.0008	4.76E-08	0.0000	0.0000	0.00E+00

353	*	0.00	0.000	0.000	0.2378	0.0000	0.0001	1.81E-08	0.0000	0.0000	0.00E+00
354		0.00	0.000	0.013	0.2356	0.0000	0.0000	3.78E-09	0.0000	0.0000	0.00E+00
355		0.00	0.000	0.013	0.2335	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
356		0.00	0.000	0.012	0.2315	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
357		0.00	0.000	0.012	0.2294	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
358		0.00	0.000	0.012	0.2274	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.012	0.2253	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
360		0.00	0.000	0.012	0.2233	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
361		0.00	0.000	0.012	0.2212	0.0001	0.0003	2.72E-08	0.0000	0.0000	0.00E+00
362		0.00	0.000	0.012	0.2192	0.0000	0.0002	2.12E-08	0.0000	0.0000	0.00E+00
363		0.00	0.000	0.012	0.2172	0.0000	0.0000	4.56E-09	0.0000	0.0000	0.00E+00
364		0.00	0.000	0.012	0.2153	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
365	*	0.00	0.000	0.012	0.2133	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 29			
	inches	cubic feet	percent
Precipitation	9.18	33,310.7	100.00
Runoff	0.000	0.0000	0.00
Evapotranspiration	8.787	31,897.9	95.76
Drainage Collected from Layer 2	0.3391	1,231.0	3.70
Percolation/Leakage through Layer 4	0.000011	0.0388	0.00
Average Head on Top of Layer 3	0.0002	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	0.0501	181.8	0.55
Soil Water at Start of Year	538.4643	1,954,625.3	5867.86
Soil Water at End of Year	538.5144	1,954,807.1	5868.40
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Daily Output for Year 30

Title: WST Landfill
Simulated On: 3/13/2026 15:55

Column key: Head #1: drainage from Layer 3; Drain #1: drainage from Layer 2; Leak #1: leakage thru Layer 4; Head #2: drainage from Layer 15; Drain #2: drainage from Layer 14; Leak #2: leakage thru Layer 16

Day	Freezing Status*		Rain	Runoff	ET	Evap. Zone Water	Head #1	Drain #1	Leak #1	Head #2	Drain #2	Leak #2
	Air	Soil	(inches)	(inches)	(inches)	(in/in)	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
1			0.00	0.000	0.012	0.2114	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
2			0.00	0.000	0.012	0.2095	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
3	*		0.05	0.000	0.061	0.2075	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
4	*		0.00	0.000	0.011	0.2056	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
5	*		0.00	0.000	0.000	0.2056	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
6	*		0.09	0.000	0.061	0.2089	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
7	*		0.00	0.000	0.013	0.2089	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
8			0.00	0.000	0.011	0.2069	0.0002	0.0006	2.88E-08	0.0000	0.0000	0.00E+00
9			0.00	0.000	0.011	0.2050	0.0001	0.0004	3.12E-08	0.0000	0.0000	0.00E+00
10	*		0.00	0.000	0.011	0.2031	0.0000	0.0000	6.26E-09	0.0000	0.0000	0.00E+00
11			0.00	0.000	0.011	0.2013	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
12			0.00	0.000	0.009	0.1997	0.0001	0.0002	1.57E-08	0.0000	0.0000	0.00E+00
13			0.04	0.000	0.013	0.2041	0.0000	0.0000	1.46E-08	0.0000	0.0000	0.00E+00
14			0.00	0.000	0.011	0.2023	0.0000	0.0000	1.05E-09	0.0000	0.0000	0.00E+00
15			0.00	0.000	0.011	0.2005	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
16			0.00	0.000	0.011	0.1987	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
17			0.00	0.000	0.011	0.1969	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
18			0.00	0.000	0.011	0.1951	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
19			0.00	0.000	0.010	0.1934	0.0000	0.0001	4.93E-09	0.0000	0.0000	0.00E+00
20			0.11	0.000	0.013	0.2092	0.0000	0.0000	1.47E-08	0.0000	0.0000	0.00E+00
21			0.13	0.000	0.013	0.2289	0.0000	0.0000	1.17E-09	0.0000	0.0000	0.00E+00
22			0.00	0.000	0.010	0.2272	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
23			0.00	0.000	0.010	0.2254	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
24			0.00	0.000	0.010	0.2237	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
25			0.00	0.000	0.010	0.2219	0.0001	0.0005	3.25E-08	0.0000	0.0000	0.00E+00
26			0.00	0.000	0.010	0.2200	0.0003	0.0010	5.85E-08	0.0000	0.0000	0.00E+00
27			0.00	0.000	0.010	0.2183	0.0000	0.0000	1.33E-08	0.0000	0.0000	0.00E+00
28			0.00	0.000	0.010	0.2167	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

29		0.00	0.000	0.010	0.2150	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
30		0.00	0.000	0.010	0.2133	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
31		0.00	0.000	0.010	0.2117	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
32		0.00	0.000	0.010	0.2100	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
33		0.00	0.000	0.010	0.2084	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
34		0.00	0.000	0.010	0.2065	0.0003	0.0011	5.75E-08	0.0000	0.0000	0.00E+00
35		0.00	0.000	0.010	0.2047	0.0003	0.0012	6.51E-08	0.0000	0.0000	0.00E+00
36		0.00	0.000	0.010	0.2029	0.0003	0.0010	5.82E-08	0.0000	0.0000	0.00E+00
37		0.00	0.000	0.010	0.2011	0.0002	0.0009	5.26E-08	0.0000	0.0000	0.00E+00
38	*	0.00	0.000	0.000	0.2011	0.0000	0.0002	2.21E-08	0.0000	0.0000	0.00E+00
39		0.00	0.000	0.010	0.1994	0.0001	0.0005	3.63E-08	0.0000	0.0000	0.00E+00
40		0.00	0.000	0.009	0.1978	0.0000	0.0001	2.02E-08	0.0000	0.0000	0.00E+00
41		0.00	0.000	0.010	0.1963	0.0000	0.0000	4.31E-09	0.0000	0.0000	0.00E+00
42		0.00	0.000	0.010	0.1947	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
43		0.00	0.000	0.009	0.1931	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
44		0.00	0.000	0.009	0.1915	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
45		0.00	0.000	0.009	0.1900	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
46		0.00	0.000	0.009	0.1884	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
47		0.00	0.000	0.009	0.1869	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
48		0.00	0.000	0.009	0.1853	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
49		0.00	0.000	0.009	0.1838	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
50		0.00	0.000	0.009	0.1823	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
51		0.00	0.000	0.009	0.1807	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
52		0.00	0.000	0.009	0.1792	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
53		0.01	0.000	0.011	0.1785	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
54		0.10	0.000	0.010	0.1933	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
55		0.00	0.000	0.009	0.1918	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
56		0.00	0.000	0.009	0.1903	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
57		0.00	0.000	0.009	0.1888	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
58		0.00	0.000	0.009	0.1873	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
59		0.00	0.000	0.009	0.1858	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
60		0.00	0.000	0.009	0.1844	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
61		0.00	0.000	0.009	0.1829	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
62		0.00	0.000	0.009	0.1815	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
63		0.00	0.000	0.009	0.1800	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
64		0.00	0.000	0.009	0.1786	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

65		0.00	0.000	0.009	0.1771	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
66		0.00	0.000	0.009	0.1757	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
67		0.00	0.000	0.009	0.1742	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
68		0.00	0.000	0.009	0.1728	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
69		0.32	0.000	0.010	0.2253	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
70		0.04	0.000	0.010	0.2299	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
71		0.00	0.000	0.008	0.2285	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
72		0.05	0.000	0.010	0.2354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
73		0.00	0.000	0.008	0.2340	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
74		0.00	0.000	0.008	0.2326	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
75		0.00	0.000	0.008	0.2312	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
76		0.00	0.000	0.008	0.2298	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
77		0.00	0.000	0.008	0.2285	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
78		0.00	0.000	0.008	0.2271	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
79		0.00	0.000	0.008	0.2257	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
80		0.00	0.000	0.008	0.2243	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
81		0.00	0.000	0.008	0.2230	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
82		0.00	0.000	0.008	0.2216	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
83		0.07	0.000	0.009	0.2317	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
84		0.17	0.000	0.009	0.2593	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
85		0.29	0.000	0.009	0.3068	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
86		0.03	0.000	0.165	0.2838	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
87		0.00	0.000	0.008	0.2825	0.0003	0.0011	5.56E-08	0.0000	0.0000	0.00E+00
88		0.00	0.000	0.008	0.2787	0.0023	0.0087	3.02E-07	0.0000	0.0000	0.00E+00
89		0.00	0.000	0.008	0.2739	0.0060	0.0225	7.41E-07	0.0000	0.0000	0.00E+00
90		0.00	0.000	0.008	0.2700	0.0042	0.0159	5.45E-07	0.0000	0.0000	0.00E+00
91		0.00	0.000	0.008	0.2661	0.0041	0.0154	5.32E-07	0.0000	0.0000	0.00E+00
92		0.30	0.000	0.009	0.3125	0.0037	0.0138	4.83E-07	0.0000	0.0000	0.00E+00
93		0.00	0.000	0.221	0.2605	0.0217	0.0814	2.23E-06	0.0000	0.0000	0.00E+00
94		0.00	0.000	0.008	0.2536	0.0109	0.0411	1.26E-06	0.0000	0.0000	0.00E+00
95	*	0.00	0.000	0.008	0.2508	0.0036	0.0136	4.68E-07	0.0000	0.0000	0.00E+00
96	*	0.00	0.000	0.008	0.2495	0.0000	0.0001	1.81E-08	0.0000	0.0000	0.00E+00
97		0.00	0.000	0.008	0.2482	0.0000	0.0000	3.77E-09	0.0000	0.0000	0.00E+00
98		0.00	0.000	0.008	0.2468	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
99		0.00	0.000	0.008	0.2455	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
100	*	0.00	0.000	0.008	0.2442	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

101		0.00	0.000	0.008	0.2429	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
102	*	0.09	0.000	0.095	0.2416	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
103	*	0.00	0.000	0.008	0.2403	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
104		0.00	0.000	0.008	0.2390	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
105		0.00	0.000	0.008	0.2377	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
106		0.00	0.000	0.008	0.2364	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
107		0.00	0.000	0.008	0.2350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
108		0.00	0.000	0.009	0.2336	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
109		0.00	0.000	0.009	0.2321	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
110		0.00	0.000	0.008	0.2308	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
111		0.00	0.000	0.008	0.2294	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
112		0.00	0.000	0.008	0.2280	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
113		0.00	0.000	0.009	0.2266	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
114		0.00	0.000	0.009	0.2251	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
115		0.00	0.000	0.009	0.2236	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
116		0.00	0.000	0.009	0.2220	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
117		0.00	0.000	0.009	0.2206	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
118		0.00	0.000	0.009	0.2191	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
119		0.00	0.000	0.009	0.2175	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
120		0.00	0.000	0.008	0.2161	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
121		0.00	0.000	0.010	0.2145	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
122		0.00	0.000	0.011	0.2128	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
123		0.00	0.000	0.010	0.2111	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
124		0.00	0.000	0.010	0.2094	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
125		0.00	0.000	0.011	0.2075	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
126		0.00	0.000	0.011	0.2058	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
127		0.00	0.000	0.009	0.2042	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
128		0.00	0.000	0.010	0.2024	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
129		0.00	0.000	0.011	0.2005	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
130		0.00	0.000	0.010	0.1989	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
131		0.00	0.000	0.011	0.1971	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
132		0.00	0.000	0.012	0.1951	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
133		0.00	0.000	0.011	0.1939	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
134		0.00	0.000	0.013	0.1918	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
135		0.00	0.000	0.012	0.1898	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
136		0.00	0.000	0.012	0.1878	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

137	0.00	0.000	0.012	0.1858	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
138	0.00	0.000	0.012	0.1838	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
139	0.00	0.000	0.012	0.1818	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
140	0.22	0.000	0.012	0.2166	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
141	0.00	0.000	0.013	0.2145	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
142	0.00	0.000	0.013	0.2123	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
143	0.00	0.000	0.014	0.2099	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
144	0.00	0.000	0.013	0.2078	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
145	0.00	0.000	0.013	0.2056	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
146	0.00	0.000	0.014	0.2032	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
147	0.00	0.000	0.014	0.2009	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
148	0.00	0.000	0.013	0.1987	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
149	0.00	0.000	0.013	0.1966	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
150	0.00	0.000	0.011	0.1947	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
151	0.00	0.000	0.013	0.1926	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
152	0.21	0.000	0.012	0.2260	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
153	0.04	0.000	0.014	0.2308	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
154	0.00	0.000	0.015	0.2284	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
155	0.00	0.000	0.016	0.2257	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
156	0.25	0.000	0.019	0.2645	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
157	0.23	0.000	0.279	0.2557	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
158	0.00	0.000	0.466	0.1780	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
159	0.00	0.000	0.209	0.1432	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
160	0.00	0.000	0.041	0.1350	0.0022	0.0082	2.77E-07	0.0000	0.0000	0.00E+00
161	0.13	0.000	0.031	0.1520	0.0000	0.0000	1.39E-08	0.0000	0.0000	0.00E+00
162	0.00	0.000	0.028	0.1473	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
163	0.00	0.000	0.038	0.1410	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
164	0.00	0.000	0.030	0.1360	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
165	0.00	0.000	0.004	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
166	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
167	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
168	0.12	0.000	0.019	0.1516	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
169	0.11	0.000	0.020	0.1667	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
170	0.00	0.000	0.029	0.1619	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
171	0.00	0.000	0.027	0.1574	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
172	0.00	0.000	0.025	0.1532	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

173	0.00	0.000	0.025	0.1490	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
174	0.00	0.000	0.032	0.1436	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
175	0.00	0.000	0.033	0.1382	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
176	0.00	0.000	0.015	0.1357	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
177	0.00	0.000	0.003	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
178	0.00	0.000	0.001	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
179	0.04	0.000	0.005	0.1405	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
180	0.11	0.000	0.018	0.1555	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
181	0.00	0.000	0.015	0.1529	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
182	0.20	0.000	0.024	0.1822	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
183	0.01	0.000	0.026	0.1801	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
184	0.00	0.000	0.025	0.1759	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
185	0.08	0.000	0.033	0.1842	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
186	0.05	0.000	0.037	0.1871	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
187	0.00	0.000	0.032	0.1817	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
188	0.00	0.000	0.029	0.1769	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
189	0.01	0.000	0.032	0.1738	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
190	0.00	0.000	0.035	0.1680	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
191	0.00	0.000	0.034	0.1624	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
192	0.00	0.000	0.027	0.1578	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
193	0.02	0.000	0.025	0.1566	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
194	0.03	0.000	0.036	0.1558	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
195	0.00	0.000	0.030	0.1508	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
196	0.00	0.000	0.032	0.1454	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
197	0.00	0.000	0.026	0.1411	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
198	0.00	0.000	0.020	0.1377	0.0000	0.0001	1.19E-08	0.0000	0.0000	0.00E+00
199	0.02	0.000	0.017	0.1376	0.0000	0.0000	1.26E-08	0.0000	0.0000	0.00E+00
200	0.17	0.000	0.018	0.1635	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
201	0.00	0.000	0.013	0.1612	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
202	0.00	0.000	0.019	0.1581	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
203	0.00	0.000	0.028	0.1535	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
204	0.00	0.000	0.030	0.1485	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
205	0.29	0.000	0.031	0.1916	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
206	0.01	0.000	0.025	0.1885	0.0000	0.0000	2.25E-09	0.0000	0.0000	0.00E+00
207	0.10	0.000	0.026	0.2000	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
208	0.00	0.000	0.033	0.1945	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

209	0.00	0.000	0.037	0.1883	0.0000	0.0000	9.74E-09	0.0000	0.0000	0.00E+00
210	0.00	0.000	0.028	0.1836	0.0000	0.0000	4.50E-09	0.0000	0.0000	0.00E+00
211	0.00	0.000	0.037	0.1774	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
212	0.00	0.000	0.039	0.1708	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
213	0.00	0.000	0.031	0.1656	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
214	0.01	0.000	0.037	0.1618	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
215	0.00	0.000	0.036	0.1558	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
216	0.00	0.000	0.043	0.1486	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
217	0.00	0.000	0.044	0.1420	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
218	0.07	0.000	0.041	0.1473	0.0000	0.0001	6.68E-09	0.0000	0.0000	0.00E+00
219	0.00	0.000	0.020	0.1440	0.0000	0.0000	1.54E-08	0.0000	0.0000	0.00E+00
220	0.00	0.000	0.030	0.1390	0.0000	0.0000	1.97E-09	0.0000	0.0000	0.00E+00
221	0.02	0.000	0.023	0.1377	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
222	0.00	0.000	0.008	0.1364	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
223	0.00	0.000	0.007	0.1353	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
224	0.10	0.000	0.023	0.1482	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
225	0.03	0.000	0.029	0.1491	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
226	0.00	0.000	0.033	0.1435	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
227	0.00	0.000	0.038	0.1375	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
228	0.08	0.000	0.016	0.1475	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
229	0.00	0.000	0.024	0.1434	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
230	0.12	0.000	0.033	0.1579	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
231	0.56	0.000	0.029	0.2472	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
232	0.03	0.000	0.211	0.2168	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
233	0.17	0.000	0.280	0.1982	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
234	0.13	0.000	0.261	0.1768	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
235	0.29	0.000	0.190	0.1942	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
236	0.44	0.000	0.161	0.2411	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
237	0.17	0.000	0.260	0.2261	0.0006	0.0022	9.06E-08	0.0000	0.0000	0.00E+00
238	0.00	0.000	0.341	0.1692	0.0000	0.0001	1.84E-08	0.0000	0.0000	0.00E+00
239	0.00	0.000	0.181	0.1391	0.0000	0.0000	3.88E-09	0.0000	0.0000	0.00E+00
240	0.02	0.000	0.038	0.1367	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
241	0.00	0.000	0.010	0.1358	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
242	0.30	0.000	0.040	0.1788	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
243	0.00	0.000	0.062	0.1692	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
244	0.00	0.000	0.057	0.1597	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

245	0.00	0.000	0.055	0.1506	0.0000	0.0000	5.51E-17	0.0000	0.0000	0.00E+00
246	0.00	0.000	0.050	0.1423	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
247	0.00	0.000	0.037	0.1360	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
248	0.01	0.000	0.011	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
249	0.19	0.000	0.029	0.1615	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
250	0.00	0.000	0.029	0.1567	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
251	0.00	0.000	0.048	0.1487	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
252	0.00	0.000	0.052	0.1400	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
253	0.00	0.000	0.024	0.1360	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
254	0.00	0.000	0.005	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
255	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
256	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
257	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
258	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
259	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
260	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
261	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
262	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
263	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
264	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
265	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
266	0.15	0.000	0.026	0.1555	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
267	0.01	0.000	0.026	0.1532	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
268	0.00	0.000	0.027	0.1487	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
269	0.00	0.000	0.030	0.1436	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
270	0.00	0.000	0.036	0.1375	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
271	0.16	0.000	0.033	0.1589	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
272	0.00	0.000	0.020	0.1556	0.0000	0.0000	2.61E-09	0.0000	0.0000	0.00E+00
273	0.06	0.000	0.042	0.1591	0.0000	0.0000	1.11E-08	0.0000	0.0000	0.00E+00
274	0.00	0.000	0.032	0.1537	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
275	0.00	0.000	0.022	0.1500	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
276	0.00	0.000	0.021	0.1466	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
277	0.00	0.000	0.018	0.1436	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
278	0.25	0.000	0.024	0.1820	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
279	0.02	0.000	0.035	0.1794	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
280	0.69	0.000	0.031	0.2896	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

281	0.23	0.000	0.207	0.2943	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
282	0.63	0.001	0.232	0.3278	0.0395	0.1484	3.55E-06	0.0000	0.0000	0.00E+00
283	0.02	0.000	0.275	0.2791	0.0205	0.0771	2.16E-06	0.0000	0.0000	0.00E+00
284	0.00	0.000	0.136	0.2475	0.0148	0.0558	1.66E-06	0.0000	0.0000	0.00E+00
285	0.07	0.000	0.194	0.2213	0.0110	0.0415	1.27E-06	0.0000	0.0000	0.00E+00
286	0.05	0.000	0.105	0.2124	0.0016	0.0062	2.24E-07	0.0000	0.0000	0.00E+00
287	0.00	0.000	0.163	0.1852	0.0000	0.0000	1.14E-08	0.0000	0.0000	0.00E+00
288	0.00	0.000	0.154	0.1585	0.0016	0.0062	2.11E-07	0.0000	0.0000	0.00E+00
289	0.00	0.000	0.141	0.1350	0.0000	0.0001	1.88E-08	0.0000	0.0000	0.00E+00
290	0.00	0.000	0.000	0.1350	0.0000	0.0000	4.00E-09	0.0000	0.0000	0.00E+00
291	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
292	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
293	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
294	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
295	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
296	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
297	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
298	0.01	0.000	0.008	0.1354	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
299	0.00	0.000	0.001	0.1352	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
300	0.00	0.000	0.001	0.1351	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
301	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
302	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
303	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
304	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
305	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
306	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
307	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
308	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
309	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
310	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
311	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
312	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
313	0.00	0.000	0.000	0.1350	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
314	0.71	0.000	0.020	0.2499	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
315	0.00	0.000	0.018	0.2469	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
316	0.00	0.000	0.019	0.2438	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

317		0.00	0.000	0.019	0.2407	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
318		0.00	0.000	0.018	0.2377	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
319		0.00	0.000	0.018	0.2347	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
320		0.00	0.000	0.018	0.2317	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
321		0.00	0.000	0.017	0.2289	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
322		0.00	0.000	0.017	0.2260	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
323		0.00	0.000	0.017	0.2232	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
324		0.00	0.000	0.017	0.2204	0.0000	0.0000	2.85E-09	0.0000	0.0000	0.00E+00
325		0.00	0.000	0.016	0.2177	0.0000	0.0000	1.20E-08	0.0000	0.0000	0.00E+00
326		0.00	0.000	0.016	0.2150	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
327		0.00	0.000	0.016	0.2123	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
328		0.00	0.000	0.016	0.2096	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
329		0.17	0.000	0.020	0.2340	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
330		0.00	0.000	0.016	0.2314	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
331		0.00	0.000	0.016	0.2288	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
332		0.00	0.000	0.018	0.2264	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
333		0.00	0.000	0.015	0.2239	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
334		0.00	0.000	0.015	0.2214	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
335		0.00	0.000	0.015	0.2189	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
336		0.00	0.000	0.015	0.2164	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
337		0.00	0.000	0.015	0.2140	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
338		0.00	0.000	0.014	0.2116	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
339		0.00	0.000	0.014	0.2092	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
340		0.00	0.000	0.014	0.2069	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
341		0.00	0.000	0.014	0.2045	0.0000	0.0001	2.12E-08	0.0000	0.0000	0.00E+00
342		0.00	0.000	0.014	0.2022	0.0000	0.0000	1.50E-08	0.0000	0.0000	0.00E+00
343		0.00	0.000	0.014	0.1999	0.0000	0.0000	1.57E-09	0.0000	0.0000	0.00E+00
344		0.00	0.000	0.014	0.1977	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
345		0.00	0.000	0.013	0.1954	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
346		0.00	0.000	0.013	0.1932	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
347		0.00	0.000	0.013	0.1910	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
348		0.00	0.000	0.013	0.1888	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
349		0.00	0.000	0.013	0.1866	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
350		0.00	0.000	0.013	0.1845	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
351		0.00	0.000	0.013	0.1824	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
352	*	0.00	0.000	0.013	0.1803	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

353		0.00	0.000	0.013	0.1782	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
354		0.00	0.000	0.012	0.1761	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
355		0.00	0.000	0.012	0.1740	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
356		0.00	0.000	0.012	0.1720	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
357		0.00	0.000	0.012	0.1699	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
358		0.00	0.000	0.012	0.1679	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
359		0.00	0.000	0.012	0.1659	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
360		0.00	0.000	0.012	0.1639	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
361		0.00	0.000	0.012	0.1619	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
362		0.00	0.000	0.012	0.1600	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
363		0.00	0.000	0.012	0.1580	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
364		0.00	0.000	0.012	0.1561	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00
365	*	0.00	0.000	0.000	0.1561	0.0000	0.0000	0.00E+00	0.0000	0.0000	0.00E+00

* = Frozen (air or soil)

Annual Totals for Year 30			
	inches	cubic feet	percent
Precipitation	10.37	37,658.1	100.00
Runoff	0.001	3.6355	0.01
Evapotranspiration	10.149	36,841.2	97.83
Drainage Collected from Layer 2	0.5675	2,060.1	5.47
Percolation/Leakage through Layer 4	0.000017	0.0611	0.00
Average Head on Top of Layer 3	0.0004	---	---
Drainage Collected from Layer 14	0.0000	0.0000	0.00
Percolation/Leakage through Layer 16	0.000000	0.0000	0.00
Average Head on Top of Layer 15	0.0000	---	---
Change in Water Storage	-0.3435	-1,246.9	-3.31
Soil Water at Start of Year	538.5144	1,954,807.1	5190.93
Soil Water at End of Year	538.1709	1,953,560.2	5187.62
Snow Water at Start of Year	0.0000	0.0000	0.00
Snow Water at End of Year	0.0000	0.0000	0.00
Annual Water Budget Balance	0.0000	0.0000	0.00

Average Annual Totals Summary

Title: WST Landfill
Simulated on: 3/13/2026 15:57

	Average Annual Totals for Years 1 - 30*			
	(inches)	[std dev]	(cubic feet)	(percent)
Precipitation	10.79	[2.02]	39,163.9	100.00
Runoff	0.052	[0.085]	188.5	0.48
Evapotranspiration	9.790	[1.693]	35,538.9	90.74
Subprofile1				
Lateral drainage collected from Layer 2	0.9722	[0.6079]	3,529.1	9.01
Percolation/leakage through Layer 4	0.000053	[0.000062]	0.1922	0.00
Average Head on Top of Layer 3	0.0018	[0.0024]	---	---
Subprofile2				
Lateral drainage collected from Layer 14	0.0000	[0]	0.0000	0.00
Percolation/leakage through Layer 16	0.000000	[0]	0.0000	0.00
Average Head on Top of Layer 15	0.0000	[0]	---	---
Water storage				
Change in water storage	-0.0255	[0.3567]	-92.7	-0.24

* Note: Average inches are converted to volume based on the user-specified area.

Peak Values Summary

Title: WST Landfill
Simulated on: 3/13/2026 15:57

	Peak Values for Years 1 - 30*		
	(inches)		(cubic feet)
Precipitation	2.03		7,359.5
Runoff	0.240		871.0
Subprofile1			
Drainage collected from Layer 2	0.7512		2,726.9
Percolation/leakage through Layer 4	0.000215		0.7795
Average head on Layer 3	3.2425		---
Maximum head on Layer 3	5.8127		---
Location of maximum head in Layer 2	43.46	(feet from drain)	
Subprofile2			
Drainage collected from Layer 14	0.0000		0.0000
Percolation/leakage through Layer 16	0.000000		0.0000
Average head on Layer 15	0.0000		---
Maximum head on Layer 15	0.0000		---
Location of maximum head in Layer 14	0.00	(feet from drain)	
Other Parameters			
Snow water	0.9925		3,602.7
Maximum vegetation soil water	0.4597	(vol/vol)	
Minimum vegetation soil water	0.1350	(vol/vol)	

Final Water Storage in Landfill Profile at End of Simulation Period

Title: WST Landfill
Simulated on: 3/13/2026 15:57
Simulation period: 30 years

	Final Water Storage	
Layer	(inches)	(vol/vol)
1	0.9364	0.1561
2	0.0020	0.0100
3	0.0000	0.0000
4	8.1180	0.4510
5	3.3341	0.2778
6	255.4336	0.2801
7	3.3342	0.2779
8	188.2357	0.2801
9	1.6731	0.2788
10	33.8469	0.2821
11	1.6916	0.2819
12	34.5604	0.2880
13	6.8160	0.2840
14	0.0014	0.0100
15	0.0000	0.0000
16	0.1875	0.7500
Snow water	0.0000	---

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Attachment III-4-B3

References

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Attachment III-4-B3: References

Attachment	Title
III-4-B3-1	Unit Weight of Municipal Solid Waste
III-4-B3-2	ABG Soil Properties Technical Note
III-4-B3-3	ASCE No. 60 Second Edition
III-4-B3-4	CAT 836 Specifications
III-4-B3-5	WL Plastics V 2.0 Supplement
III-4-B3-6	GSE PermaNet Drainage Design Manual
III-4-B3-7	Designing with Geosynthetics
III-4-B3-8	Skaps Transnet Product Data Sheet
III-4-B3-9	HELP User Manual 4.0
III-4-B3-10	National Renewable Energy Laboratory (NREL) Data Viewer 2019-2023 Results for Wind Speed and Humidity, Pecos, Texas
III-4-B3-11	WeatherSpark Data for Pecos, Texas
III-4-B3-12	Sclairpipe HDPE Pipe General Information Sheet
III-4-B3-13	Hydrogeologic Properties of Earth Materials and Principles of Groundwater Flow
III-4-B3-14	Bentofix GCL Specifications Sheet
III-4-B3-15	Plastic Pipe Institute Handbook of Polyethylene (PE) Pipe

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Attachment III-4-B3-1

Unit Weight of Municipal Solid Waste

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Unit Weight of Municipal Solid Waste

Article *in* Journal of Geotechnical and Geoenvironmental Engineering · October 2006

DOI: 10.1061/(ASCE)1090-0241(2006)132:10(1250)

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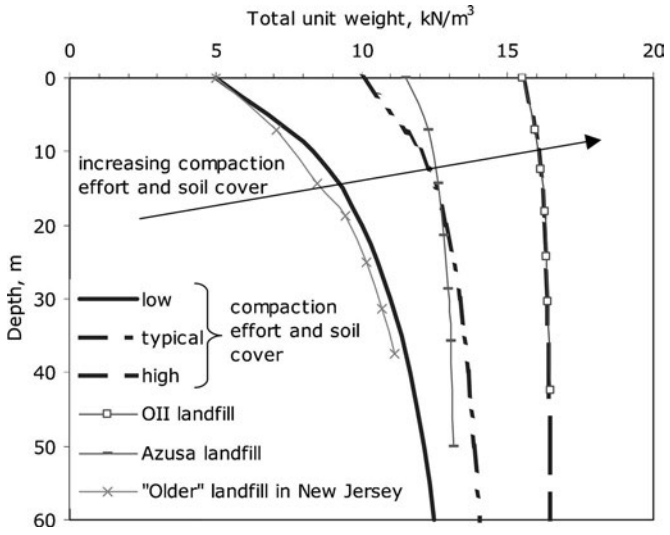


Fig. 11. Recommended unit weight profiles for conventional municipal solid-waste landfills. The near-surface in-place unit weight depends on waste composition (including moisture content) in addition to compaction effort and the amount of soil cover. The effect of confining stress is represented by depth.

MSW Unit Weight Model

The model described by Eq. (4) was fit to the field data presented in Fig. 3. The fitted hyperbolas are shown in Fig. 3 as solid lines for each landfill. In the fitting process, the near-surface in-place unit weight was assigned based upon the field data and then the hyperbolic parameters β and α were estimated based upon a visual "best fit" to the data.

Fig. 11 illustrates a family of representative MSW unit weight profiles developed using this model. Model parameters for the three representative profiles shown in Fig. 11 (for low, typical, and high near-surface in-place unit weight) are provided in Table 2. The in-place near-surface MSW unit weight for a particular waste material primarily increases with compaction effort and soil content and the increase in unit weight with confining stress at depth becomes less pronounced with increasing near-surface in-place unit weight (moving from the continuous curve on the left-hand side toward the dashed curve to the right-hand side). The recommended curves are supported by the field-fitted hyperbolas, some of which are shown in this figure, and the laboratory test data described previously.

Moisture content is not explicitly included in the MSW unit weight model because for conventional landfills it was found to be of lesser importance and was not measured consistently in the field studies of MSW unit weight. Reliable moisture content measurements ranged from approximately 10%–50%. The curves shown in Fig. 11 are considered reasonable for typical conventional landfills, i.e., landfills with moisture contents at or below field capacity. The moisture content of the waste, although not explicitly included in Fig. 11, may affect where, within the family of typical unit weight profiles, a particular landfill falls, i.e., an increase in moisture content will move the representative unit weight curve for a given landfill to the right in Fig. 11.

Table 2. Hyperbolic Parameters for Different Compaction Effort and Amount of Soil Cover

Compaction effort and soil amount	γ_i (kN/m^3)	β (m^3/kN)	α (m^4/kN)
Low	5	0.1	2
Typical	10	0.2	3
High	15.5	0.9	6

Waste compressibility, as represented by the modified compression indices, $C_{c\varepsilon}$, can be estimated from the recommended unit weight curves for low, typical, and high in-place near-surface unit weight. Defining the modified compression index $C_{c\varepsilon}$ as the slope of the volumetric strain-log vertical stress plot and assuming no loss of mass (no degradation), it can be shown that for material that has a total unit weight of γ_{t1} at an initial vertical effective stress σ'_{v1} and a total unit weight of γ_{t2} at vertical effective stress σ'_{v2}, the equivalent modified compression index is given by the following equation:

$$C_{c\varepsilon} = \frac{\Delta e}{1+e_0}\frac{1}{\log\left(\frac{\sigma'_{v1}}{\sigma'_{v2}}\right)} = \frac{\gamma_{t2}-\gamma_{t1}}{\gamma_{t2}}\frac{1}{\log\left(\frac{\sigma'_{v1}}{\sigma'_{v2}}\right)} \quad (5)$$

Using Eq. (5) and discretizing the three recommended unit weight profiles at different depth intervals, values of the MSW equivalent compression index $C_{c\varepsilon}$ that correspond to the representative unit weight profiles in Fig. 11 can be estimated. Using this approach, the resulting $C_{c\varepsilon}$ values are 0.015–0.04, 0.13–0.22, and 0.36–0.55 for high, typical, and low near-surface in-place unit weight, respectively. These values are consistent with previous recommendations on the compressibility of MSW (e.g.,Sowers 1973; Fassett 1993; Kavazanjian et al. 1999).

The parameters of the hyperbolas fitted to the field unit weight data of Fig. 3 are plotted in Fig. 12 to illustrate the relationship of the near-surface in-place unit weight, γ_i, with the β parameter (Chart 1) and the relationship of β with the α parameter (Chart 2). The majority of the field data are in the lower left-hand side of the charts (low initial unit weight, small β and α), with the denser OII Landfill data being in the upper-right portion of these charts due to its large initial unit weight and small difference between its initial unit weight and unit weight at depth. It is reasonable to expect that as the amount of daily soil cover, moisture content, or compaction effort increases, the unit weight near the surface, γ_i, and the α and the β parameters will also increase. As explained previously, the larger the β parameter, the smaller the difference between the unit weight at the surface and at depth, and the larger the α parameter, the smaller the increase of the unit weight near the surface (see Fig. 10).

The field data suggest that γ_i, α, and β increase as the amount of cover-soil or compaction effort increases. This observation is supported by the results of the large-scale triaxial laboratory data shown in Fig. 5. Because the laboratory unit weight data is for isotropic stress conditions, "equivalent" field depths were estimated by calculating the depth at which the isotropic stress in the laboratory is equal to the mean field stress under K_0 ("at rest") stress conditions. A value of K_0 equal to 0.5 was assumed, which is consistent with Poisson's ratio values measured in the triaxial tests for specimens with 100% of the constituents smaller than 20 mm. The laboratory data in Fig. 5 were fit to Eq. (4) and values of γ_i, α, and β, were derived. The resulting values of α and β are shown in Fig. 12 for the Tri-Cities Landfill A3 sample group specimens. Specimen A3-3L included 100% less than 20 mm material and was prepared without compaction. Specimen A3-1L included the same material but was compacted with more effort than specimen A3-3L. Comparison of the parameters de-

Attachment III-4-B3-2

ABG Soil Properties Technical Note

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SOIL PROPERTIES:
Unit Weight

Technical Note

Introduction

The unit weight, also known as the 'weight density', of a soil refers to its weight per cubic metre and is typically expressed as kilonewtons per cubic metre (kN/m^3), or tons per cubic metre (t/m^3)[1]. Knowing the unit weight of a soil is particularly important for geotechnical design as well as assessing earthworks volumes. This technical note is intended to provide a basis for estimating a soil's unit weight in the absence of specific testing results.

Factors Affecting Soil Unit Weight

The unit weight of a soil depends on the composition of the soils particles, the amount of water in the soil, and how well compacted the soil is. The contributing factors include, but are not limited to:

- Mineralogy of the soil particles (e.g. silica, quartz, feldspar, etc.).
- The range of sizes of the soil particles, also known as the particle size distribution.
- The angularity of the soil particles (most relevant to coarse sands and gravels)
- The moisture content of the soil – whether the voids between the soil particles are completely filled with water (fully saturated) or mostly air.
- Organic content of the soil.
- Degree of compaction of the soil.

Measuring Soil Unit Weight

In theory this is as simple as measuring a soil's volume then weighing it. In practice it can be more difficult because as soon as you extract a sample of soil it may collapse, expand, change moisture content or vary in a variety of other ways. If a sample is carefully removed from site and transported to a laboratory, the density can be measured using the methods described in Chapter 7 of BS 1377-2:1990. Determining the density of soils in-situ can be achieved using methods described in Chapter 2 of BS 1377-9:1990. One of the more common methods used on site is the nuclear density gauge (see Figure 1).



Figure 1: Nuclear density gauge

Typical Soil Unit Weights

Several studies have attempted to assess a typical unit weight for a given soil type and ABG typically uses the information in BS 8002, as well as other sources and values accumulated in over 30 years of operation. This information has been combined into Table 1, below.

References

British Standards Institution, BS 1377-2:1990 - *Methods of test for soils for civil engineering purposes. Classification tests*

British Standards Institution, BS 1377-9:1990 - *Methods of test for soils for civil engineering purposes. In-situ tests*

British Standards Institution, BS 8002:1994 - *Code of Practice for Earth Retaining Structures*

British Standards Institution, BS 8002:2015 - *Code of Practice for Earth Retaining Structures*

Zekkos, D., Bray, J., Kavazanjian, E., Matasovic, N., Rathje, E., Riemer, M., & Stokoe, K. (2006) *Unit Weight of Municipal Solid Waste*. Journal of Geotechnical and Geoenvironmental Engineering, 132(10), 1250-1261. doi: 10.1061/(asce)1090-0241(2006)132:10(1250)

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SOIL PROPERTIES:
Unit Weight

Technical Note

Table 1: Typical Soil Unit Weights

Soil Type	Soil Unit Weight (kN/m^3) [1]			
	Loose		Dense	
	Moist	Saturated	Moist	Saturated
A – Granular				
Gravel [3]	16.0	20.0	18.0	21.0
Well graded sand and gravel [3]	19.0	21.5	21.0	23.0
Coarse or medium sand [3]	16.5	20.0	18.5	21.5
Well graded sand [3]	18.0	20.5	21.0	22.5
Fine or silty sand [3]	17.0	20.0	19.0	21.5
Topsoil – green roof [2]	8.0	12.5	n/a	
Topsoil – friable [2]	14.0	16.0	17.0	19.0
B – Cohesive				
Very Soft Clay [4]	14.0		18.0	
Soft Clay [4]	15.0		19.0	
Firm Clay [4]	16.5		20.5	
Stiff Clay [4]	18.0		22.0	
Very Stiff Clay [4]	18.5		23.5	
Hard clay [4]	21.0		24.0	
Peat [3]	12.0 (highly variable)			
Organic Clay [3]	15.0 (highly variable)			
Stiff or hard glacial clay [3]	21.0			
Topsoil – clayey [2]	18.0		21.0	
C – Fill Materials				
Engineered, coarse [4]	16.0	18.0	20.0	22.0
Engineered, fine [4]	17.5	18.0	20.0	20.0
Rock fill [3]	15.0	19.5	17.5	21.0
Brick hardcore [3]	13.0	16.5	17.5	19.0
Slag fill [3]	12.0	18.0	15.0	20.0
Ash fill [3]	6.5	13.0	10.0	15.0
Municipal waste landfill [5]	7.0 (shallow)	12.5 (deep)	15.5 (shallow)	16.5 (deep)

Notes:

1. 1kN/m^3 is equal to 9.81 t/m^3 (1kN/m^3 ≈ 10t/m^3)
2. ABG internal assessments, experience, and accumulated information from suppliers.
3. BS 8002:1994
4. BS 8002:2015
5. Zekkos et al., 2006

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ASCE No. 60 Second Edition

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ASCE Manuals and Reports on Engineering Practice No. 60
WEF Manual of Practice No. FD-5

Gravity Sanitary Sewer Design and Construction

Second Edition

Prepared by a Joint Task Force of the
Environmental and Water Resources Institute and the
Pipeline Division Committee on Pipeline Planning of the
American Society of Civil Engineers
and the
Collection Systems Subcommittee of the
Technical Practice Committee of the
Water Environment Federation

Edited by Paul Bizier

ASCE American Society of Civil Engineers

E-W-R-I

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is located within the embankment as shown in Fig. 9-7, the installation is called an "incomplete trench condition" or "incomplete projection condition," as shown in Fig. 9-8.

In computing the settlement values, the effect of differential settlement caused by any compressible layers below the natural ground surface also must be considered. An exceptional situation for a sewer pipe in a trench can be encountered where the natural soil settles more than the trench backfill, such as where the natural soils are organic or peat and the trench backfill is relatively incompressible compacted fill. A more common situation is where the sewer pipe is pile-supported in organic soils. In such cases, the load on the sewer pipe is greater than that of the prism above the pipe, and down-drag loads should be considered in the design of the piles.

9.2.2.4.1. Fill Loads

The fill load on a pipe installed in a positive-projecting embankment condition is computed by the equation:

$$W_c = C_c w B_c^2 \qquad (9\text{-}8)$$

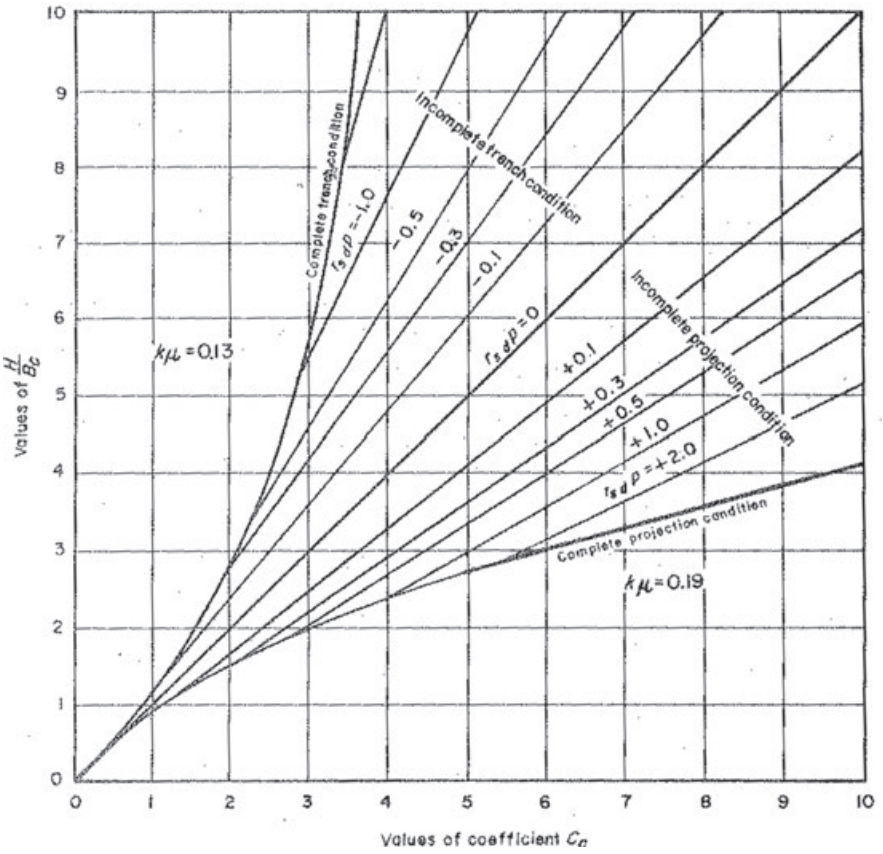


FIGURE 9-8. Diagram for coefficient C_c *for positive-projecting sewer pipes.* Courtesy of American Concrete Pipe Association, Irving, Tex.

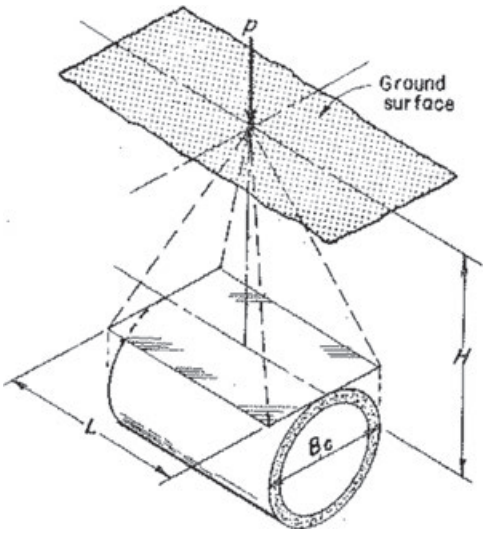


FIGURE 9-14. Concentrated superimposed load vertically centered over sewer pipe.

at the vertical axis directly beneath the point of application and decreases in all directions outward from the center of application. As the distance between the plane and the surface increases, the intensity of the load at any point on the plane decreases.

9.3.1. General Pressure Distribution

Concentrated and distributed superimposed loads should be considered in the structural design of sewers, especially where the depth of earth cover is less than 8 ft (2.4 m). Where these loads are anticipated, they are added to the predetermined trench load. Superimposed loads are calculated by use of Holl's and Newmark's modifications to Boussinesq's equation (Spangler 1946).

9.3.1.1. Concentrated Loads

Holl's integration of Boussinesq's solution leads to the following equation for determining loads due to superimposed concentrated load, such as a truck wheel load (Fig. 9-14):

$$W_{sc} = C_s PF/L \qquad (9\text{-}19)$$

where

W_{sc} = the load on the conduit, in lb/ft (kg/m) of length
P = the concentrated load, in lb (kg)
F = the impact factor

C_s = the load coefficient, a function of $B_c/(2H)$ and $L/(2H)$, where H = the height of fill from the top of conduit to ground surface, in ft (m) and B_c = the width of conduit in ft (m)
L = the effective length of conduit, in ft (m).

The effective length of a sewer pipe is defined as the length over which the average load caused by surface traffic wheels produces nearly the same stress in the sewer pipe wall as does the actual load which varies in intensity from point to point. An effective length, L, equal to 3 ft (1 m) for pipe greater than 3 ft (1 m) long, and the actual length for pipe segments shorter than 3 ft (1 m) are recommended.

If the concentrated load is displaced laterally and longitudinally from a vertically centered location over the section of sewer pipe under consideration, the load on the pipe can be computed by algebraically adding the effect of the concentrated load on various rectangles, each with a corner centered under the concentrated load. Values of C_s in Table 9-3 divided by 4 equals the load coefficient for a rectangle whose corner is vertically centered under the concentrated load.

9.3.1.2. Distributed Loads

For the case of a superimposed load distributed over an area of considerable extent (Fig. 9-15), the formula for load on the sewer pipe is:

$$W_{sd} = C_s p F B_c \tag{9-20}$$

where
W_{sd} = the load on the sewer pipe, lb/ft (N/m)
p = the intensity of distributed load, lb/ft^2 (N/m^2)
F = impact factor
B_c = the width of the sewer pipe, ft (m)
C_s = load coefficient, which is a function of $D/(2H)$ and $(M/2H)$ from Table 9-3
H = height from the top of the sewer pipe to the ground surface, ft (m)

and D and M are the width and length, respectively, of the area over which the distributed load acts, ft (m).

For the case of a uniform load offset from the center of the sewer pipe, the loads per unit length of pipe may be determined by a combination of rectangles. The load on the sewer pipe can be computed by algebraically adding the effect of various rectangles of loaded area. It is more convenient to work in terms of load under one corner of a rectangular loaded area rather than at the center. Dividing the tabular values of C_s by 4 will give the effect for this condition. Stresses from various types of surcharge

TABLE 9-4. Impact Factors for Highway Truck Loads

H, Height of Cover	*F*, Impact Factor
0 to 1 ft (0 to 0.30 m)	1.3
1 ft, 1 inch to 2 ft (0.31 to 0.61 m)	1.2
2 ft, 1 inch to 3 ft (0.62 to 0.91 m)	1.1
>3 ft (>0.91 m)	1

American Concrete Pipe Association (ACPA). (2000). "Concrete pipe design manual," ACPA, Irving, Tex. Reprinted with permission.

As the depth, *H*, increases, the critical loading configuration can be either one HS-20 wheel load, two HS-20 wheel loads in the passing mode, or the alternate load in the passing mode. Since the exact geometric relationship of individual or combinations of surface wheel loads cannot be anticipated, the most critical loading configurations and the outside dimensions of the distributed load areas within the indicated cover depths are summarized in Table 9-5.

9.3.1.4. Railroad Loads

In determining the live load transmitted to a pipe installed under railroad tracks, the weight on the locomotive driver axles plus the weight of the track structure, including ballast, is considered to be uniformly distributed over an area equal to the length occupied by the drivers multiplied by the length of ties. Typically, tie length is assumed to be 8.5 ft (2.6 m). The American Railway Engineering and Maintenance of Way Association (AREMA) recommends a Cooper E80 loading with axle loads and axle spacing, as shown in Fig. 9-20. In addition, 200 lb/ft (2,900 N/m) should be allowed for the weight of the track structure.

Typically, railroads require an impact factor of 1.75 for depth of cover up to 5 ft (1.5 m). Between 5 and 30 ft (1.5 and 9.1 m), the impact factor is reduced by 0.03 per ft (0.1 per m) of depth. Below a depth of 30 ft (9.1 m), the impact factor is 1.

TABLE 9-5. Critical Loading Configurations

H	*P*	Distributed Load Area
<1.33 ft (<0.40 m)	16,000 lb (71,170 N)	$1.67 + 1.75H$ $(0.83 + 1.75H)$
1.33 to 4.1 ft (0.41 to 1.25 m)	32,000 lb (142,340 N)	$5.67 + 1.75H$ $(0.83 + 1.75H)$
>4.1 ft (>1.25 m)	48,000 lb (213,515 N)	$5.67 + 1.75H$ $(4.83 + 1.75H)$

American Concrete Pipe Association (ACPA). (2000). "Concrete pipe design manual," ACPA, Irving, Tex. Reprinted with permission.

TABLE 9-3. Values of Load Coefficientss, C_s, for Concentrated and Distributed Superimposed Loads Vertically Centered Over Conduit*

$\frac{D}{2H}$ or $\frac{B_c}{2H}$	$\frac{M}{2H}$ or $\frac{L}{2H}$													
	0.1	0.2	0.3	0.4	0.5	0.5	0.7	0.8	0.9	1.0	1.2	1.5	2.0	5.0
0.1	0.019	0.037	0.053	0.067	0.079	0.089	0.097	0.103	0.108	0.112	0.117	0.121	0.124	0.128
0.2	0.037	0.072	0.103	0.131	0.155	0.174	0.189	0.202	0.211	0.219	0.229	0.238	0.244	0.248
0.3	0.053	0.103	0.149	0.190	0.224	0.252	0.274	0.292	0.306	0.318	0.333	0.345	0.355	0.360
0.4	0.067	0.131	0.190	0.241	0.284	0.320	0.349	0.373	0.391	0.405	0.425	0.440	0.454	0.460
0.5	0.079	0.155	0.224	0.284	0.336	0.379	0.414	0.441	0.463	0.481	0.505	0.525	0.540	0.548
0.6	0.089	0.174	0.252	0.320	0.379	0.428	0.467	0.499	0.524	0.544	0.572	0.596	0.613	0.624
0.7	0.097	0.189	0.274	0.349	0.414	0.467	0.511	0.546	0.584	0.597	0.628	0.650	0.674	0.688
0.8	0.103	0.202	0.292	0.373	0.441	0.499	0.546	0.584	0.615	0.639	0.674	0.703	0.725	0.740
0.9	0.108	0.211	0.306	0.391	0.463	0.524	0.574	0.615	0.647	0.673	0.711	0.742	0.766	0.784
1.0	0.112	0.219	0.318	0.405	0.481	0.544	0.597	0.639	0.673	0.701	0.740	0.774	0.800	0.816
1.2	0.117	0.229	0.333	0.425	0.505	0.572	0.628	0.674	0.711	0.740	0.783	0.820	0.849	0.868
1.5	0.121	0.238	0.345	0.440	0.525	0.596	0.650	0.703	0.742	0.774	0.820	0.861	0.894	0.916
2.0	0.124	0.244	0.355	0.454	0.540	0.613	0.674	0.725	0.766	0.800	0.849	0.894	0.930	0.956

*Influence coefficients for solution of Holl's and Newmark's integration of the Boussinesq equation for vertical stress.

If, under embankment conditions, the material placed around the sewer pipe is different from that used in the embankment, or if for construction reasons fill is placed around the sewer pipe before the embankment is built, the compacted backfill should cover the pipe by at least 1 ft (0.3 m) and extend at least one diameter to either side.

9.6.2. Loads on Flexible Plastic Pipe

The load carried by a buried flexible pipe in a narrow trench may be calculated using the Marston formula [Eq. (9-3)]. A conservative design approach may be used by assuming the dead load carried by a flexible pipe–soil system in any installation to be the prism load. For normal installations, the prism load is the maximum load that can he developed.

The load on a projecting flexible sewer pipe is calculated using Eq. (9-8). As before, the load coefficient (C_c) depends on the projection ratio (p), settlement ratio (r_{sd}), and the ratio of fill height to pipe width (H/B_c), and can be determined from Fig. 9-8. For flexible projecting pipe, the product $r_{sd}p$ is negative or zero. As shown in Fig. 9-8, when the product is zero the load coefficient, C_c, equals H/B_c. Equation (9-8) then becomes equivalent to Eq. (9-1), which gives the prism load:

$$W_d = HwB_c$$

9.6.3. Thermoplastic Pipe

A wide range of physical properties is available from various plastic sewer pipe materials. Many have ASTM or ANSI specifications. Thermoplastic pipe materials (ABS, PE, and PVC) are all affected by temperature. Specified test requirements are applicable at 73.4 °F (23 °C). At higher temperatures, the plastic becomes less rigid but impact strength is increased. Lower temperatures result in increased brittleness but greater pipe stiffness. Pipe being installed at low temperatures requires careful handling. Certain chemicals will increase the possibility of environmental stress cracking (ESC) for certain thermoplastics. Typically, these compounds include concentrated oxidizing agents, organic chemicals, and oils, fats, and waxes. If any of these compounds are expected in high concentrations, the engineer should review the proposed application with the pipe manufacturer. It may be possible to compensate by utilizing a different plastic formulation or by utilizing another material.

9.6.3.1. Laboratory Load Test

The standard test to determine pipe stiffness or load deflection characteristics of plastic pipe is the parallel-plate loading test. This test is conducted in accordance with ASTM D2412, Standard Test Method for

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Attachment III-4-B3-4

CAT 836 Specifications

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Product Specifications For 836

Engine

Gross Power - SAE J1995:2014	562 hp
Net Power - SAE J1349:2011	496 hp
Net Power - ISO 9249:2007	502 hp
Engine Model	Cat® C18
Emissions	Option 1 - U.S. EPA Tier 4 Final, EU Stage V, Korea Stage V and Japan 2014
Rated Speed	1900 rpm
Engine Power - ISO 14396:2002	553 hp
Emissions	Option 2 - Brazil MAR-1, equivalent to U.S. EPA Tier 3/EU Stage IIIA
Rated Speed	1900 rpm
Net Power - SAE J1349:2011	496 hp
Net Power - ISO 9249:2007	502 hp
Gross Power - SAE J1995:2014	562 hp
Engine Power - ISO 14396:2002	553 hp
Peak Torque (1,400 rpm)	2275 lbf·ft

Torque Rise	52%
Bore	5.71 in
Stroke	7.2 in
Displacement	1104.5 in³
High Idle Speed	2120 r/min
Low Idle Speed	750 r/min
Maximum Altitude - Without Derating	7500 ft
Note	Net power advertised is the power available at the engine flywheel when the engine is equipped with a fan, air cleaner, clean emissions module and alternator.

Operating Specifications

Operating Weight (Tier 4 Final/Stage V)	124063 lb
Operating Weight (Tier 3/Stage IIIA equivalent)	123321 lb
Maximum Operating Weight (Tier 4 Final/Stage V)	126364 lb
Maximum Operating Weight (Tier 3/Stage IIIA equivalent)	125622 lb

Transmission

Transmission Type	Planetary - Powershift - ECPC
Direct Drive - Forward 1	4.3 mile/h
Direct Drive - Forward 2	7.8 mile/h
Direct Drive - Reverse 1	4.6 mile/h

Replaceable	Weld on
Width Over Drums	4280 mm
Tip Height	179 mm
Tip Height - Diamond	7.25 in

836 Standard Equipment

NOTE

Standard and optional equipment may vary. Consult your Cat dealer for details.

POWERTRAIN

Advanced Productivity Electronic Control System (APECS)
Air-to-air aftercooler
Brakes, fully hydraulic, enclosed, wet multiple disc brakes
Cat Clean Emission Module (Tier 4 Final/Stage V only)
Electro hydraulic parking brake
Engine, Cat C18 configured for two emissions options: Tier 4 Final/Stage V, Korea Stage V, and Japan 2014 or Brazil MAR-1 (Tier 3/Stage IIIA equivalent)
Fuel priming pump, electric
Fuel-to-air cooler
Ground level emergency engine shutdown switch
Guard (3 piece) transmission
Heat shield, turbo and exhaust manifold
Hydraulically driven demand fan
Integrated braking
Radiator, Aluminum Modular Radiator (AMR)
Separated cooling system
Starting aid (ether)
Throttle lock
Torque converter with lockup clutch (LUC)
Turbine precleaner, engine air intake
Transmission, planetary, with 2F/2R speed range control
Underhood ventilation system

ELECTRICAL

Alarm, back-up
Alternator, 150 amp
Batteries, maintenance-free (4-1,000 CCA)
Converter, 10-15 amp, 24V to 12V
Lighting system, LED (front and rear)
Lighting, access stairway

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Attachment III-4-B3-5

WL Plastics V 2.0 Supplement

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WLPipeCalc™ V2.0 Supplement – Equations & Information

Contents

Notice 1
1 – Pipe Pressure Rating 1
2 – Hazen-Williams Pressure Water Flow 2
3 – Manning Gravity Water Flow 2
4 – Low Pressure Gas Flow 3
5 – Working Pressure Rating for Water 3
6 – Buried Polyethylene Pipe 5
7 – Submerged Pipe Ballast 7
8 – Length Change with Temperature Change 8
9 – Groundwater Flotation 8
10 – ATL for Pull-In Installation 9
11 – Minimum Field Bending Radius 9
12 – High Pressure Gas Flow 9
13 – Above Grade Pipe Support 10
14 – External Pressure/Vacuum Resistance 10
15 – Thermal Contraction Tensile Load 11
16 – Poisson Pullback Force 11
17 – End Anchor Load, Temperature Increase 11
18 – Trench Width 12
19 – Pipe Volume 12
20 – Temperature Conversion 12
21 – HDPE Thermal Properties 12

Notice

The WLPipeCalc™ CD-ROM and this supplement are intended for use as piping system guides. These publications should not be used in place of a professional engineer's judgment or advice and they are not intended as installation instructions. The information in or generated by the WLPipeCalc™ CD-ROM and this supplement does not constitute a guarantee or warranty for piping installations and cannot be guaranteed because the conditions of use are beyond our control. The user of the information assumes all risk associated with its use. WL Plastics Corporation has made every reasonable effort to ensure accuracy, but the information in or generated by the WLPipeCalc™ CD-ROM and this supplement may not be complete, especially for special or unusual applications. Changes to the WLPipeCalc™ CD-ROM and this supplement may occur from time to time without notice. Contact WL Plastics Corporation to determine if you have the most current edition.

The WLPipeCalc™ CD-ROM allows the user to enter values for variables and determine a result using the equations in the CD-ROM publication. This publication, WL120, provides equations used for WLPipeCalc™ CD-ROM calculation screens, and related information.

Other equations and methods for determining piping system design may be applicable. As part of piping system design, the user should determine the design equations and methods that are appropriate for the intended use.

1 – Pipe Pressure Rating

See publications WL102, WL104 and WL118, and "Working Pressure Rating for Water" for additional information.

$$PR = \frac{2\,HDB\,f_T\,f_E}{(DR-1)} \qquad (1)$$

Where

PR = pressure rating, psi.
HDB = hydrostatic design basis at 73°F (Table 1)
f_T = operating temperature multiplier (Table 2)
f_E = environmental design factor (table 3)
DR = pipe dimension ratio

$$DR = \frac{D}{t} \qquad (2)$$

D = pipe outside diameter, in (WL102; WL104)
t = pipe minimum wall thickness, in

Table 1 HDB – WL Plastics PE3408 HDPE

	HDB at 73°F	*HDB at 140°F*
WL Plastics PE3408	1600 psi	800 psi

Table 2 Operating Temperature Multiplier, f_T

Maximum Operating Temperature		*Multiplier, f_T*
°F	*°C*	
≤ 40*	≤ 4	1.3
> 40 ≤ 60*	> 4 ≤ 16	1.1
> 60 ≤ 80	> 16 ≤ 27	1.0
> 80 ≤ 90	> 27 ≤ 32	0.9
> 90 ≤ 100	> 32 ≤ 38	0.8
> 100 ≤ 110	> 38 ≤ 43	0.71
> 110 ≤ 120	> 43 ≤ 49	0.64
> 120 ≤ 130	> 49 ≤ 54	0.57
> 130 ≤ 140	> 54 ≤ 60	0.50

* For water distribution and transmission applications, multipliers for 60°F (16°C) and lower temperatures are not used.

Table 3 Environmental Design Factor, f_E

Factor, f_E	*Environmental and Applications Conditions,*
0.50*	Liquids that are chemically benign to polyethylene such as potable and process water, municipal sewage, wastewater, reclaimed water, salt water, brine solutions, glycol/antifreeze solutions, alcohol; Buried pipes for gases that are chemically benign to polyethylene such as dry natural gas (in Class 1 or 2 locations where Federal Regulations (49 CFR Part 192) do not limit pressure), methane, propane, butane, carbon dioxide, hydrogen sulfide.
0.32	Buried pipes for compressed air at ambient temperature; Buried pipes for fuel gases such as natural gas, LP gas, propane, butane in distribution systems and Class 3 or 4 locations where Federal Regulations limit pipe pressure to the lesser of 100 psi or the design pressure rating.
0.25	Permeating or solvating liquids in the pipe or the surrounding soil such as gasoline, fuel oil, kerosene, crude oil, diesel fuel, liquid hydrocarbon fuels, vegetable and mineral oils.

* The maximum design factor, 0.50, is a cumulative factor based on variability in materials, testing and processing, handling and installation abuse, and variability in operating conditions. It is widely accepted for thermoplastic pressure pipe design in North America.

2 – Hazen-Williams Pressure Water Flow

Hazen and Williams developed an empirical formula for friction (head) loss for water flow at 60° F that can be applied to liquids having a kinematic viscosity of 1.130 centistokes (0.00001211 ft^2/sec), or 31.5 SSU. Some error can occur at other temperatures because the viscosity of water varies with temperature,

Hazen-Williams formula for friction (head) loss in feet:

$$h_f = \frac{0.002083\,L}{d^{4.8655}}\left(\frac{100\,Q}{C}\right)^{1.85} \quad (3)$$

Hazen-Williams formula for friction (head) loss in psi:

$$p_f = \frac{0.0009015\,L}{d^{4.8655}}\left(\frac{100\,Q}{C}\right)^{1.85} \quad (4)$$

Where

h_f = friction (head) loss, ft
L = pipe length, ft
Q = flow, gal/min
d = pipe inside diameter, in (WL102; WL104)
C = Hazen-Williams Friction Factor, dimensionless
p_f = friction (head) loss, lb/in^2

Table 4 Hazen-Williams Friction Factor, C

Pipe Material	*Values for C*		
	Range High / Low	*Average Value*	*Typical Design Value*
Butt fused polyethylene pipe with internal beads	160 / 130	155	150
Cement or mastic lined iron or steel pipe	160 / 130	148	140
Copper, brass, lead, tin or glass pipe or tubing	150 / 120	140	130
Wood stave	145 / 110	120	110
Welded and seamless steel	150 / 80	130	100
Cast and ductile iron	150 / 80	130	100
Concrete	152 / 85	120	100
Corrugated steel	–	60	60

Full Pipe Flow Velocity

Water flow velocity in a full, circular pipe:

$$V = 0.40853\frac{Q}{d^2} \quad (5)$$

Where

V = water flow velocity, ft/sec
Q = flow, gal/min
d = pipe inside diameter, in (WL102; WL104)

3 – Manning Gravity Water Flow

The Manning equation is limited to water or liquids with a kinematic viscosity equal to water. A derived version of the Manning equation for circular pipes flowing full or half full is:

$$Q = 0.275\frac{d^{8/3}\,S^{1/2}}{n} \quad (6)$$

or $$Q_{CFS} = \left(6.136\times10^{-4}\right)\frac{d^{8/3}\,S^{1/2}}{n} \quad (7)$$

Where

Q = flow, gal/min
Q_{CFS} = flow, ft^3/sec
d = pipe inside diameter, in (WL102; WL104)
S = hydraulic slope, ft/ft

$$S = \frac{h_1 - h_2}{L} \quad (8)$$

h_1 = upstream pipe elevation, ft
h_2 = downstream pipe elevation, ft
n = roughness coefficient, dimensionless

Table 5 Manning Equation n Values

Surface	*n, range*	*n, typical design*
Polyethylene pipe	0.008 – 0.011	0.009
Uncoated cast or ductile iron pipe	0.012 – 0.015	0.013
Corrugated steel pipe	0.021 – 0.030	0.024
Concrete pipe	0.012 – 0.016	0.015
Vitrified clay pipe	0.011 – 0.017	0.013
Brick and cement mortar sewers	0.012 – 0.017	0.015
Wood stave	0.010 – 0.013	0.011
Rubble masonry	0.017 – 0.030	0.021

Circular pipes will carry more liquid when slightly less than full compared to completely full because there is a slight reduction in flow area compared to a significant reduction in the wetted surface of the pipe. Maximum flow occurs at about 93% of full pipe flow, and maximum velocity at about 78% of full pipe flow.

4 – Low Pressure Gas Flow

Caution – To minimize the risk of mechanical damage, pressure gas piping is buried, installed at heights and in areas where moving equipment cannot contact or damage piping, and encased in shatter resistant materials. Pressure gas piping is restrained to prevent movement in case of mechanical damage.

Where inlet and outlet gas pressures are less than 1 psig (27.7 in H_2O) the Mueller low pressure gas flow equation may be used.

$$Q_h = \frac{2971 d^{2.725}}{S_g^{\,0.425}}\left(\frac{h_1 - h_2}{L}\right)^{0.575} \quad (9)$$

Where

S_g = gas specific gravity (Table 6)
h_1 = inlet pressure, in H_2O
h_2 = outlet pressure, in H_2O
L = pipe length, ft
d = pipe inside diameter, in (WL102; WL104)

Table 6 Approximate Specific Gravity (14.7 psi & 68°F)

Gas	*Specific Gravity, S_g*
Acetylene (ethylene), C_2H_2	0.907
Air	1.000
Ammonia, NH_3	0.596
Argon, A	1.379
Butane, C_4H_{10}	2.067
Carbon Dioxide, CO_2	1.529
Carbon Monoxide, CO	0.967
Ethane, C_2H_6	1.049
Ethylene, C_2H_4	0.975
Helium, He	0.138
Hydrogen Chloride, HCl	1.286
Hydrogen, H	0.070
Hydrogen Sulfide, H_2S	1.190
Methane, CH_4	0.554
Methyl Chloride, CH_3Cl	1.785
Natural Gas	0.667
Nitric Oxide, NO	1.037
Nitrogen, N_2	0.967
Nitrous Oxide, N_2O	1.530
Oxygen, O_2	1.105
Propane, C_3H_8	1.562
Propene (Propylene), C_3H_6	1.451
Sulfur Dioxide, SO_2	2.264
Landfill Gas (approx. value)	1.00
Carbureted Water Gas	0.63
Coal Gas	0.42
Coke-Oven Gas	0.44
Refinery Oil Gas	0.99
“Wet” Gas (approximate value)	0.75

5 – Working Pressure Rating for Water

Working Pressure Rating (WPR) for water at ≤ 80°F (≤ 27°C) has application pressure components for steady long-term internal pressure and momentary surge pressure from sudden water velocity change. WPR

Railroad live loads are typically described using AISI Cooper E80 values which are applied as three, 80,000 lb loads over three, 2ft x 8 ft areas spaced 5 ft apart.

Table 9 E80 Cooper Railroad Live Loading

Height Above Pipe Crown, ft	*Live Load, lb/ft²*
2	3800
5	2400
8	1600
10	1100
12	800
15	600
20	300
30	100

Live loads may be determined using other appropriate methods.

Total Load Pressure:

$$P_T = P_E + P_L \quad (24)$$

Where

P_T = total load pressure at pipe crown, lb/ft²

Wall Crushing Resistance:

$$N_C = \frac{460800}{P_T\ DR} \quad (25)$$

Where

N_C = safety factor against wall crushing

Wall Buckling Resistance

$$N_B = \frac{144\,P_{WC}}{P_T} \quad (26)$$

Where

N_B = safety factor against wall buckling

$$P_{WC} = 5.65\sqrt{\frac{R\,B'\,E'\,E}{12\,(DR-1)^3}} \quad (27)$$

Where

P_{WC} = constrained buckling pressure, psi
R = reduction factor for buoyancy

$$R = 1 - 0.33\frac{H'}{H} \quad (28)$$

H' = height of groundwater above pipe, ft
H = soil cover above pipe, ft
B' = elastic support factor

$$B' = \frac{1}{1 + 10.87312^{(-0.065\,H)}} \quad (29)$$

E' = modulus of soil reaction, psi (Table 10)
E = modulus of elasticity, psi (Table 17)
= 28,200 psi for long-term at 73°F
= 110,000 psi for short-term at 73°F

Table 10 Modulus of Soil Reaction, E'

Degree of Bedding Compaction,	*Soil Type Pipe Bedding Material (Unified Classification System[a])*				
	A	B	C	D	E
	Average Value for E', psi (MPa)				
Dumped	1000 (6.89)	200 (1.38)	100 (0.69)	50 (0.34)	
Slight, <85% Proctor, 40% Relative Density	3000 (20.68)	1000 (6.89)	400 (2.76)	200 (1.38)	No data available; consult a competent soils engineer; otherwise use E'= 0
Moderate, 85-95% Proctor, 40-70% Relative Density	3000 (20.68)	2000 (13.79)	1000 (6.89)	400 (2.76)	
High, >95% Proctor, >70% Relative Density	3000 (20.68)	3000 (20.68	2000 (13.79)	1000 (6.89)	

A - Crushed rock

B – Coarse grained soils; little or no fines GW, GP, SW, SP[c] contains less than 12% fines

C – Fine grained soils (LL<50); soils with medium to no plasticity, CL, ML, ML-CL, with less than 25% coarse grained particles. Coarse grained soils with fines GM, GC, SM, SC contains more than 12% fines

D – Fine grained soils (LL<50); soils with medium to no plasticity, CL, ML, ML-CL, with less than 25% coarse grained particles

E – Fine-grained soils (LL[b]>50) Soils with medium to high plasticity, CH, MH, CH-MH

Note – Standard Proctors in accordance with ASTM D 698 are used with this table. Values applicable only for fills less than 50 ft (15 m). Table does not include a safety factor. For use in predicting initial deflections only; appropriate Deflection Lag Factor must be applied for long-term deflections

[a] ASTM D2487; USBR E-3. [b] LL = liquid limit [c] Or any borderline soil beginning with one of these symbols (i.e., GM-GC, GC-SC).

Percent Deflection

$$\left(\frac{\Delta X}{D_M}\right) = \frac{P_T}{144}\left(\frac{K\,D_L}{\frac{2E}{3}\left(\frac{1}{DR-1}\right)^3 + 0.061\,E'}\right)100 \quad (30)$$

Where

ΔX = horizontal deflection, in
D_M = pipe mean diameter, in

$\left(\frac{\Delta X}{D_M}\right)$ = percent deflection

$$D_M = D\left(1 - \frac{1.06}{DR}\right) \quad (31)$$

D = pipe outside diameter, in (WL102; WL104)
K = bedding factor (typically 0.1)
D_L = deflection lag factor (Table 11)

Table 11 Deflection Lag Factor

D_L	*Typical Value*
1.0	Minimum value for use only with granular backfill and if the full soil prism load is assumed to act on the pipe.
1.5	Minimum value for use with granular backfill and assumed trench loadings
2.5	Minimum value for use with CL, ML backfills, for conditions where the backfill can become saturated, etc.

Safe deflection for non-pressure PE3408 piping generally depends on ring bending wall strain, which is typically limited to 8%.

$$\left(\frac{\Delta X}{D_M}\right) \le \frac{\varepsilon\left(DR - 1.06\right)}{1.06\, f_D} \quad (32)$$

Where

ε = wall strain percent
≤ 8.0% for non-pressure PE3408
f_D = deformation shape factor
= 6.0 for typical non-elliptical pipe deformation

Wall strain in pressurized PE3408 pipes is more complex because internal pressure increases wall strain.

Table 12 Safe % Deflection for PE3408 Pressure Pipe

Safe % Deflection	*DR*
2.5	≤9
3.0	11
4.0	13.5
5.0	17
6.0	21
7.0	26
8.5	32.5

7 – Submerged Pipe Ballast

Ballast weights are attached to or placed over the pipe for submergence. Ballast weights are typically bottom heavy and shaped to prevent pipe rolling. Design incorporates pipe and ballast weight and displacement, the fluids inside and outside the pipe, and environmental conditions.

$$V_P = \frac{\pi D^2}{576} \quad (33)$$

Where

V_P = displaced volume of pipe, ft^3/ft
π = Pi (approximately 3.1416)
D = pipe outside diameter, in (WL102; WL104)

$$B_P = V_P\, K\, \omega_{LO} \quad (34)$$

Where

B_P = pipe displacement uplift force, lb/ft
K = submerged environment factor
ω_{LO} = specific weight of liquid outside pipe, lb/ft^3

Table 13 Submerged Environment Factor

Submerged Environment	*Factor, K*
Significant tidal flows, roving currents, stream currents	1.5
Low tidal flows or slow moving stream , river, lake or pond currents	1.3
Neutral buoyancy condition	1.0

Table 14 Specific Weights at 60°F (15°C)

Fluid	*Specific Weight, ω, lb/ft^3*
Air and other gases	0.0
Fresh water	62.4
Seawater	64.0
Gasoline	42.5
Kerosene	50.2
Crude oil	53.1
Brine, 6% NaCl	65.1
Brine, 24% NaCl	73.8
Brine, 12% CaCl	69.0
Brine, 30% CaCl	80.4
Concrete	110 to 150
Steel	490
Brick	112 – 137
Sand, Gravel	100 – 109
Cast iron	440 – 480
Brass	511 – 536
Bronze	548

$$V_B = \frac{\pi d^2}{576} \quad (35)$$

Where

V_B = pipe ID volume, ft^3/ft
d = inside diameter of pipe, in (WL102; WL104)

13 – Above Grade Pipe Support

At a minimum, above grade pipe supports should cradle the bottom third of the pipe, and be one-half pipe diameter long. Long-term vertical deflection between supports should not exceed 1-in (25 mm).

$$L_S = \frac{1}{12}\left(\frac{4608\,E\,I\,y_s}{5\,(w_p + w_{LI})}\right)^{0.25} \quad (53)$$

$$y_S = \frac{5(w_P + w_{LI})(12L_S)^4}{4608\,E\,I} \quad (54)$$

L_S = support spacing, ft
y_s = vertical deflection at center of span, in
E = modulus of elasticity, psi (Table 10)
= 28,200 psi for long-term at 73°F
I = moment of inertia, in^4

$$I = \frac{\pi\left(D^4 - d^4\right)}{64} \quad (55)$$

D = pipe outside diameter, in (WL102; WL104)
d = pipe inside diameter, in (WL102; WL104)
w_P = weight of pipe, lb/ft (WL102 or WL104)
w_{LI} = liquid inside pipe weight, lb/ft

For empty pipe,

$$w_{LI} = 0 \quad (56)$$

For half-full pipe,

$$w_{LI} = \omega_{LI}\frac{\pi d^2}{1152} \quad (57)$$

For full pipe,

$$w_{LI} = \omega_{LI}\frac{\pi d^2}{576} \quad (58)$$

ω_{LI} = pipe contents specific weight, lb/ft^3

14 – External Pressure/Vacuum Resistance

Circumferentially applied external pressure or internal vacuum or a combination of external pressure and vacuum will attempt to flatten the pipe. Freestanding pipe such as pipe in surface, sliplining and submerged applications is not supported by embedment or other external confinement that can significantly enhance resistance to flattening from external pressure. The resistance of freestanding pipe to flattening from external pressure depends on wall thickness (pipe DR), elastic properties (time and temperature dependent elastic modulus and Poisson's ratio), and roundness.

$$P_{CR} = \frac{2\,E\,f_O}{\left(1-\mu^2\right)}\left(\frac{1}{DR-1}\right)^3 \quad (59)$$

Where

P_{CR} = flattening resistance limit, psi
E = modulus of elasticity, psi
μ = Poisson's Ratio
= 0.35 for short-term stress
= 0.45 for long-term stress
f_O = roundness factor
DR = pipe dimension ratio,

$$P_{AL} = \frac{P_{CR}}{N} \quad (60)$$

P_{AL} = safe external pressure, psi
N = safety factor (typically ≥ 2)

Table 17 Modulus of Elasticity for PE3408

Temperature, °F (°C)	*Modulus of Elasticity for Load Time, kpsi (MPa)*						
	Short-term	10 h	100 h	1000 h	1 y	10 y	50 y
-20 (-29)	300.0 (2069)	140.8 (971)	125.4 (865)	107.0 (738)	93.0 (641)	77.4 (534)	69.1 (476)
0 (-18)	260.0 (1793)	122.0 (841)	108.7 (749)	92.8 (640)	80.6 (556)	67.1 (463)	59.9 (413)
40 (4)	170.0 (1172)	79.8 (550)	71.0 (490)	60.7 (419)	52.7 (363)	43.9 (303)	39.1 (270)
60 (16)	130.0 (896)	61.0 (421)	54.3 (374)	46.4 (320)	40.3 (278)	33.5 (231)	29.9 (206)
73 (23)	110.0 (758	57.5 (396	51.2 ((353)	43.7 (301)	38.0 (262)	31.6 (218)	28.2 (194)
100 (38)	100.0 (690)	46.9 (323)	41.8 (288)	35.7 (246)	31.0 (214)	25.8 (178)	23.0 (159
120 (49)	65.0 (448)	30.5 (210)	27.2 (188)	23.2 (160)	20.2 (139)	16.8 (116)	15.0 (103)
140 (60)	50.0 (345)	23.5 (162)	20.9 (144)	17.8 (123)	15.5 (107)	12.9 (89)	11.5 (79)

Table 18 Roundness Factor, f_o

% Deflection	f_o	*% Deflection*	f_o
0	1.00	6	0.52
1	0.92	7	0.48
2	0.88	8	0.42
3	0.78	9	0.39
4	0.70	≤ 10	0.36
5	0.62		

Attachment III-4-B3-6

GSE PermaNet Drainage Design Manual

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GSE ENVIRONMENTAL™



DRAINAGE
DESIGN MANUAL

DURABILITY RUNS DEEP

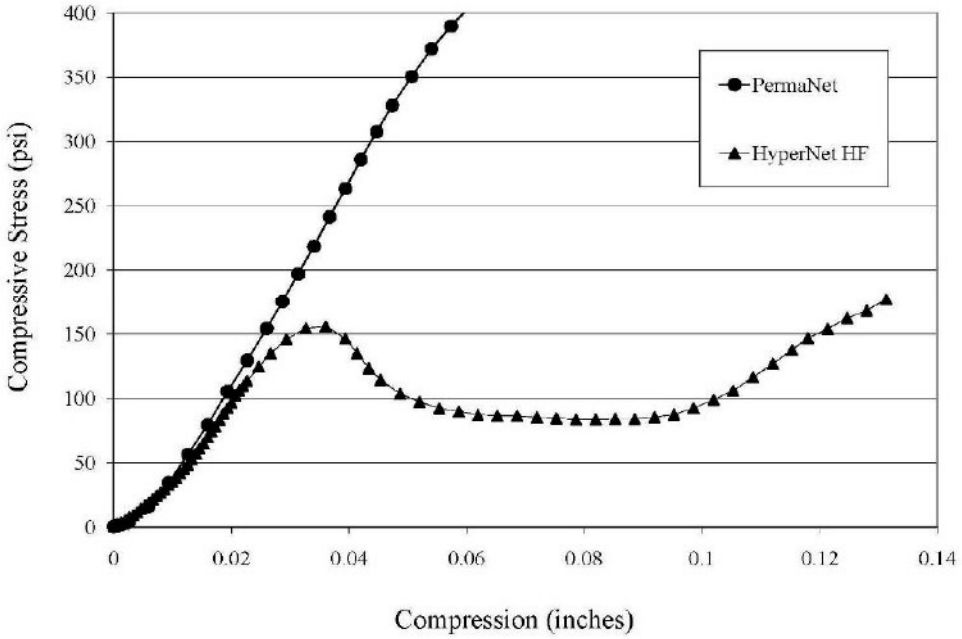


Figure 2.5. Compression strength of HyperNet vs. PermaNet.

2.2.3 GSE BioDrain Product Line

Traditionally, geonet drainage geocomposites have been available only with nonwoven needlepunched geotextiles. Such products have performed exceptionally well for landfill applications which continue to be their primary market focus. There is growing interest in the use of drainage geocomposites in such applications as retaining walls, pavements, rooftops, slabs, etc. where different geotextile properties may be beneficial or even necessary. Even within the traditional landfill market, there are new opportunities and challenges related to leachate distribution in bioreactor landfills. The range of performance characteristics of geocomposites, including filtration properties, interface shear strength, transmissivity and ultraviolet resistance can be significantly expanded by considering woven geotextiles. Table 2.1 compares filtration and UV properties of both woven and nonwoven needlepunched geotextiles. Figure 2.6 shows a BioDrain drainage geocomposite with a woven geotextile.

One project where the BioDrain geocomposite has been recently used is Melissa Landfill in North Texas outside Dallas. Figure 2.7 depicts the installation of a drainage geocomposite on this project, where the designer required a woven geotextile so that the geocomposite could be left exposed for more than a month. This was possible only with a woven geotextile, as needlepunched geotextiles have limitations in exposure to UV or sunlight. Another project where a woven-geonet drainage geocomposite has been used successfully is the field-scale testing plots at McGill Road Landfill, Jackson, Michigan (Khire & Haydar, 2007). Here a woven geotextile was selected for leachate distribution by utilizing the opening size range provided in Table 2.1. Figure 2.8 presents a photograph of the geocomposite installed on this job. This field-scale study led to the following key conclusions regarding the use of geocomposite for leachate recirculation:

Attachment III-4-B3-7

Designing with Geosynthetics

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DESIGNING WITH GEOSYNTHETICS

FIFTH EDITION



ROBERT M. KOERNER

compressibility section, however, fabrics deform under load (recall Figure 2.6). Thus a new term, permittivity (Ψ) as was previously defined as equation (2.8), is repeated here:

$$\Psi = \frac{k_n}{t}$$

where

Ψ = permittivity (sec^{-1}),
k_n = permeability (properly called *hydraulic conductivity*) normal to the geotextile where the subscript n is often omitted (m/sec), and
t = thickness of the geotextile (m).

The above equation is used in Darcy's formula as follows:

$$q = k_n i A$$

$$q = k_n \frac{\Delta h}{t} A$$

$$\frac{k_n}{t} = \boxed{\Psi = \frac{q}{(\Delta h)(A)}} \tag{2.16}$$

where

q = flow rate (m^3/sec),
i = hydraulic gradient (dimensionless),
Δh = total head lost (m), and
A = total area of geotextile test specimen (m^2).

The formulation above is used for constant head tests in an identical manner as with soil permeability testing. Typically, the flow rate (q) is measured at one value of Δh, and then the test is repeated at different values of Δh. These different values of Δh produce correspondingly different values of q. When plotted as ($\Delta h A$) on the horizontal axis and (q) on the vertical axis, the slope of the resulting straight line yields the desired value of Ψ.

The test can also be conducted using a falling (variable) head procedure as is also performed on soils. In this case, Darcy's formula is integrated over the head drop in an interval of time and used in the following equation:

$$\frac{k_n}{t} = \Psi = 2.3 \frac{a}{A \Delta t} \log_{10} \frac{h_o}{h_f} \tag{2.17}$$

where

Ψ = permittivity (sec^{-1}),
a = area of water supply standpipe (m^2),

and Risseeuw [65]). Although the equation indicates tensile strength, it can be applied to burst strength, tear strength, puncture strength, impact strength, and so on.

2.4.2 Flow-Related Problems

For problems dealing with flow through or within a geotextile, such as filtration and drainage applications, the formulation of the allowable values takes the form of equation (2.25a). Typical values for reduction factors are given in Table 2.12. Note that these values must be tempered by the site-specific conditions, as in Section 2.4.1. If the laboratory test includes the mechanism listed, it appears in the equation as a value of 1.0.

$$q_{allow} = q_{ult}\left(\frac{1}{RF_{SCB} \times RF_{CR} \times RF_{IN} \times RF_{CC} \times RF_{BC}}\right) \tag{2.25a}$$

$$q_{allow} = q_{ult}\left(\frac{1}{\Pi RF}\right) \tag{2.25b}$$

where

q_{allow} = allowable flow rate,
q_{ult} = ultimate flow rate,
RF_{SCB} = reduction factor for soil clogging and blinding ($\geq$1.0),
RF_{CR} = reduction factor for creep reduction of void space ($\geq$1.0),
RF_{IN} = reduction factor for adjacent materials intruding into geotextile's void space ($\geq$1.0),
RF_{CC} = reduction factor for chemical clogging ($\geq$1.0),

TABLE 2.12 RECOMMENDED FLOW-REDUCTION FACTOR VALUES FOR USE IN EQUATION (2.25a)

	Range of Reduction Factors				
Application	Soil Clogging and Blinding[1]	Creep Reduction of Voids	Intrusion into Voids	Chemical Clogging[2]	Biological Clogging
Retaining wall filters	2.0–4.0	1.5–2.0	1.0–1.2	1.0–1.2	1.0–1.3
Underdrain filters	2.0–10	1.0–1.5	1.0–1.2	1.2–1.5	2.0–4.0[3]
Erosion control filters	2.0–10	1.0–1.5	1.0–1.2	1.0–1.2	2.0–4.0
Landfill filters	2.0–10	1.5–2.0	1.0–1.2	1.2–1.5	2.0–5.0[3]
Gravity drainage	2.0–4.0	2.0–3.0	1.0–1.2	1.2–1.5	1.2–1.5
Pressure drainage	2.0–3.0	2.0–3.0	1.0–1.2	1.1–1.3	1.1–1.3

1. If stone riprap or concrete blocks cover the surface of the geotextile, use the upper values or include an addition reduction factor.
2. Values can be higher, particularly for high alkalinity groundwater.
3. Values can be higher for turbidity and/or microorganism contents greater than 5000 mg/l.

One way of doing this is to ascribe reduction factors on each of the items not adequately assessed in the laboratory test. For example,

$$q_{allow} = q_{ult}\left[\frac{1}{RF_{IN} \times RF_{CR} \times RF_{CC} \times RF_{BC}}\right] \tag{4.5}$$

or if all of the reduction factors are considered together:

$$q_{allow} = q_{ult}\left[\frac{1}{\Pi RF}\right] \tag{4.6}$$

where

q_{ult} = flow rate determined using ASTM D4716 or ISO 12958 for short-term tests between solid platens using water as the transported liquid under laboratory test temperatures,

q_{allow} = allowable flow rate to be used in equation (4.3) for final design purposes,

RF_{IN} = reduction factor for elastic deformation, or intrusion, of the adjacent geosynthetics into the geonet's core space,

RF_{CR} = reduction factor for creep deformation of the geonet and/or adjacent geosynthetics into the geonet's core space,

RF_{CC} = reduction factor for chemical clogging and/or precipitation of chemicals within the geonet's core space,

RF_{BC} = reduction factor for biological clogging within the geonet's core space, and

ΠRF = product of all reduction factors for the site-specific conditions.

Some guidelines as to the various reduction factors to be used in different situations are given in Table 4.2. Please note that some of these values are based on relatively sparse information. Other reduction factors, such as overlapping connections, temperature effects, and liquid turbidity, could also be included. If needed, they can be included on a site-specific basis. On the other hand, if the actual laboratory test procedure has included the particular item, it would appear in the above formulation as a value of unity. Examples 4.2 and 4.3 illustrate two of the uses of geonets and serve to point out that high reduction factors are warranted in critical situations.

Example 4.2

What is the allowable geonet flow rate to be used in the design of a secondary leachate collection (or leak detection) system? Assume that laboratory testing at proper design load and proper hydraulic gradient gave a short-term between-rigid-plates value of 2.5×10^{-4} m²/s.

TABLE 4.2 RECOMMENDED REDUCTION FACTOR VALUES FOR EQUATION (4.5) DETERMINING ALLOWABLE FLOW RATE OR TRANSMISSIVITY OF GEONETS

Application Area	Reduction Factor Values in Equation (4.5)			
	RF_{IN}*	RF_{CR}*	RF_{CC}	RF_{BC}
Sport fields	1.0–1.2	1.0–1.5	1.0–1.2	1.1–1.3
Capillary breaks	1.1–1.3	1.0–1.2	1.1–1.5	1.1–1.3
Roof and plaza decks	1.2–1.4	1.0–1.2	1.0–1.2	1.1–1.3
Retaining walls, seeping rock, and soil slopes	1.3–1.5	1.2–1.4	1.1–1.5	1.0–1.5
Drainage blankets	1.3–1.5	1.2–1.4	1.0–1.2	1.0–1.2
Infiltrating water drainage for landfill covers	1.3–1.5	1.1–1.4	1.0–1.2	1.5–2.0
Secondary leachate collection (landfill)	1.5–2.0	1.4–2.0	1.5–2.0	1.5–2.0
Primary leachate collection (landfills)	1.5–2.0	1.4–2.0	1.5–2.0	1.5–2.0

*These values are sensitive to the type of geonet, rib separation distance, and density of the resin used in the geonet's manufacture. The magnitude of the applied load is also of major importance.

Solution: Average values from Table 4.2 are used in equation (4.5) (however, note the large reduction).

$$q_{allow} = q_{ult}\left[\frac{1}{RF_{IN} \times RF_{CR} \times RF_{CC} \times RF_{BC}}\right]$$

$$= 2.5 \times 10^{-4}\left[\frac{1}{1.75 \times 1.7 \times 1.75 \times 1.75}\right]$$

$$= 2.5 \times 10^{-4}\left[\frac{1}{9.11}\right]$$

$$q_{allow} = 0.27 \times 10^{-4}\ m^2/s$$

Example 4.3

What is the allowable geonet flow rate to be used in the design of a capillary break beneath a roadway to prevent frost heave? Assume that laboratory testing was done at the proper design load and hydraulic gradient and that this testing yielded a short-term between-rigid-plates value of $2.5 \times 10^{-4}\ m^2/s$.

Solution: Since better information is not known, average values from Table 4.2 are used in equation (4.5).

$$q_{allow} = q_{ult}\left[\frac{1}{RF_{IN} \times RF_{CR} \times RF_{CC} \times RF_{BC}}\right]$$

$$= 2.5 \times 10^{-4}\left[\frac{1}{1.2 \times 1.1 \times 1.3 \times 1.2}\right]$$

$$= 2.5 \times 10^{-4}\left[\frac{1}{2.06}\right]$$

$$q_{allow} = 1.21 \times 10^{-4}\ m^2/s$$

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Attachment III-4-B3-8

Skaps Transnet Product Data Sheet

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SKAPS TRANSNET™ HDPE GEOCOMPOSITE WITH TN 160 GEONET

SKAPS INDUSTRIES
571 Industrial Pkwy,
Commerce, GA 30529
Phone: (706) 336-7000
Fax: (706) 336-7007

SKAPS TRANSNET™ Geocomposite consists of SKAPS Geonet made from HDPE resin with nonwoven polypropylene geotextile fabric heat bonded on one side or both sides of Geonet.

PROPERTY	TEST METHOD	UNIT	VALUE		QUALIFIER
GEONET					
Thickness	ASTM D 5199	mil	150	150	MAV(3)
Carbon Black	ASTM D 4218	%	2.00	2.00	MAV
Tensile Strength	ASTM D 7179	lb/in	30	30	MAV
Melt Flow	ASTM D 1238(2)	g/10 min	1.00	1.00	Maximum
Density	ASTM D 1505	g/cm^3	0.94	0.94	MAV
Transmissivity(1)	ASTM D 4716	gal/min/ft (m^2/sec)	4.83 (1.0×10^{-3})	4.83 (1.0×10^{-3})	MAV
GEOCOMPOSITE			**6 oz/yd²**	**8 oz/yd²**	
Ply Adhesion	ASTM D 7005	lb/in	1.00	1.00	MAV
Transmissivity(1) DS	ASTM D 4716	gal/min/ft (m^2/sec)	**TN 160-2-6**	**TN 160-2-8**	
			0.48 (1.0×10^{-4})	0.48 (1.0×10^{-4})	MAV
Transmissivity(1) SS	ASTM D 4716	gal/min/ft (m^2/sec)	**TN 160-1-6**	**TN 160-1-8**	
			2.42 (5.0×10^{-4})	2.42 (5.0×10^{-4})	MAV
GEOTEXTILE					
Fabric Weight	ASTM D 5261	oz/yd^2	6	8	MARV(4)
Grab Tensile	ASTM D 4632	lb	160	225	MARV
Grab Elongation	ASTM D 4632	%	50	50	MARV
Trapezoid Tear	ASTM D 4533	lb	65	90	MARV
CBR Puncture	ASTM D 6241	lb	450	600	MARV
Water Flow(5)	ASTM D 4491	gpm/ft^2	125	100	MARV
Permittivity(5)	ASTM D 4491	sec^{-1}	1.63	1.26	MARV
Permeability(5)	ASTM D 4491	cm/sec	0.30	0.30	MARV
AOS	ASTM D 4751	US Sieve	70	80	MaxARV

Notes:

(1) Transmissivity measured using water at 21 ± 2 °C (70 ± 4 °F) with a gradient of 0.1 and a confining pressure of 1000 psf between steel plates after 15 minutes. Values may vary with individual labs.
DS - Double Sided, SS - Single Sided

(2) Condition 190/2.16

(3) Minimum average value.

(4) MARV is statistically defined as mean minus two standard deviations and it is the value which is exceeded by 97.5% of all the test data.

(5) At the time of manufacturing. Handling may change these properties.

This information is provided for reference purposes only and is not intended as a warranty or guarantee.

SKAPS assumes no liability in connection with the use of this information. Geotextile and Geonet properties are prior to lamination.

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Attachment III-4-B3-9

HELP User Manual 4.0

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EPA
United States
Environmental Protection
Agency

EPA/600/B-20/219 | January 2020
www.epa.gov/homeland-security-research

Hydrologic Evaluation of Landfill Performance: HELP 4.0 User Manual



Office of Research and Development
Homeland Security Research Program

2. About the Model

2.1 Overview

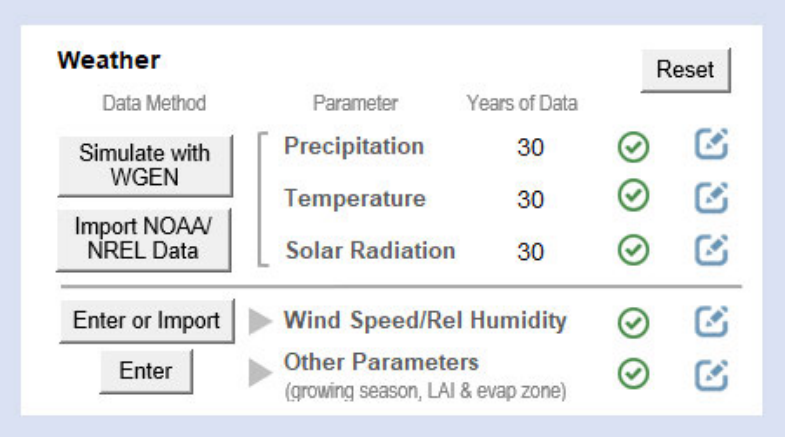
The **Hydrologic Evaluation of Landfill Performance (HELP)** model is a quasi-two-dimensional hydrologic model of water movement across, into, through and out of landfills. The model accepts weather, soil, and design data. It uses solution techniques that account for key factors affecting water movement in a landfill, including: surface storage; snowmelt; runoff; infiltration; evapotranspiration; vegetative growth; soil moisture storage; lateral subsurface drainage; leachate recirculation; unsaturated vertical drainage; and leakage through soil, geomembrane, and composite liners. Landfill systems including various combinations of vegetation, cover soils, waste cells, lateral drain layers, low permeability barrier soils, and synthetic geomembrane liners may be modeled. The model was developed to conduct water balance analysis of landfills, cover systems, and solid waste disposal and containment facilities. As such, the model facilitates rapid estimation of the amounts of runoff, evapotranspiration, drainage, leachate collection, and liner leakage that may be expected to result from the operation of a wide variety of landfill designs. The model, applicable to open, partially closed, and fully closed sites, is a tool for both designers and permit writers.

HELP model **Version 4** was developed by EPA ORD/CESER. HELP model **Versions 1, 2, and 3** were developed by the U.S. Army Engineer Waterways Experiment Station (WES) for EPA. The model was developed in response to needs in the Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, better known as Superfund), as identified by the EPA Office of Land Management and Emergency Response.

As in the earlier versions of the model, the hydrologic processes modeled can be divided into two categories: **surface processes** and **subsurface processes**. The surface processes modeled are snowmelt, interception of rainfall by vegetation, surface runoff, and surface evaporation. The subsurface processes modeled are evaporation from the soil profile, plant transpiration, unsaturated vertical drainage, barrier soil liner percolation, geomembrane leakage, and saturated lateral drainage.

Daily infiltration into the landfill is determined indirectly from a surface water balance. Infiltration is assumed to equal the sum of rainfall, surface storage, and snowmelt minus the sum of runoff, additional storage in snowpack, and evaporation of surface water. No liquid water is assumed to be held in surface storage from one day to the next except in the snowpack or when the top soil is saturated and runoff is not permitted. Each day, the available water for infiltration, runoff or evaporation from water on the surface is determined from the surface storage, discharge from the snowpack and/or rainfall. Snowfall is added to the surface snow storage which is depleted by either evaporation or melting. Snowmelt is added to the available water and is treated as rainfall except that it is not intercepted by vegetation. This available water is used to compute the runoff by the Soil Conservation Society (SCS) rainfall-runoff relationship. The interception is the measure of water available to evaporate from the surface. Interception in excess of the potential evaporation is added to infiltration. Surface evaporation is then computed. Potential evaporation from the surface is first applied to the interception; any excess is applied to the snowmelt, then to the snowpack and finally to the groundmelt. Potential evaporation in excess of the evaporation from the surface is applied to the soil column and plant transpiration. The snowmelt and

4.3 Weather Data



The HELP model requires several inputs to model the weather context of a landfill, including daily precipitation, temperature and solar radiation; average annual wind speed; quarterly relative humidity; growing season start and end dates; maximum leaf area index (LAI); and evaporative zone depth. Depending on the parameter, you can import weather data from existing HELP v3.07 data files (.D4, .D7, .D11 and .D13), simulate weather data using the WGEN weather generator, import data downloaded from National Oceanic and Atmospheric Administration (NOAA) or National Renewable Energy Laboratory (NREL) websites, or enter the information directly through the interface.

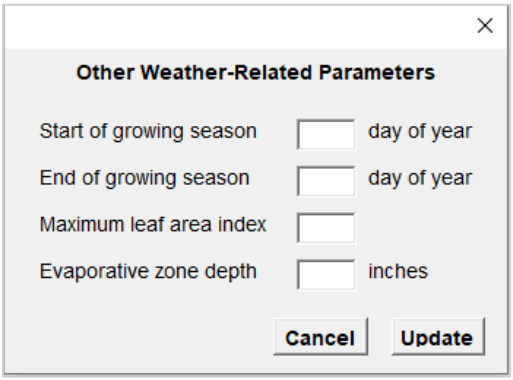
Section 4.1 describes how to import general information from existing HELP v3.07 files from the **Control Panel**. The **Simulate Weather** button in the **Weather** panel allows you to run a weather simulation for precipitation, temperature and solar radiation using the built-in WGEN weather generator. The **Import NOAA/NREL Data** button in the **Weather** panel allows you to import data downloaded from NOAA and NREL websites. The **Enter or Import** button for wind speed and relative humidity generates a form that can be used to import data from NREL or enter data directly. The **Enter** button for other parameters generates a form for entering growing season, leaf area index, and evaporative zone depth information. The **Enter/Edit** icons allow you to see and edit weather data inputs. If you click **Reset** in the **Weather** panel, all information in the panel will be deleted.

4.3.1 Synthetic Weather Generation (WGEN)

HELP v4.0 will generate up to 100 years of daily precipitation, temperature, and solar radiation data stochastically for a location. The synthetic weather generator is based on a routine developed by the USDA Agricultural Research Service (Richardson and Wright, 1984). Weather parameter values used in the synthetic weather generator are imported from a database of calculated weather parameters for over 13,000 points located on a 0.25 x 0.25 degree grid across the continental U.S. The program retrieves parameter values from the closest grid point in the dataset based on the latitude and longitude specified for the landfill location. For more information on WGEN and the gridded dataset used to develop location-specific parameter values for use in WGEN, please refer to **Appendix B**.

4.3.5 Other Weather-Related Parameters

Other weather-related parameters used by the HELP model are growing season start and end dates, maximum leaf area index, and evaporative zone depth. Definitions of these parameters and data sources are described in **Appendix F**.



You can import data for these parameters from an existing Help v3.07 .D11 file (along with other information; see **Appendix A**), as described in **Section 4.1**. Alternatively, you can enter the data directly by clicking the **Enter** button or the **Enter/Edit** icon next to **Other Parameters** in the **Weather** panel, after which a pop-up user form will display. This user form will also allow you to edit imported data. See the **User Tip** text box above for considerations regarding the order of data import, entry and editing. Enter or edit the values for growing season start and end dates, maximum leaf area index, and evaporative zone depth for the landfill location and click **Update**.

Once the other weather-related parameters are complete (imported and/or entered directly), the data status column in the **Weather** panel will show a check mark (✓).

4.4 Runoff Curve Number

As with previous versions of the model, HELP v4.0 models the rainfall-runoff process using the Soil Conservation Service (SCS) curve-number method. The model uses an SCS runoff curve number (CN) for Antecedent Moisture Condition II (AMC-II) determined using one of the following methods:

Method 1, User-specified CN: The user enters an SCS AMC-II CN directly

Method 2, Modified User's CN: The user enters an SCS AMC-II CN, landfill surface slope, and slope length, and the model computes a modified SCS AMC-II CN, accounting for slope and slope length

Method 3, HELP-computed CN: The user enters the landfill surface slope, slope length, and vegetative cover, and the model computes an SCS AMC-II CN based on these inputs and the soil texture of the topmost layer (entered in the **Soil & Design** panel, as described in **Section 4.5**)

You can import runoff curve number information from existing HELP v3.07 data files (.D10) or enter the information directly through the interface. **Section 4.1** describes how to import existing .D10 files from the **Control Panel**.

To enter information, directly, click in the text box in the **Runoff Curve Number** panel, and then click the drop down arrow to display the list of methods for computing the SCS AMC-II CN. Select the desired method from the options listed.

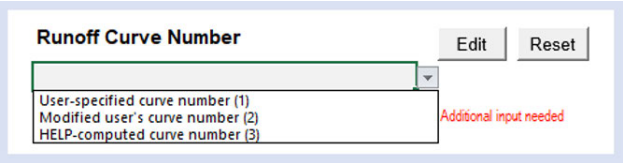
Next, click **Edit**, and the model will display a pop-up user form for entering information required for the selected method. When you are done entering the required information, click **Submit**. The user form will close, and the SCS AMC-II CN entered by you (Method 1) or computed by the model (Method 2 or 3) will be displayed in the Runoff Curve Number panel. If insufficient information is entered, the SCS AMC-II CN field will display "TBD" along with a note explaining that additional input is required.

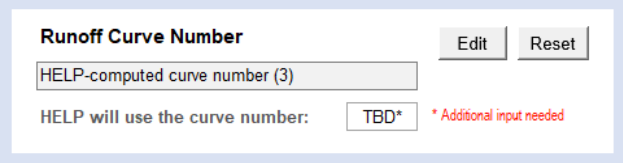
Vegetative Cover (CN Method 3)

If you use Method 3 to determine an ACS AMC-II CN, the model will provide a dropdown list with the following options for specifying the quality of vegetative cover on the landfill:

- Bare ground
- Poor stand of grass
- Fair stand of grass
- Good stand of grass
- Excellent stand of grass

Most landfills will tend to have a poor or fair stand of grass, as landfills are typically not ideal support systems for vegetative growth.





User Tips

If you click **Reset** in the **Runoff Curve Number** panel, all information in the panel will be deleted. If you import existing .D10 files, existing information in the Runoff Curve Number panel will be overwritten by imported information.

The HELP model v3.07 .D10 file contains model simulation, runoff curve number and landfill design inputs (See **Appendix A**). When you import from a .D10 file, any previously imported or entered data for these fields will be replaced. If you plan to use HELP v3.07 data for one or more of these parameters, it is recommended that you import the .D10 files first.

Method 3 computes an SCS AMC-II CN based on inputs from both the **Runoff Curve Number** and **Soil & Design** panels. If you enter CN inputs for Method 3 before specifying the topmost layer of the landfill, the CN in the Runoff Curve Number panel will display "TBD." When you specify the topmost layer, the CN will be computed and displayed.

Appendix F
Information and Data Sources for Growing Season, Leaf Area Index and Evaporative Zone Depth

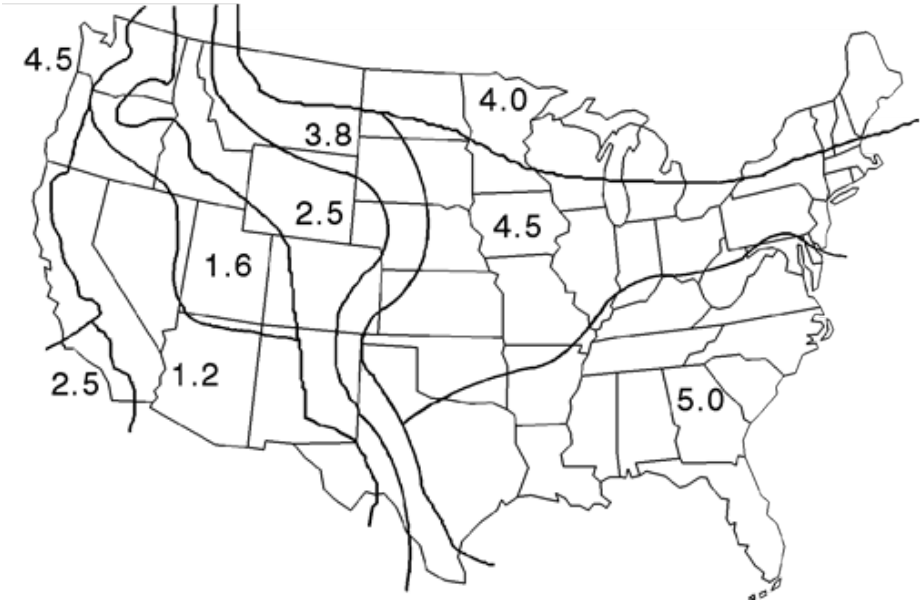
Growing Season

The start of the growing season is based on mean daily temperature and plant species. Typically, the start of the growing season for grasses is the Julian date (day of the year) when the normal mean daily temperature rises above 50 to 55 degrees Fahrenheit. The growing season ends when the normal mean daily temperatures falls below 50 to 55 degrees Fahrenheit. In cooler climates the start and end would be at lower temperatures and in warmer climates at higher temperatures. In locations where the growing season extends year-round, the start of the growing season should be reported as day 0 and the end as day 367.

Maximum Leaf Area Index (LAI)

LAI is the dimensionless ratio of the leaf area of actively transporting vegetation to the nominal surface area of the land on which the vegetation is growing. The maximum LAI for bare ground is zero. For a poor stand of grass the LAI could approach 1.0; for a fair stand of grass, 2.0; for a good stand of grass, 3.5; and for an excellent stand of grass, 5.0. The LAI for dense stands of trees and shrubbery would also approach 5. The model is largely insensitive to values above 5.

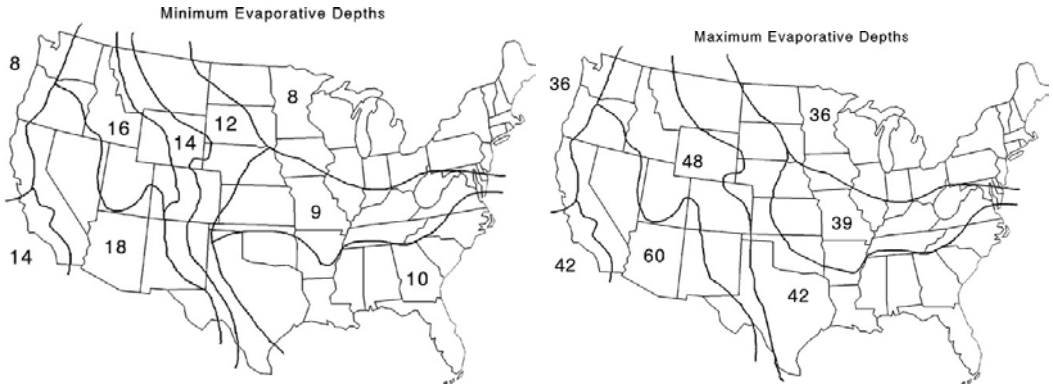
If the vegetative species limit plant transpiration (such as succulent plants), the maximum LAI value should be reduced to a value equivalent of the LAI for a stand of grass that would yield a similar quantity of plant transpiration. Most landfills would tend to have at best a fair stand of grass and often only a poor stand of grass because landfills are not designed as ideal support systems for vegetative growth. Surface soils are commonly shallow and provide little moisture storage for dry periods. See below for appropriate maximum LAI for the geographical location of your site.



Geographic Distribution of Maximum Leaf Area Index

Evaporative Zone Depth

The evaporative zone depth is the maximum depth from which water may be removed by evapotranspiration. HELP requires the ET zone depth to be greater than zero and less than or equal to the depth to the topmost liner. The value specified influences the storage of water near the surface and, therefore, directly affects the computations for evapotranspiration and runoff. Evaporative zone depth value depends on site location and soil type. Below are some default values.



Geographic Distribution of Minimum Evaporative Depth (in) **Geographic Distribution of Maximum Evaporative Depth (in)**

In general, clayey soils would have larger evaporative zone depths since they exert greater capillary suction; analogously, sandy soils would have smaller evaporative zone depths. Shrubs and trees with tap roots would have larger evaporative zone depths than the values presented in the figures above. For bare soil the evaporative depth could be as small as several inches in gravels; in sands the depth may be about 4 to 8 inches, in silts about 8 to 18 inches, and in clays about 12 to 60 inches.

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Attachment III-4-B3-10

National Renewable Energy Laboratory (NREL) Data Viewer 2019-2023 Results for Wind Speed and Humidity, Pecos, Texas

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Attachment III-4-B3-10: NREL Wind Speed and Humidity

Calculated Average Relative Humidity and Wind Speed

	Average Relative Humidity (%)	Wind Speed (m/s)	Wind Speed (mph)
Annual	40.81	3.67	8.22
Q1	41.85	—	—
Q2	34.70	—	—
Q3	41.09	—	—
Q4	45.56	—	—

Data retrieved from the Wind Resource Database hosted by the National Renewable Energy Laboratory (NREL). The NREL database was queried for wind speed and humidity recordings from 2019 through 2023 using the coordinates of the landfill. The BC-HERR CONUS 60-minute (NOAA + NREL) option for weather data was selected. A comma-separated file was provided with wind speed and relative humidity readings at 60-minute intervals for the queried time period. The dataset was filtered by quarter across all five years, and averages for each quarter were calculated in Microsoft Excel.

Source

National Renewable Energy Laboratory (NREL). 2021. Data Viewer. Retrieved from Wind Resource Database. <https://wrdb.nrel.gov/data-viewer>.

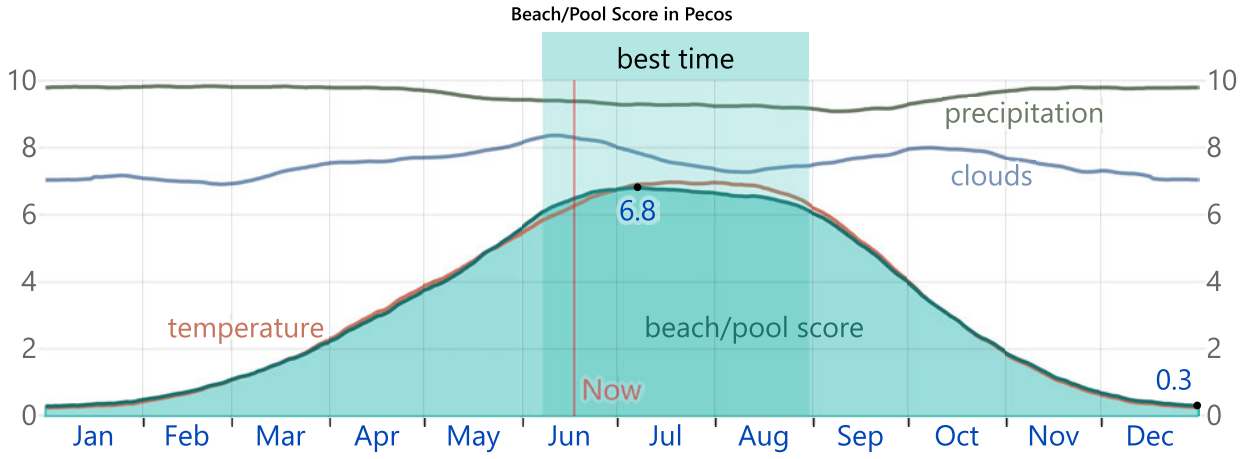
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Attachment III-4-B3-11

WeatherSpark Data for Pecos, Texas

DBS&A
a Geo-Logic Company

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The beach/pool score (filled area), and its constituents: the temperature score (red line), the cloud cover score (blue line), and the precipitation score (green line).

Methodology

For each hour between 8:00 AM and 9:00 PM of each day in the analysis period (1980 to 2016), independent scores are computed for perceived temperature, cloud cover, and total precipitation. Those scores are combined into a single hourly composite score, which is then aggregated into days, averaged over all the years in the analysis period, and smoothed.

Our cloud cover score is 10 for fully clear skies, falling linearly to 9 for mostly clear skies, and to 1 for fully overcast skies.

Our precipitation score, which is based on the three-hour precipitation centered on the hour in question, is 10 for no precipitation, falling linearly to 9 for trace precipitation, and to 0 for 0.04 inches of precipitation or more.

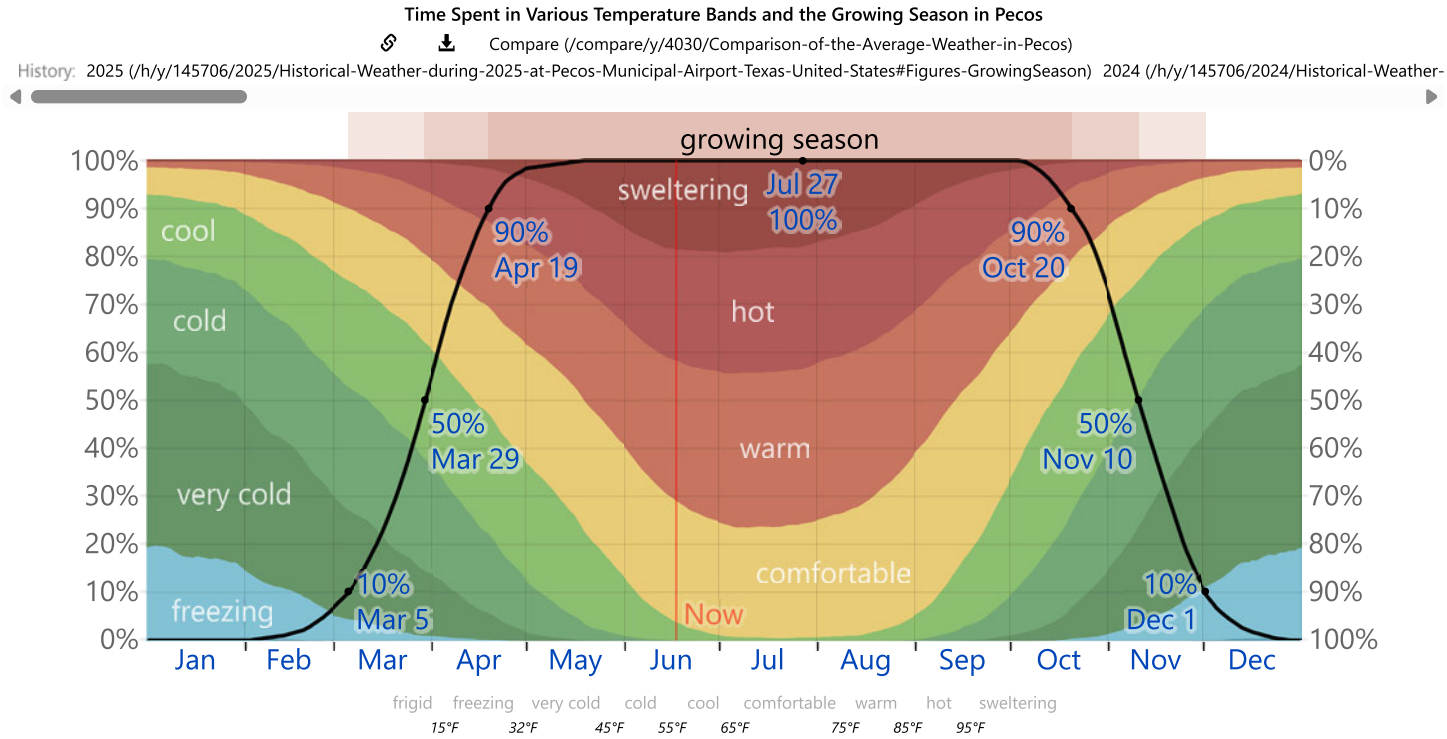
Our tourism temperature score is 0 for perceived temperatures below 50°F, rising linearly to 9 for 65°F, to 10 for 75°F, falling linearly to 9 for 80°F, and to 1 for 90°F or hotter.

Our beach/pool temperature score is 0 for perceived temperatures below 65°F, rising linearly to 9 for 75°F, to 10 for 82°F, falling linearly to 9 for 90°F, and to 1 for 100°F or hotter.

Growing Season

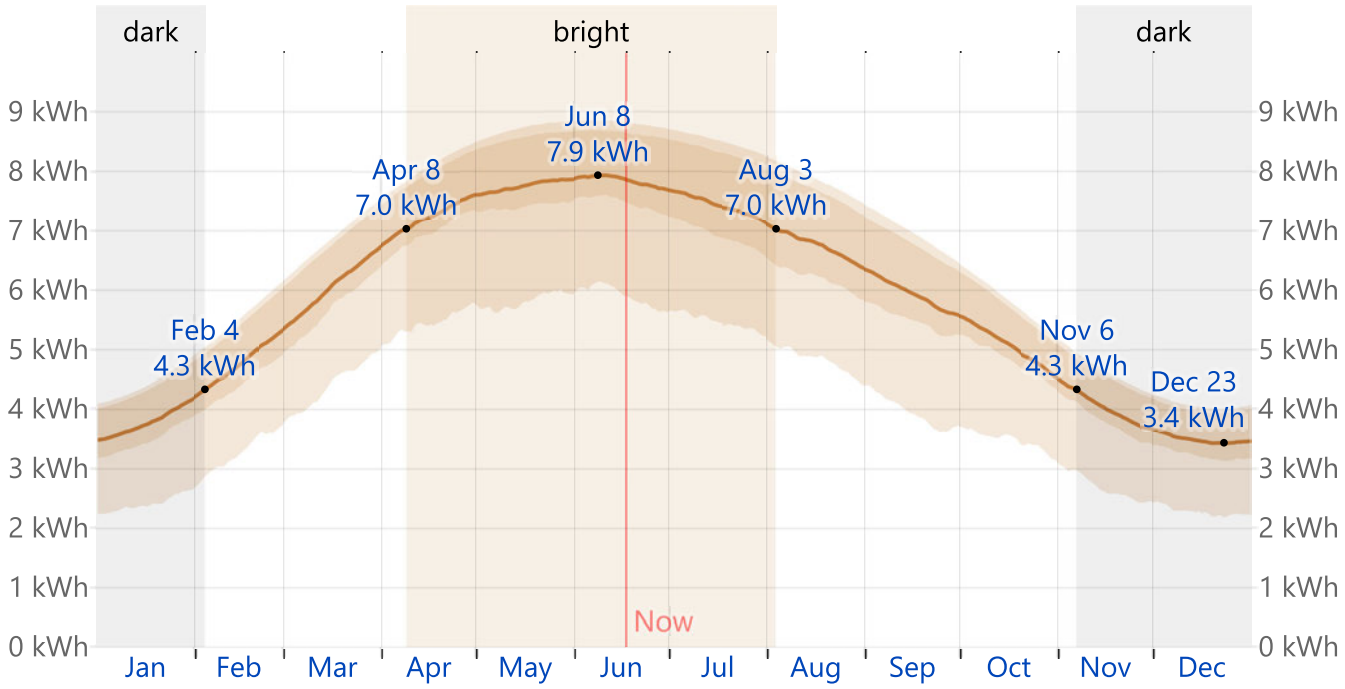
Definitions of the growing season vary throughout the world, but for the purposes of this report, we define it as the longest continuous period of non-freezing temperatures (≥ 32°F) in the year (the calendar year in the Northern Hemisphere, or from July 1 until June 30 in the Southern Hemisphere).

The growing season in Pecos typically lasts for 7.4 months (226 days), from around March 29 to around November 10, rarely starting before March 5 or after April 19, and rarely ending before October 20 or after December 1.



The percentage of time spent in various temperature bands. The black line is the percentage chance that a given day is within the growing season.

ADVERTISEMENT



The average daily shortwave solar energy reaching the ground per square meter (orange line), with 25th to 75th and 10th to 90th percentile bands.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Solar Energy (kWh)	3.8	4.8	6.1	7.3	7.8	7.8	7.4	6.7	5.9	5.0	4.0	3.5

Topography

For the purposes of this report, the geographical coordinates of Pecos are 31.423 deg latitude, -103.493 deg longitude, and 2,582 ft elevation.

The topography within 2 miles of Pecos is essentially flat, with a maximum elevation change of 46 feet and an average elevation above sea level of 2,579 feet. Within 10 miles is essentially flat (240 feet). Within 50 miles contains only modest variations in elevation (4,222 feet).

The area within 2 miles of Pecos is covered by shrubs (92%), within 10 miles by shrubs (95%), and within 50 miles by shrubs (92%).

Data Sources

This report illustrates the typical weather in Pecos, based on a statistical analysis of historical hourly weather reports and model reconstructions from January 1, 1980 to December 31, 2016.

Temperature and Dew Point

There are 4 weather stations near enough to contribute to our estimation of the temperature and dew point in Pecos.

For each station, the records are corrected for the elevation difference between that station and Pecos according to the International Standard Atmosphere (https://en.wikipedia.org/wiki/International_Standard_Atmosphere), and by the relative change present in the MERRA-2 satellite-era reanalysis (https://gmao.gsfc.nasa.gov/reanalysis/MERRA-2/) between the two locations.

The estimated value at Pecos is computed as the weighted average of the individual contributions from each station, with weights proportional to the inverse of the distance between Pecos and a given station.

The stations contributing to this reconstruction are:

- Pecos Municipal Airport (/y/145706/Average-Weather-at-Pecos-Municipal-Airport-Texas-United-States-Year-Round)

  (KPEQ, 96%, 3.0 mi, south, 30 ft elevation change)
- Winkler County Airport (/y/145707/Average-Weather-at-Winkler-County-Airport-Texas-United-States-Year-Round)

  (KINK, 3.0%, 30 mi, northeast, 223 ft elevation change)
- Cavern City Air Terminal (/y/145678/Average-Weather-at-Cavern-City-Air-Terminal-New-Mexico-United-States-Year-Round)

  (KCNM, 0.7%, 77 mi, northwest, 650 ft elevation change)
- Pine Springs, Guadalupe Mountains National Park (/y/145676/Average-Weather-at-Pine-Springs-Guadalupe-Mountains-National-Park;-Texas;-United-States-Year-Round)

  (KGDP, 0.5%, 82 mi, west, 2,874 ft elevation change)

Attachment III-4-B3-12

Sclairpipe HDPE Pipe General Information Sheet

DBS&A a Geo-Logic Company

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Sclairpipe®

VERSATILE HIGH DENSITY POLYETHYLENE PIPE



Proven performance in a wide range of applications

Since its development in 1955, large diameter HDPE pipe has been successfully used in many installations worldwide. In North America, Sclairpipe high density polyethylene pipe was first introduced in 1968. Since then it has been installed for river, lake and salt water crossings, municipal and industrial fresh and salt water intakes and effluent outfalls. Sclairpipe has also been used extensively for pipeline repair and rehabilitation.



Some popular applications of Sclairpipe include:

- Potable Water Distribution
- Pressure Water Systems
- Sewage Systems
- Water Mains
- Sliplining
- Fire Mains
- Directional Drilling
- Trenchless Technologies
- Slurry Pipe
- Mining
- Marine Pipelines & Crossings
- Deep Water Intakes
- Deep Water Outfalls
- Irrigation Lines
- Biofilters
- Gas Gathering



Potable Water

Sclairpipe is used for both new water main installations and to rehabilitate deteriorated piping systems made from other materials. It can accept repetitive pressure surges that far exceed the static pressure rating of the pipe. Sclairpipe is easy to handle and is available in long lengths that cut down on jointing time. Thermal fusion on site reduces installation time and ensures leakproof joints that eliminate infiltration and exfiltration problems. Sclairpipe is well suited for dynamic soils and areas prone to earthquake.



Sewage Systems

After more than 35 years of use in municipal and industrial sewer applications, Sclairpipe has proven to be a reliable, cost effective, long-term solution for sewer and wastewater systems. It offers resistance to corrosion and chemicals with durability and strength that rigid concrete, PVC or ductile iron pipes can't duplicate. Lightweight Sclairpipe is easy-to-install, extremely flexible and does not corrode or tuberculate over time.



Industry

Long-term reliable piping solutions are always in demand by industry. Sclairpipe offers resistance to corrosion, abrasion and chemicals resulting in a durable, strong and cost-effective installation.

Choose the size that's right for you

Sclairpipe is available in standard Dimensional Ratio's (DR's), in sizes ranging from 4" to 48" in diameter. Sclairpipe is available in PE 3608 and PE 4710. With the higher allowable stress rating of PE 4710, the pipe wall can be thinner for the same pressure rating (higher DR).

The Dimensional Ratio relates the minimum wall thickness of the pipe to its outside diameter, and is important to define the pressure rating of a particular pipe. The maximum continuous operating pressure stated is based on the allowable hydrostatic design stress of each specific material (per ASTM D3350 and PPI's TR-3), and the pipe wall thickness (DR), at a service temperature of 73.4°F.

Uponor, Sclairpipe Product Range, IPS Size, PE3608

	PE3608			DR32.5 (50 psi)			DR26 (64 psi)			DR21 (80 psi)		
Nominal Pipe Size	Minimum Outside Diameter *(inches)*	Maximum Outside Diameter *(inches)*	Average Outside Diameter *(inches)*	Average Inside Diameter *(inches)*	Minimum Wall Thickness *(inches)*	Average Weight *(lbs/ft)*	Average Inside Diameter *(inches)*	Minimum Wall Thickness *(inches)*	Average Weight *(lbs/ft)*	Average Inside Diameter *(inches)*	Minimum Wall Thickness *(inches)*	Average Weight *(lbs/ft)*
4	4.48	4.52	4.50	4.21	0.138	0.83	4.13	0.173	1.03	4.05	0.214	1.26
5	5.54	5.59	5.56	5.20	0.171	1.27	5.11	0.214	1.57	5.00	0.265	1.93
6	6.60	6.65	6.63	6.19	0.204	1.80	6.08	0.255	2.23	5.96	0.315	2.73
7	7.09	7.16	7.13	6.66	0.219	2.08	6.54	0.274	2.58	6.41	0.339	3.16
8	8.59	8.66	8.63	8.06	0.265	3.05	7.92	0.332	3.78	7.75	0.411	4.63
10	10.70	10.80	10.75	10.05	0.331	4.74	9.87	0.413	5.87	9.66	0.512	7.19
12	12.69	12.81	12.75	11.92	0.392	6.66	11.71	0.490	8.26	11.46	0.607	10.12
13	13.31	13.44	13.38	12.50	0.412	7.33	12.28	0.514	9.09	12.02	0.637	11.14
14	13.94	14.06	14.00	13.09	0.431	8.03	12.86	0.538	9.95	12.59	0.667	12.20
16	15.93	16.07	16.00	14.96	0.492	10.49	14.70	0.615	13.00	14.38	0.762	15.94
18	17.92	18.08	18.00	16.83	0.554	13.28	16.53	0.692	16.46	16.18	0.857	20.17
20	19.91	20.09	20.00	18.70	0.615	16.39	18.37	0.769	20.32	17.98	0.952	24.90
22	21.90	22.10	22.00	20.56	0.677	19.83	20.21	0.846	24.58	19.78	1.048	30.13
24	23.89	24.11	24.00	22.43	0.738	23.60	22.04	0.923	29.25	21.58	1.143	35.85
26	25.88	26.12	26.00	24.30	0.800	27.70	23.88	1.000	34.33	23.38	1.238	42.08
28	27.87	28.13	28.00	26.17	0.862	32.13	25.72	1.077	39.82	25.17	1.333	48.80
30	29.87	30.14	30.00	28.04	0.923	36.88	27.55	1.154	45.71	26.97	1.429	56.02
32	31.86	32.14	32.00	29.91	0.985	41.96	29.39	1.231	52.01	28.77	1.524	63.74
36	35.84	36.16	36.00	33.65	1.108	53.11	33.06	1.385	65.82	32.37	1.714	80.67
40	39.82	40.18	40.00	37.39	1.231	65.56	36.74	1.538	81.26	35.96	1.905	99.59
42	41.81	42.19	42.00	39.26	1.292	72.28	38.58	1.615	89.59	37.76	2.000	109.80
48	47.78	48.22	48.00	44.87	1.477	94.41	44.09	1.846	117.02	43.15	2.286	143.42

Pipe dimensions are in accordance with ASTM F714 and AWWA C906
Pressure Ratings are for water at 73.4 deg F.
Some of the pipe sizes and DR's above are available only on request. Check with your representative for availability.
Other dimensions and DR's not listed may be available upon special request.
All dimensions are in inches unless otherwise noted.
Weights are calculated by the methodology established in PPI's TR-7 and are applicable to PE 3608.

The standard stocked length of Sclairpipe pipe is 50 feet, in sizes above 4″ in diameter with longer lengths available on request.

Please visit our web site (www.uponor.ca) and use our online design tools to determine the pipe size best suited to your specific application.

DR17 (100 psi)			DR13.5 (128 psi)			DR11 (160 psi)			DR9 (200 psi)			DR7.3 (254 psi)		
Average Inside Diameter *(inches)*	Minimum Wall Thickness *(inches)*	Average Weight *(lbs/ft)*	Average Inside Diameter *(inches)*	Minimum Wall Thickness *(inches)*	Average Weight *(lbs/ft)*	Average Inside Diameter *(inches)*	Minimum Wall Thickness *(inches)*	Average Weight *(lbs/ft)*	Average Inside Diameter *(inches)*	Minimum Wall Thickness *(inches)*	Average Weight *(lbs/ft)*	Average Inside Diameter *(inches)*	Minimum Wall Thickness *(inches)*	Average Weight *(lbs/ft)*
3.94	0.265	1.54	3.79	0.333	1.90	3.63	0.409	2.29	3.44	0.500	2.73	3.19	0.616	3.26
4.87	0.327	2.35	4.69	0.412	2.91	4.49	0.506	3.50	4.25	0.618	4.18	3.95	0.762	4.99
5.80	0.390	3.33	5.58	0.491	4.12	5.35	0.602	4.96	5.06	0.736	5.92	4.70	0.908	7.08
6.24	0.419	3.85	6.01	0.528	4.77	5.75	0.648	5.74	5.45	0.792	6.85	5.06	0.976	8.18
7.55	0.507	5.65	7.27	0.639	6.99	6.96	0.784	8.41	6.59	0.958	10.04	6.12	1.182	11.99
9.41	0.632	8.77	9.06	0.796	10.86	8.68	0.977	13.07	8.22	1.194	15.59	7.63	1.473	18.63
11.16	0.750	12.34	10.75	0.944	15.28	10.29	1.159	18.38	9.75	1.417	21.94	9.05	1.747	26.21
11.71	0.787	13.58	11.27	0.991	16.81	10.80	1.216	20.23	10.22	1.486	24.14	9.49	1.832	28.84
12.25	0.824	14.88	11.80	1.037	18.42	11.30	1.273	22.17	10.70	1.556	26.45	9.93	1.918	31.60
14.00	0.941	19.44	13.49	1.185	24.06	12.92	1.455	28.95	12.23	1.778	34.55	11.35	2.192	41.27
15.76	1.059	24.60	15.17	1.333	30.45	14.53	1.636	36.64	13.76	2.000	43.72	12.77	2.466	52.23
17.51	1.176	30.37	16.86	1.481	37.59	16.15	1.818	45.24	15.29	2.222	53.98	14.19	2.740	64.48
19.26	1.294	36.75	18.55	1.630	45.48	17.76	2.000	54.74	16.82	2.444	65.31	15.61	3.014	78.02
21.01	1.412	43.74	20.23	1.778	54.13	19.37	2.182	65.14	18.35	2.667	77.73	17.03	3.288	92.85
22.76	1.529	51.33	21.92	1.926	63.52	20.99	2.364	76.45	19.88	2.889	91.22	18.45	3.562	108.97
24.51	1.647	59.53	23.60	2.074	73.67	22.60	2.545	88.66	21.40	3.111	105.80	19.87	3.836	126.38
26.26	1.765	68.34	25.29	2.222	84.57	24.22	2.727	101.78	22.93	3.333	121.45			
28.01	1.882	77.75	26.97	2.370	96.22	25.83	2.909	115.80	24.46	3.556	138.19			
31.51	2.118	98.41	30.35	2.667	121.78	29.06	3.273	146.57						
35.01	2.353	121.49	33.72	2.963	150.35	32.29	3.636	180.95						
36.76	2.471	133.94	35.40	3.111	165.76	33.91	3.818	199.49						
42.01	2.824	174.94	40.46	3.556	216.50									

Sclair IPS Cut Sheet_PE3608_r201407

- All dimensions are in inches unless otherwise specified.
- Pressure ratings are based on load durations of 50 years at a service temperature of 73.4F. The HDS (pipe wall allowable stress) for PE 3608 and PE 4710 are 800 psi and 1,000 psi respectively.
- Dimensions and tolerances per ASTM F714. Pipe weights calculated using PPI TR-7 using PE3608 density of 0.953 gm/cc and 0.958 gm/cc for PE4710 materials.
- The ASTM D3350 cell classifications conform to the requirements of the applicable pipe specification (ASTM F714, AWWA C906, etc.).
- Contact Uponor Infra for sizes, DR's and DIPS offering not shown.

Uponor, Sclairpipe Product Range, IPS Size, PE4710												
	PE4710			DR32.5 (64 psi)			DR26 (80 psi)			DR21 (100 psi)		
Nominal Pipe Size	Minimum Outside Diameter *(inches)*	Maximum Outside Diameter *(inches)*	Average Outside Diameter *(inches)*	Average Inside Diameter *(inches)*	Minimum Wall Thickness *(inches)*	Average Weight *(lbs/ft)*	Average Inside Diameter *(inches)*	Minimum Wall Thickness *(inches)*	Average Weight *(lbs/ft)*	Average Inside Diameter *(inches)*	Minimum Wall Thickness *(inches)*	Average Weight *(lbs/ft)*
4	4.48	4.52	4.50	4.21	0.138	0.840	4.13	0.173	1.030	4.05	0.214	1.27
5	5.54	5.59	5.56	5.20	0.171	1.280	5.11	0.214	1.580	5.00	0.265	1.94
6	6.60	6.65	6.63	6.19	0.204	1.81	6.08	0.255	2.24	5.96	0.315	2.75
7	7.09	7.16	7.13	6.66	0.219	2.09	6.54	0.274	2.59	6.41	0.339	3.18
8	8.59	8.66	8.63	8.06	0.265	3.07	7.92	0.332	3.80	7.75	0.411	4.66
10	10.70	10.80	10.75	10.05	0.331	4.77	9.87	0.413	5.91	9.66	0.512	7.24
12	12.69	12.81	12.75	11.92	0.392	6.70	11.71	0.490	8.31	11.46	0.607	10.18
13	13.31	13.44	13.38	12.50	0.412	7.38	12.28	0.514	9.14	12.02	0.637	11.21
14	13.94	14.06	14.00	13.09	0.431	8.08	12.86	0.538	10.02	12.59	0.667	12.28
16	15.93	16.07	16.00	14.96	0.492	10.56	14.70	0.615	13.08	14.38	0.762	16.04
18	17.92	18.08	18.00	16.83	0.554	13.36	16.53	0.692	16.56	16.18	0.857	20.29
20	19.91	20.09	20.00	18.70	0.615	16.49	18.37	0.769	20.44	17.98	0.952	25.06
22	21.90	22.10	22.00	20.56	0.677	19.96	20.21	0.846	24.74	19.78	1.048	30.32
24	23.89	24.11	24.00	22.43	0.738	23.75	22.04	0.923	29.44	21.58	1.143	36.08
26	25.88	26.12	26.00	24.30	0.800	27.87	23.88	1.000	34.55	23.38	1.238	42.34
28	27.87	28.13	28.00	26.17	0.862	32.33	25.72	1.077	40.07	25.17	1.333	49.11
30	29.87	30.14	30.00	28.04	0.923	37.11	27.55	1.154	46.00	26.97	1.429	56.37
32	31.86	32.14	32.00	29.91	0.985	42.22	29.39	1.231	52.34	28.77	1.524	64.14
36	35.84	36.16	36.00	33.65	1.108	53.44	33.06	1.385	66.24	32.37	1.714	81.18
40	39.82	40.18	40.00	37.39	1.231	65.98	36.74	1.538	81.77	35.96	1.905	100.22
42	41.81	42.19	42.00	39.26	1.292	72.74	38.58	1.615	90.16	37.76	2.000	110.49
48	47.78	48.22	48.00	44.87	1.477	95.01	44.09	1.846	117.76	43.15	2.286	144.32

Pipe dimensions are in accordance with ASTM F714 and AWWA C906
Pressure Ratings are for water at 73.4 deg F.
Some of the pipe sizes and DR's above are available only on request. Check with your representative for availability.
Other dimensions and DR's not listed may be available upon special request.
All dimensions are in inches unless otherwise noted.
Weights are calculated by the methodology established in PPI's TR-7 and are applicable to PE4710

Product innovation and quality assurance

For 50 years Uponor Infra has been a leader in the design, development, manufacture and support of polyethylene piping systems. Uponor Infra's experienced engineers can offer design and engineering assistance, assuring you of a dependable piping system designed to meet your needs. Visit our website (www.uponor.ca) and see how our innovative online calculator can assist you. Extensive R&D in the early 1960's led us to produce 16" diameter polyethylene pipe at a time when many considered large diameter polyethylene pipes a technical impossibility. Today Uponor Infra produces solid wall Sclairpipe in sizes up to 48".

All Uponor Infra products are manufactured from special, high strength resins with complete quality control maintained from raw material to finished pipe product. Uponor Infra was the first North American manufacturer of polyethylene pipe and fittings to have its Quality Management System registered to the ISO 9001:2008 level.

Our strict manufacturing specifications are verified daily, using precise dimensional controls and accelerated long term hydrostatic testing. A continuous quality control process assures you of long-term pipe performance. We certify that the pipe resin used to extrude Sclairpipe has a minimum cell classification of PE 345464C or PE445474C respectively, when classified in accordance with ASTM D3350. Sclairpipe's material classification is based on PPI's (Plastic Pipe Institute) method of determining and validating the Long-Term Hydrostatic Stress (LTHS) of polyethylene pipe.

DR17 (125 psi)			DR13.5 (160 psi)			DR11 (200 psi)			DR9 (250 psi)			DR7.3 (317 psi)		
Average Inside Diameter *(inches)*	Minimum Wall Thickness *(inches)*	Average Weight *(lbs/ft)*	Average Inside Diameter *(inches)*	Minimum Wall Thickness *(inches)*	Average Weight *(lbs/ft)*	Average Inside Diameter *(inches)*	Minimum Wall Thickness *(inches)*	Average Weight *(lbs/ft)*	Average Inside Diameter *(inches)*	Minimum Wall Thickness *(inches)*	Average Weight *(lbs/ft)*	Average Inside Diameter *(inches)*	Minimum Wall Thickness *(inches)*	Average Weight *(lbs/ft)*
3.94	0.265	1.55	3.79	0.333	1.91	3.63	0.409	2.30	3.44	0.500	2.75	3.19	0.616	3.28
4.87	0.327	2.36	4.69	0.412	2.93	4.49	0.506	3.52	4.25	0.618	4.20	3.95	0.762	5.02
5.80	0.390	3.35	5.58	0.491	4.15	5.35	0.602	4.99	5.06	0.736	5.96	4.70	0.908	7.12
6.24	0.419	3.88	6.01	0.528	4.80	5.75	0.648	5.78	5.45	0.792	6.89	5.06	0.976	8.23
7.55	0.507	5.68	7.27	0.639	7.03	6.96	0.784	8.47	6.59	0.958	10.10	6.12	1.182	12.07
9.41	0.632	8.83	9.06	0.796	10.93	8.68	0.977	13.15	8.22	1.194	15.69	7.63	1.473	18.75
11.16	0.750	12.42	10.75	0.944	15.37	10.29	1.159	18.50	9.75	1.417	22.08	9.05	1.747	26.37
11.71	0.787	13.67	11.27	0.991	16.92	10.80	1.216	20.36	10.22	1.486	24.29	9.49	1.832	29.02
12.25	0.824	14.98	11.80	1.037	18.53	11.30	1.273	22.31	10.70	1.556	26.62	9.93	1.918	31.79
14.00	0.941	19.56	13.49	1.185	24.21	12.92	1.455	29.13	12.23	1.778	34.76	11.35	2.192	41.53
15.76	1.059	24.76	15.17	1.333	30.64	14.53	1.636	36.87	13.76	2.000	44.00	12.77	2.466	52.56
17.51	1.176	30.56	16.86	1.481	37.82	16.15	1.818	45.52	15.29	2.222	54.32	14.19	2.740	64.89
19.26	1.294	36.98	18.55	1.630	45.77	17.76	2.000	55.08	16.82	2.444	65.72	15.61	3.014	78.51
21.01	1.412	44.01	20.23	1.778	54.47	19.37	2.182	65.55	18.35	2.667	78.22	17.03	3.288	93.44
22.76	1.529	51.65	21.92	1.926	63.92	20.99	2.364	76.93	19.88	2.889	91.80			
24.51	1.647	59.90	23.60	2.074	74.13	22.60	2.545	89.22	21.40	3.111	106.46			
26.26	1.765	68.77	25.29	2.222	85.10	24.22	2.727	102.42	22.93	3.333	122.22			
28.01	1.882	78.24	26.97	2.370	96.83	25.83	2.909	116.53						
31.51	2.118	99.02	30.35	2.667	122.55	29.06	3.273	147.49						
35.01	2.353	122.25	33.72	2.963	151.29									
36.76	2.471	134.78	35.40	3.111	166.80									
42.01	2.824	176.04												

Uponor_Sclair_IPS_PE4710_r201407

Innovative joining methods and equipment

Sclairpipe piping systems can be assembled by heat fusion (butt, electrofusion, socket and saddle fusion), flanged connections, compression couplings and various mechanical couplings. The superior performance of Sclairpipe results from the combination of pipe and fittings designed to work together as a complete system. A full range of pressure rated fittings is available to suit any application.

The most popular method of joining Sclairpipe is thermal butt fusion. This fast and economical technique permits the quick assembly of long continuous lengths and the joining of fittings to the pipe. The fused joints are as reliable and strong as the pipe itself, fully restrained, providing continuous leak proof systems.

Attachment III-4-B3-13

Hydrogeologic Properties of Earth Materials and Principles of Groundwater Flow

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Hydrogeologic Properties of Earth Materials and Principles of Groundwater Flow

William W. Woessner and Eileen P. Poeter

THE GROUNDWATER PROJECT

By using Equation 4, the total porosity can be calculated as 0.46 or 46%, as shown in Equation 5.

$$n = \frac{1.43\frac{g}{cm^3} - 2.65\frac{g}{cm^3}}{0\frac{g}{cm^3} - 2.65\frac{g}{cm^3}} = 0.46 \quad (5)$$

For additional information on the densities of earth materials, Click here to link to Box 1.

Values of Total Porosity

Tables of total porosity values for earth materials are included in publications provided by government agencies and researchers, as well as in hydrogeology textbooks. Examples of total porosity values for earth materials are presented in Table 1.

Generally, unconsolidated materials have higher porosities (20 to 55%) than consolidated sediments and igneous and metamorphic rocks. Though, some consolidated sedimentary rocks; and weathered and/or fractured igneous and metamorphic rocks can also have high porosities. The porosity of vesicular basalt is a result of the degree of void creation during the solidification process.

Table 1 - Typical total porosity ranges of some common earth materials (after Rivera, 2014; with data from Freeze and Cherry, 1979 and Domenico and Schwartz, 1998).

Total Porosity Range of Some Common Earth Materials (Percent)	
Material	**Range Total Porosity (%)**
Unconsolidated Sediments	
Clay	45 - 55
Silt	35 - 50
Fine-sand	26 - 50
Coarse-sand	30 - 45
Gravel	25 - 35
Sand and gravel	20 - 30
Glacial till	20 - 30
Consolidated Sediments	
Shale	1 - 10
Siltstone	20 - 40
Sandstone	5 - 30
Limestone and dolomite	1 - 25
Karstic limestone	5 - 35
Igneous and Metamorphic Rocks	
Fresh granite and gneiss	0.01 - 3
Weathered granite and gneiss	5 - 25
Fractured basalt	5 - 30
Vesicular basalt	10 - 40
Tuff	10 - 55

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Attachment III-4-B3-14

Bentofix GCL Specifications Sheet

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BENTOFIX® NSL

NSL

Thermal Lock® Geosynthetic Clay Liners

Bentofix Thermal Lock® NSL Geosynthetic Clay Liner (GCL) is a needlepunched, thermally reinforced composite comprised of a core of natural sodium Wyoming bentonite clay between two durable geotextile layers to form a low permeability hydraulic barrier. The top layer is a staple fiber nonwoven (NW) geotextile while the bottom layer is a woven (W) geotextile. The product is intended for moderate to steep slopes and moderate to high load applications where increased internal shear strength is required.

Property	ASTM Test Method	Frequency	Value Imperial Units	Value Metric Units
Typical Geotextile Properties				
• Top / Cap Nonwoven	D 5261	200,000 sq ft (20,000 m^2)	6.0 oz./yd^2 MARV	200 g / m^2 MARV(1)
• Woven			3.1 oz./yd^2 MARV	105 g / m^2 MARV
Bentonite Properties (SI Units Only)				
• Swell Index	D 5890	100,000 lbs.	24 ml/ 2 g min.	24 ml/ 2 g min.
• Moisture Content	D 4643	(50,000 kg)	12 % max.	12 % max.
• Fluid Loss	D 5891	100,000 lbs.	18 ml max.	18 ml max.
Finished GCL Properties				
• Bentonite Mass/Unit Area[2]	D 5993	40,000 ft^2 (4,000 m^2)	0.75 lbs/ft^2 MARV	3.66 kg/m^2 MARV
• Tensile Strength	D 6768	40,000 ft^2 (4,000 m^2)	30 lb/in MARV	5 kN/m MARV
• Peel Strength	D 6496	40,000 ft^2 (4,000 m^2)	3.5 lbs/in min	610 N/m min
• Permeability[3]	D 5887	Weekly	5 x 10^{-9} cm/s max	5 x 10^{-9} cm/s max
• Index Flux[3]	D 5887	Weekly	1 x 10^{-8} $m^3/m^2/s$ max	1 x 10^{-8} $m^3/m^2/s$ max
• Internal Shear Strength[4]	D 6243	Periodic	500 psf Typical	24 kPa Typical

(1) Minimim Average Roll Value.
(2) Oven-dried measurement. Equates to 0.84 lb/sqft (4.1 kg/sqm) when indexed to 12% moisture content.
(3) Deaired, deionized water @ 5 psi (34.5 kPa) maximum effective confining stress and 2 psi (13.8 kPa) head pressure.
(4) Typical peak value for specimen hydrated for 24 hours and sheared under a 200 psf (9.6 kPa) normal stress.

The information contained herein has been compiled by TAG Environmental Inc.. and is, to the best of our knowledge, true and accurate. This information is offered without warranty. Final determination of suitability for use contemplated is the sole responsibility of the user. This information is subject to change without notice. TAG is a division of Terrafix Geosynthetics Inc. GCLs since 1992. 04-2021.

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Attachment III-4-B3-15

Plastic Pipe Institute Handbook of Polyethylene (PE) Pipe

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Handbook of Polyethylene (PE) Pipe

Foreword

PE piping, has been successfully utilized for a variety of piping applications for over 50 years. Despite this relatively short history, the engineering community has embraced the overall toughness and durability of PE pipe and the latitude afforded by the variety of installation methods that can be employed using PE pipe to expand its use at a quickening rate.

Today, we see PE piping systems operating in a broad array of installations; from pressure-rated potable water and natural gas lines to gravity sewers, from industrial and chemical handling to telecommunications and electrical ducting; from oil and gas production to marine installations and directional drilling.

This text has been developed to assist designers, installers and owners in the design, rehabilitation and installation of solid wall PE pipe. Applications using profile wall PE pipe are addressed briefly; applications using PEX pipe (for plumbing, heating, ...) and applications using corrugated PE pipe (for drainage, ...) are covered in multiple and separate PPI publications.

This Handbook discusses material properties, design, installation and applications of solid wall PE pipe and to a lesser extent, profile wall PE pipe. Corrugated PE pipe for drainage applications is covered in a separate handbook.

This Handbook discusses material properties, design, installation and applications of solid wall PE pipe and to a lesser extent, profile wall PE pipe. Corrugated PE pipe for drainage applications is covered in a separate handbook.

The material presented in this text has been written in a manner that is easily understood, with an emphasis on organization to provide the reader with ease of reference. It is only because of our efforts to be as comprehensive as possible with respect to the subject matter that have resulted in such an extensive publication.

Next, the designer determines the Deformation Factor, D_F , by entering the Watkins-Gaube Graph with the Rigidity Factor. See Fig. 3-6. The Deformation Factor is the proportionality constant between vertical deflection (compression) of the soil layer containing the pipe and the deflection of the pipe. Thus, pipe deflection can be obtained by multiplying the proportionality constant D_F times the soil settlement. If D_F is less than 1.0 in Fig. 3-6, use 1.0.

The soil layer surrounding the pipe bears the entire load of the overburden above it without arching. Therefore, settlement (compression) of the soil layer is proportional to the prism load and not the radial directed earth pressure. Soil strain, ε_S, may be determined from geotechnical analysis or from the following equation:

(3-27)

$$\varepsilon_S = \frac{wH}{144E_S}$$

WHERE

w = **unit weight of soil, pcf**

H = **depth of cover (height of fill above pipe crown), ft**

E_S = **secant modulus of the soil, psi**

The designer can find the pipe deflection as a percent of the diameter by multiplying the soil strain, in percent, by the deformation factor:

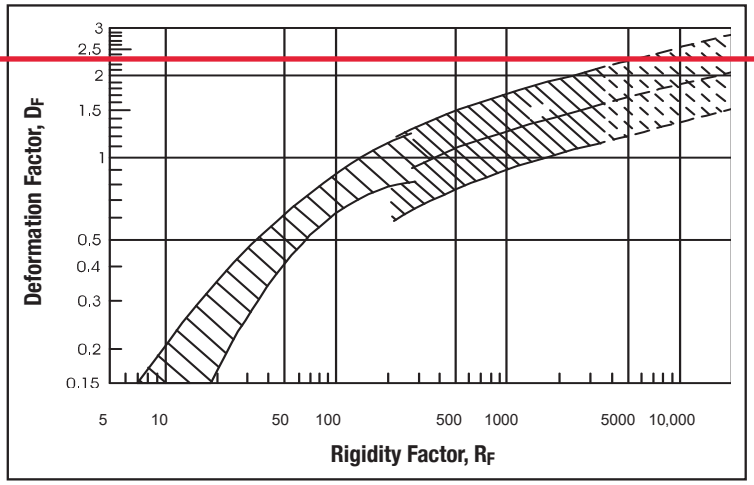


Figure 3-6 Watkins-Gaube Graph

(3-28)

$$\frac{\Delta X}{D_M}(100) = D_F \varepsilon_S$$

WHERE

$\Delta X/D_M$ **multiplied by 100 gives percent deflection.**

Appendix III-4-C

Liner Quality Control Plan

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Liner Quality Control Plan
WST Landfill
Reeves County, Texas

Prepared for
West Sun Tex, LLC
Pecos, Texas

Prepared by

DBS&A
a Geo-Logic Company

Texas Registered Engineering Firm F-286
Texas Registered Geoscience Firm No. 50045
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DB20.1166



July 2026

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Table of Contents

1. Introduction 1
1.1 Purpose 1
1.2 Definitions 2
2. Design Criteria 4
2.1 Liner System for Landfill Disposal Unit 4
2.2 Leachate Collection System 7
2.3 Liner System for Contact Stormwater Pond 7
2.4 Construction Monitoring 8
2.5 Documentation 8
3. Liner Subgrade 9
3.1 Construction Below Groundwater Table 9
3.2 Slope Stability 9
3.3 Pre-Construction Testing and In-Situ Soils 9
3.4 General Fill Placement 10
3.5 Final Subgrade Inspection, Testing, and Acceptance 10
3.6 Anchor Trenches 11
4. Geosynthetic Clay Liner 11
4.1 Material Properties 11
4.2 Delivery, Off-Loading, and Storage 12
4.3 Quality Assurance Testing and Certification 13
4.4 Installation and Repair 14
4.5 GCL Acceptance 16
5. Geomembrane Liner 16
5.1 Material Properties 16
5.2 Delivery, Off-Loading, and Storage 17
5.3 Quality Assurance Testing and Certification 18
5.4 Installation 19
5.5 Seaming 21
5.6 Repairs 22
5.7 Field Quality Control Testing 22
5.7.1 Destructive Tests 22
5.7.2 Non-Destructive Tests 23
5.8 Geomembrane Acceptance 23

6. Drainage Collection Layer 23
6.1 Geonet and Geocomposite 24
6.1.1 Material Properties 24
6.1.2 Delivery, Off-Loading, and Storage 24
6.1.3 Quality Assurance Testing and Certification 26
6.1.4 Installation 26
6.2 Geotextile 28
6.2.1 Material Properties 28
6.2.2 Delivery, Off-Loading, and Storage 28
6.2.3 Quality Assurance Testing and Certification 29
6.2.4 Installation 29
6.3 Select Aggregate 29
6.3.1 Material Properties 29
6.3.2 Delivery, Off-Loading, and Storage 30
6.3.3 Quality Assurance Testing and Certification 30
6.3.4 Installation 30
6.4 HDPE Pipe 30
6.4.1 Material Properties 31
6.4.2 Delivery, Off-Loading, and Storage 31
6.4.3 Quality Assurance Testing and Certification 31
6.4.4 Installation 32
7. Protective Soil Layer 32
7.1 Material Properties 32
7.2 Delivery, Off-Loading, and Storage 32
7.3 Quality Assurance Testing and Certification 33
7.4 Installation 33
7.5 Final PSL Inspection, Testing, and Acceptance 33
8. Documentation and Reporting 34
8.1 LER Acceptance 35
8.2 LER Markers 35
References 36

List of Tables

III-4-C-1 Typical Details of Systems Addressed in LQCP 4
III-4-C-2 Maximum Daily Leakage through Liner under Peak Conditions 5
III-4-C-3 Maximum Daily Leakage through Clay under Peak Conditions 6
III-4-C-4 Required Properties for GCL 11
III-4-C-5 GCL Delivery, Off-Loading, and Storage 12
III-4-C-6 GCL Installation and Repair Requirements 14
III-4-C-7 Geomembrane Delivery, Off-Loading, and Storage Requirements 18
III-4-C-8 Geomembrane Installation Requirements 20
III-4-C-9 Required Properties for Geocomposite 24
III-4-C-10 Geonet and Geocomposite Delivery, Off-Loading, and Storage Requirements 25
III-4-C-11 Geonet and Geocomposite Installation Requirements 27
III-4-C-12 Protective Soil Cover Installation Requirements 33

List of Attachments

III-4-C1 System Details
III-4-C2 Testing Requirements for System Components
III-4-C3 Seasonal High Groundwater Determination

1. Introduction

1.1 Purpose

Daniel B. Stephens & Associates, Inc. (DBS&A) has prepared this liner quality control plan (LQCP) for WST Landfill in accordance with the requirements of 30 Texas Administration Code (TAC) 330.339 to establish procedures to ensure compliance with the Texas Commission on Environmental Quality (TCEQ) municipal solid waste (MSW) rules. Guidance regarding quality control of construction and quality assurance of sampling and testing procedures are provided in this document; however, personnel shall follow the latest technical guidelines of the TCEQ Executive Director (ED) where applicable. This LQCP additionally provides guidance for the design, construction, testing, and documentation of the liner and leachate collection systems at WST Landfill.

This LQCP shall be used in conjunction with the final construction drawings and project plans and specifications. The LQCP outlines the following:

- Lines of communication, responsibilities, and role of quality assurance (QA) team and other related project personnel
- A QA program and the QA procedures to be implemented during a system's construction, including field observation, laboratory and field testing, and acceptance criteria for constructed work
- Recording and documenting procedures to demonstrate that the constructed systems meet the requirements of project plans and specifications
- Liner evaluation report (LER) submittals

This LQCP is intended for use during construction and installation of liner systems for landfill units, liner systems for contact stormwater ponds, and leachate collection systems. The LQCP was developed in accordance with TCEQ regulatory guidance (TCEQ, 2017), industry standards such as Daniel and Koerner (1993), and other applicable technical references. A current copy of this LQCP must be maintained and kept available on-site or at an alternate location approved by the TCEQ ED at all times.

1.2 Definitions

This section provides definitions for terms used in this LQCP.

- *ASTM International (ASTM):* An international organization that develops and publishes voluntary technical standards for a range of products, systems, materials, and services.
- *Construction quality assurance (CQA):* CQA is a planned system of activities that provides the owner and permitting agency assurance that the facility was constructed as specified in the design. CQA includes observation, evaluation, and testing procedures necessary to assess and document the quality of the constructed facility. It also includes measures to be taken by the CQA organization to assess whether work complies with the plans, specifications, and permit requirements for a project.
- *Contractor:* The firm or agency responsible for performance of the construction contract, including the performance of all subcontractors.
- *Geocomposite:* Drainage component consisting of a geonet with non-woven geotextile heat-bonded on one or both sides, assembled by the manufacturer.
- *Geomembrane liner evaluation report (GLER):* Report confirming the compliance of a geomembrane liner to the LQCP, submitted to TCEQ for approval.
- *Geonet:* A net-like configuration of extruded high-density polyethylene (HDPE) ribs used as a planar conductor of liquids.
- *Geosynthetics:* A planar product manufactured from polymeric material used with soil, rock, earth, or other geotechnical engineering related material as an integral part of a manmade project, structure, or system.
- *Geosynthetic clay liner (GCL):* A highly impermeable manufactured hydraulic barrier composed of sodium bentonite clay sandwiched between planar sheets of geotextile.
- *Geosynthetic clay liner evaluation report (GCLER):* Report confirming the compliance of a GCL to the LQCP, submitted to TCEQ for approval.
- *Geotechnical professional (GP):* Person(s) or firm(s) authorized by the owner to manage and oversee the execution of work. Any individual designated as the GP must be a professional engineer (P.E.) as licensed by the State of Texas. The GP is responsible for observing, testing, and documenting activities related to geosynthetics QA during the installation of liner systems. The GP shall also be responsible for issuing and signing the LER. The GP or his/her

representative shall be on-site for all liner construction and testing. All completed work is subject to approval of the GP.

The GP may also be mentioned in applicable regulations and guidelines as the GP, resident project representative, geotechnical quality control/quality assurance professional (GQCP), or professional of record (POR).

- *Geotextile:* A permeable synthetic textile used with soil, rock, sand, gravel, or any other similar materials as an integral part of a drainage system. It serves as a filter interface between two types of soil materials, as a drainage conductor, or as soil reinforcement.
- *High-density polyethylene (HDPE):* A polymer prepared by low-pressure polymerization of ethylene as the principal monomer and having the characteristics of ASTM D4976, Class III and IV polyethylene. Such polymer resins have densities greater than or equal to 0.941 gram per cubic centimeter (g/cm^3) as noted in ASTM D4976.
- *Manufacturer:* Firm(s) responsible for the production of geomembrane, geotextile, and geonet materials, pipes, fittings, and other equipment.
- *Owner:* West Sun Tex, LLC (WST).
- *Panel:* A unit area of geosynthetic materials which will be seamed in the field.
- *Project plans and specifications:* All project-related plans and specifications, including design modifications and as-built plans.
- *Qualified engineering technician (QET):* A qualified representative of the GP who meets the qualifications of a NICET certified in Geotechnical Engineering Technology at Level 2 or higher, who is an engineering technician with a minimum of four years of directly related experience, or who is a graduate engineer or geologist with at least one year of directly related experience.
- *Quality assurance (QA):* Actions taken by the GP to assure conformity of the liner system production and installation with the LQCP, drawings, and specifications. QA is provided by a party independent of installation.
- *QA laboratory:* The firm responsible for conducting tests on geosynthetic samples taken from the site. The laboratory shall be independent of the owner, manufacturer, contractor, and any party involved with the manufacture and/or installation of any part of the liner system.

- *Seasonal high groundwater table:* The highest measured or calculated water level within the construction area.
- *Work:* All tools, equipment, supervision, labor, material, or supplies necessary to complete the project as specified herein and as shown on the plans.

2. Design Criteria

WST Landfill intends to accept solid waste resulting from municipal, commercial, institutional, and recreational activities, including garbage, construction waste, brush, and rubbish, Class 1, 2, and 3 nonhazardous industrial waste, petroleum-contaminated soils, wastewater treatment facility sludge, and special waste as defined in the facility's permit. To protect human health and the environment, WST Landfill shall be designed to meet or exceed the requirements stated in 30 TAC 330.331. The liner and leachate collection systems at WST Landfill shall be constructed as outlined in this document. Typical containment systems covered by this LQCP are provided in the locations listed in Table III-4-C-1.

Table III-4-C-1. Typical Details of Systems Addressed in LQCP

System Addressed in LQCP	Location of Typical Detail
Liner system for landfill unit	Attachment III-4-C1, Drawing C-17, Detail 3
Liner system for contact stormwater pond	Attachment III-4-C1, Drawing C-11, Detail 1
Leachate collection system	Attachment III-4-C1, Drawing C-17

2.1 Liner System for Landfill Disposal Unit

An alternative liner system with a geosynthetic clay liner (GCL) has been proposed for this site. The liner system consists of four main components, and shall be constructed on a prepared subgrade as discussed in Section 3.1. The liner system is designed to maintain less than a 30-centimeter depth of leachate over the liner. The liner system shall consist of the following components, from the bottom up:

- A GCL installed in direct and uniform contact with the compacted subgrade
- A layer of geomembrane (60-mil HDPE) installed in direct and uniform contact with the GCL
- A leachate drainage layer consisting of geocomposite placed over the geomembrane

- A 24-inch-thick (or greater) layer of protective soil cover over any geocomposite (excluding leachate collection trenches)

The liner system for landfill disposal units shall be equivalent for all cells, and has been designed to provide an equivalent or better level of protection than the prescribed liner system for both MSW and Class 1 nonhazardous industrial solid waste cells.

Per 30 TAC 330.331(e), an alternative liner system for Class I cells must provide equal or greater protection than 3 feet of compacted clay with a minimum hydraulic conductivity of 1×10^{-7} centimeters per second (cm/s). Table III-4-C-2 compares the maximum leakage through both liner systems modeled using the Hydrologic Evaluation of Landfill Performance (HELP) model.

Table III-4-C-2. Maximum Daily Leakage through Liner under Peak Conditions

Liner System	Thickness (feet)	Maximum Leakage through Liner (inches per acre per day) [a]
Barrier Soil Liner (CH) [b]	3.00	0.0001
Geosynthetic Clay Liner (GCL)	0.01	0.0001

[a] Maximum leakage is based on the maximum hydraulic head generated on the liner during peak rainfall conditions over a one-year simulation period and is considered highly conservative relative to actual site conditions.

[b] 3 feet of compacted clay prescribed by 30 TAC 330.331(d)(2).

The leakage numbers above were simulated by artificially increasing the moisture content of the overlying soil material to field capacity, which would force head to be generated on the liner. The GCL and the 3-foot compacted clay liner are considered to have equivalent performance, as their daily leakage rates under peak conditions are of the same order of magnitude. An additional demonstration comparing leachate migration between the barrier soil liner and GCL using the Giroud equation has been provided in the Liner Equivalency Demonstration (Attachment III-4-G). This analysis accounts for potential defects in the geomembrane and demonstrates that the GCL provides greater protection against leachate migration than the proposed 3-foot-thick compacted clay liner.

The deepest point of excavation for the landfill is 2,626 feet above mean sea level (feet msl) as shown in Drawing C-14 (Appendix III-4-A). 30 TAC 335.584(b)(1) states that the underlying soil units within 5 feet of the base of the containment structure cannot have a hydraulic conductivity greater than 1×10^{-5} cm/s. The majority of the soil types found between 2,626 and 2,621 feet msl are silty clays and silt (Attachment III-5, Figures III-5-21 through III-5-23). In the cases where

the soil types are sands, they are not laterally contiguous, and are separated from the perched water table by underlying silt or clay-rich soils. The sandy soil present is not sufficient to provide a significant pathway for waste migration, so the exception to this location restriction under 30 TAC 335.584(b)(1)(A) has been met. Additionally, the average annual evaporation exceeds average annual rainfall by more than 56 inches in Pecos; therefore, it is unlikely that any leakage through the liner will occur. This satisfies the location restriction exception provided in 30 TAC 335.584(b)(1)(B), which states that the average annual evaporation must exceed average annual rainfall by more than 40 inches.

30 TAC 335.584(b)(2) requires that facilities located over a regional aquifer be separated from the base of the containment structure by at least 10 feet of clay with a minimum hydraulic conductivity of 1×10^{-7} cm/s, a value typically associated with fat clay. The deepest soil boring on the site (SB-4) (Attachment III-5-C) identifies a continuous 40-foot-thick interval of lean clay between 60 and 100 feet below ground surface (bgs). The performance of 10 feet of fat clay was compared to lean clay (25 and 40 feet thickness) using the HELP model. The results are provided in Table III-4-C-3.

Table III-4-C-3. Maximum Daily Leakage through Clay under Peak Conditions

Underlying Soil Unit	Thickness (feet)	Maximum Leakage through Soil Barrier (inches per acre per day) [a]
Fat Clay (CH) [b]	10	0.000888
Lean Clay (CL)	25	0.000700
	40	0.000531

[a] Maximum leakage is based on the maximum hydraulic head generated on the soil column during peak rainfall conditions over a one-year simulation period and is considered highly conservative relative to actual site conditions.

[b] 10 feet of clay with a minimum hydraulic conductivity of 1×10^{-7} cm/s prescribed by 30 TAC 330.331(d)(2).

Table III-4-C-3 shows that 25 feet of lean clay is considered to be as protective as the 10 feet of fat clay required per 30 TAC 335.584(b)(2). The drilling of deep monitoring wells to the regional aquifer will include an evaluation of whether a minimum of 25 feet of lean clay is present in the subsurface across the site. These subsurface conditions are expected due to the perched water table found below the site, which requires a continuous low-permeability layer, or aquitard, to retain groundwater above the regional aquifer.

2.2 Leachate Collection System

Leachate collection systems shall be equivalent for all landfill cells, and have been designed to meet the requirements of 30 TAC 330.333. A leachate collection system shall gather and direct leachate from solid waste cells into sumps/leachate extraction risers located around the perimeter of the cells and maintain less than a 30-centimeter depth of leachate over the liner systems. A leachate collection trench shall be situated in the center of each constructed cell at WST Landfill and shall consist of the following components, from the bottom up:

- A continuance of the landfill unit liner system, in uniform and direct contact with the underlying subgrade of the leachate collection trench
- A sheet of geotextile wrapped around the contents of the leachate collection trench to act as a separator between the granular drainage materials and the surrounding protective cover soil
- Perforated HDPE leachate collection pipe seated atop the geotextile separator in the invert of the trench
- A 36-inch layer of select aggregate drainage material

The leachate collection trench within each landfill disposal unit shall be graded to a sump that contains geotextile-wrapped select aggregate drainage material and HDPE piping for leachate collection and removal.

Further description of the leachate collection system for WST Landfill is provided in the Leachate and Contaminated Water Plan (LCWP) (Appendix III-4-B).

2.3 Liner System for Contact Stormwater Pond

The contact stormwater pond, referred to as the contaminated water pond within the permit drawings (Appendix III-4-A), at WST Landfill has been designed to meet the most stringent requirements of 30 TAC 330.207, 330.331, and 330.333. The contact stormwater pond will collect contaminated water from the leachate collection systems and serve as a storage unit to evaporate water and leave behind the solid leachate contaminants. It shall be lined with geosynthetics to prevent the creation of any hazards to human health or the environment. The liner system for the contact stormwater pond at WST Landfill shall consist of the following components, from the bottom up:

- A GCL installed in direct and uniform contact with the compacted subgrade

- A layer of flexible geomembrane (60-mil HDPE) in direct and uniform contact with the GCL
- A layer of flexible geomembrane (60-mil HDPE) installed in direct and uniform contact with the underlying geomembrane

2.4 Construction Monitoring

Continuous on-site monitoring is necessary to ensure that the components of the liner system are constructed in accordance with this LQCP. This plan establishes the quantitative criteria that will be used in the field and laboratory to measure the quality of the liner subgrade, liner installation, and leachate collection system. Attachment III-4-C2 provides minimum testing frequencies and acceptable testing methods for such components.

It is the objective of this LQCP to ensure that test results meet applicable specified values. Should a test result not achieve the specified value for a material, it must be replaced or repaired. This operation must be repeated until test results are acceptable. The GP understands that variations due to isolated anomalies in materials, sample disturbances, human testing errors, or other factors may result in failing tests. If the GP believes that these tests are not indicative of the general quality of construction, the GP may accept a small percentage of outliers.

The GP will document and certify that applicable components of WST Landfill were constructed in accordance with this LQCP. The GP shall make sufficient site visits to observe critical construction activities and to verify that the construction and quality assurance activities are performed in accordance with this LQCP.

2.5 Documentation

The GP shall maintain current records of quality control operations, inspections, and tests performed relative to the work of suppliers and contractors at WST Landfill. These records shall be reported through appropriate CQA documents including daily summary reports, geosynthetics inventory forms (Form TCEQ-10075A), field compaction test logs, certificate of acceptance of soil subgrade forms (Form TCEQ-10075B), geosynthetics deployment logs, geomembrane field quality control logs, and panel layout drawings.

Photographs shall also be used to document the progress and acceptability of work, and shall be incorporated into daily summary reports. Each photograph in a daily summary report shall denote the date, time, and location of the photograph, as well as other pertinent details.

3. Liner Subgrade

3.1 Construction Below Groundwater Table

DBS&A has prepared a determination of the seasonal high groundwater table at WST Landfill (Attachment III-4-C3). The February 2026 analysis indicates that groundwater levels beneath WST Landfill are substantially below the engineered depth of excavation, and shall not interfere with the landfill's permitted design. Should additional data become available that indicate a rise in the seasonal high groundwater table, this LQCP shall be updated to reflect this information. The seasonal high groundwater table may not be adjusted downward from DBS&A's February 2026 determination.

3.2 Slope Stability

The proposed site plan for WST Landfill (Drawing C-1 in Appendix III-4-A) provides for the landfill cell perimeter sidewalls to be sloped at approximately 25 percent until they meet the landfill cell floors and continue at a 3 percent cross slope to a leachate collection trench along the centerline of each cell. Collection trenches will slope at 2 percent to sumps/leachate extraction risers located along the perimeter of the landfill. Slope stability analyses were performed to ensure the longevity of WST Landfill's liner systems given this design of a typical landfill cell; the analyses are provided in Appendix III-4-E.

The slope stability analyses provided in Appendix III-4-E are only valid for the conditions that were analyzed. Any changes to the excavation plan, liner system, or landfill completion plan will necessitate that the slope stability analyses be revised to reflect the actual conditions. Further, the slope stability analyses represent end-of-construction conditions and may not represent temporary conditions during construction; temporary construction slopes shall not be steeper than the final slopes. Concentrated loadings, such as heavy equipment and soil stockpiles, shall not be placed within 100 feet of the crest of slopes unless additional slope stability analyses are performed to authorize such conditions.

3.3 Pre-Construction Testing and In-Situ Soils

The GP, QET, or contractor in the presence of the GP or QET shall collect samples of proposed in-situ and/or borrow fill material in advance of construction in accordance with the contract documents for determination of soil characteristics (e.g., standard Proctor, Atterberg limits tests,

etc.) and compliance with project plans and specifications. Attachment III-4-C2 provides further details of required testing procedures of these materials.

The subgrade of a landfill cell or lined pond shall be prepared consistent with proper subgrade preparation techniques for the installation of geosynthetic materials as specified by the GCL manufacturer, this LQCP, and project plans and specifications. Excavation shall be performed to reach the design base grades of the subgrade. In-situ subgrade soils shall be proof-rolled in the presence of the GP or QET with rubber-tired construction equipment or a compactor to detect soft zones or areas subject to pumping. Areas of soft soils will be reworked and areas subject to pumping will be undercut to firm material and backfilled with general fill as outlined in Section 3.4. Proof-rolling and visual examination of the subgrade preparation by the GP or QET will generally be sufficient to evaluate suitability of the subgrade as a foundation for the liner system. Acceptance of the liner subgrade shall be documented by the contractor, GP (or QET), and owner through completion of a certificate of acceptance of soil subgrade (Form TCEQ-10075B) immediately in advance of installing GCL.

3.4 General Fill Placement

General fill, if required, shall be placed in loose lifts no greater than 8 inches, moisture conditioned and compacted, tested for in-place density and moisture, and approved by the QET or GP between the placement of each lift using field methods detailed in Attachment III-4-C2 (Table III-4-C2-1). Lifts shall be compacted to a minimum of 95 percent of maximum dry density as determined by the standard Proctor test (ASTM D698) at a moisture content within +2 percent of the optimum moisture content. Results of in-place density and moisture tests shall be recorded on a field compaction test log. Exposed subgrade that has significantly dried or exhibits desiccation shall be wetted and compacted prior to fill placement. Areas with failing tests shall be reworked and recompacted, and then retested with passing results before another lift can be placed. The specified moisture content of each lift shall be maintained during the construction process. Abrupt changes of grade shall be regraded. The final lift shall be wetted and smooth rolled.

3.5 Final Subgrade Inspection, Testing, and Acceptance

Upon completion of subgrade preparation, the GP or QET shall visually inspect the final subgrade for protruding debris, foreign objects, angular stones, vegetation, frozen materials, or any rocks or rock clods larger than 1 inch. Elevations of the subgrade shall be verified by survey methods on an established grid system with not less than one verification point per

5,000 square feet of surface. Immediately in advance of the installation of GCL, the contractor shall document acceptance of the subgrade using Form TCEQ-10075B. This form shall also be signed by the GP (or QET) and owner. If traffic, erosion, settlement, or other damage causes deterioration of the subgrade following its initial preparation, the surface must be reworked, inspected, tested, and accepted prior to deployment of GCL over these areas.

3.6 Anchor Trenches

Anchor trenches should be installed around all portions of the geomembrane where the leading edge(s) are not used to tie in to an existing liner system. Anchor trenches shall be left open until seaming of the geomembrane is completed. Expansion and contraction of the geomembrane should be accounted for during deployment. Excavated anchor trenches shall have rounded corners to mitigate crimping of the geomembrane. Loose soil shall not underlie geomembrane in the anchor trench.

Anchor trenches shall be backfilled with compacted general fill at the earliest practicable time following geosynthetics deployment. Anchor trenches shall be backfilled and compacted in a manner that does not damage or induce stress to the geomembrane and compacted to at least 90 percent of the maximum dry density as determined by a standard Proctor. Compaction tests of the anchor trench need not be reported.

4. Geosynthetic Clay Liner

4.1 Material Properties

GCL material properties shall meet or exceed the values listed in Table III-4-C-4, project plans and specifications, and the GRI-GCL3 Standard Specification. These material properties shall be evaluated in accordance with the frequencies detailed in Attachment III-4-C2 (Table III-4-C2-2).

Table III-4-C-4. Required Properties for GCL

Component	Property	Value
Bentonite used in a GCL	Free swell	≥24 mL
	Fluid loss	≤18 mL
Assembled GCL product	Bentonite mass/unit area	≥0.8 pounds per square foot (lb/ft^2)
	Permeability	≤5 x 10^{-9} centimeters per second (cm/s)

Bentonite sealing compound (BSC) and/or granular bentonite (GB) shall be applied to ensure tightness at penetrations and structures. The BSC and GB shall be supplied by the manufacturer and shall consist of the same bentonite used in the manufacture of the GCL. The BSC shall be a mixture of nonaqueous-liquid suspension agents, which creates a paste-like texture. The suspension agents used in the manufacture of the BSC shall be non-toxic and water-soluble and shall not restrict the bentonite's ability to swell and absorb water upon hydration.

GCL materials shall be marked with overlap alignment lines on its top side as an installation aid and wrapped around cores that are structurally sound to prevent excessive bending or buckling during handling. GCL rolls shall be packaged in relatively impermeable and opaque protective covers and shipped by appropriate means to prevent damage and hydration of the rolls. GCL rolls must be stored indoors prior to shipment to the site.

4.2 Delivery, Off-Loading, and Storage

Table III-4-C-5 summarizes requirements regarding the delivery, off-loading, and storage of GCL materials.

Table III-4-C-5. GCL Delivery, Off-Loading, and Storage

GCL Topic	Delivery, Unloading, and Storage Requirements
Delivery and Off-Loading	▪ Geomembrane rolls shall be off-loaded using equipment and methods in accordance with manufacturer recommendations and which do not cause damage or excessive strain on the materials. ▪ Inspect the delivered materials for damage and defects (conducted by the GP or QET). ▪ GCL materials shall be free from surface blemishes, tears, discoloration, and irregularities in thickness.
Temporary On-Site Storage	▪ Store GCL rolls on a platform or otherwise elevated off the ground and covered with a tarp to preclude moisture intrusion while awaiting deployment. ▪ Do not stack the rolls higher than recommended by the manufacturer to protect thinning of the bentonite at contact points.

Each roll delivered to the project site shall have a label the following information:

- Manufacturer's name
- Product identification/style
- Roll and lot/batch number

- Roll dimensions
- Roll weight
- Any other information which is necessary to trace the quality assurance documentation

Off-loading and storage of the GCL is the responsibility of the contractor, unless material deliveries occur prior to contractor mobilization. In such instances, off-loading and storage of the GCL falls under the responsibility of the owner. The responsible party shall store and protect GCL from dirt, water, ultraviolet light exposure, and other sources of damage immediately following off-loading.

The GCL storage area shall be designated by the owner. The GP or QET shall inspect delivered materials and ensure that all manufacturing quality control (MQC) testing, conformance testing, and manufacturer certifications are sufficient and applicable the GCL delivered to the site. The GP or QET shall document all delivered GCL materials using a GCL inventory log (Form TCEQ-10075A), including any damages incurred during shipping, off-loading, or storage of the materials.

Following mobilization, the contractor shall preserve the integrity of GCL rolls and the readability of roll labels. The contractor shall be responsible for the transportation of each roll of GCL from the storage area to its proposed panel location.

4.3 Quality Assurance Testing and Certification

GCL testing requirements are summarized in Attachment III-4-C2 (Table III-4-C2-2). The GCL manufacturer shall supply the GP or owner written certification(s) of quality control pertaining to the manufacturing process. Quality control certificates shall be provided by the GCL manufacturer for all rolls delivered to the site. Each certificate shall include roll identification numbers and results of all MQC tests; test methods and results shall comply with project plans and specifications in addition to the GRI-GCL3 Standard Specification. Needle-punched nonwoven GCL materials shall also be certified to not contain any broken or remnant needles from the manufacturing process.

Sampling of the GCL for conformance testing by an independent QA laboratory may be performed by a representative of the owner, a representative of the third-party independent laboratory, the GP, or QET. Sampling may occur prior to the rolls being delivered on-site as long as the tested roll numbers are those delivered for each lot and are verified by the GP. Samples shall be pulled from randomly selected rolls in units which are evenly spaced and span the entire

roll width. Samples shall be marked with the corresponding roll identification number. The GP may, at his/her discretion, subdivide the manufacturer's listed lots into smaller lots for purposes of conformance testing.

Conformance test results shall be reviewed by the GP and lots shall be accepted or rejected prior to placement of the GCL. Test results shall meet or exceed the property values listed in project plans and specifications and the GRI-GCL3 Standard Specification. In the case of failing test results for any given lot sample, the lot shall be resampled and retested. If test results from resamples comply with acceptable values, the lot shall be accepted.

4.4 Installation and Repair

GCL must be handled and installed as recommended by the manufacturer to ensure that it is not damaged. Minimum requirements for GCL installation and repair are summarized in Table III-4-C-6. As discussed in Section 3.3, the contractor, GP (or QET), and owner shall complete a certificate of acceptance of soil subgrade (Form TCEQ-10075B) immediately prior to installing GCL to confirm the condition of its underlying subgrade. CQA activities performed during the installation of GCL shall be recorded on applicable CQA forms and GCL panel numbers shall be recorded on a panel layout drawing by the GP or QET immediately upon deployment.

Table III-4-C-6. GCL Installation and Repair Requirements

GCL Topic	Installation and Repair Requirements
Installation	▪ Handling ○ Prohibit installation personnel from smoking or from wearing damaging shoes when working on GCL. ○ Avoid dragging of the geotextile or bentonite facing of the GCL on the subgrade. ○ Do not use deployed GCL as a work area unless a protective tarp, rub sheet, or other protective covering is placed over the GCL. ○ Do not store generators, gasoline or solvent cans, tools, or other supplies directly on GCL. ▪ Deployment ○ Install GCL panels with the proper side up. ○ Ensure GCL panels are installed in direct and uniform contact with the underlying subgrade or geosynthetics materials. ○ Avoid entrapment of stones, trash, or other debris beneath or within the GCL that may cause damage to the GCL or overlying geomembrane, if applicable.

Table III-4-C-6 (cont.)

GCL Topic	Installation and Repair Requirements
Installation (cont.)	▪ Vehicular traffic, other than light equipment with low contact pressure rubber tires (e.g. smooth-tired ATVs or golf carts), shall not be permitted on deployed GCL. ▪ Reinforce GCLs on slopes steeper than 7H:1V (e.g. lock stitched or needle punched) to provide adequate internal shear resistance. ▪ Unroll GCLs on side slopes in the direction of the slope. ▪ Anchor GCLs at the top of the slope, and then unroll working down to keep the material free of wrinkles and folds. ▪ Avoid placing the GCL in the rain or at times of impending rain. ▪ Avoid placing GCL during excessive winds. ▪ Remove and replace with new GCL material if the bentonite material becomes partially hydrated prior to being covered. ▪ Anchor installed GCL with sandbags or other appropriate devices to prevent uplift by wind prior to covering. ▪ Cover GCLs on the same day as they are placed with a geomembrane or with other liner system components as required by the design to prevent hydration due to weather conditions. ▪ Overlap and Bonding ○ Overlap GCL to manufacturer recommendations, which will vary according to seam location and specific climatic conditions. ○ For needle-punched GCL, apply granular bentonite on seams at rate required by manufacturer. ○ At sumps, overlap GCL at least 1 foot. At bottom of collection sumps, unroll an extra layer of GCL on top of previously-installed GCL. ○ Avoid placing seams on top of underlying seams. Horizontal seams and mid-slope anchor trenches not allowed on side slopes. ○ The flexible membrane liner shall be placed over the GCL during the same day as placement of the GCL. Only those GCL panels that can be anchored and covered the same day shall be deployed in position. ○ Seam overlap shall be placed such that the direction of flow is from the top sheet to the bottom sheet to form a shingle effect. ▪ Inspection ○ Ensure that deployed GCL panels contain no folds or excessive slack. ○ Inspect the installed GCL surface to ensure that no stones, cutting blades, tools, or other objects that may damage the GCL are present prior to covering.

Table III-4-C-6 (cont.)

GCL Topic	Installation and Repair Requirements
Repairs	▪ GCL Repairs Using Geotextiles ○ Patch torn or otherwise damaged geosynthetic facing (with no loss of bentonite from the GCL) with the same type of geosynthetic. ○ Adhere or heat-bond the geosynthetic patch to the main GCL to avoid shifting during backfilling; the patch must extend at least 12 inches beyond the damaged area. ▪ GCL Repairs Using GCL ○ If the GCL damage includes loss of bentonite, the patch must consist of full GCL extending at least 12 inches beyond the damaged area. ○ Follow the same lapping procedures specified for original laps of GCL panels. ▪ Patches and repairs shall not be allowed on slopes greater than 5H:1V unless they are securely anchored with an adhesive or other approved method. Alternatively, the patches can be placed under the defective liner in order to prevent slippage of the patch.

4.5 GCL Acceptance

The GCL shall be accepted by the GP (or QET under explicit guidance of the GP) when installation is complete, documentation of installation is completed, and verification of the adequacy of field seams and repairs is complete.

5. Geomembrane Liner

5.1 Material Properties

Geomembrane liner shall consist of either HDPE materials (in the case of liner systems for a landfill unit or contact stormwater pond). Geomembrane material properties shall meet or exceed the values detailed in project plans and specifications and the GRI-GM13 Standard Specification (HDPE). These material properties shall be evaluated in accordance with the frequencies specified in Attachment III-4-C2 (Table III-4-C2-3).

The geomembrane shall be manufactured of new, prime first-quality products designed and produced specifically for the purpose of liquid containment in hydraulic structures and chemically resistant to leachate. Reground, reworked, or trim material in the form of chips or

edge strips may be added if the material is from the same manufacturer and is exactly the same formulation as the geomembrane being produced. Recycled or reclaimed materials must not be used in the manufacturing process. The geomembrane material shall be produced so as to be free of holes, blisters, undispersed raw materials, or any sign of contamination by foreign matter. The geomembrane rolls shall be packaged and shipped by appropriate means to prevent damage of the geomembrane rolls. Extrudate welding rod shall be of the same compound as the geomembrane and supplied by the same manufacturer, and shall be delivered in their original sealed containers.

5.2 Delivery, Off-Loading, and Storage

Table III-4-C-7 summarizes requirements regarding the delivery, off-loading, and storage of geomembrane liner materials.

All liner materials shall be shipped in rolls labeled with the following information:

- Manufacturer's name
- Polymer identification/grade and thickness
- Roll and lot/batch number
- Roll dimensions
- Any other information which is necessary to trace the quality assurance documentation

The geomembrane manufacturer shall also supply the GP or owner with the origin, identification, and production of the resin (supplier's name, brand name, and production plant). Off-loading and storage of the geomembrane is the responsibility of the contractor, unless material deliveries occur prior to contractor mobilization. In such instances, off-loading and storage of the geomembrane falls under the responsibility of the owner. The responsible party shall store and protect the geomembrane materials according to Table III-4-C-7 immediately following off-loading.

The geomembrane storage area shall be designated by the owner. The GP or QET shall inspect delivered materials and ensure that all MQC testing, conformance testing, and manufacturer certifications are sufficient and applicable to the geomembrane materials delivered to the site. The GP or QET shall document all delivered geomembrane materials using a geomembrane inventory log (Form TCEQ-10075A), including any damages incurred during shipping, off-loading, or storage of the materials.

Following mobilization, the contractor shall preserve the integrity of geomembrane materials and the readability of material labels. The contractor shall be responsible for the transportation of each roll of geomembrane from the storage area to its proposed panel location.

Table III-4-C-7. Geomembrane Delivery, Off-Loading, and Storage Requirements

Geomembrane Topic	Delivery, Off-Loading, and Storage Requirements
Delivery and Off-Loading	▪ Geomembrane rolls shall be off-loaded using equipment and methods in accordance with manufacturer recommendations and which do not cause damage or excessive strain on the materials. ▪ Do not push, slide, or drag rolls or pallets of geomembrane. ▪ Inspect the delivered materials for damage and defects (conducted by the GP or QET). ▪ Geomembrane sheets must be free from pinholes, surface blemishes, scratches, or other defects (e.g., non-uniform color, streaking, roughness, agglomerates of carbon black or other additives or fillers, visibly discernible regrind or rework, etc.).
Temporary On-Site Storage	▪ Store geomembrane in an area on-site where standing water cannot accumulate at any time. ▪ Protect geomembrane materials from soft, wet, rocky, and rough ground. ▪ Ensure that the storage area is suitably prepared so that no stones or other rough objects, which could damage the geomembrane materials, are present on the ground. ▪ Protect rolls of geomembrane from crushing of the core or flattening of the rolls. Achieve this by stacking no more than 5 rolls, or following the manufacturer's stacking recommendations. ▪ Secure the rolls or pallets to prevent shifting, abrasion, or other adverse movement. ▪ Cover or provide a temporary shelter for rolls or pallets of geomembranes stored longer than 6 months to protect against precipitation, ultraviolet exposure, and accidental damage.

5.3 Quality Assurance Testing and Certification

Geomembrane material conformance and MQC testing requirements are summarized in Attachment III-4-C2 (Table III-4-C2-3). The geomembrane manufacturer shall provide written certification(s) of quality control pertaining to the manufacturing process. Quality control certificates shall be provided by the geomembrane manufacturer for all rolls delivered to the site. Each certificate shall include roll identification numbers and results of all MQC tests. Test

methods and results shall comply with project plans and specifications in addition to the material's GRI Standard Specification (GRI-GM13 for HDPE).

Sampling of the geomembrane for conformance testing by an independent QA laboratory may be performed by a representative of the owner, a representative of the third-party independent laboratory, the GP, or QET. Sampling may occur prior to the rolls being delivered on-site as long as the tested roll numbers are those delivered for each lot and are verified by the GP or QET. Samples shall be pulled from randomly selected rolls in units that are evenly spaced and span the entire roll width. Samples shall be marked with the machine direction and corresponding roll identification number. The GP may, at his/her discretion, subdivide the manufacturer's listed lots into smaller lots for purposes of conformance testing.

Conformance test results shall be reviewed by the GP and lots shall be accepted or rejected prior to placement of the liner. Test results shall meet or exceed the property values listed in project plans and specifications and the material's GRI Standard Specification. In the case of failing test results for any given lot sample, the lot shall be resampled and retested. If test results from resamples comply with acceptable values, the lot shall be accepted.

Field testing and quality assurance requirements concerning geomembrane are specified in this LQCP in Section 5.7.

5.4 Installation

Geomembrane installation shall be conducted in accordance with manufacturer recommendations to maintain the material's integrity and performance. Minimum requirements for geomembrane installation are summarized in Table III-4-C-8. The GP (or QET under explicit guidance of the GP) and contractor must accept the underlying liner components and confirm all required quality assurance activities have been completed prior to the placement of geomembrane.

CQA activities performed during the installation of geomembrane materials shall be recorded on applicable CQA forms. Geomembrane panel numbers shall also be recorded on a panel layout drawing by the GP or QET immediately upon deployment.

Table III-4-C-8. Geomembrane Installation Requirements

Geomembrane Topic	Installation Requirements
Deployment	▪ Follow all manufacturer's recommendations. ▪ Folded or creased sections of panels are not acceptable and shall not be used unless they are a normal part of the manufacturing process. ▪ Install geomembrane in direct and uniform contact with the underlying geosynthetics. ▪ Ensure that underlying geosynthetics are not damaged during deployment. ▪ Prevent construction equipment from traveling directly on the lower geosynthetic material if geomembrane is placed over geosynthetic. ▪ Do not place geomembrane during inclement weather (rain, high winds, or freezing temperatures).
Equipment on Geomembrane	▪ Limit vehicular traffic on the liner to low-ground-pressure supporting equipment only. Areas damaged by vehicular traffic must be repaired. ▪ Prohibit personnel working on the geomembrane from: ○ Smoking; ○ Wearing damaging shoes; or ○ Engaging in any other activity likely to damage the geomembrane.
Placement	▪ Only unroll geomembrane sheets that are to be placed and seamed in one day. ▪ Position geomembrane with the overlap recommended by manufacturer, but not less than 4 inches for HDPE. ▪ GP or QET must visually inspect placement and overlap of geomembrane to verify compliance with the LQCP.
Folds, Large Wrinkles, and Fish Mouths	▪ Walk-out or remove wrinkles prior to field seaming. Folds, large wrinkles, or fish mouths are not allowed in the seam. Only normal factory-induced creasing may be acceptable. ▪ Cut, overlap, and weld the material where wrinkles or folds occur. This process should be accomplished in such a manner that constructed seams are not required to carry significant tensile loads. ○ During wrinkle or fold repairs, adjacent geomembrane may not necessarily be required to meet the 3-inch minimum overlap if approved by the GP or QET. ▪ Remove dirt, water, oil, etc. from the area to be bonded. ▪ Bond and seal all completed seams tightly.
Tack Welds	▪ Use heat only tack welds (if used) with HDPE geomembrane. ▪ Do not use double-sided tape, glue, or other method when extrusion or fusion welding is used for bonding.
Geomembrane Seaming	▪ Follow manufacturer recommendations for field seaming and repairs. ▪ For HDPE, fusion or extrusion welding is acceptable.

Table III-4-C-8 (cont.)

Geomembrane Topic	Installation Requirements
Seam Joints	▪ Orient seams on side slopes (e.g. slopes steeper than 6H:1V) parallel to the side slope direction. ▪ Locate seams that join side slopes and bottom sections at least 5 feet from the toe of the slope and along the floor. ▪ Minimize the number of seams in corners and odd-shaped geometric locations.
Temperature	▪ Do not attempt seaming when the ambient air temperature is above 104°F. ▪ Follow GRI Test Method GM9 forseaming geomembrane when the ambient air temperature is below 32°F.
End of Each Work Day	▪ Anchor all unseamed edges with sand bags or other approved devices at the end of each day or installation segment. ▪ Do not use staples, U-shaped rods, or other penetrating anchors.

5.5 Seaming

Field seams between sheets of geomembrane material will be made using approved fusion-welding systems, equipment, and techniques. Approved fusion-welding systems include fillet weld using extrudate, lap weld using extrudate, and lap weld using single or double wedge welder. Only operators who have completed accepted trials welds shall be allowed to weld panel seams.

Field trial seam testing requirements are listed in Attachment III-4-C2 (Table III-4-C2-4). During geomembrane seaming operations, the GP or QET must provide full-time observation and documentation of compliance with the installation requirements listed in Table III-4-C-8. In addition, CQA personnel shall:

- Observe the condition of the seams and note any defects. All defects must be repaired in accordance with the requirements of Section 5.6.
- Observe that seam grinding has been completed less that one hour before extrusion welding and the extrudate has been purged from extrusion welders.
- Observe that there are no horizontal seams on side slopes and that textured materials extend a minimum of 5 feet past the toe of slope.

5.6 Repairs

Destructive and non-destructive tests shall be performed on geomembrane seams in accordance with Section 5.7 to assure their integrity as part of the liner CQA program. All seam leaks detected by non-destructive tests and locations of samples for destructive tests shall be repaired by installing patches or cap strips over the damaged area. The patch or cap strip must be of the same liner material and extend for a distance of at least 6 inches in all directions of the damage. Extrusion welding methods shall be utilized to adhere patches or cap strips on geomembrane materials. At a minimum, these repairs must be retested non-destructively and possibly destructively (refer to destructive testing criteria for repaired seams as described in Attachment III-4-C2 (Table III-4-C2-5).

Each repair shall be numbered and logged by the contractor and GP (or QET). Repairs that pass non-destructive testing shall be accepted as adequate repairs. Repairs that fail non-destructive testing must be redone and retested until passing test results are achieved. The GP or QET shall observe the non-destructive testing of repairs. The contractor and GP (or QET) shall record the number of each repair, date, and non-destructive test outcome.

5.7 Field Quality Control Testing

5.7.1 Destructive Tests

During field-seaming operations, destructive samples will be marked by the GP or QET and collected by the contractor. Destructive testing methods are detailed in Attachment III-4-C2 (Table III-4-C2-5). Destructive testing shall be performed at a frequency of one stratified test location per 500 linear feet of seamed length. Repairs over 10 feet long shall be included in the total seam length. Samples collected for destructive testing shall be 45 inches long and 12 inches wide (with the seam centered along the length of the sample). A sufficient amount of seam shall be removed to conduct (1) field seam testing, (2) independent laboratory testing, and (3) archiving of enough material to retest the seam if necessary. Field testing shall be conducted by the contractor and shall include at least two peel tests per sample (four when possible for testing both tracks on dual-track fusion-welded seams) and two shear tests per sample. Prior to field destructive testing, the GP or QET shall verify that the extensometer testing apparatus used for peel and shear tests has an updated calibration certificate that is traceable to the National Institute of Standards and Technology (NIST). The GP or QET shall observe all field destructive testing and record results in appropriate CQA logs. All field seams must have a film tear bond in peel and shear compliant with GRI-GM19a Standard Specification.

5.7.2 Non-Destructive Tests

Non-destructive seam testing shall be conducted for the entire length of each seam in accordance with Attachment III-4-C2 (Table III-4-C2-6). Non-destructive seam tests include vacuum tests and air pressure tests. The GP or QET must observe all non-destructive testing to assure that equipment operators are properly conducting and recording tests. The GP or QET shall observe that the entire length of each seam is tested and shall record all tests results in appropriate CQA forms. The GP or QET shall identify any failed seams and ensure that the contractor performs repairs and retests as needed.

5.8 Geomembrane Acceptance

The contractor shall retain ownership and responsibility for the geomembrane until acceptance by the owner. The geomembrane liner shall be accepted by the owner when the following conditions are met:

- Installation is finished.
- Verification in the form of a certificate of acceptance of the adequacy of field seams and repairs, including associated testing, is complete.
- Certification is completed by the GP that confirms the liner system was installed in accordance with the construction drawings, project plans and specifications, contract documents, this LQCP, and manufacturer recommendations.
- Certification, including as-built drawing(s) and installation documentation, is provided by the contractor to the GP.

6. Drainage Collection Layer

A drainage collection layer will be placed above the geomembrane liner. This layer is called a leachate collection system (LCS). The drainage layer will consist of a heat-bonded HDPE geonet/ geotextile drainage composite (geocomposite) on the floor and sidewalls. In the LCS, perforated or slotted HDPE collection pipe shall be seated atop the geocomposite, embedded in granular material (gravel) within sump and leachate trench areas. Leachate chimney drains will be installed in landfill cells to allow a direct hydraulic conduit between waste layers and the LCS.

6.1 Geonet and Geocomposite

6.1.1 Material Properties

Geonet or geocomposite shall be installed in direct and uniform contact with the underlying geomembrane in systems addressed in this LQCP. These materials shall be manufactured specifically for the purpose of planar drainage of liquid and chemically resistant to leachate. Material properties shall meet or exceed the values listed in the project plans and specifications and Table III-4-C-9. These material properties shall be evaluated in accordance with the frequencies specified in Attachment III-4-C2 (Table III-4-C2-7). The rolls of geonet and geocomposite shall be packaged and shipped by appropriate means to prevent damage of the materials.

Table III-4-C-9. Required Properties for Geocomposite

Component	Property	Standard	Value
HDPE Drainage Net	Specific gravity	ASTM D1505	0.93 g/cm^3
	Thickness	ASTM D5199	0.2 inch
	Carbon black	ASTM D1603	Minimum 2%, maximum 3%
Geocomposite [a]	Transmissivity	ASTM D4716	5 x 10^{-4} m^2/s

[a] Only required for geocomposite materials.

6.1.2 Delivery, Off-Loading, and Storage

Table III-4-C-10 summarizes requirements regarding the delivery, off-loading, and storage of geonet and geocomposite materials. Each roll of material delivered to the project site shall have a label containing the following information:

- Manufacturer's name
- Product identification/style
- Roll and lot/batch number
- Any other information which is necessary to trace the quality assurance documentation

Off-loading and storage of the geonet and geocomposite is the responsibility of the contractor, unless material deliveries occur prior to contractor mobilization. In such instances, off-loading and storage of the material falls under the responsibility of the owner. The responsible party

shall store and protect the geonet and geocomposite materials according to Table III-4-C-8 immediately following off-loading.

Table III-4-C-10. Geonet and Geocomposite Delivery, Off-Loading, and Storage Requirements

Geonet and Geocomposite Topic	Delivery, Off-Loading, and Storage Requirements
Delivery and Off-Loading	▪ Rolls shall be off-loaded using equipment and methods in accordance with manufacturer recommendations and which do not cause damage or excessive strain on the materials. ▪ Inspect the delivered materials for damage and defects (conducted by the Site CQA Manager). ▪ Materials shall be free from surface blemishes, tears, discoloration, and other irregularities. ▪ Do not push, slide, or drag rolls or pallets of geonet or geocomposite.
Temporary On-Site Storage	▪ Store geonet and geocomposite in an area on-site where standing water cannot accumulate at any time. ▪ Ensure that the storage area is suitably prepared so that no stones or other rough objects, which could damage the materials, are present on the ground. ▪ Follow the manufacturer's stacking recommendations to protect rolls of geonet and geocomposite from crushing of the core or flattening of the rolls. ▪ Secure the rolls or pallets to prevent shifting, abrasion, or other adverse movement. ▪ Cover or provide a temporary shelter for rolls or pallets of geonet and geocomposite stored at the site longer than 6 months to protect against precipitation, ultraviolet exposure, and accidental damage.

The geonet and geocomposite storage area shall be designated by the owner. The GP or QET shall inspect delivered materials and ensure that all MQC testing, conformance testing, and manufacturer certifications are sufficient and applicable the materials delivered to the site. The GP or QET shall document all delivered materials using an inventory log (Form TCEQ-10075A), including any damages incurred during shipping, off-loading, or storage of the materials.

Following mobilization, the contractor shall preserve the integrity of the materials and the readability of material labels. The contractor shall be responsible for the transportation of each roll of geonet and geocomposite from the storage area to its proposed panel location.

6.1.3 Quality Assurance Testing and Certification

Geonet and geocomposite testing requirements are summarized in Attachment III-4-C2 (Table III-4-C2-7). The manufacturer shall supply the GP or owner written certification(s) of quality control pertaining to the manufacturing process. Quality control certificates shall be provided by the manufacturer for all rolls delivered to the site. Each certificate shall include roll identification numbers and results of all MQC tests. Test methods and results shall comply with project plans and specifications, Table III-4-C-9, and Attachment III-4-C2 (Table III-4-C2-7).

Sampling of the geonet and geocomposite for conformance testing by an independent QA laboratory may be performed by a representative of the owner, a representative of the third-party independent laboratory, the GP, or QET. Sampling may occur prior to the rolls being delivered on-site as long as the tested roll numbers are those delivered for each lot and are verified by the GP or QET. Samples shall be pulled from randomly selected rolls in units that are evenly spaced and span the entire roll width. Samples shall be marked with the corresponding roll identification number. The GP may, at his/her discretion, subdivide the manufacturer's listed lots into smaller lots for purposes of conformance testing.

Conformance test results shall be reviewed by the GP and lots shall be accepted or rejected prior to placement of the material. Test results shall meet or exceed the property values listed in project plans and specifications and Table III-4-C-9. In the case of failing test results for any given lot sample, the lot shall be resampled and retested. If test results from resamples comply with acceptable values, the lot shall be accepted.

6.1.4 Installation

Table III-4-C-11 details installation requirements of geonet and geocomposite following guidance from Chapter 6 of the U.S. EPA technical guidance document *Quality Assurance and Quality Control for Waste Containment Facilities*. Installation of geonet and geocomposite shall also follow manufacturer recommendations to maintain the material's integrity and performance. The GP (or QET under explicit guidance of the GP) and contractor must accept the underlying liner components and confirm that all required quality assurance activities have been completed prior to the placement of the materials.

CQA activities performed during the installation of geonet and geocomposite materials shall be recorded on applicable CQA forms.

Table III-4-C-11. Geonet and Geocomposite Installation Requirements

Geonet and Geocomposite Topic	Installation Requirements
Deployment	▪ Follow all recommendations from the manufacturer. ▪ Install geonet or geocomposite in direct and uniform contact with the underlying geomembrane. ▪ Care shall be taken to keep the material clean and free from debris prior to installation. If the geonet or geocomposite is not clean, it should be washed using a high-pressured hose prior to installation. ▪ Ensure the underlying geosynthetics are not damaged during deployment. ▪ Prevent construction equipment from traveling directly on the lower geosynthetic materials. ▪ On slopes, the geonet or geocomposite shall be secured and rolled down the slope in such a manner as to keep the geonet panel in tension continually. If necessary, the material shall be positioned by hand after being unrolled to minimize wrinkles. ▪ During placement of geonet and geocomposite, care shall be taken not to entrap soil or excessive dust within the material that could cause clogging of the drainage system and/or stones that could damage the adjacent geomembrane.
Equipment on Geocomposite	▪ Limit vehicular traffic on the liner to low-ground-pressure supporting equipment only. ▪ Prohibit personnel working on the geomembrane from: ○ Smoking. ○ Wearing damaging shoes. ○ Engaging in any other activity likely to damage the geosynthetics.
Placement	▪ Only unroll geonet and geocomposite panels that are to be placed and seamed in one day. ▪ Position geonet or geocomposite with the overlap recommended by manufacturer, but not less than 4 inches on adjacent seams and 8 inches on end seams. ▪ GP or QET must visually inspect placement and overlap of materials to verify requirements.
Geocomposite Seaming	▪ Follow manufacturer recommendations for field seaming and repairs. ▪ Overlaps shall be secured by tying. Tying can be achieved by HDPE fasteners or polymer braids. Tying devices shall be white or yellow for easy inspection. Metallic devices will not be permitted. Tying shall be every 5 feet along the slope and base, every 6 inches in the anchor trench, and every 6 inches along end-to-end seams.

Table III-4-C-11 (cont.)

Geonet and Geocomposite Topic	Installation Requirements
Geocomposite Seaming (cont.)	▪ Horizontal seams on side slopes shall be minimized. Only those horizontal seams shown on the contractor's Panel Layout Drawing, as approved by the GP shall be allowed. Horizontal seams on side slopes shall be staggered. ▪ The geonet or geocomposite shall not be welded or adhered to the HDPE geomembrane. ▪ The uppermost geotextile overlap of each pair of adjacent geocomposite panels shall be sewn together. Heat seaming of longitudinal seams will not be allowed. Seams will be sewn using a white polymetric thread with chemical resistance equal to or exceeding that of the geotextile. All seams will be continuous. Seam strength (defined as strength of the seam divided by strength of geotextile) will be a minimum of 80 percent.
Seam Joints	▪ Orient seams on side slopes (e.g. slopes steeper than 6H:1V) parallel to the side slope direction. ▪ Locate seams that join side slopes and bottom sections at least 5 feet from the side slope and along the floor. ▪ Minimize the number of seams in corners and odd-shaped geometric locations.

6.2 Geotextile

6.2.1 Material Properties

Geotextile shall be installed in direct and uniform contact with the underlying geosynthetics. These materials shall be at least 8-ounce nonwoven geotextile and shall be manufactured to be chemically resistant to leachate. Geotextile material properties shall meet or exceed the values listed in the project plans and specifications. These material properties shall be evaluated in accordance with the frequencies specified in Attachment III-4-C2 (Table III-4-C2-8). The rolls of geotextile shall be packaged and shipped by appropriate means to prevent damage of the rolls.

6.2.2 Delivery, Off-Loading, and Storage

Off-loading and storage of the geotextile is the responsibility of the contractor, unless material deliveries occur prior to contractor mobilization. In such instances, off-loading and storage of the geotextile falls under the responsibility of the owner. The responsible party shall store and protect the geotextile materials to prevent any damage to the materials.

6.2.3 Quality Assurance Testing and Certification

Geotextile testing requirements are summarized in Attachment III-4-C2 (Table III-4-C2-8). The geotextile manufacturer shall supply the GP or owner written certification(s) of quality control pertaining to the manufacturing process. Quality control certificates shall be provided by the geotextile manufacturer for all rolls delivered to the site. Each certificate shall include roll identification numbers and results of all MQC tests. Test methods and results shall comply with project plans and specifications, as well as Attachment III-4-C2 (Table III-4-C2-8).

MQC test results shall be reviewed by the GP and lots shall be accepted or rejected prior to placement of the geotextile. Test results shall meet or exceed the property values listed in project plans and specifications. In the case of failing test results for any given lot sample, the lot shall be resampled and retested. If test results from resamples comply with acceptable values, the lot shall be accepted.

6.2.4 Installation

Geotextile shall be deployed by hand or by equipment that will unroll the geocomposite without damaging or stretching it and deployment equipment must not damage the underlying geosynthetics. Smoking and damaging shoes shall not be permitted on the geotextile and only light equipment with low contact pressure rubber tires (e.g., smooth-tired all-terrain vehicles [ATVs] or golf carts) shall be permitted on the deployed geocomposite. Adjacent rolls of geotextile shall be overlapped and sewn or heat bonded together.

6.3 Select Aggregate

6.3.1 Material Properties

Select aggregate material properties shall be evaluated in accordance with the frequencies specified in Attachment III-4-C2 (Table III-4-C2-1). Materials shall be washed select aggregate that is durable, resistant to weathering and chemical degradation due to contact with leachate, well-graded, and free from organic substances, overburden, spoil, and other deleterious matter. Materials shall have smooth particle shapes that will not damage the liner system when used in combination with the geocomposite and geotextile within the LCS; crushed material shall not be accepted. Gravel shall meet the following gradation requirements:

- 0 to 15% passing ⅜-inch sieve
- 20 to 50% passing ½-inch sieve

- 90 to 100% passing 1 ½-inch sieve

Stated gradation may vary if permeability requirements are met and materials are approved by the GP as equivalent. Permeability shall be tested by ASTM D2434 and have a minimum value of $1x10^{-2}$ cm/s. Permeability testing requirements may be waived if it can be shown through correlation with grain size analysis that material easily meets permeability criteria as approved by the GP. Percent calcium carbonate by weight shall not exceed 15 as verified by testing in accordance with ASTM D3042.

6.3.2 Delivery, Off-Loading, and Storage

If select aggregate materials are delivered to the site prior to approval by the GP, materials shall be stockpiled on-site in areas as dictated by owner. Provision shall be implemented to minimize surface water impact on the stockpile(s). Removal and placement of the materials shall be conducted in a manner to minimize intrusion of native soils adjacent to and beneath the stockpile(s).

6.3.3 Quality Assurance Testing and Certification

Select aggregate shall be sampled and tested for conformance according to Attachment III-4-C2 (Table III-4-C2-1). Sampling of the materials shall be performed by the GP, QET, or contractor in the presence of the GP or QET as specified by contract documents. Samples of select aggregate shall be representative of the materials which are delivered to the site. Conformance test results shall be reviewed by the GP and accepted prior to placement of the material.

6.3.4 Installation

Select aggregate shall be placed in the collection trenches, sumps, and chimney drains to the alignments and grades shown on the drawings. Minimum 8-ounce nonwoven geotextile will be placed around gravel drainage components to prevent intrusion of fines. All geotextile materials shall be hand-placed. Select aggregate shall be placed using care to not dislodge or damage HDPE pipe or underlying geosynthetics. The GP or QET shall provide full-time CQA observation services during the installation of select aggregate to ensure proper installation of the materials.

6.4 HDPE Pipe

HDPE pipe is installed as a component of the leachate collection systems at WST Landfill. The LCS system contains slotted or perforated HDPE pipe in the leachate collection trenches, as well as solid-wall HDPE pipe at the sumps/leachate extraction risers. Perforated HDPE pipe collects

seepage from the protective cover, drainage collection layer, and chimney drain and directs it to collection sumps where solid-wall HDPE extraction piping conveys fluid to the ground surface. Perforated pipes are seated within leachate collection trenches with select aggregate, wrapped with a non-woven geotextile material, and covered by the granular drainage layer (chimney drain). Solid-wall pipes are welded to the perforated pipes to provide an extraction point for the collected leachate. LCS piping designs are shown on the engineering drawings and shall be detailed further in project plans and specifications.

6.4.1 Material Properties

HDPE pipe and fittings shall meet the requirements of cell classification PE 345464C or higher cell classification in accordance with ASTM D3350. Pipe shall have the minimum standard dimension ratio (SDR) rating and perforation schedule shown on the engineering drawings and project specifications. Pipe shall also be free of cosmetic defects (e.g., grooves, pits, hollows, etc.). The pipe manufacturer shall provide a certification confirming that the pipe meets the requirements of this LQCP, as well as the project plans and specifications.

6.4.2 Delivery, Off-Loading, and Storage

Off-loading and storage of the HDPE pipe is the responsibility of the contractor, unless material deliveries occur prior to contractor mobilization. In such instances, off-loading and storage of the HDPE pipe falls under the responsibility of the owner. The responsible party shall store and protect the HDPE pipe materials from damage until installation commences. Storage of the HDPE pipe shall not exceed the lesser of 17 rows high or the manufacturer's recommendation.

The contractor shall be responsible for moving pipes and fittings from the storage area to the area of installation. The contractor shall be responsible for replacing any material damaged during transport or installation.

6.4.3 Quality Assurance Testing and Certification

Prior to installation of the HDPE pipe, the contractor shall provide to the owner or GP the manufacturer's certification verifying that the quality of the raw materials used to manufacture the HDPE pipe meets the manufacturer's specifications. In addition, each HDPE pipe length delivered to the project site shall have the following identification information:

- Manufacturer's name
- Pipe size

- Ring stiffness constant classification or SDR number
- Production code designating plant location, machine, and date of manufacture

6.4.4 Installation

Pipe shall be placed to the lines and grades shown on the engineering drawings. Perforations shall be oriented in accordance with the project plans, specifications, and engineering drawings. Pipe and fittings shall be joined in accordance with the manufacturer's recommendations and the project plans and specifications. The pipe shall be laid atop the geotextile materials and within the select aggregate in a manner which minimizes any lateral or horizontal shifting of the HDPE pipe during installation and covering. Pipe shall also be installed in such a manner to prevent damage, wrinkling, or shifting of the underlying geosynthetics. The GP or QET shall perform continuous CQA observation during installation to ensure all requirements of the HDPE pipe are met and that the integrity of the pipe is retained.

7. Protective Soil Layer

7.1 Material Properties

A minimum 2-foot-thick protective soil layer (PSL) shall be placed in direct contact atop geocomposite materials as the final component of a liner system within a landfill disposal unit. Protective soil shall not be placed above the geotextile-wrapped chimney drain. PSL material shall consist of readily available on-site materials (typically materials from the unconsolidated formation at the surface of the site) free from debris, rubbish, frozen materials, foreign objects, organic substances, and other deleterious matter. Material shall be free of rock clods or gravel larger than ⅜ inch and shall have rounded particle shapes to avoid potential for damage to underlying geosynthetics. Testing requirements and frequencies to verify PSL material properties are detailed in Attachment III-4-C2 (Table III-4-C2-1). All test results shall meet the requirements of project specifications or be approved by the GP as equivalent.

7.2 Delivery, Off-Loading, and Storage

If on-site soils are not adequate for PSL, materials may be delivered to the project site. PSL materials that are delivered to the site prior to approval by the GP shall be stockpiled on-site in areas as dictated by owner. Provision shall be implemented to minimize surface water impact

on the stockpile(s). Removal and placement of the materials shall be conducted in a manner to minimize intrusion of native soils adjacent to and beneath the stockpile(s).

7.3 Quality Assurance Testing and Certification

PSL materials shall undergo pre-construction testing as specified in Attachment III-4-C2 (Table III-4-C2-1). Sampling of the materials shall be performed by the GP, QET, or contractor in the presence of the GP or QET as specified by contract documents. Samples of PSL shall be representative of the materials which are placed above the liner system. Pre-construction test results shall be reviewed and accepted by the GP prior to placement of the material.

7.4 Installation

Installation requirements of PSL are summarized in Table III-4-C-12. Full-time CQA observation by the GP or QET shall be performed to ensure material conformity and protection of the underlying geosynthetics.

Table III-4-C-12. Protective Soil Cover Installation Requirements

Protective Soil Cover Topic	Installation and Design Requirements
Installation Over Geocomposite	▪ The protective soil cover does not require compaction under density-controlled construction procedures, however it should be stable for construction and disposal traffic. ▪ Place protective soil cover as soon as possible after the installation of geocomposite. ▪ Place all soil materials over the geocomposite during the coolest part of the day. Deploy soil in "fingers" along the surface to control the amount of slack and minimize wrinkles and folds in the geosynthetics. Deploy soil only up-slope on side slopes to minimize stress on the geosynthetics. ▪ Place protective cover with light equipment (such as low-ground-pressure dozers) while maintaining at least 18 inches of material between the dozer and underlying geosynthetics at all times.

7.5 Final PSL Inspection, Testing, and Acceptance

The required thickness of protective cover will be verified by survey methods as specified in Attachment III-4-C2 (Table III-4-C2-1) on an established grid system identical to the grid that was used to verify subgrade elevations. The GP shall physically inspect PSL and also review and accept the PSL verification prior to the initiation of subsequent activities within the cell.

8. Documentation and Reporting

Liner CQA testing must be performed in conformance with this LQCP to demonstrate that the subgrade, liner system, and leachate collection system have been installed in compliance with the project plans and specifications and the LQCP as required by 30 TAC 330.339. The data must be submitted as a liner evaluation report (LER) as required in 30 TAC 330.341, including a geosynthetic clay liner evaluation report (GCLER) and a geomembrane liner evaluation report (GLER). The GCLER and GLER shall be sealed by a professional engineer registered in good standing with Texas and countersigned by the owner, site operator, or his/her authorized representative.

Each LER will contain a narrative describing conduct of work and testing programs required by LQCP, as-built and/or record drawings, and appendices of field and laboratory data. Preferred document format will include GCLER, GLER, narrative, as-built drawings, and test result summaries. Additional data will be included in appendices, as needed. GCLER/GLER submittals will include test documentation as recommended in TCEQ guidelines.

Specifically, each LER will contain or discuss the following information, at minimum, for geosynthetic liner systems:

- GCL stability analyses (if required)
- Geosynthetic roll shipment and receipt information
- Manufacturer QC certificates and results
- Storage and handling information
- Conformance test sampling and test results
- Subgrade acceptance forms
- Anchor trench preparation and backfilling
- Destructive testing methods, criteria, and results
- Material properties and placement of drainage materials and protective covers
- Seam preparation, orientation, and identification
- Panel deployment, identification, and placement
- Panel wrinkling, fish-mouthing, and manufacturer creases
- Weather and ambient temperatures
- Seaming methods, times, temperature, equipment shutdowns and startups

- Continuous 100-percent nondestructive seam testing, methods, criteria, and results
- Repairs including preparation procedures, failure delineation, patch size, shape, and retesting
- Sectorized fill layout plan
- Location of subject trench or cell with GCLER/GLER markers
- Previous filled and active areas
- Daily field summary reports
- As-built GCL panel layout drawing
- As-built geomembrane panel layout drawing showing location of destructive test samples, patches, and repairs
- As-built drawings showing elevations of protective cover to confirm its thickness

8.1 LER Acceptance

If the ED provides no written or verbal response within 14 days of receipt of the LER, WST Landfill may continue facility construction or operation. If the ED determines that a report is incomplete or test data provided are insufficient to support evaluation conclusions, additional test data or other information may be required and use of the cell or disposal area shall not be allowed until such additional data are received, reviewed, and accepted.

The surface of a liner system shall be covered or otherwise protected within six months to mitigate effects of desiccation, surface erosion, and rutting due to traffic. Liner surfaces not covered within six months shall be checked by the LER evaluator, who shall submit their findings via letter report to the Executive Director. Any required repairs shall be performed promptly. A new report shall be submitted on new construction for all liners in need of repair due to damage.

8.2 LER Markers

The limits of all constructed liners must be clearly marked with the placement of red-colored markers. These markers must be readily discernible by site workers and site inspectors, and be maintained at all times during the active disposal operations within the area and may be removed as needed to facilitate operations upon approval of subsequent LER areas. The LER markers must be tied into the master site grid system for reference and shall not be placed through the constructed liner.

References

Daniel, D.E. and R.M. Koerner. 1993. *Technical guidance document: Quality assurance and quality control for waste containment facilities*. EPA/600/R-93/182 (NTIS PB94-159100).

Daniel, D.E. and R.M. Koerner. 2007. *Waste containment facilities: Guidance for construction quality assurance and construction quality control of liner and cover systems, 2nd edition*. ASCE Press.

GRI Standard Specifications: available at <https://geosynthetic-institute.org/specs.htm>.

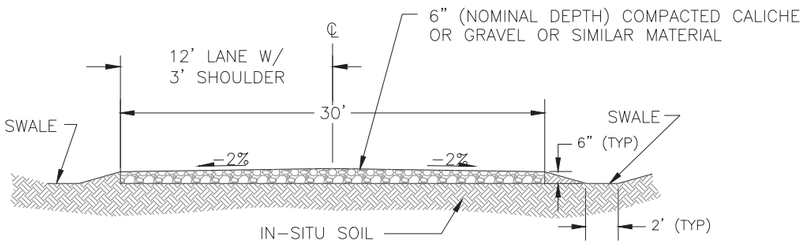
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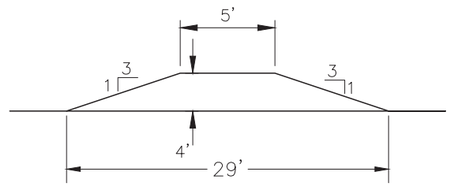
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System Details

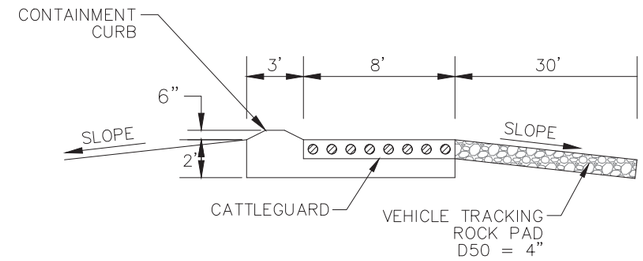
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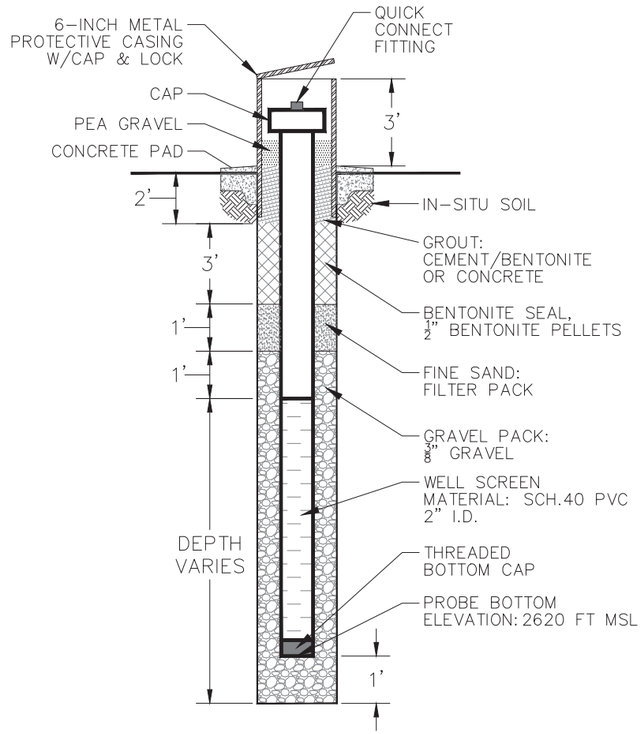
CALICHE OR GRAVEL ACCESS ROAD DETAIL 1
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PERIMETER ACCESS CONTROL BERM DETAIL 2
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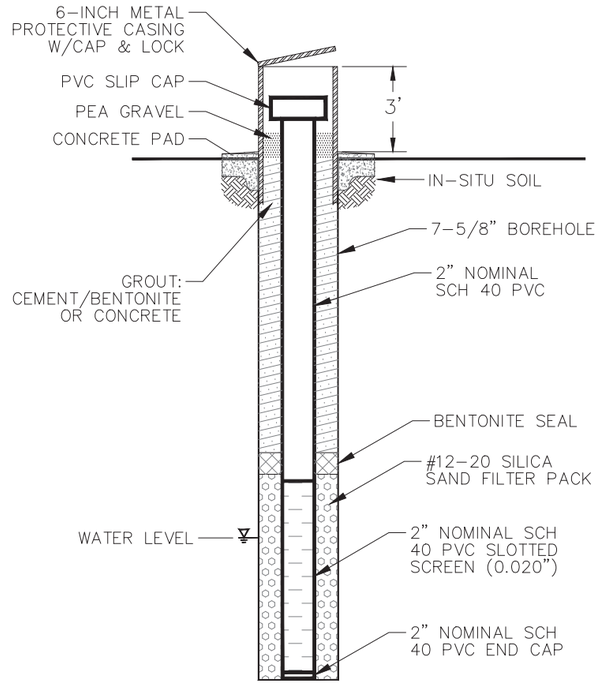


EXIT CATTLEGAURD AND CONTAINMENT CURB (SECTION) DETAIL 3
NTS



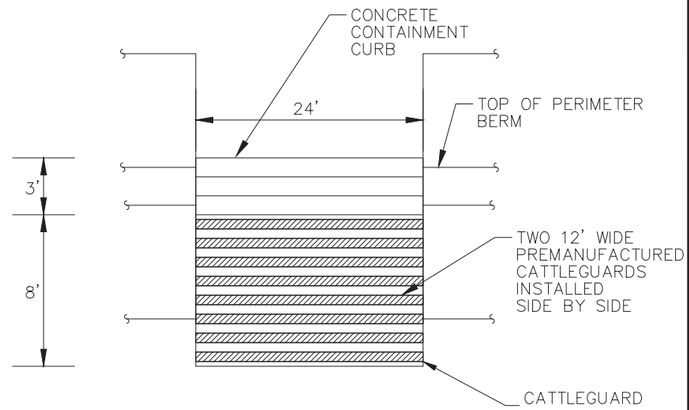
LFG MONITORING PROBE DIAGRAM 4
NTS

NOTES:
1. ELEVATION OF DEEPEST EXCAVATION IS 2626'.



GROUNDWATER MONITOR WELL DIAGRAM 5
NTS

NOTES:
1. USE THREADED SCREW JOINTS ONLY.
2. SEE PART III, ATTACHMENT 5 FOR ADDITIONAL INFORMATION REGARDING GROUNDWATER MONITOR WELLS.



EXIT CATTLEGAURD AND CONTAINMENT CURB (PLAN VIEW) DETAIL 6
SCALE: NTS

Well Name	State Plane X	State Plane Y	Elevation (ft)	Distance to next well (ft)
MW-1	1,282,567	10,498,553	2,663	600
MW-2	1,283,078	10,498,867	2,661	600
MW-3	1,283,589	10,499,182	2,658	600
MW-4	1,284,100	10,499,497	2,656	600
MW-5	1,284,611	10,499,811	2,653	493
MW-6	1,284,981	10,500,136	2,652	600
MW-7	1,284,660	10,500,642	2,653	598
MW-8	1,284,347	10,501,151	2,657	584
MW-9	1,284,032	10,501,643	2,659	503
MW-10	1,283,544	10,501,767	2,661	533
MW-11	1,283,093	10,501,484	2,662	533
MW-12	1,282,641	10,501,201	2,663	854
MW-13	1,281,910	10,500,760	2,666	848
MW-14	1,281,197	10,500,300	2,665	-
MW-1D	1,282,562	10,498,548	2,663	N/A
MW-4D	1,284,105	10,499,502	2,656	N/A
MW-8D	1,284,352	10,501,146	2,657	N/A

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DESIGNED BY: KJ
DRAWN BY: CK, JA, ML
CHECKED BY: GP
APPROVED BY: GP

STATE OF TEXAS GUNDAR PETERSON 103091 LICENSED PROFESSIONAL ENGINEER 7/22/2026

DBS&A a Geo-Logic Company
TEXAS REGISTERED ENGINEERING FIRM F-286

WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

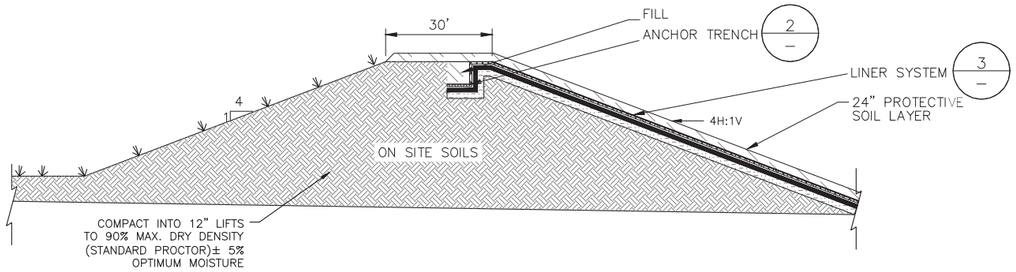
WST LANDFILL
REEVES COUNTY, TEXAS

CIVIL DETAILS 1

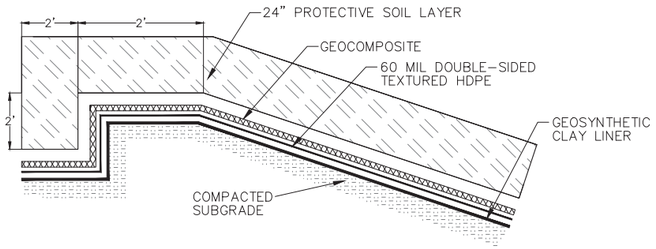
SHEET 18 OF 21
DWG NO. C-16

JOB NO. DB20.1166

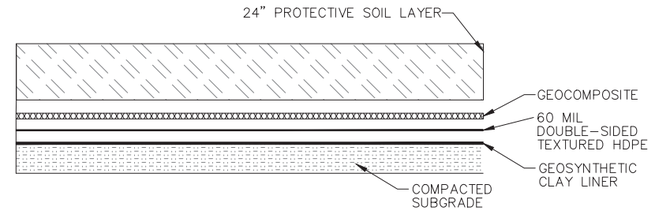
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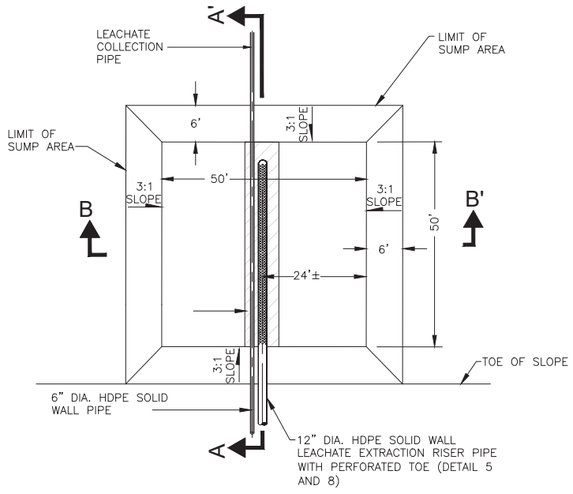
CELL PERIMETER BERM DETAIL 1 -
NTS



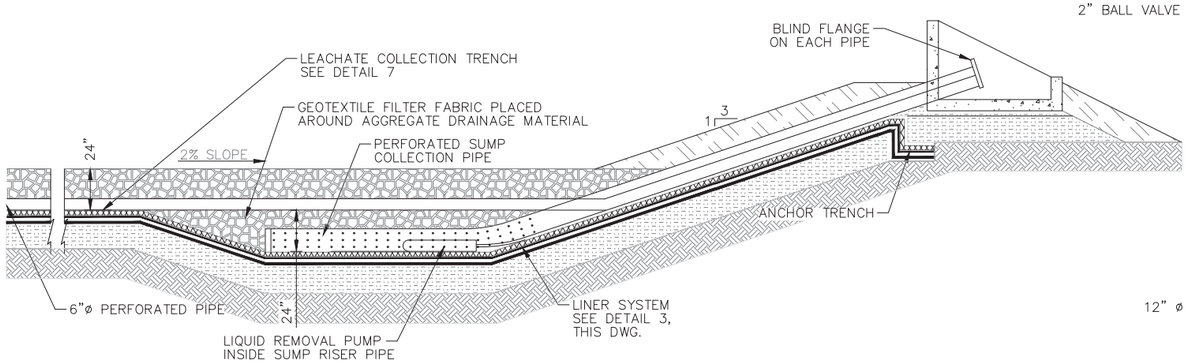
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SCALE: NTS



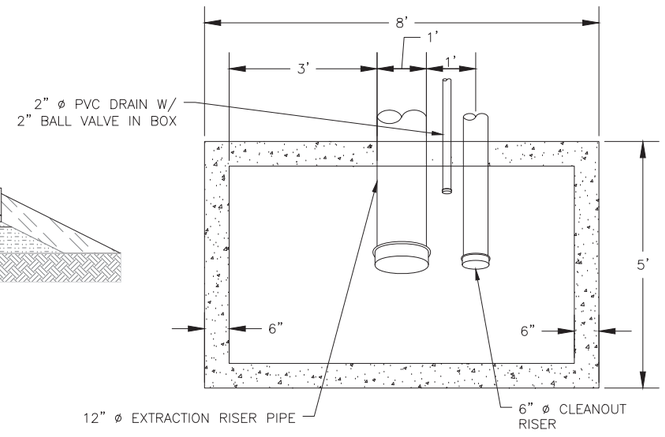
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SCALE: NTS



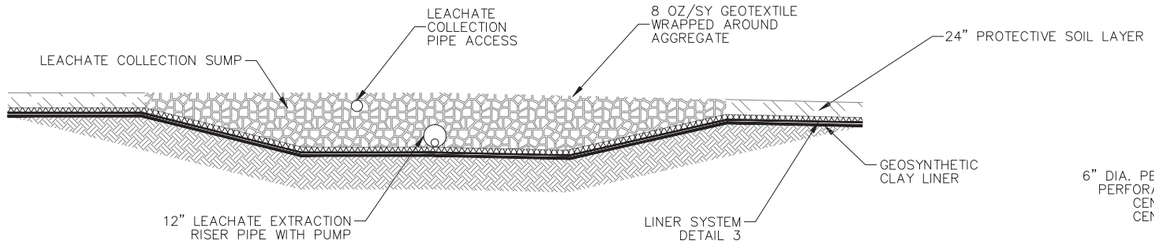
TYPICAL LEACHATE COLLECTION SUMP PLAN 4 -
NTS



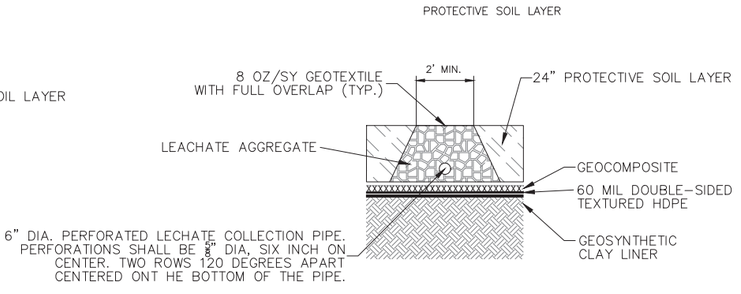
LEACHATE SUMP AND EXTRACTION RISER 5 -
NTS



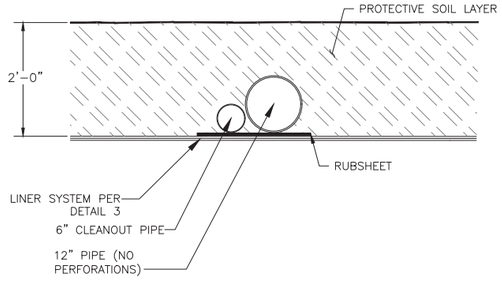
RISER VAULT PLAN 6 -
NTS



SUMP SECTION B-B' 7 -
NTS



LEACHATE COLLECTION TRENCH 8 -
SCALE: NTS



SIDE SLOPE RISER PIPE SECTION 9 -
SCALE: NTS

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DBS&A a Geo-Logic Company
TEXAS REGISTERED ENGINEERING FIRM F-286

WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

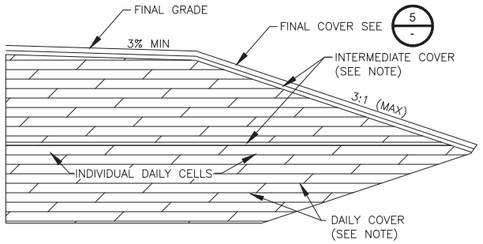
WST LANDFILL
REEVES COUNTY, TEXAS

CIVIL DETAILS 2

SHEET 19 OF 21
DWG NO. C-17

JOB NO. DB20.1166

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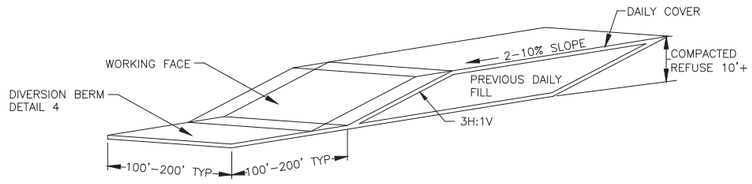


INTERMEDIATE COVER MINIMUM 12" SOIL APPLIED AND COMPACTED ON LIFTS WHICH HAVE NOT BEEN ACTIVE WITHIN 180 DAYS.

DAILY COVER ALTERNATE DAILY COVER OR MINIMUM 6" SOIL APPLIED AT THE END OF EACH WORKING DAY.

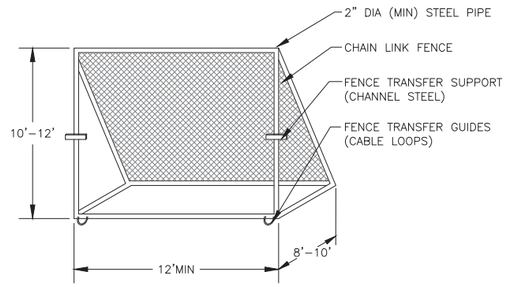
CLASS 1 SOIL BARRIER 4–FOOT–THICK CLAY RICH SOIL BARRIER AT MAXIMUM CLASS 1 WASTE HEIGHT

TYPICAL CROSS SECTION COVER APPLICATION 1/- NTS

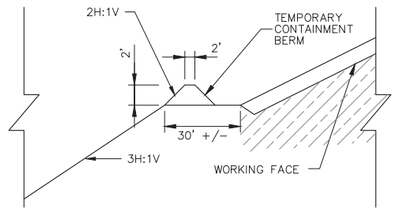


NOTE: REFUSE APPLIED IN LAYERS 2'–3' THICK TYPICAL AND COMPACTED BY REPEATED PASSES BY LANDFILL EQUIPMENT (COMPACTOR OR BULLDOZER)

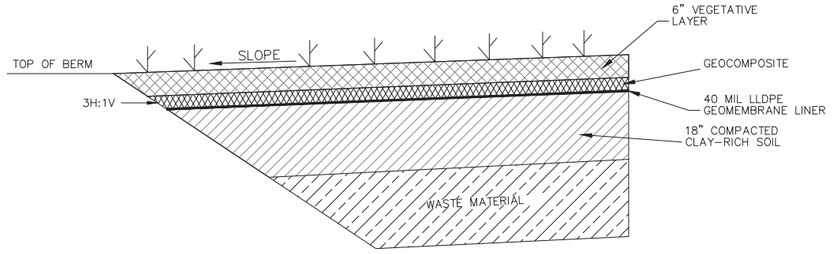
TYPICAL DAILY FILLING PLAN 2/- NTS



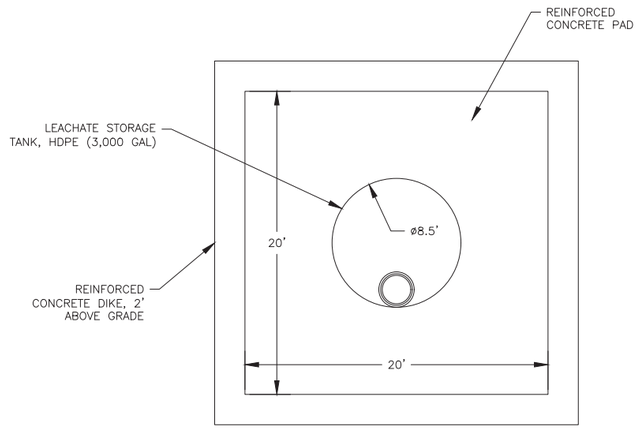
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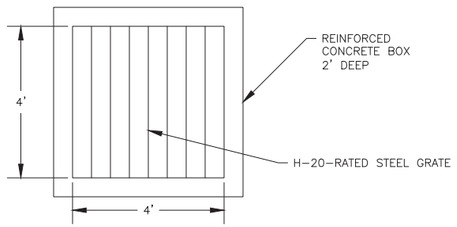
CONTACT WATER CONTAINMENT BERM 4/- SCALE: NTS



FINAL COVER SECTION DETAIL 5/- SCALE: NTS



LEACHATE STORAGE DETAIL 6/C-1 NTS



CITIZEN COLLECTION STATION SUMP DETAIL 7/C-1 NTS

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DRAWN BY: CK, JA, ML
CHECKED BY: GP
APPROVED BY: GP

STATE OF TEXAS — GUNDAR PETERSON — 103091 — LICENSED PROFESSIONAL ENGINEER — 7/22/2026

DBS&A a Geo-Logic Company
TEXAS REGISTERED ENGINEERING FIRM F–286

WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

WST LANDFILL
REEVES COUNTY, TEXAS

CIVIL DETAILS 3

SHEET 20 OF 21
DWG NO. C-18

JOB NO. DB20.1166

Z:\1X\MWTX\S\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\CAD\PRODUCTION\C-18 CIVIL DETAILS 3.DWG July 14, 2026 – 3:01 PM BY: GLA USER

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Attachment III-4-C2

Testing Requirements for System Components

DBS&A
a Geo-Logic Company

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Attachment III-4-C2: Testing Requirements for Liner System Components

Table III-4-C2-1. Standard Tests for Soils and Select Aggregate

Soil Test Category	Type of Test	Standard Test Methods [a]	Minimum Frequency of Testing
Borrow Fill Materials	Unified Soil Classification	ASTM D2487	One per representative source
	Moisture/Density Relationship	ASTM D698	
	Percent Passing No. 200 Sieve	ASTM D1140	
	Atterberg Limits	ASTM D4318	
	Coefficient of Permeability	ASTM D5084 or CoE EM1110-2-1906	
Subgrade Layer	In-Place Density	ASTM D6938	One per 20,000 ft^2 of surface area per 6-inch compacted lift
Protective Soil Cover	Sieve (gradation)	ASTM C136	One per representative source
Select Aggregate	Coefficient of Permeability	ASTM D5084 or CoE EM1110-2-1906	One per 3,000 yd^3 of material placed
	Sieve (gradation)	ASTM C136	
	Percent calcium carbonate	ASTM D3042	

[a] The GP may propose equivalent or better tests.

Table III-4-C2-2. Standard Tests for GCL Materials

Entity Performing Test	Test	Type of Test	Standard Test Methods [a]	Frequency of Testing
Supplier or Manufacturer	Bentonite [b]	Free Swell	ASTM D5890	One per 50 tons and every truck or railcar
		Fluid Loss	API 13B or ASTM D5891	
	Geotextile	Mass/Unit Area	ASTM D5261	One per 200,000 ft^2
		Grab Tensile Strength	ASTM D4632	
	Geomembrane	Mass/Unit Area [c]	ASTM D5261	
		Thickness (smooth)	ASTM D5199	One per 200,000 ft^2
		Thickness (textured)	ASTM D5994	
		Tensile Properties	ASTM D6693	
Manufacturer	GCL Product	Bentonite Mass/Unit Area	ASTM D5993	One per 40,000 ft^2
		Bentonite Moisture Content	ASTM D5993	
		Tensile Strength [d]	ASTM D6768	One per 200,000 ft^2
		Grab Tensile Strength [c]	ASTM D4632	
		Permeability [e]	ASTM D5887	One per week for each production line [f]
		Lap Joint Permeability	Flow box or other suitable device	One per material and lap type
QA Laboratory (conformance testing)	GCL Product	Clay Mass/Unit Area	ASTM D5993	One per 100,000 ft^2
		Permeability [g]	ASTM D5084 or D5887	
		Direct Shear [h]	ASTM D5321 or D6243	One per GCL/adjoining material type

[a] The GP may propose equivalent or better tests.

[b] Test to be performed on bentonite before incorporation into GCL.

[c] May be calculated using density and thickness of geomembrane.

[d] Not applicable for geomembrane-backed GCL. Manufacturer of geomembrane-backed GCL must, however, certify that product will meet required permeability standards based on prior testing.

[e] May also be done as conformance testing.

[f] Report last 20 permeability values, ending on production date of supplied GCL.

[g] Test at confining/consolidating pressure simulating field conditions for ASTM D5084. Permeability test not applicable for geomembrane-backed GCL which is installed geomembrane side down and covered with second geomembrane. Permeability test on geomembrane-backed GCL must be done with geomembrane backing removed and may be done at a reduced frequency (one per 200,000 ft^2 to 300,000 ft^2).

[h] Not applicable for slopes of 7H:1V or flatter. Testing must be on material in hydrated state unless GCL is to include geomembrane on both sides of GCL, and must use strain rates, confining pressures, and other parameters which simulate field conditions.

Table III-4-C2-3. Standard Tests for Geomembranes

Test Category	Type of Test	Standard Test Methods [a]	Frequency of Testing
Resin	Specific Gravity/Density	ASTM D792 or D1505	One per 100,000 ft^2 and every resin lot
	Melt Flow Index	ASTM D1238	
Geomembrane Manufacturer	MQC	Testing per GRI-GM13 Standard Specification [b]	Testing per GRI-GM13 Standard Specification
Conformance Testing by Third-Party Independent Laboratory	Thickness	ASTM D5199 (smooth) or D5994 (textured)	One per 50,000 ft^2 and every resin lot
	Specific Gravity/Density	ASTM D792 or D1505	
	Carbon Black Content	ASTM D1603	One per 100,000 ft^2 and every resin lot
	Carbon Black Dispersion	ASTM D5596	
	Tensile Properties	ASTM D6693	
Destructive Seam Field Testing	Shear	ASTM D6392	Varies for field, laboratory, and archive
	Peel	ASTM D4437	
Non-Destructive Seam Field Testing	Air Pressure	GRI Test Method GM29 or ASTM D5820	All dual-track fusion
	Vacuum	ASTM D5641	All non-air-pressure-tested seams when possible

[a] The GP may propose equivalent or better tests.

[b] UV resistance testing not required for HDPE that will be immediately covered.

Table III-4-C2-4. Trial Seam Testing Requirements for Geomembranes

Trial Seam Testing Topic	Trial Seam Testing Requirements
Trial Seam Testing	Each day, prior to commencing field seaming: ▪ Create test seams on fragment pieces of geomembrane to verify that seaming conditions are adequate. ○ Have every individual employee preforming seamer activities make at least one test seam each day they perform field seaming. ▪ Test the welder and the machine for each new trial seam when using extrusion welding. ▪ Test the machine only for each new trial seam when using fusion welding (since the machine is not operator dependent).
Trial Seam Test Criteria	▪ Make trial seams least 3 feet long by 1 foot wide. ▪ Die-cut four (six when possible if using dual track fusion welding) adjoining 1-inch-wide specimens from the test seam sample. ○ Test two specimens in the field for shear. ○ Test two for peel (four when possible if testing both inner and outer welds for dual track fusion welding). ▪ Ensure that the extensometer testing apparatus used for peel and shear tests has an updated calibration certificate that is traceable to National Bureau of Standards prior to the start of testing.
Trial Seam Failure Criteria	▪ Trial seam failure criteria are the same as for destructive seam testing. ▪ Test specimens exhibit acceptable break codes and properties specified in the most current version of GRI-GM19a Standard Specification. ▪ Elongation measurements are not required for trial seams. ▪ For failed test specimens: ○ If one test specimen fails, repeat the trial seam. ○ If the repeated trial seam also fails, then construct and test two more trial seams. ○ Repeat this process until all test seams pass. ▪ Do not begin field welding, for the machine or welder (if applicable), until all test seams pass.
Additional Trial Seams	Make additional trial seams: ▪ At the beginning of each seaming period for each seaming apparatus used that day (the beginning of each seaming period is considered to be the morning, and immediately after a break); ▪ For each occurrence of significantly different environmental conditions (such as temperature, humidity, dust, etc.); ▪ Any time the machine is turned off for more than 30 minutes; and ▪ When seaming different geomembrane (e.g. tie-ins and smooth to textured).

Table III-4-C2-5. Geomembrane Destructive Testing Requirements

Destructive Testing Topic	Destructive Testing Requirements
Testing Frequency	Alternative Testing Frequency: ▪ Use (1) the method of attributes and (2) control charts to determine the testing frequencies for destructive seam testing. ▪ The procedures should follow GRI-GM14 and GRI-GM20 and must be submitted and approved by the ED prior to implementation. ▪ Standard Testing Frequency: ○ Take destructive test samples of field seams at a minimum of one stratified location for every 500 linear feet or major fraction thereof. ○ Take destructive test samples of repaired geomembrane leaks and seams at a frequency of one stratified test every 500 linear feet or major fraction thereof. Individual repairs of leaks or failed seams, which are greater than 10 feet, shall count toward the 500 linear foot testing interval. ○ Conduct, at a minimum, a destructive test for each welding machine used for seaming or repairs. ○ Take additional destructive test samples if deemed necessary by the GP or QET.
Test Specimens	▪ Maintain a sufficient amount of the seam to conduct field testing, independent laboratory testing, and to retest the seam when necessary (archiving). ▪ Include at least two peel test specimens (four when possible for testing both tracks on dual track fusion welded seams) and two shear test specimens for field testing.
Repairs	Destructive seam testing locations shall be repaired by installing a cap strip over the entire length of failed seam. The cap strip must be of the same liner material and extend at least 6 inches in all directions over the failed seam. The cap strip shall be completely seamed by extrusion welding to the parent geomembrane. Test capped sections non-destructively except as specified above in "Testing Frequency."
Passing Criteria	▪ Meet the break codes, strength, elongation, and percent peel separation as described in GRI-GM19a Standard Specification for all laboratory-tested specimens from a destructive test location. ▪ Meet the break codes and strengths as described in GRI-GM19a Standard Specification for field-tested specimens.
Retesting	If a destructive test fails: ▪ Conduct additional destructive test at least 10 feet on both sides of the failed destructive test. ○ If any of these additional destructive tests fail, repeat the sampling and testing process until the failed seam is located by passing destructive tests. ▪ Cap any failed seam between passing destructive tests. Alternatively, all seams done by the welder or machine within the time period (between passing destructive tests or trial welds) represented by the failed destructive test may be capped.

Table III-4-C2-6. Geomembrane Non-Destructive Testing Requirements

Non-Destructive Testing Topic	Non-Destructive Testing Requirements
Non-Destructive Testing	▪ Perform continuous non-destructive testing (by the installer) on all factory and field seams. ▪ Observe all non-destructive testing (GP or QET). ▪ Conduct: ○ Air-pressure testing for dual-track fusion welds. ○ Vacuum-box testing for all extrusion welds. ○ Request prior approval from the Executive Director for all other types of non-destructive testing. ▪ Isolate all indicated leaks and repair leaks by following the procedures described in Section 7.8 of the LQCP (Repairs and Verification).
Air Pressure Testing	1. Seal the ends of the air channel of the dual-track fusion weld and pressurize to approximately 30 psi for HDPE geomembrane. 2. Shut off air pump (after pressure of 30 psi is reached). 3. Wait 5 minutes. 4. Observe the air pressure. Understanding your results: ▪ A loss of <4 psi is acceptable if it is determined that the air channel is not blocked between the sealed ends. ▪ A loss ≥4 psi indicates the presence of a seam leak that must then be isolated and repaired.
Vacuum Box Testing	A suction value of approximately 4 to 8 psi must be applied to all extrusion welded seams that can be tested in this manner. Examples of extrusion welded seams that do not easily lend themselves to vacuum testing would be around boots, appurtenances, etc. The seam must be observed for leaks for at least 10 seconds while subjected to this vacuum.

Table III-4-C2-7. Standard Tests for Geonet and Geocomposite Material

Test Category	Product	Test [a]	Test Method [b]	Testing Frequency
Manufacturer	Resin (geonet)	Density	ASTM D792 or D1505	One test per 100,000 ft^2 and every resin lot
		Melt Flow Index	ASTM D1238	
	Geonet	Density	ASTM D792 or D1505	
		Mass/Area	ASTM D5261	
		Thickness	ASTM D5199	
		Compression	ASTM D1621	
		Transmissivity	ASTM D4716	
	Geotextile [c]	Mass/Area	ASTM D5261	
		Grab Tensile Strength	ASTM D4632	
		Trapezoidal Tear Strength	ASTM D4533	
		Burst Strength	ASTM D3786	
		Puncture Strength	ASTM D4833	
		Thickness	ASTM D5199	
		Apparent Opening Size	ASTM D4751	
		Permittivity	ASTM D4491	
QA Laboratory	Geocomposite Product [c]	Transmissivity	ASTM D4716	One test per product type
		Interface Shear or Ply Adhesion	ASTM D5321 or D413	One test per project

[a] Adapted from EPA/600/R-93/182, September 1993, and *Designing with Geosynthetics*, 6th ed.

[b] The GP may propose equivalent or better tests.

[c] Only required for geocomposite materials.

Table III-4-C2-8. Standard Tests for Geotextile Material

Test Category	Product	Test [a]	Test Method [b]	Testing Frequency
Manufacturer	Geotextile	Mass/Area	ASTM D5261	One test per 100,000 ft^2 and every resin lot
		Grab Tensile Strength	ASTM D4632	
		Trapezoidal Tear Strength	ASTM D4533	
		Burst Strength	ASTM D3786	
		Puncture Strength	ASTM D4833	
		Apparent Opening Size	ASTM D4751	

[a] Adapted from EPA/600/R-93/182, September 1993, and *Designing with Geosynthetics*, 6th ed.

[b] The GP may propose equivalent or better tests.

Attachment III-4-C3

Seasonal High Groundwater Determination

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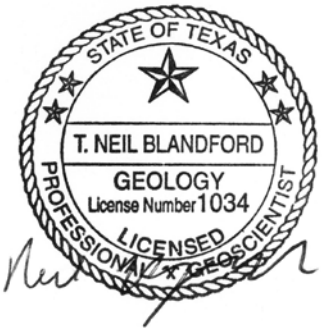
Memorandum

To: Kelly Jayne, P.E.

Date: February 3, 2026

From: Neil Blandford, P.G.

Subject: Seasonal High Groundwater Table
WST Landfill



This technical memorandum addresses the seasonal high groundwater table beneath the West Sun Tex LLC (WST) landfill near Pecos, Texas (the site). Per 30 TAC 330.339(b)(2)(B), "The seasonal high water table is the highest measured or calculated water level in an aquifer during investigation for a permit application or any groundwater characterization studies at a site." As explained in the geology report, the Pecos Valley Aquifer is the only aquifer that occurs beneath the site within 1,000 feet of land surface. The current Pecos Valley Aquifer water table beneath the site is approximately 2,525 feet above mean sea leave (feet msl), or about 137 feet below land surface (bgs). There is a perched zone (zone of saturated sediments) that occurs below the site above the Pecos Valley Aquifer water table. The saturated sediments in the perched zone are not an aquifer, and occur at approximately 60 to 80 feet bgs.

The seasonal high water tables in both the Pecos Valley Aquifer and the perched zone are addressed in this memorandum. The seasonal high groundwater table for the Pecos Valley Aquifer and the perched zone are 2,530 feet msl and 2,600 feet msl, respectively.

Pecos Valley Aquifer Seasonal High Groundwater Table

The only Pecos Valley Aquifer water level measured immediately beneath the site was taken at soil boring SB-4 (Figure 1). The depth to water of 137 feet bgs was measured in a temporary well installed in boring SB-4 on February 23, 2021. This depth to water value corresponds to a water table elevation of approximately 2,525 feet msl. Because soil boring SB-4 was not completed as a monitor well, there are no additional SB-4 water level data available. As explained in the geology report, the Pecos Valley Aquifer water table elevation beneath the site of 2,525 feet msl is consistent with Pecos Valley Aquifer wells in the region.

Water levels are measured at some Pecos Valley Aquifer wells in the general vicinity of the site by the Texas Water Development Board (TWDB) or the Reeves County Groundwater Conservation District (GCD). The Pecos Valley Aquifer well closest to the site with the most

complete and up-to-date water level record is well 4635601. Water levels in this well were initially monitored by the U.S. Geological Survey (USGS) from 1947 through 1961, by TWDB through January 2020, and then by the Reeves County GCD through December 2024. The measured water levels at this well were most often taken during the winter months (December, January, or February) when pumping for irrigation, and other uses such as municipal and domestic are small. The five most recent annual water level measurements for well 4635601 are summarized in Table 1, and measured water levels for the period of record are provided in Figure 1.

Table 1. Recent Water Level Measurements for Pecos Valley Aquifer Well 4635601

Measurement Date	Depth to Water (feet bgs)	Water Level Elevation [a] (feet msl)	Water level Change (feet)
1/30/2020	228.21	2,507.79	—
12/16/2021	229.30	2,506.70	–1.09
11/9/2022	226.75	2,509.25	2.55
12/10/2023	231.30	2,504.70	–4.55
12/26/2024	232.00	2,504.00	–0.70

[a] Land surface elevation from digital elevation model is 2,736 feet above mean sea level (feet msl).
bgs = Below ground surface

As indicated Figure 1, the water levels at well 4635601 have remained relatively constant since about 1975. The observed decline in water levels prior to 1975 is due to groundwater development in the Pecos Valley Aquifer, primarily for irrigated agriculture. Similar water level trends are observed at other wells in the region.

Based on Table 1 and the hydrograph for well 4635601 (Figure 1), it is concluded that a rise of no more than several feet (perhaps up to 5 feet) could occur in the Pecos Valley Aquifer water table beneath the site due to typical water-table fluctuations. Therefore, a maximum seasonal Pecos Valley Aquifer water table of 132 feet bgs (i.e., 137 feet bgs – 5 feet), equivalent to 2,530 feet msl, is estimated for the site.

Perched Zone Seasonal High Groundwater Table

The site is underlain by a perched zone that occurs at about 60 to 80 feet bgs, above the Pecos Valley Aquifer water table. The perched zone is not an aquifer because is cannot yield significant quantities of groundwater to wells. Groundwater levels in the perched zone have

been monitored at nine monitor wells since July 2021. The monitor well locations are shown in Figure 2, and recorded water levels are provided in Figure 3.

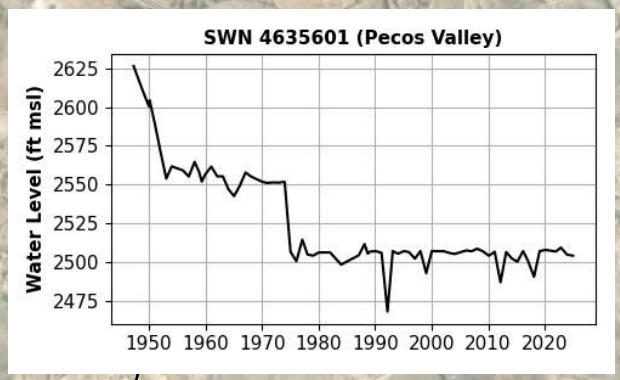
In addition, pressure transducers were installed in five of the perched zone monitor wells in September 2021 to record seasonal variations in water levels. The transducers recorded water levels on an hourly basis during their operation. The recorded water levels from the pressure transducers are provided in Figure 4. Note that the small abrupt changes in water level elevation in Figure 4 at monitor wells GW-6 and GW-13 in September 2023 are due to transducer adjustments.

Seasonal changes in perched zone water levels are small, at much less than a foot (Figures 3 and 4). The highest water level elevation occurs at monitor well MW-3, and is consistently between 2,599 and 2,600 feet msl (Figure 3). Therefore, it is recommended that a value of 2,600 feet msl be used as the seasonal high water table for the perched zone.

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Figures

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285

Site location

SB-4
2,525

Pecos

20

Pecos

N

0 3,000 6,000 Feet

Aerial Photograph: ESRI et al.

Explanation

- TWDB monitored well location
- Soil boring
- Site location

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WST LANDFILL

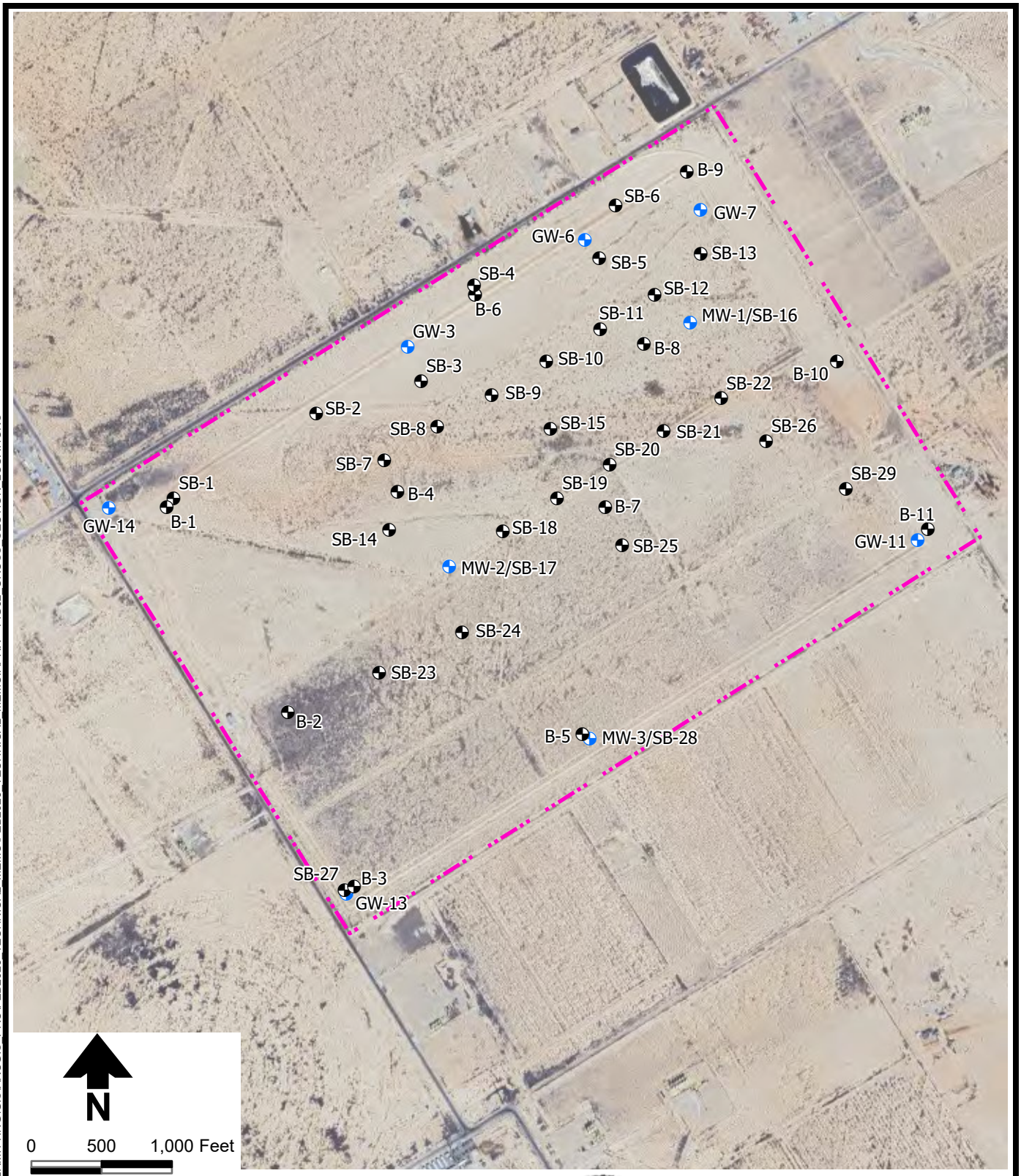
Pecos Valley Aquifer Water Level

1/30/2026 DB20.1166

Figure 1

Rev 2: July 2026 (Rev 0: March 2026)

S:\PROJECTS\DB20.1166 WST PECOS PERMITTING\GIS\ARCGIS PRO\FEB2026 TECHNICAL MEMO\FEB2026 TECHNICAL MEMO.APRX • FIG01 HYDROGRAPHS



Aerial Photograph: ESRI et al.

Explanation

- Monitor well
- Soil boring
- Site location

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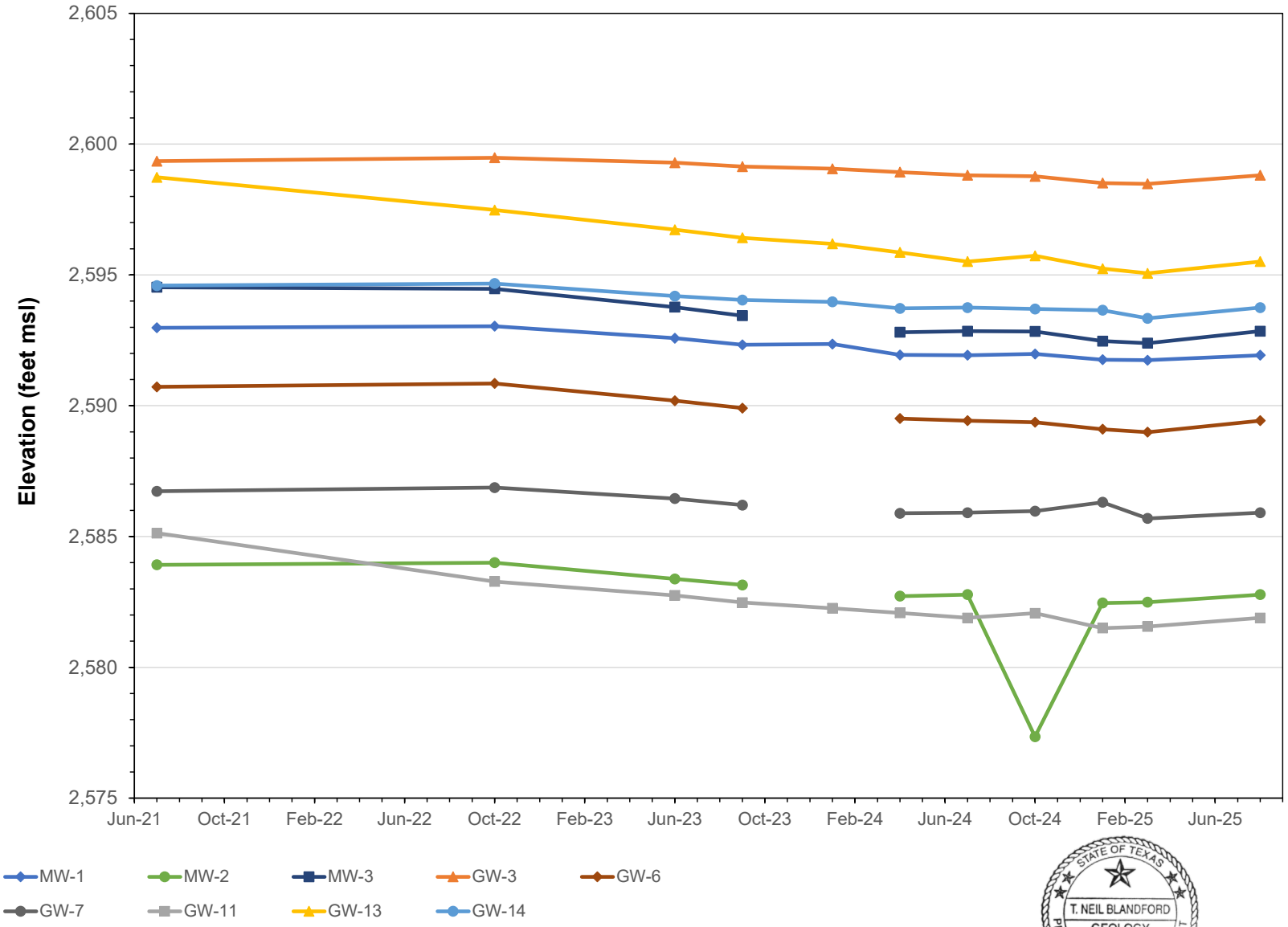
Soil Boring and Monitor Well Locations

1/30/2026 DB20.1166

Figure 2

Rev 2: July 2026 (Rev 0: March 2026)

S:\PROJECTS\DB20.1166 WST PECOS PERMITTING\GIS\ARCGIS PRO\FEB2026 TECHNICAL MEMO\FEB2026 TECHNICAL MEMO.APRX • FIG02 CROSS SECTION LOCATIONS



Note: October 2024 value for MW-2 likely in error.

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Figure 3

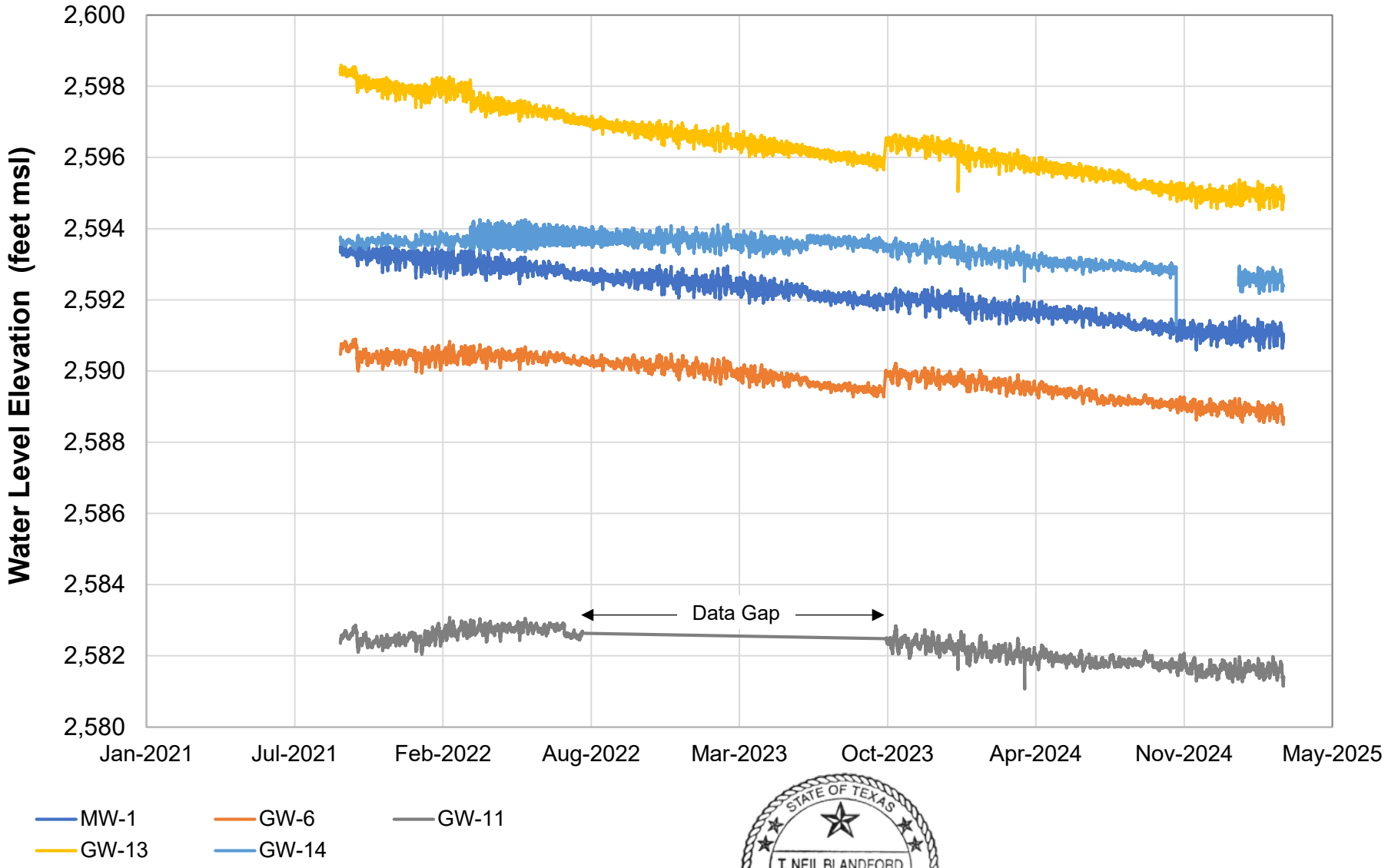
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Water Level in Perched Zone Monitor Wells

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Figure 4

WST LANDFILL

Perched Zone Water Levels for Monitor Wells with Transducers

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2/3/2026 DB20.1166

Appendix III-4-D

Evaporation Pond Sizing

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Calculation Cover Sheet

Project Name WST Landfill Project Number DB20.1166

Calculation Number DB20.1166-01 Discipline Engineering No. of Sheets 7

PROJECT:

WST Landfill

SITE:

Pecos, Texas

SUBJECT:

Contact Stormwater Pond Volume Determination

SOURCES OF DATA:

A. Leachate and Contaminated Water Plan (Appendix III-4-B)
B. NOAA Atlas 14, Volume 11, Version 2, Location name: Pecos, Texas, USA
C. Drawing C-1 Site Plan (Appendix III-4-A)
D. Water Data for Texas - Lake Evaporation/Rainfall, Quadrangle 604

SOURCES OF FORMULAE & REFERENCES:

1.

☐ Preliminary Calculation ☒ Final Calculation Supersedes Calculation No. ___

Rev. No.	Revision	Calculation By	Date	Checked By	Date	Approved By	Date
0		EA	3/6/2026	EL	3/8/2026	KJ	3/18/2026



Project No. DB20.1166 Date 3/6/2026

Subject Contact Stormwater Pond Volume Determination Sheet 1 of 7

By E. Abbott Checked By E. Levin Calculation No. DB20.1166-01

1. Purpose

Calculate the volume required for a geosynthetic-lined, open-surface contact stormwater pond at WST Landfill.

2. Given

"Contaminated water" is defined by 30 Texas Administrative Code (TAC) 330.3(36) as any leachate, gas condensate, or water that has come into contact with waste. At WST Landfill, contaminated water includes any leachate produced by the facility's waste management units and any additional water that dilutes that leachate solution.

To manage contaminated water at WST Landfill, a geosynthetic-lined, open-surface contact stormwater pond shall be designed and constructed to facilitate evaporation and prevent the off-site discharge of any contaminated water or leachate from the facility. The contact stormwater pond shall be designed to contain leachate generated by the facility's waste management units, as well as precipitation resulting from a 100-year, 24-hour storm, while maintaining 1 foot of freeboard. The perimeter of the contact stormwater pond shall be encircled by an earthen berm, and the surrounding areas shall be graded away from the pond as to prevent any run-on water from generating additional and unnecessary volume of contaminated water.

Leachate generation figures are determined in a separate calculation located in Appendix III-4-B, where the U.S. Environmental Protection Agency (EPA) Hydrologic Evaluation of Landfill Performance (HELP) model is used to evaluate water movement across, into, through, and out of waste management units based on numerous parameters of the deposited waste, daily cover, and leachate collection system. The HELP model output quantifying average annual total collected drainage is used in this analysis, as it reflects the integrated leachate generation response of the landfill across all seasonal, climatic, and operational conditions within a one-year period. This model accounts for average precipitation over the waste management units. This average annual total drainage amount provided by the HELP model evaluation is equal to 1,380.3 ft^3/acre/year, or approximately 28,848 ft^3/year for one 20.9-acre cell at WST Landfill.

30 Texas Administration Code (TAC) 330 recommends that landfill stormwater control measures be designed to convey and contain a 25-year storm; however, a 100-year design storm is used in this analysis to provide supplemental protection of human health and the environment surrounding the project site. NOAA Atlas 14 is used to obtain the 100-year, 24-hour storm point precipitation estimate of 5.28 inches.

This analysis also takes into account the design constraint of the pond's surface area, which is obtained from CAD renderings of the facility's site plan. From these renderings, it is anticipated that the surface area of the contact stormwater pond will be roughly 184 feet by 184 feet, or approximately 33,600 ft^2.

Additional parameters used in this calculation include average monthly precipitation and gross evaporation figures, which are obtained from the Texas Water Development Board for quadrangle 604. Data collected by the Texas Water Development Board from June 1995 to June 2025 are processed to derive the monthly averages shown in Table 1.

Table 1. Average Monthly Evaporation and Precipitation for Texas Quadrangle 604

Month	Average Monthly Gross Evaporation (inches)	Average Monthly Precipitation (inches)
January	2.999	0.445
February	3.545	0.303
March	5.310	0.476
April	6.982	0.503
May	7.281	0.760
June	8.239	1.297
July	7.908	1.449
August	7.229	1.448
September	5.744	1.789
October	5.002	1.088
November	3.831	0.542
December	3.054	0.393

3. Method

This calculation follows a water balance approach to determine the estimated volume of contaminated water in the lined contact stormwater pond. The time frame of this analysis spans January through December of three years, for 36 months total.

The water balance for the contact stormwater pond is comprised of inflow via precipitation and leachate generation, as well as outflow through surface evaporation. As needed, these parameters are converted into volumetric units using the pond's surface area. The water balance for the contact stormwater pond is then derived using Equation 1.

$$V_{pond} = V_{precip.} + V_{leachate} - V_{evap.} \quad (1)$$

where V_{pond} = volume of liquid in the contact stormwater pond (ft^3)
$V_{precip.}$ = volume of precipitation over the pond (ft^3)
$V_{leachate}$ = volume of generated leachate (ft^3)
$V_{evap.}$ = volume of average monthly evaporation (ft^3)

In addition, the analysis of WST Landfill's contact stormwater pond volume accounts for the initial occurrence of a 100-year, 24-hour storm; the volume of water resulting from this storm is added to the first month of the analysis and tracked for three years subsequent.

4. Solution

The volume of liquid occupying the contact stormwater pond at WST Landfill is analyzed on a monthly basis for a total of three years using the data and methods outlined above. A sample calculation is provided for the first month of analysis (January of year 1) that incorporates the precipitation volume of the 100-year, 24-hour storm over the contact stormwater pond and also over one-third of a landfill cell, as this is expected to be the greatest area to be without intermediate cover at a given time; January of year 1 is the only month that accounts for this storm event. A monthly breakdown of the three-year analysis is provided in Table 2.

To begin, the contributing inflows and outflows are converted into volumetric quantities using the pond's surface area.

The rainfall depth resulting from the 100-year, 24-hour storm is converted to volumetric units for January of year 1:

$$V_{precip.} = \frac{5.28\ in.}{month} * \frac{1\ ft}{12\ in.} * \left[\left(\frac{20.9\ acres}{3} * \frac{43{,}560\ ft^2}{acre}\right) + 33{,}600\ ft^2\right] = 148{,}310\ \frac{ft^3}{month}$$

Similarly, the rainfall from depth monthly average precipitation is converted to volumetric units for the first month of the analysis:

$$V_{precip.} = \frac{0.44\ in.}{month} * \frac{1\ ft}{12\ in.} * 33{,}600\ ft^2 = 1{,}245\ \frac{ft^3}{month}$$

The volume of leachate generated by waste management units is also converted to volumetric units for January of year 1:

$$V_{leachate} = 28{,}848\frac{ft^3}{year} * \frac{1\ year}{12\ months} = 2{,}404\ \frac{ft^3}{month}$$

The monthly average evaporation for January of year 1 is then converted to volumetric units:

$$V_{evap.} = 3.00\ in. * \frac{1\ ft}{12\ in.} * 33{,}600\ ft^2 = 8{,}398\ \frac{ft^3}{month}$$

Next, Equation 1 is used to assess the water balance within the contact stormwater pond for January of year 1:

$$V_{pond} = (148{,}310 + 1{,}245)\ \frac{ft^3}{month} + 2{,}404\ \frac{ft^3}{month} - 8{,}398\ \frac{ft^3}{month} = 143{,}561\ ft^3$$

$$V_{pond} = 143{,}561\ ft^3 * \frac{7.48\ gallons}{1\ ft^3} = 1{,}073{,}835\ gallons$$

This process is repeated for the remainder of the three-year analysis period (excluding additional occurrences of the 100-year, 24-hour storm). Results of the three-year analysis are detailed in Table 2.

Table 2. Estimated Volume of Contaminated Water in Contact Stormwater Pond

Year of Analysis	Month	Volume of Precipitation (ft^3)	Volume of Evaporation (ft^3)	Volume of Incoming Leachate (ft^3)	Volume in Pond	
					(ft^3)	(gallons)
1	January	149,555*	8,398	2,404	143,561	1,073,835
1	February	849	9,926	2,404	136,888	1,023,924
1	March	1,333	14,868	2,404	125,757	940,663
1	April	1,407	19,550	2,404	110,019	822,942
1	May	2,128	20,387	2,404	94,164	704,348
1	June	3,633	23,068	2,404	77,133	576,952
1	July	4,056	22,142	2,404	61,450	459,649
1	August	4,055	20,242	2,404	47,668	356,554
1	September	5,010	16,084	2,404	38,998	291,703
1	October	3,045	14,005	2,404	30,443	227,710
1	November	1,518	10,727	2,404	23,637	176,807
1	December	1,101	8,550	2,404	18,592	139,071
2	January	1,245	8,398	2,404	13,843	103,549
2	February	849	9,926	2,404	7,171	53,637
2	March	1,333	14,868	2,404	0	0
2	April	1,407	19,550	2,404	0	0
2	May	2,128	20,387	2,404	0	0
2	June	3,633	23,068	2,404	0	0
2	July	4,056	22,142	2,404	0	0
2	August	4,055	20,242	2,404	0	0
2	September	5,010	16,084	2,404	0	0
2	October	3,045	14,005	2,404	0	0
2	November	1,518	10,727	2,404	0	0
2	December	1,101	8,550	2,404	0	0
3	January	1,245	8,398	2,404	0	0
3	February	849	9,926	2,404	0	0
3	March	1,333	14,868	2,404	0	0
3	April	1,407	19,550	2,404	0	0
3	May	2,128	20,387	2,404	0	0
3	June	3,633	23,068	2,404	0	0
3	July	4,056	22,142	2,404	0	0
3	August	4,055	20,242	2,404	0	0

Year of Analysis	Month	Volume of Precipitation (ft^3)	Volume of Evaporation (ft^3)	Volume of Incoming Leachate (ft^3)	Volume in Pond	
					(ft^3)	(gallons)
3	September	5,010	16,084	2,404	0	0
3	October	3,045	14,005	2,404	0	0
3	November	1,518	10,727	2,404	0	0
3	December	1,101	8,550	2,404	0	0

* Includes precipitation from a 100-year, 24-hour storm.

As seen in Table 2, this analysis estimates that the volume of liquid contained within WST Landfill's contact stormwater pond diminishes following February of year 2. This is due to the dependence of the pond's volume on the occurrence of the 100-year, 24-hour storm, which was incurred during January of year 1. Within each month subsequent to the first month of the analysis, the area's average evaporation greatly exceeds precipitation; this imbalance of inflow versus outflow causes the pond to dry up.

This analysis provides evidence that a contact stormwater pond designed approximately following the provided parameters (surface area, incoming leachate values, etc.) at WST Landfill shall be able to contain and evaporate a 100-year, 24-hour storm within 1.2 years of the storm's occurrence. Therefore, a contact stormwater pond at WST Landfill that is designed to contain a volume of at least 143,561 ft^3, or 1,073,835 gallons, of liquid shall be adequate to safely contain and evaporate contaminated water generated by the facility.

The stage-storage relationship of a contact stormwater pond meeting the aforementioned design requirements is detailed in Table 3. This represents a rectangular pond designed with surface dimensions of 184 feet by 184 feet, a depth of 6.5 feet (including 1 foot of freeboard), side-slope angles of 3H:1V, and pond bottom dimensions of 145 feet by 145 feet.

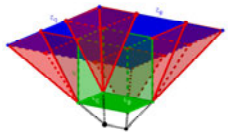
Table 3. Stage-Storage Characteristics of Contact Stormwater Pond

Elevation (feet msl)	Depth (feet)	Storage Volume		Notes
		(ft^3)	(gallons)	
2,657.5	0	0	0	
2,658	0.5	10,732	80,282	
2,659	1.5	33,536	250,879	
2,660	2.5	58,188	435,301	
2,661	3.5	84,760	634,086	
2,662	4.5	113,324	847,773	
2,663	5.5	143,952	1,076,901	Maximum water surface elevation (100-yr storm and leachate)
2,664	6.5	176,716	1,322,009	

msl = above mean sea level

Inputs

Pond Bottom Width (ft)	145	
Pond Bottom Length (ft)	145	
Sideslope:1	3	
Depth of Water (ft)	5.5	
Max Pond Depth (ft)	6.5	



Output Pond Dimensions - At Max Depth

Maximum Water Surface Area		
Water Surface Width (ft)	184	Found by multiplying the side slopes by the max depth (times two, for each side) and adding to the base width
Water Surface Length (ft)	184	Found by multiplying the side slopes by the max depth (times two, for each side) and adding to the base length
Total Water Surface Area (sf)	33856	Multiply the two answers above
Maximum Surface Area		
Pond Bottom Area (sf)	21025	Found by multiplying the pond base by the pond width
Side Slope Area		Treat each side slope as a trapezoid and use (b1+b2)/2*h
Area of Width Side (sf)	3381.27	Use trapezoid formula
Area of Length Side (sf)	3381.27	Use trapezoid formula
Total Surface Area (sf)	34550.06	Adding pond bottom and side slopes*2
Max Pond Volume		
Rectangular Prism (cf)	136662.5	Using pond bottom and max depth (green in figure)
Triangle Along Width (cf)	9189.375	1/2*total depth*total depth*sideslope*width (made of red triangle in figure)
Triangle Along Length (cf)	9189.375	1/2*total depth*total depth*sideslope*length (made of red triangle in figure)
Total Triangular Volumes (cf)	36757.5	width volume*2 + length volume*2
Triangular Pyramid at Corner (cf)	823.875	pyramid base is sideslope*depth, then use 1/3*b*b*h (corners in figure)
Total Pond Volume (cf)	176715.5	
Total Pond Volume (gal)	1322008.7	

Output Pond Dimensions Below Waterline - At Set Depth

Water Surface Width (ft)	178	Found by multiplying the side slopes by the max depth (times two, for each side) and adding to the base width
Water Surface Length (ft)	178	Found by multiplying the side slopes by the max depth (times two, for each side) and adding to the base length
Water Surface Area (sf)	31684	Multiply the two answers above
Maximum Surface Area		
Pond Bottom Area (sf)	21025	Found by multiplying the pond base by the pond width
Side Slope Area		Treat each side slope as a trapezoid and use (b1+b2)/2*h
Area of Width Side (sf)	2808.89	Use trapezoid formula
Area of Length Side (sf)	2808.89	Use trapezoid formula
Total Surface Area (sf)	32260.57	Adding pond bottom and side slopes*2
Pond Volume Below Waterline		
Rectangular Prism (cf)	115637.5	Using pond bottom and max depth (green in figure)
Triangle Along Width (cf)	6579.375	1/2*total depth*total depth*sideslope*width (made of red triangle in figure)
Triangle Along Length (cf)	6579.375	1/2*total depth*total depth*sideslope*length (made of red triangle in figure)
Total Triangular Volumes (cf)	26317.5	width volume*2 + length volume*2
Triangular Pyramid at Corner (cf)	499.125	pyramid base is sideslope*depth, then use 1/3*b*b*h (corners in figure)
Water Volume (cf)	143951.5	
Water Volume (gal)	1076901.2	

Output Pond Dimensions Above Waterline - At Set Depth

Area of Width Side (sf)	572.37	Use trapezoid formula
Area of Length Side (sf)	572.37	Use trapezoid formula
Total Surface Area Above Waterline (sf)	2289.49	Adding pond bottom and side slopes*2
Total Volume Above Waterline (cf)	32764	

B

NOAA Atlas 14, Volume 11, Version 2
Location name: Pecos, Texas, USA*
Latitude: 31.4324°, Longitude: -103.5854°
Elevation: 2661 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.287** (0.218-0.379)	**0.359** (0.275-0.469)	**0.477** (0.364-0.626)	**0.574** (0.431-0.765)	**0.707** (0.513-0.970)	**0.808** (0.571-1.14)	**0.910** (0.628-1.32)	**1.02** (0.683-1.51)	**1.16** (0.754-1.79)	**1.27** (0.805-2.01)
10-min	**0.471** (0.357-0.622)	**0.589** (0.451-0.769)	**0.782** (0.597-1.03)	**0.941** (0.707-1.25)	**1.16** (0.844-1.60)	**1.33** (0.942-1.88)	**1.49** (1.03-2.17)	**1.66** (1.11-2.47)	**1.87** (1.22-2.88)	**2.03** (1.28-3.20)
15-min	**0.561** (0.425-0.741)	**0.701** (0.538-0.916)	**0.931** (0.710-1.22)	**1.12** (0.840-1.49)	**1.38** (1.00-1.89)	**1.58** (1.11-2.22)	**1.77** (1.22-2.57)	**1.98** (1.33-2.94)	**2.26** (1.47-3.48)	**2.47** (1.56-3.90)
30-min	**0.731** (0.553-0.965)	**0.912** (0.700-1.19)	**1.21** (0.924-1.59)	**1.46** (1.09-1.94)	**1.79** (1.30-2.45)	**2.04** (1.44-2.88)	**2.30** (1.58-3.33)	**2.56** (1.72-3.82)	**2.93** (1.90-4.52)	**3.22** (2.04-5.08)
60-min	**0.899** (0.680-1.19)	**1.12** (0.861-1.47)	**1.49** (1.14-1.96)	**1.80** (1.35-2.39)	**2.21** (1.60-3.03)	**2.53** (1.79-3.56)	**2.85** (1.96-4.13)	**3.18** (2.14-4.74)	**3.64** (2.37-5.61)	**4.00** (2.53-6.32)
2-hr	**1.05** (0.797-1.37)	**1.32** (1.01-1.70)	**1.75** (1.34-2.28)	**2.11** (1.59-2.80)	**2.62** (1.91-3.57)	**3.01** (2.14-4.21)	**3.41** (2.36-4.90)	**3.84** (2.59-5.66)	**4.43** (2.89-6.75)	**4.89** (3.11-7.63)
3-hr	**1.13** (0.863-1.48)	**1.42** (1.10-1.83)	**1.90** (1.46-2.46)	**2.30** (1.74-3.03)	**2.86** (2.09-3.88)	**3.30** (2.35-4.59)	**3.75** (2.61-5.36)	**4.24** (2.87-6.21)	**4.91** (3.21-7.43)	**5.44** (3.46-8.43)
6-hr	**1.27** (0.976-1.65)	**1.61** (1.24-2.05)	**2.14** (1.65-2.76)	**2.60** (1.98-3.41)	**3.25** (2.39-4.38)	**3.77** (2.70-5.20)	**4.31** (3.00-6.09)	**4.89** (3.32-7.08)	**5.71** (3.74-8.54)	**6.36** (4.06-9.73)
12-hr	**1.41** (1.09-1.82)	**1.78** (1.38-2.26)	**2.37** (1.84-3.04)	**2.88** (2.20-3.74)	**3.60** (2.66-4.80)	**4.16** (2.99-5.69)	**4.77** (3.34-6.68)	**5.43** (3.70-7.78)	**6.38** (4.20-9.43)	**7.15** (4.58-10.8)
24-hr	**1.56** (1.20-1.99)	**1.97** (1.53-2.47)	**2.62** (2.04-3.32)	**3.17** (2.44-4.10)	**3.97** (2.94-5.25)	**4.60** (3.32-6.23)	**5.28** (3.71-7.31)	**6.03** (4.13-8.55)	**7.12** (4.71-10.4)	**8.02** (5.16-12.0)
2-day	**1.71** (1.33-2.18)	**2.18** (1.70-2.72)	**2.92** (2.28-3.68)	**3.56** (2.75-4.57)	**4.49** (3.35-5.90)	**5.23** (3.80-7.03)	**6.04** (4.27-8.28)	**6.94** (4.77-9.73)	**8.25** (5.47-11.9)	**9.32** (6.02-13.7)
3-day	**1.82** (1.42-2.30)	**2.34** (1.82-2.88)	**3.13** (2.45-3.93)	**3.84** (2.97-4.90)	**4.86** (3.63-6.35)	**5.68** (4.14-7.60)	**6.58** (4.66-8.98)	**7.59** (5.23-10.6)	**9.05** (6.01-13.0)	**10.2** (6.63-15.0)
4-day	**1.90** (1.49-2.40)	**2.45** (1.91-3.01)	**3.30** (2.59-4.13)	**4.04** (3.14-5.15)	**5.14** (3.86-6.70)	**6.03** (4.40-8.04)	**7.01** (4.97-9.52)	**8.10** (5.59-11.2)	**9.68** (6.44-13.8)	**11.0** (7.12-15.9)
7-day	**2.10** (1.65-2.64)	**2.73** (2.12-3.32)	**3.66** (2.89-4.56)	**4.51** (3.51-5.71)	**5.77** (4.35-7.48)	**6.81** (4.99-9.01)	**7.96** (5.66-10.7)	**9.23** (6.39-12.7)	**11.1** (7.40-15.6)	**12.6** (8.20-18.1)
10-day	**2.27** (1.79-2.84)	**2.95** (2.30-3.57)	**3.96** (3.13-4.91)	**4.88** (3.81-6.15)	**6.24** (4.72-8.06)	**7.37** (5.42-9.71)	**8.62** (6.15-11.5)	**10.0** (6.94-13.6)	**12.0** (8.03-16.8)	**13.6** (8.89-19.5)
20-day	**2.82** (2.24-3.51)	**3.60** (2.84-4.36)	**4.78** (3.80-5.90)	**5.84** (4.58-7.30)	**7.38** (5.60-9.44)	**8.65** (6.38-11.3)	**10.0** (7.19-13.3)	**11.6** (8.06-15.6)	**13.8** (9.26-19.1)	**15.6** (10.2-22.0)
30-day	**3.26** (2.58-4.03)	**4.10** (3.25-4.97)	**5.40** (4.31-6.65)	**6.55** (5.16-8.17)	**8.21** (6.25-10.4)	**9.56** (7.06-12.4)	**11.0** (7.91-14.5)	**12.6** (8.81-16.9)	**14.9** (10.0-20.5)	**16.8** (11.0-23.4)
45-day	**3.78** (3.01-4.67)	**4.72** (3.77-5.73)	**6.19** (4.95-7.59)	**7.45** (5.88-9.25)	**9.26** (7.06-11.7)	**10.7** (7.92-13.8)	**12.2** (8.79-16.0)	**13.8** (9.70-18.4)	**16.2** (10.9-22.0)	**18.0** (11.8-24.9)
60-day	**4.22** (3.37-5.20)	**5.23** (4.20-6.36)	**6.84** (5.50-8.38)	**8.21** (6.49-10.2)	**10.1** (7.73-12.8)	**11.6** (8.62-14.9)	**13.2** (9.50-17.2)	**14.8** (10.4-19.6)	**17.1** (11.6-23.2)	**18.9** (12.4-26.0)

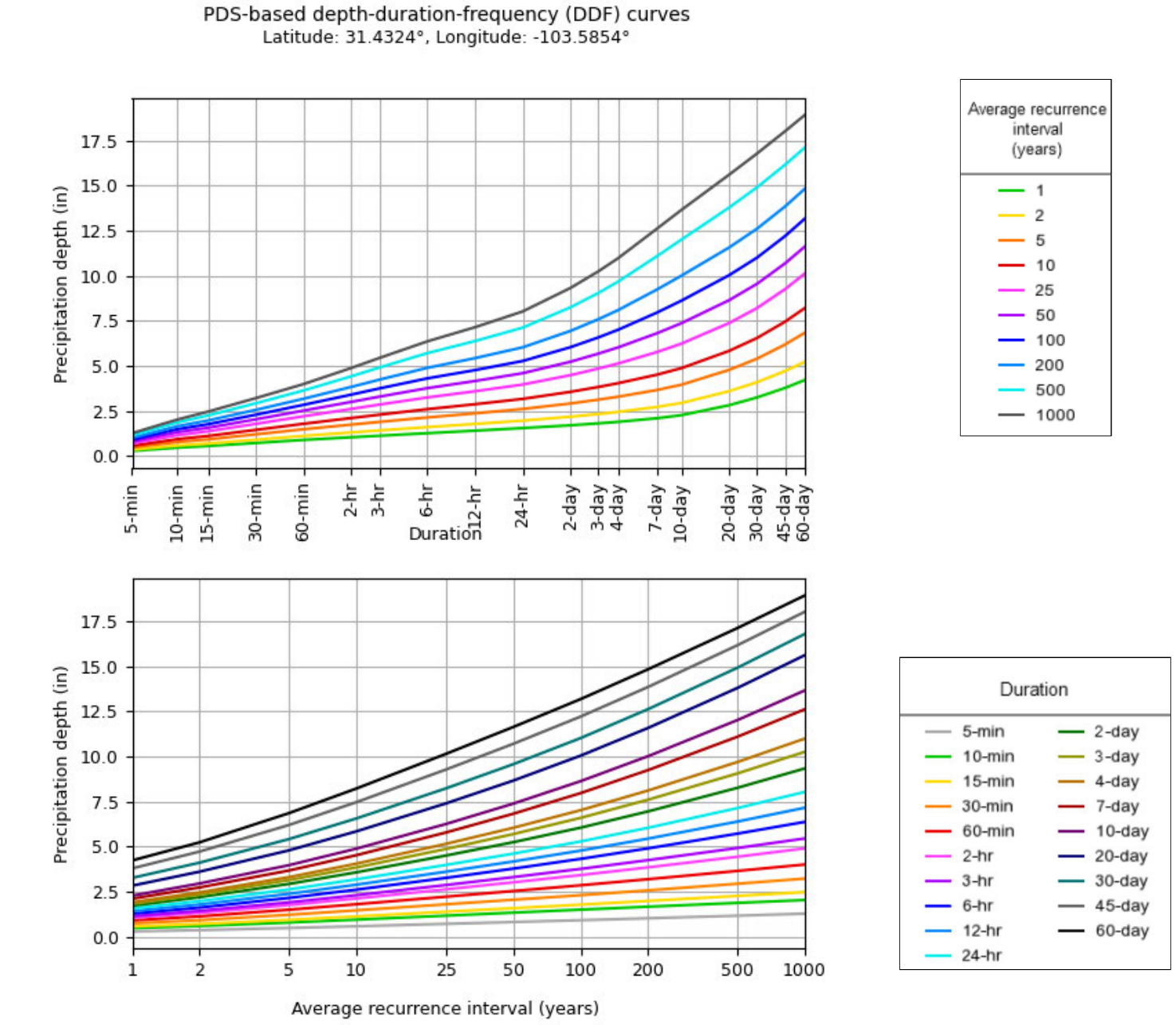
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical



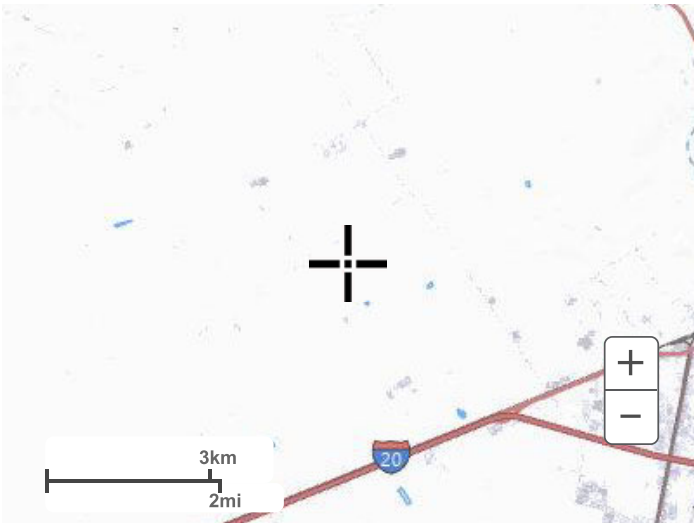
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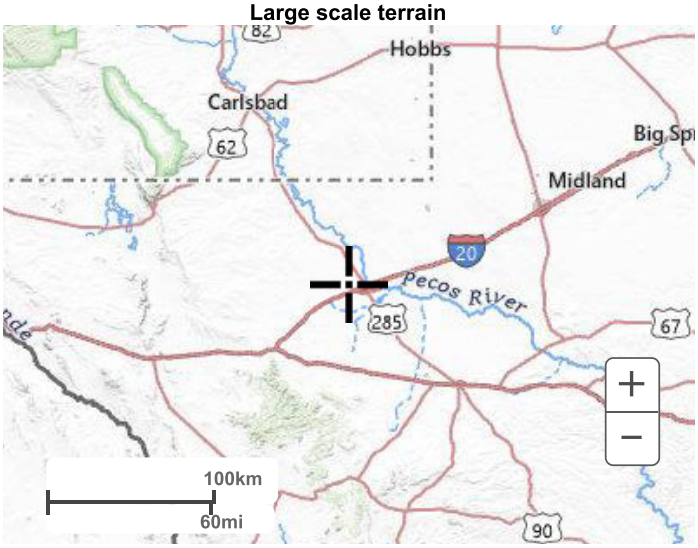
Back to Top

Maps & aerials

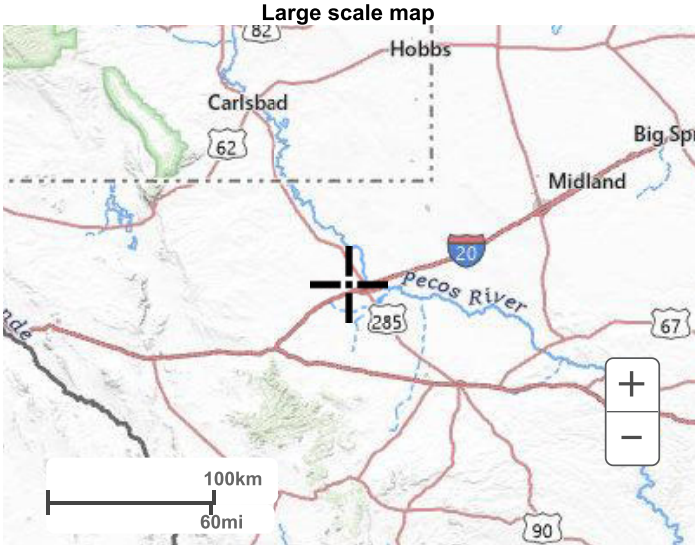
Small scale terrain



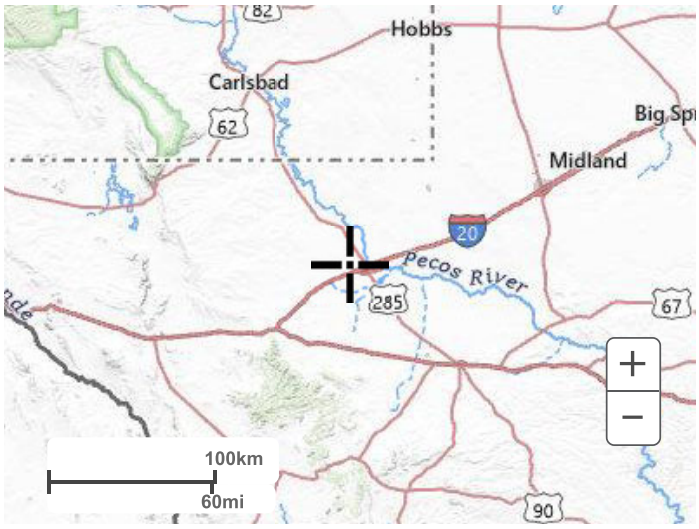
Large scale terrain



Large scale map



Large scale aerial



Back to Top

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Appendix III-4-E

Slope Stability Analysis

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Slope Stability Evaluation Report
WST Landfill
Reeves County, Texas

Prepared for
West Sun Tex, LLC
Pecos, Texas

Prepared by

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Table of Contents

1. Introduction 1

2. Relevant Information About the Site 2
   - 2.1 Site Description 2
   - 2.2 Site Geologic and Hydrogeologic Conditions 2
   - 2.3 Landfill Geometry 2
   - 2.4 Lining Systems 3

3. "Unstable Area" Evaluation 4
   - 3.1 Foundation Soil Conditions 4
   - 3.2 Geologic/Geomorphologic Features (Geohazards) 5
   - 3.3 Human-Made Features or Events 5
   - 3.4 Settlement-Induced Tension in Composite Liner System 6

4. Seismic Impact Zone Evaluation 6

5. Stability Evaluations 7
   - 5.1 General 7
   - 5.2 Waste Fill Stability Evaluation 8
     - 5.2.1 Representative Cross Sections 8
     - 5.2.2 Material Properties 8
     - 5.2.3 Seismic Loading 9
     - 5.2.4 Method of Analysis 9
     - 5.2.5 Stability Criteria 10
     - 5.2.6 Results 10
     - 5.2.7 Discussion 10

6. Conclusions and Recommendations 11
   - 6.1 Conclusions 11
   - 6.2 Recommendations 12

7. Limitations and Closure 13

References 14

List of Figures

III-4-E-1 Site Location and Vicinity Maps
III-4-E-2 Proposed Site Layout – Base Grades and Final Cover
III-4-E-3 Proposed Phase Layout (Partial) and Generic Cross Section
III-4-E-4 Cross Sections through Landfill Composite Liner and Cover Systems
III-4-E-5 Stability Evaluations - Representative Cross Sections
III-4-E-6 Representative Cross Sections and Results of Stability Evaluations

List of Tables

III-4-E-1 Material Properties for Static and Pseudostatic Slope Stability Analyses
III-4-E-2 Results of Static and Pseudostatic Slope Stability Analysis of WST Landfill Waste Fill

List of Attachments

III-4-E1 Seismic Hazard Analysis

1. Introduction

This stability evaluation report was prepared by Geo-Logic Associates (GLA), parent company of Daniel B. Stephens & Associates, Inc. (DBS&A), for West Sun Tex, LLC (WST) in support of permitting efforts for the development of the proposed WST Landfill (the landfill or the site) in Reeves County, Texas. It presents the site conditions, interpreted subgrade conditions methods, evaluation of seismic and other hazards at the site, and engineering evaluations performed in support of preliminary design of the project.

The engineering evaluations include permit-level static and seismic stability evaluations of waste fill. Stability of cut slopes (slopes created by excavation) and stability of final cover slopes is discussed in detail. Conclusions on the potential impacts of seismic and other hazards on the design, construction, operation, and eventual closure of the WST Landfill is presented at the end, along with recommendations for final design.

WST is applying for a Type I municipal solid waste permit[1] for a new landfill facility in Reeves County, Texas. The purpose of this "hazards" evaluation, and evaluation of static and seismic slope stability is to assess if the proposed improvements are buildable and to provide engineering input for preliminary design. The final intent of this study is to demonstrate the conformance of the preliminary design with applicable state and federal regulations.

The stability assessment presented herein is a preliminary (i.e., it is commensurate with a permit-level design of the WST Landfill). Accordingly, engineering evaluations are based on generic material parameters (i.e., on material parameters considered a low-bound estimate for liner systems proposed for this project). GLA anticipates that more detailed, focused analyses based upon material parameters obtained by site-specific testing will be performed in support of the final design of the landfill, including prior to each cell construction, and prior to the final cover construction.

[1] According to TAC Title 30 / Part 1 / Chapter 330 / Subchapter A / Rule section 330.5, a Type I landfill unit is the standard landfill for the disposal of MSW. The commission may authorize the designation of special-use areas for processing, storage, and disposal or any other functions involving solid waste.

2. Relevant Information About the Site

2.1 Site Description

The site is in Reeves County, Texas, approximately 5 miles west-northwest of the City of Pecos, Texas. As indicated in Figure III-4-E-1 by shading, the entire site occupies approximately 440 acres. The approximate geometric center of the site is at 31.4324 degrees north longitude and -103.5854 degrees east latitude.

The site is currently undeveloped. Its past land uses included agricultural activities, which were discontinued approximately 20 years ago. Nearby properties generally include agricultural fields, oil and gas developments, rural residences, and undeveloped land. The site is relatively flat, with a slope of approximately 0.3 percent downward from west to east.

2.2 Site Geologic and Hydrogeologic Conditions

According to DBS&A (2021), the site is generally underlain by Quaternary-age alluvial soil deposits that range in thickness from hundreds of feet to approximately 1,000 feet. According to DBS&A (2021), alluvial deposits consist of caliche, clay, silt, sand, gravel, and boulder-sized materials.

Site-specific hydrogeological investigation was performed DBS&A (2021). They advanced several borings and subsequently converted them into groundwater monitor wells. The measured depth to groundwater generally ranged from approximately 60 to 83 feet below ground surface (bgs). Groundwater depth of 137 feet bgs was reported in a single borehole.

Groundwater depth measurements by DBS&A (2021) are consistent with their counterparts reported by Terracon (2014). In particular, Terracon reported groundwater elevations that were approximately 53 to 80 feet bgs. Therefore, it is likely that groundwater at this site is “deep” and its impacts on engineered site improvements can be eliminated from engineering considerations documented in this report.

2.3 Landfill Geometry

Figure III-4-E-2 shows a plan view of the proposed WST Landfill. The proposed landfill base grades are “paled” (shown in gray). The proposed landfill final cover is schematically indicated by thick black lines. As shown in Figure III-4-E-2, the proposed WST Landfill can be classified as an “area-fill” type landfill. The area fill will be developed in phases. These phases, herein

referred to as landfill cells, are explained in greater detail in Figure III-4-E-3. Each phase will occupy approximately 20 acres.

Landfill geometric considerations relevant for this report are shown as an inset of Figure III-4-E-3. This inset is a cross section with an exaggerated vertical scale. It shows that cut slopes will be excavated approximately 20 feet below present grade. They will be inclined at 3H: 1V (horizontal: vertical). Excavated soil will be used to construct approximately 5-foot-high perimeter berm and intercell berms (see Figure III-4-E-3). Both perimeter and intercell berms will be inclined at 3H: 1V.

Within individual cells, waste fill will be placed over the composite liner system. Cell base, side slopes, and intercell berms will be lined. The maximum waste fill height will be approximately 50 feet, with 25 feet protruding above the crest of perimeter berm. The final configuration of site development (thick black lines in Figure III-4-E-2) will be constructed with side slopes inclined at 15 degrees with respect to horizontal. Top deck will drain radiantly at an inclination of minimum 2 percent with respect to horizontal.

2.4 Lining Systems

The Type I refuse, which is also commonly referred to as (nonhazardous) municipal solid waste (MSW), will be contained by composite liner systems (lining systems). Three composite liner systems will be deployed, including (1) base liner, (2) side slope liner, and (3) landfill cover liner. They are schematically presented in Figure III-4-E-4. Additional information about the proposed lining systems is provided below:

- Base Liner – Top-to-bottom:
  - 24-inch-thick protective cover soil layer
  - Geocomposite drainage layer (double-sided)
  - 60-mil-thick high-density polyethylene (HDPE) geomembrane barrier (double textured)
  - Geosynthetic clay liner (GCL)
  - Prepared (compacted) subgrade
- Side-Slope Liner – Top-to-bottom:
  - 24-inch-thick protective cover soil layer
  - Geocomposite drainage layer (double-sided)

- 60-mil-thick HDPE geomembrane barrier (double textured)
- GCL
- Perimeter berm (top 5 feet; compacted to 90 percent of maximum dry density, as established by the Standard Proctor Compaction Test)

- Landfill Final Cover – Top-to-bottom:
  - 6-inch-thick vegetative (soil) layer
  - Geocomposite
  - 40-mil-thick Linear Low-Density Polyethylene (LLDPE) geomembrane barrier (double textured)
  - 18-inch-thick protective cover soil
  - Interim cover (landfill cover foundation layer) or waste

3. "Unstable Area" Evaluation

3.1 Foundation Soil Conditions

The site is generally underlain by alluvium. The alluvium is approximately 1,000 feet thick and is horizontally layered.

As shown in Figure III-4-E-3 and explained in Section 2.3, the proposed improvements will be created by excavation. Approximately 20 feet of in-situ soil column (in-situ unit weight of approximately 125 pounds per cubic foot [lb/ft^3]) will be replaced with MSW (as placed long-term unit weight of approximately 85 lb/ft^3; see Table 1). Given that the unit weight of MSW is approximately 68 percent of its soil counterpart, maximum fill thickness is 50 feet, and the maximum head of leachate within the WST Landfill will be limited to 1.0 foot, added weight on landfill liner is equivalent to approximately 9 feet of soil. This is a relatively small load that will be induced on the liner over an extended period of time. It will be evenly distributed on liner because waste will be placed in horizontal lifts, while alluvium is horizontally layered and relatively competent at depth.

GLA is not aware of evidence that the subsurface soils consist of highly compressible and/or collapsible materials (e.g., peats, very soft clays, cemented sands, and/or in-place uncontrolled

waste fill). Therefore, large and/or sudden settlements of which may impair the functionality of the composite liner system are not anticipated at this time.

Based on our review and interpretation of geological, hydrogeological, and geotechnical information noted above, we find no basis to categorize the site location as an "unstable area."

3.2 Geologic/Geomorphologic Features (Geohazards)

GLA considered the following potential geohazards:

- *Karst:* The site is not within a mapped karst zone as shown in the TPWD (2022) map.
- *Active Faulting:* The site is not underlain by a known active fault. According to the USGS (2022a) database, the nearest active fault to the site is located at a distance of approximately 67 miles. Therefore, faulting is not a project constraint.
- *Seismicity:* This site is in an area of low to moderate seismicity, which are commonly defined as "areas where design earthquake Moment Magnitude ranges between M 4.5 to M 6.5." Results of site-specific seismic hazard evaluation (see Section 4) indicate that desegregated M ranges between 4.9 and 5.7. The results of formal site-specific evaluation of seismic impacts (see Section 5) indicate that seismicity is not a project constraint.
- *Landsliding:* The site is relatively flat, with a slope of approximately 0.3 percent downward toward the east. Topography in the vicinity of the site is similar, suggesting that landsliding is not a significant project constraint.

Based on our review of the information noted above, we do not categorize the site location as an "unstable area" on the basis of potential geohazards.

3.3 Human-Made Features or Events

GLA considered the following hazards related to human-made features or events:

- *Subsidence:* Regional-scale subsidence may occur due to Permian Basin petroleum extraction and/or groundwater extraction. However, due to relatively broad areal distribution of such subsidence, significant differential settlement at the site is considered unlikely. Additionally, according to the USGS (2022b) map of active mine sites, the nearest mining activities are located approximately 8 miles northwest of the site; consequently, mine subsidence at the site is considered unlikely.

- *Induced Seismicity:* Resource extraction and waste disposal practices related to Permian Basin petroleum field development may increase the frequency of regional seismic events (e.g., Frohlich et al., 2020; Skoumal et al., 2020). However, the magnitudes of induced seismic events are typically lower than M 4.5; this magnitude is near the lower bound for areas of low to moderate seismicity (earthquake M range of 4.5 to 6.5) and well below the M range of 4.9 to 5.7 established as design criteria for this project (see Section 4). Consequently, induced seismicity is unlikely to pose a significant design constraint.

Based on our review of the information noted above, we do not categorize the site location as an "unstable area" based on human-made features or events.

3.4 Settlement-Induced Tension in Composite Liner System

As discussed in Section 3.1, settlement below landfill composite liner system is likely to be "small" (on the order of inches).

Even if relatively large settlement occurs within the WST Landfill subgrade (on the order of 1 to 2 feet in the center of the landfill relative to its perimeter), it is not likely that it will adversely impact its base and side slope composite liner systems. This is because (1) settlement will be relatively small (see Section 3.1), (2) settlement will be uniform (alluvium is horizontally layered, base of the excavation will be observed after grading and non-uniformities, if any observed, will be repaired and waste will be placed in horizontal lifts), and (3) groundwater is at least 20 feet below the base of excavation; hence, its oscillations are not likely to induce settlement in the profile.

Settlement of waste fill can be substantial. Typically, over an extended period, waste fills settle on the order of 30 percent. Thus, a 50-foot-thick MSW fill could settle up to 15 feet. This settlement is typically compensated for by placing additional waste fill up to approved grades. Differential settlement of waste fill can be mitigated by proper compaction of waste at placement and waste placement in horizontal lifts.

4. Seismic Impact Zone Evaluation

GLA used the USGS (2022a) web application to evaluate the peak ground acceleration (PGA) for the site. The PGA value was evaluated based on a 2 percent probability of exceedance in 50 years (i.e., approximately 2,475-year return period); this return period is more conservative than the return period of approximately 2,373 years specified in the TAC provisions.

In accordance with TAC provisions, which specify "lithified earth material" ground conditions, the National Earthquake Hazards Reduction Program (NEHRP) Site Class B/C boundary (i.e., shear wave velocity to 30 meters depth, $V_{s\text{-}30}$, of 760 meters per second [m/s]) was used for the evaluation.

The results of site-specific seismic hazard evaluation with USGS web tool (2018 National Seismic Hazard Model) are provided as Attachment III-4-E-1. The evaluated PGA ≈ 0.08 g. This value is below the threshold value of PGA ≈ 0.10 g specified in the TAC provisions as a threshold for performing seismic evaluations. The disaggregated M is 4.9 ("mode"). When all sources that contribute to the seismic hazard are concluded, including distant ones, M 5.7 is reported.

When performing pseudostatic slope stability evaluations, seismic loading is applied as a seismic coefficient (k_s). Seismic coefficient is a dimensionless constant. It is defined as a factor of proportionality of the weight of the sliding mass applied in horizontal direction. In areas of low to moderate seismicity, k_s is typically evaluated as PGA/2. Thus, for this site, site-specific k_s was evaluated as k_s = 0.04. However, to provide conservative basis for design, GLA adopted and employed a higher value of k_s = 0.05. As noted and discussed in Richardson et al. (1995), k_s = 0.05 is the minimal value recommended for seismic slope stability evaluations in the United States.

5. Stability Evaluations

5.1 General

At landfill sites, there are four types of slopes that may warrant a formal stability evaluation: (1) cut slopes, (2) landfill final cover slopes, (3) waste fill slopes – interim configuration, and (4) waste fill slopes – final configuration.

By inspection, GLA finds that a formal stability evaluation of cut slopes is not warranted[2]. This is because (1) groundwater at the site is "deep" (at least 23 feet below the bottom of the excavation; see Section 2.2), (2) there is no evidence that the subsurface soils consist of highly compressible and/or collapsible materials (e.g., peats, very soft clays, cemented sands, and/or in-

[2] See recommendation for in-grading monitoring of cut slopes, as outlined in the Recommendations section of this report.

place uncontrolled waste fill; see Section 3.1), and (3) cut slopes are relatively "short" (up to 20 feet high) and "flat" (inclined at 3H: 1V; see Section 2.3).

GLA further finds that a formal stability evaluation of landfill final cover slopes is not warranted. This is because (1) final cover slopes will be constructed relatively flat (15 percent slopes/ inclination with respect to horizontal; see Section 2.3) and (2) final cover slopes will be buttressed by a 5-foot-high perimeter berm that will be constructed as properly keyed engineered fill (see Section 2.3).

By inspection, especially if textured HDPE is used along landfill base and side slopes, GLA finds that formal stability evaluation of waste fill slopes is also not warranted. However, to provide a conservative basis for design, a formal stability evaluation of waste fill slopes (static and pseudostatic) was performed, as explained in the following section.

5.2 Waste Fill Stability Evaluation

5.2.1 Representative Cross Sections

GLA developed two representative cross sections through the proposed WST landfill. They are indicated in plan view in Figure III-4-E-5 and are shown as cross sections in Figure III-4-E-6. Cross section A-A' is longitudinal. Cross Section B-B' is transversal. Both sections were developed through highest and steepest slopes of the WST Landfill. Cross section A-A' is developed just north of the longitudinal interior berm to engage the cell base composite liner systems. Figure III-4-E-5 further reveals that this cross section is also conservatively selected to pass where excavated side slopes are the shortest.

5.2.2 Material Properties

Material properties used for slope stability analysis are listed in Table III-4-E-1.

Table III-4-E-1. Material Properties for Static and Pseudostatic Slope Stability Analyses

Material	Unit Weight (pcf)	Friction Angle (degrees)	Cohesion (Adhesion) (psf)
Municipal Solid Waste [a]	85	31	900
Composite Liner System [b]	90	8 [c]	0

[a] Based on results of direct shear testing of MSW reported by Kavazanjian et al. (2013).

[b] Interface conditions (e.g., smooth or textured geomembrane, etc.) and shear strength test results were not available at the time of this evaluation. To provide a *conservative* basis for design, the controlling interface was assumed to be *smooth* HDPE against nonwoven geotextile (both for side slope and base composite liner systems).

[c] Value typical for smooth HDPE/geotextile interface; adhesion of this interface is conservatively neglected.

pcf = Pounds per cubic foot

psf = Pounds per square foot

Unit weight and shear strength parameters assigned to MSW are, for this project, generic. They were developed by large scale-testing of representative samples of MSW recovered from the OII landfill in southern California. Detailed information is presented in Kavazanjian et al. (2013).

Unit weight of composite liner system is included in Table III-4-E-1 for completeness (it does not affect the results of slope stability evaluations). Shear strength parameters of composite liner system were conservatively selected to correspond to the interface between smooth HDPE and geotextile (see further explanation in Section 5.2.7).

5.2.3 Seismic Loading

As noted in Section 4, the site is in an area of low to moderate seismicity (i.e., in an area where the design earthquake magnitudes range from M 4.5 to 6.5). Pseudostatic calculations documented herein (see Section 5.2.6) used a seismic coefficient of k_s = 0.05, which exceeds a site-specific value of k_s = 0.04 by 25 percent (see Section 4 for evaluation of k_s).

5.2.4 Method of Analysis

GLA evaluated the stability of the proposed WST Landfill waste fill slopes using a two-dimensional (2D) limit equilibrium-based approach. In particular, GLA used the Morgenstern and Price (1965) method, as implemented in the computer program SLOPE/W (www.seequent.com). This method was used for both static and pseudostatic slope stability evaluations.

5.2.5 Stability Criteria

Stability criteria used for the static and pseudostatic stability evaluations of the WST Landfill waste fill are as follows:

- *Static:* calculated FS_{static} of 1.5 or more
- *Pseudostatic:* calculated $FS_{pseudostatic}$ of 1.1 or more (with k_s = 0.05)

FS_{static} and $FS_{pseudostatic}$ denote static and pseudostatic factors of safety, respectively.

5.2.6 Results

Slope stability analysis computer program outputs (cross sections with indicated shapes of critical failure surfaces) are shown in Figures III-4-E-6A through 6H. The corresponding FS_{static} and $FS_{pseudostatic}$ are summarized in Table III-4-E-2. For a range of calculated values, as related to critical failure surfaces, refer to Figures III-4-E-6A through 6H.

Table III-4-E-2. Results of Static and Pseudostatic Slope Stability Analysis of WST Landfill Waste Fill

Cross Section	Stability Criteria	Calculated Values	Stability Criteria Met?
A-A′	$FS_{static} \geq 1.5$ $FS_{pseudostatic} \geq 1.1$	FS_{static} = 2.1 and 2.3 $FS_{pseudostatic}$ = 1.4 and 1.6	Yes
B-B′	$FS_{static} \geq 1.5$ $FS_{pseudostatic} \geq 1.1$	FS_{static} = 2.1 and 2.2 $FS_{pseudostatic}$ = 1.5 and 1.6	Yes

Note: See Figure III-4-E-5 for locations of cross sections. See Figure III-4-E-6 for critical failure surfaces.

Information presented in Table III-4-E-2 and Figures III-4-E-6A through 6H indicates that static and pseudostatic stability criteria established for this project are exceeded by 40 percent (static analysis) and 30 percent (pseudostatic analysis).

5.2.7 Discussion

The stability evaluations presented herein are conservative. This is because (1) interface shear strength parameters assigned to the base and side slope composite liner systems are conservative and (2) pseudostatic analysis is performed with seismic coefficient of k_s = 0.05. The interface shear strength parameters correspond to a smooth HDPE/geotextile interface, while

textured HDPE is recommended and will be used in final design and for construction. The seismic coefficient exceeds the site-specific value of 0.035 by 25 percent (see Section 4).

6. Conclusions and Recommendations

6.1 Conclusions

Based on GLA's review of information from readily available technical literature and interpretation of site-specific geologic, hydrogeologic, and geotechnical information, we do not find evidence that the project site is within an "unstable area" and/or "seismic impact zone" as defined by TAC provisions. Consequently, we conclude that special engineering measures for "unstable area" and/or "seismic impact zone" mitigation are not required for development of this site.

Groundwater at this site is "deep" (at least 23 feet below the bottom of the excavation; see Section 2.2). Therefore, its impacts on engineered site improvements can be eliminated from engineering considerations documented in this report.

By inspection, GLA finds that a formal stability evaluation of cut slopes is not warranted. This is because (1) groundwater at the site is "deep" (at least 23 feet below the bottom of the excavation; see Section 2.2), (2) there is no evidence that the subsurface soils consist of highly compressible and/or collapsible materials (e.g., peats, very soft clays, cemented sands, and/or in-place uncontrolled waste fill; see Section 3.1), and (3) cut slopes are relatively "short" (up to 20 feet high) and "flat" (inclined at 3H: 1V; see Section 2.3).

GLA further finds that a formal stability evaluation of landfill final cover slopes is not warranted. This is because (1) final cover slopes will be constructed relatively flat (15 percent slopes/ inclination with respect to horizontal; see Section 2.3) and (2) final cover slopes will be buttressed by a 5-foot-high perimeter berm that will be constructed as properly keyed engineered fill (see Section 2.3).

The results of the permit-level limit equilibrium static and seismic stability evaluations documented herein indicate that the proposed excavation and waste fill slopes meet the design basis stability criteria established for the project. In particular, calculated static factors of safety are higher than 1.5, and calculated pseudostatic factors of safety are higher than 1.1.

6.2 Recommendations

Recommendations provided here are for design development, not for construction. Additional construction recommendations may be identified at a later stage in the design process. They include the following:

- The proposed WST Landfill should be lined with double-textured HDPE geomembranes (base and side slopes). This will enhance waste fill stability, including waste fill stability during operations. A single layer of geocomposite should suffice on side slopes.
- The proposed WST Landfill should be lined with needle-punched GCL (recommend Bentomat DN 9 or equivalent). GLA notes that, along landfill base (and possibly along side slopes), GCL will be placed directly over subgrade. Key component of GCL (bentonite) is hygroscopic, and therefore may hydrate if placed directly over subgrade. Shear strength of hydrated, stitched GCL may be as low as 6 degrees (i.e., below 8 degrees assumed herein).
- The proposed liner materials, including geomembrane type, GCL type, geocomposite type, should be identified in the plans. The same information should be detailed in technical specifications, along with conformance testing requirements.
- Upon excavation, licensed geologist should observe graded slopes. Should deviation from conditions anticipated herein be observed, GLA should be notified immediately.
- Interface testing should be performed during construction of individual cells to confirm assumed interface friction angle of 8 degrees (residual value).
- Engineered fill berms (intercell and perimeter, as applicable) should be keyed into competent subgrade materials.
- We recommend that during the design stage of the project, consideration be given to evaluation of short-term and long-term settlement potential of waste fill. The results of settlement evaluation should be interpreted in terms of differential settlement to demonstrate that surface drainage features will not be operationally compromised (e.g., by grade reversal and/or will not promote positive drainage).
- The final cover section presented and evaluated herein is tentative. This tentative design assumes the following: (1) 0.5-foot-thick vegetative soil cover over (2) 1.5-foot-thick soil layer over (3) a double-sided textured LLDPE geomembrane.

- It is recommended that GLA be provided the opportunity for a general review of any final construction documents prepared by other consultants or contractors in order that our recommendations may be properly interpreted and implemented.

7. Limitations and Closure

The assumptions presented in this report are based upon our experience at the site, past field investigations performed by others, a review of previous reports, and a review of other literature. The assumptions and methods employed are consistent with our understanding of the current state-of-practice in Texas with regard to preliminary, permit-level evaluations and the understanding that further, more focused evaluations will be completed as part of phase and cell specific designs. Notwithstanding this, if the project scope of work changes from that described herein, our analyses should be reviewed and modified, if necessary.

This report was prepared in accordance with generally accepted geoenvironmental engineering practices applicable at the time this report was prepared and for the project location. GLA makes no other warranties, either expressed or implied, as to the professional advice provided under the terms of current agreement with WST.

GLA recommendations consist of professional opinions and conclusions, based on the scope of services outlined at the beginning of this report. GLA assumed that adequate follow-up engineering, field investigations, and construction quality assurance will be provided, as necessary, to verify that the assumptions used in the design are valid and that WST Landfill is constructed properly.



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Senior Engineer

Neven Matasovic, PhD, BC.GE
Principal Engineer

Date signed: March 23, 2026

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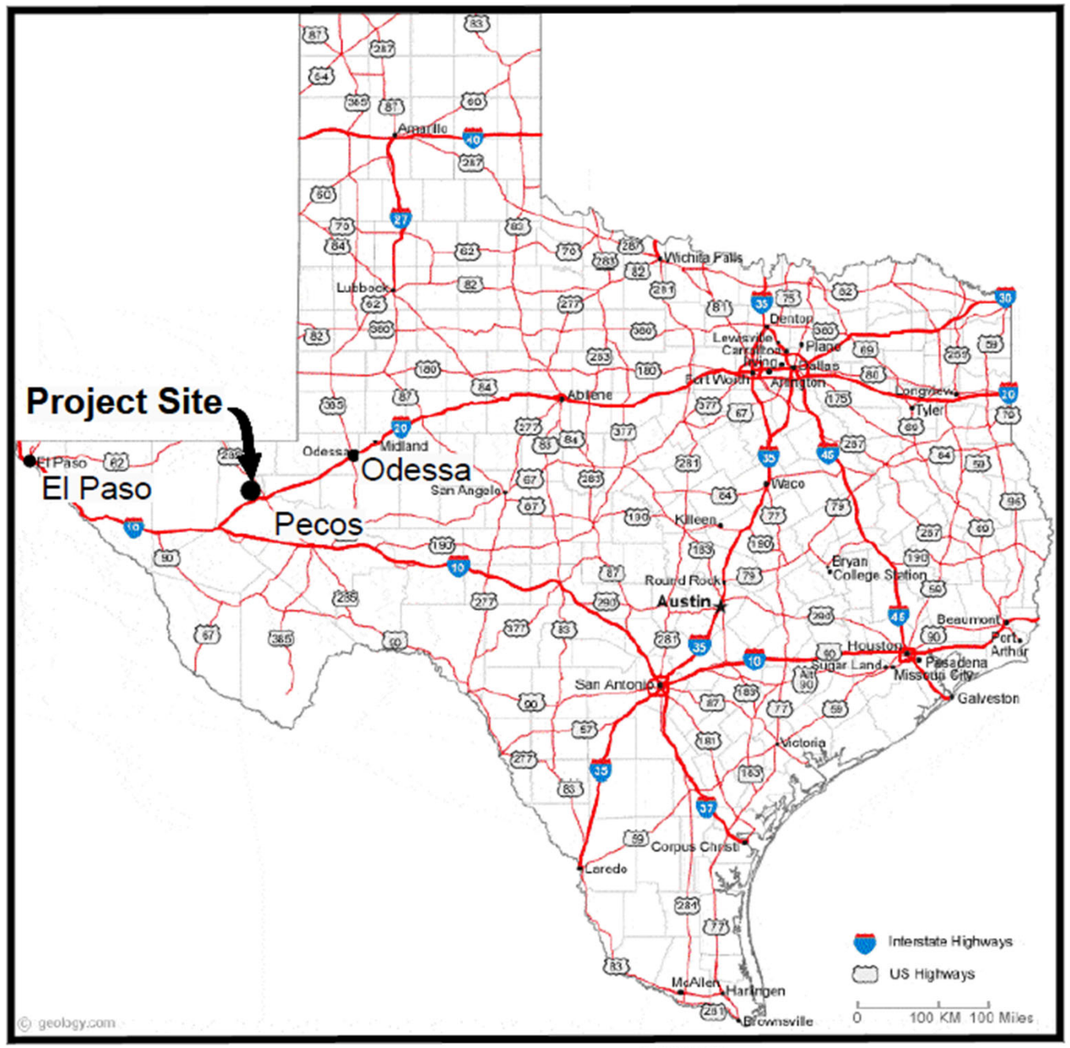
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Figures

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VICINITY MAP

NTS

NORTH



SITE MAP

NTS

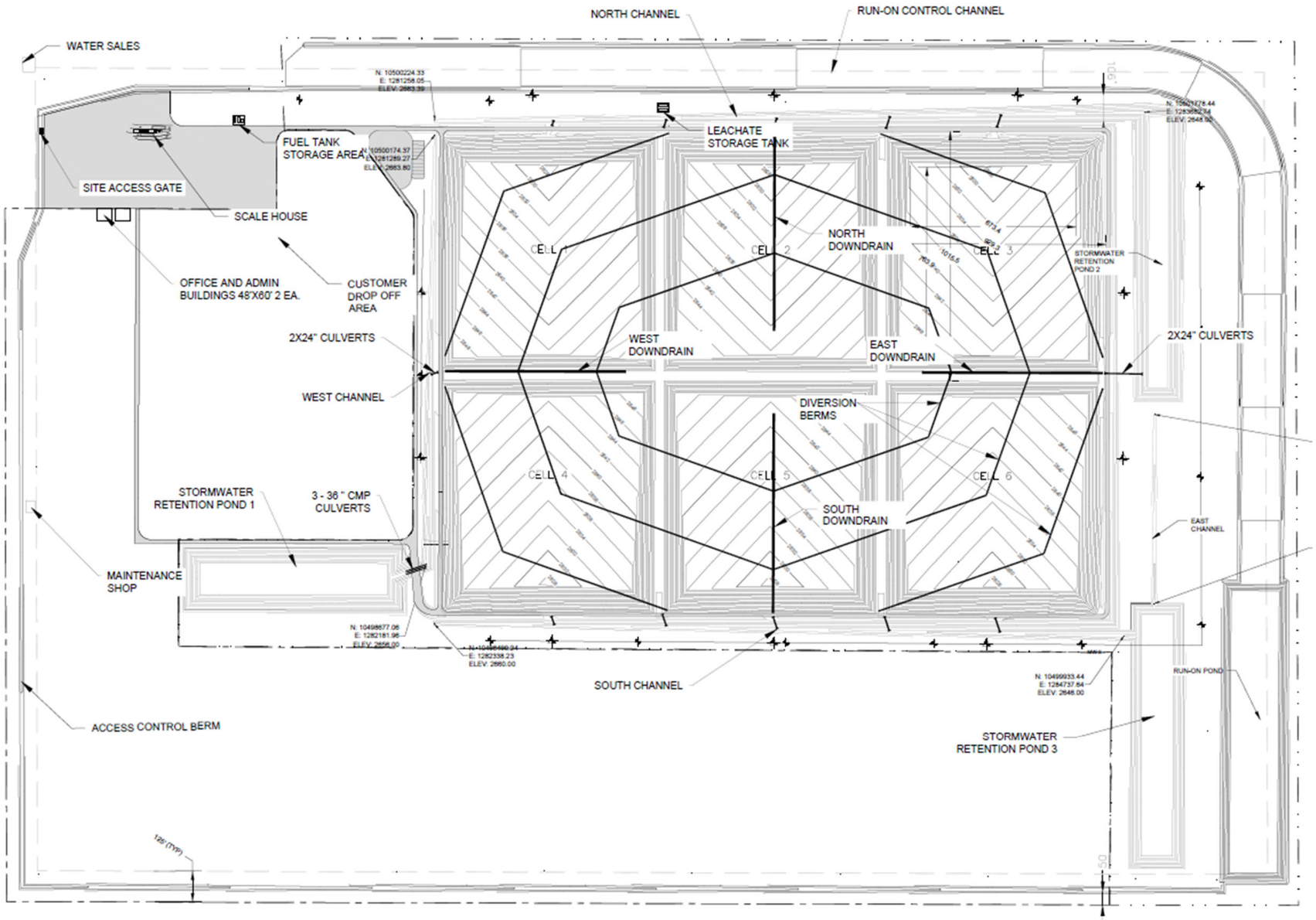
NORTH

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Site Location and Vicinity Maps
WST Landfill
Reeves County, Texas

Date:	February 2026	Figure No.	III-4-E-1
Project No.:	DBB20.1166.00		



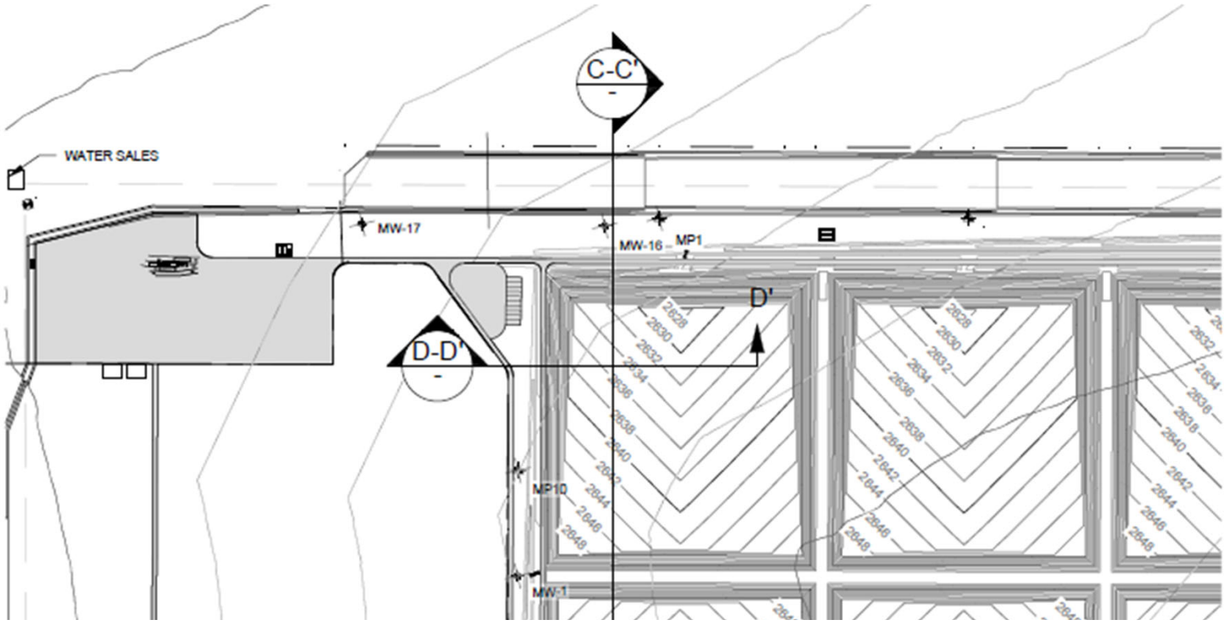
Note: Thick black lines approximate landfill cover contours

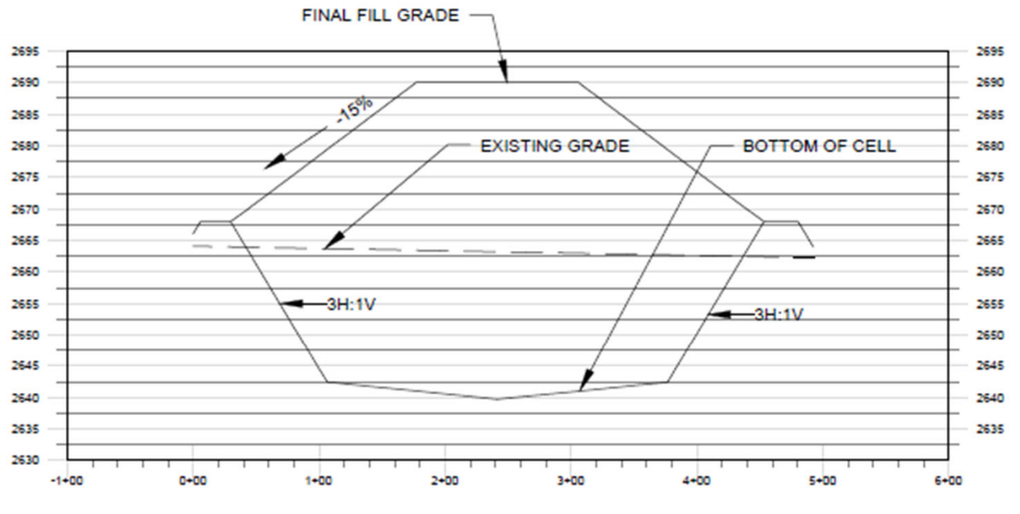
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Proposed Site Layout – Base Grades and Final Cover
WST Landfill
Reeves County, Texas

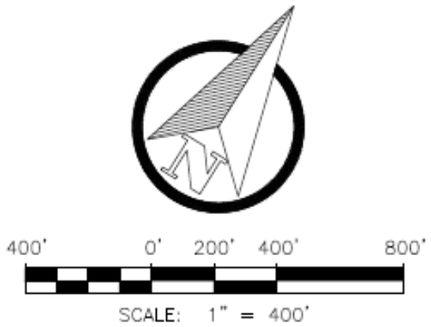
Date:	February 2026	Figure No.	III-4-E-2
Project No.:	DBB20.1166.00		





SECTION D-D'
HORIZONTAL SCALE = 1" = 100'
VERTICAL SCALE = 1" = 10'

Note: Vertical Scale is Exaggerated

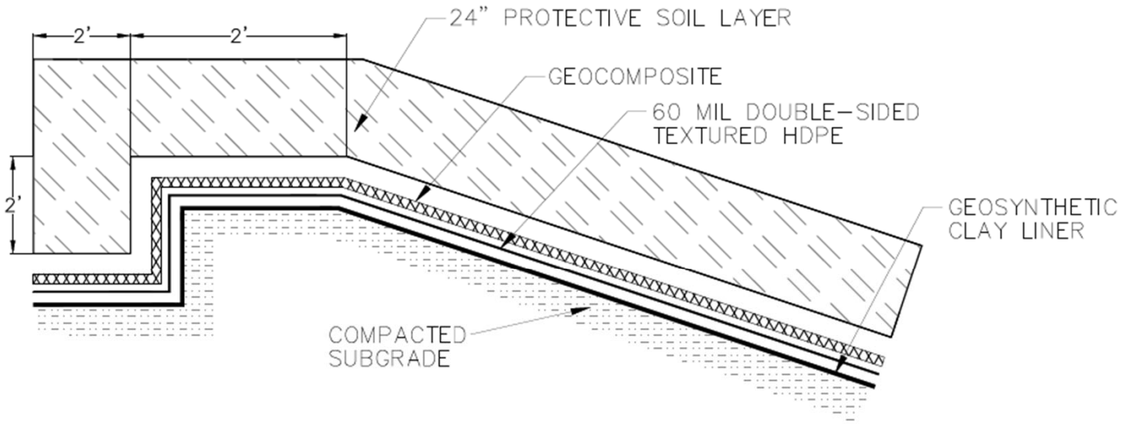




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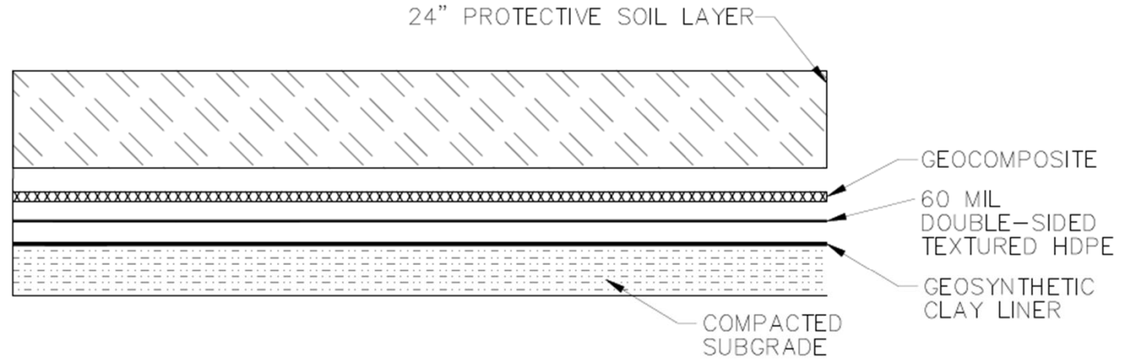
Proposed Phase Layout (Partial) and Generic Cross Section
WST Landfill
Reeves County, Texas

Date:	February 2026	Figure No.	III-4-E-3
Project No.:	DBB20.1166.00		



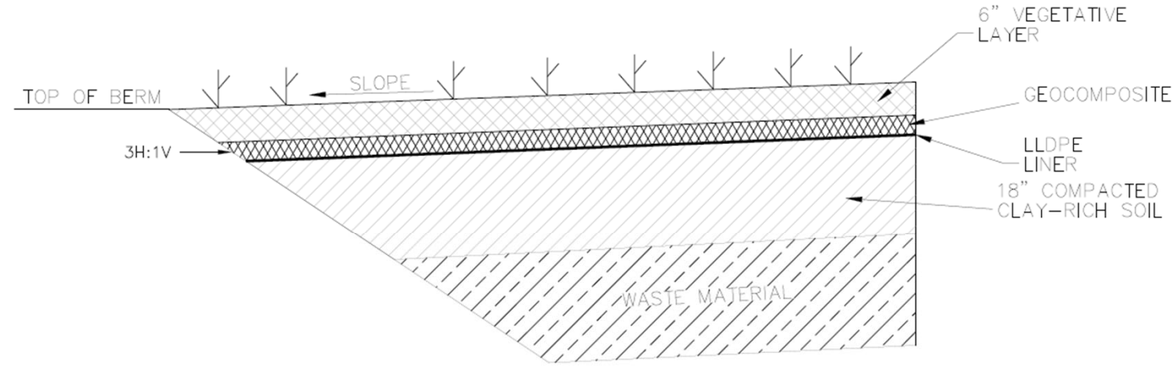
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SCALE: NTS



BOTTOM AND SIDESLOPE LINER SYSTEM 3 / -

SCALE: NTS



FINAL COVER SECTION DETAIL 5 / -

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NTS = Not to Scale

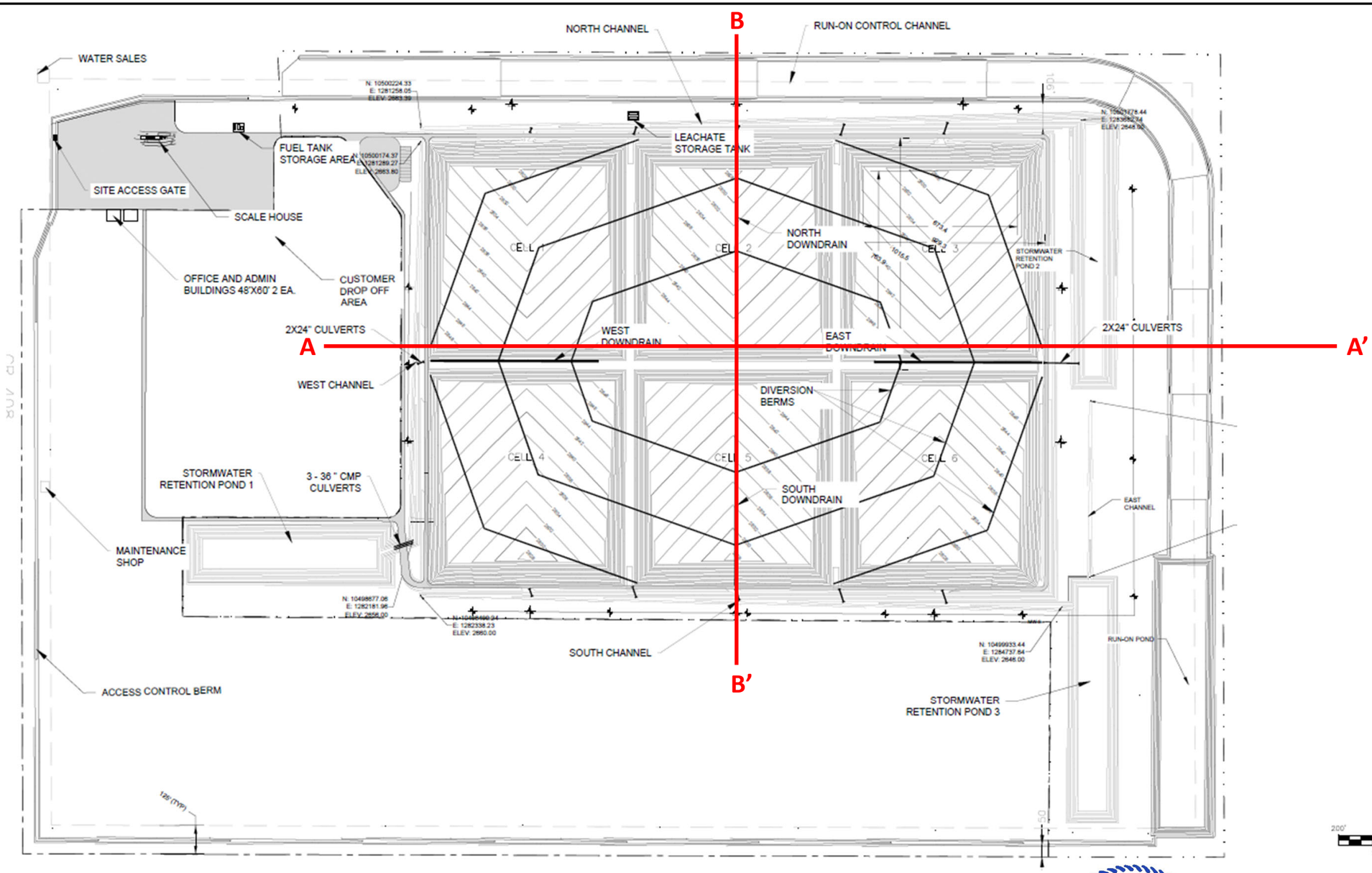
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Cross Sections through Landfill Composite Liner and Cover Systems
WST Landfill
Reeves County, Texas

Date:	February 2026	Figure No.	III-4-E-4
Project No.:	DBB20.1166.00		



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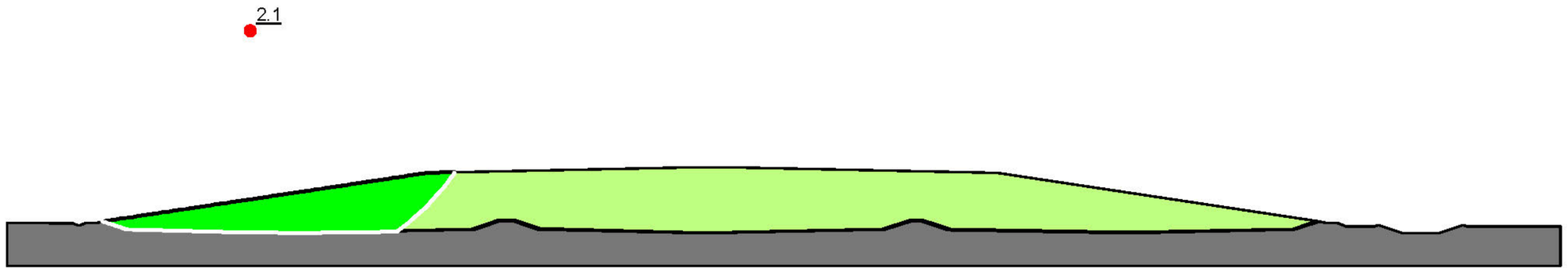
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Stability Evaluations - Representative Cross Sections
WST Landfill
Reeves County, Texas

Date:	February 2026	Figure No.	III-4-E-5
Project No.:	DBB20.1166.00		

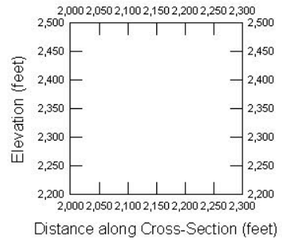
Static





Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Phi-B (°)
	Bedrock (Impenetrable)	Bedrock (Impenetrable)				
	Refuse Fill (31 degrees / 900 psf)	Mohr-Coulomb	85	900	31	0
	Side-Slope Liner (8 degrees)	Mohr-Coulomb	90	0	8	0

File Name: Section B-B 2025-12-30 AFW.gsz
Last Solved Date: 12/30/2025
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Kind: SLOPE/W
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Search Method: Grid and Radius
Horz Seismic Coef.:
Factor of Safety: 2.1



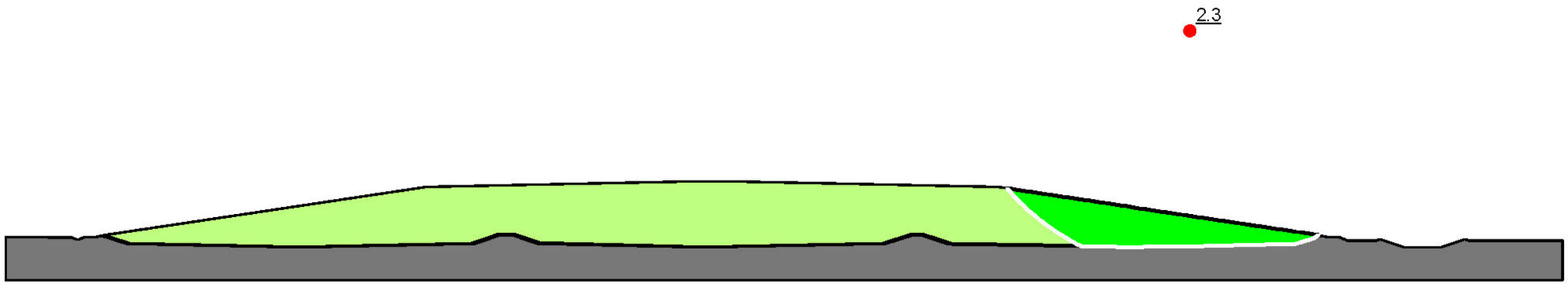
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Representative Cross Sections and Results of Stability Evaluations
WST Landfill
Reeves County, Texas

Date:	February 2026	Figure No.	III-4-E-6A
Project No.:	DBB20.1166.00		

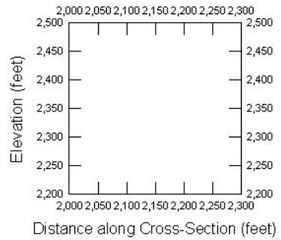
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Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Phi-B (°)
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	Refuse Fill (31 degrees / 900 psf)	Mohr-Coulomb	85	900	31	0
	Side-Slope Liner (8 degrees)	Mohr-Coulomb	90	0	8	0

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Search Method: Grid and Radius
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Factor of Safety: 2.3

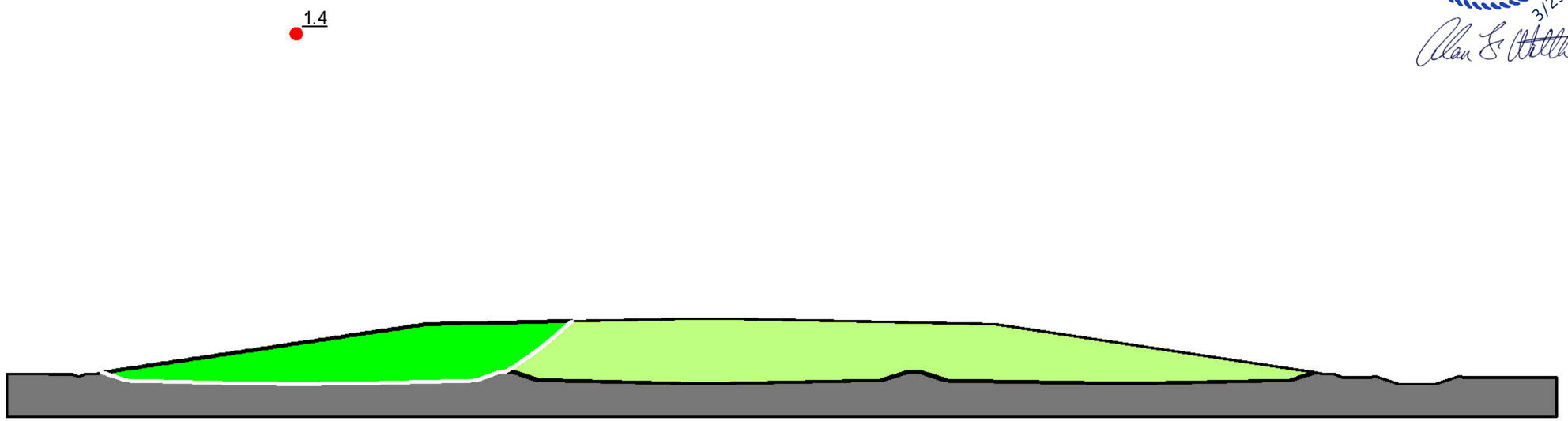


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Representative Cross Sections and Results of Stability Evaluations
WST Landfill
Reeves County, Texas

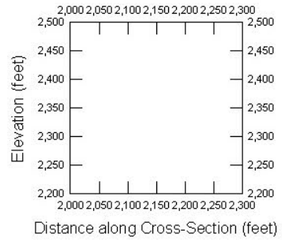
Date:	February 2026	Figure No.	III-4-E-6B
Project No.:	DBB20.1166.00		

Pseudostatic (k_s = 0.05)



Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Phi-B (°)
	Bedrock (Impenetrable)	Bedrock (Impenetrable)				
	Refuse Fill (31 degrees / 900 psf)	Mohr-Coulomb	85	900	31	0
	Side-Slope Liner (8 degrees)	Mohr-Coulomb	90	0	8	0

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Search Method: Grid and Radius
Horz Seismic Coef.: 0.05
Factor of Safety: 1.4



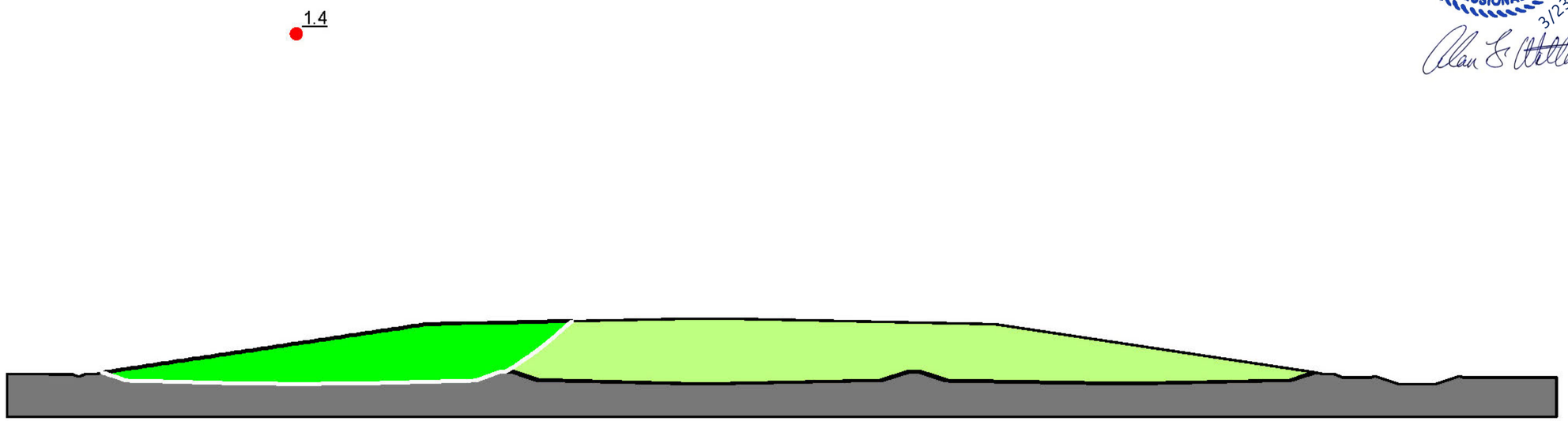
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Representative Cross Sections and Results of Stability Evaluations
WST Landfill
Reeves County, Texas

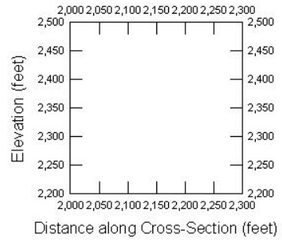
Date:	February 2026	Figure No.	III-4-E-6C
Project No.:	DBB20.1166.00		

Pseudostatic (k_s = 0.05)



Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Phi-B (°)
	Bedrock (Impenetrable)	Bedrock (Impenetrable)				
	Refuse Fill (31 degrees / 900 psf)	Mohr-Coulomb	85	900	31	0
	Side-Slope Liner (8 degrees)	Mohr-Coulomb	90	0	8	0

File Name: Section B-B 2025-12-30 AFW.gsz
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Factor of Safety: 1.4



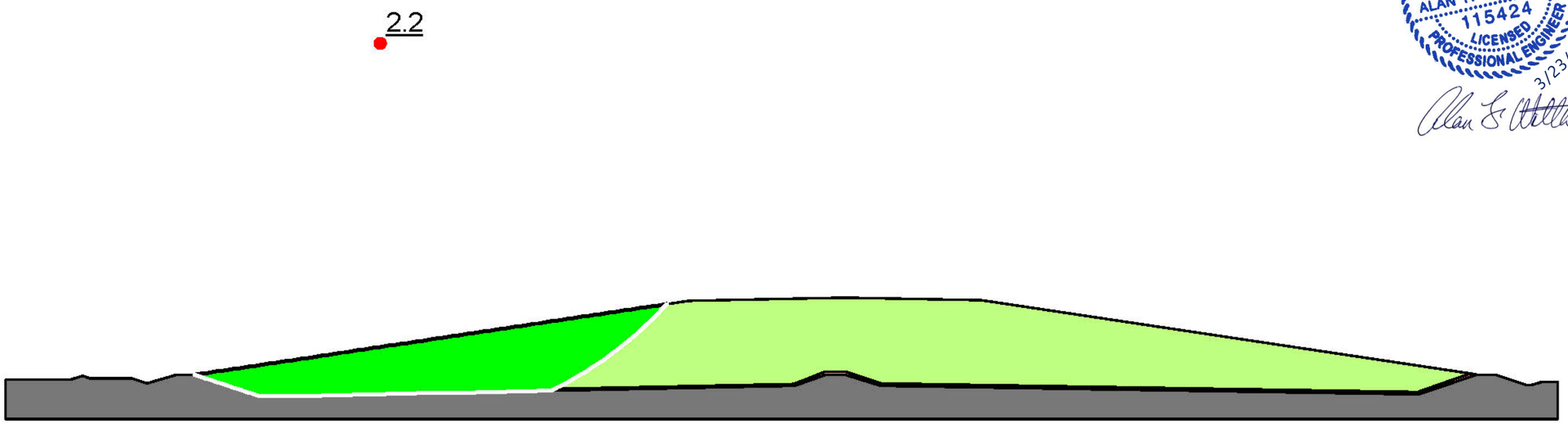
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Representative Cross Sections and Results of Stability Evaluations
WST Landfill
Reeves County, Texas

Date:	February 2026	Figure No.	III-4-E-6D
Project No.:	DBB20.1166.00		

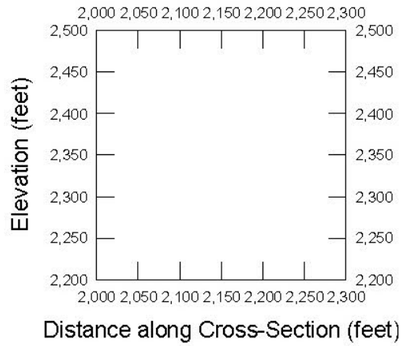
Static



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3/23/2026

Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Phi-B (°)
	Bedrock (Impenetrable)	Bedrock (Impenetrable)				
	Refuse Fill (31 degrees / 900 psf)	Mohr-Coulomb	85	900	31	0
	Side-Slope Liner (8 degrees)	Mohr-Coulomb	90	0	8	0

File Name: Section C-C 2025-12-30 AFW.gsz
Last Solved Date: 12/30/2025
Name: 1a - MSW Fill Slope M-P G-R Static
Kind: SLOPE/W
Method: Morgenstern-Price
Search Method: Grid and Radius
Horz Seismic Coef.:
Factor of Safety: 2.2



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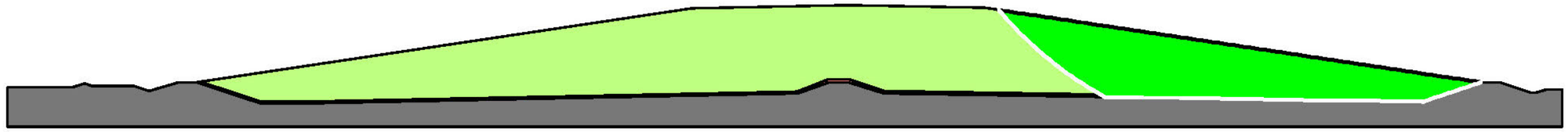
Representative Cross Sections and Results of Stability Evaluations
WST Landfill
Reeves County, Texas

Date:	February 2026	Figure No.	III-4-E-6E
Project No.:	DBB20.1166.00		

Static

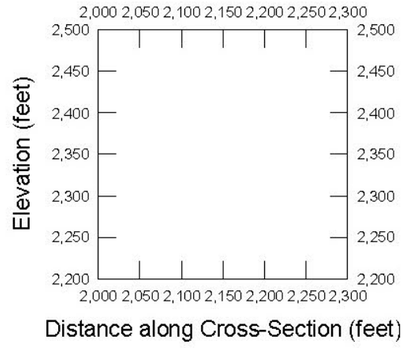
2.1

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3/23/2026



Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Phi-B (°)
	Bedrock (Impenetrable)	Bedrock (Impenetrable)				
	Refuse Fill (31 degrees / 900 psf)	Mohr-Coulomb	85	900	31	0
	Side-Slope Liner (8 degrees)	Mohr-Coulomb	90	0	8	0

File Name: Section C-C 2025-12-30 AFW.gsz
Last Solved Date: 12/30/2025
Name: 1b - MSW Fill Slope M-P G-R Static
Kind: SLOPE/W
Method: Morgenstern-Price
Search Method: Grid and Radius
Horz Seismic Coef.:
Factor of Safety: 2.1

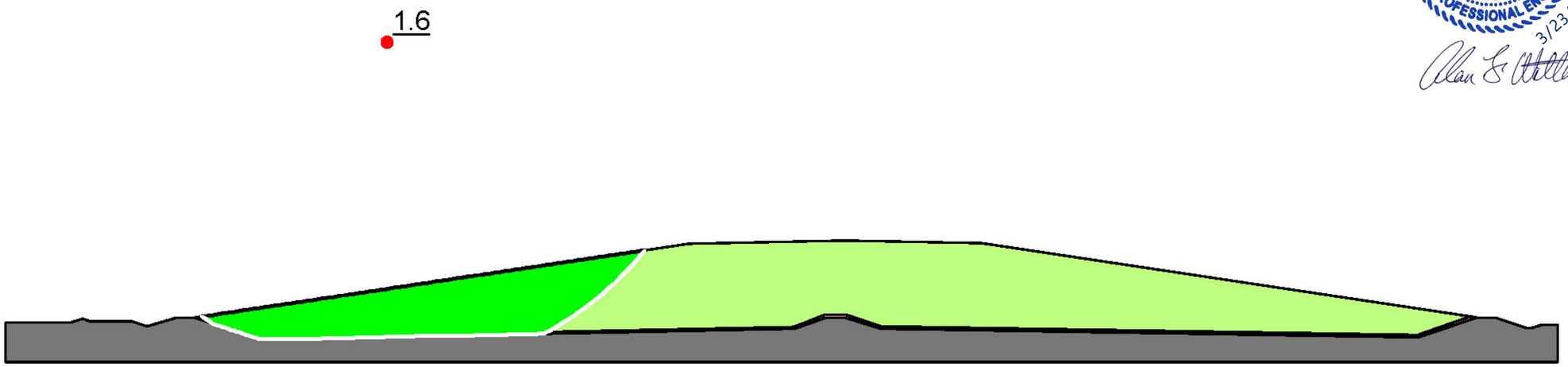


Geo-Logic ASSOCIATES

Representative Cross Sections and Results of Stability Evaluations
WST Landfill
Reeves County, Texas

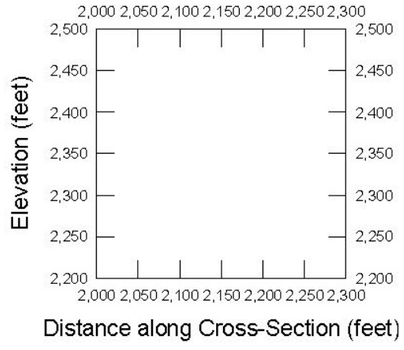
Date:	February 2026	Figure No.	III-4-E-6F
Project No.:	DBB20.1166.00		

Pseudostatic (k_s = 0.05)



Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Phi-B (°)
	Bedrock (Impenetrable)	Bedrock (Impenetrable)				
	Refuse Fill (31 degrees / 900 psf)	Mohr-Coulomb	85	900	31	0
	Side-Slope Liner (8 degrees)	Mohr-Coulomb	90	0	8	0

File Name: Section C-C 2025-12-30 AFW.gsz
Last Solved Date: 12/30/2025
Name: 2a - MSW Fill Slope M-P G-R PS k=0.05
Kind: SLOPE/W
Method: Morgenstern-Price
Search Method: Grid and Radius
Horz Seismic Coef.: 0.05
Factor of Safety: 1.6



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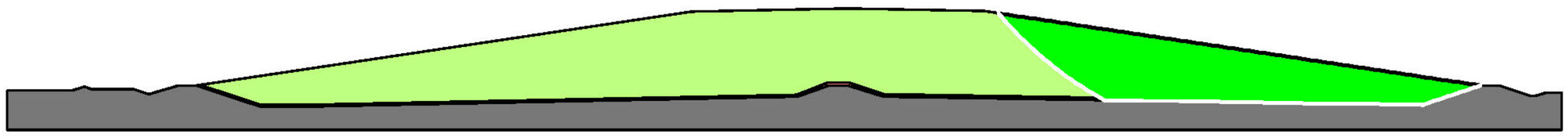
Representative Cross Sections and Results of Stability Evaluations
WST Landfill
Reeves County, Texas

Date:	February 2026	Figure No.	III-4-E-6G
Project No.:	DBB20.1166.00		

Pseudostatic (k_s = 0.05)

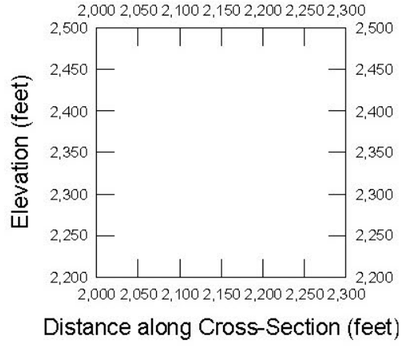
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Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Phi-B (°)
	Bedrock (Impenetrable)	Bedrock (Impenetrable)				
	Refuse Fill (31 degrees / 900 psf)	Mohr-Coulomb	85	900	31	0
	Side-Slope Liner (8 degrees)	Mohr-Coulomb	90	0	8	0

File Name: Section C-C 2025-12-30 AFW.gsz
Last Solved Date: 12/30/2025
Name: 2b - MSW Fill Slope M-P G-R PS k=0.05
Kind: SLOPE/W
Method: Morgenstern-Price
Search Method: Grid and Radius
Horz Seismic Coef.: 0.05
Factor of Safety: 1.5



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Representative Cross Sections and Results of Stability Evaluations
WST Landfill
Reeves County, Texas

Date:	February 2026	Figure No.	III-4-E-6H
Project No.:	DBB20.1166.00		

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Attachment III-4-E1

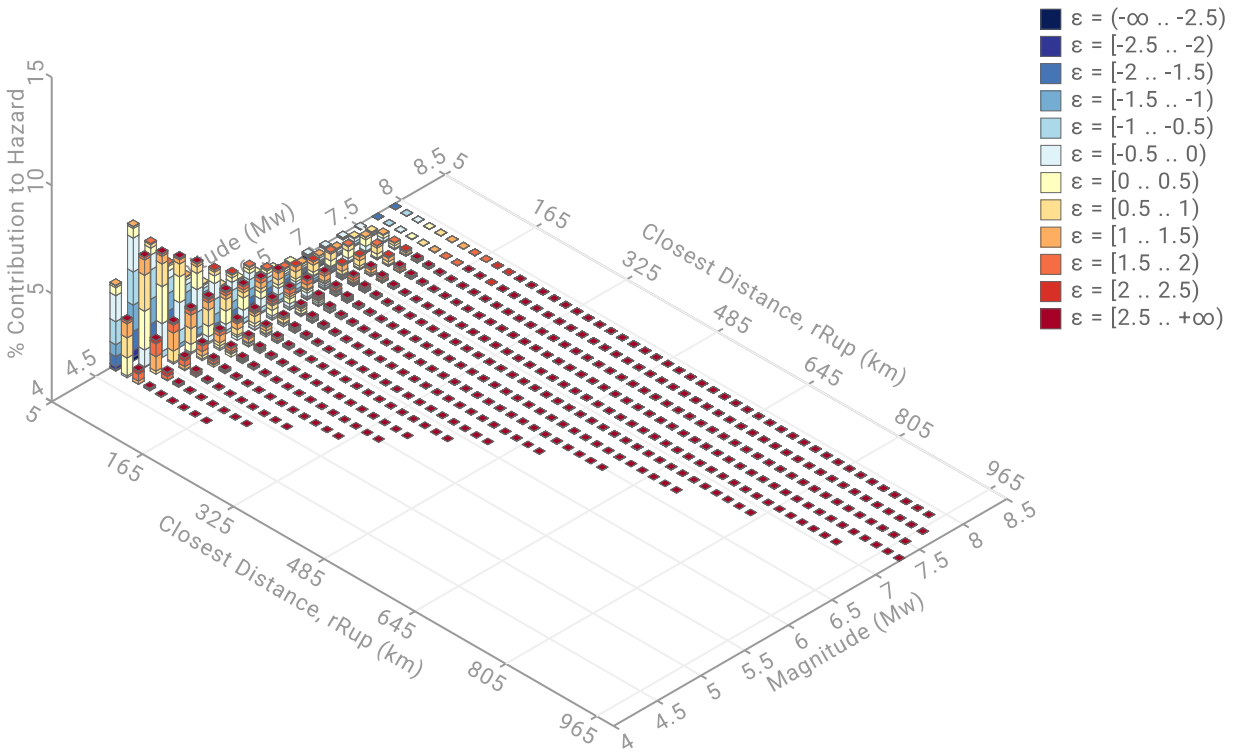
Seismic Hazard Analysis

DBS&A
a Geo-Logic Company

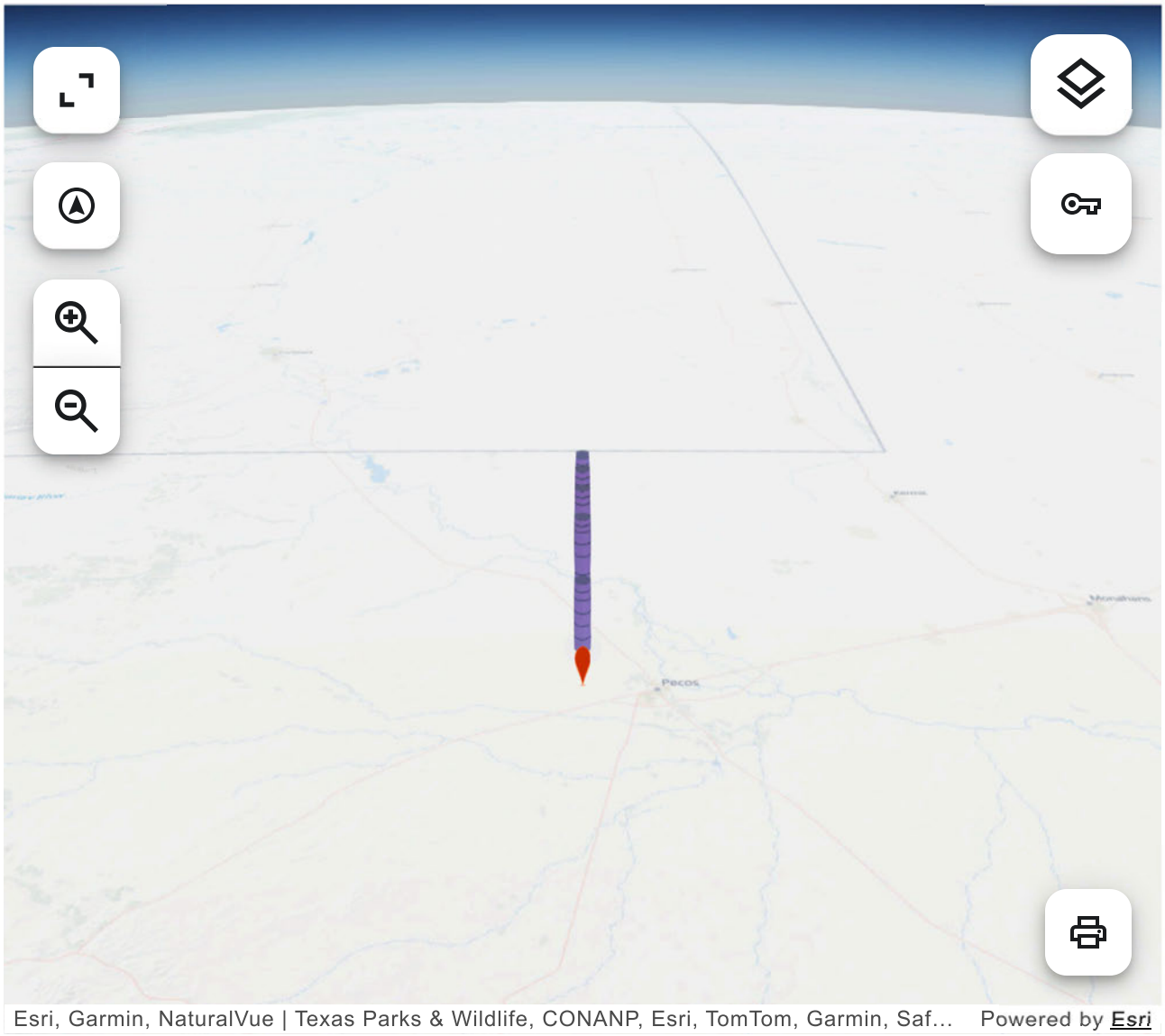
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Disaggregation Report

Disaggregation



Geographical Disaggregation



Parameter Summary

Model: NSHM Conterminous U.S. 2018

Latitude: 31.4324 °

Longitude: -103.5854 °

Site Class: BC (Vs30 760)

Intensity Measure Type: PGA

Return Period: 2475 (2% in 50)

Component: Total

Disaggregation Summary: Total

Disaggregation targets

Return period : 2475 yrs

Exceedance rate : 4.040e-4 yr^{-1}

PGA ground motion : 8.072e-2 g

Recovered targets

Return period : 2474.6201 yrs

Exceedance rate : 4.041e-4 yr^{-1}

Totals

Binned : 100 %

Residual : 0 %

Trace : 2.1 %

Mean (over all sources)

m : 5.68

r : 43.57 km

ε_0 : -0.04 σ

Mode (largest m-r bin)

m : 4.9

r : 13.32 km

ε_0 : -0.91 σ

Contribution : 6.22 %

Mode (largest m-r-ε_0 bin)

m : 4.9

r : 26.02 km

ε_0 : 0.28 σ

Contribution : 1.79 %

Discretization

r : min = 0.0, max = 1000.0, Δ = 20.0 km

m : min = 4.4, max = 9.4, Δ = 0.2

ε : min = -3.0, max = 3.0, Δ = 0.5 σ

Epsilon keys

ε0 : [-∞ .. -2.5)

ε1 : [-2.5 .. -2.0)

ε2 : [-2.0 .. -1.5)

ε3 : [-1.5 .. -1.0)

ε4 : [-1.0 .. -0.5)

ε5 : [-0.5 .. 0.0)

ε6 : [0.0 .. 0.5)

ε7 : [0.5 .. 1.0)

ε8 : [1.0 .. 1.5)

ε9 : [1.5 .. 2.0)

ε10 : [2.0 .. 2.5)

ε11 : [2.5 .. +∞]

Disaggregation Contributions: Total

Source Set ↳ Source	Type	r	m	ε_0	lon	lat	az	%
SSCn Craton [1,9,10] (fixed) (opt)	Grid							29.45
PointSourceFinite: -103.585, 31.635		22.72	5.27	-0.45	103.585°W	31.635°N	0.00	3.38
PointSourceFinite: -103.585, 31.590		17.95	5.21	-0.80	103.585°W	31.590°N	0.00	3.35
PointSourceFinite: -103.585, 31.545		13.29	5.17	-1.27	103.585°W	31.545°N	0.00	3.07
PointSourceFinite: -103.585, 31.680		27.51	5.33	-0.17	103.585°W	31.680°N	0.00	2.89
PointSourceFinite: -103.585, 31.725		32.30	5.40	0.03	103.585°W	31.725°N	0.00	2.63
PointSourceFinite: -103.585, 31.500		8.91	5.14	-1.83	103.585°W	31.500°N	0.00	2.12
PointSourceFinite: -103.585, 31.815		41.86	5.54	0.31	103.585°W	31.815°N	0.00	2.03
PointSourceFinite: -103.585, 31.860		46.63	5.61	0.41	103.585°W	31.860°N	0.00	1.61
PointSourceFinite: -103.585, 31.770		37.09	5.47	0.19	103.585°W	31.770°N	0.00	1.6
USGS Craton [1,3,4] (fixed) (opt)	Grid							29.44
PointSourceFinite: -103.585, 31.635		22.72	5.27	-0.45	103.585°W	31.635°N	0.00	3.38
PointSourceFinite: -103.585, 31.590		17.95	5.21	-0.80	103.585°W	31.590°N	0.00	3.35
PointSourceFinite: -103.585, 31.545		13.29	5.17	-1.27	103.585°W	31.545°N	0.00	3.07
PointSourceFinite: -103.585, 31.680		27.51	5.33	-0.17	103.585°W	31.680°N	0.00	2.89
PointSourceFinite: -103.585, 31.725		32.30	5.40	0.03	103.585°W	31.725°N	0.00	2.63
PointSourceFinite: -103.585, 31.500		8.91	5.14	-1.83	103.585°W	31.500°N	0.00	2.12
PointSourceFinite: -103.585, 31.815		41.86	5.54	0.31	103.585°W	31.815°N	0.00	2.03
PointSourceFinite: -103.585, 31.860		46.63	5.61	0.41	103.585°W	31.860°N	0.00	1.61
PointSourceFinite: -103.585, 31.770		37.09	5.47	0.19	103.585°W	31.770°N	0.00	1.6
Extensional (adaptive) (opt)	Grid							12.03
SSCn Craton [1,9,10] (adaptive) (opt)	Grid							8.46
USGS Craton [1,3,4] (adaptive) (opt)	Grid							8.46
Extensional (fixed) (opt)	Grid							8.11
USGS default (fixed) (opt)	Grid							1.08
SSCn default (fixed) (opt)	Grid							1.08

Application Metadata

Application: Disaggregation
URL: https://earthquake.usgs.gov/nshmp/hazard/disagg

Repository: nshmp-apps
Version: 21.4.1
URL: https://code.usgs.gov/ghsc/nshmp/nshmp-apps

Repository : nshmp-haz
Version: 2.8.2
URL: https://code.usgs.gov/ghsc/nshmp/nshmp-haz

Repository : nshmp-lib
Version: 1.7.15
URL: https://code.usgs.gov/ghsc/nshmp/nshmp-lib

Repository : nshm-conus
Version: 5.2.4
URL: https://code.usgs.gov/ghsc/nshmp/nshms/nshm-conus.git

February 19, 2026, 10:54 AM

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Appendix III-4-F

Liner Equivalency Calculation

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DBS&A a Geo-Logic Company

Calculation Cover Sheet

Project Name WST Landfill – Municipal Solid Waste Permit Project Number DB20.1166

Calculation Number DB20.1166-02 Discipline Solid Waste No. of Sheets 4

PROJECT:

WST Landfill – Municipal Solid Waste Permit Application



SITE:

WST Landfill, Pecos, Reeves County, TX

SUBJECT:

Liner Equivalency Demonstration - Compare leachate flow through a prescriptive composite liner system incorporating a compacted clay/soil liner with that of an equivalent system containing a geosynthetic clay liner (GCL).

SOURCES OF DATA:

A. 30 Texas Administration Code § 330.331 (2006)
B. AGRU GeoClay® Brochure (2018)

SOURCES OF FORMULAE & REFERENCES:

1. Giroud, J.P., Badu-Tweneboah, K. and Soderman, K.L. (1997) "Comparison of Leachate Flow Through Compacted Clay Liners and Geosynthetic Clay Liners in Landfill Liner Systems." Geosynthetics International, Vol. 4, Nos. 3-4, pp. 391-431.
2. Erickson, R.B. and Thiel R. (2002) "Design and application of the geomembrane supported GCL in one-product and encapsulated composite liner systems." Clay Geosynthetic Barriers, Zanzinger H., Koerner R.M. & Gartung E., ISBN 90 58093808, pp. 31-40.

☐ Preliminary Calculation ☒ Final Calculation Supersedes Calculation No. ___

Rev. No.	Revision	Calculation By	Date	Checked By	Date	Approved By	Date
0		EA	11/17/2025	MO	11/17/2025	KJ	11/20/2025

Project No. DB20.1166.00 Date 11/17/2025

Subject Liner Equivalency Demonstration Sheet 1 of 4

By E. Abbott Checked By M. Oden Calculation No. DB20.1166-02

1. Objective

Compare leachate flow through a prescriptive composite liner system incorporating a compacted clay/soil liner (CCL) with that of an equivalent system containing a geosynthetic clay liner (GCL) for use in Type I municipal solid waste units at WST Landfill.

Per 30 Texas Administration Code § 330.331(b)A, the prescribed liner system for a Type I landfill unit consists of the following:

- A lower component containing at least 2 feet of recompacted soil with a maximum hydraulic conductivity of 1 x 10-7 centimeters per second (cm/s)
- An upper component which consists of a minimum 30-mil geomembrane (minimum 60-mil if high density polyethylene [HDPE] material is used) installed in direct and uniform contact with the soil liner.

In addition, the prescribed liner system for a landfill unit which accepts Class 1 industrial solid waste, excluding asbestos-containing materials, consists of the following [A]:

- A lower component containing at least three feet of re-compacted soil with a maximum hydraulic conductivity of 1 x 10-7 cm/s
- An upper component which consists of a minimum 30-mil geomembrane (minimum 60-mil if HDPE material is used) installed in direct and uniform contact with the soil liner.

The proposed liner system included in the equivalency demonstrations of both Type I units and Type I units designated to accept Class 1 waste consist of a geosynthetic clay liner overlain by a 60-mil HDPE geomembrane.

This calculation will demonstrate that the proposed liner system will operate with equivalent or greater performance than the prescribed liner systems given by 30 TAC 330.331(b)[A].

2. Given

Leachate migration through a composite liner system occurs initially through defects of the geomembrane such as punctures, tears, or holes[1]. If an amount of leachate passes through a

defect in the geomembrane, it is contained by the lower component of the composite liner system (often the CCL or GCL), which hinders the advective flow of leachate into the unit's underlying subgrade.

It should be noted that, according to Giroud et al.[1], "...placing a low-permeability soil (even a good CCL) under a GCL provides no benefit regarding advective flow control... the hydraulic conductivity of GCLs is so low that virtually any soil layer (even most CCLs) underlying a GCL *acts as a drainage layer*; it does not become saturated and it does not contribute to the hydraulic barrier." Therefore, the efficacy of any composite liner system using a GCL component beneath its geomembrane is contingent solely on that GCL's ability to impede the flow of leachate.

The following variables are used in the Giroud Equation to calculate leachate migration through a composite liner system due to a defect in the geomembrane:

Q_s = liquid flow rate through the composite liner system caused by one defect in the geomembrane (m^3/s)
C = correction factor describing geomembrane placement (good = 0.21; poor = 1.15)[2]
h = head of liquid above the geomembrane (m)
t = thickness of the soil or GCL component of the composite liner system (m)
a_s = representative defect area (m^2)
k_{sub} = hydraulic conductivity of the soil or GCL component of the composite liner system (m/s)

The values of the above variables for the prescribed and proposed composite liner systems are summarized in Table 1.

Project No. DB20.1166.00 Date 11/17/2025

Subject Liner Equivalency Demonstration Sheet 3 of 4

By E. Abbott Checked By M. Oden Calculation No. DB20.1166-02

Table 1: Variables for the Giroud Equation - Rate of Leachate Migration Through Composite Liners

Size of Circular Defect	C	h (m)[a]	t (m)[b]	a_s (m^2)[c]	k_{sub} (m/s)[d]
CCL: 60-mil HDPE Geomembrane/ 2' Compacted Clay/Soil (30 Tex. Admin. Code § 330.331(b))					
Large	0.21	0.30	0.6096	7.85×10^{-5}	1.00×10^{-9}
Small (Pinhole)	0.21	0.30	0.6096	7.85×10^{-7}	1.00×10^{-9}
CCL: 60-mil HDPE Geomembrane/ 3' Compacted Clay/Soil (30 Tex. Admin. Code § 330.331(e)(1))					
Large	0.21	0.30	0.9144	7.85×10^{-5}	1.00×10^{-9}
Small (Pinhole)	0.21	0.30	0.9144	7.85×10^{-7}	1.00×10^{-9}
GCL: 60-mil HDPE Geomembrane/ Geosynthetic Clay Liner (Proposed Equivalent System)					
Large	0.21	0.30	0.0090	7.85×10^{-5}	5.00×10^{-11}
Small (Pinhole)	0.21	0.30	0.0090	7.85×10^{-7}	5.00×10^{-11}

[a] h is assumed to be 30 cm which is the maximum depth of leachate over the liner per 30 Texas Administration Code § 330.331(a)(2)[A].
[b] t of the hydrated GCL is assumed to be 9 mm referencing Giroud et al.[1] and the manufacturer brochure for AGRU GeoClay® GCL[B].
[c] The diameter of a large defect is 10 mm. The diameter of a small (pinhole) defect is 1 mm.
[d] k_{sub} values are obtained from 30 Texas Administration Code § 330.331(b)[A] for CCL and from a manufacturer brochure for AGRU GeoClay® GCL[B].

3. Method

As stated by Giroud et al.[1], the rate of leachate migration through one defect in the geomembrane layer of a composite liner system can be found using the following semi-empirical equation:

$$Q_s = C\left[1 + 0.1\left(\frac{h}{t}\right)^{0.95}\right] {a_s}^{0.1} h^{0.9} {k_{sub}}^{0.74} \quad (1)$$

Equation 1 is sed to assess the prescribed and proposed liner systems' ability to limit advective flow of leachate into the underlying subgrade. The results of these analyses are discussed below.

4. Solution

Values for the prescribed liner system are used in Equation 1 to find leachate flow rate through the composite liner system resulting from a large hole in the geomembrane as follows:

$$0.21\left[1+0.1\left(\frac{0.30\ m}{0.6096\ m}\right)^{0.95}\right](7.85*10^{-5}\ m^2)^{0.1}\ (0.30\ m)^{0.9}\left(1.00*10^{-9}\ \frac{m}{s}\right)^{0.74}=\ 6.35*10^{-9}\ \frac{m^3}{s}$$

The results are then converted to various units for simpler comparison:

$$6.35*10^{-9}\ \frac{m^3}{s}=\ 2.24*10^{-7}\ \frac{ft^3}{s}=\ 0.145\ gpd=52.9\ \frac{gal}{yr}$$

These procedures are repeated for the large and small (pinhole) sizes for all three composite liner systems. A summary of the predicted leachate migration rate for each scenario is provided in Table 2.

Table 2: Rate of Leachate Migration Through Composite Liners (Per Hole)

Hole Type	Q_s (m^3/s)	Q_s (ft^3/s)	Q_s (gpd)	Q_s (gal/yr)
CCL: 60-mil HDPE Geomembrane/ 2' Compacted Clay (30 Tex. Admin. Code § 330.331(b))				
Large	6.35×10^{-9}	2.24×10^{-7}	0.145	52.9
Small (Pinhole)	4.01×10^{-9}	1.41×10^{-7}	0.091	33.4
CCL: 60-mil HDPE Geomembrane/ 3' Compacted Clay (30 Tex. Admin. Code § 330.331(e)(1))				
Large	6.25×10^{-9}	2.21×10^{-7}	0.143	52.1
Small (Pinhole)	3.94×10^{-9}	1.39×10^{-7}	0.090	32.9
GCL: 60-mil HDPE Geomembrane/ Geosynthetic Clay Liner (Proposed Equivalent System)				
Large	2.50×10^{-9}	8.83×10^{-8}	0.057	20.8
Small (Pinhole)	1.58×10^{-9}	5.57×10^{-8}	0.0360	13.1

The results of the above assessment demonstrate that the proposed composite liner system, using a geosynthetic clay liner and a 60-mil HDPE geomembrane, provides an equivalent level of protection to the prescribed composite liner system. As shown in Table 2, the calculated amount of leachate resulting from a defect in the geomembrane is less with the proposed equivalent system than the amount calculated through prescriptive liner systems containing two or three feet of clay/soil liner. Therefore, the proposed composite liner system may be used for all cells, including those designated to receive Class 1 industrial waste.

TEXAS ADMINISTRATIVE CODE: As in effect on 11/17/2025.

TITLE 30. ENVIRONMENTAL QUALITY

PART 1. TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

CHAPTER 330. MUNICIPAL SOLID WASTE

SUBCHAPTER H. LINER SYSTEM DESIGN AND OPERATION

§330.331. Design Criteria.

(a) New permits for Type I landfill units, lateral expansions, vertical expansions of Type I landfills over landfills that do not meet the design criteria under paragraph (1) or (2) of this subsection and expansions of existing Type IAE landfills that subsequently no longer satisfy the conditions specified in §330.5(b)(1) of this title (relating to Classification of Municipal Solid Waste Facilities) must be constructed in accordance with one of the following provisions approved by the executive director:

(1) a design that ensures that the concentration values listed in Table 1 of this paragraph will not be exceeded in the uppermost aquifer at the point of compliance, as determined in §330.403 of this title (relating to Groundwater Monitoring Systems); or

200601446-1.html

(2) a composite liner, as defined in subsection (b) of this section, and a leachate collection system that is designed and constructed to maintain less than a 30-centimeter depth of leachate over the liner.

(b) For purposes of this section, "composite liner" means a system consisting of two components; the upper component must consist of a minimum 30-mil geomembrane liner and the lower component must consist of at least a two-foot layer of re-compacted soil with a hydraulic conductivity of no more than 1×10^{-7} centimeters per second (cm/sec). Geomembrane liner components consisting of high density polyethylene (HDPE) must be at least 60-mil thick. The geomembrane liner component must be installed in direct and uniform contact with the compacted soil component.

(c) When approving a design that complies with subsection (a)(1) of this section, the executive director may consider, but is not limited to, the following factors:

(1) the hydrogeologic characteristics of the facility and surrounding land;

(2) the climatic factors of the area;

(3) the volume and physical and chemical characteristics of the leachate;

(4) the quantity, quality, and direction of flow of groundwater;

(5) the proximity and withdrawal rate of the groundwater users;

(6) the availability of alternative drinking water supplies;

(7) the existing quality of the groundwater, including other sources of contamination and their cumulative impacts on the groundwater and whether groundwater is currently used or reasonably expected to be used for drinking water;

(8) public health, safety, and welfare effects; and

(9) practicable capability of the owner or operator.

(d) Type IV landfills must meet one of the following groundwater protection requirements:

(1) there must exist at least four feet of in-situ soil between the deposited waste and groundwater. This in-situ soil must constitute an in-situ liner and must meet all the physical properties for a constructed liner as detailed in §330.339(c)(5) of this title (relating to Liner Quality Control Plan). In-situ liners must not exhibit primary or secondary physical features such as jointing, fractures, bedding planes, solution cavities, root holes, desiccation shrinkage cracks etc., that have a coefficient of permeability greater than 1×10^{-7} cm/sec;

(2) there must be at least a three-foot thick re-compacted clay liner between the deposited waste and groundwater. The constructed liner must meet all the criteria detailed in §330.339 of this title and must at a minimum have one foot of protective cover overlying the re-compacted liner after all quality control testing and final thickness determinations are complete; or

(3) an alternative liner design, in accordance with §330.335 of this title (relating to Alternative Liner Design).

(e) Municipal solid waste landfill facilities that accept Class 1 industrial solid wastes, other than asbestos-containing material, must have dedicated cells that meet the following requirements.

(1) The cells designated for Class 1 industrial solid wastes must have a composite liner system consisting of two components. The upper component must consist of

a minimum of a 30-mil geomembrane liner and the lower component must consist of at least a three-foot layer of re-compacted soil with a hydraulic conductivity of no more than 1 x 10^{-7} cm/sec. Geomembrane liner components consisting of HDPE must be at least 60-mil thick. The geomembrane liner component must be installed in direct and uniform contact with the compacted soil component. The liner system installed for Class 1 industrial solid waste cells is subject to the requirements of §330.339 of this title. These cells must be designated on facility layout maps.

(2) The cells designated for Class 1 industrial solid wastes must have a leachate-collection system designed and constructed to maintain less than a 30-cm depth of leachate over the liner. The leachate-collection and leachate-removal system must be:

(A) constructed of materials that are chemically resistant to the leachate expected to be generated;

(B) of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and by any equipment used at the landfill; and

(C) designed and operated to function through the scheduled closure and post-closure period of the landfill.

(3) Unless the executive director approves an engineered design that the applicant has demonstrated will provide equal or greater protection to human health and the environment, a new landfill cell or an areal expansion of an existing landfill cell must be located in areas allowed by §335.584(b)(1) and (2) of this title (relating to Location Restrictions).

B

The Plastics Experts.

AGRU GeoClay®

REINFORCED NEEDLE-PUNCHED GEOSYNTHETIC CLAY LINER



AGRU GEOCLAY® NN66 GENERAL PROPERTIES			
Material Property	**Test Method**	**Test Frequency SF**	**Required Values**
Bentonite Swell Index[1]	D 5890	1 per 100,000 lbs.	24 ml/2g min.
Bentonite Fluid Loss[1]	D 5891	1 per 100,000 lbs.	18 ml max
Bentonite Mass/Area[2]	D 5993	40,000 ft^2 (4,000 m^2)	0.75 lb/ft^2 (3.6 kg/m^2) min
GCL Tensile Strength[3]	D 6768	40,000 ft^2 (4,000 m^2)	50 lbs/in (87N/cm) MARV
GCL Peel Strength[3]	D 6496	40,000 ft^2 (4,000 m^2)	3.5 lbs/in (6.1 N/cm) min
GCL Index Flux[4]	D 5887	Weekly	1 $x10^{-8}$ m^3/m^2/sec max
GCL Hydraulic Conductivity[4]	D 5887	Weekly	5 $x10^{-9}$ cm/sec max
GCL Hydrated Internal Shear Strength[5]	D 6243	Periodic	500psf (24 kPa) typ

Notes:

[1] Bentonite property tests performed at a bentonite processing facility prior to shipment to GCL production facility.

[2] Bentonite mass/area reported at 0% moisture content.

[3] All tensile strength testing is performed in the machine direction using ASTM D 6768. All peel strength testing is performed using ASTM D 6496. Upon request, tensile & peel tests can be reported per modified ASTM D 4632 using 4" grips.

[4] Deaired, deionized water @ 5psi maximum confining pstress and 2 psi head pressure. Reported value is equivalent to 925 gal/acre/day. The flux value is equivalent to a permeability of $5x10^{-9}$ cm/sec for typical GCL thickness. Actual flux values vary with field condition pressures.

[5] Specimens are hydrated for 24 hours and sheared at 200 psf. Site-specific materials, GCL products, and test conditions must be used to verify internal and interface strength of the proposed design.



Technical Paper by J.P. Giroud, K. Badu-Tweneboah and K.L. Soderman

COMPARISON OF LEACHATE FLOW THROUGH COMPACTED CLAY LINERS AND GEOSYNTHETIC CLAY LINERS IN LANDFILL LINER SYSTEMS

ABSTRACT: The purpose of this paper is to provide an approach for comparing the effectiveness of geosynthetic clay liners (GCLs) and compacted clay liners (CCLs) used in association with geomembranes to form composite liners. Comparing the effectiveness of these two types of composite liners is required in "equivalency demonstrations" intended to demonstrate that a geomembrane-GCL composite liner is equivalent to a conventional geomembrane-CCL liner prescribed by a regulation. In the first part of the paper, the contribution of the geomembrane is ignored and the paper presents analytical evaluations of advective leachate flow through GCLs, low-permeability soil layers (such as CCLs), and two-layer systems including a GCL and a low-permeability soil layer. The analyses presented explain why some calculations typically performed for landfill liner system design or for equivalency demonstrations lead to the paradoxical result that the advective flow of leachate is greater when a GCL is placed on a layer of low-permeability soil than when the GCL is placed on a layer of high-permeability soil. The second part of the paper presents an analytical method for comparing the effectiveness of a composite liner including a GCL and a composite liner including a CCL. This analytical method enables design engineers to compare the effectiveness of various composite liners without neglecting the beneficial effect of the geomembrane. A parametric study presented in the paper shows that neglecting the geomembrane liner in equivalency demonstrations (which is frequently done in the current state of practice) penalizes composite liners that incorporate a GCL.

KEYWORDS: Liner system, Flow rate, Compacted clay liner, Geosynthetic clay liner, CCL-GCL comparison, Composite liner.

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4 FLOW THROUGH COMPOSITE LINERS

4.1 Introduction

As indicated in Section 2.8, GCLs used in landfills are always used as the low-permeability soil component of composite liners. In other words, GCLs used in landfills are always associated with a geomembrane. The cases discussed in Section 3 were only relevant to the extreme design scenario where the geomembrane is ignored, and to other containment structures where GCLs may be used without a geomembrane.

In Section 4, the geomembrane is not ignored and the effectiveness of composite liners constructed with CCLs and GCLs is compared.

4.2 Rate of Leachate Migration Through Composite Liners With CCL and GCL

Development of Equation. As indicated by Giroud and Bonaparte (1989), liquid migration through a composite liner occurs essentially through defects of the geomembrane. According to Giroud (1997), the rate of liquid migration through a defect in the geomembrane component of a composite liner is given by the following semi-empirical equation:

$$Q = 0.21\,[1 + 0.1(h/t)^{0.95}]\,a^{0.1}\,h^{0.9}\,k^{0.74} \tag{51}$$

See Reference 2, Erickson and Thiel (2002), for "C" coefficient values

where: Q = flow rate through one geomembrane defect; h = head of liquid above the geomembrane; t = thickness of the soil component of the composite liner; a = defect area; and k = hydraulic conductivity of the soil component of the composite liner. It is important to note that Equation 51 can only be used with the following units: a (m^2), h (m), t (m), k (m/s).

As discussed in Sections 2.5 and 2.6, there are cases where it is prescribed by regulations, or simply envisioned by design engineers, to place a GCL on a layer of soil with a low hydraulic conductivity such as 1×10^{-8} or 1×10^{-7} m/s. An important conclusion from Section 3, is that, if a GCL is placed on a soil layer (even a soil layer with low permeability), the soil layer has no influence on leachate advective flow and only the GCL should be considered in leachate flow calculations. The same conclusion applies to the soil component of a composite liner. Accordingly, if, in a composite liner, a GCL is placed on a layer of low-permeability soil, only the GCL will be considered in Equation 51.

Using Equation 51, the ratio between the rate of leachate flow through a composite liner with a CCL and a composite liner with a GCL is as follows:

$$\frac{q_{comp\ CCL}}{q_{comp\ GCL}} = \frac{0.21\,N\,[1 + 0.1(h/t_{CCL})^{0.95}]\,a^{0.1}\,h^{0.9}\,k_{CCL}^{0.74}}{0.21\,N\,[1 + 0.1(h/t_{GCL})^{0.95}]\,a^{0.1}\,h^{0.9}\,k_{GCL}^{0.74}} \tag{52}$$

where: $q_{comp\ CCL}$ = unit rate of flow through a composite liner where the soil component is a CCL; $q_{comp\ GCL}$ = unit rate of flow through a composite liner where the soil component is a GCL; t_{CCL} = thickness of the CCL in the composite liner; t_{GCL} = thickness of the GCL

in the composite liner; and N = number of geomembrane defects per unit area. After simplification, Equation 52 becomes:

$$\frac{q_{comp\ CCL}}{q_{comp\ GCL}} = \left(\frac{k_{CCL}}{k_{GCL}}\right)^{0.74} \frac{1 + 0.1(h / t_{CCL})^{0.95}}{1 + 0.1(h / t_{GCL})^{0.95}} \tag{53}$$

Discussion. It appears that the leachate flow rate ratio expressed by Equation 53 does not depend on the number and the size of defects. Numerical values of $q_{comp\ CCL}/q_{comp\ GCL}$ calculated using Equation 53 are presented in Table 7. It appears that, for leachate heads typically encountered in landfills (i.e. heads smaller than 0.3 m, and generally smaller than 0.1 m), the calculated advective flow control performance of a composite liner which consists of a geomembrane on a GCL is significantly better than the calculated advective flow control performance of the standard composite liner which consists of a geomembrane on the standard CCL (i.e. a CCL with a thickness of 0.6 m and a hydraulic conductivity of 1×10^{-9} m/s). Table 7 also shows that a composite liner with a GCL outperforms the standard composite liner for leachate heads up to approximately 1 to 7 m depending on the GCL hydraulic conductivity; such large heads should be a very rare occurrence in a landfill since they would correspond to a major malfunction of the leachate collection and removal system.

Table 7. Ratio between rates of advective flow through a composite liner including a CCL and a composite liner including a GCL, $q_{comp\ CCL}/q_{comp\ GCL}$.

GCL characteristics: Thickness, t_{GCL} (mm) Hydraulic conductivity, k_{GCL} (m/s)			5 5×10^{-12}	7 1×10^{-11}	9 5×10^{-11}
	(m)	(mm)	$q_{comp\ CCL}/q_{comp\ GCL}$	$q_{comp\ CCL}/q_{comp\ GCL}$	$q_{comp\ CCL}/q_{comp\ GCL}$
Leachate head on top of the liner, h	0	0	50.44	30.20	9.18
	0.01	10	42.36	26.54	8.28
	0.05	50	26.92	18.50	6.14
	0.1	100	18.87	13.66	4.71
	0.3	300	9.01	6.98	2.54
	0.6	600	5.31	4.23	1.58
	1.0		3.59	2.89	1.09
	3.0		1.65	1.35	0.52
	5.0		1.23	1.01	0.39
	7.0		1.04	0.85	0.33
	10		0.90	0.74	0.28
	∞		0.53	0.44	0.17

Notes: The tabulated values of the advective flow rate ratio were calculated using Equation 53 with the following CCL characteristics: thickness, t_{CCL} = 0.6 m; and hydraulic conductivity, $k_{CCL} = 1 \times 10^{-9}$ m/s. (This is the standard CCL defined in Section 2.5.) The characteristics of the GCL are from Table 2.

Clay Geosynthetic Barriers, Zanzinger, Koerner & Gartung (eds),
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Design and application of the geomembrane supported GCL in one-product and encapsulated composite liner systems

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ABSTRACT: Since 1994, the geomembrane supported GCL (GM-GCL) has increasingly been used as a one-product composite liner and encapsulated bentonite composite liner in waste landfills across the USA, Europe, and Asia as an alternative to conventional geomembrane-compacted clay composite liners. This is primarily due to its superior hydraulic performance in response to leakage through defects in the geomembrane, effective sealing at its overlapped seams, and economic savings derived by its lower cost of installation. This paper discusses the general design and performance considerations when utilizing the GM-GCL as a one-product composite liner, focusing on: (1) hydraulic performance (e.g. composite liner leakage), (2) slope stability, and (3) installation issues and construction quality assurance (CQA).

1 INTRODUCTION

1.1 *Benefits of a one-product composite liner*

Conventional composite liner applications in waste containment industries often require a composite liner comprised of a geomembrane that overlays a low permeability compacted clay liner (CCL). Since their introduction to waste containment applications in 1985, GCLs have commonly been utilized to replace all or part of the CCL layer. The one-product composite GM-GCL discussed in this paper is comprised of a thin layer of sodium montmorillonite clay (bentonite) mixed with a water-based adhesive that attaches it to a polyethylene geomembrane. This product has been used as a one-product composite liner and in encapsulated bentonite composite liners in bottom liner and cap applications in the United States, effectively replacing both the geomembrane and compacted clay components of traditional prescriptive composite liners. Given the documented effective hydraulic sealing provided by the GM-GCL, the ease of its installation, and the cost savings made possible by the simplicity of installing a single product, the GM-GCL provides an effective alternative to conventional geomembrane and compacted clay liner installations.

1.2 *Installation configurations*

There are two general design configurations for the GM-GCL product (Fig. 1):

1. *Single composite mode.* In this installation, the bentonite side of the material is generally installed face down and the geomembrane side face up, to form a one-product composite (geomembrane-clay) liner. Normally, the overlaps are not mechanically joined but are overlapped for self-sealing, as shown in Figure 1a. It is also possible to weld the geomembrane components together utilizing conventional geomembrane welding techniques, including either dual-track hot-wedge welding (Fig. 1b) or extrusion welding procedures. Additional details and configurations are discussed in Thiel et al. (2001).
2. *Encapsulated mode*. In this installation, a supplemental geomembrane is installed against the bentonite side of the material, as shown in Figure 1c. In this application, the GM-GCL product is usually installed with the bentonite side face up and the geomembrane side facing against the subgrade, with a supplemental geomembrane installed over the bentonite surface. This configuration, however, can also be reversed so

1. *Performance as a fluid barrier.* Since providing a fluid barrier is the main objective of a composite liner system, the design practitioner must have the means to evaluate potential leakage for a given design application. This issue is addressed in Section 2 of this paper.
2. *Slope stability.* Geosynthetics in cover and liner systems typically have layers and interfaces that provide the critical slip plane for slope stability. It is important that the designer understand the limitations and shear strength properties of all layers and their associated interfaces, and that relevant local and global stability analyses be performed. This is discussed in Section 3.
3. *Installation and durability.* Understanding how a project is constructed, and the construction advantages and limitations for the various materials proposed in a project, is critical to a sound design. Inappropriate construction practices can defeat any product or design intent. Key construction procedures and limitations are described in Section 4.

2 ENVIRONMENTAL PROTECTION AGAINST LEAKAGE

The hydraulic performance of a GM-GCL composite liner can be evaluated using standard accepted leakage models. Leakage may result from (1) defects in the primary geomembrane resulting primarily from installation damage, (2) coincident defects in the upper and lower geomembranes in encapsulated GM-GCL installations, and (3) seepage at overlapped GM-GCL seams when the geomembrane seams are not welded. The general approach and design equations for evaluating composite liner leakage, and environmental protection comparisons between a GM-GCL liner and an equivalent GM-compacted clay liner are presented below.

2.1 *Leakage modes*

2.1.1 *Defects in composite liner geomembranes*

Empirical modeling and field observations (Giroud & Badu-Tweneboah 1992; Giroud 1997) have resulted in the Equation (1) for estimating leakage through a hole in the geomembrane portion of a composite liner. The empirical equation takes the following form:

$$Q = C[1 + 0.1(h_w/t)^{0.95}]a^{0.1}h_w^{0.9}k_s^{0.74} \quad (1)$$

[For $h_w < 3$ m, and defect diameter $a \leq 5 \times 10^{-4}$ m^2 (25 mm dia.)]
where: Q = rate of leakage through a defect (m^3/s); C = a constant related to the quality of the intimate contact between the geomembrane and its underlying clay liner; h_w = head of liquid on top of the geomembrane (m); t = thickness of the soil component of the composite liner (m); a = area of defect in geomembrane (m^2); and k_s = hydraulic conductivity of the underlying clay liner soil (m/s). The basis for Equation (1) is referenced in the U.S. EPA Technical Manual (1993), and is incorporated into the latest versions of the HELP computer model (U.S. EPA 1994) used for predicting landfill leachate generation and leakage.

2.1.2 *Defects in encapsulated bentonite system*

For an encapsulated design (Fig. 1c), the size of the defect in the lower geomembrane would control leakage, and leakage would occur when an event caused coincident defects in the upper and lower geomembranes. In this case, Darcy's law controls the advective flow rate through a defect of a given size. The leakage equation would take the following form:

$$Q = k_s i a \quad (2)$$

where: Q = leakage (m^3/s); k_s = hydraulic conductivity of the bentonite; i = hydraulic gradient (liquid head h_w/bentonite thickness t); and a = area of coincident defects through an encapsulated liner system (m^2).

2.1.3 *Seepage at overlapped (unwelded) GM-GCL seams*

In the case of overlapped seams (Fig. 1a), liquid will seep directly into and possibly through the overlaps. Therefore, the seepage rate through overlapped GM-GCL seams must be quantified in a leakage evaluation.

Due to the weight of its bentonite coating, an installed GM-GCL lays flat on the subgrade. This virtually eliminates wrinkles and results in excellent contact between overlapped panels at their seam areas. For a typical GM-GCL overlap distance of 300 mm, it would take more than 5 years before seepage would begin through the overlap with a fluid build-up of up to 300 mm. Steady-state leakage would most likely take several more years to develop (Thiel et al. 2001). This seam performance is based on data provided by the large-scale tank tests

reported by Estornell & Daniel (1992) and the Cincinnati U.S. EPA GCL test Plot "P" exhumed after 4.5 years of performance (Daniel 2001).

Leakage per unit length due to seepage along a saturated GM-GCL overlap is calculated in accordance with Darcy's law as follows (Thiel et al. 2001):

$$Q = k_s(h_w/B)t \tag{3}$$

where Q = flow rate per unit length ($m^3/s\,m$); k_s = hydraulic conductivity of the bentonite (m/s); h_w = head on top of the liner (m); B = width of overlap (m); and t = thickness of the bentonite (m).

To determine leakage due to seepage at overlap seams, the total linear length of seam for a given project must be calculated. The general length of overlap seams (S) in an installation area (A) is (Thiel et al. 2001):

$$S = A(1/L + 1/W) \tag{4}$$

where $L =$ average length of panels less overlap (typically 51.2 m for the GM-GCL); W = average width of panels less overlap [typically 5.0 m for the GM-GCL]. Applying equation (4) to a typical GM-GCL installation thus results in approximately 2200 m of overlap seam per hectare of lined area. The actual length of overlap seam would increase slightly if the complexity of the installation increased due to structures, for example, or irregularities. Total leakage at overlapped seams is subsequently determined by multiplying Q by the length of seam S.

2.2 *Factors affecting leakage*

2.2.1 *Intimate contact "C-value"*

Equation (1) contains the factor C which accounts for the degree of intimate contact between the geomembrane and adjacent clay. Most of the empirical formulas and recommendations developed to date have been for compacted clay liners. Empirical studies indicate that compacted clay liner installations with good construction quality assurance achieve what would be considered a "good" liner contact rating, resulting in a C-value of 0.21. Without good construction quality control and quality assurance, the hydraulic contact between a geomembrane and a compacted clay liner might be "poor", resulting in a C-value for Equation (1) of 1.15.

Giroud (Thiel et al. 2001) evaluated the contact C-factor between the bentonite component of the GM-GCL and an adjacent geomembrane by analyzing the approaches developed and expounded by Rowe (1998), Foose et al. (2001) and Harpur et al. (1993). Using the results published in those references, Thiel et al. (2001) recommend a conservative value of $C = 0.01$ for contact between the bentonite component of the GM-GCL and an adjacent geomembrane.

Note that the C-value for the GM-GCL is not applicable for other types of GCLs. This exclusion is justified by the much smaller amount of bentonite wetting observed in GM-GCLs compared to geotextile encased GCLs in tests performed by Estornell & Daniel (1992), and in the lower interface transmissivity shown in tests performed by Harpur et al. (1993).

2.2.2 *Hydraulic conductivity*

The hydraulic conductivity of sodium bentonite in GCLs is affected by (1) the level of normal stress applied to the GCL, and (2) chemical alterations caused by different permeating liquids that may increase the hydraulic conductivity of sodium bentonite. Guidance to selecting the appropriate hydraulic conductivity value(s) for a project-specific GCL application and liquid is presented by Thiel et al. (2001).

Typical hydraulic conductivity values for sodium bentonite, when exposed to tap water and compatible dipolar liquids, range from 5×10^{-11} m/s to 9×10^{-13} m/s under normal loads ranging from 5 kPa to 500 kPa, respectively. Bentonite's hydraulic conductivity may be increased to as high as 1×10^{-8} m/s by leachates that contain high cation concentrations, such as from incinerator ash (Thiel et al. 2001). Therefore, project-specific normal loads and leachate compatibility must be evaluated when deriving the appropriate hydraulic conductivity values.

2.2.3 *Project specific design assumptions*

1. *Liquid head build-up, h_w.* The build-up may vary from less than 25 mm for cap applications, up to 300 mm for regulated allowable build-up above bottom liners, and elevated liquid head for secondary containment leakage events and impoundment applications.
2. *Defect area, a, and frequency of defects per unit area.* Industry average standards for estimating defects in an installed geomembrane assume that approximately two to ten 100 mm^2 holes per ha exist after a geomembrane

Appendix III-4-G

Waste Generation Calculation

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DBS&A a Geo-Logic Company

Calculation Cover Sheet

Project Name WST Landfill Project Number DB20.1166

Calculation Number DB20.1166-03 Discipline Engineering No. of Sheets 2

PROJECT: WST Landfill
SITE: Pecos, Texas
SUBJECT: Rate of Waste Deposition and Estimated Operating Life
SOURCES OF DATA: A. AutoCAD Cut-Fill Report B. The Texas Demographic Center at UT San Antonio (2025)
SOURCES OF FORMULAE & REFERENCES: 1. 30 TAC 330.63 (2024)

☐ Preliminary Calculation ☒ Final Calculation Supersedes Calculation No. _____

Rev. No.	Revision	Calculation By	Date	Checked By	Date	Approved By	Date
0	Permit submittal	AB	11/4/2025	EA	11/8/2025	KJ	11/10/2025
1	TCEQ NOD #1	AB	6/15/2026	TG	7/14/2026		



1. Objective

Estimate the rate of solid waste deposition and the operating life of WST Landfill.

2. Given

To predict the amount of waste that WST Landfill will accept on a yearly basis and subsequently determine its operating life, the following assumptions were made:

- 10,000 people with a per capita collection rate of five pounds per day dispose of a maximum of 15 acre-feet of solid waste in one year 1.
- The maximum inventory of waste at WST Landfill is 12,007,634 cubic yards (CY)[A].
- Waste density is 0.6 tons/CY.
- The entirety of six adjacent counties (Culberson, Jeff Davis, Loving, Pecos, Reeves, and Ward Counties) will contribute solid waste to the landfill on a daily basis, as seen in Figure 1 and Table 1.

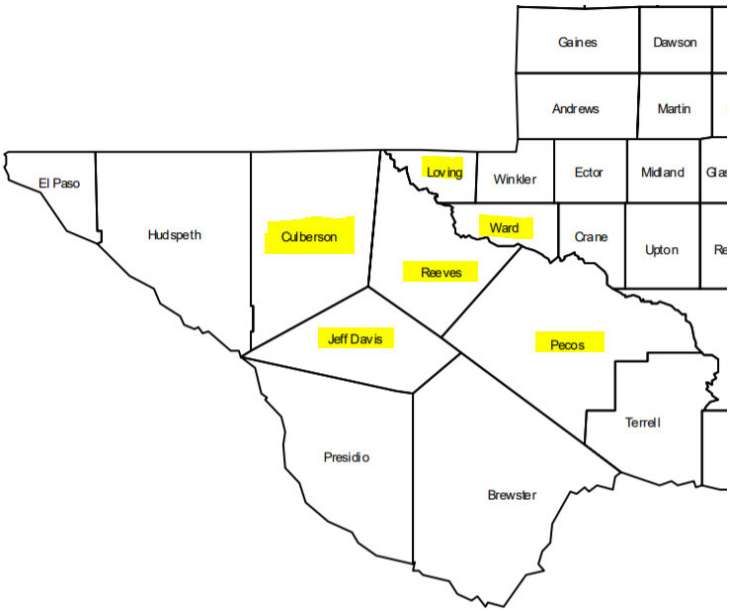


Figure 1. Six adjacent counties (highlighted) are assumed to contribute waste to WST Landfill on a daily basis.

Table 1. Estimated Populations of Neighboring Counties *(assuming a mid migration scenario)*[B]

County	Projected Population						
	2025	2026	2027	2028	2029	2030	2031
Culberson	2,251	2,250	2,251	2,243	2,243	2,241	2,231
Jeff Davis	1,753	1,725	1,701	1,666	1,638	1,614	1,579
Loving	64	64	64	62	64	64	60
Pecos	14,719	14,704	14,675	14,678	14,664	14,645	14,638
Reeves	12,088	12,192	12,296	12,408	12,516	12,612	12,707
Ward	11,182	11,304	11,434	11,553	11,672	11,810	11,916
Total	42,057	42,239	42,421	42,610	42,797	42,986	43,171

3. Solution

To begin this calculation, the maximum volumetric waste deposition rate from the 2027 total anticipated population is found:

$$42{,}421\ people * \frac{15\ \frac{acre-ft}{year}}{10{,}000\ people} = 63\ \frac{acre-ft}{year} = 102{,}659\ \frac{CY}{year}$$

Next the assumed waste density is applied:

$$102{,}659\ \frac{CY}{year} * \frac{0.6\ tons}{CY} = 61{,}595\ \frac{tons}{year}$$

The above steps are repeated for the estimated population values for 2028 through 2031. The results are summarized in Table 2.

Table 2. Estimated Waste Deposition Rates

Year	Waste Deposition Rate		
	acre-ft/year	CY/year	tons/year
2027	64	102,659	61,595
2028	64	103,116	61,870
2029	64	103,569	62,141
2030	64	104,026	62,416
2031	65	104,377	62,626

Finally, to find the estimated operating life of the landfill, the maximum inventory of waste is divided by the highest estimated annual waste deposition rate. As populations across all six counties are expected to experience minimal population growth, the waste deposition rate from 2031 is considered to be the highest deposition rate, and is used in the following calculation:

$$12{,}007{,}634\ CY\ \div\ 104{,}377\ \frac{CY}{year}\ =\ 115.0\ years$$

Assuming that the landfill begins accepting waste in 2027, maximum inventory will be reached by 2142.

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<<Prev Rule Next Rule>>

Texas Administrative Code

TITLE 30	ENVIRONMENTAL QUALITY
PART 1	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 330	MUNICIPAL SOLID WASTE
SUBCHAPTER B	PERMIT AND REGISTRATION APPLICATION PROCEDURES
RULE §330.63	Contents of Part III of the Application

(C) specify the maximum allowable period of time that unprocessed and processed wastes are to remain on site.

(2) Incineration units. The owner or operator shall provide waste feed rates, an estimate of the amount and planned method for testing and final disposal of incinerator ash, an estimate of the volume of quench or process water, and the planned method of treatment and disposal of such water.

(3) Surface impoundments. The owner or operator shall provide:

(A) design specifications for surface impoundments, including a plan view and cross-section of the impoundment;

(B) the minimum freeboard to be maintained and the basis of the design to prevent overtopping resulting from normal or abnormal operations; overfilling; wind and wave action; rainfall; run-on (if allowed); malfunctions of level controllers, alarms, and other equipment; and human error. The owner or operator shall show that adequate freeboard will be available to prevent overtopping from a 25-year, 24-hour rainfall event; and/or

(C) in accordance with §330.339 of this title (relating to Liner Quality Control Plan), a liner quality control plan prepared in accordance with Subchapter H of this chapter (relating to Liner System Design and Operation).

(4) Landfill units. The owner or operator shall specify:

(A) provisions for all-weather operation, e.g., all-weather road, wet-weather pit, alternative disposal facility, etc., and provisions for all-weather access from publicly owned routes to the disposal facility and from the entrance of the facility to unloading areas used during wet weather. Interior access road locations and the type of surfacing shall be indicated on a facility plan. The roads within the facility shall be designed so as to minimize the tracking of mud onto the public access road;

(B) the landfill method proposed, e.g., moving-face cell or trench, area fill, or combination;

(C) elevation of deepest excavation, maximum elevation of waste, maximum elevation of final cover;

(D) a calculation of the estimated rate of solid waste deposition and operating life of the landfill unit. As a general rule, 10,000 people with a per capita collection rate of five pounds per day, dispose of 10 - 15 acre-feet of solid waste in one year;

(E) landfill unit cross-sections consisting of plan profiles across the facility clearly showing the top of the levee, top of the proposed fill (top of the final cover), maximum elevation of proposed fill, top of the wastes, existing ground, bottom of the excavations, side slopes of trenches and fill areas, gas vents or wells, and groundwater monitoring wells, plus the initial and static levels of any water encountered. The owner or operator shall provide a sufficient number of cross-sections, both latitudinally and longitudinally, so as to accurately depict the existing and proposed depths of all fill areas within the site. The plan portion shall be shown on an inset key map. The fill cross-sections shall go through or very near the soil borings in order that the boring logs

obtained from the soils report can also be shown on the profile;

(F) construction and design details of compacted perimeter or toe berms that are proposed in conjunction with aboveground (aerial-fill) waste disposal areas shall be included in the fill cross-sections; and

(G) a liner quality control plan prepared in accordance with Subchapter H of this chapter.

(5) Arid exemption landfill application information. Owners or operators of new, existing, and lateral expansions of small MSW landfill facilities that meet the criteria in §330.5(b) of this title (relating to Classification of Municipal Solid Waste Facilities) shall submit a certification of eligibility to the executive director and place a copy of the certification in the operating record. The certification shall be signed by a principal executive officer, a ranking elected official, or an independent professional engineer licensed to practice in the State of Texas. The certification must contain the following information:

(A) a statement certifying that the small MSW landfill facility meets all requirements contained in §330.5(b) of this title for exemptions from Subchapter H of this chapter (relating to Liner System Design and Operation) and Subchapter J of this chapter (relating to Groundwater Monitoring and Corrective Action);

(B) documentation that the small MSW landfill facility receives for disposal an annual average of less than 20 tons per day of authorized types of waste in a Type IAE landfill unit and/or less than 20 tons per day of authorized types of waste in a Type IVAE landfill unit for a total waste acceptance rate less than 40 tons per day for the facility, based upon the most recent four reporting quarters or a certification that programs have been put in place, or will be implemented, to reduce the annual average to less than 20 tons per day based on an annual average for each landfill unit type within one year;

(C) documentation that there are no practicable waste management alternatives available. The documentation shall demonstrate one of the following:

(i) additional costs of available alternatives are estimated to exceed 1.0% of the owner's or operating community's budget for all public services;

(ii) haul distances to alternative sites are unreasonably long; or

(iii) all other alternatives are not feasible to implement, given the community location and economic condition; and

(D) documentation that the small MSW landfill unit receives less than or equal to 25 inches of average annual precipitation as determined from precipitation data for the nearest official precipitation recording station for the most recent 30-year reporting period.

(6) Type V mobile liquid waste processing units. The owner or operator shall provide the following:

(A) documentation of affirmative local government approval or acceptance of the mobile unit operation, including conformity with local ordinances, local rules, or requirements set forth by the treatment facility for the discharge, including local limits, zoning restrictions, permits, licenses, authorizations, etc. These regulations do not grant authorization for operation of mobile liquid waste processing units in noncompliance with local government ordinances and regulations or without the express approval of the local wastewater authority. Discharge from a mobile liquid waste processing unit is allowed only at selected disposal points selected by the local treatment facility permitted under Texas Water Code, Chapter 26, so that they can be monitored by the local treatment facility; and

(B) written approval from the receiving treatment facility permitted under Texas Water Code, Chapter 26.

(7) Type IX energy, material, gas recovery for beneficial use, or landfill mining waste processing units. The owner or operator shall provide:

(A) For wastes to be excavated, a test pit evaluation report prepared by an engineer. Prior approval of a test pit plan must be obtained from the executive director before excavation of test pits including location and depth of all test pits, including a discussion and information on the following:

(i) a description of the characteristics of waste observed in test pits excavated on the site to include the percent of paper, plastics, ferrous metal, other metal, glass, other constituents, and soil fraction by weight;

(ii) a design for the test pits to extend four feet beneath the waste or to a depth authorized by the executive director and information submitted to include a Toxicity Characteristic Leaching Procedure (TCLP) of the soil to characterize the soil beneath the site. Liners if present shall not be disrupted;

(iii) a TCLP analysis of each representative type of waste excavated. Additionally, waste excavated from each test pit must be analyzed for asbestos and polychlorinated biphenyls (PCBs). Consideration should be given to the analysis of waste material from each test pit for hazardous waste constituents;

(iv) a determination as to a sufficient number of test pits to establish the properties of the waste. A site of five acres or less must have a minimum of three test pits. Sites larger than five acres must have three test pits plus one for every additional five acres or fraction of an acre. The number of test pits shall be approved by the executive director prior to making the pits. The test pits should be sufficiently large enough to provide representative information;

(v) a description of how all test pits will be backfilled with clean high plasticity or low plasticity clay. The excavation shall be backfilled to exceed the existing grade and provide positive drainage;

(vi) a cross-section drawing using the information from the test pits to depict the top and bottom elevations of the landfill;

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Next Page Previous Page

List of Titles Back to List

HOME | TEXAS REGISTER | TEXAS ADMINISTRATIVE CODE | OPEN MEETINGS

Attachment III-5

Geology Report

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Geology Report
WST Landfill
Reeves County, Texas

Prepared for
West Sun Tex, LLC
Pecos, Texas

Prepared by

DBS&A
a Geo-Logic Company

Texas Registered Engineering Firm F-286
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DB20.1166



July 2026

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Table of Contents

1. Introduction 1
2. Regional Geology 1
   2.1 Regional Geologic Structure 1
   2.2 Surface Geology 1
   2.3 Generalized Stratigraphic Column in the Facility Area and Regional Cross Sections 2
3. Geologic Processes Active in the Vicinity of the Facility 3
4. Regional Aquifers in the Vicinity of the Facility 4
   4.1 Aquifer Description and Characteristics 4
   4.2 Typical TDS of Pecos Valley Aquifer Water 6
   4.3 Recharge Areas Within 5 miles of the Site 7
   4.4 Present Use of Groundwater in the Vicinity of the Facility 8
      4.4.1 Pecos, Texas Groundwater Supply 8
      4.4.2 Water Wells Within 1 mile of Facility Property Boundary 8
5. Subsurface Conditions 9
   5.1 Site Investigations 9
   5.2 Site Cross Sections and Subsurface Stratigraphy 12
6. Geotechnical Properties 12
   6.1 Standard Penetration Tests 12
   6.2 Laboratory Soil Analysis 13
   6.3 Suitability of the Observed Soils and Strata 14
7. Groundwater 15
   7.1 Occurrence and Regulatory Classification 15
   7.2 Perched Zone Water Levels 16
   7.3 Perched Zone Water Quality 18
   7.4 Slug Testing 19
8. Groundwater Monitoring Plan 21
9. Arid Exemption Groundwater Certification Process 22

References 22

List of Figures

III-5-1 Site Map
III-5-2 Regional Geologic Structure
III-5-3 Regional Surface Geology
III-5-4 Stratigraphic Column
III-5-5 Regional Cross Section Locations
III-5-6 Regional Cross Sections from Meyer et al. (2012) that Pass Near the Site
III-5-7 Base Elevation of Pecos Valley Alluvium
III-5-8 Aerial Photography
III-5-9 Topographic Map
III-5-10 Mapped Faults from Texas GAT Sheets
III-5-11 Geophysical Logs Cross Section A-A'
III-5-12 Cross Section A-A'
III-5-13 Extent of Pecos Valley Aquifer and Pecos Trough
III-5-14 Pecos Valley Aquifer Water Table Elevation
III-5-15 Pecos Valley Aquifer Hydrographs
III-5-16 Pecos Valley Aquifer Total Dissolved Solids Concentration
III-5-17 Pecos Valley Aquifer Total Dissolved Soilids Concentration Near Site
III-5-18 Areas of Recharge within 5 miles of the Site
III-5-19 Water Wells Within 1 mile of Facility Boundary
III-5-20 Soil Boring, Monitor Well, and Cross Section Location Map
III-5-21 Geologic Cross Section B-B'
III-5-22 Geologic Cross Section C-C'
III-5-23 Geologic Cross Section D-D'
III-5-24 Water Level in Perched Zone Monitor Wells
III-5-25 Perched Zone Water Levels for Monitor Wells with Transducers
III-5-26 Perched Zone Water Level Map, October 2022
III-5-27 Perched Zone Water level Map, August 2025
III-5-28 Proposed Groundwater Monitor Wells

List of Tables

III-5-1 Water Wells Within 1 mile of the Facility Boundary
III-5-2 Boring Log and Monitor Well Summary
III-5-3 Water Levels in Monitor Wells
III-5-4 Results of September 2023 Slug Tests
III-5-5 Proposed Monitor Wells

List of Appendices

III-5-A Consumer Confidence Reports for Pecos, Texas
III-5-B Soil Boring Plan, including 2014 Subsurface Exploration Report
III-5-C Boring Logs
III-5-D Soil Properties Laboratory Report
III-5-E Slug Test Results
III-5-F Water Quality Data

1. Introduction

Daniel B. Stephens & Associates, Inc. (DBS&A) has prepared this geology report for the WST Landfill on behalf of West Sun Tex, LLC (WST) per 30 Texas Administrative Code (TAC) §330.63(e). WST is applying for a Type I municipal solid waste (MSW) permit for the WST Landfill, located in north-central Reeves County approximately 5 miles west-northwest of Pecos, Texas (Figure III-5-1). The location is at the intersection of County Road (CR) 408 and CR 415, in Section 46, Block 4, H. & G.N. RR Co. Survey. The facility (or site) is in an area with flat topography that slopes gently to the east, and is dominated by desert scrub and grass vegetation.

The facility property includes 440 acres. Approximately 238 acres of the property are within the permit area. The approximate geometric center of the site is located at latitude 31.4324 degrees north and longitude –103.5854 degrees east. Land use in the vicinity of the site is for agriculture and oil and gas development, rural residences, and undeveloped land. The property has been used for agricultural production in the past, but has been out of cultivation for over 20 years.

2. Regional Geology

2.1 Regional Geologic Structure

The site is in north-central Reeves County in the west-central portion of the Permian Basin of west Texas and southeastern New Mexico. The Permian Basin includes two sub-basins divided by the north-northwest striking Central Basin Platform. The western sub-basin is the Delaware Basin and the eastern sub-basin is the Midland Basin (Figure III-5-2). Reeves County overlies the Delaware Basin.

2.2 Surface Geology

The regional surface geology is provided in Figure III-5-3. At and in the vicinity of the site, surficial materials are mapped as Quaternary alluvium (Qal) on the Geologic Atlas of Texas Pecos Sheet (Barnes, 1976). Alluvium typically consists of unconsolidated sand, silt, gravel, and clay. Other mapped geologic units in the general vicinity of the site include (1) Other Quaternary Deposits (Qao), which are mostly boulders, cobbles, and pebbles derived from multiple source rocks, (2) Gypsite (Ogy) which is granular gypsum, (3) Fluviatile Terrace Deposits (Qt) consisting

of gravel, sand and silt associated with the Pecos River, and (4) the Tahoka Formation (Qta). Outcrops of older rocks such as the Lower Cretaceous Antlers Sand and the Triassic Dockum Group occur east, northeast, and southeast of the site across the Pecos River and southeast of the City of Pecos (Pecos). These older rocks are approximately 15 miles or more from the site (Figure III-5-3) and are not discussed further.

2.3 Generalized Stratigraphic Column in the Facility Area and Regional Cross Sections

A generalized stratigraphic column in the facility area is provided in Figure III-5-4. The stratigraphic column is based on the descriptions in Meyer et al. (2012) and Blandford et al. (2015). Meyer et al. (2012, Figure 6-1) identifies the facility location to be within the Texas Water Development Board (TWDB) Brackish Resource Aquifers Characterization System (BRACS) aquifer Region 2. The stratigraphic column at the site as provided in Table 6-1 of Meyer et al. (2012) consists of (starting from land surface) Pecos Valley Alluvium, Dewey Lake Formation, Rustler Formation, and Salado and Castile Formations. Each of these units is listed and briefly described in Figure III-5-4 for completeness, but based on information presented in the remainder of this section, the only geologic unit that occurs within 1,000 feet of land surface in the vicinity of the site is the Pecos Valley Alluvium.

Meyer et al. (2012, Figures 6-7, 6-8, and 6-12) provide several regional geologic cross sections in the region of interest, two of which intersect BRACS aquifer Region 2. The proposed facility is located near the intersection of cross sections A-A' and E-E' from Meyer et al. (2012) (Figures III-5-5 and III-5-6). The cross sections show that the Pecos Valley Alluvium unconformably overlies older geologic formations of the Permian Period, and that the base of the Pecos Valley Alluvium is more than 1,000 feet below ground surface at the site. Figure III-5-7 is a map of the elevation of the base of the Pecos Valley Alluvium constructed using the datapoints from Meyer et al. (2012); based on this figure, the elevation of the base of the Pecos Valley Alluvium below the site is approximately 1,340 feet above mean sea level (feet msl).

The Pecos Valley Alluvium consists of discontinuous Tertiary- and Quaternary-age deposits of caliche, clay, silt, sand, gravel, and even boulder-sized material deposited in a variety of settings, including lacustrine, fluvial, eolian, and valley-fill environments (Anaya and Jones, 2009; Meyer et al., 2012). These deposits are unconsolidated to semi-consolidated and undifferentiated, and were unconformably deposited on older formations in several structural basins, including the

Pecos Trough to the west (within which the facility is located) and the Monument Draw Trough to the east adjoining the Central Basin Platform (Figure III-5-2) (Anaya and Jones, 2009; George et al., 2009; Meyer et al., 2012). The lithology and thickness of individual beds within the Pecos Valley Alluvium vary widely (both laterally and vertically) over relatively short distances (White, 1971), and clay layers occur frequently (Meyer et al., 2012).

3. Geologic Processes Active in the Vicinity of the Facility

The geologic processes active in the vicinity of the facility were evaluated as described in this section. Aerial photographs were reviewed, and a search of technical literature found no evidence of faulting in the vicinity of the facility. No evidence of differential subsidence, structural damage to constructed facilities (e.g., buildings, roads), scarps, surface depressions, or linear features was identified in the vicinity of the facility on an aerial photograph (Figure III-5-8) or topographic map (Figure III-5-9). The nearest major faults mapped on the Geologic Atlas of Texas sheets are approximately 65 miles southwest of the site (Figure III-5-10).

According to Meyer et al. (2012), collapsed post-Salado Formation sediments were overlain by the Pecos Valley Alluvium. Evidence of collapse features at depth are evident in portions of the Meyer et al. (2012) cross sections. See, for example, the Pecos Valley Alluvium contact with the underlying redbeds in Loving County north of the Pecos River in cross section A-A' in Figure III-5-6, and the same surface in cross section E-E' at the Monument Draw Trough. Although some collapse features occur at depth in the Pecos Trough, they are not as frequent as in other portions of the sections, and none occur in the immediate vicinity of the site.

Three publicly available oil and gas borehole geophysical logs near the site were used to develop the structural cross section A-A'. The locations of the wells used to construct cross section A-A' are shown on Figure III-5-11. The geophysical logs, obtained from the BRACS database through the online TWDB interactive map application, were run from near land surface to total depth. The distance between wells along cross section A-A' is approximately 3.1 to 3.5 miles, with the middle geophysical log (well 1676) located near the site (Figure III-5-11). Cross section A-A' (Figure III-5-12) shows the bottom of the Pecos Valley Alluvium unconformably positioned above the Dewey Lake redbeds between 1,350 and 1,400 feet msl in geophysical well log 1676, and the Delaware Lime is shown at approximately 1,690 feet below sea level (feet bsl). Cross section A-A' indicates no faulting or structural deformation within the

Delaware Lime (massive carbonate units within the Wolfcamp Formation) or overlying formations.

Structural contour maps from GeoMap® Company (GeoMap, 2025) were purchased to obtain additional information regarding faulting and structural deformation of deep formations within 3 miles of the site. The GeoMap® structure maps are copyright protected and could not be included in this submittal; purchase and contact information for the maps is provided in the references. These maps indicate that the Delaware Lime is present below the site at a depth of approximately 1,600 to 1,625 feet bsl; there is no apparent faulting or deformation of this unit within a 3-mile radius of the site. The Bone Spring Formation occurs below the site at a greater depth of approximately 4,800 to 4,900 feet bsl. There is also no apparent faulting or deformation of this unit within a 3-mile radius of the site. A southeast-trending normal fault occurs just beyond the 3-mile distance west of the site within the Bone Spring Formation, with downthrown strata offset to the east with displacement of approximately 100 feet. This fault appears to have no impact on the shallower strata, and does not project upward into the shallower Delaware Lime Formation.

4. Regional Aquifers in the Vicinity of the Facility

4.1 Aquifer Description and Characteristics

The regional aquifers that correspond to the geologic units in the vicinity of the facility are provided in a stratigraphic column (Figure III-5-4). As illustrated in Figure III-5-13, only the Pecos Valley Aquifer (designated as a major aquifer in Texas) exists in the vicinity of the facility within 1,000 feet of the land surface. As illustrated in Figure III-5-12, the Rustler Aquifer (designated as a minor aquifer in Texas) underlies the Dewey Lake redbeds at a depth of about 1,900 feet below the site. The Pecos Valley Aquifer covers approximately 8,650 square miles of west Texas and southeast New Mexico, and is a major source of water (Meyer et al., 2012).

The Pecos Valley Aquifer is an unconfined aquifer, although groundwater in deeper portions of the aquifer may be semi-confined (Meyer et al. 2012; Ashworth and Hopkins, 1995). Yields from existing wells in the Pecos Trough are moderate to large. About 75 percent of the wells with reported production rates produce at least 600 gallons per minute (gpm), and about one-third of the wells produce at least 1,000 gpm. Reported specific capacities of wells producing from the Pecos Valley Aquifer range from 11 to 56 gallons per minute per foot of drawdown (gpm/ft) (TWDB BRACS database). Aquifer transmissivity ranges from less than 1 square foot per day

(ft^2/d) to approximately 14,000 ft^2/d, and averages about 5,500 ft^2/d. Hydraulic conductivity averages approximately 8.6 feet per day (ft/d) (Meyer et al., 2012). Specific yield likely ranges from about 10 to 30 percent for alluvium, and is assumed to be 20 percent (i.e., 0.2) for the Pecos Valley Aquifer based on Jones and Anaya (2009).

Although the Pecos Valley Alluvium occurs at land surface in the vicinity of the site, the top of the Pecos Valley Aquifer is defined by the regional water table. A map of the regional water table was constructed by downloading the reported regional water levels for Pecos Valley Aquifer wells from the TWDB groundwater database for the period 2021 through November 2025. The water level elevations were plotted and subsequently contoured by hand (Figure III-5-14). Although there would likely be some change in water level elevations during this period, the changes are believed to be small enough that they would not substantially affect the regional water table map, a point supported by the Pecos Valley Aquifer hydrographs presented at the end of this section.

The regional water table contours in Figure III-5-14 indicate the occurrence of a cone of depression in the Pecos Valley Aquifer generally south of Pecos and Interstate Highway 20 (I-20) (i.e., the 2,500 feet msl closed, approximately circular, contour). This region of low water level elevations exists primarily due to groundwater pumping for irrigated agriculture, and more recently an increase in groundwater pumping for oil and gas operations. The Pecos Valley Aquifer water table beneath the site has an elevation of about 2,525 feet msl based on the deep site boring SB-4. The occurrence and nature of a perched zone at the site that occurs above the Pecos Valley Aquifer water table are discussed in Section 7.

The direction of groundwater flow in the Pecos Valley Aquifer beneath the site is approximately due south (Figure III-5-14). The hydraulic gradient between the site and the 2,500 feet msl contour near I-20 is about 0.002 foot per foot (ft/ft). The rate of groundwater flow beneath the site in the regional aquifer is estimated to be about 31 feet per year (ft/yr) using the average reported hydraulic conductivity of 8.6 ft/d from Meyer et al. (2012) and an effective porosity of 0.2 (i.e., assumed to be the same as the specific yield). The groundwater flow velocity is the hydraulic gradient multiplied by the hydraulic conductivity, divided by the effective porosity.

Figure III-5-15 shows Pecos Valley Aquifer water levels through time for monitored wells closest to the site with long-term hydrographs that have recent data. The hydrographs presented on Figure III-5-15 and numerous additional hydrographs with more limited periods of record were reviewed. The hydrographs illustrate the changes in groundwater levels due to development (pumping) of the Pecos Trough portion of the Pecos Valley Aquifer. Aquifer water levels

generally declined substantially due to large amounts of groundwater pumping for irrigation that began in the late 1940s and 1950s. Since the 1950s and 1960s, aquifer water levels have partially recovered due to reduced pumping (Garza and Wesselman, 1959; Anaya and Jones, 2009). Pecos Valley Aquifer water levels in the general vicinity of the site have generally been declining or stable since 2000. Hydrographs east of the site near the Pecos River show less of a historical decline, due to aquifer recharge from the river and return flow from irrigated acreage supplied by surface water rather than groundwater pumping.

The hydrograph for Pecos Valley Aquifer well 4635601, about 4 miles west of the facility with a reported depth of 360 feet, has the most complete Pecos Valley Aquifer water level record near the site (Figure III-5-15). This well has a water level record that begins in 1947 and continues through the present. The water level in this well declined significantly during the 1950s and again in the mid-1970s, for a total decline of at least 125 feet. Since the mid-1970s, the water level in this well has remained fairly stable at about 2,500 to 2,510 feet msl, which is approximately 230 feet below ground surface (bgs).

4.2 Typical TDS of Pecos Valley Aquifer Water

Total dissolved solids (TDS) concentrations in Pecos Valley Aquifer groundwater in the Pecos Trough typically exceed 1,000 milligrams per liter (mg/L), and TDS concentrations for a substantial portion of groundwater exceed 3,000 mg/L (Freese and Nichols, 2020). Figure III-5-16 shows TDS concentrations for the Pecos Valley Aquifer for all data points available from the TWDB water quality database. Although all of the data points in the figure are for Pecos Valley Aquifer wells, the well depths and sample dates are variable. Figure III-5-16 indicates that TDS concentrations of the Pecos Valley Aquifer in the Pecos Trough generally range from 1,000 to 10,000 mg/L. Wells with TDS concentrations less than 1,000 mg/L tend to occur outside the Pecos Trough at distance east or southeast of the site.

Figure III-5-17 shows the same data points for a smaller region in the vicinity of the site. As indicated in the figure, the well depths range from about 200 to 700 feet, and the TDS concentrations range from 2,463 to 4,647 mg/L for the wells closest to the site. The TDS data points are primarily from the 1940s and 1950s. However, water quality is not expected to change substantially through time, or at least will not improve because there is no significant source of fresh water that recharges the aquifer. This point is supported by two more recent water quality measurements. Well 46-36-506, less than 1 mile east of the site, had a reported TDS concentration of 2,812 mg/L in 2007, and well 46-36-509, a little over 1 mile north of the site, had a reported TDS concentration of 3,304 mg/L in 2004.

The TWDB BRACS program classifies water as fresh if TDS concentration is between 0 and 1,000 mg/L, slightly saline if TDS concentration is 1,000 to 3,000 mg/L, moderately saline if TDS concentration is 3,000 to 10,000 mg/L, and very saline if TDS concentration is 10,000 to 35,000 mg/L. Using this classification, groundwater in the vicinity of the facility is slightly to moderately saline (Figure III-5-17), consistent with observed Pecos Valley Aquifer groundwater quality throughout much of the Pecos Trough. The U.S. Environmental Protection Agency (EPA) recommends a TDS secondary maximum contaminant level of 500 mg/L for drinking water based on aesthetic considerations (U.S. EPA, 2018). None of the wells in the vicinity of the site meet this secondary standard. Slightly saline water may be used without treatment for rig supply, fracking, stock (if at the lower end of the range), and irrigation (depending on crop tolerance and soil conditions [Ayers and Westcot, 1985]). Slightly saline water would require treatment for domestic use. Moderately saline water may be used without treatment for rig supply and fracking, but is not suitable for irrigation, domestic, and stock use without treatment.

4.3 Recharge Areas Within 5 miles of the Site

Recharge to the Pecos Valley Aquifer occurs as infiltration of precipitation and infiltration of water from canals, irrigation return flow, and potentially the Pecos River. Figure III-5-18 shows example recharge areas within 5 miles of site. Detailed studies of the quantity of recharge from the identified sources of recharge are not available, and the quantity of recharge will change with climate conditions.

The water source for irrigation may be groundwater or surface water if the irrigated acreage is within one of the seven irrigation districts along the Pecos River served by the Red Bluff Water Power Control District. Four of these irrigation districts are in the general vicinity of Pecos adjacent to the Pecos River, and the remainder are farther downstream to the east. It is estimated that 20 percent of water applied for irrigation returns to the regional water table, and that losses due to seepage from irrigation canals range from 30 to 72 percent (Ashworth, 1990). Most natural recharge is episodic, associated with heavy rainfall events or from frequent smaller rainfall events. Otherwise, most precipitation is lost to evapotranspiration (Jones, 2001). There is likely some aquifer recharge at Pecos due to leaking water infrastructure typical of a small town or municipality.

Some inter-aquifer leakage may occur from the underlying Rustler Aquifer at depth (approximately 1,500 feet bgs or more at the site) into the overlying Pecos Valley Aquifer. Jones and Anaya (2009) assumed that inter-aquifer leakage was zero, so if there is seepage between these aquifer units, it is likely a small quantity. Any seepage of groundwater between the Pecos

Valley and Rustler Aquifers would need to occur across the low-permeability Dewey Lake confining unit, which is hundreds of feet thick (Figures III-5-4 and III-5-12).

4.4 Present Use of Groundwater in the Vicinity of the Facility

The present use of groundwater in the vicinity of the facility is for irrigation, mining (oil and gas), stock, and domestic purposes. This assessment is based on the water use listed in the TWDB groundwater database and the proposed use listed on well logs submitted to the Texas Department of Licensing and Regulation (TDLR). Based on the water quality summary provided in Section 4.2, water from the Pecos Valley Aquifer is not suitable for domestic household use without treatment to reduce its salinity. Treatment might also be required to reduce the concentrations of other constituents, such as nitrate. Details of the quantity of water use in the vicinity of the site are not available.

Municipal use and water sources for Pecos are discussed in Section 4.4.1, and water wells within 1 mile of the facility property boundary and their designated uses are presented in Section 4.4.2.

4.4.1 Pecos, Texas Groundwater Supply

Pecos is the largest town in Reeves County, and is located approximately 5 miles southeast of the facility. Pecos obtains its water supply for its own population (10,254 people in 2018) and that of Barstow, Texas (population of 380 in 2018) (Freese and Nichols, 2020). In 2020, Pecos was projected to supply 3,035 acre-feet of water; this amount is projected to increase to 3,605 acre-feet per year (ac-ft/yr) by 2070 (Freese and Nichols, 2020).

Pecos obtains its water supply from three well fields called Worsham, South Worsham, and Ward County (Appendix III-5-A). The Worsham well fields are south of Pecos and about 11 to 13 miles south-southeast of the site. The Ward County well field is about 25 miles east-northeast of Pecos near Monahans and is not in the vicinity of the site. Groundwater from the Worsham well field has high concentrations of TDS and chloride, and no more than 5 percent groundwater from this well field is blended with the town's other water supplies to meet water quality standards (Freese and Nichols, 2020).

4.4.2 Water Wells Within 1 mile of Facility Property Boundary

A search of water wells located within 1 mile of the facility was conducted using the online TWDB groundwater database, the TWDB BRACS database, and the submitted drillers reports database (SDRDB) (Figure III-5-19). BRACS wells identified as "oil or gas" wells were discarded,

and only BRACS wells identified as "withdrawal of water" were used in the analysis. Where it could be confirmed that wells were duplicated in the multiple databases (e.g. a TWDB BRACS well was the same as a well in the TWDB Groundwater Database), only the state well number is plotted in Figure III-5-19.

In addition, when WST purchased the property, a non-potable water well was located near the northwest corner of the property, outside of the landfill footprint (Figure III-5-19). WST provided that the depth of this well is 430 feet, and that it has a chloride concentration of over 11,000 mg/L. This well is not currently in operation, and a state well number could not be found.

Figure III-5-19 shows 28 water wells (excluding monitor wells) within 1 mile of the facility boundary; these wells are summarized in Table III-5-1. All of the wells are completed in the Pecos Valley Aquifer. Of these 28 wells, 5 (including the WST non-potable well) are unused, 4 are for domestic supply, 9 are for irrigation use, 1 is for stock supply, 3 are for rig supply, 1 is for fracking supply, and 5 are for unknown uses. The well depths range from 170 to 725 feet and average 411 feet (Table III-5-1).

5. Subsurface Conditions

5.1 Site Investigations

The soil boring plan (Appendix III-5-B) was prepared for the facility per 30 TAC §330.63, and was approved by the executive director. The soil boring plan used site data from the subsurface exploration report (Terracon, 2014), which presents the installation and results of 11 geotechnical borings, identified as soil borings B-1 through B-11. The Terracon (2014) report documents subsurface materials consisting of interbedded clay, silt, sand, and gravel. Soil borings B-2 through B-4, B-6 through B-9, and B-11 were drilled to 30 feet bgs and were dry. Soil boring B-1 was drilled to 85 feet, and groundwater was measured 48 hours after its installation at 73 feet bgs, which is at an elevation of approximately 2,599 feet msl. Soil boring B-5 was drilled to 65 feet, and groundwater was measured 48 hours later at 60 feet bgs, which is at an elevation of approximately 2,603 feet msl. Soil boring B-10 was drilled to 100 feet and groundwater was measured 30 hours later at 53 feet bgs, which is at an elevation of approximately 2,600 feet msl.

To further investigate subsurface conditions at the site, DBS&A implemented the soil boring plan and advanced 29 additional borings (SB-1 through SB-29) at the facility to establish the subsurface stratigraphy, determine geotechnical properties of the soils, and determine groundwater conditions. The investigation was performed from February 9 to March 16, 2021. Six of the soil borings (SB-6, SB-9, SB-11, SB-14, SB-16, and SB-17) were completed to depths 15 to 25 feet deeper than planned, and one soil boring (SB-4) was completed shallower than planned. SB-4 was drilled to 187 feet, and penetrated approximately the upper 50 feet of the Pecos Valley Aquifer. Consequently, there was no need to continue drilling to the planned depth of 335 feet. Three of the soil borings were converted to permanent groundwater monitor wells: SB-16 (monitor well MW-1), SB-17 (monitor well MW-2), and SB-28 (monitor well MW-3).

During two subsequent field events, six additional permanent monitor wells not included in the soil boring plan were installed. These are monitor wells GW-3 and GW-7 (installed May 3 to 6, 2021) and monitor wells GW-6, GW-11, GW-13, and GW-14 (installed September 20 to 22, 2021). The monitor wells were installed to better characterize the perched zone (Section 7) encountered beneath the site.

A summary of the soil boring and monitor well drilling and construction details (including the Terracon [2014] borings) is provided as Table III-5-2. The locations of the soil borings are shown on Figure III-5-20. Boring logs for the (Terracon, 2014) investigation are attached to the Soil Boring Plan in Appendix III-5-B. Boring logs and well construction diagrams for the 2021 investigation are provided in Appendix III-5-C. The boring logs from both investigations include the boring name/number, surface elevation, and location coordinates, a columnar section with text showing the elevation of all contacts between soil and rock layers, and a description of each layer using the unified soil classification system, color, degree of compaction, and moisture content. The soil boring locations and surface elevations, as well as monitor well top of casing elevations and locations were established in the field by a professional surveyor. The boring depths ranged from 30 to 187 feet bgs (Table III-5-2), corresponding to bottom of hole elevations ranging from 2,475 feet msl (SB-4) to 2,642 feet msl (B-2).

A total of 15 soil borings were completed to a depth of 65 feet bgs or greater. Soil boring SB-4 was initially drilled to 100 feet using mud-rotary drilling methods, and water was reported by the driller at 57 feet bgs. Soil boring SB-4 was deepened the following day to 187 feet, a temporary screen was installed, and a static groundwater level was recorded at 137 feet bgs approximately 19 hours later. The purpose of drilling SB-4 in two stages was to document two separate zones: the shallow perched zone and the deeper Pecos Valley Aquifer.

The soil borings and monitor wells were installed using several drilling methods. The Terracon (2014) soil borings were drilled using a truck-mounted Central Mining Equipment (CME)-75 drill rig with continuous-flight augers, and soil samples were collected using split-barrel (often called split-spoon) sampling procedures in accordance with standard penetration tests (SPTs) using an auto-hammer. Terracon also collected representative samples that were submitted for selected limited engineering testing. Results of the testing are attached to the soil boring plan in Appendix III-5-B.

During the 2021 investigation, soil borings and monitor wells were installed using hollow-stem auger (HSA), mud-rotary, and air-rotary drilling methods. Soil borings SB-1 through SB-29 were installed with HSA drilling methods except for soil boring SB-4, which was installed using mud-rotary drilling methods because the HSA method could not reach the desired depth. The SB-4 boring was drilled using a Reichdrill T-650 WII rotary drilling rig with a 6⅞-inch tri-cone bit. Samples of the soils encountered in SB-4 were recovered from the drilling fluids using a Tulsa Rig Iron Mud Reclamation System (separation system). Monitor wells GW-3, GW-6, GW-7, GW-11, GW-13, and GW-14 were installed using an Ingersoll Rand TH-60 air-rotary drilling rig. The drilling methods are summarized in Table III-5-2.

Selected soil samples collected during the 2021 investigation were submitted to the DBS&A Soil Testing and Research Laboratory (DBS&A laboratory) for testing to define physical and engineering characteristics. Testing consisted of standard physical property tests such as Atterberg limits and particle-size distribution, as well as vertical hydraulic conductivity.

DBS&A provided technical staff to observe and document the drilling at the site and to record field data. All geotechnical tests were performed in accordance with industry practice and recognized procedures.

For all soil boings installed during the 2021 investigation, a temporary monitor well was installed upon completion of the boring to facilitate static water level measurement. The static water level was recorded 24 hours after installation to allow for groundwater stabilization. After final measurements were obtained, the temporary well materials (casing and screen) were removed from the boring and the boring was backfilled with bentonite chips and properly hydrated. All drilling, subsurface investigation, and borehole plugging and abandonment were performed in accordance with the applicable requirements of 16 TAC §76 (Water Well Drillers and Water Well Pump Installers). Drilling water used to prepare drilling mud and decontaminate drilling equipment was obtained from Pecos. General information about Pecos water is provided in Appendix III-5-A.

5.2 Site Cross Sections and Subsurface Stratigraphy

In total, 40 soil borings have been drilled and 9 permanent monitor wells have been installed at the site. Boring logs and one driller's log were used to construct three stratigraphic cross sections at the facility. The cross section locations are shown in Figure III-5-20. Cross sections B-B', C-C', and D-D' are presented in Figures III-5-21, III-5-22, and III-5-23, respectively. The water levels illustrated on the cross sections and groundwater beneath the site are discussed in Section 7.

The cross sections depict the observed strata at the proposed facility, and illustrate the occurrence of complex gradational layers of clay, silty clay, silt, sand, clayey sand, silty sand, and gravel of the Pecos Valley Alluvium. Fining upward sequences (coarse-grained materials grading upward to fine-grained materials) are apparent over multiple depositional episodes that represent channeling (coarser-grained sediments) followed by overbank deposition of finer-grained materials. Multiple channels with basal gravel units are apparent in the cross sections at depths of 10 to 30 feet bgs. Below 30 feet bgs to about 90 feet bgs (bottom of the cross sections) the predominant material types are fat clay, silty clay, silt, and silty sand with some thin sand lenses limited in extent.

Soil boring SB-4, the deepest boring constructed at the site, was drilled to 187 feet bgs to investigate the vertical extent of the perched zone and the upper portion of the Pecos Valley Aquifer. At this location, clay-rich material (sandy clay, clayey gravel, clay with sand) was encountered from about 60 to 151 feet bgs. Sandy gravel and gravel with sand were found from 152 to 180 feet bgs. The nature of the perched zone beneath the site is discussed in Section 7.

6. Geotechnical Properties

This section presents geotechnical properties of the subsurface soil materials at the facility. All geotechnical tests were performed in accordance with industry practice and recognized procedures. The following subsections include discussion with conclusions about the suitability of the observed soils and strata at the facility for use as a Type I MSW landfill.

6.1 Standard Penetration Tests

During the Terracon (2014) investigation, soil samples were collected while performing SPT and split-barrel sampling according to ASTM International (ASTM) method D1586. Terracon

collected nine representative soil samples from soil boring B-1, which were submitted for particle size analysis (ASTM D422), liquid and plastic limit (ASTM D4318), and moisture content (ASTM D2216). In addition, direct shear testing (ASTM D3080) was performed on a bulk soil sample collected from boring B-7 within the 0 to 10 feet bgs interval. Results of the testing are included in Exhibit B-2 of the Terracon (2014) report, attached to the soil boring plan (Appendix III-5-B).

During the 2021 investigation, SPT and split-barrel sampling were conducted during drilling using a cat-head hammer at intervals of 5 feet or less. The SPT information is included on the boring logs (Appendix III-5-C). The number of blows required to advance the sampler each 0.5 foot (0.15 meter [m]) of penetration or fraction was recorded by the field geologist. Per ASTM D1586, the first 0.5 foot (0.15 m) is considered to be a seating drive. The sum of the number of blows required for the second and third 0.5 foot (0.15 m) of penetration is termed the "standard penetration resistance," or the "N value." SPT N values have been correlated to numerous soil properties. In cohesionless soils (e.g., sands), the SPT can be used to predict the compactness and relative density, such as very loose, loose, medium, or dense (Peck et al., 1973). In cohesive soils (e.g., clays), the SPT is less reliable in predicting the consistency (i.e., very soft, soft, medium, stiff, etc.) (Peck et al., 1973).

The lowest N value for the soils encountered during the 2021 investigation was 6 (in both SB-9 and SB-28). SPTs in several boreholes resulted in a total of 50 blows applied during one of the three 0.5-foot (0.15-m) increments, indicating that very dense coarse-grained materials (such as gravel or cemented sand) or hard fine-grained materials (such as clay) were encountered. Per ASTM D1586, the numbers of blows for each complete 0.5-foot (0.15-m) increment and for each partial increment were recorded on the boring log. For partial increments, the depth of penetration was reported to the nearest 0.1 foot (0.030 m), in addition to the number of blows. A summary of N values as they related to coarse-grained and fine-grained materials is presented in the Terracon (2014) report, attached to the soil boring plan (Appendix III-5-B).

6.2 Laboratory Soil Analysis

A total of 13 soil samples were collected during the 2021 investigation, and 7 were submitted to the DBS&A laboratory for analysis to determine soil characteristics. Representative samples were selected for analysis based on field observations from each soil layer or stratum that will form the bottom and sides of the proposed excavation, and from those that are less than 30 feet below the lowest elevation of the proposed excavation. The samples were obtained using

Shelby tubes that were stabilized, capped, and sealed immediately to retain any moisture in the sample.

The laboratory report for the 2021 investigation is provided as Appendix III-5-D. The testing used to generate the report employs industry standard methods. Testing included dry bulk density and calculated porosity (ASTM D7263), particle size analysis (ASTM D7928 and D6913), Atterberg (liquid and plastic) limits (ASTM D4318), saturated hydraulic conductivity (ASTM D5856M and D5084), moisture content (ASTM D7263 and ASTM D2216), and visual-manual description (ASTM 2488). All of these methods were used to aid in classifying the soils in accordance with ASTM D2487, which is the Standard Practice for Classification of Soils for Engineering Purposes using the Unified Soil Classification System (USCS). The results of the laboratory tests are also presented on the boring logs (Appendix III-5-C).

The particle size analysis resulted in the ASTM classification of a sandy silt or silt with sand in 4 of the 7 samples. Sample SB-17 (11'-12') was classified as silty sand, and samples SB-23 (25.5') and SB-11 (49'-50') were classified as sandy lean clays. The Atterberg limits test produced similar classification with the exception of sample SB-17 (11'-12'), which required a visual-manual classification as silt due to non-plasticity. The calculated porosity ranged from 39.3 percent in SB-23 (25.5') to 58.0 percent in SB-16 (55.5'). The saturated hydraulic conductivity values ranged from 5.3×10^{-7} centimeters per second (cm/s) in sample SB-16 (55.5') to 8.6×10^{-3} cm/s in sample SB-17 (11'-12'). These are vertical hydraulic conductivity values, and correspond to values of 0.0015 ft/d (SB-16) to 24.4 ft/d (SB-17).

6.3 Suitability of the Observed Soils and Strata

The geology in the area of the proposed facility is suitable for the siting and operation of a Type I MSW landfill based on the physiography and topography of the area. Review of the surface geology did not reveal geologic or geomorphologic features that would cause unstable areas to exist in soils at the site, such as surface faulting or collapse features associated with karst. As shown on the soil borings and cross sections, the subsurface of the site is composed primarily of interbedded clay, silt, and sand with some gravel units. The WST Landfill may use the low-permeability surface soils as daily, intermediate, and final cover, but the soils may not be suitable as a compacted clay liner without amendment. Excavated soils may also be used as general fill, road material, and potentially evapotranspiration cover if approved in the future.

As presented in detail in Section 7, the geologic strata that will remain in place from the base of the facility to approximately 100 feet bgs are generally low-permeability clay, silt, and silty sand

(Figures III-5-21, III-5-22, and III-5-23). The combined vertical hydraulic conductivity of these materials is sufficiently low to lead to formation of a perched zone beneath the facility from about 60 to 80 feet bgs (Section 7). The perched zone will serve as a useful zone above the top of the Pecos Valley Aquifer to monitor the facility.

7. Groundwater

7.1 Occurrence and Regulatory Classification

Table III-5-3 summarizes the water level elevations observed at all site boreholes and monitor wells. As indicated in the table, water levels in the borings (excluding deep boring SB-4) ranged from 53 to 84 feet bgs. All 21 borings completed to 40 feet bgs or less were dry, as were deeper borings SB-14 (completed to 80 feet bgs) and SB-23 (completed to 65 feet bgs) (Table III-5-3).

Soil boring SB-4 is the deepest boring at the facility. SB-4 was initially advanced through the perched zone encountered at about 60 to 80 feet. The following day, SB-4 was drilled to a depth of 187 feet bgs and a temporary monitor well was constructed. This boring passed through unsaturated material that occurs below the perched zone and penetrated approximately the top 50 feet of the Pecos Valley Aquifer. The water level recorded in the SB-4 temporary monitor was 137 feet bgs, which is about 67 feet greater than the depth to water at monitor well GW-3 (soil boring SB-28) of 70 feet bgs (monitor well GW-3 is the nearest location to SB-4 with a perched zone water level). The observed water level at SB-4 is consistent with that observed in nearby Pecos Valley Aquifer water supply wells (Figure III-5-14).

The significant difference in observed water levels between SB-4 and the shallower site borings, in conjunction with the Pecos Valley Aquifer information provided in Sections 2 and 4, indicates that the water encountered between about 60 to 80 feet bgs below the site is "perched" above the Pecos Valley Aquifer water table. Perched water conditions may occur where a low-permeability material, such as clay or silt, impedes the downward movement of infiltrating water, causing it to accumulate within or at the top of the low-permeability unit(s) at an elevation above the "regional" water table of the underlying aquifer unit.

The perched zone beneath the facility is not an aquifer. An "aquifer" is defined under 30 TAC §330.3 as a "geological formation, group of formations, or portion of a formation capable of yielding significant quantities of groundwater to wells or springs." The perched zone beneath the site does not meet the 30 TAC §330.3 definition of an aquifer because it is not capable of

yielding significant quantities of groundwater to wells or springs. The bases for this conclusion are as follows:

- The perched zone has not been targeted or relied upon as a water supply by existing well owners or drillers, even for small water demands such as domestic or stock use (Table III-5-1).
- At 3 of the 6 perched zone monitor wells that were hydraulically tested (GW-11, GW-13, and GW-14), the estimates of hydraulic conductivity are low (0.14 to 0.68 ft/d) (Section 7.4).
- The perched zone saturated thickness is limited, ranging from about 6 to 23 feet in the monitor wells and averaging about 14 feet (Table III-5-2). This saturated thickness is insufficient to operate a well, even at low water demand.
- At some locations, such as at soil borings SB-14 and SB-23, there is no perched water that will enter a well bore.

Therefore, the limited zone of saturation that occurs at about 60 to 80 feet bgs is referred to in this report as a perched zone, and not a perched aquifer.

Although the perched zone is not in direct hydraulic communication with the underlying Pecos Valley Aquifer, the perched water is expected to eventually reach the Pecos Valley Aquifer water table as vertical downward seepage or through a combination of horizontal migration and subsequent vertical downward seepage. The source of the perched water is likely irrigation return flow from prior years when the site was irrigated. This conclusion is supported by the high nitrate concentrations found in the perched zone monitor wells (Section 7.3). Therefore, the perched zone is a good location to monitor beneath the facility because seepage from the facility (if it does occur) will migrate along the same pathways as the perched water.

Identification of the uppermost aquifer as the Pecos Valley Aquifer, including the groundwater flow direction and rate, are provided in Section 4. The Pecos Valley Aquifer is the "first perennial aquifer" beneath the site as the term is used in 30 TAC §330.3, and was investigated beneath the facility at deep boring SB-4. The remainder of this section provides details on the characterization of water in the perched zone.

7.2 Perched Zone Water Levels

Table III-5-2 summarizes the initial water table elevations for the boreholes, and Table III-5-3 summarizes water levels in the site monitor wells collected during 11 field events. Large

changes in water levels have not been observed at the monitor wells (Figure III-5-24). A general overall decline in water levels occurred between July 2021 and August 2025. The largest decline of 3.24 feet occurred at well GW-11, while the smallest decline of approximately 0.54 foot occurred at well GW-3. Even though the overall water level trend is downward during the period of monitoring, small increases in water levels have occurred (Table III-5-3 and Figure III-5-24).

Pressure transducers were installed in perched zone monitor wells MW-1, MW-6, GW-11, GW-13, and GW-14 in September 2021 to monitor water levels at regular (hourly) intervals. Solinst Canada Ltd. (Solinst) Levelogger® absolute water level dataloggers were used. An absolute water level datalogger measures total pressure of the overlying water column and the atmosphere. A separate Solinst Barologger® 5 located at the facility was used to obtain simultaneous barometric readings in air. The Barologger® 5 readings were used to adjust the Levelogger® data to obtain true water levels.

The recorded water levels from the pressure transducers are provided in Figure III-5-25. Note that the small abrupt changes in water level elevation in Figure III-5-25 at monitor wells GW-6 and GW-13 in September 2023 are due to physical transducer adjustments at the wellhead. The transducer water level measurements illustrate declining trends in water levels and no distinguishable seasonal variation.

Pecos Valley Aquifer water levels in the area typically respond to seasonal fluctuations associated with groundwater pumping for uses such as irrigated agriculture. The lack of significant variation in perched zone water levels (Figures III-5-24 and III-5-25) is additional evidence that the perched water beneath the site is distinct from the underlying Pecos Valley Aquifer.

Perched zone water level contour maps for the October 2021 and August 2025 water level monitoring events were prepared (Figures III-5-26 and III-5-27, respectively). The groundwater flow direction in the perched zone is consistently to the east-southeast. Groundwater levels in well MW-2 were measured to be approximately 10 to 12 feet lower than those in nearby wells MW-3 and GW-3, but were comparable to levels observed in well GW-11, located to the east. This distribution of groundwater elevations between MW-2 and GW-11 results in a water table map with an east-southwest trending trough. Overall, horizontal groundwater flow in the perched zone is toward the central portion of the site, and then to the southeast.

The horizontal hydraulic gradient for the water table represented in Figure III-5-27 ranges from a high of about 0.01 ft/ft north of monitor well MW-2 to a low of about 2.6 x 10^{-4} ft/ft between wells MW-2 and GW-11. The geometric mean of hydraulic conductivity determined from slug tests at the site is 1 ft/d (Section 7.4.2 and Appendix III-5-E). Using the same approach as presented in Section 4.1, the average rate of horizontal groundwater flow in the perched zone is estimated to range from about 0.5 ft/yr (low hydraulic gradient) to 18 ft/yr (high hydraulic gradient) assuming an effective porosity of 0.2. These estimated flow velocities would change in direct proportion to the assumed effective porosity of the perched zone sediments. For example, the rate would be double for an effective porosity of 0.1, and would be 50 percent less for an effective porosity of 0.3; both of these effective porosity values are possible.

7.3 Perched Zone Water Quality

Baseline water quality samples were collected from the perched zone monitor wells MW-1, GW-3, GW-11, GW-13, and GW-14 during April 2021, September 2023, January 2024, April 2024, and July 2024 to establish background chemical concentrations and groundwater parameters. The samples were collected in accordance with a sampling and analysis plan (SAP) that incorporates DBS&A standard operating procedures (SOPs) for water sampling (Part III, Attachment 6). A field blank was also collected during each event by pouring deionized water into sample containers; the field blank is used to verify the absence of airborne contaminants during the time of sample collection.

Monitor well sampling by bailing began with measuring the depth to water in the monitor well with an electronic water level indicator. These measurements were used to calculate the required purge volume for each monitor well. As each monitor well was purged, field values of pH, temperature, dissolved oxygen, oxidation/reduction potential, and electrical conductivity (i.e., field parameters) were measured at regular intervals to document that stable water quality conditions had been established at the well.

Laboratory analyses were performed by Eurofins Environment Testing (Eurofins) in Denver, Colorado and Albuquerque, New Mexico. Eurofins supplied clean, pre-preserved sample containers as needed. Samples were shipped priority overnight on ice and chain-of-custody protocol per standard procedure.

Groundwater samples collected in 2021 were analyzed for general chemistry, anions, cations, total and dissolved metals, volatile organic compounds, and semivolatile organic compounds. Samples collected in 2023, 2024, and 2025 were analyzed for the listed constituents in 40 CFR

258 Appendix I in accordance with 30 TAC §330.407. In April 2024, the analytical suite was expanded to include additional parameters required under the Railroad Commission of Texas (RRC) groundwater monitoring program for commercial surface waste facilities, including Texas Method 1005 for total petroleum hydrocarbons. Analytical results for the six sampling events are provided in Appendix III-5-F.

Baseline water quality testing results reported herein will be used to establish background groundwater parameters specific to the facility and individual permanent monitor wells; there are no pre-established groundwater parameters for MSW landfills. For instance, baseline water quality sampling performed from April 2021 through July 2024 indicates that nitrate concentrations in the perched zone monitor wells ranged from 35 to 130 mg/L. The detected nitrate concentrations are likely due to the infiltration of return flow and associated dissolved constituents from fertilizers from when the site was irrigated in the past. Regardless of the suspected source, baseline concentrations for each analyte will be established using statistical methods for future reporting.

As an indicator of overall groundwater quality in the perched zone, from April 2021 through July 2024, TDS concentrations ranged from 4,000 mg/L in monitor well GW-3 to 8,000 mg/L in monitor well GW-13. During the same period, chloride concentrations ranged from 520 mg/L in monitor well GW-3 to 2,200 mg/L in monitor well GW-13. The perched zone water could not be used for typical purposes such as domestic, stock, or irrigation without significant treatment and, as already explained in Section 7.1, the perched zone would not yield sufficient water to a well for such purposes regardless.

7.4 Slug Testing

Slug tests were conducted at the site in monitor wells MW-1, MW-2, MW-3, GW-3, GW-11, GW-13, and GW-14 to estimate the horizontal hydraulic conductivity of the saturated material adjacent to the monitor well screen. The tests were performed between September 27 and 29, 2023 following a groundwater sampling event. Multiple slug tests were conducted at each monitor well except for well GW-3, which had only one test. Tests were a combination of rising and falling head tests (Table III-5-4), although the falling head tests were not considered reliable as explained below. Falling head tests were conducted by introducing a slug into the water column, causing the water level in the well casing to rise higher than the water level in the surrounding formation. The rate at which the water level in the well declined back toward the initial static level was then monitored. After the water level stabilized, rising head tests were

performed by removing the slug from the water column, causing the water level in the well to drop quickly and then gradually rise back to the equilibrium level.

Water levels were monitored during each test using non-vented Solinst Levelogger® 5 transducers and an electronic water level tape (sounder). Barometric pressure data were recorded using a Solinst Barologger® 5 installed near monitor well GW-14, and were used to compensate the Levelogger® data for changes in ambient barometric pressure throughout the tests. The slugs were constructed using 1.25-inch-diameter Schedule (SCH) 40 polyvinyl chloride (PVC) pipe weighted with sand. Slugs were either 4 or 6 feet long, depending on the length of water column in the well. Where possible, 6-foot slugs were used to maximize water level displacement.

The hydraulic conductivity results for each test was calculated using the Bouwer and Rice method in the software package AqteSolv™ (Appendix III-5-E). A representative hydraulic conductivity value for each well was estimated based on the arithmetic average hydraulic conductivity of successful tests at a given monitor well. Invalid tests caused by excess turbulence from slug insertion or interference between down-hole equipment were identified from the field notes and by inspecting the test data, and the results from these tests were not used to calculate average hydraulic conductivity values.

Most of the test results demonstrated what is called "double straight line" behavior, wherein the slope of the normalized head versus time curves was initially steep immediately after the slug was inserted, followed by inflection to a shallower slope after a short time (Appendix III-5-E). This is characteristic behavior for wells screened across the water table, as is the case for all the monitor wells that were tested. The steepness of the initial slope is caused by water transferring between the well filter pack and well casing, and is not representative of hydraulic properties of the formation material adjacent to the well screen. This process was compensated for in the analysis by correcting the casing radius for the effective porosity of the filter pack (assumed to be 0.25) following the guidelines of Bouwer (1989).

Although falling head tests are documented in Appendix III-5-E, they are not considered reliable for wells screened across a water table (Bouwer, 1989). When the water level inside the screened interval is greater than the surrounding water table, water may flow from the screen into unsaturated material. This effect may be more or less pronounced depending on aquifer properties. For this reason, the average hydraulic conductivity determined for each well was based on rising head slug test results only (Table III-5-4). The estimated horizontal hydraulic conductivity values range from 0.14 ft/d at monitor well GW-11, which is screened adjacent to

silt, to 4.45 ft/d at monitor well MW-2, which is screened adjacent to well-graded sand. The geometric mean of the average horizontal hydraulic conductivity at the perched zone monitor wells is 1 ft/d.

Error in interpretation of the slug test results may arise from incorrect identification of the magnitude of the initial change in water level during the rising and falling slug tests. In several instances, significant noise in the transducer data was present at the beginning of the test. In some cases, this was attributed to the slug and the transducer becoming entangled. In other cases, a change in water level greater than could be attributed to the displacement of the slug was observed that could not be readily explained. In both of these scenarios, a plausible data point was selected for the maximum initial change by inspecting the data and reviewing the field notes.

8. Groundwater Monitoring Plan

This section presents the proposed groundwater monitoring plan developed in accordance with TAC §330.403. As detailed in Section 7, the perched zone overlies (occurs shallower than) the top of the Pecos Valley Aquifer, so a dual monitoring system is proposed. The perched zone is an appropriate zone to implement the majority of the monitor well network to monitor the facility, as any facility-related impacts will reach, and flow within, the perched zone prior to reaching the Pecos Valley Aquifer. This provides the best method to "reasonably assure detection of any contamination of the groundwater before it migrates beyond the boundaries of the site", in accordance with 30 TAC 332.47(C)(ii). Additional wells are required to monitor the point of compliance (POC); however, the facility intends to optimize these locations to minimize drilling holes that could become unwanted conduits to the underlying aquifer.

The locations of 14 proposed perched zone monitor wells and 3 Pecos Valley Aquifer wells are provided in Figure III-5-28. Well depths and anticipated screen intervals are provided in Table III-5-5. The well locations were selected based on the observed perched zone water levels and the interpreted direction of groundwater flow. Proposed wells MW-1, MW-2, MW-13, and MW-14 would be upgradient wells relative to the landfill, and the remainder of the proposed wells would be downgradient. Based on the analysis provided in Section 7.2, significant changes in water levels are not observed on a seasonal basis, and the direction of groundwater flow in the perched zone is consistent between monitoring events (e.g., Figures III-5-26 and III-5-27). It is

not expected that site construction or landfill operations will affect the perched zone groundwater flow direction or rates.

Monitor well MW-1 will monitor background perched zone water flowing from south to north, and monitor well MW-14 will monitor background perched zone water flowing from north to south. Monitor well MW-2 will is also expected to monitor upgradient water, but also provides a monitor point at the edge of the elongated depression in the perched zone water levels where the direction of groundwater flow may be starting to shift from north-northeast to east. The spacing of all monitor wells is 600 feet or less, with the exception of background wells MW-13 and MW-14 (Table III-5-5). The proposed 850-foot spacing for the two wells is reasonable given that they are in upgradient locations.

The groundwater flow direction in the Pecos Valley Aquifer is to the south in the vicinity of the facility (Figure III-5-14). However, given the scale of the figure, local variation in groundwater flow direction that includes an easterly component is possible. Proposed monitor wells MW-1D, MW-4D, and MW-8D (Table III-5-5) are recommended to monitor the POC in the Pecos Valley Aquifer; these well locations are on the south and east sides of the facility (Figure III-5-14). These wells will be spaced greater than 600 feet, but as explained above the perched zone is the optimal location to identify potential seepage before it reaches the Pecos Valley Aquifer. In addition, the facility is committed to installing additional Pecos Valley Aquifer monitor wells if contamination is detected at perched zone or Pecos Valley Aquifer monitor wells.

9. Arid Exemption Groundwater Certification Process

WST is not seeking an arid exemption for the proposed landfill design, so the associated groundwater certification process is not applicable.

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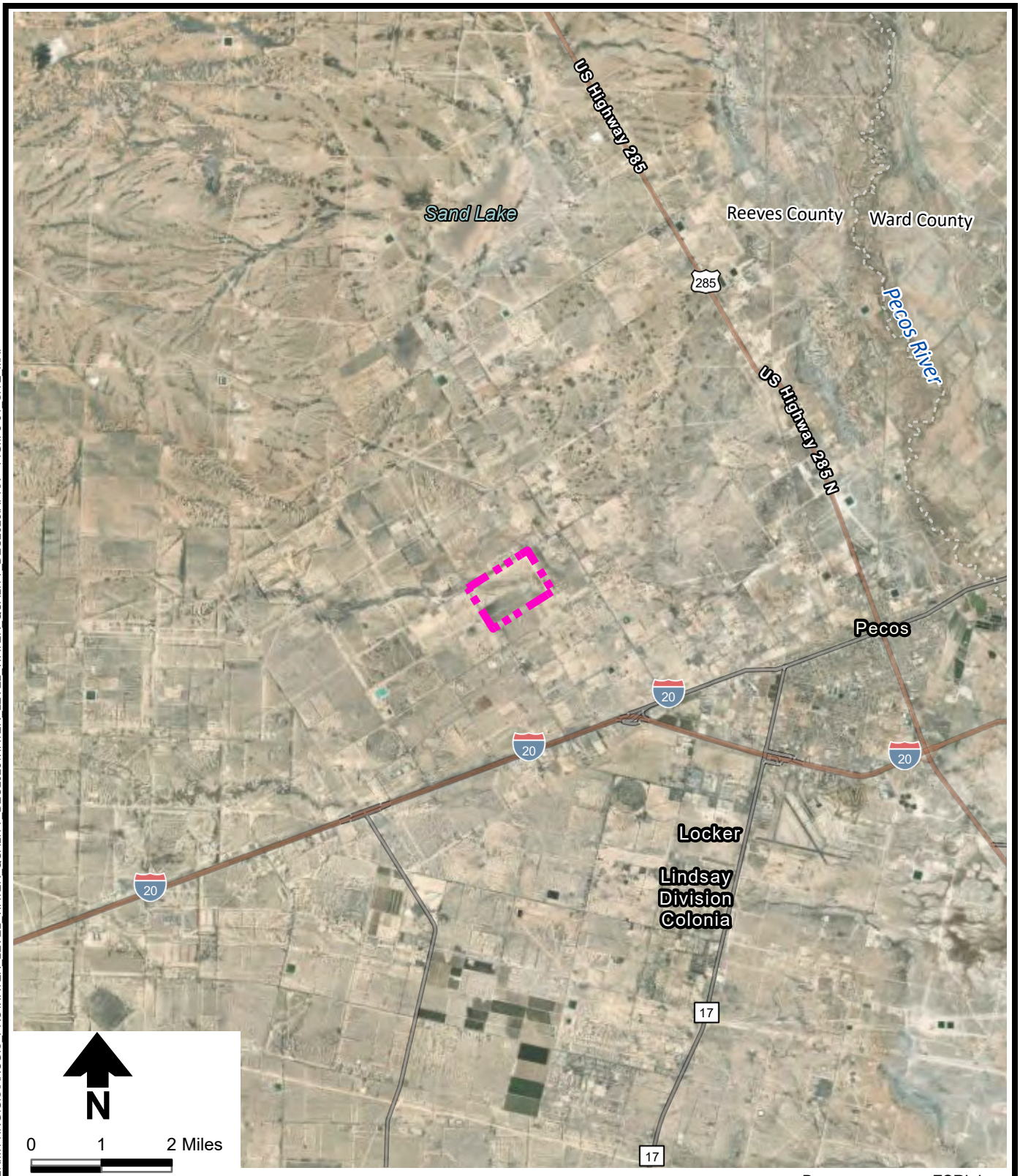
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Figures

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Basemap source: ESRI, Inc.

S:\PROJECTS\DB20.1166 WST PECOS PERMITTING\GIS\ARCGIS PRO\WATER LEVEL WATER QUALITY DEC2025\WATER LEVEL WATER QUALITY DEC2025.APRX • FIGIII-5-01 SITE MAP

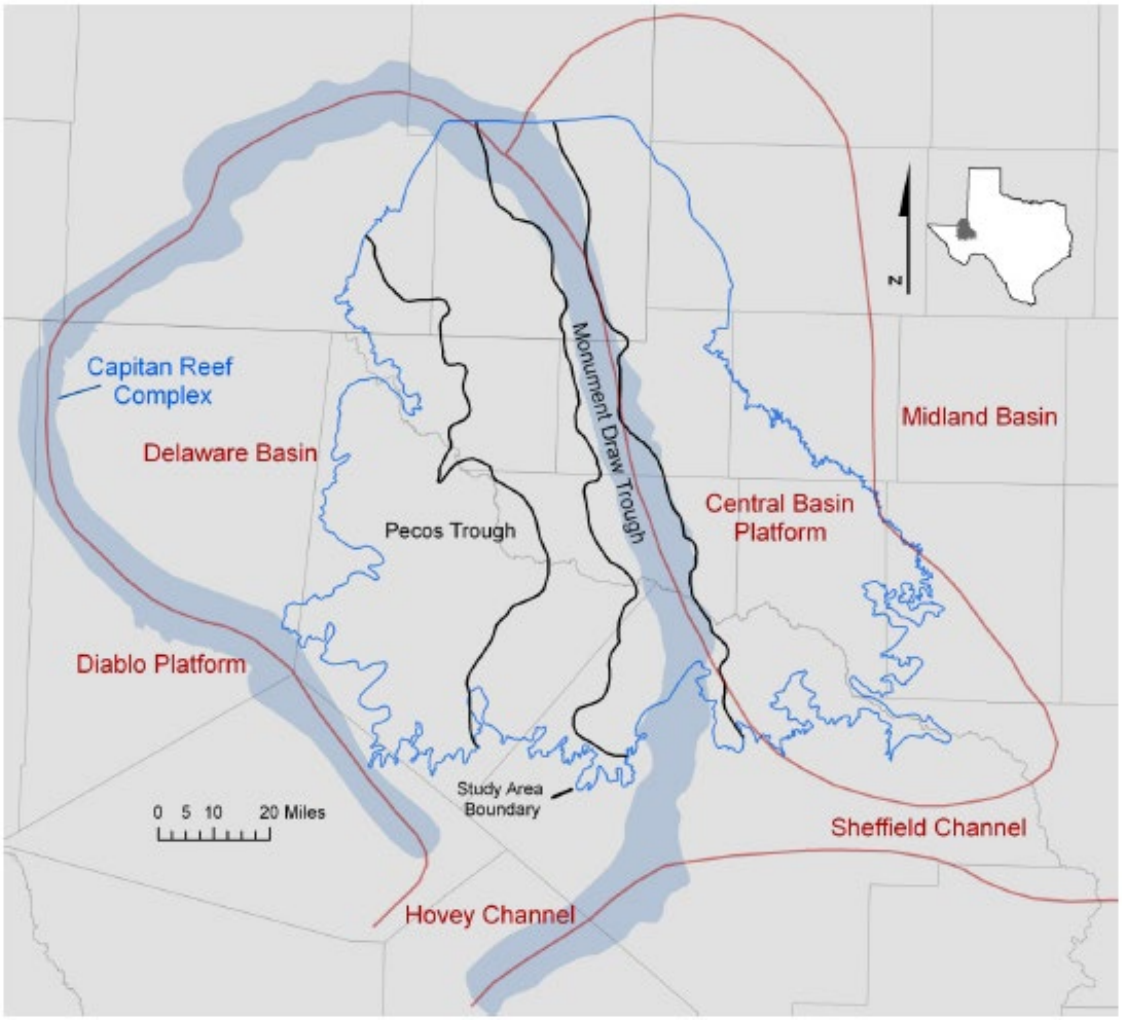
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2/25/2026 DB20.1166

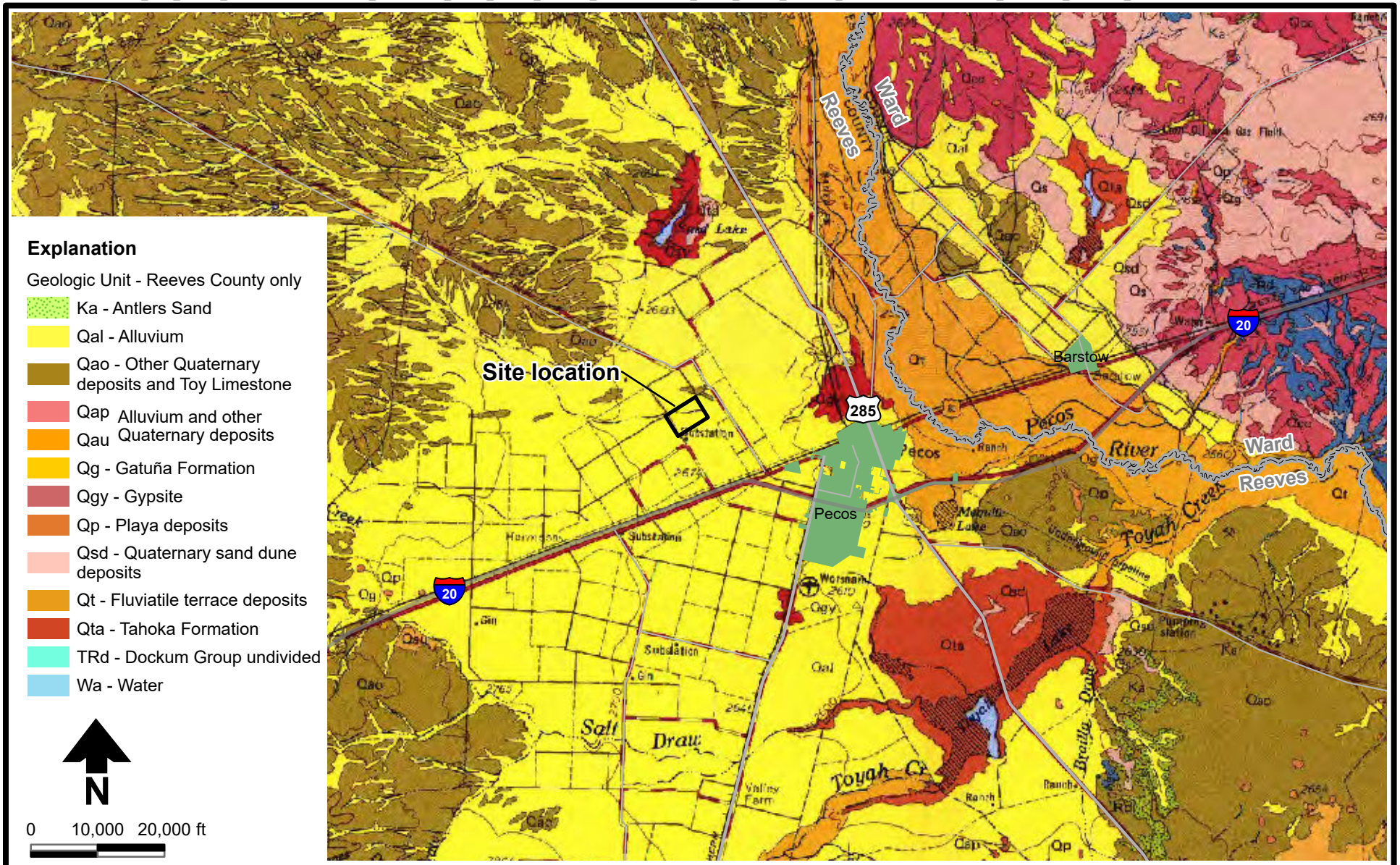
WST LANDFILL

Site Map

Figure III-5-1



Source: Meyer et al., 2012



Geologic Atlas of Texas, Pecos Sheet

Figure III-5-3

WST LANDFILL

Regional Surface Geology

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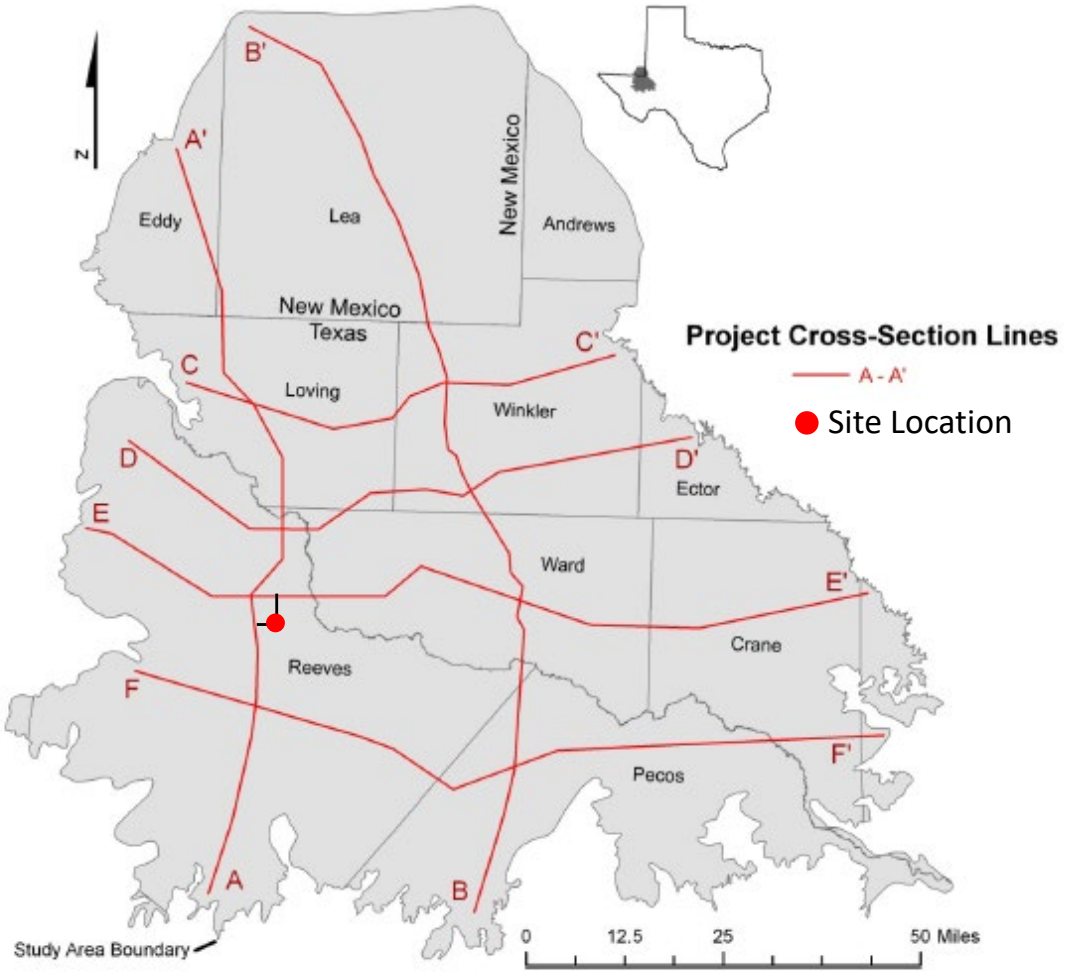
Period	Group/Series	Formations in Delaware Basin	Aquifers in Delaware Basin	Formations in Permit Area	Aquifers in Permit Area
Quaternary		Sheet sand and windblown sand	Above the water table (not saturated)	Sheet sand and windblown sand	Above the water table (not saturated)
Tertiary	Late Pliocene to Miocene	Pecos Valley Alluvium	Ogallala or Pecos Valley (major aquifers)	Pecos Valley Alluvium (Pecos Trough)	Pecos Valley Aquifer (major aquifer)
Cretaceous	Fredericksburg Group	Fort Terrett	Fort Terrett		
	Trinity Group	Antlers Sand			
Triassic	Dockum Group	Cooper Canyon	Upper Dockum (primarily a confining unit)		
		Trujillo Sandstone			
		Tecovas	Lower Dockum (minor aquifer - Santa Rosa)		
		Santa Rosa			
Permian	Ochoan Series	Dewey Lake	Confining Unit	Confining Unit	Confining Unit
		Rustler	Rustler Aquifer (minor aquifer)	Rustler	Rustler Aquifer (minor aquifer)
		Salado	Confining Unit	Salado	Confining Unit
	Guadalupian Series	Castile		Castile	
		Capitan Reef or Delaware Mountain Group: Bell Canyon	Capitan Reef Complex (minor aquifer)	Capitan Reef Complex not present	Capitan Reef Complex not present
		Capitan Reef or Delaware Mountain Group: Cherry Canyon			
		Capitan Reef or Delaware Mountain Group: Brushy Canyon			

Source: Modified from Blandford et al., 2015 and Meyer et al., 2012

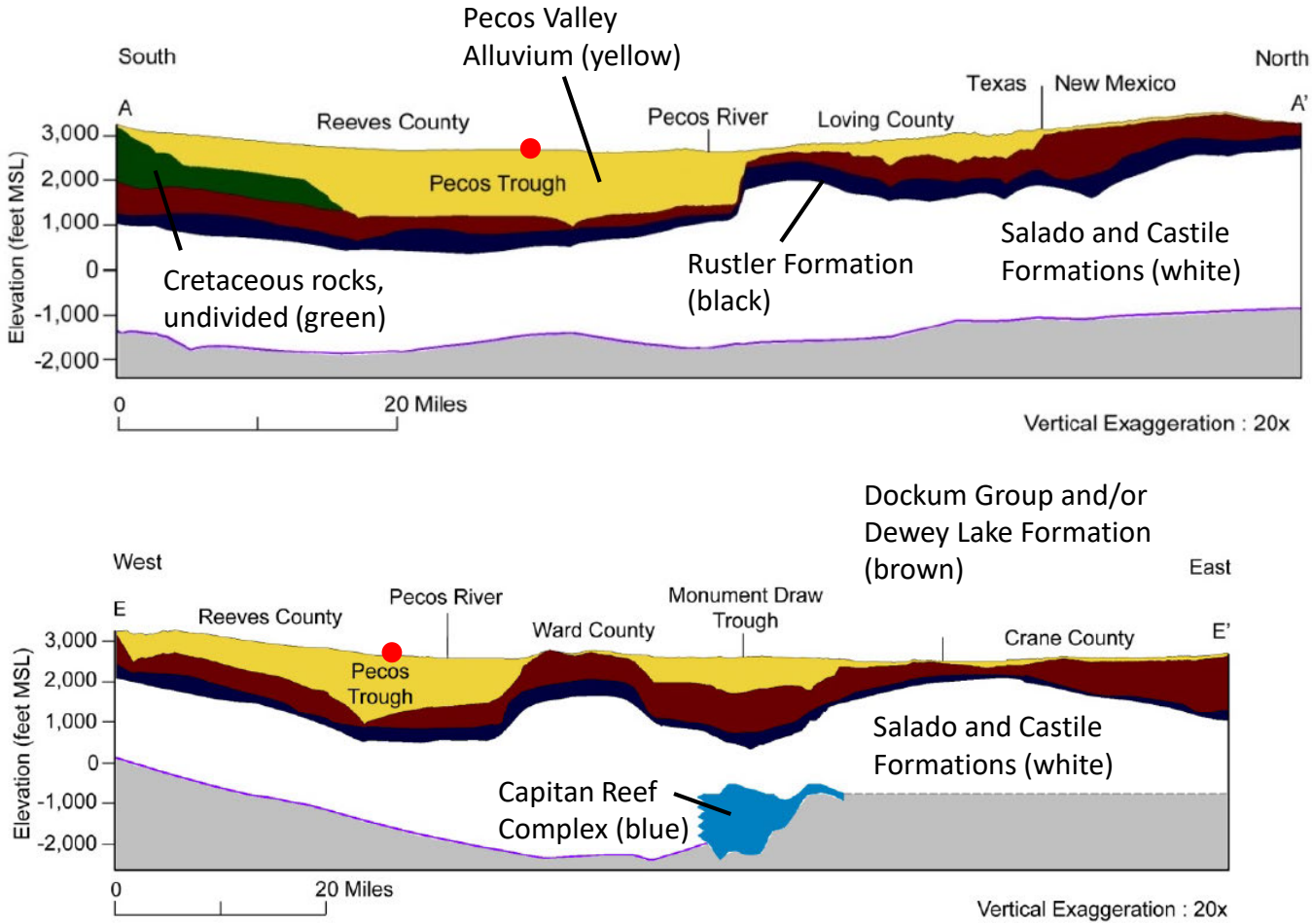
Figure III-5-4

WST LANDFILL
Stratigraphic Column

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1/12/2026 DB20.1166



Source: Meyer et al., 2012



Source: Modified from Meyer et al., 2012

Figure III-5-6

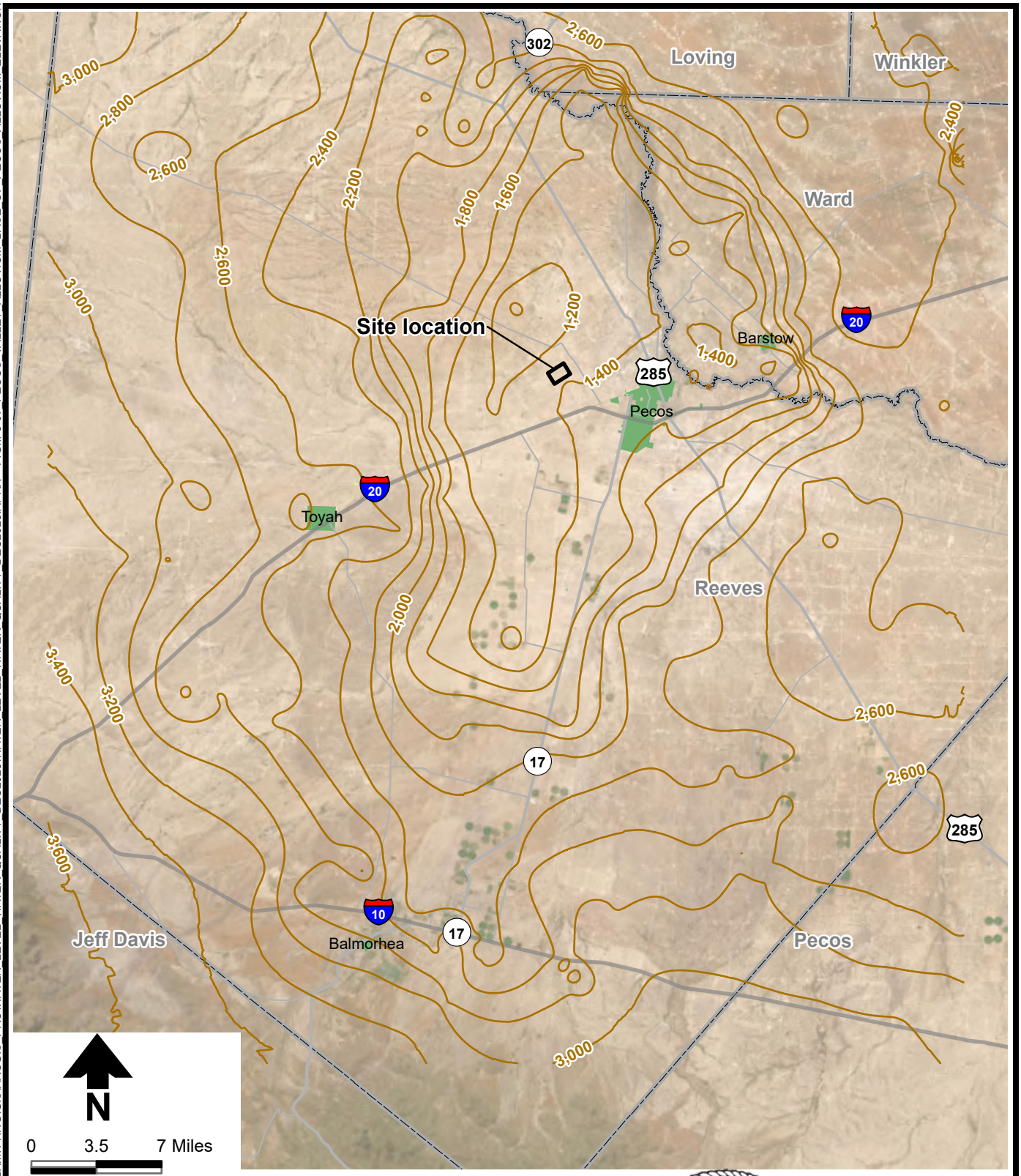
WST LANDFILL

Regional Cross Sections from Meyer et al. (2012) that Pass Near the Site

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1/12/2026 DB20.1166

Rev 2: July 2026 (Rev 0: March 2026)



Aerial Photograph: ESRI et al.

Explanation

- Base of alluvium elevation contour (ft msl) based on data points from Meyer et al. (2012)
- Site location
- County boundary

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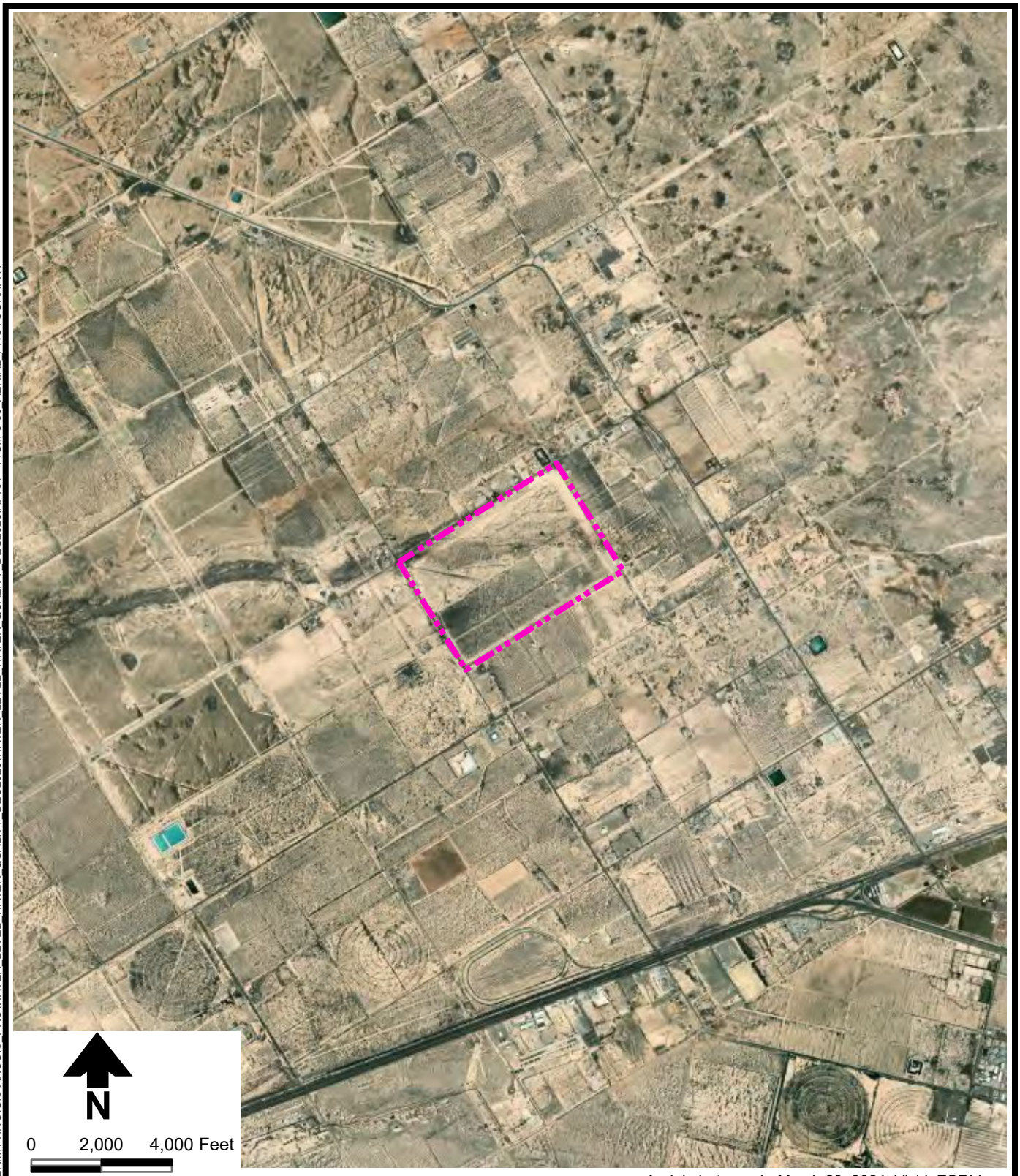
Base Elevation of Pecos Valley Alluvium

2/25/2026 DB20.1166

Figure III-5-7

Rev 2: July 2026 (Rev 0: March 2026)

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Aerial photograph, March 28, 2024, Vivid, ESRI Inc.

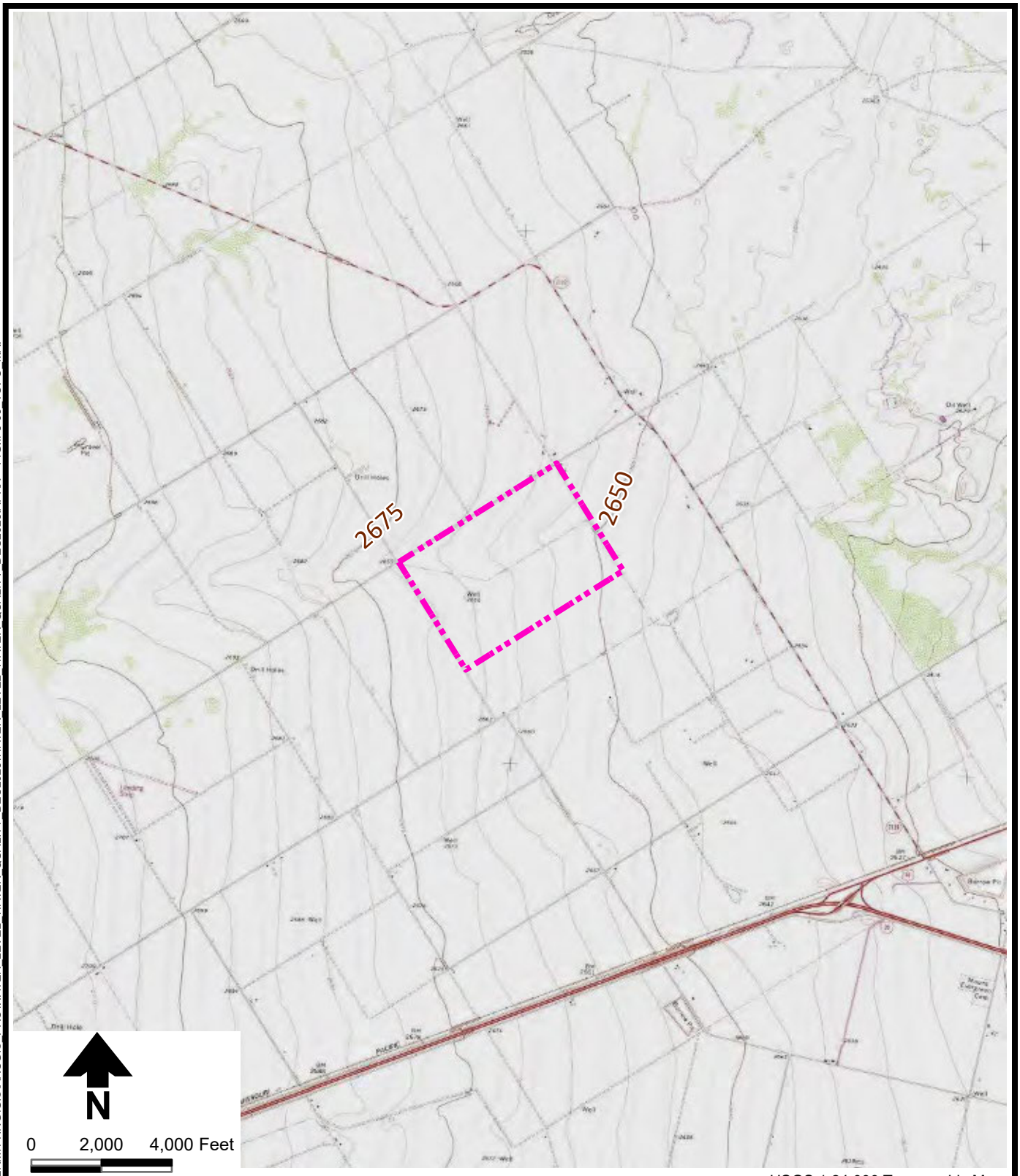
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WST LANDFILL
Aerial Photography

Figure III-5-8



USGS 1:24,000 Topographic Map

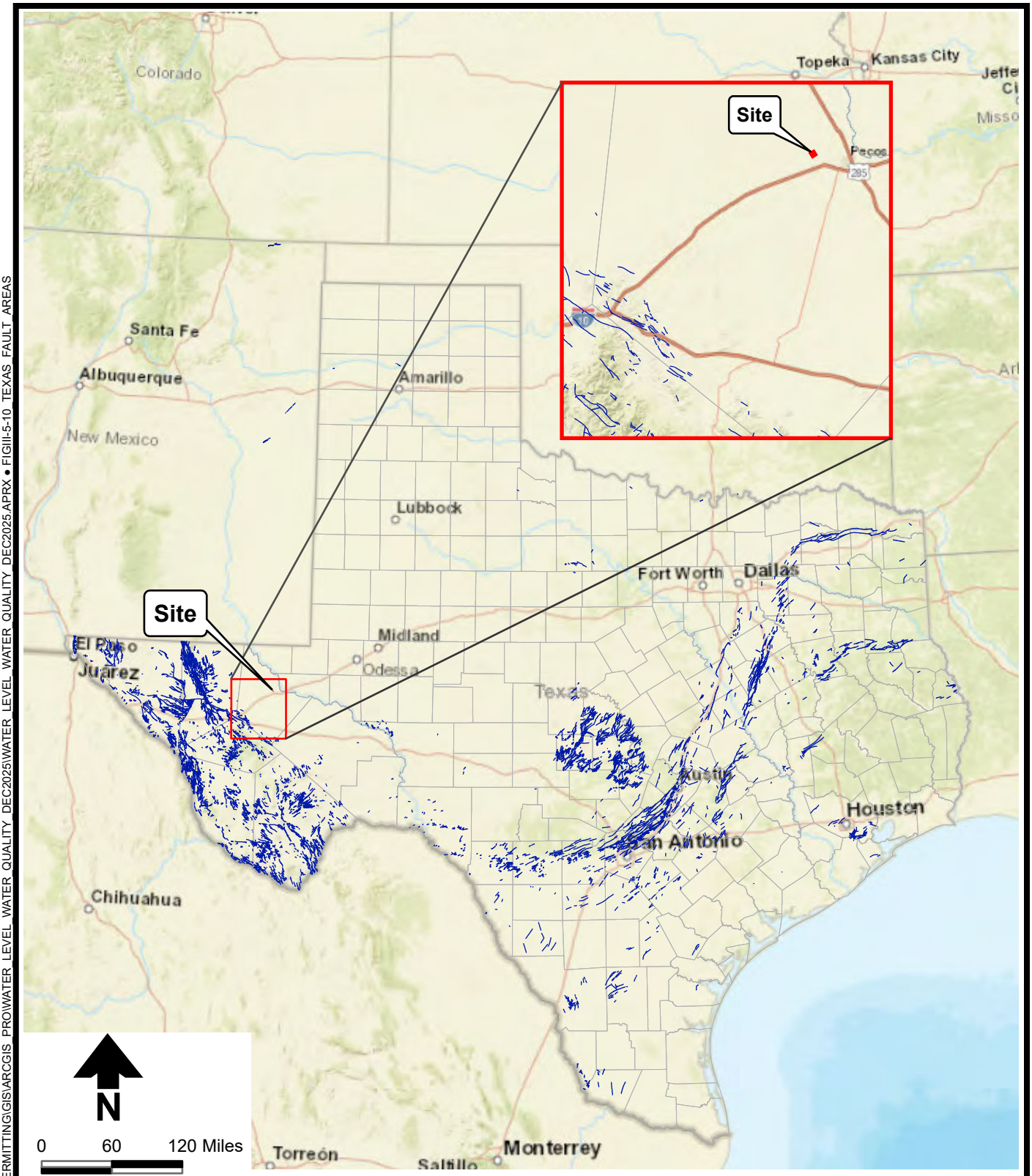
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2/25/2026 DB20.1166

WST LANDFILL
Topographic Map

Figure III-5-9



Basemap: ESRI et al.

S:\PROJECTS\DB20.1166 WST PECOS PERMITTING\GIS\ARCGIS PRO\WATER LEVEL WATER QUALITY DEC2025\WATER LEVEL WATER QUALITY DEC2025.APRX • FIGIII-5-10 TEXAS FAULT AREAS

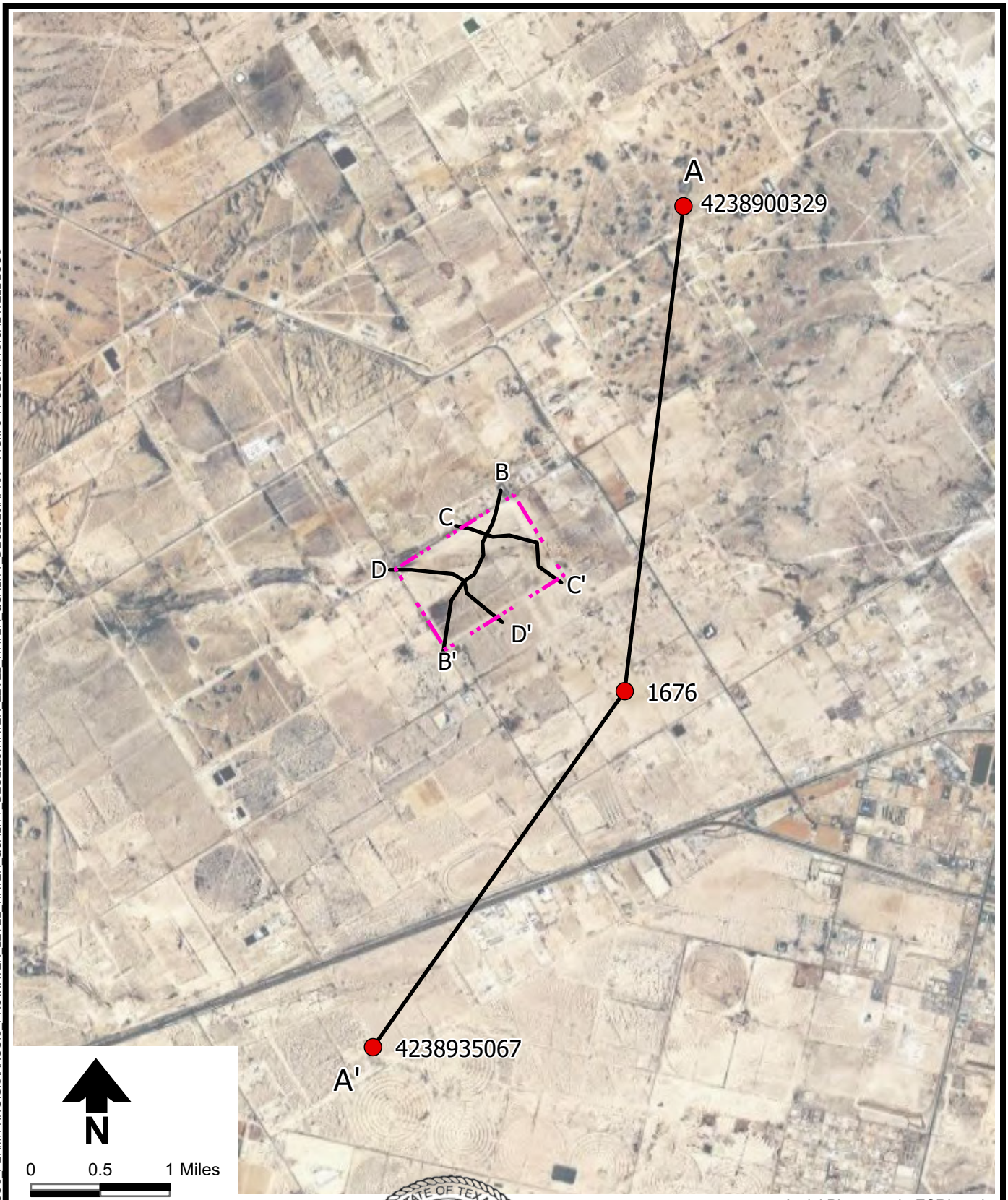
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WST LANDFILL

Mapped Faults from Texas GAT Sheets

Figure III-5-10



Aerial Photograph: ESRI et al.

Explanation

- Geophysical well log location
- Cross section location
- Site location

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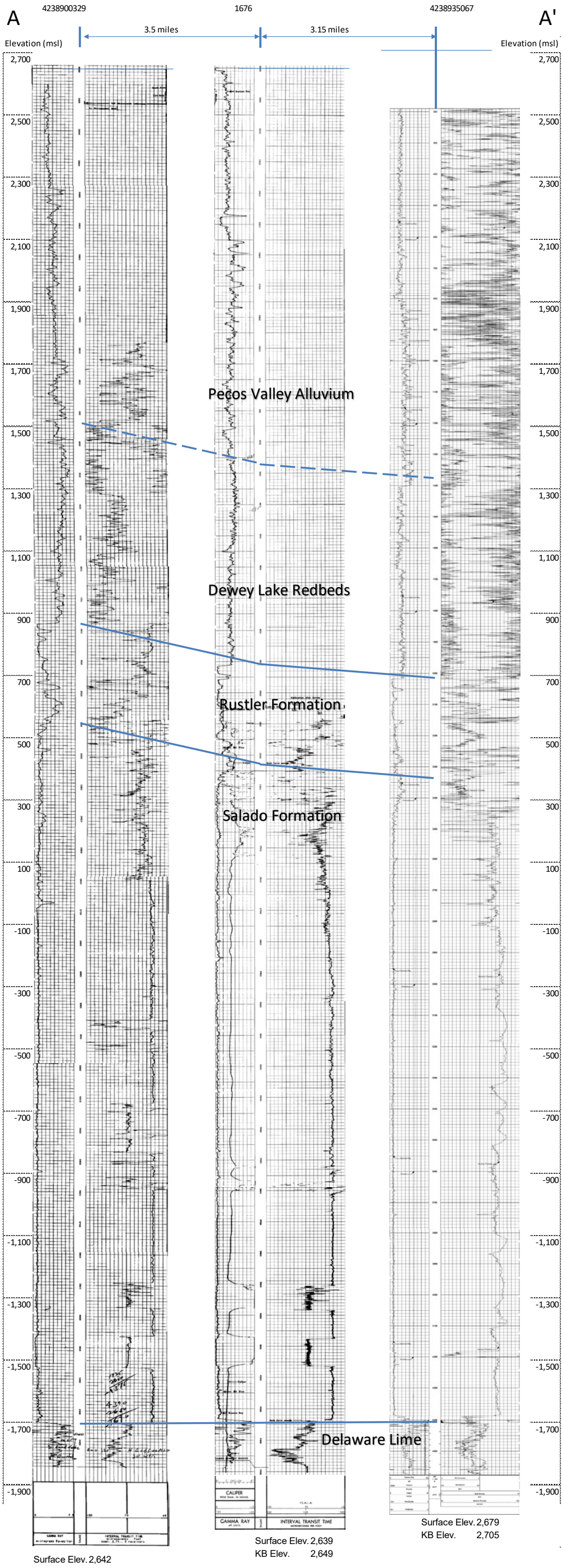
WST LANDFILL

Geophysical Logs Cross Section A-A'

Figure III-5-11

Rev 2: July 2026 (Rev 0: March 2026)

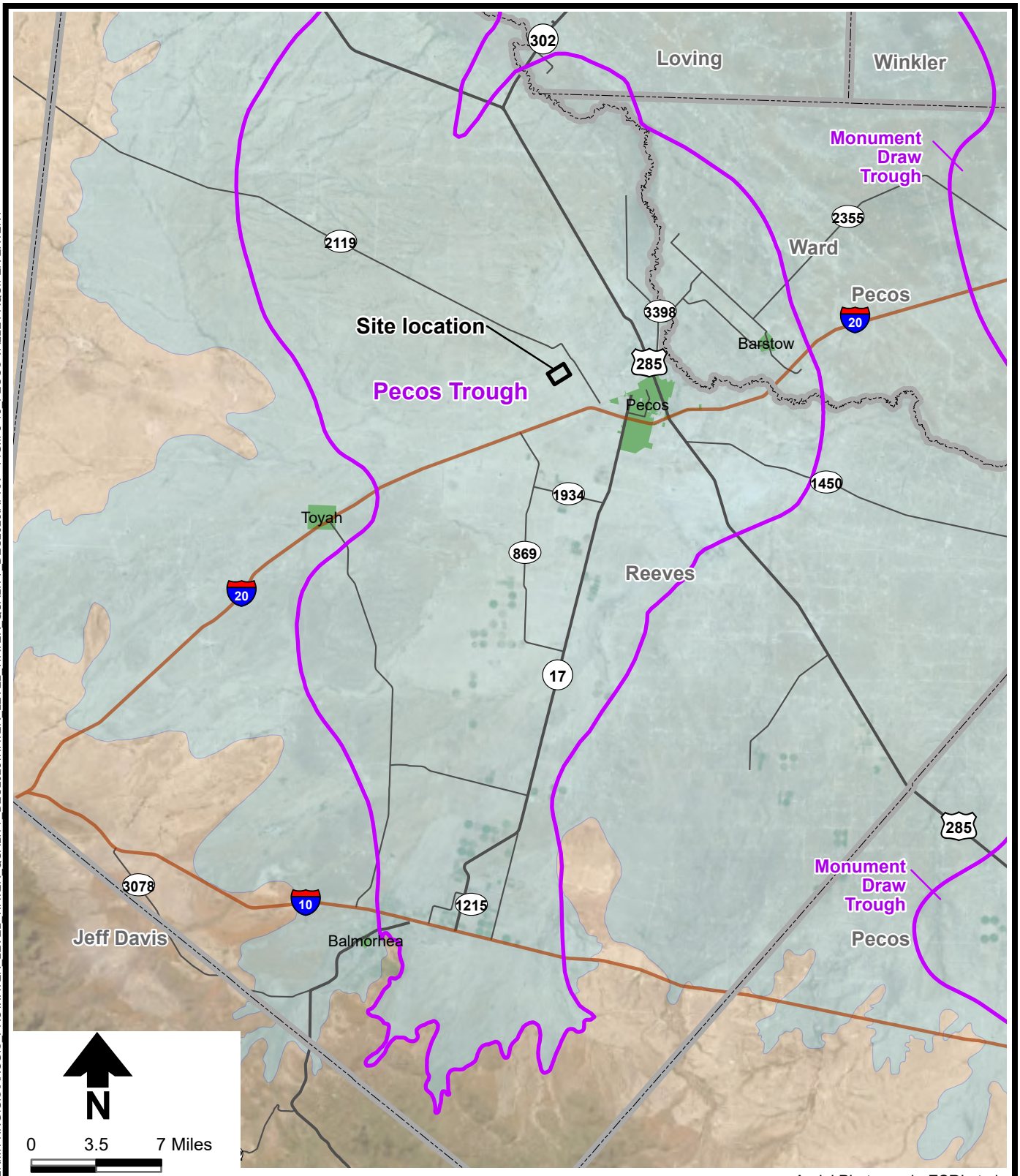
S:\PROJECTS\DB20.1166 WST PECOS PERMITTING\GIS\ARCGIS PRO\WATER LEVEL WATER QUALITY DEC2025\WATER LEVEL WATER QUALITY DEC2025.APRX • FIGIII-5-11-GEOPHYSICAL WELL LOGS



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Figure III-5-12

WST LANDFILL
Cross Section A-A'



Aerial Photograph: ESRI et al.

Explanation

- Approximate trough boundary
- Pecos Valley Aquifer extent
- Site location
- County boundary

WST LANDFILL

Extent of Pecos Valley Aquifer and Pecos Trough

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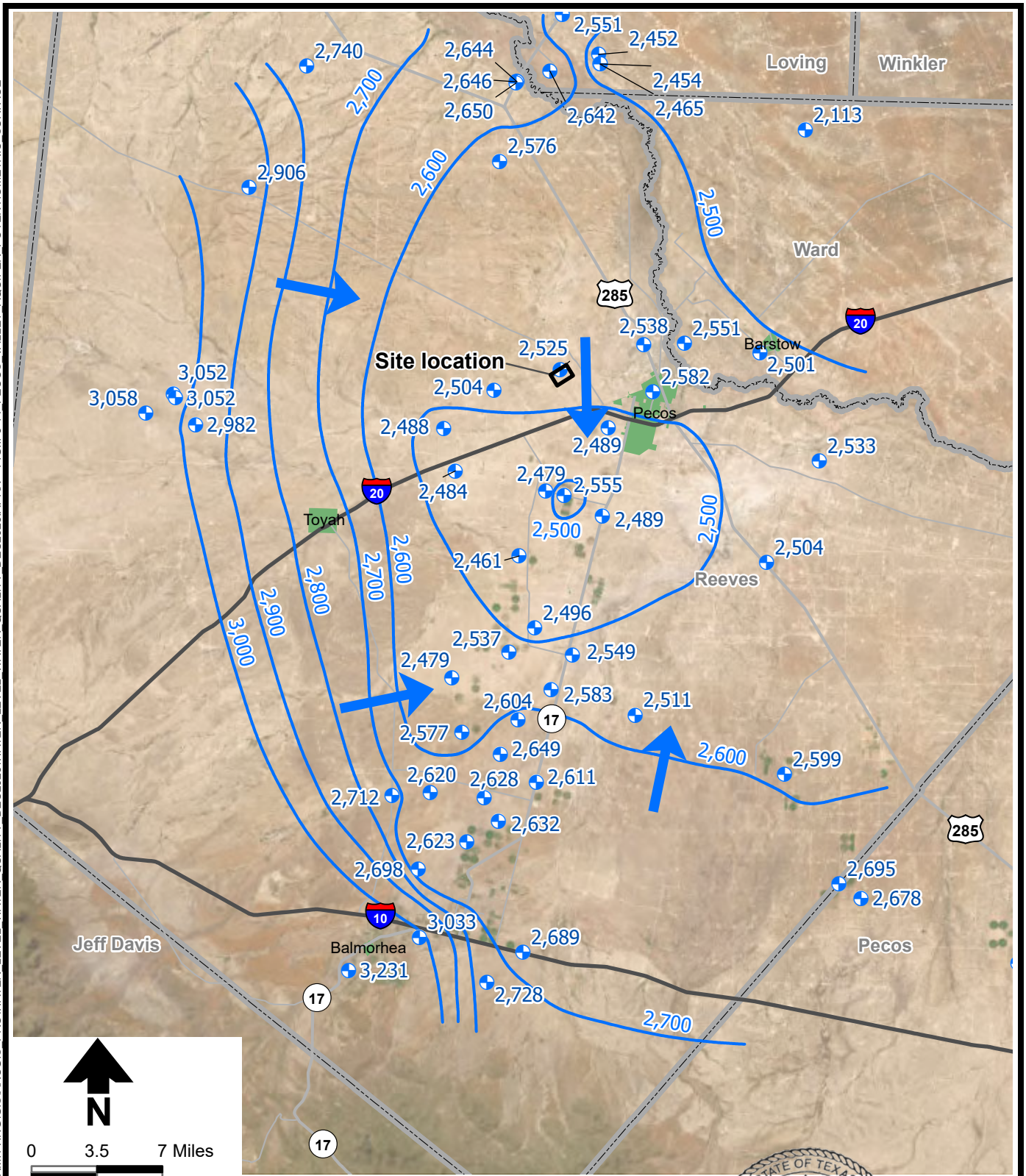
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Figure III-5-13

Page III-1201

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Explanation

- 2,728 Water level elevation (ft msl)
- Well
- Water level elevation contour (ft msl)
- Site location
- County boundary
- Groundwater flow direction

Note: Water level elevation data from March 2021 through November 2025.

Aerial Photograph: ESRI et al.

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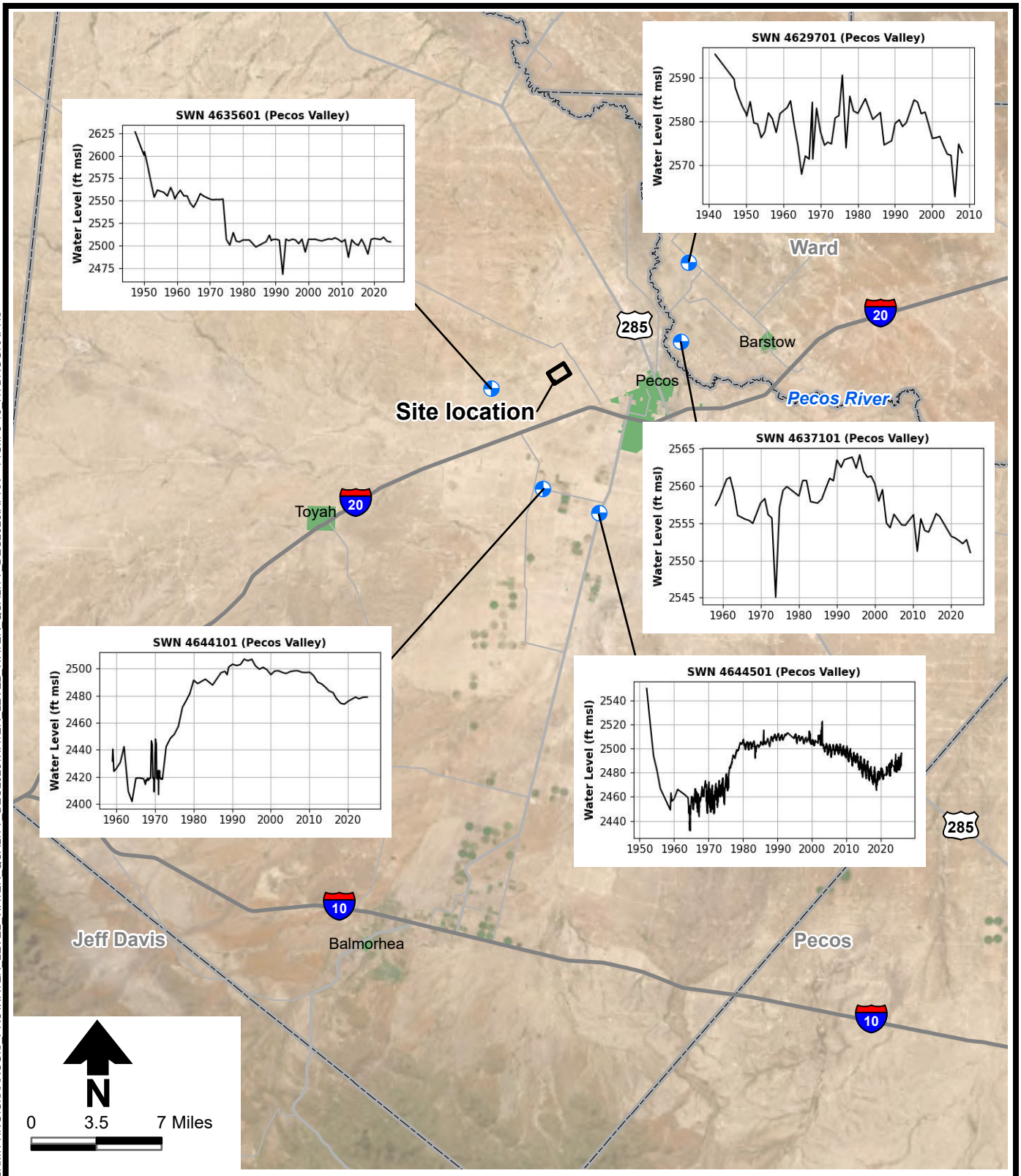
WST LANDFILL

Pecos Valley Aquifer Water Table Elevation

Figure III-5-14

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Aerial Photograph: ESRI et al.

Explanation

- TWDB monitored well location
- Site location
- County boundary

S:\PROJECTS\DB20.1166 WST PECOS PERMITTING\GIS\ARCGIS PRO\WATER LEVEL WATER QUALITY DEC2025\WATER LEVEL WATER QUALITY DEC2025.APRX • FIGIII-5-15 HYDROGRAPHS

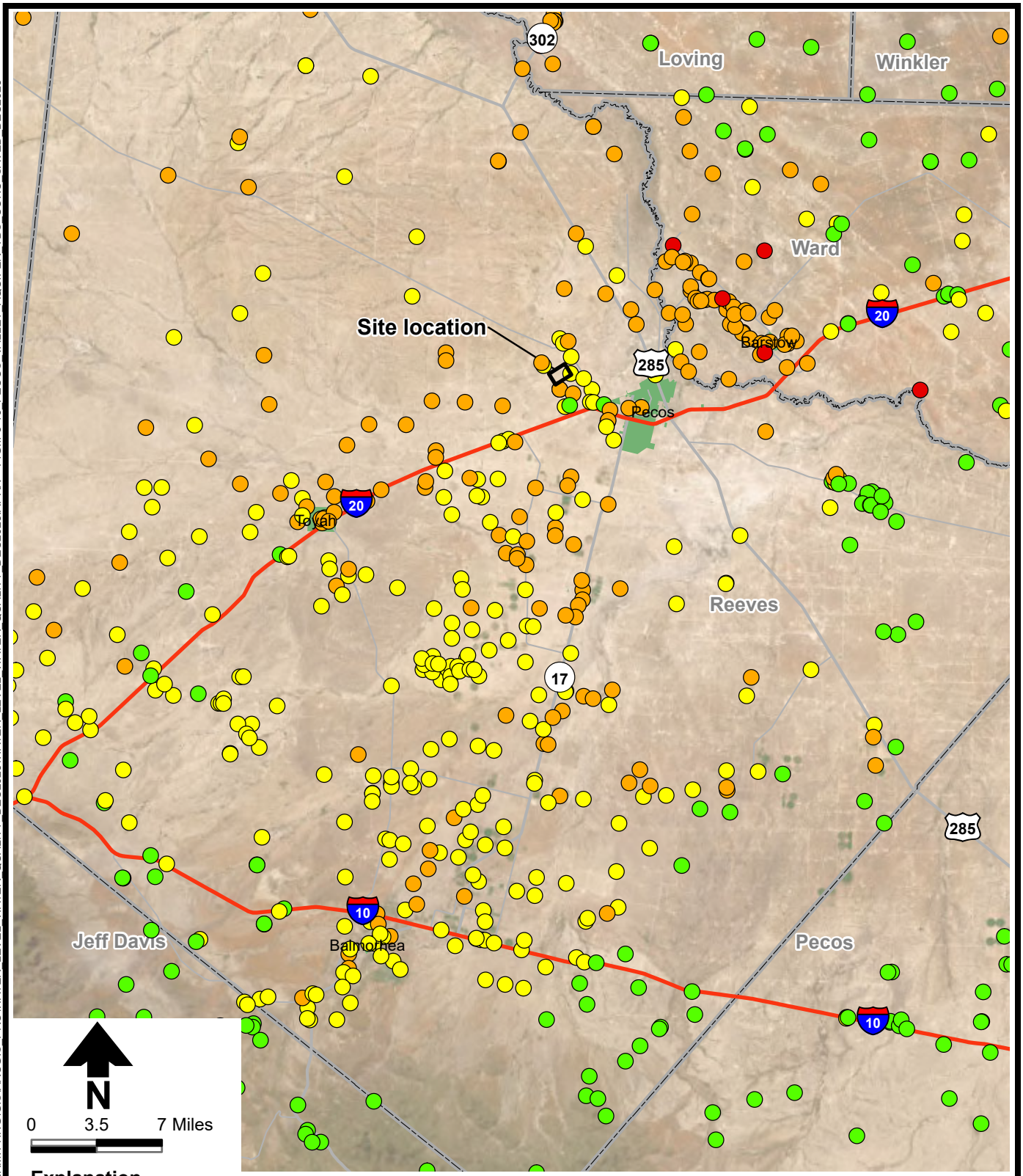
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WST LANDFILL

Pecos Valley Aquifer Hydrographs

Figure III-5-15



Aerial Photograph: ESRI et al.

Explanation

Total dissolved solids concentration (mg/L)

- 0 - 1,000
- 1,001 - 3,000
- 3,001 - 10,000
- >10,000

County boundary

Site location

Note: TDS concentrations are most recent data available from the TWDB database.

WST LANDFILL

Pecos Valley Aquifer
Total Dissolved Solids Concentration

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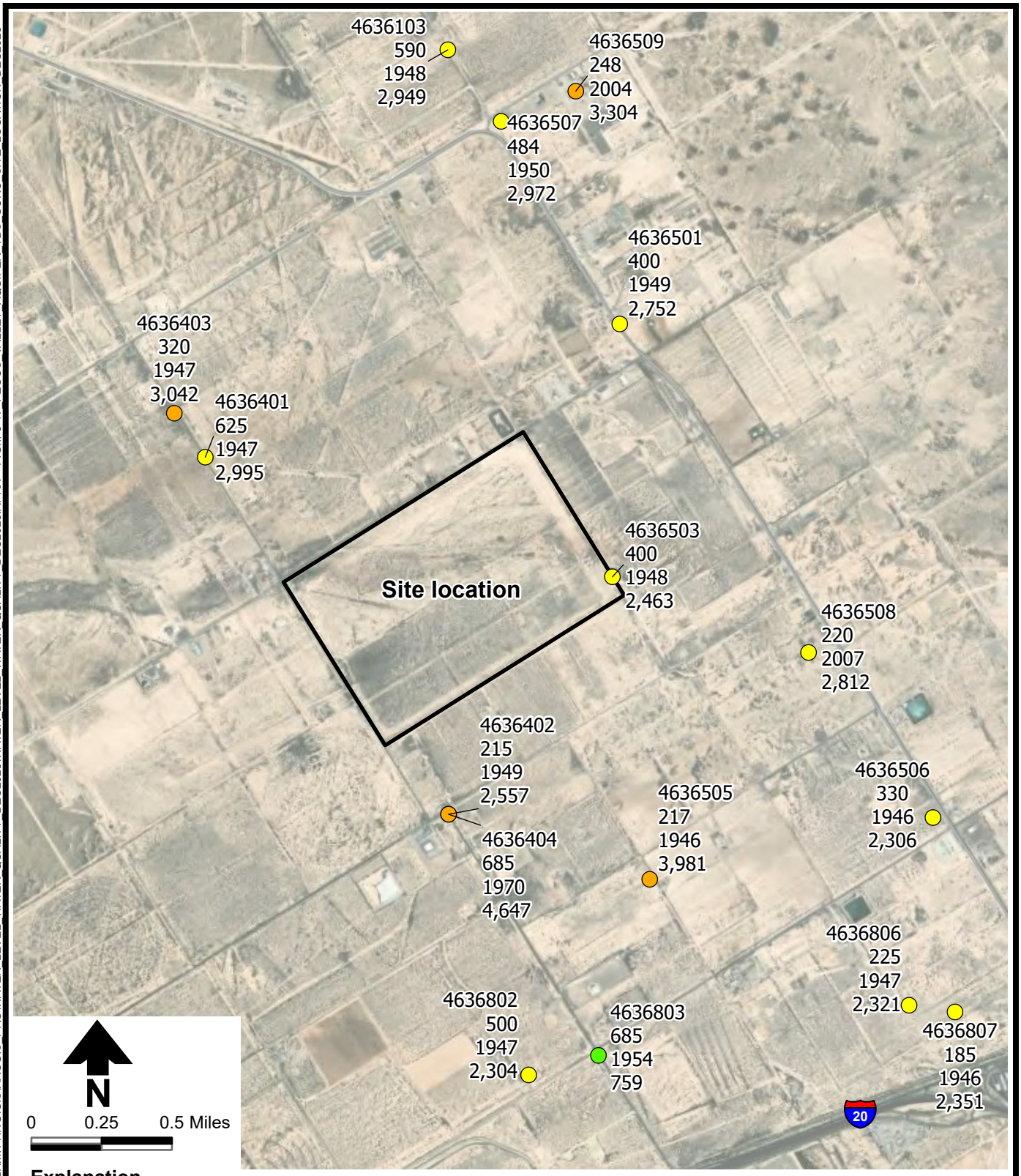
2/25/2026 DB20.1166

Figure III-5-16

Page III-1204

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S:\PROJECTS\DB20.1166 WST PECOS PERMITTING\GIS\ARCGIS PRO\WATER LEVEL WATER QUALITY DEC2025\WATER LEVEL WATER QUALITY DEC2025.APRX • FIGIII-5-16 PECOS VALLEY AQUIFER TDS CONC SAVED DEC2025



Aerial Photograph: ESRI et al.

Explanation

Total dissolved solids concentration (mg/L)

- 0 - 1,000
- 1,000 - 3,000
- 3,000 - 4,647

County boundary

Site location

State well number
Depth of well (feet)
Year measured
TDS (mg/L)

Note: TDS concentrations are most recent data available from the TWDB database.

WST LANDFILL

Pecos Valley Aquifer Total Dissolved Solids Concentration Near Site

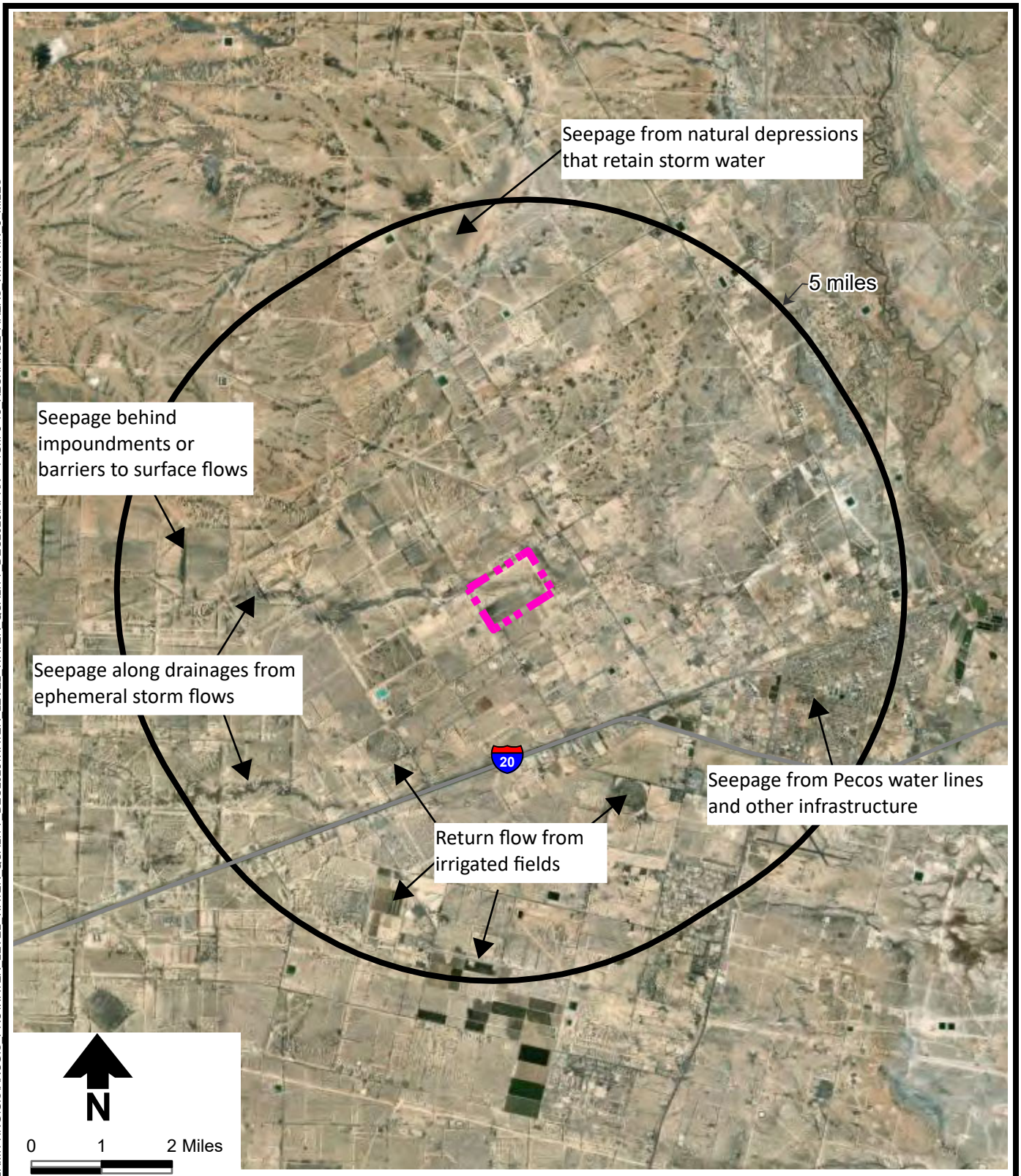
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Figure III-5-17

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USGS 1:24,000 Topographic Map

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Areas of Recharge within 5 Miles of the Site

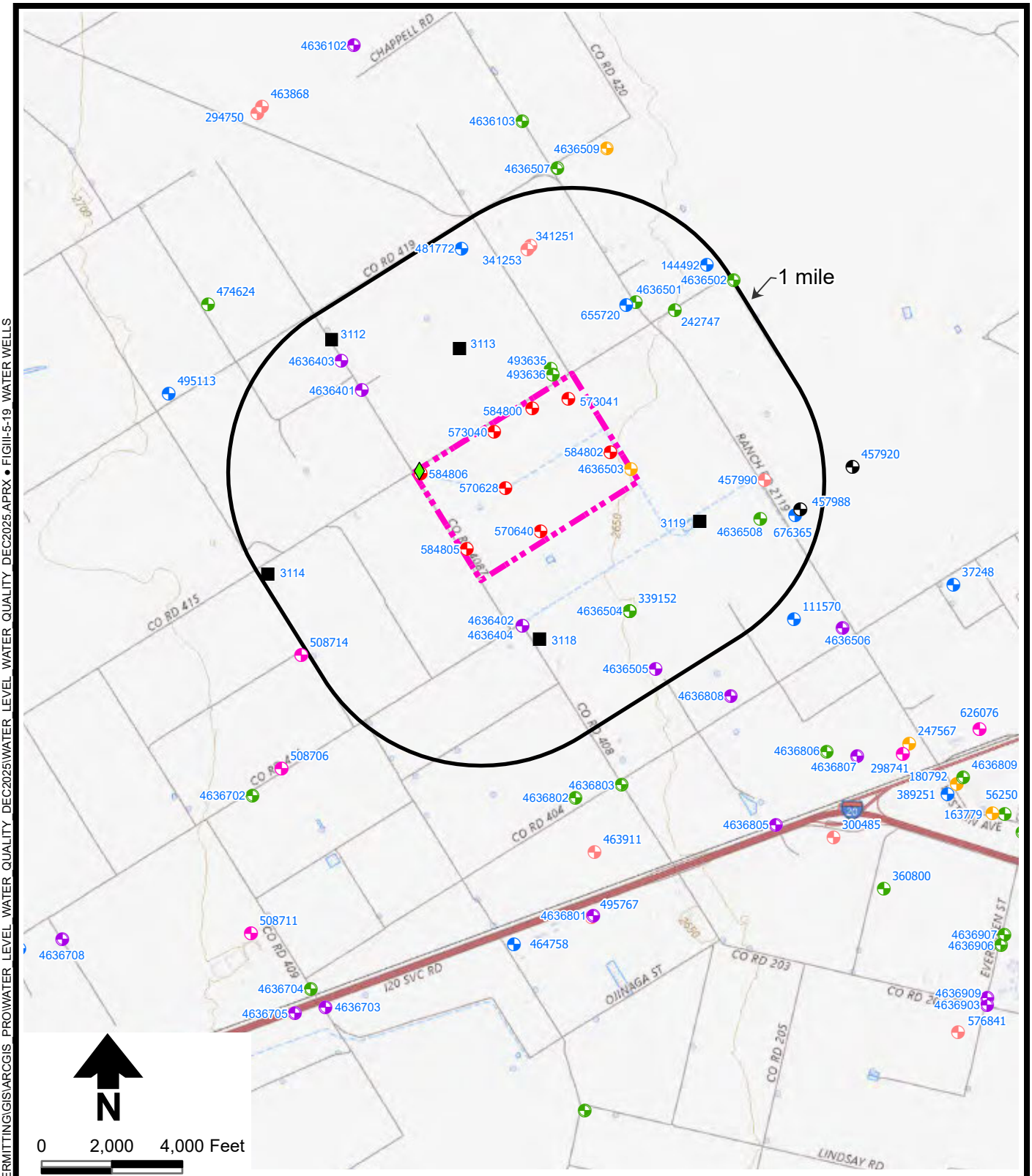
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Figure III-5-18

Rev 2: July 2026 (Rev 0: March 2026)

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USGS 1:24,000 Topographic Map

Explanation

- Site
- BRACS water well
- Domestic
- Fracking Supply
- Industrial
- Irrigation
- Rig Supply
- Stock
- Monitor
- Unused
- WST non-potable water well

Note: Well data downloaded December, 2025

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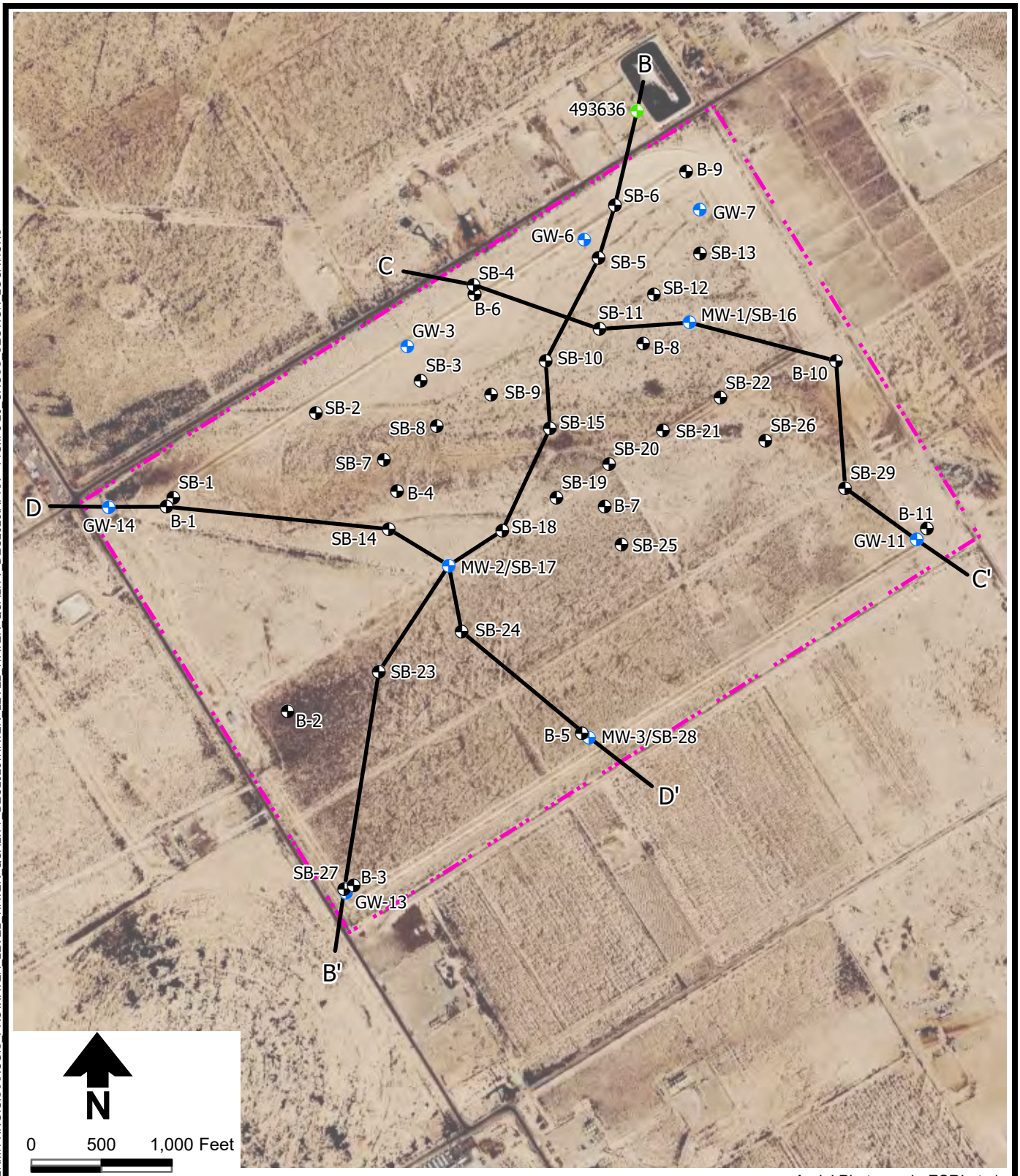
Water Wells Within 1 Mile of Facility Boundary

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Figure III-5-19

S:\PROJECTS\DB20.1166 WST PECOS PERMITTING\GIS\ARCGIS PRO\WATER LEVEL WATER QUALITY DEC2025\WATER LEVEL WATER QUALITY DEC2025.APRX • FIGIII-5-19 WATER WELLS



Aerial Photograph: ESRI et al.

Explanation

- Cross section location
- Site location
- Monitor well
- Soil boring
- Irrigation well

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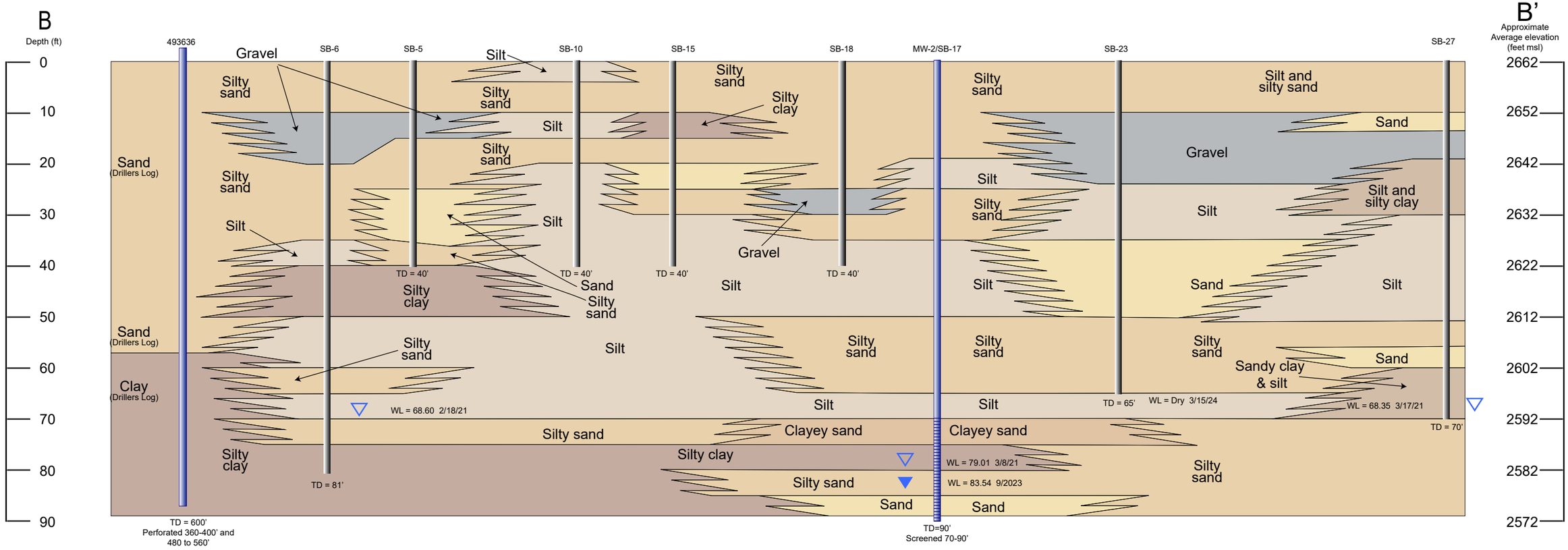
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WST LANDFILL

Soil Boring, Monitor Well, and Cross Section Location Map

Figure III-5-20

S:\PROJECTS\DB20.1166 WST PECOS PERMITTING\GIS\ARCGIS PRO\WATER LEVEL WATER QUALITY DEC2025\WATER LEVEL WATER QUALITY DEC2025.APRX • FIGIII-5-20 CROSS SECTION LOCATIONS



Vertical exaggeration = 25X
Vertical 1″= 20′
Horizontal 1″=511.76′

Explanation

- ▽ Water level in boring after installation
- ▼ Static water level in monitor well
- Well / Screen
- Soil boring

- CL ML Silt and silty clay
- CL Silty clay
- GM Gravel
- ML Silt
- SC Clayey sand
- SM Silty sand
- SW Sand
- SW-SM Sand and silty sand

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Rev 2: July 2026 (Rev 0: March 2026)

WST LANDFILL

Geologic Cross Section B-B'

Figure III-5-21

\\data1abq\Data5\Projects\DB20.1166_WST_Pecos_Permitting\VR_Drawings\Cross_sections_2025Dec\CS_BlCross section B-B'.ai

C

C’

Depth (ft)

Approximate Average elevation (feet msl)

0 — 2662
10 — 2652
20 — 2642
30 — 2632
40 — 2622
50 — 2612
60 — 2602
70 — 2592
80 — 2582
90 — 2572

SB-4 | SB-11 | MW-1/SB-16 | B-10 | SB-29 | GW-11

Silt
Gravel
Silty sand
Silt
Clayey sand
Silt
Silty clay
Silty sand
Silt
Silty clay to 100’

TD = 187’
Screened 177 to 187’ (temporary)
WL = 137’ on 2/25/21

Silty sand
Silty sand
Sand
Silt
Silt

WL = 63.19 3/3/2021

Silty sand

TD = 80’

Silty sand
Gravel
Silty sand
Silt
Silt

WL = 67.69 9/2023

Silty sand
Silty clay

TD = 80’
Screened 60-80’

Fat clay
Fat clay
Fat clay
Silt

TD = 100’
Clay extends to 100’

Silt & clay
Silt
Fat clay
Silt & clay
Silt

TD = 40’

Silt
Fat clay
Silty clay

WL = 53’

Silt
Silt

WL = 69.49’ 9/2023

TD = 90
Screened 60-90’

Vertical exaggeration = 20X
Vertical 1″= 20’
Horizontal 1″=405.69’

Explanation

- Water level in boring after installation
- Static water level in monitor well
- Well / Screen
- Soil boring

- CH Fat clay
- CL ML Silt and silty clay
- CL Silty clay
- GM Gravel
- ML Silt
- SC Clayey sand
- SM Silty sand
- SW Sand
- SW-SM Sand and silty sand

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WST LANDFILL

Geologic Cross Section C-C’

Figure III-5-22

Rev 2: July 2026 (Rev 0: March 2026)

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D

D’

Depth (ft)

Approximate Average elevation (feet msl)

GW-14 B-1 SB-14 MW-2/SB-17 SB-24 MW-3/SB-28

0 10 20 30 40 50 60 70 80 90

2662 2652 2642 2632 2622 2612 2602 2592 2582 2572

Sandy clay & clayey sand
Fat clay
Fat clay
Silty sand
Silty sand
Silty sand
Silt
Silty sand
Gravel
Silt
Silty sand
Silt
Silty sand
Silty clay
Silt
Silty sand
Silty sand
Silty sand
Silty clay
Gravel
Silty clay
Silt
Silty sand
Silt
Silty sand
Silt
Silty sand
Silt & silty clay
Silty sand
Silt
Sand
Silty clay
Silt & silty clay
Silty clay
Sand & silty sand
Sand & silt
Silt
Clayey sand
Silty clay
Silt
Sand
Sand
Silty sand

WL = 78.42 9/2023
WL=73’
WL = 79.01 3/8/2021
WL = 83.54 9/2023
WL = 69.31 9/2023

TD = 90’ Screened 60-90’
TD = 85’
TD = 80’ Dry after installation
TD = 80’ Screened 60-80’

Vertical exaggeration = 20X
Vertical 1″= 20’
Horizontal 1″=406.60’

Explanation

- Water level in boring after installation
- Static water level in monitor well
- Well / Screen
- Soil boring
- CH Fat clay
- CL ML Silt and silty clay
- CL Silty clay
- GM Gravel
- ML Silt
- SC Clayey sand
- SM Silty sand
- SW Sand
- SW-SM Sand and silty sand

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01/05/2026 DB20.1166

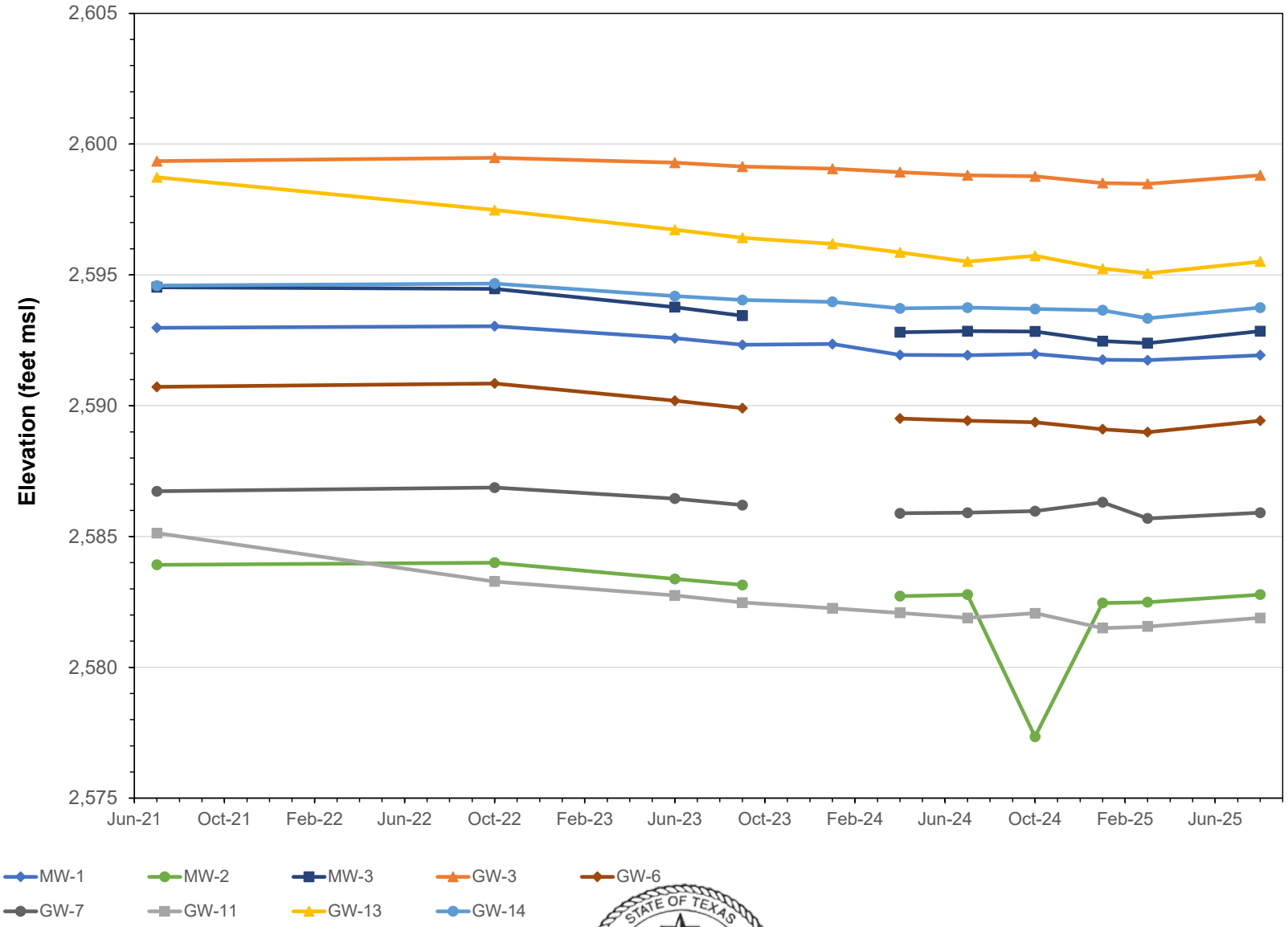
Rev 2: July 2026 (Rev 0: March 2026)

WST LANDFILL

Geologic Cross Section D-D’

Figure III-5-23

\\data1\abq\DataS\Projects\DB20.1166_WST_Pecos_Permitting\VR_Drawings\Cross_sections_2025Dec\CS_BICross section B-B'.ai



Note: October 2024 value for MW-2 likely in error.

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Figure III-5-24

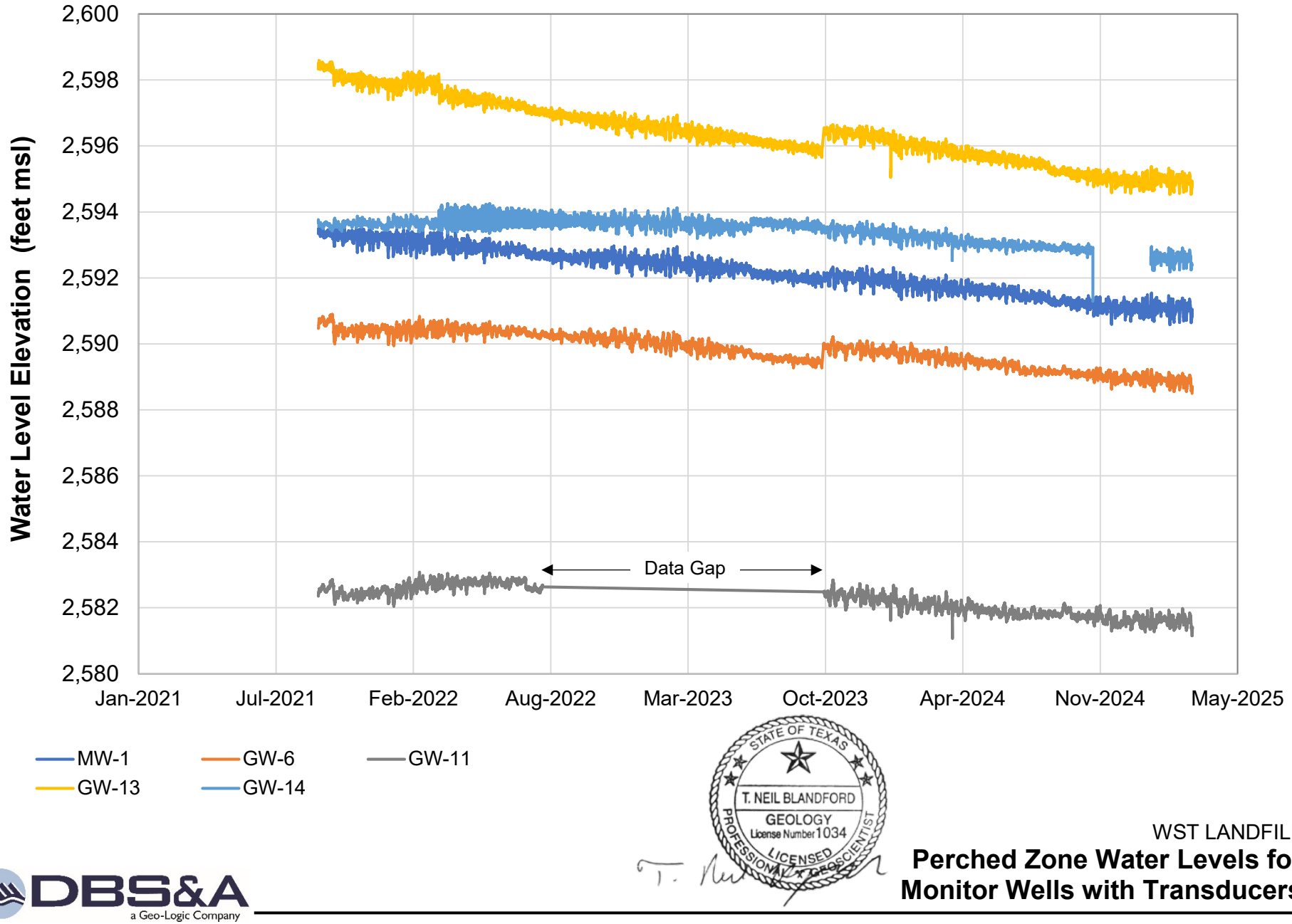
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WST LANDFILL

Water Level in Perched Zone Monitor Wells

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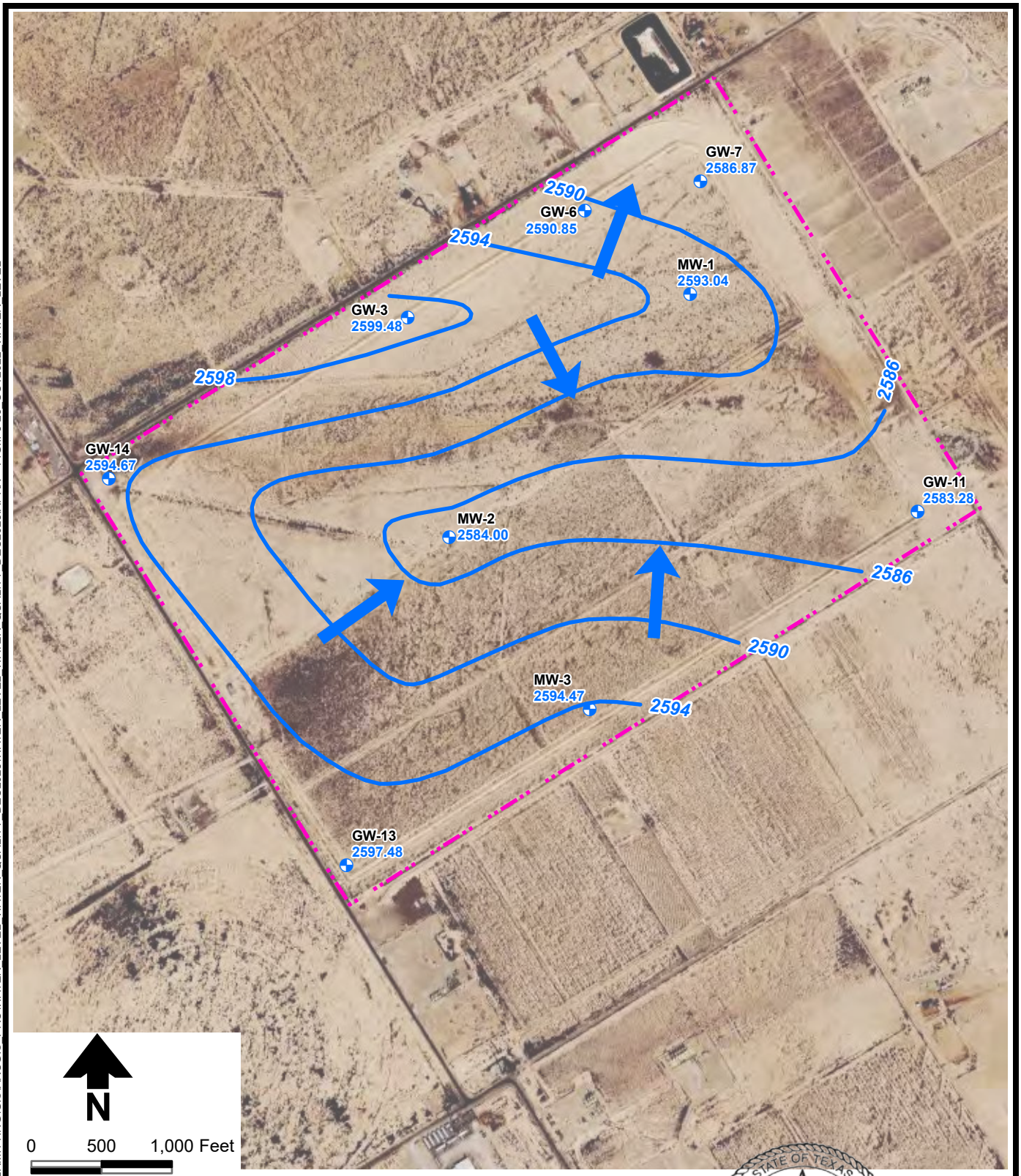
Figure III-5-25

WST LANDFILL

Perched Zone Water Levels for Monitor Wells with Transducers

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2/24/2026 DB20.1166



S:\PROJECTS\DB20.1166 WST PECOS PERMITTING\GIS\ARCGIS PRO\WATER LEVEL WATER QUALITY DEC2025\WATER LEVEL WATER QUALITY DEC2025.APRX • FIGIII-5-26 OCT2022 WATER LEVEL

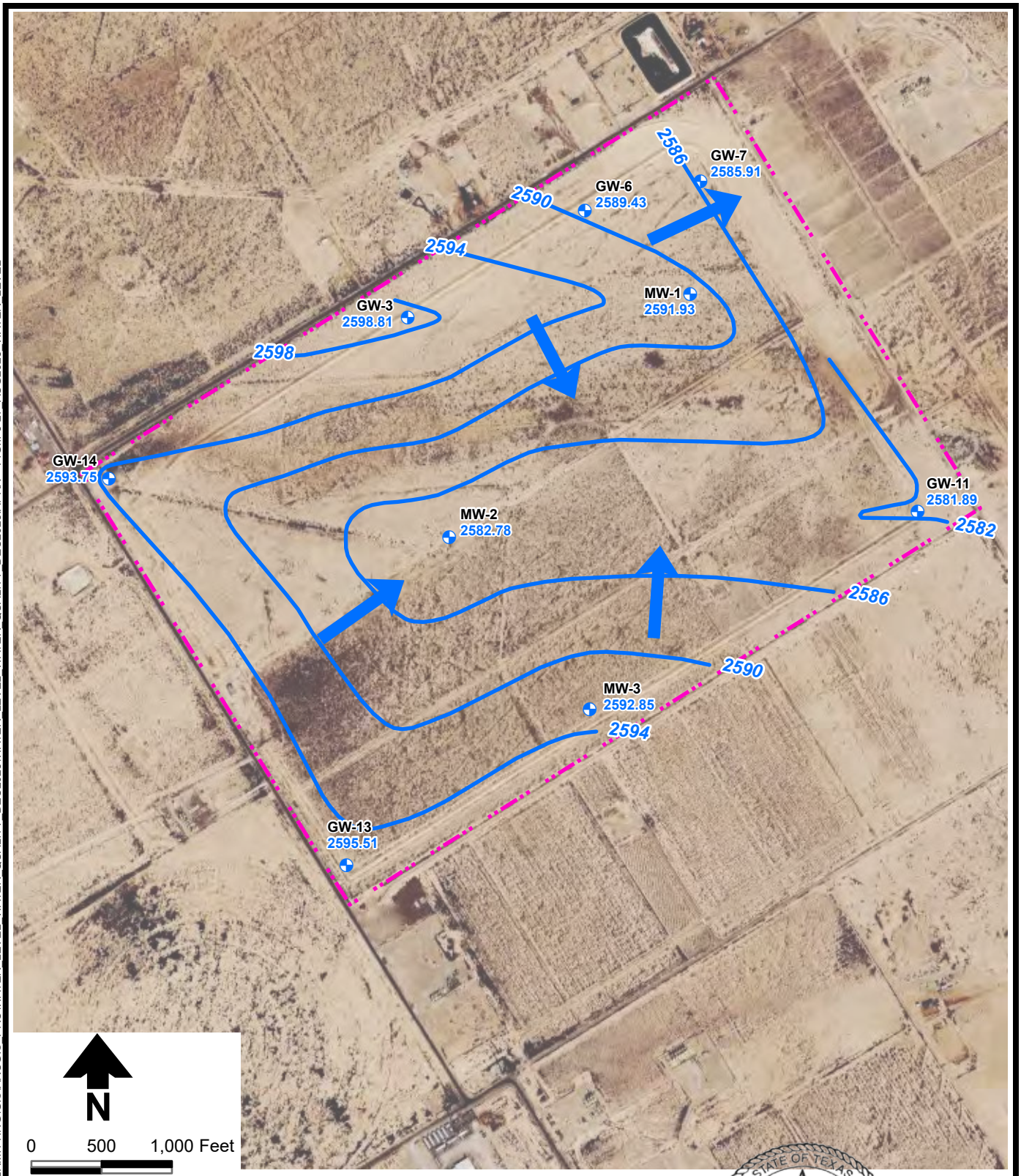
WST LANDFILL

Perched Zone Water Level Map
October 2022

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2/27/2026 DB20.1166

Figure III-5-26



Explanation

- Well
- Water level elevation (feet msl)
- **MW-1** Monitor well designation
- **2591.93** Water level elevation (feet msl)
- Groundwater flow direction
- Site location

Aerial Photograph: ESRI et al.

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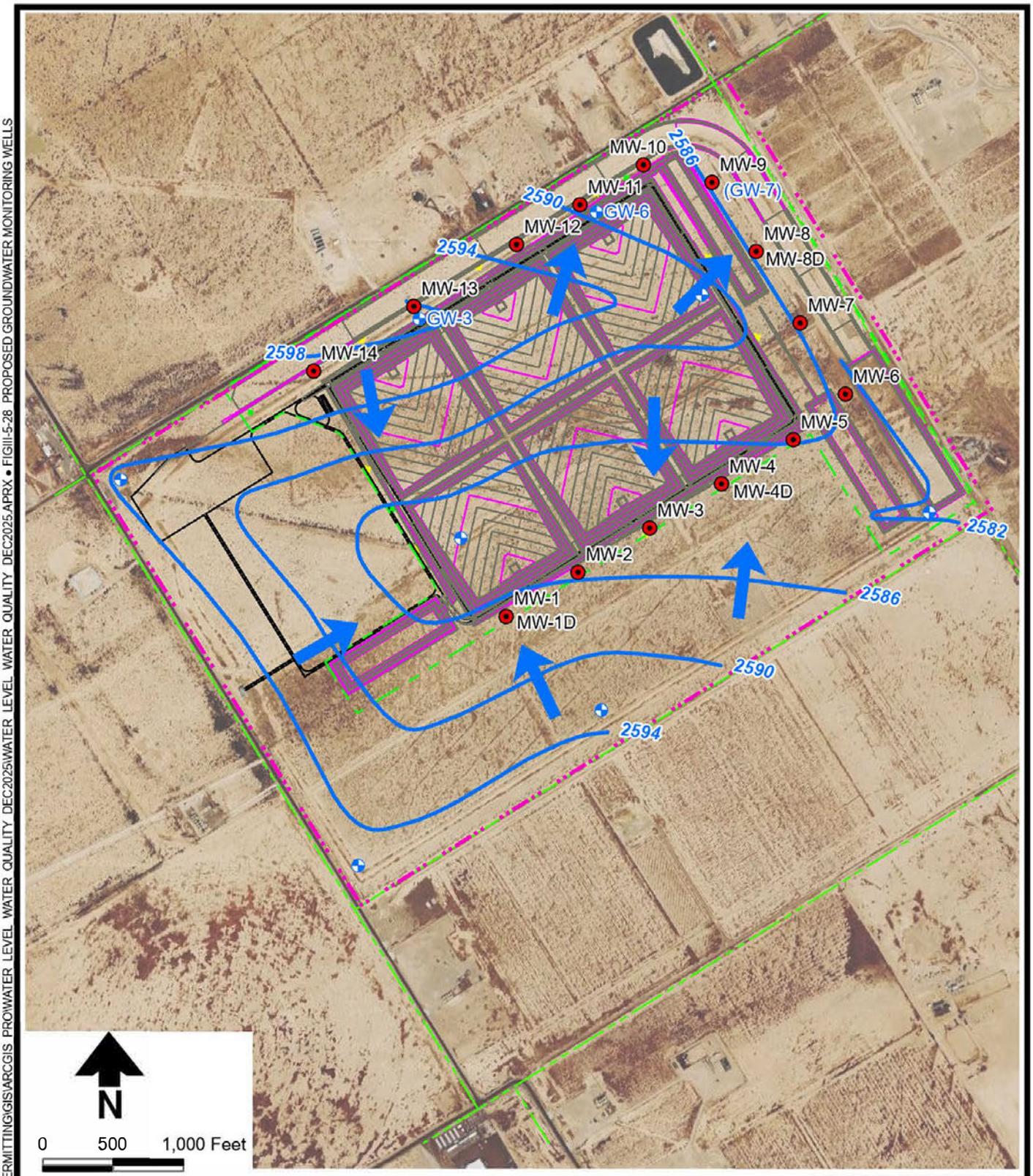
Perched Zone Water Level Map
August 2025

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2/27/2026 DB20.1166

Figure III-5-27

S:\PROJECTS\DB20.1166 WST PECOS PERMITTING\GIS\ARCGIS PRO\WATER LEVEL WATER QUALITY DEC2025\WATER LEVEL WATER QUALITY DEC2025.APRX • FIGIII-5-27 AUG2025 WATER LEVEL



Aerial Photograph: ESRI et al.

Explanation

- Proposed groundwater monitor well
- Existing monitor well
- Perched zone August 2025 water level elevation (feet msl)
- Site location

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WST LANDFILL

Proposed Groundwater Monitor Wells

6/18/2026 DB20.1166

Figure III-5-28

Rev 2: July 2026 (Rev 0: March 2026)

S:\PROJECTS\DB20.1166 WST PECOS PERMITTING\GIS\ARCGIS PRO\WATER LEVEL WATER QUALITY DEC2025\WATER LEVEL WATER QUALITY DEC2025.APRX • FIGIII-5-28 PROPOSED GROUNDWATER MONITORING WELLS

Tables

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Table III-5-1. Water Wells Within 1 mile of the Facility Boundary

Source	Well ID [a]	Water Use	Owner	Elevation (feet msl)	Depth (feet)	Coordinates (decimal degrees)		Comments
						Latitude	Longitude	
SDRDB	339152	Irrigation	Brett Walker	—	220	31.421944	-103.574444	May also be TWDB Well No. 4636504
SDRDB	457988	Fracking supply	PDC	—	725	31.430278	-103.559167	
SDRDB	676365	Domestic	Blackbeard	—	400	31.429803	-103.559603	
SDRDB	341251	Rig supply	Arabella Petroleum Company	—	400	31.450278	-103.584445	
SDRDB	341253	Rig supply	Arabella Petroleum Company	—	280	31.450001	-103.584722	
SDRDB	481772	Domestic	Willow Creek Co	—	203	31.4499	-103.590733	
SDRDB	493635	Irrigation	Lupe Ortega	—	600	31.440715	-103.58227	
SDRDB	493636	Irrigation	Lupe Ortega	—	600	31.440259	-103.582078	
SDRDB	655720	Domestic	Miguel Casas	—	260	31.445833	-103.575556	
SDRDB	144492	Domestic	David Switzer	2,647	200	31.449167	-103.568333	Same as BRACS well 1031
SDRDB	457990	Rig supply	PDC	—	725	31.4325	-103.5625	
SDRDB	242747	Irrigation	Ysidro Renteria	—	500	31.445556	-103.571111	
TWDB	4636501	Irrigation	H.P. Bryan	2,656	400	31.446111	-103.574722	Same as BRACS well 10024. Historical observation well.
TWDB	4636503	Stock	L. Schneider	2,648	400	31.433055	-103.574722	Historical observation well.
TWDB	4636403	Unused	J. Williams	2,682	320	31.440834	-103.601389	Same as BRACS well 3276. Historical observation well.
TWDB	4636404	Irrigation	P. McKinney	2,662	685	31.420555	-103.584167	Historical observation well.
TWDB	4636502	Irrigation	H. Bryan	2,642	170	31.448056	-103.565834	Historical observation well.
TWDB	4636402	Unused	H.H. Brown	2,663	215	31.420555	-103.584167	Historical observation well.
TWDB	4636505	Unused	R. Yarbrough	2,647	217	31.4175	-103.571944	Historical observation well.
TWDB	4636401	Unused	Jack Williams	2,679	625	31.438611	-103.599445	Same as BRACS well 3277. Historical observation well.
TWDB	4636504	Irrigation	J. Wendt	2,650	222	31.421944	-103.574444	May also be SDRDB Well No. 339152. Historcial observation well.
TWDB	4636508	Irrigation	Jim Blanchard	2,637	220	31.429444	-103.562778	Miscellaneous water-level measurements
BRACS	3112	Unknown	Jack Williams	2,682	300	31.44248	-103.602313	
BRACS	3113	Unknown	Jack Williams	2,671	632	31.442059	-103.590643	
BRACS	3114	Unknown	J.W. Lumpkin	2,692	645	31.423994	-103.607524	
BRACS	3118	Unknown	R.H. Brown	2,661	215	31.419537	-103.58257	
BRACS	3119	Unknown	C.K. Hutchins	2,644	700	31.429111	-103.568284	
WST	Non-potable well	Unused	WST		430	31.432421	-103.594	Reported chloride concentration over 11,000 mg/L

Note: Excludes monitor wells; known duplicate BRACS wells not listed.

[a] For SDRDB wells, this is the tracking number. For TWDB wells, this is the state well number. For BRACS wells, this is the BRACS database number.

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Table III-5-2. Boring Log and Monitor Well Summary
Page 1 of 2

Boring / Monitor Well Name	Coordinates		Ground Surface Elevation (feet msl)	Top of Casing Elevation (feet msl)	Boring Completion Date	Drilling Method	Total Depth (feet bgs)	Elevation at Total Depth (feet msl)	Screen Interval	Screen Type	Date of Initial Water Level After Installation	Groundwater Depth After Drilling (feet bgs)	Groundwater Elevation After Drilling (feet msl)	Date of Most Recent Water Level	Depth of Most Recent Water Level (feet bgs)	Most Recent Groundwater Elevation (feet msl)
	Latitude	Longitude														
B-1	31.432277	31.432277	2,672	NA	9/4/2014	Auger	85	2,587.00	None	NA	9/6/2014	73	2,599			
B-2	31.42837	-103.589781	2,672	NA	9/3/2024	Auger	30	2,642.00	None	NA	NA	Dry				
B-3	31.425015	-103.588134	2,670	NA	9/3/2014	Auger	30	2,640.00	None	NA	NA	Dry				
B-4	31.432663	-103.5875	2,666	NA	9/5/2014	Auger	30	2,636.00	None	NA	NA	Dry				
B-5	31.427991	-103.583039	2,663	NA	9/5/2014	Auger	65	2,598.00	None	NA	9/7/2014	60	2,603			
B-6	31.436718	-103.585978	2,666	NA	9/5/2014	Auger	30	2,636.00	None	NA	NA	Dry				
B-7	31.432417	-103.582764	2,661	NA	9/5/2014	Auger	30	2,631.00	None	NA	NA	Dry				
B-8	31.435649	-103.582023	2,660	NA	9/5/2014	Auger	30	2,630.00	None	NA	NA	Dry				
B-9	31.438992	-103.581242	2,662	NA	9/5/2014	Auger	30	2,632.00	None	NA	NA	Dry				
B-10	31.435394	-103.577627	2,655	NA	9/5/2014	Auger	100	2,555.00	None	NA	9/7/2014	53	2,602			
B-11	31.432127	-103.575387	2,653	NA	9/4/2014	Auger	30	2,623.00	None	NA	NA	Dry				
SB-1	31.43241	-103.592397	2,667	NA	2/9/2021	HSA	40	2,626.66	30–40	Temp	2/11/2021	Dry				
SB-2	31.434156	-103.5892	2,664	NA	2/11/2021	HSA	40	2,624.05	30–40	Temp	2/15/2021	Dry				
SB-3	31.434845	-103.586831	2,662	NA	2/11/2021	HSA	65	2,597.47	55–65	Temp	2/15/2021	64.5	2,598			
SB-4 [a]	31.436562	-103.585657	2,662	NA	2/23/2021	Mud	187	2,475.27	177–187	Temp	2/25/2021	137	2,525			
SB-5	31.437343	-103.582851	2,661	NA	2/12/2021	HSA	40	2,620.68	30–40	Temp	2/15/2021	Dry				
SB-6	31.438387	-103.582512	2,660	NA	2/17/2021	HSA	81	2,578.98	71–81	Temp	2/18/2021	68	2,592			
SB-7	31.433281	-103.587619	2,661	NA	2/16/2021	HSA	40	2,621.48	30–40	Temp	2/19/2012	Dry				
SB-8	31.433962	-103.586429	2,660	NA	2/19/2021	HSA	40	2,620.26	30–40	Temp	2/22/2021	Dry				
SB-9	31.434607	-103.585213	2,660	NA	2/18/2021	HSA	80	2,579.70	70–80	Temp	2/22/2021	62	2,598			
SB-10	31.435303	-103.58399	2,659	NA	2/24/2021	HSA	40	2,619.35	30–40	Temp	2/26/2021	Dry				
SB-11	31.435958	-103.582781	2,659	NA	2/25/2021	HSA	80	2,579.09	70–80	Temp	3/3/2021	63	2,596			
SB-12	31.436658	-103.581564	2,659	NA	3/3/2021	HSA	40	2,618.94	30–40	Temp	3/5/2021	Dry				
SB-13	31.437488	-103.580538	2,658	NA	3/3/2021	HSA	65	2,593.39	55–65	Temp	3/5/2021	64	2,594			
SB-14	31.43192	-103.587459	2,664	NA	3/4/2021	HSA	80	2,583.53	70–80	Temp	3/5/2021	Dry				
SB-15	31.433987	-103.583848	2,658	NA	3/4/2021	HSA	40	2,617.62	30–40	Temp	3/5/2021	Dry				
SB-16/MW-1	31.436137	-103.580729	2,657	2,660.02	3/9/2021	HSA	80	2,576.85	60–80	Perm	3/15/2021	68	2,589	8/28/2025	68.09	2,591.93
SB-17/MW-2	31.431244	-103.586067	2,663	2,666.69	3/6/2021	HSA	90	2,573.41	70–90	Perm	3/8/2021	84	2,579	8/28/2025	83.91	2,582.78
SB-18	31.431958	-103.584866	2,661	NA	3/8/2021	HSA	40	2,621.46	30–40	Temp	3/10/2021	Dry				

Notes are provided at the end of the table.

Table III-5-2. Boring Log and Monitor Well Summary
Page 2 of 2

Boring / Monitor Well Name	Coordinates		Ground Surface Elevation (feet msl)	Top of Casing Elevation (feet msl)	Boring Completion Date	Drilling Method	Total Depth (feet bgs)	Elevation at Total Depth (feet msl)	Screen Interval	Screen Type	Date of Initial Water Level After Installation	Groundwater Depth After Drilling (feet bgs)	Groundwater Elevation After Drilling (feet msl)	Date of Most Recent Water Level	Depth of Most Recent Water Level (feet bgs)	Most Recent Groundwater Elevation (feet msl)
	Latitude	Longitude														
SB-19	31.43263	-103.58365	2,660	NA	3/8/2021	HSA	65	2,595.36	55–65	Temp	3/10/2021	64	2,596			
SB-20	31.433319	-103.582474	2,657	NA	3/9/2021	HSA	40	2,617.46	30–40	Temp	3/10/2021	Dry				
SB-21	31.43401	-103.581265	2,655	NA	3/10/2021	HSA	65	2,590.31	55–65	Temp	3/11/2021	59	2,596			
SB-22	31.434683	-103.579974	2,654	NA	3/10/2021	HSA	40	2,614.06	30–40	Temp	3/12/2021	Dry				
SB-23	31.429126	-103.587592	2,666	NA	3/11/2021	HSA	65	2,600.82	55–65	Temp	3/15/2021	Dry				
SB-24	31.429957	-103.585729	2,664	NA	3/11/2021	HSA	40	2,623.63	30–40	Temp	3/15/2021	Moist				
SB-25	31.431754	-103.582137	2,659	NA	3/16/2021	HSA	65	2,594.27	55–65	Temp	3/17/2021	64	2,595			
SB-26	31.433869	-103.57892	2,653	NA	3/12/2021	HSA	40	2,613.11	30–40	Temp	3/15/2021	Dry				
SB-27	31.424855	-103.588236	2,668	NA	3/16/2021	HSA	70	2,597.70	60–70	Temp	3/17/2021	68	2,600			
SB-28/MW-3	31.427958	-103.582748	2,660	2,662.75	3/17/2021	HSA	80	2,579.87	60–80	Perm	3/18/2021	70	2,590	8/28/2025	69.90	2,592.85
SB-29	31.432986	-103.577069	2,652	NA	3/15/2021	HSA	40	2,611.73	30–40	Temp	3/17/2021	Dry				
GW-3	31.435511	-103.587158	2,666	2,666.17	5/5/2021	Air	90	2,576.20	60–90	Perm	5/6/2021	67	2,599	8/28/2025	67.36	2,598.81
GW-6	31.437702	-103.583188	2,664	2,664.08	9/20/2021	Air	90	2,574.10	60–90	Perm	9/20/2021	75	2,589	8/28/2025	74.65	2,589.43
GW-7	31.438347	-103.580574	2,662	2,662.02	5/5/2021	Air	90	2,572.00	59–89	Perm	5/6/2021	76	2,586	8/28/2025	76.11	2,585.91
GW-11	31.432014	-103.575399	2,652	2,651.97	9/20/2021	Air	90	2,562.00	60–90	Perm	9/21/2021	70	2,582	8/28/2025	70.08	2,581.89
GW-13	31.424781	-103.588189	2,671	2,670.58	9/20/2021	Air	90	2,580.60	60–90	Perm	9/21/2021	75	2,596	8/28/2025	75.07	2,595.51
GW-14	31.432194	-103.593866	2,670	2,672.46	9/20/2021	Air	90	2,579.50	60–90	Perm	9/21/2021	79	2,591	8/28/2025	78.71	2,593.75

Note: Horizontal datum: Texas State Plane Coordinate System, Central Zone 4203, North American Datum 1983, 2011 adjustment. Vertical datum: North American Vertical Datum 1988, GEOID 2012B

[a] Soil boring SB-4 was drilled to 100 feet where groundwater was encountered at 57 feet. Boring was deepened following day to 187 feet where a temporary screen was installed and water was measured at 137 feet after 24 hours.

Auger = Flight auger with split-spoon sampler and standard penetration test.
HAS = Hollow-stem auger with split-spoon sampler on 5-foot intervals and standard penetration test.
Mud = Mud rotary. Drill cuttings collected at ground surface.
Air = Air rotary. Drill cuttings collected at ground surface.
msl = Above mean sea level
bgs = Below ground surface

Table III-5-3. Water Levels in Monitor Wells

Monitor Well	Water Level Elevation (feet msl)										
	July 2021	October 2022	June 2023	September 2023	January 2024	April 2024	July 2024	October 2024	January 2025	March 2025	August 2025
MW-1	2,592.98	2,593.04	2,592.58	2,592.33	2,592.36	2,591.94	2,591.93	2,591.98	2,591.76	2,591.74	2,591.93
MW-2	2,583.92	2,584.00	2,583.38	2,583.15	—	2,582.72	2,582.78	2,577.35 [a]	2,582.46	2,582.49	2,582.78
MW-3	2,594.53	2,594.47	2,593.77	2,593.44	—	2,592.81	2,592.85	2,592.84	2,592.47	2,592.39	2,592.85
GW-3	2,599.35	2,599.48	2,599.29	2,599.14	2,599.06	2,598.93	2,598.81	2,598.77	2,598.51	2,598.48	2,598.81
GW-6	2,590.72	2,590.85	2,590.19	2,589.91	—	2,589.51	2,589.43	2,589.37	2,589.10	2,588.99	2,589.43
GW-7	2,586.73	2,586.87	2,586.45	2,586.20	—	2,585.89	2,585.91	2,585.97	2,586.31	2,585.69	2,585.91
GW-11	2,585.13	2,583.28	2,582.75	2,582.48	2,582.26	2,582.08	2,581.89	2,582.07	2,581.50	2,581.56	2,581.89
GW-13	2,598.73	2,597.48	2,596.73	2,596.42	2,596.19	2,595.86	2,595.51	2,595.73	2,595.24	2,595.06	2,595.51
GW-14	2,594.59	2,594.67	2,594.19	2,594.04	2,593.97	2,593.72	2,593.75	2,593.70	2,593.65	2.593.34	2,593.75

[a] Measurement believed to be in error
msl = Above mean sea level
btoc = Below top of casing
— = Not measured

Table III-5-4. Results of September 2023 Slug Tests

	Hydraulic Conductivity (feet/day)					
	MW-1	MW-2	MW-3	GW-11	GW-14	GW-13 [a]
Rising head test #1	2.34	4.00	1.89	0.13	0.66	0.74
Rising head test #2	2.13	4.90	—	0.15	0.70	0.89
Rising head test #3	—	—	—	—	—	0.40
Average of all tests	2.24	4.45	1.89	0.14	0.68	0.68
Primary material type tested	SM, Silty sand and sandy silt mixture	SW, Well-graded sands and gravelly sands with little or no fines	MH, Inorganic silts, micaceous or diatomaceous fine sand	ML, Inorganic silts and very fine sands	ML, Inorganic silts and very fine sands	SW/SM and ML, Well-graded sand, silty sand and inorganic silt

[a] Tests 1 and 2 were performed on 9/27/2023 using a 4-foot slug. The third test was performed on 9/28/2023 using a 6-foot slug.
— = Not applicable

Table III-5-5. Proposed Monitor Wells

Proposed Well	State Plane Coordinates (feet)		Total Depth (feet bgs)	Top of Screen (feet bgs)	Bottom of Screen (feet bgs)	Distance from Prior Well (feet)
	X	Y				
MW-1	1,282,567	10,498,553	97	66	96	—
MW-1D	1,282,562	10,498,548	156	125	155	NA
MW-2	1,283,078	10,498,867	96	65	95	600
MW-3	1,283,589	10,499,182	95	64	94	600
MW-4	1,284,100	10,499,497	93	62	92	600
MW-4D	1,284,105	10,499,502	156	125	155	NA
MW-5	1,284,611	10,499,811	88	57	87	600
MW-6	1,284,981	10,500,136	89	58	88	493
MW-7	1,284,660	10,500,642	88	57	87	600
MW-8	1,284,347	10,501,151	92	61	91	598
MW-8D	1,284,352	10,501,146	156	125	155	NA
MW-9 [a]	1,284,032	10,501,643	94	63	93	584
MW-10	1,283,544	10,501,767	90	59	89	503
MW-11	1,283,093	10,501,484	94	63	93	533
MW-12	1,282,641	10,501,201	91	60	90	533
MW-13	1,281,910	10,500,760	91	60	90	851
MW-14	1,281,197	10,500,300	89	58	88	851

[a] Proposed well MW-9 is the same as existing monitor well GW-7. No other proposed wells are existing wells.
bgs = Below ground surface
NA = Not applicable

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Appendix III-5-A

Consumer Confidence Reports for Pecos, Texas

DBS&A a Geo-Logic Company

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Secondary Constituents

Many constituents (such as calcium, sodium, or iron) which are often found in drinking water can cause taste, color, and odor problems. The taste and odor constituents are called secondary constituents and are regulated by the State of Texas, not EPA. The constituents are not caused for health concerns. Therefore, secondaries are not required to be reported in this document but they may greatly affected the appearance and taste of your water.

Coliform Bacteria

Maximum Contaminant Level Goal	Total Coliform Maximum Contaminant Level	Highest No. Of Positive	Fecal Coliform or E-Coli Maximum Contaminant Level	Total No. Of Positive E. Coli or Fecal Coliform Samples	Violations	Likely Source of Contamination
0	1 Positive monthly Sample	1		0	N	Naturally present in the environment.

Lead and Copper

Lead and Copper	Date Sampled	MCLG	Action Level (AL)	90TH Percentile	# Sites Over AL	Units	Violations	Likely Source of Contamination
Copper	2019	1.3	1.3	0.249	0	ppm	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems
Lead	2019	0	15	1.72	1	ppb	N	Corrosion of household plumbing system; Erosion of natural deposits.

Definitions: Action Level Goal (ALG) : The level of a contaminant in drinking water below which there is no known or expected risk to health. ALGs allow for a margin of safety.

Violations

E.coli
Fecal coliforms and E.coli are bacteria whose presence indicates that water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune system.

Violation Type	Violation Begin	Violation End	Violation Explanation
Monitor GWR triggered/additional major	02/01/19	02/28/2019	We failed to collect follow-up samples within 24 hours of learning of the total coliform-positive sample. These needed to be tested for fecal indicators from indicators from all sources that were being used at the time the positive sample was collected.

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Rev 2: July 2026 (Rev 0: March 2026)

2019

CONSUMER CONFIDENCE REPORT
CITY OF PECOS
TX1950001

Annual Drinking Water Quality Report

This report is intendent to provide you with important information about your drinking water and the efforts made by the water system to provide safe drinking water.

SPECIAL NOTICE

Required Language for ALL Community Public Water System Supplies:

You may be more vulnerable than the general population to certain microbial contaminants, such as Cryptosporidium, in drinking water. Infants, some elderly, or immunocompromised persons such as those undergoing chemotherapy for cancer; persons who have undergone organ transplants; those who are undergoing treatment with steroids; and people with HIV/AIDS or other immune system disorders, can be particularly at risk from infections. You should seek advice about drinking water from your physician or health care providers Additional guidelines on appropriate means to lessen the risk of infection by Cryptosporidium are available from the Safe Drinking Water Hotline (800-426-4791).

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. We are responsible for providing high quality drinking water, but we cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead.

Where Do We Get Our Drinking Water?

The source of drinking water used by PECOS CITY TOWN OF is Ground Water.

Potable ground water in Worsham field is found principally in the Alluvium and Santa Rosa aquifers, and in Ward County field is found principally in the Allurosa aquifer.

Information about your Drinking Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPAs Safe Drinking Water Hotline at (800) 426-4791.

Annual Water Quality Report For the period of January 1 to December 31, 2019

*~~~

DEFINITIONS and ABBREVATIONS

Maximum Contaminant Level (MCL)
The highest permissible level of a contaminant in drinking water. MCL are set as close to the MCLG's as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG)
The level of a contaminant in drinking water below which there is no known or expected health risk. MCLGs allow for a margin of safety.

Maximum Residual Disinfectant Level (MRDL)
The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG)
The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use disinfectants to control microbial contamination.

Treatment Technique (TT)
A require process intended to reduce the level of a contaminant in drinking. water

Level 1 Assessment:
A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) Why Coliform bacteria have been found in our water system.

Level 2 Assessment:
A Level 2Assessment is very detailed study of the water system to identify potential problems and determine (if possible) why an E. Coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

Avg
Regulatory compliance with some MCLs are based on running annual average of monthly samples.

Action Level
The Concentration of a contaminant which, if exceed, triggers treatment or other requirements which a water system must follow.

Na Not applicable

Definitions
The following tables contain scientific terms and measures, some of which may require explanation.

- NTU nephelometric turbidity Units
- MFL millions fibers per liter (a measure Of asbestos)
- mrem: millirems per year (a measure of radiation absorbed by the body)
- pCi/l picocuries per liter (measure of radioactivity)
- ppm parts per million, milligrams per liter (mg/l) or one ounce in 7,350 gallons of water
- ppb micrograms per liter or parts per billion, or one ounce in 7,350,000 gallons of water
- ppt parts per trillion, or nanograms per liter (ng/L)
- ppq parts per quadrillion or picograms per liter (pg/L)

Disinfection By-Products	Collection Date	Highest Level Detected	Range of Individual samples	MCLG	MCL	Units	Violation	Likely Source of Contamination
Haloacetic Acids (HAA5)	2019	2	0 – 1.6	No goal for the total	60	ppb	N	By-product of drinking water disinfection
Total Trihalomethanes (TTHM)	2019	14	0 – 13.9	No goal for the total	80	ppb	N	By-product of drinking water disinfection

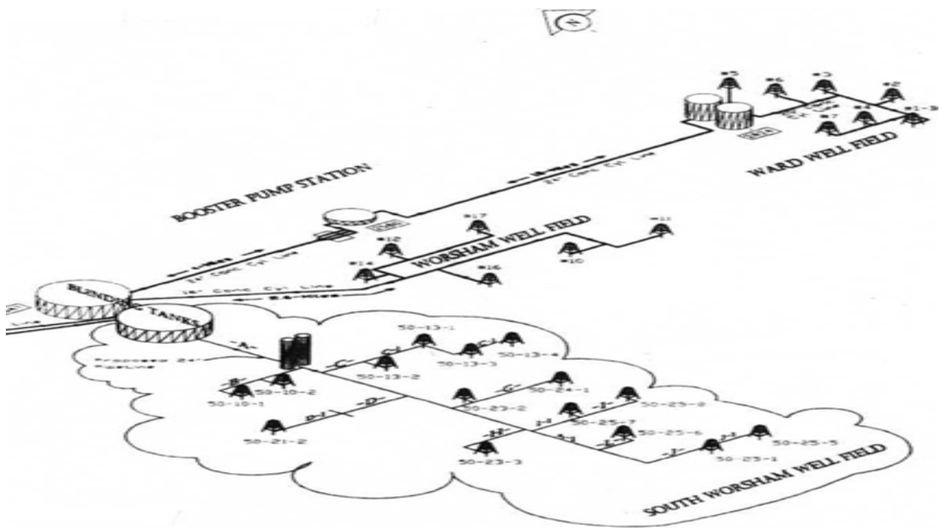
*The value in the Highest Level or Average detected column is the highest of all HAA5 sample results collected at a location over year.
*The value in the Highest Level or Average detected column is the highest of all TTHM sample results collected at a location over year.

Inorganic Contaminants	Collection Date	Highest Level Detected	Range of individual samples	MCLG	MCL	Units	Violation	Likely Source of Contamination
Arsenic	2019	1.4	1.4 – 1.4	0	10	ppb	N	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
Barium	2019	0.025	0.025 – 0.025	2	2	ppm	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Chromium	2019	1.6	1.6 – 1.6	100	100	ppb	N	Discharge from steel and pulp mills; Erosion of natural deposits.
Fluoride	08/24/2017	1.34	1.34-1.34	4	4.0	ppm	N	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate (measured as Nitrogen)	2019	4	3.58 – 3.58	10	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; erosion of natural deposits.

Radioactive Contaminants	Collection Date	Highest Level Detected	Range of Individual Samples	MCLG	MCL	Units	Violation	Likely Source of Contamination
Beta/photon emitters	2019	6.3	6.3-6.3	0	50	pCi/L*	N	Decay of natural and man-made deposits.
*EPA considers 50 pCi/L to be the level of concern for beta particles.								
Gross alpha excluding radon and uranium	2019	3	3 – 3	0	15	pCi/L	N	Erosion of natural deposits.
Uranium	2019	8.3	8.3 – 8.3	0	30	ug/l	N	Erosion of natural deposits

Disinfectant Residual

Disinfectant Residual	Year	Average Level	Range of levels Detected		MRDL	MRDLG	Units of measure	Violation (Y / N)	Source in Drinking Water
Gas Chlorine	2019	0.61	0.30 – 1.46		4	4	ppm	N	Water additive used to control microbes



Information about Source Water

TECQ completed an assessment of your source water, and results indicate that some of our sources are susceptible to certain contaminants. The sampling requirement for your water system is based on this susceptibility and previous sample data. Any detections of these contaminants will be found in this Consumer Confidence Report.

For more information on source water assessments and protection effort at our system contact town of Pecos City 432-445-2932

Source Water Name		Type of Water	Report Status	Location
10 – WORSHAM	WORSHAM	GROUND WATER	ACTIVE	WORSHAM FIELD
11 – WORSHAM	WORSHAM	GROUND WATER	ACTIVE	WORSHAM FIELD
16A – WORSHAM	WORHSAM	GROUND WATER	ACTIVE	WORSHAM FIELD
1B – WARD CO	WARD CO	GROUND WATER	ACTIVE	WARD COUNTY
3A – WARD CO	WARD CO	GROUND WATER	ACTIVE	WARD COUNTY
4 – WARD CO	WARD CO	GROUND WATER	ACTIVE	WARD COUNTY
5 – WARD CO	WARD CO	GROUND WATER	ACTIVE	WARD COUNTY
50-10-1 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-10-2 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-13-1 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-13-2 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-13-3 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-13-4 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-15-1 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-21-2 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-23-2 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-23-3 WARSHAM	WARSHAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-24-1 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-25-1 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-25-5 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-25-6 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-25-7 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-25-8 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-9-2 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
6 – WARD CO	WARD CO	GROUND WATER	ACTIVE	WARD COUNTY
7 – WARD CO	WARD CO	GROUND WATER	ACTIVE	WARD COUNTY

Secondary Constituents

Many constituents (such as calcium, sodium, or iron) which are often found in drinking water can cause taste, color, and odor problems. The taste and odor constituents are called secondary constituents and are regulated by the State of Texas, not EPA. The constituents are not caused for health concerns. Therefore, secondaries are not required to be reported in this document, but they may greatly affect the appearance and taste of your water.

Coliform Bacteria

Maximum Contaminant Level Goal	Total Coliform Maximum Contaminant Level	Highest No. Of Positive	Fecal Coliform or E-Coli Maximum Contaminant Level	Total No. Of Positive E. Coli or Fecal Coliform Samples	Violations	Likely Source of Contamination
0	1 Positive monthly Sample	0		0	N	Naturally present in the environment.

Lead and Copper

Lead and Copper	Date Sampled	MCLG	Action Level (AL)	90TH Percentile	# Sites Over AL	Units	Violations	Likely Source of Contamination
Copper	08/23/2022	1.3	1.3	0.187	0	ppm	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems
Lead	08/23/2022	0	15	1.23	0	ppb	N	Corrosion of household plumbing system; Erosion of natural deposits.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. We are responsible for providing high quality drinking water, but we cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead.

This is an alert about your drinking water and a cosmetic dental problem that might affect children under nine years of age. At low levels, fluoride can help prevent cavities, but children drinking water containing more than 2 milligrams per liter (mg/L) of fluoride may develop cosmetic discoloration of their permanent teeth (dental fluorosis). The drinking water provide by your community water system Town of Pecos City has a fluoride concentration of 2.25 mg/L. Dental fluorosis, in it's moderate or severe forms, may result in a brown staining and/or pitting of permanent teeth. This problem occurs only in developing teeth before they erupt from the gums. Children under nine should be provided with alternative sources of drinking water or water that has been treated to remove the fluoride to avoid the possibility of staining and pitting of their permanent teeth. You may also want to contact your dentist about proper use by young children of fluoride-containing products. Older children and adults may safely drink the water. For more information, please call Town of Pecos City of Pecos at 432-445-2932. Some home water treatment units are also available to remove fluoride from drinking water. To learn more about available home water treatment units, you may call NSF International at 1-877-8-NSF-HELP.

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2023

CONSUMER CONFIDENCE REPORT
CITY OF PECOS
TX1950001

Annual Drinking Water Quality Report

This report is intendent to provide you with important information about your drinking water and the efforts made by the water system to provide safe drinking water.

SPECIAL NOTICE

Required Language for ALL Community Public Water System Supplies:

You may be more vulnerable than the general population to certain microbial contaminants, such as Cryptosporidium, in drinking water. Infants, some elderly, or immunocompromised persons such as those undergoing chemotherapy for cancer; persons who have undergone organ transplants; those who are undergoing treatment with steroids; and people with HIV/AIDS or other immune system disorders, can be particularly at risk from infections. You should seek advice about drinking water from your physician or health care providers Additional guidelines on appropriate means to lessen the risk of infection by Cryptosporidium are available from the Safe Drinking Water Hotline (800-426-4791).

Message from the Public Works Director

I am pleased to share the 2023 Water Quality Report with the community. This report is a summary of the quality of water provided to our customers in 2023, including details about where the water comes from, water quality testing, and how these results compare to regulatory standards. The information in this report is for the period Jan. 1—Dec. 31, 2023, and is also submitted formally and routinely to the Texas Commission on Environment Quality, which monitors our compliance with the many regulatory standards and testing protocols required to assure safe drinking water.

I am proud to report that the water provided to our customers in 2023 met all United States Environmental Protection Agency (U.S. EPA) and State drinking water standards. We understand the responsibility we have to share information about the water being provided to our residents and businesses in the most transparent way possible. If you have any questions about the information in this report, or the Town of Pecos City water system, please contact me at 432.445.2424
Kelvin Ridgley, MBA

Where Do We Get Our Drinking Water?

The source of drinking water used by TOWN OF PECOS CITY is Ground Water.

Potable ground water in Worsham field is found principally in the Alluvium and Santa Rosa aquifers, and in Ward County field is found principally in the Allurosa aquifer.

Information about your Drinking Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPAs Safe Drinking Water Hotline at (800) 426-4791.

Annual Water Quality Report For the period of January 1 to December 31, 2023

PUBLIC PARTICIPATION OPPORTUNITIES

DATE/TIME: EACH MONTH
2ND/4TH THURSDAY @5:30PM
PLACE : CITY HALL CHAMBERS
PHONE: (432) 445-2421

FOR MORE INFORMATION REGARDING THIS REPORT CONTACT: TOWN OF PECOS CITY 432-445-2932

EN ESPANOL

Este reporte incluye información sobre el agua para tomar. Para asistencia en español, favor de llamar al teléfono (432)445-2421.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also, come from gas stations, urban storm water runoff, and septic systems.
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Contaminants may be found in drinking water that may cause taste, color, or odor problems. These types of problems are not necessarily causes for health concerns. For more information on taste, odor, or color of drinking water, please contact the system's business office.

DEFINITIONS and ABBREVATIONS

Maximum Contaminant Level (MCL)
The highest permissible level of a contaminant in drinking water. MCL are set as close to the MCLG's as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG)
The level of a contaminant in drinking water below which there is no known or expected health risk. MCLGs allow for a margin of safety.

Maximum Residual Disinfectant Level (MRDL)
The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

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The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use disinfectants to control microbial contamination.

Treatment Technique (TT)
A require process intended to reduce the level of a contaminant in drinking. water

Level 1 Assessment:
A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why Coliform bacteria have been found in our water system.

Level 2 Assessment:
A Level 2Assessment is very detailed study of the water system to identify potential problems and determine (if possible) why an E. Coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

Avg
Regulatory compliance with some MCLs are based on running annual average of monthly samples.

Action Level
The Concentration of a contaminant which, if exceed, triggers treatment or other requirements which a water system must follow.

Na Not applicable

Definitions and Abbreviations
The following tables contain scientific terms and measures, some of which may require explanation.

- NTU nephelometric turbidity Units (a measure of turbidity)
- MFL millions fibers per liter (a measure of asbestos)
- mrem: millirems per year (a measure of radiation absorbed by the body)
- pCi/l picocuries per liter (measure of radioactivity)
- ppm parts per million, milligrams per liter (mg/l) or one ounce in 7,350 gallons of water
- ppb micrograms per liter or parts per billion, or one ounce in 7,350,000 gallons of water
- ppt parts per trillion, or nanograms per liter (ng/L)
- ppq parts per quadrillion or picograms

Disinfection By-Products	Collection Date	Highest Level Detected	Range of Individual samples	MCLG	MCL	Units	Violation	Likely Source of Contamination
Haloacetic Acids (HAA5)	2023	8	0 – 17.2	No goal for the total	60	ppb	N	By-product of drinking water disinfection
Total Trihalomethanes (TTHM)	2023	29	0 – 30	No goal for the total	80	ppb	N	By-product of drinking water disinfection

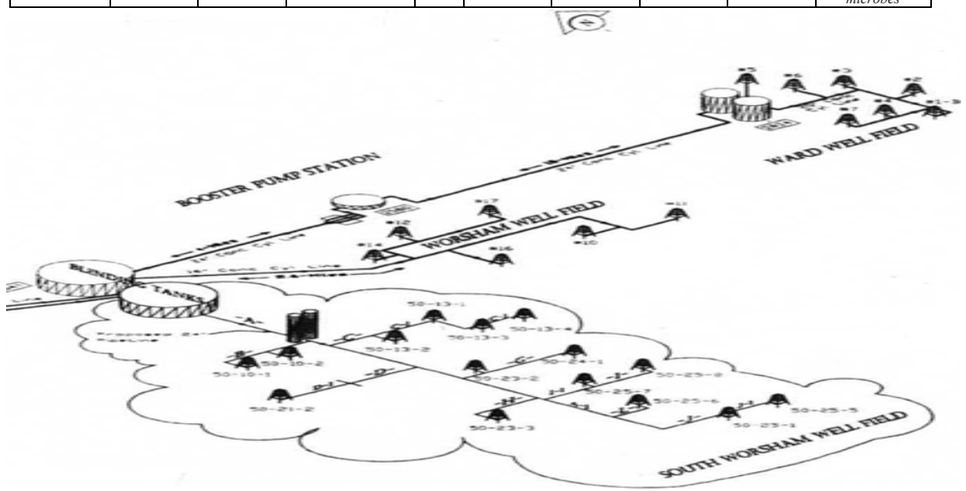
*The value in the Highest Level or Average detected column is the highest of all HAA5 sample results collected at a location over year.
*The value in the Highest Level or Average detected column is the highest of all TTHM sample results collected at a location over year.

Inorganic Contaminants	Collection Date	Highest Level Detected	Range of individual samples	MCLG	MCL	Units	Violation	Likely Source of Contamination
Arsenic	02/07/2022	1.9	1.9 – 1.9	0	10	ppb	N	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
Barium	02/07/2022	0.025	0.025 – 0.025	2	2	ppm	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Chromium	02/07/2022	2.6	2.6 – 2.6	100	100	ppb	N	Discharge from steel and pulp mills; Erosion of natural deposits.
Fluoride	2023	2.25	2.25 -2.25	4	4.0	ppm	N	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate (measured as Nitrogen)	2023	2	2.2 -2.2	10	10	ppm	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; erosion of natural deposits.
Unregulated Contaminant	**Collection Date**	**Average Level (µg/L)**	**Health-Based Reference Concentration (µg/L) Range of Levels Detected (µg/L)**		**Range of Levels Detected (µg/L)**			**Health Information Summary**
Lithium	02/17/2023 11/07/2023	66.85	10		56.2 - 77.5			This data is Part of UCMR5 result in relation to minimum reporting level and available non-regulatory health-based reference concentrations.

Radioactive Contaminants	Collection Date	Highest Level Detected	Range of Individual Samples	MCLG	MCL	Units	Violation	Likely Source of Contamination
Beta/photon emitters	02/07/2022	8.2	8.2 - 8.2	0	50	pCi/L*	N	Decay of natural and man-made deposits.
*EPA considers 50 pCi/L to be the level of concern for beta particles.								
Gross alpha excluding radon and uranium	07/24/2019	3	3 – 3	0	15	pCi/L	N	Erosion of natural deposits.
Uranium	02/07/2022	8.5	8.5 – 8.5	0	30	ug/l	N	Erosion of natural deposits

Disinfectant Residual

Disinfectant Residual	Year	Average Level	Range of levels Detected		MRDL	MRDLG	Units of measure	Violation (Y / N)	Source in Drinking Water
Gas Chlorine	*2023*	*0.60*	*0.24 – 1.62*		*4*	*4*	*ppm*	*N*	*Water additive used to control microbes*



Information about Source Water

TECQ completed an assessment of your source water, and results indicate that some of our sources are susceptible to certain contaminants. The sampling requirement for your water system is based on this susceptibility and previous sample data. Any detections of these contaminants will be found in this Consumer Confidence Report.

For more information on source water assessments and protection effort at our system contact town of Pecos City 432-445-2932

Source Water Name		Type of Water	Report Status	Location
10 – WORSHAM	WORSHAM	GROUND WATER	ACTIVE	WORSHAM FIELD
11 – WORSHAM	WORSHAM	GROUND WATER	ACTIVE	WORSHAM FIELD
16A – WORSHAM	WORHSAM	GROUND WATER	ACTIVE	WORSHAM FIELD
1B – WARD CO	WARD CO	GROUND WATER	ACTIVE	WARD COUNTY
3A – WARD CO	WARD CO	GROUND WATER	ACTIVE	WARD COUNTY
4 – WARD CO	WARD CO	GROUND WATER	ACTIVE	WARD COUNTY
5 – WARD CO	WARD CO	GROUND WATER	ACTIVE	WARD COUNTY
50-10-1 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-10-2 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-13-1 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-13-2 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-13-3 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-13-4 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-15-1 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-21-2 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-23-2 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-23-3 WARSHAM	WARSHAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-24-1 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-25-1 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-25-5 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-25-6 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-25-7 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-25-8 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
50-9-2 S WORSHAM	WORHSAM	GROUND WATER	ACTIVE	SOUTH WORSHAM FIELD
6 – WARD CO	WARD CO	GROUND WATER	ACTIVE	WARD COUNTY
7 – WARD CO	WARD CO	GROUND WATER	ACTIVE	WARD COUNTY

Appendix III-5-B

Soil Boring Plan

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CORRESPONDENCE COVER SHEET
WASTE PERMITS DIVISION
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Date: 12/11/2020
Facility Name: WST Permian Landfill
Permit or Registration No.: New

Nature of Correspondence:
☐ Initial/New
☒ Response/Revision*

*If Response/Revision, please provide previous TCEQ Tracking No.: 25753395
(Previous TCEQ Tracking No. can be found in the Subject line of the TCEQ's response letter to your original submittal.)

This cover sheet should accompany all correspondences submitted to the Waste Permits Division and should be affixed to the front of your submittal as a cover page. Please check the appropriate box for the type of correspondence being submitted. For questions regarding this form, please contact the Waste Permits Division at (512) 239-2335.

Table 1 - Municipal Solid Waste

APPLICATIONS	REPORTS and RESPONSES
☐ New Notification	☐ Closure Report
☐ New Permit (including Subchapter T)	☐ Groundwater Alternate SRC Demonstration
☐ New Registration (including Subchapter T)	☐ Groundwater Corrective Action
☐ Major Amendment	☐ Groundwater Monitoring Report
☐ Minor Amendment	☐ Groundwater Statistical Evaluation
☐ Limited Scope Major Amendment	☐ Landfill Gas Corrective Action
☐ Notice Modification	☐ Landfill Gas Monitoring
☐ Non-Notice Modification	☐ Liner Evaluation Report
☐ Transfer/Name Change Modification	☒ Soil Boring Plan
☐ Temporary Authorization	☐ Special Waste Request
☐ Voluntary Revocation	☐ Other:
☐ Subchapter T Workplan	
☐ Other:	

Table 2 - Industrial & Hazardous Waste

APPLICATIONS	REPORTS and RESPONSES
☐ New	☐ Annual/Biennial Site Activity Report
☐ Renewal	☐ CfPT Plan/Result
☐ Post-Closure Order	☐ Closure Certification/Report
☐ Major Amendment	☐ Construction Certification/Report
☐ Minor Amendment	☐ CPT Plan/Result
☐ Class 3 Modification	☐ Extension Request
☐ Class 2 Modification	☐ Groundwater Monitoring Report
☐ Class 1 ED Modification	☐ Interim Status Change
☐ Class 1 Modification	☐ Interim Status Closure Plan
☐ Endorsement	☐ Soil Core Monitoring Report
☐ Temporary Authorization	☐ Treatability Study
☐ Voluntary Revocation	☐ Trial Burn Plan/Result
☐ 335.6 Notification	☐ Unsaturated Zone Monitoring Report
☐ Other:	☐ Waste Minimization Report
	☐ Other:



Soil Boring Plan, WST Permian Landfill

Daniel B. Stephens & Associates, Inc. (DBS&A) has prepared this proposed soil boring plan (SBP) to investigate subsurface conditions at the proposed 192-acre WST Permian Landfill (waste footprint of 119 acres). According to guidelines outlined in TAC Title 30 Chapter 330 (30 TAC 330), Subchapter B, sites ranging in size from 150 to 200 acres require 23 to 26 borings. DBS&A proposes to advance a total of 26 additional borings at the site (Appendix A) to establish subsurface stratigraphy and to determine geotechnical properties of the subsurface soil and/or rock beneath the proposed facility. These borings will be additional borings completed during the proposed investigation by DBS&A, and do not include any of the borings completed during previous geotechnical investigations at the site.

Proposed boring depths range from 40 to 335 feet below ground surface (bgs), based on a maximum depth of excavation of 35 feet bgs planned for the waste management units and guidelines outlined in 30 TAC 330, Subchapter B. The approximate elevation of the deepest excavation (EDE) is 2,632 feet above mean sea level (feet msl); this will be the lowest point in any excavation including leachate collection sumps. Because a site survey has not been completed yet, this value is approximate and based on U.S. Geological Survey (USGS) maps. A minimum of 15 of these borings will be completed to a depth of 65 feet bgs, and one (SB-04) or more of the borings will be drilled to a depth sufficient to penetrate the uppermost aquifer or to a depth of 335 feet bgs if the base of the aquifer is not encountered in that depth. The soil boring names, surface elevations, proposed boring depths, boring bottom elevations, and depth below the EDE are provided in Table 1. Final depths and number of borings may vary depending on conditions encountered in the field.

Available surface geologic mapping indicates that the site lies in an area consisting of large expanses of Quaternary alluvium interspersed with fluviatile terraced deposits in the Pecos River Valley (Anderson et al., 1982). The Quaternary alluvium includes floodplain deposits consisting of low terrace deposits near floodplain level and bedrock locally in stream channels. The Quaternary alluvium also includes alluvial plain deposits consisting of fan deposits and colluvium locally near the margins. The material is generally coarser toward the margins and mostly sandy silt elsewhere that has been subject to modification by sheetwash action. Fluviatile terrace deposits consist of a mixture of gravel, sand, and silt with common pebbles of chert, quartzite, igneous rock, metamorphic rock, and caliche.

Table 1. Proposed Boring Information

Boring No.	Surface Elevation (feet msl)	Total Depth (feet bgs)	Boring Bottom Elevation (feet msl)	Elevation of Deepest Excavation (feet msl)	Depth Below Deepest Excavation (feet)
SB-1	2,668	40	2,628	2,632	–4
SB-2	2,665	40	2,625	2,632	–7
SB-3	2,663	65	2,598	2,632	–34
SB-4	2,663	335	2,328	2,632	–304
SB-5	2,660	40	2,620	2,632	–12
SB-6	2,661	65	2,596	2,632	–36
SB-7	2,663	40	2,623	2,632	–9
SB-8	2,661	40	2,621	2,632	–11
SB-9	2,661	65	2,596	2,632	–36
SB-10	2,660	40	2,620	2,632	–12
SB-11	2,659	65	2,594	2,632	–38
SB-12	2,658	40	2,618	2,632	–14
SB-13	2,658	65	2,593	2,632	–39
SB-14	2,659	65	2,594	2,632	–38
SB-15	2,656	40	2,616	2,632	–16
SB-16	2,662	65	2,597	2,632	–35
SB-17	2,663	65	2,598	2,632	–34
SB-18	2,661	40	2,621	2,632	–11
SB-19	2,659	65	2,594	2,632	–38
SB-20	2,657	40	2,617	2,632	–15
SB-21	2,656	65	2,591	2,632	–41
SB-22	2,655	40	2,615	2,632	–17
SB-23	2,666	65	2,601	2,632	–31
SB-24	2,663	40	2,623	2,632	–9
SB-25	2,658	65	2,593	2,632	–39
SB-26	2,654	40	2,614	2,632	–18
SB-27	2,668	70	2,598	2,632	–34
SB-28	2,659	65	2,594	2,632	–38
SB-29	2,652	40	2,612	2,632	–20

msl = Above mean sea level
bgs = Below ground surface

Available literature on the regional hydrogeology in the vicinity of the site indicates that the site lies near the Pecos Trough of the Pecos Valley Alluvial Aquifer (e.g., Mace et al., 2001). The Pecos Valley aquifer is composed of Tertiary and Quaternary age alluvium up to 1,500 feet thick, and unconformably overlies older Permian, Triassic, and Cretaceous age rocks. The alluvium is mostly composed of interbedded clay, sand, gravel, and caliche. In general, the aquifer is unconfined, though clay beds may locally act as confining layers. Near the site, this aquifer appears to be over 1,000 feet thick and underlain by Triassic Age Dockum Group sediments (Figure 1).

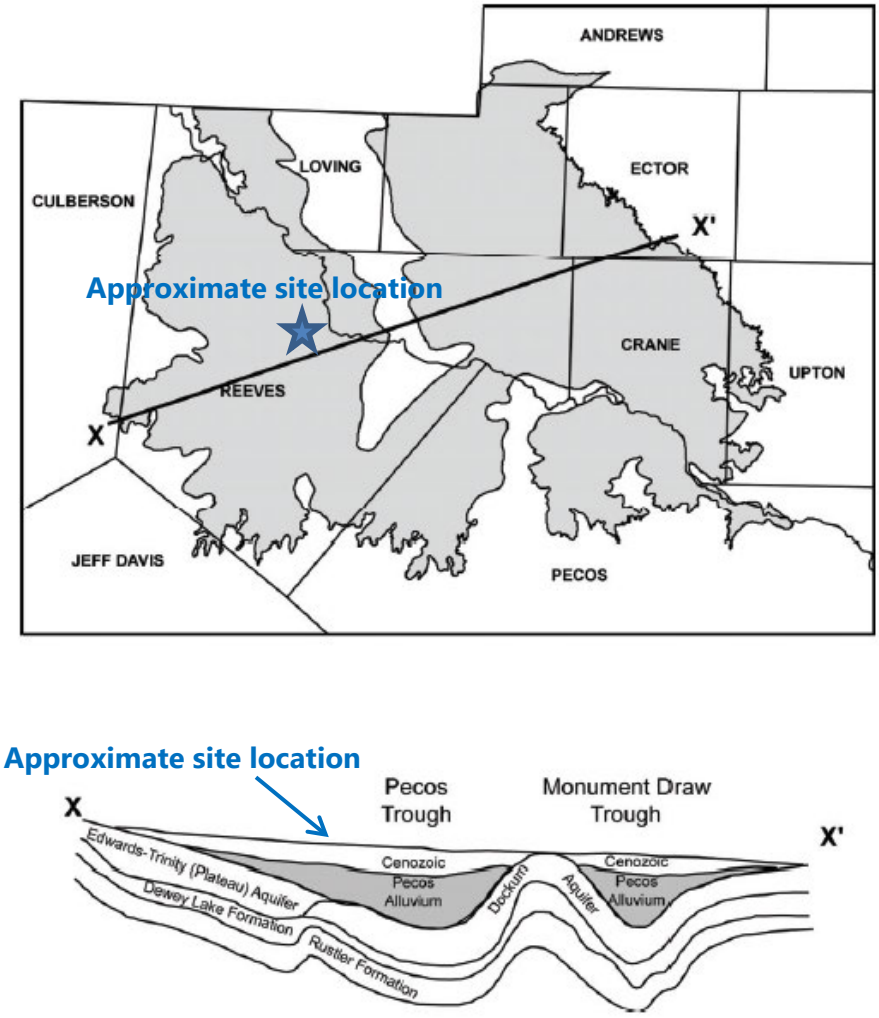


Figure 1. Cross Section Across Pecos Valley Alluvial Aquifer (from Mace et al., 2001), with Approximate Site Location Shown

Based on a preliminary review of regional geology for the area and an existing geotechnical report for the site, it is anticipated that the subsurface materials will consist of interbedded clay, silt, sand, and gravel. A geotechnical report from a subsurface investigation completed in 2014 is provided as Appendix B. Based on the geotechnical report, it is proposed that the borings will be advanced using a hollow-stem auger drill rig capable of collecting discrete samples by driving split spoons. Drilling and plugging of the borings will be completed by a drilling contractor licensed to install monitor wells in the state of Texas. All borings, subsurface investigations, and plugging and abandonment will be conducted in accordance with applicable rules in Title 16 TAC Chapter 76 (Water Well Drillers and Water Well Pump Installers, administered by the Texas Department of Licensing and Regulation), including the preparation and submittal of well installation and plugging reports. Prior to drilling, One Call Utility locates will be contacted to obtain utility clearances to ensure that boring locations do not conflict with any buried utilities.

During the drilling, standard penetration tests (SPTs) will be conducted using a calibrated automatic or cat-head hammer at intervals of 5 feet or less. SPTs for the borings shall be completed in accordance with ASTM D1586, "Penetration Test and Split – Barrel Sampling of Soils." The SPT information will be used to assess the sub-grade soil strength characteristics. Soil classification will be completed in accordance with ASTM D2487, "Classification of Soils for Engineering Purposes" and/or ASTM D2488, "Recommended Practice for Visual and Manual Description of Soils." Select samples may also be obtained using Shelby tubes and California samplers depending on the type of material encountered. Laboratory samples will be collected and submitted for the following analyses (where site-specific information is not already available):

- Geotechnical data that describe the geotechnical properties of the subsurface soil materials and a discussion with conclusions about the suitability of the soils and strata.
- Soil characteristics determined from at least one sample from each soil layer or stratum that will form the bottom and side of the proposed excavation and from those that are less than 30 feet below the lowest elevation of the proposed excavation.
- Permeability tests to be performed according to one of the standards on undisturbed soil samples. All test results will indicate the type of tests used and the orientation of each tested sample.
    - Constant head with back pressure

- Falling head

- Sieve analysis for particle size distribution.
- Atterberg limits.
- Moisture content.

If harder materials such as caliche, strongly cemented soil, or bedrock are encountered at the site, alternative drilling methods may be necessary to advance the borings. These alternative methods may include mud/air rotary or rock coring depending on materials encountered.

DBS&A will provide technical staff to direct the drilling and record field data. All drilling operations will be supervised by a professional geoscientist or engineer who is familiar with the geology of the area and is licensed to practice in the State of Texas. Continuous logs of the borings will be produced during the drilling to record soil, rock, and groundwater conditions. These boring logs will contain all the information required by 30 TAC 330.63(e)(4), and will be prepared by or under the supervision of a professional geoscientist or engineer who is familiar with the geology of the area and is licensed to practice in the State of Texas. Representative samples will be selected from the borings and submitted to a laboratory where tests will be conducted to define physical and engineering characteristics. Testing is proposed to consist of standard physical property tests such as Atterberg limits and particle-size distribution, as well as hydraulic conductivity testing.

Borings will be left open for a minimum of 24 hours after drilling to obtain water levels. Once final water level measurements have been obtained, the borings will be backfilled with bentonite chips. Depending on subsurface materials and groundwater conditions encountered at the site, some of the borings may also be completed as monitoring wells/piezometers. If water is used in drilling of boreholes for piezometers that may be converted to monitor wells, a current chemical analysis of the water will be provided with the monitor well installation report as required by 30 TAC 330.421(a)(1)(B).

Results of the investigation will be summarized in the geology report that will be submitted along with the permit application. DBS&A will produce boring logs that include boring number, surface elevation, and location coordinates, a columnar section with text showing the elevation of all contacts between soil and rock layers, and a description of each layer using the unified soil classification system, color, degree of compaction, and moisture content. If this SBP needs to be modified, DBS&A will request approval from TCEQ.

References

Anderson, J.E., J.B. Brown, E.M.P. Gries, D. Lovejoy, D. McKalips, and V.E. Barnes. 1982. *Geologic atlas of Texas*. Fort Stockton Sheet. The University of Texas at Austin, Bureau of Economic Geology. Scale 1:250,000.

Mace, R.E., W.F. Mullican, and E.S. Angle. 2001. *Aquifers of west Texas*. Texas Water Development Board Report 356.

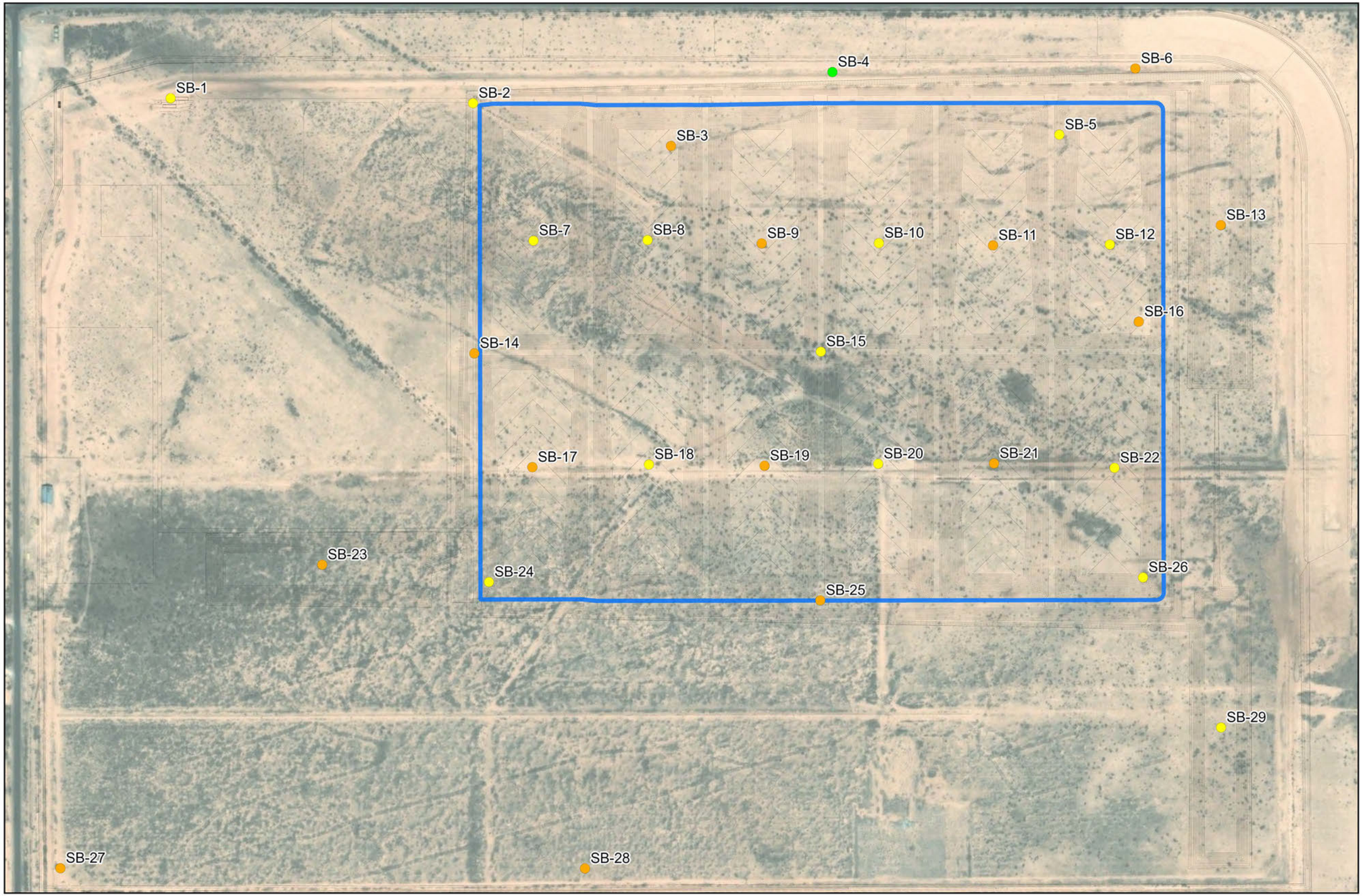
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Appendix A

Proposed Boring Locations

DBS&A
Daniel B. Stephens & Associates, Inc.

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Explanation

- Piezometer location
- Shallow boring
- Deep boring
- Proposed waste footprint (119 acres)

N

0 200 400 Feet

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REV. NO.	DATE	DESCRIPTION	APPROVED BY

DATE OF ISSUE: 7/20/2026
DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

C LIEBLI
S ROMERO
G PETERSON
C LIEBLI

DBS&A Daniel B. Stephens & Associates, Inc.

STATE OF TEXAS
GUNDAR PETERSON
103091
LICENSED
PROFESSIONAL ENGINEER
7/22/2026

Geotechnical Boring Plan Locations

WEST SUN TEX PERMIT APPLICATION

Geotechnical Boring Plan

DWG NO. 1

JOB NO. DB20.1166

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Appendix B

2014 Geotechnical Report

DBS&A
Daniel B. Stephens & Associates, Inc.

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Subsurface Exploration Report

Pecos Oil and Gas Waste Facility
Pecos, Reeves County, Texas
October 9, 2014
Terracon Project No. A4145090

Prepared for:
HDR Engineering, Inc.
Dallas, Texas

Prepared by:
Terracon Consultants, Inc.
Midland, Texas

Terracon

October 9, 2014

HDR Engineering, Inc.
17111 Preston Road, Suite 200
Dallas, TX 75248-1232

Attn: Mr. David C. Vogt, P.E.
Associate, Project Manager
P: 972.960.4461
M: 214.471.2328
E: david.vogt@hdrinc.com

Re: Subsurface Exploration Report
Pecos Oil and Gas Waste Facility
Pecos, Reeves County, Texas
Terracon Project Number: A4145090

Dear Mr. Vogt:

Terracon Consultants, Inc. (Terracon) has completed the subsurface exploration for the above referenced project. This study was performed in general accordance with our proposal PA4140235 dated August 6, 2014. Terracon submits this subsurface exploration report based on field exploration and laboratory testing on collected soil samples. The report includes information about subsurface soil conditions and groundwater conditions. As requested by HDR Engineering, Inc., engineering analyses, calculations and recommendations are not included in the scope of services provided by Terracon for this project.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report, or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.
Texas Registration #3272

Sean E. Davis, MS, EIT
Senior Staff Geotechnical Engineer

Jon Sheng, P.E.
Geotechnical Department Manager

STATE OF TEXAS
XUE-JUN SHENG
109551
LICENSED
PROFESSIONAL ENGINEER

Enclosures
Copies Submitted: Addressee: (1) Electronic

TABLE OF CONTENTS

Page

1.0 INTRODUCTION 1
2.0 PROJECT INFORMATION 1
2.1 Project Description 1
2.2 Site Location and Description 1
3.0 SUBSURFACE CONDITIONS 2
3.1 Typical Profile 2
3.2 Groundwater 2
4.0 GENERAL COMMENTS 2

APPENDIX A – FIELD EXPLORATION

Exhibit A-1	Boring Location Plan
Exhibit A-2	Field Exploration Description
Exhibits A-3 through A-13	Boring Logs

APPENDIX B – LABORATORY TESTING

Exhibit B-1	Laboratory Testing Description
Exhibit B-2	Direct Shear Test Data Report

APPENDIX C – SUPPORTING DOCUMENTS

Exhibit C-1	General Notes
Exhibit C-2	Unified Soil Classification System

SUBSURFACE EXPLORATION REPORT
PECOS OIL AND GAS WASTE FACILITY
PECOS, REEVES COUNTY, TEXAS

Terracon Project No. A4145090
October 9, 2014

1.0 INTRODUCTION

A new Oil and Gas Waste Facility is planned on the southeast quadrant of the intersection of County Road 408 and County Road 415 in Pecos, Reeves County, Texas. Our scope of services included drilling and sampling eleven (11) borings to depths of approximately 30 to 100 feet below ground surface (bgs), laboratory and field testing, and boring log preparation. The purpose of these services is to provide information relative to:

- subsurface soil conditions
- groundwater conditions

2.0 PROJECT INFORMATION

2.1 Project Description

Item	Description
Proposed construction	A new oil and gas waste facility is planned at the project site.
Below Grade Areas	None

2.2 Site Location and Description

Item	Description
Location	The project site consists of a tract of land approximately 3,600 by 5,300 feet in plain view, which is located on the southeast quadrant of the intersection of County Road 408 and County Road 415 in Pecos, Reeves County, Texas.
Existing improvements	None
Current ground cover	Shrubs with some exposed soil and native grasses
Existing topography	The project site grades are slightly downward (approximately 1 foot vertically for 500 feet horizontally) toward the northeast.

Should any of the above information be inconsistent with the planned construction, please let us know so that we may make any necessary modifications to this report.

3.0 SUBSURFACE CONDITIONS

3.1 Typical Profile

Conditions encountered at the boring locations are indicated on the boring logs. Stratification boundaries on the boring logs represent the approximate locations of changes in soil types; in-situ, the transition between materials may be gradual. Details for the boring locations can be found on the boring logs in Appendix A of this report.

3.2 Groundwater

The borings were advanced in the dry using continuous flight auger drilling techniques that allow short-term groundwater observations to be made while drilling. Groundwater seepage was encountered at depths between 53 and 80 feet bgs in borings B-1, B-5, and B-10.

These groundwater observations provide an indication of the groundwater conditions present at the time the borings were drilled, and up to 48 hours after the completion of drilling. Groundwater conditions may be different at the time of construction. Groundwater conditions may change because of seasonal variations in rainfall, runoff and other conditions not apparent at the time of drilling.

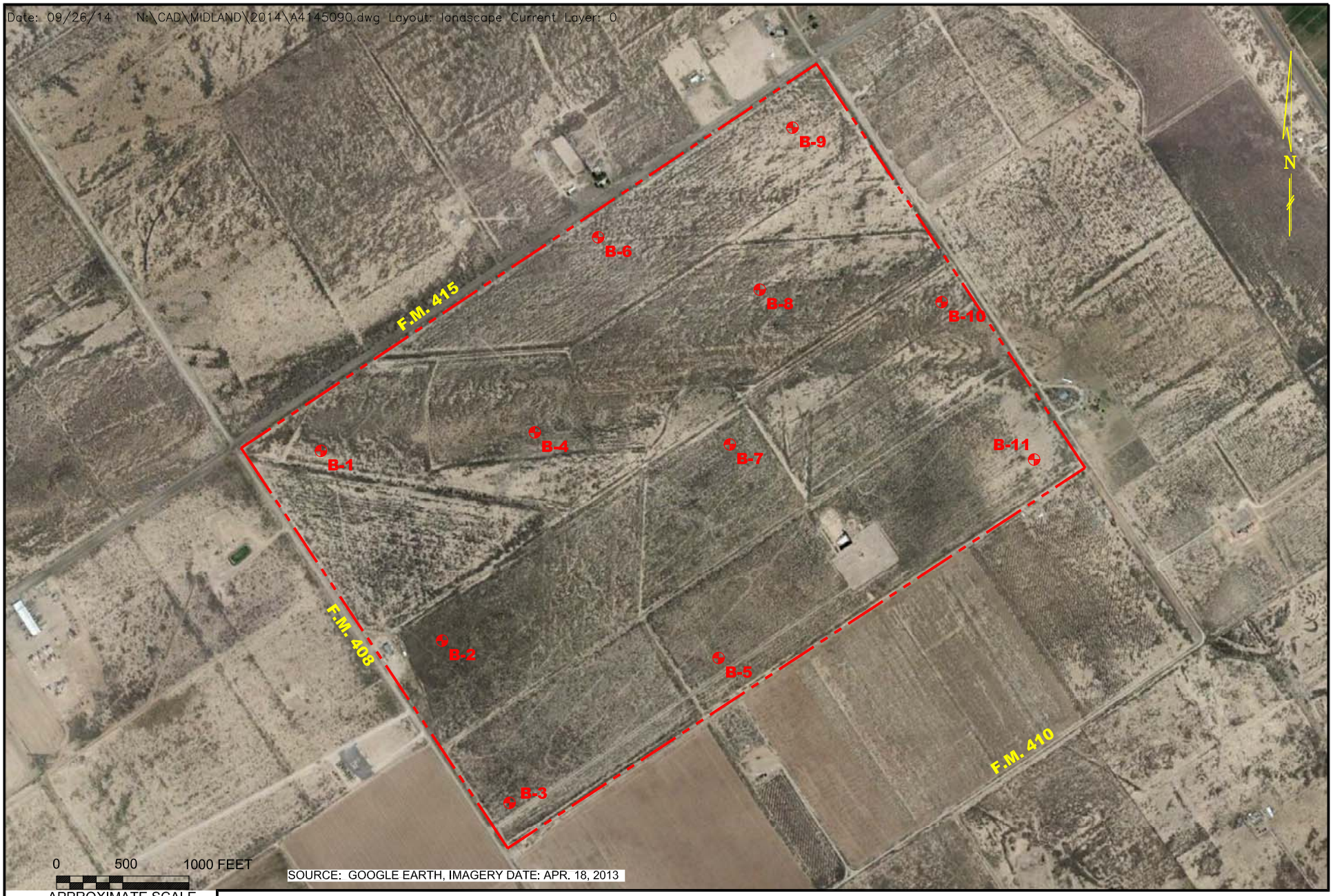
4.0 GENERAL COMMENTS

The scope of services for this project does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No warranties, either express or implied, are intended or made. Site safety, excavation support, and dewatering requirements are the responsibility of others. In the event that changes in the nature, design, or location of the project as outlined in this report are planned, the conclusions and recommendations contained in this report shall not be considered valid unless Terracon reviews the changes and either verifies or modifies the conclusions of this report in writing.

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APPENDIX A
FIELD EXPLORATION



APPROXIMATE SCALE

THIS DRAWING SHOULD NOT BE USED SEPARATELY FROM ORIGINAL REPORT.

NOTE: ALL BORING LOCATIONS ARE APPROXIMATE.

Project Mngr:	SED
Drawn By:	CDD
Checked By:	SED
Approved By:	JS

Project No.	A4145090
Scale:	AS SHOWN
Date:	09/26/14

Terracon
Consulting Engineers and Scientists
(Registration No.: F-3272)
1211 W. FLORIDA AVENUE MIDLAND, TX 79701
PH. (432-684-9600) FAX. (432-684-9608)

BORING LOCATION PLAN

PECOS OIL AND GAS WASTE FACILITY
COUNTY ROAD 415 AND COUNTY ROAD 408
PECOS, REEVES COUNTY, TEXAS

EXHIBIT

A-1

Field Exploration Description

Subsurface conditions were explored by drilling eleven (11) borings, at the approximate locations indicated on the Boring Location Plan on Exhibit A-1 in the Appendix. The field exploration was performed from September 2 to September 5, 2014. The test locations were established in the field by a representative of Terracon by measuring from available reference features and using a handheld GPS. The boring locations should be considered accurate only to the degree implied by the methods employed to determine them.

The borings were performed using a truck-mounted drill rig, utilizing a continuous flight auger. Samples of the soils encountered in the borings were obtained using split-spoon sampling procedures in accordance with standard penetration tests, utilizing an auto-hammer. The samples were tagged for identification, sealed to reduce moisture loss, and taken to the laboratory for further examination, testing, and classification. Following the completion of drilling and the performance of groundwater measurements, the borings were backfilled with bentonite hole plug.

A CME automatic SPT hammer was used to advance the split-barrel sampler in the borings performed on this site. A greater efficiency is typically achieved with the automatic hammer compared to the conventional safety hammer operated with a cathead and rope.

Field logs of the borings were prepared by a representative of Terracon. The logs included visual classifications of the materials encountered as well as interpretation of the subsurface conditions between samples. The boring logs included with this report represent the engineer's interpretation of the field logs and include modifications based on laboratory evaluation of the samples. The boring logs are presented on Exhibits A-3 through A-13. General notes to log terms and symbols are presented on Exhibit C-1.

BORING LOG NO. B- 1

PROJECT: Pecos Oil and Gas Waste Facility

CLIENT: HDR Engineering, Inc.
Dallas, Texas

SITE: County Road 415 and County Road 408
Pecos, Reeves County, Texas

LOCATION See Exhibit A-1
Latitude: 31.432277° Longitude: -103.592683°
Approximate Surface Elev: 2672 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	LITHOLOGY	DEPTH (Ft.)	FIELD TEST RESULTS	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (psf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
2.0	2670+/-	**SANDY LEAN CLAY (CL)**, brown, stiff		5-6-6 N=12							
		LEAN CLAY WITH SAND (CL), reddish yellow to yellowish brown, very stiff, moderate cementation	5	7-10-12 N=22							
		-hard at 8.5'	10	27-28-29 N=57				15		32-20-12	81
13.0	2659+/-										
		FAT CLAY WITH SAND, yellowish brown, hard, strong cementation	15	31-42-44 N=86						89-32-57	76
				24-24-50/5"							
			20	22-36-50/5"							
				21-40-50/4"							
			25	26-40-50/4"							
			30	35-36-50/5"							
33.0	2639+/-										
		SILTY SAND (SM), light brown to brown, very dense	35	31-50/3"							
		-strong cementation from approximately 33' to 36'									
		-dense at 38.5'	40	16-15-17 N=32				14		26-23-3	48
		-very dense at 43.5'	45	30-50/4"							
			50	16-48-45 N=93							
		-dense at 53.5'	55	12-17-22 N=39							
61.0	2611+/-	-very dense at 58.5'	60	17-30-36 N=66							
		LEAN CLAY (CL), reddish yellow, hard	65	21-30-33 N=63							
		-stiff at 68.5'	70	5-6-8 N=14				27		41-18-23	86
			75	5-6-7 N=13							
81.0	2591+/-	-very stiff at 78.5'	80	10-9-13 N=22							
85.0	2587+/-	**SILTY SAND (SM)**, grayish brown, very dense	85	8-25-50 N=75				14		NP	16
		Boring Terminated at 85 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Continuous Flight Auger

Abandonment Method:
Boring was backfilled with bentonite hole plug following our 48 hour groundwater measurement

See Exhibit A-2 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:
NP = Non-plastic

WATER LEVEL OBSERVATIONS

- *Groundwater at 80' while drilling*
- *Groundwater at 75' after completion*
- *48 hours after completion, groundwater at 73'*

Terracon
1211 West Florida Avenue
Midland, Texas

Boring Started: 9/2/2014 | Boring Completed: 9/4/2014
Drill Rig: CME 55 | Driller: One J2S Drilling
Project No.: A4145090 | Exhibit: A-3

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL A4145090 LOGS (DEEP BORINGS).GPJ

BORING LOG NO. B- 2

PROJECT: Pecos Oil and Gas Waste Facility

CLIENT: HDR Engineering, Inc.
Dallas, Texas

SITE: County Road 415 and County Road 408
Pecos, Reeves County, Texas

LOCATION See Exhibit A-1
Latitude: 31.42837° Longitude: -103.589781°
Approximate Surface Elev: 2672 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (psf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	SANDY LEAN CLAY (CL), brown, very stiff					3-7-10 N=17							
	-stiff at 2'					6-6-8 N=14				6		24-13-11	55
4.0	2668+/-												
	SILT WITH SAND (ML), trace gravel, reddish yellow to yellowish brown, very stiff					5-6-12 N=18							
	-hard at 6'		5			11-15-22 N=37							
						14-22-27 N=49							75
			10										
						25-36-50/4"							
			15										
						28-34-39 N=73							
			20										
						28-37-32 N=69							
			25										
						50/5"							
30.0	2642+/-		30										
	Boring Terminated at 30 Feet												

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Continuous Flight Auger

Abandonment Method:
Boring was backfilled with bentonite hole plug following the completion of drilling

See Exhibit A-2 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:
NP = Non-plastic

WATER LEVEL OBSERVATIONS
No seepage encountered while drilling
Dry at completion

Terracon
1211 West Florida Avenue
Midland, Texas

Boring Started: 9/3/2014 Boring Completed: 9/3/2014
Drill Rig: CME 55 Driller: One J2S Drilling
Project No.: A4145090 Exhibit: A-4

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL A4145090 LOGS (SHALLOW BORINGS).GPJ

BORING LOG NO. B- 3

PROJECT: Pecos Oil and Gas Waste Facility

CLIENT: HDR Engineering, Inc.
Dallas, Texas

SITE: County Road 415 and County Road 408
Pecos, Reeves County, Texas

LOCATION See Exhibit A-1
Latitude: 31.425015° Longitude: -103.588134°
Approximate Surface Elev: 2670 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (psf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
						4-7-9 N=16							
										5		23-14-9	66
						14-25-35 N=60							
5.0	2665+/-		5			25-35-40 N=75							
						34-33-30 N=63							
			10			27-31-32 N=63							
						11-11-9 N=20				4		18-15-3	12
			15			7-5-20 N=25							
						11-21-30 N=51							
			20			42-23-34 N=57							
						21-11-8 N=19				3		17-13-4	25
			25			7-10-14 N=24							
						11-18-27 N=45							
30.0	2640+/-		30										

SANDY LEAN CLAY (CL), trace gravel, brown, very stiff

-hard at 2'

WELL GRADED SAND WITH SILT (SW-SM), reddish yellow to brown, very dense, moderate cementation

-medium dense at 13.5'

SILTY SAND WITH GRAVEL (SM), reddish yellow, medium dense

-very dense at 18.5'

-medium dense at 23.5'

-less gravel encountered below 25'

-dense at 28.5'

Boring Terminated at 30 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Continuous Flight Auger

Abandonment Method:
Boring was backfilled with bentonite hole plug following the completion of drilling

See Exhibit A-2 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:
NP = Non-plastic

WATER LEVEL OBSERVATIONS

No seepage encountered while drilling

Dry at completion

Terracon
1211 West Florida Avenue
Midland, Texas

Boring Started: 9/3/2014 | Boring Completed: 9/3/2014
Drill Rig: CME 55 | Driller: One J2S Drilling
Project No.: A4145090 | Exhibit: A-5

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL A4145090 LOGS (SHALLOW BORINGS).GPJ

BORING LOG NO. B- 4

PROJECT: Pecos Oil and Gas Waste Facility

CLIENT: HDR Engineering, Inc.
Dallas, Texas

SITE: County Road 415 and County Road 408
Pecos, Reeves County, Texas

LOCATION See Exhibit A-1
Latitude: 31.432663° Longitude: -103.5875°
Approximate Surface Elev: 2666 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (psf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
0.0	2666+/-										
	SANDY LEAN CLAY (CL), brown, very stiff			5-7-11 N=18				9		38-18-20	63
3.0	2663+/-										
	SANDY SILT (ML), trace gravel, reddish yellow to brown, hard, moderate cementation			13-15-15 N=30							
		5		13-21-27 N=48							61
	-strong cementation from 7.5' to 20'			25-50/4"							
		10		31-50/5"							
				37-50/2"							
		15		38-50/4"							
				18-29-50/5"							
		20		18-26-39 N=65							
				13-21-28 N=49							
		25		19-30-50 N=80							
				32-34-28 N=62							
30.0	2636+/-	30									
	Boring Terminated at 30 Feet										

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Continuous Flight Auger

Abandonment Method:
Boring was backfilled with bentonite hole plug following the completion of drilling

See Exhibit A-2 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:
NP = Non-plastic

WATER LEVEL OBSERVATIONS
No seepage encountered while drilling
Dry at completion

Terracon
1211 West Florida Avenue
Midland, Texas

Boring Started: 9/5/2014 Boring Completed: 9/5/2014
Drill Rig: CME 55 Driller: One J2S Drilling
Project No.: A4145090 Exhibit: A-6

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL A4145090 LOGS (SHALLOW BORINGS).GPJ

BORING LOG NO. B- 5

PROJECT: Pecos Oil and Gas Waste Facility

CLIENT: HDR Engineering, Inc.
Dallas, Texas

SITE: County Road 415 and County Road 408
Pecos, Reeves County, Texas

LOCATION See Exhibit A-1
Latitude: 31.427991° Longitude: -103.583039°
Approximate Surface Elev: 2663 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	LITHOLOGY
2.0	2661+/-	**SANDY LEAN CLAY (CL)**, brown, very stiff
		SANDY SILT (ML), trace gravel, reddish yellow to yellowish brown, hard, moderate cementation
		-strong cementation from 8.5' to 20'
		-strong cementation from 13.5' to 20'
		-small to medium gravel encountered from 17' to 20'
31.0	2632+/-	
		FAT CLAY (CH), trace gravel, light brown to brown, hard, weak cementation
		-very stiff at 43.5'
51.0	2612+/-	
		LEAN CLAY WITH GRAVEL (CL), reddish yellow, hard, moderate cementation
61.0	2602+/-	-very stiff at 58.5'
65.0	2598+/-	**SILTY SAND (SM)**, light brown to brown, dense, weak cementation
		Boring Terminated at 65 Feet

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (psf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
			4-7-8 N=15							
5			18-18-19 N=37							
10			35-41-47 N=88							63
			41-50/5"							
15			39-49-50/5"							
			39-50/4"							
20			50/3"							
25			9-14-21 N=35							
30			17-32-44 N=76							
35			15-27-34 N=61				21		53-24-29	86
40			26-31-35 N=66							
45			3-6-12 N=18							
50			10-12-16 N=28							
55			14-22-32 N=54				31		36-24-12	95
60	▼		6-5-10 N=15							
65			12-15-24 N=39				28		27-22-5	76

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Continuous Flight Auger

Abandonment Method:
Boring was backfilled with bentonite hole plug following our 48 hour groundwater measurement

See Exhibit A-2 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:
NP = Non-plastic

WATER LEVEL OBSERVATIONS

- *Groundwater at 60' while drilling*
- *Groundwater at 60' after completion*
- *48 hours after completion, groundwater at 60'*

Terracon
1211 West Florida Avenue
Midland, Texas

Boring Started: 9/3/2014 | Boring Completed: 9/5/2014
Drill Rig: CME 55 | Driller: One J2S Drilling
Project No.: A4145090 | Exhibit: A-7

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL A4145090 LOGS (DEEP BORINGS).GPJ

BORING LOG NO. B- 6

PROJECT: Pecos Oil and Gas Waste Facility

CLIENT: HDR Engineering, Inc.
Dallas, Texas

SITE: County Road 415 and County Road 408
Pecos, Reeves County, Texas

LOCATION See Exhibit A-1
Latitude: 31.436718° Longitude: -103.585978°
Approximate Surface Elev: 2666 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (psf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	SANDY LEAN CLAY (CL), brown, stiff			4-4-4 N=8							
	-very stiff at 2'			9-9-17 N=26							
4.0	2662+/-										
	LEAN CLAY (CL), reddish yellow to yellowish brown, hard, moderate cementation	5		20-27-35 N=62							
				20-47-43 N=90							
		10		25-41-50/5"				17		39-23-16	82
	-strong cementation from 13.5' to 30'			50/5"							
18.0	2648+/-	15									
	FAT CLAY WITH SAND (CH), yellowish brown, hard, strong cementation			44-50/2"				18		78-38-40	78
		20									
				50/4"							
		25									
				49-50/4"							
30.0	2636+/-	30									
	Boring Terminated at 30 Feet										

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Continuous Flight Auger

Abandonment Method:
Boring was backfilled with bentonite hole plug following the completion of drilling

See Exhibit A-2 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:
NP = Non-plastic

WATER LEVEL OBSERVATIONS
No seepage encountered while drilling
Dry at completion

Terracon
1211 West Florida Avenue
Midland, Texas

Boring Started: 9/5/2014 | Boring Completed: 9/5/2014
Drill Rig: CME 55 | Driller: One J2S Drilling
Project No.: A4145090 | Exhibit: A-8

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL A4145090 LOGS (SHALLOW BORINGS).GPJ

BORING LOG NO. B- 7

PROJECT: Pecos Oil and Gas Waste Facility

CLIENT: HDR Engineering, Inc.
Dallas, Texas

SITE: County Road 415 and County Road 408
Pecos, Reeves County, Texas

LOCATION See Exhibit A-1
Latitude: 31.432417° Longitude: -103.582764°
Approximate Surface Elev: 2661 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (psf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
				6-8-8 N=16							
				8-15-28 N=43				12		34-21-13	76
5.0	2656+/-										
		5		27-37-40 N=77							
				27-50/3"							
		10		35-50/4"							67
				50/5"							
		15		50/5"							
				40-50/5"							
		20		23-42-50/5"							
				17-25-46 N=71							
		25		20-29-50/5"							
				25-32-46 N=78							
30.0	2631+/-	30									

LEAN CLAY WITH SAND (CL), brown, very stiff

-hard at 2'

SANDY SILT (ML), trace gravel, reddish yellow, hard, moderate cementation

-strong cementation from 7.5' to 27.5'

Boring Terminated at 30 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Continuous Flight Auger

Abandonment Method:
Boring was backfilled with bentonite hole plug following the completion of drilling

See Exhibit A-2 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:
NP = Non-plastic

WATER LEVEL OBSERVATIONS

No seepage encountered while drilling

Dry at completion

Terracon
1211 West Florida Avenue
Midland, Texas

Boring Started: 9/5/2014 Boring Completed: 9/5/2014
Drill Rig: CME 55 Driller: One J2S Drilling
Project No.: A4145090 Exhibit: A-9

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL A4145090 LOGS (SHALLOW BORINGS).GPJ

BORING LOG NO. B- 8

PROJECT: Pecos Oil and Gas Waste Facility

CLIENT: HDR Engineering, Inc.
Dallas, Texas

SITE: County Road 415 and County Road 408
Pecos, Reeves County, Texas

LOCATION See Exhibit A-1
Latitude: 31.435649° Longitude: -103.582023°
Approximate Surface Elev: 2660 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (psf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
						6-6-8 N=14							
						13-22-20 N=42							
			5			15-16-20 N=36							
						18-18-24 N=42				6		28-23-5	29
						22-12-24 N=36							
			10										
						10-17-30 N=47				26		58-32-26	58
			15										
						38-50/4"							
			20										
						25-38-50/4"							
			25										
						31-29-42 N=71							
			30										

SILTY SAND WITH GRAVEL (SM), brown, medium dense

-dense at 2'

8.0 2652+/-

SANDY FAT CLAY (CH), trace gravel, reddish yellow, hard, moderate cementation
-less gravel encountered below 8.5'

-strong cementation from 18.5' to 25'

30.0 2630+/-

Boring Terminated at 30 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Continuous Flight Auger

Abandonment Method:
Boring was backfilled with bentonite hole plug following the completion of drilling

See Exhibit A-2 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:
NP = Non-plastic

WATER LEVEL OBSERVATIONS

No seepage encountered while drilling

Dry at completion

Terracon
1211 West Florida Avenue
Midland, Texas

Boring Started: 9/5/2014 Boring Completed: 9/5/2014
Drill Rig: CME 55 Driller: One J2S Drilling
Project No.: A4145090 Exhibit: A-10

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL A4145090 LOGS (SHALLOW BORINGS).GPJ

BORING LOG NO. B- 9

PROJECT: Pecos Oil and Gas Waste Facility

CLIENT: HDR Engineering, Inc.
Dallas, Texas

SITE: County Road 415 and County Road 408
Pecos, Reeves County, Texas

LOCATION See Exhibit A-1
Latitude: 31.438992° Longitude: -103.581242°
Approximate Surface Elev: 2662 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	FIELD TEST RESULTS	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (psf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
		SILTY SAND WITH GRAVEL (SM), brown, medium dense		4-5-7 N=12							
		-dense at 2'		16-18-25 N=43							
5.0	2657+/-		5								
		LEAN CLAY WITH SAND (CL), reddish yellow, hard, moderate cementation		31-33-39 N=72							
				18-22-28 N=50							
			10	21-24-35 N=59				11		44-21-23	76
12.5	2649.5+/-										
		SILTY SAND WITH GRAVEL (SM), light brown to brown, very dense, moderate cementation -strong cementation from 12.5' to 15'		50/5"							
			15	29-31-31 N=62				3		NP	21
				23-21-29 N=50							
		-medium dense at 20'	20	6-14-15 N=29							
22.5	2639.5+/-										
		SANDY SILT (ML), reddish yellow, hard, moderate cementation		15-18-29 N=47							
			25	21-46-50/5"				16		39-25-14	50
		-strong cementation from 27.5' to 30'		24-50/5"							
30.0	2632+/-										
		Boring Terminated at 30 Feet	30								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Continuous Flight Auger

Abandonment Method:
Boring was backfilled with bentonite hole plug following the completion of drilling

See Exhibit A-2 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:
NP = Non-plastic

WATER LEVEL OBSERVATIONS
No seepage encountered while drilling
Dry at completion

Terracon
1211 West Florida Avenue
Midland, Texas

Boring Started: 9/5/2014 | Boring Completed: 9/5/2014
Drill Rig: CME 55 | Driller: One J2S Drilling
Project No.: A4145090 | Exhibit: A-11

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL A4145090 LOGS (SHALLOW BORINGS).GPJ

BORING LOG NO. B-10

PROJECT: Pecos Oil and Gas Waste Facility

CLIENT: HDR Engineering, Inc.
Dallas, Texas

SITE: County Road 415 and County Road 408
Pecos, Reeves County, Texas

LOCATION See Exhibit A-1
Latitude: 31.435394° Longitude: -103.577627°
Approximate Surface Elev: 2655 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	Description
4.0	2651+/-	**SILTY SAND WITH GRAVEL (SM)**, brown, medium dense
		FAT CLAY WITH SAND (CH), reddish yellow, hard -strong cementation from 6' to 30'
31.0	2624+/-	**SANDY SILT (ML)**, light brown to brown, hard, moderate cementation
38.0	2617+/-	**SANDY FAT CLAY (CH)**, reddish yellow, hard
		-very stiff at 53.5'
72.0	2583+/-	
78.0	2577+/-	**SILT WITH SAND (ML)**, trace gravel, grayish brown, very stiff -hard at 73.5'
88.0	2567+/-	**SILT WITH GRAVEL (ML)**, pale tan to white, hard
100.0	2555+/-	**LEAN CLAY WITH SAND (CL)**, reddish yellow, hard, moderate cementation -strong cementation below 98.5'
		Boring Terminated at 100 Feet

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (psf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
5		8-10-11 N=21							
		12-12-19 N=31							
10		12-16-22 N=38				16		66-33-33	71
		23-50/5"							
15		39-50/5"							
		50/5"							
20		34-50/3"							
25		18-22-49 N=71							
30		12-45-50/5"							
35		10-18-28 N=46				20		37-27-10	53
40		24-19-17 N=36							
45		8-11-22 N=33							
50		11-11-29 N=40							
55		8-12-16 N=28							
60		6-10-14 N=24							
65		7-7-11 N=18							
70		10-12-16 N=28							
75		10-27-35 N=62				46		NP	72
80		19-20-40 N=60				37		NP	82
90		20-34-50/5"				28		44-22-22	78
100		50/5"							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Continuous Flight Auger

Abandonment Method:
Boring was backfilled with bentonite hole plug following our 30 hour groundwater measurement

See Exhibit A-2 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:
NP = Non-plastic

WATER LEVEL OBSERVATIONS

- *Groundwater at 62' while drilling*
- *Groundwater at 55' after completion*
- *30 hours after completion, groundwater at 53'*

Terracon
1211 West Florida Avenue
Midland, Texas

Boring Started: 9/4/2014 Boring Completed: 9/5/2014
Drill Rig: CME 55 Driller: One J2S Drilling
Project No.: A4145090 Exhibit: A-12

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL A4145090 LOGS (DEEP BORINGS).GPJ

BORING LOG NO. B-11

PROJECT: Pecos Oil and Gas Waste Facility

CLIENT: HDR Engineering, Inc.
Dallas, Texas

SITE: County Road 415 and County Road 408
Pecos, Reeves County, Texas

LOCATION See Exhibit A-1
Latitude: 31.432127° Longitude: -103.575387°
Approximate Surface Elev: 2653 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (psf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
CLAYEY SAND (SC), trace gravel, brown, medium dense				8-10-9 N=19				4		22-15-7	48
				8-13-15 N=28							
-very dense at 4'				14-30-50/4"							
5.0	2648+/-	5		50/5"							
SILT WITH SAND (ML), trace gravel, reddish yellow, hard, moderate cementation				45-50/4"							
-strong cementation from 6' to 10'		10									
				17-26-46 N=72							79
		15									
				No recovery, grab sample							
		20									
-strong cementation from 23.5' to 25'				49-50/3"				21		44-29-15	83
		25									
30.0	2623+/-			23-24-38 N=62							
Boring Terminated at 30 Feet		30									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Continuous Flight Auger

Abandonment Method:
Boring was backfilled with bentonite hole plug following the completion of drilling

See Exhibit A-2 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:
NP = Non-plastic

WATER LEVEL OBSERVATIONS
No seepage encountered while drilling
Dry at completion

Terracon
1211 West Florida Avenue
Midland, Texas

Boring Started: 9/4/2014 | Boring Completed: 9/4/2014
Drill Rig: CME 55 | Driller: One J2S Drilling
Project No.: A4145090 | Exhibit: A-13

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL A4145090 LOGS (SHALLOW BORINGS).GPJ

APPENDIX B
LABORATORY TESTING

Laboratory Testing Description

The boring logs and samples were reviewed by a geotechnical engineer who selected soil samples for testing, following submission of the boring logs to HDR Engineering, Inc., additional lab tests were requested and performed. Testing for this project was performed by technicians working under the direction of the engineer. A brief description of the tests performed follows.

Particle size analysis (ASTM D422), liquid and plastic limit tests (ASTM D4318), and moisture content tests (ASTM D2216) were made to aid in classifying the soils in accordance with the Unified Soil Classification System (USCS). The USCS is summarized on Exhibit C-2 in Appendix C. The results of the laboratory tests are presented on the boring logs in Appendix A.

As requested by HDR Engineering, Inc., Direct shear testing (ASTM D3080) was performed on a bulk soil sample obtained from boring B-7 (0 to 10 feet bgs). Results of direct shear testing are included on Exhibit B-2 in this appendix.

Procedural standards noted above are for reference to methodology in general. In some cases variations to methods are applied as a result of local practice or professional judgment.

DIRECT SHEAR TEST
ASTM D3080

Date: 9/30/2014
Client: HDR Engineering, Inc.
Project: Pecos oil & Gas Waste Facility
Project No.: A4145090
Location: B-7
Depth: 0-10 ft.
Description: Brown Lean Clay with Sand
Remarks: Percent passing #200 = 75.5
Type of Sample: Laboratory molded
Assumed Specific Gravity=2.70 **LL=**30 **PL=**13 **PI=**17

Parameters for Specimen No. 1

Specimen Parameter	Initial	Consolidated	Final
Moisture content: Moist soil+tare, gms.	122.960		214.250
Moisture content: Dry soil+tare, gms.	107.950		188.430
Moisture content: Tare, gms.	22.760		64.420
Moisture, %	17.6	20.8	20.8
Moist specimen weight, gms.	156.60		
Diameter, in.	2.500	2.500	
Area, in.²	4.909	4.909	
Height, in.	1.000	0.983	
Net decrease in height, in.		0.017	
Wet density, pcf	121.5	127.0	
Dry density, pcf	103.3	105.1	
Void ratio	0.6313	0.6032	
Saturation, %	75.4	93.2	

Test Readings for Specimen No. 1

Normal stress = 1.0 ksf
Strain rate, in./min. = 0.005
Fail. Stress = 0.969 ksf **at reading no.** 21

No.	Horizontal Def. Dial in.	Load Dial	Load lbs.	Strain %	Shear Stress ksf
0	0.0000	0.000	0.0	0.0	0.000
1	0.0000	0.300	0.3	0.0	0.009
2	0.0014	0.109	0.1	0.1	0.003
3	0.0075	2.354	2.4	0.3	0.069
4	0.0095	4.442	4.4	0.4	0.130
5	0.0111	6.711	6.7	0.4	0.197
6	0.0126	8.545	8.5	0.5	0.251
7	0.0146	10.613	10.6	0.6	0.311
8	0.0161	12.269	12.3	0.6	0.360
9	0.0182	14.117	14.1	0.7	0.414
10	0.0207	15.940	15.9	0.8	0.468
11	0.0232	17.694	17.7	0.9	0.519
12	0.0273	19.829	19.8	1.1	0.582
13	0.0318	21.672	21.7	1.3	0.636
14	0.0363	23.491	23.5	1.5	0.689

Terracon Consultants, Inc.

Test Readings for Specimen No. 1

No.	Horizontal Def. Dial in.	Load Dial	Load lbs.	Strain %	Shear Stress ksf
15	0.0423	25.464	25.5	1.7	0.747
16	0.0499	27.286	27.3	2.0	0.800
17	0.0589	29.043	29.0	2.4	0.852
18	0.0709	30.730	30.7	2.8	0.901
19	0.0936	32.506	32.5	3.7	0.954
20	0.1221	33.001	33.0	4.9	0.968
21	0.1281	33.020	33.0	5.1	0.969
22	0.1792	32.595	32.6	7.2	0.956
23	0.2303	32.370	32.4	9.2	0.950
24	0.2814	32.130	32.1	11.3	0.943
25	0.3325	30.655	30.7	13.3	0.899
26	0.3836	29.471	29.5	15.3	0.865
27	0.4346	28.434	28.4	17.4	0.834
28	0.4858	27.568	27.6	19.4	0.809

Parameters for Specimen No. 2

Specimen Parameter	Initial	Consolidated	Final
Moisture content: Moist soil+tare, gms.	122.960		152.850
Moisture content: Dry soil+tare, gms.	107.950		131.050
Moisture content: Tare, gms.	22.760		22.960
Moisture, %	17.6	20.2	20.2
Moist specimen weight, gms.	155.50		
Diameter, in.	2.500	2.500	
Area, in.²	4.909	4.909	
Height, in.	1.000	0.959	
Net decrease in height, in.		0.041	
Wet density, pcf	120.7	128.6	
Dry density, pcf	102.6	107.0	
Void ratio	0.6428	0.5749	
Saturation, %	74.0	94.7	

Test Readings for Specimen No. 2

Normal stress = 2.0 ksf

Strain rate, in./min. = 0.005

Fail. Stress = 1.675 ksf **at reading no.** 20

No.	Horizontal Def. Dial in.	Load Dial	Load lbs.	Strain %	Shear Stress ksf
0	0.0000	0.820	0.0	0.0	0.000
1	0.0005	1.764	0.9	0.0	0.028
2	0.0030	4.759	3.9	0.1	0.116
3	0.0040	7.820	7.0	0.2	0.205
4	0.0050	11.554	10.7	0.2	0.315
5	0.0060	15.277	14.5	0.2	0.424
6	0.0070	18.947	18.1	0.3	0.532
7	0.0081	22.255	21.4	0.3	0.629
8	0.0091	25.631	24.8	0.4	0.728
9	0.0101	28.803	28.0	0.4	0.821
10	0.0111	31.961	31.1	0.4	0.914

Test Readings for Specimen No. 2

No.	Horizontal Def. Dial in.	Load Dial	Load lbs.	Strain %	Shear Stress ksf
11	0.0126	35.970	35.2	0.5	1.031
12	0.0147	39.526	38.7	0.6	1.135
13	0.0172	42.489	41.7	0.7	1.222
14	0.0212	45.615	44.8	0.8	1.314
15	0.0288	48.848	48.0	1.2	1.409
16	0.0394	51.782	51.0	1.6	1.495
17	0.0559	54.689	53.9	2.2	1.580
18	0.0921	57.641	56.8	3.7	1.667
19	0.1101	57.723	56.9	4.4	1.669
20	0.1131	57.927	57.1	4.5	1.675
21	0.1642	57.472	56.7	6.6	1.662
22	0.2153	57.165	56.3	8.6	1.653
23	0.2665	56.449	55.6	10.7	1.632
24	0.3176	55.986	55.2	12.7	1.618
25	0.3687	55.007	54.2	14.7	1.590
26	0.4199	55.015	54.2	16.8	1.590
27	0.4710	54.376	53.6	18.8	1.571

Parameters for Specimen No. 3

Specimen Parameter	Initial	Consolidated	Final
Moisture content: Moist soil+tare, gms.	122.960		212.930
Moisture content: Dry soil+tare, gms.	107.950		188.000
Moisture content: Tare, gms.	22.760		59.590
Moisture, %	17.6	19.4	19.4
Moist specimen weight, gms.	154.90		
Diameter, in.	2.500	2.500	
Area, in.²	4.909	4.909	
Height, in.	1.000	0.944	
Net decrease in height, in.		0.056	
Wet density, pcf	120.2	129.3	
Dry density, pcf	102.2	108.3	
Void ratio	0.6492	0.5568	
Saturation, %	73.3	94.1	

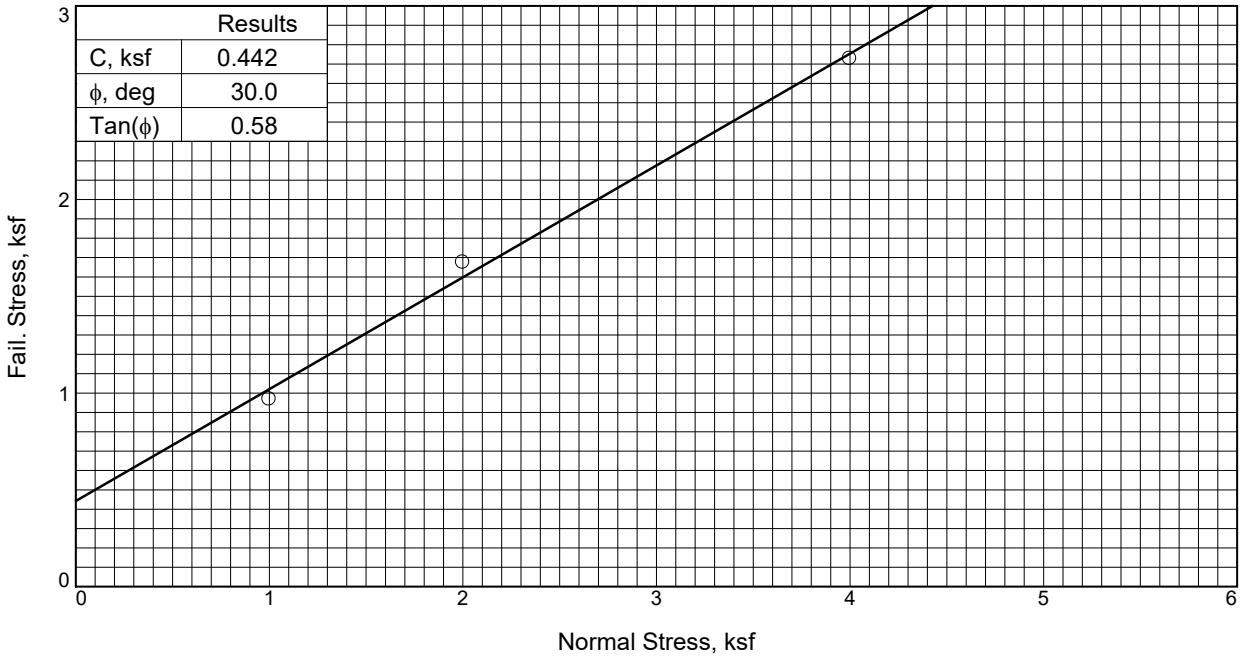
Test Readings for Specimen No. 3

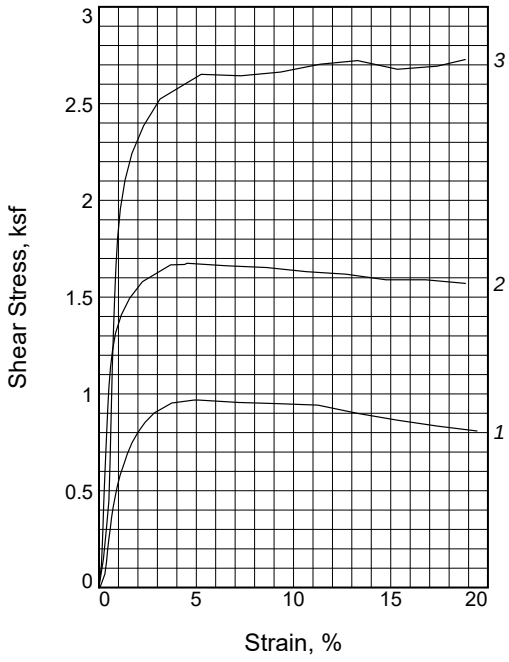
Normal stress = 4.0 ksf

Strain rate, in./min. = 0.005

Fail. Stress = 2.728 ksf **at reading no.** 25

No.	Horizontal Def. Dial in.	Load Dial	Load lbs.	Strain %	Shear Stress ksf
0	0.0000	0.000	0.0	0.0	0.000
1	0.0000	0.116	0.1	0.0	0.003
2	0.0055	4.976	5.0	0.2	0.146
3	0.0096	10.442	10.4	0.4	0.306
4	0.0126	15.208	15.2	0.5	0.446
5	0.0141	22.020	22.0	0.6	0.646
6	0.0152	28.153	28.2	0.6	0.826
7	0.0162	34.010	34.0	0.6	0.998
8	0.0172	38.923	38.9	0.7	1.142
9	0.0187	45.529	45.5	0.7	1.336
10	0.0202	51.460	51.5	0.8	1.510
11	0.0218	56.494	56.5	0.9	1.657
12	0.0238	61.345	61.3	1.0	1.800
13	0.0273	66.634	66.6	1.1	1.955
14	0.0334	71.710	71.7	1.3	2.104
15	0.0424	76.461	76.5	1.7	2.243
16	0.0574	81.327	81.3	2.3	2.386
17	0.0785	86.042	86.0	3.1	2.524
18	0.1312	90.368	90.4	5.2	2.651
19	0.1823	90.107	90.1	7.3	2.643
20	0.2333	90.767	90.8	9.3	2.663
21	0.2844	92.169	92.2	11.4	2.704
22	0.3324	92.802	92.8	13.3	2.722
23	0.3835	91.264	91.3	15.3	2.677
24	0.4347	91.810	91.8	17.4	2.693
25	0.4707	92.984	93.0	18.8	2.728





Sample No.		1	2	3
Initial	Water Content, %	17.6	17.6	17.6
	Dry Density, pcf	103.3	102.6	102.2
	Saturation, %	75.4	74.0	73.3
	Void Ratio	0.6313	0.6428	0.6492
	Diameter, in.	2.500	2.500	2.500
	Height, in.	1.000	1.000	1.000
At Test	Water Content, %	20.8	20.2	19.4
	Dry Density, pcf	105.1	107.0	108.3
	Saturation, %	93.2	94.7	94.1
	Void Ratio	0.6032	0.5749	0.5568
	Diameter, in.	2.500	2.500	2.500
	Height, in.	0.983	0.959	0.944
Normal Stress, ksf		1.000	2.000	4.000
Fail. Stress, ksf		0.969	1.675	2.728
Strain, %		5.1	4.5	18.8
Ult. Stress, ksf				
Strain, %				
Strain rate, in./min.		0.005	0.005	0.005

Sample Type: Laboratory molded
Description: Brown Lean Clay with Sand

Assumed Specific Gravity= 2.70
Remarks: Percent Passing #200 = 75.5

Client: HDR Engineering, Inc.

Project: Pecos Oil & Gas Waste Facility

Location: B-7
Depth: 0-10 ft.
Proj. No.: A4145090 **Date Sampled: 9/5/14**

DIRECT SHEAR TEST REPORT
Terracon Consultants, Inc.
Houston, TX

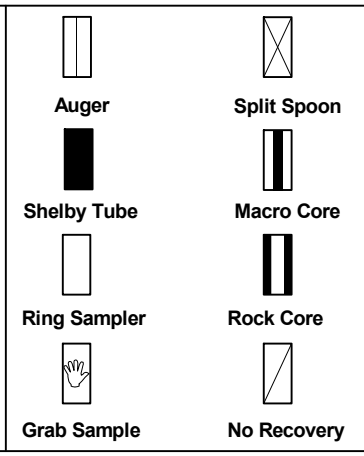
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APPENDIX C
SUPPORTING DOCUMENTS

GENERAL NOTES

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

SAMPLING



WATER LEVEL



Water Initially Encountered

Water Level After a Specified Period of Time

Water Level After a Specified Period of Time

Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.

FIELD TESTS

(HP)	Hand Penetrometer
(T)	Torvane
(b/f)	Standard Penetration Test (blows per foot)
(PID)	Photo-Ionization Detector
(OVA)	Organic Vapor Analyzer

DESCRIPTIVE SOIL CLASSIFICATION

Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

LOCATION AND ELEVATION NOTES

Unless otherwise noted, Latitude and Longitude are approximately determined using a hand-held GPS device. The accuracy of such devices is variable. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

STRENGTH TERMS

RELATIVE DENSITY OF COARSE-GRAINED SOILS (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance Includes gravels, sands and silts.			CONSISTENCY OF FINE-GRAINED SOILS (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance			
Descriptive Term (Density)	**Standard Penetration or N-Value Blows/Ft.**	**Ring Sampler Blows/Ft.**	**Descriptive Term (Consistency)**	**Unconfined Compressive Strength, Qu, psf**	**Standard Penetration or N-Value Blows/Ft.**	**Ring Sampler Blows/Ft.**
Very Loose	0 - 3	0 - 6	Very Soft	less than 500	0 - 1	< 3
Loose	4 - 9	7 - 18	Soft	500 to 1,000	2 - 4	3 - 4
Medium Dense	10 - 29	19 - 58	Medium-Stiff	1,000 to 2,000	4 - 8	5 - 9
Dense	30 - 50	59 - 98	Stiff	2,000 to 4,000	8 - 15	10 - 18
Very Dense	> 50	≥ 99	Very Stiff	4,000 to 8,000	15 - 30	19 - 42
			Hard	> 8,000	> 30	> 42

RELATIVE PROPORTIONS OF SAND AND GRAVEL

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 15
With	15 - 29
Modifier	> 30

GRAIN SIZE TERMINOLOGY

Major Component of Sample	Particle Size
Boulders	Over 12 in. (300 mm)
Cobbles	12 in. to 3 in. (300mm to 75mm)
Gravel	3 in. to #4 sieve (75mm to 4.75 mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm
Silt or Clay	Passing #200 sieve (0.075mm)

RELATIVE PROPORTIONS OF FINES

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 5
With	5 - 12
Modifier	> 12

PLASTICITY DESCRIPTION

Term	Plasticity Index
Non-plastic	0
Low	1 - 10
Medium	11 - 30
High	> 30

UNIFIED SOIL CLASSIFICATION SYSTEM

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [A]					Soil Classification	
					Group Symbol	Group Name [B]
Coarse Grained Soils: More than 50% retained on No. 200 sieve	**Gravels:** More than 50% of coarse fraction retained on No. 4 sieve	**Clean Gravels:** Less than 5% fines [C]	$Cu \geq 4$ and $1 \leq Cc \leq 3$ [E]		GW	Well-graded gravel [F]
			$Cu < 4$ and/or $1 > Cc > 3$ [E]		GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH		GM	Silty gravel [F,G,H]
			Fines classify as CL or CH		GC	Clayey gravel [F,G,H]
	Sands: 50% or more of coarse fraction passes No. 4 sieve	**Clean Sands:** Less than 5% fines [D]	$Cu \geq 6$ and $1 \leq Cc \leq 3$ [E]		SW	Well-graded sand [I]
			$Cu < 6$ and/or $1 > Cc > 3$ [E]		SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH		SM	Silty sand [G,H,I]
			Fines classify as CL or CH		SC	Clayey sand [G,H,I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	**Silts and Clays:** Liquid limit less than 50	**Inorganic:**	PI > 7 and plots on or above "A" line [J]		CL	Lean clay [K,L,M]
			PI < 4 or plots below "A" line [J]		ML	Silt [K,L,M]
		Organic:	Liquid limit - oven dried	< 0.75	OL	Organic clay [K,L,M,N]
			Liquid limit - not dried			Organic silt [K,L,M,O]
	Silts and Clays: Liquid limit 50 or more	**Inorganic:**	PI plots on or above "A" line		CH	Fat clay [K,L,M]
			PI plots below "A" line		MH	Elastic Silt [K,L,M]
		Organic:	Liquid limit - oven dried	< 0.75	OH	Organic clay [K,L,M,P]
			Liquid limit - not dried			Organic silt [K,L,M,Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor				PT	Peat

[A] Based on the material passing the 3-inch (75-mm) sieve

[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay

[E] $Cu = D_{60}/D_{10}$ $\quad Cc = \dfrac{(D_{30})^2}{D_{10} \times D_{60}}$

[F] If soil contains ≥ 15% sand, add "with sand" to group name.

[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

[H] If fines are organic, add "with organic fines" to group name.

[I] If soil contains ≥ 15% gravel, add "with gravel" to group name.

[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

[L] If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.

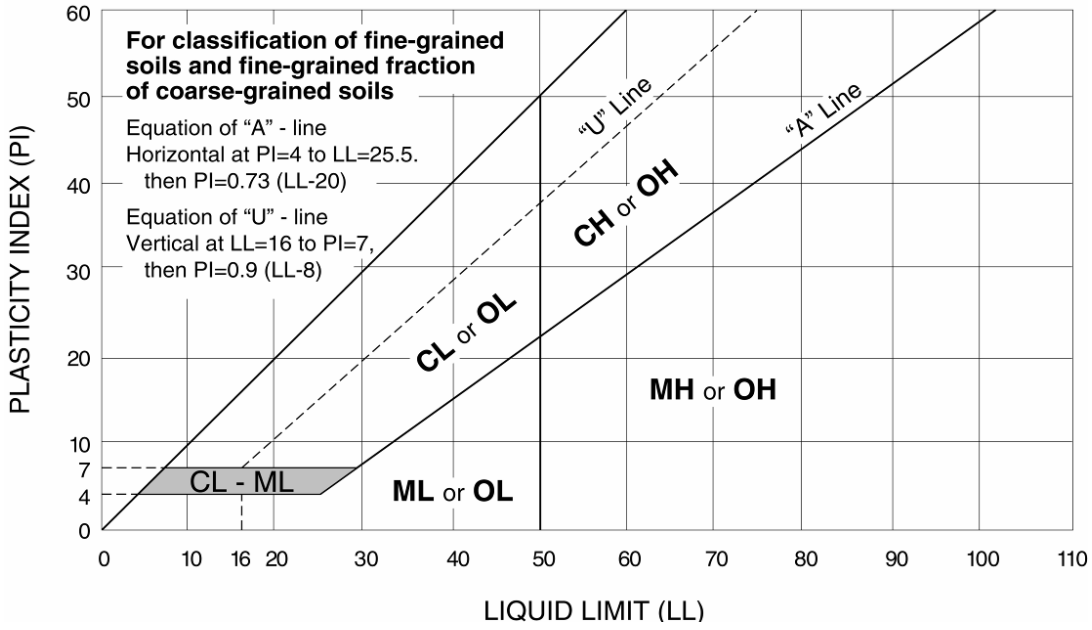
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.

[N] PI ≥ 4 and plots on or above "A" line.

[O] PI < 4 or plots below "A" line.

[P] PI plots on or above "A" line.

[Q] PI plots below "A" line.



Terracon

Exhibit C-2

Vogt, David

From: Tiffany Humberson [redacted]
Sent: Monday, June 01, 2015 10:41 AM
To: Vogt, David
Cc: [redacted]
Subject: RE: Meeting to discuss a future pit permit for oil and gas exploration and production wastes

David,

After reviewing the soil borings, there needs to be an additional 100 foot boring done in the middle of the acreage. Close to where the #7 boring is located.

We require a permeability of less than or equal to 1 x 10^{-7} cm/sec, like MSW landfills. The onsite soils are not acceptable as the compacted clay liner. We will however accept a design for the cells that includes;

Protective soil layer;
Leachate collection system;
60 mil HPDE primary liner;
Leak detection system;
60 mil HPDE secondary liner;
Geosynthetic clay liner (GCL);
Compacted subgrade.

There are several GCL liners available and consist of a sodium bentonite between to geotextile fabric sheets. I mentioned the synthetic liner in the meeting. Let me know if you have any more questions,

Tiffany

From: Vogt, [redacted]
Sent: Monday, June 01, 2015 9:03 AM
To: Tiffany Humberson
Cc: [redacted]
Subject: RE: Meeting to discuss a future pit permit for oil and gas exploration and production wastes

Tiffany,

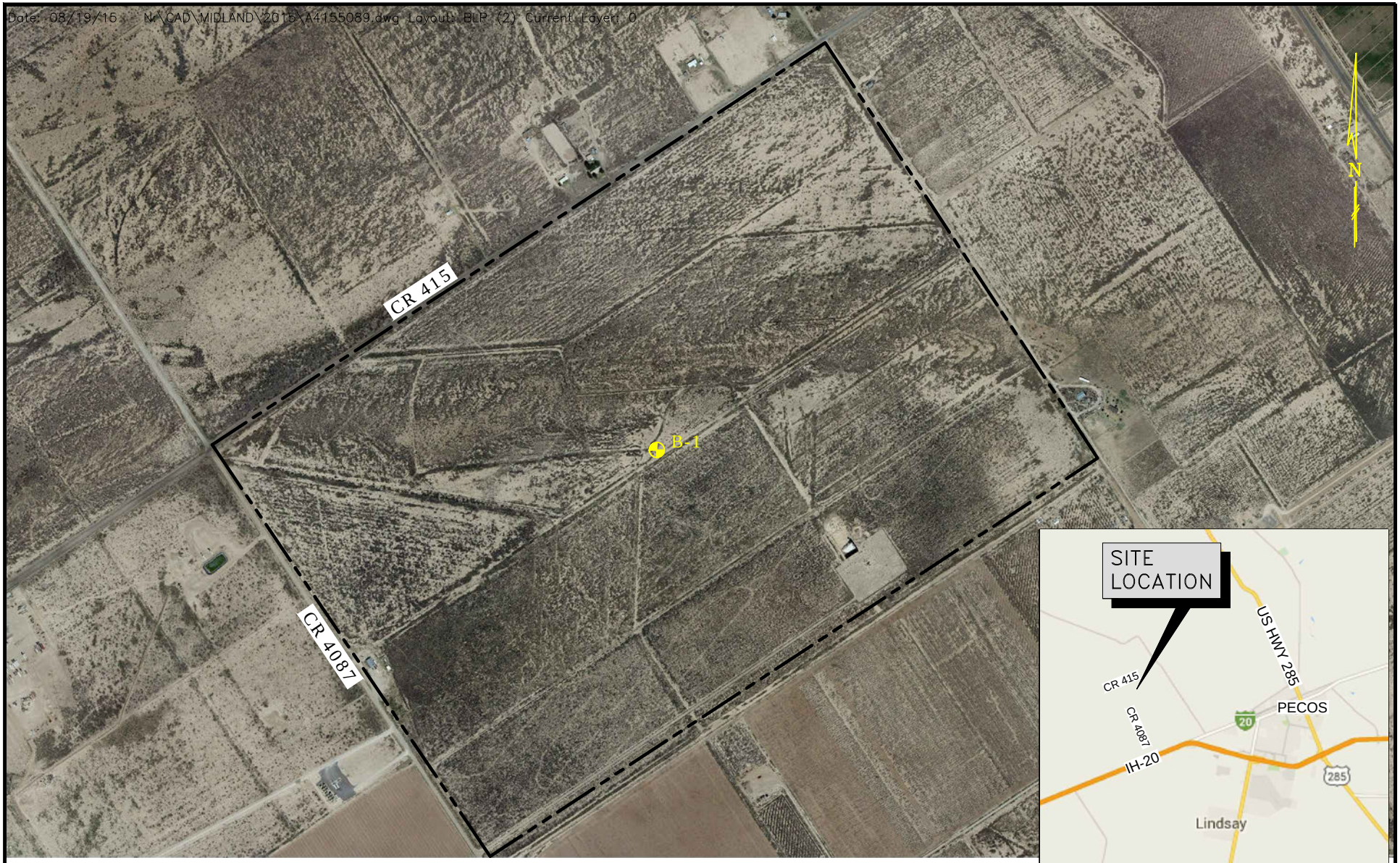
Attached please find the facility layout and location. I am working on the soils balance for the facility to lock in the depths of the pits. However, I am estimating a depth below the existing surface of approximately 20-30 feet with a pit perimeter berm of approximately 10-20 feet above surface.

Sincerely,

David C. Vogt, P.E.
Associate, Project Manager

HDR

Date: 08/19/15 N:\CAD\MIDLAND\2015\A4155089.dwg Layout: BLP (2) Current Layer: 0



SOURCE: GOOGLE EARTH. APRIL 7, 2013.

SITE VICINITY MAP
SOURCE: GOOGLE MAPS, 2015.

0 500 1000 FEET
APPROXIMATE SCALE

THIS DRAWING SHOULD NOT BE USED SEPARATELY FROM ORIGINAL REPORT.

NOTE: ALL BORING LOCATIONS ARE APPROXIMATE.

Project Mngr:	JT
Drawn By:	JJD
Checked By:	JT
Approved By:	JS

Project No.	A4155089
Scale:	AS SHOWN
Date:	08/19/15

Terracon
Consulting Engineers and Scientists
(Registration No.: F-3272)
10400 STATE HIGHWAY 191 MIDLAND, TX 79707
PH. (432-296-4142) FAX. (432-684-9608)

BORING LOCATION PLAN

PECOS OIL AND GAS FACILITY, PHASE 2
SEQ OF CR 415 AND CR 408
PECOS, REEVES COUNTY, TEXAS

EXHIBIT
A-3

BORING LOG NO. B-1

PROJECT: Pecos Oil and Gas Waste Facility, Phase 2

CLIENT: HDR Engineering, Inc.
Dallas, Texas

SITE: SEQ of CR 415 and CR 408
Pecos, Reeves County, Texas

LOCATION See Exhibit A-2

Latitude: 31.432235° Longitude: -103.584391°

Surface Elev.: 2663 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (psi)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
				1-2-2 N=4							
				3-5-6 N=11				8		26-21-5	75
		5		7-10-12 N=22							
				11-18-21 N=39				10			71
		10		12-15-18 N=33							
12.0	2651										
		15		7-14-20 N=34				23		83-31-52	78
		20		11-15-18 N=33							
		25		17-20-18 N=38							
28.0	2635										
		30		12-12-14 N=26				19		35-18-17	13
32.0	2631										
		35		3-3-6 N=9							
		40		6-10-23 N=33							
		45		3-6-7 N=13				30		44-23-21	78
48.0	2615										
		50		5-11-16 N=27							
		55		5-7-8				21			45

SILTY CLAY WITH SAND (CL-ML), light brown to tan, soft
-stiff at 2'
-very stiff at 4'
-hard below 6'

FAT CLAY WITH SAND (CH), light brown to brown, hard

CLAYEY SAND WITH GRAVEL (SC), brown, medium dense

LEAN CLAY WITH SAND (CL), brown, stiff
-hard at 38.5'

SILTY CLAYEY SAND (SC-SM), brown, medium dense

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger
Wash Rotary after 63 feet

Abandonment Method:
Borings backfilled with cement-bentonite grout upon completion.

See Exhibit A-3 for description of field procedures.
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater encountered at 68' during drilling

Terracon
10400 State Highway 191
Midland, Texas

Boring Started: 7/28/2015 | Boring Completed: 7/28/2015

Drill Rig: CME 55 | Driller: Total Support Services

Project No.: A4155089 | Exhibit: A-5

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL A4155089_LOG.GPJ

BORING LOG NO. B-1

PROJECT: Pecos Oil and Gas Waste Facility, Phase 2

CLIENT: HDR Engineering, Inc.
Dallas, Texas

SITE: SEQ of CR 415 and CR 408
Pecos, Reeves County, Texas

LOCATION See Exhibit A-2

Latitude: 31.432235° Longitude: -103.584391°

Surface Elev.: 2663 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (psi)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
						N=15							
			60			6-11-14 N=25							
			65			7-12-15 N=27				22		22-15-7	18
	68.0	2595		▽									
			70			16-21-27 N=48							
			75			12-6-8 N=14							
			80			5-8-15 N=23				19			60
			85			11-17-23 N=40							
			90			15-27-36 N=63				22		64-26-38	67
			95			21-28-36 N=64							
	100.0	2563	100			21-27-32 N=59							

SILTY CLAYEY SAND (SC-SM), brown, medium dense *(continued)*

SANDY FAT CLAY (CH), brown, hard

-stiff to very stiff between 73.5' and 80'

Boring Terminated at 100 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger
Wash Rotary after 63 feet

Abandonment Method:
Borings backfilled with cement-bentonite grout upon completion.

See Exhibit A-3 for description of field procedures.
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Groundwater encountered at 68' during drilling*

Terracon
10400 State Highway 191
Midland, Texas

Boring Started: 7/28/2015 Boring Completed: 7/28/2015

Drill Rig: CME 55 Driller: Total Support Services

Project No.: A4155089 Exhibit: A-6

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL A4155089_LOG.GPJ

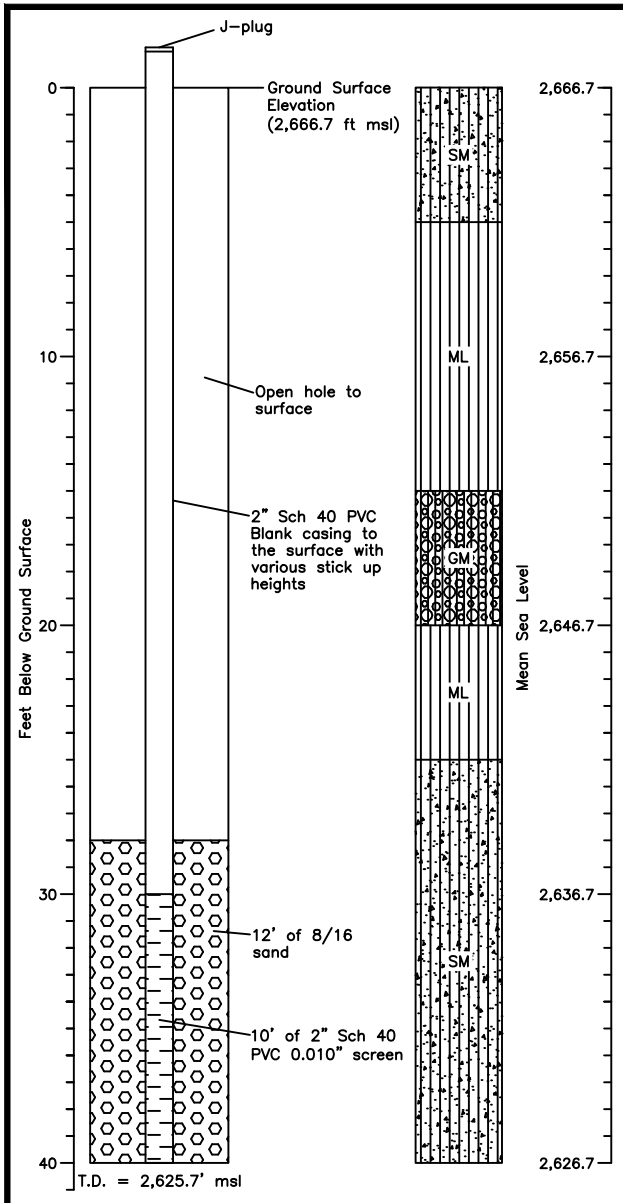
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Appendix III-5-C

Boring Logs

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
50%	0–5	1.2–2.4	13,19,24 N=43	SM	Fine sandy silt. 7.5 YR 7/4. Loosely consolidated with strong HCl reaction; well–sorted, sub–rounded sand grains, not plastic, sticky, dry.
70%	5–10	1.6–2.4	28,41,36 N=77	ML	Silt with fine sand. 7.5 YR 8/2. Weak clumps with strong HCl reaction; well–sorted, sub–rounded sand grains, slightly plastic, sticky, dry.
60%	10–15	1.5–2.4	12,25,42 N=67	ML	As above with trace gravel to 4" making this poorly–sorted.
40%	15–20	0.9–2.4	28,48,50 N=98	GM	Sandy silty gravel. Various colors; silty matrix is 7.5 YR 7/2. Weakly cemented and soft with strong HCl reaction; poorly–sorted, rounded to angular grains, not plastic, slightly sticky, dry.
75%	20–25	1.8–2.4	12,27,38 N=65	ML	Fine sandy– clayey–silt. 7.5 YR 6/4. Weak and soft with strong HCl reaction; trace medium sand with moderate sorting; angular to rounded grains, not plastic, slightly sticky, dry.
90%	25–30	2.1–2.4	23,31,30 N=61	SM	Silty gravelly sand. 7.5 YR 6/3. Weakly cemented with strong HCl reaction; nodules of calcite; poorly–sorted from find sand to ¼" gravel; angular to rounded, not plastic, slightly sticky, dry.
75%	30–35	1.8–2.4	6,8,12 N=20	SM	As above. Slightly moist such that it can be rolled.
80%	35–40	2.0–2.4	15,33,43 N=76	SM	As above. Nodules of calcite appearing as layers/veins, dry. Bottom of boring.

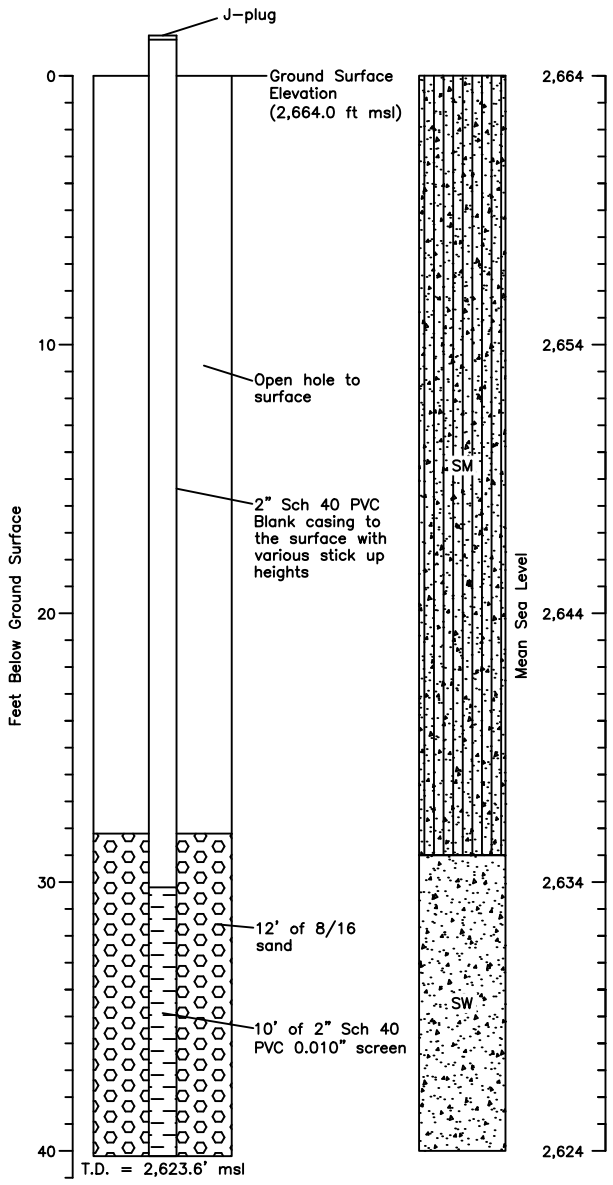
Geologist: K. Robinson
Driller: Talon LPE
Date completed: 02/09/21
Drilling method: HSA
Bit diameters: 7–7/8" O.D.
Sampling method: 1–3/8" split spoon
Coordinates: 10499592.24, 1280283.237 U.S. Survey Feet

Note:
A temporary well was placed after completing the boring in order to take a more representative static water measurement. The temporary well was dry, so no measurements were taken. The temporary well was removed and the bore hole was plugged and abandoned per regulations.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-1

DBS&A
Daniel B. Stephens & Associates, Inc.

S:\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\CAD\PRODUCTION\BORING LOGS\SB-2.DWG



Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
–	0–1	–		SM	Silty fine sand. 7.5 YR 4/6. 70% sand, ~25% silt, trace clay; strong HCl reaction; well-sorted, rounded to sub-angular; slightly plastic, not sticky, dry.
100%	4–5	1.5/1.5	15,22,26 N=48	SM	Silty fine sand with clay. 7.5 YR 6/4. 60% sand, ~25% silt, 15% clay; strong HCl reaction; well-sorted, rounded to subangular grains; moderately plastic, slightly sticky, dry.
100%	9–10	1.5/1.5	16,22,27 N=49	SM	Silty sand, 7.5 YR 6/4, low strength, strong HCl reaction, 60% fine-medium sand, 35% silt, trace clay. Grains are subangular to rounded; moderately well-sorted, slightly plastic, non-sticky, dry.
100%	14–15	1.5/1.5	22,40,50 N=90	SM	As above with additional CaCO3, making the color 7.5 YR 7/7.
100%	19–20	1.7/1.5	20,36,50 N=86	SM	Silty fine sand with clay. 7.5 YR 6/3. 60% sand, fine grained, 30% silt, 10% clay; strong HCl reaction; grains are subangular to sub-rounded, well-sorted, moderately plastic, slightly sticky, slightly moist.
90%	24–25	1.3/1.5	15,23,33 N=56	SM	Silty clayey sand. 7.5 YR 6/4. 50% fine-medium sand, 30% silt, 20% clay; strong HCl reaction; grains moderately-sorted, sub-angular to rounded; moderately plastic, slightly sticky, dry.
100%	29–30	1.6/1.5	21,42,50 N=92	SW	Sand with silt. 7.5 YR 6/6. 90% very course to fine sand, 10% silt; strong HCl reaction; poorly-sorted, angular to rounded grains, not plastic, not sticky, slightly moist.
100%	34–35	1.6/1.5	19,50 N=50	SW	Sand with silt. 7.5 YR 4/6. 80% very course to fine sand, 15% silt, trace clay; strong HCl reaction; poorly-sorted, angular to rounded grains, not plastic, not sticky, slightly moist.
100%	39–40	1.7/1.5	8,15,21 N=36	SW	Silty sand with clay. 7.5 YR 6/6. 70% very course to fine sand, 20% silt, 10% clay; strong HCl reaction, poorly-sorted, sub-angular to sub-rounded, slightly plastic, slightly sticky, slightly moist.

Geologist: K. Robinson
Driller: Talon LPE
Date completed: 02/11/21
Coordinates: 10500197.83, 1281298.518 U.S. Survey Feet

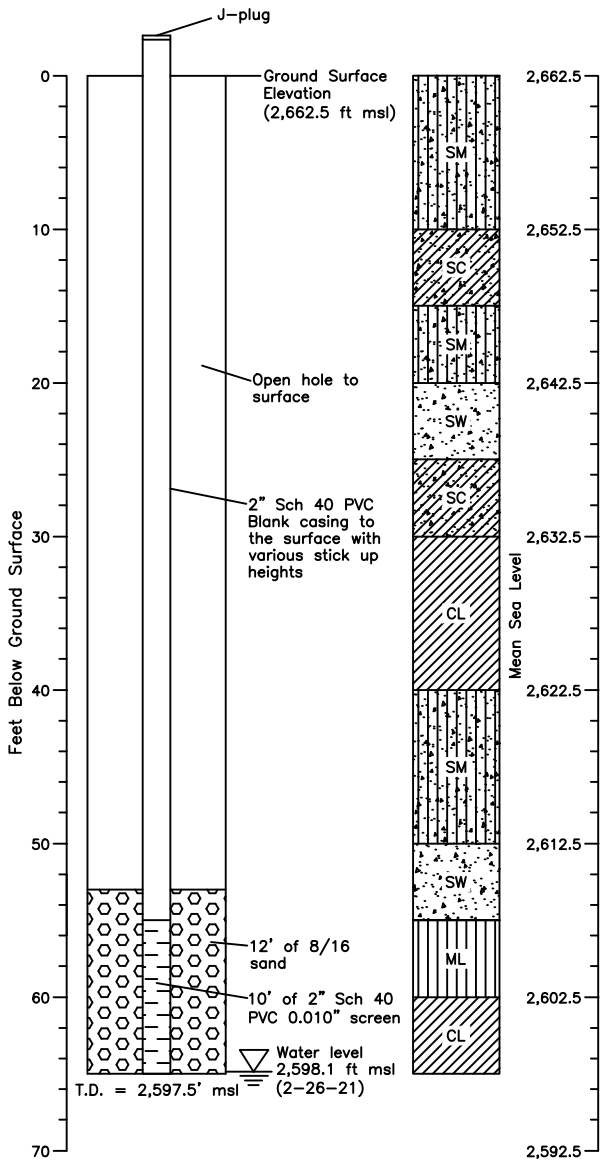
Drilling method: HSA
Bit diameters: 7-7/8" O.D.
Sampling method: 1-3/8" split spoon

Note:
A temporary well was placed after completing the boring in order to take a more representative static water measurement. The temporary well was dry, so no measurements were taken. The temporary well was removed and the bore hole was plugged and abandoned per regulations.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-2

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
–	0–1	–		SM	Silty sand. 7.5 YR 4/4. 80% fine–medium sand, moderately–sorted, 20% silt; strong HCl reaction; angular to subrounded, not plastic, not sticky, dry.
90%	4–5	1.3/1.5	10,12,15 N=27	SM	Silty sand with clay. 7.5 YR 5/6. 35% silt, trace clay, 60% fine–medium sand; strong HCl reaction; moderately–sorted, angular to rounded; slightly plastic, not sticky, dry.
100%	9–10	1.6/1.5	10,18,30 N=48	SM	Silty sand with clay. 7.5 YR 7/4. 50% fine–medium sand, 40% silt, 10% clay; strong HCl reaction, grains are well–sorted and mostly fine; angular to subrounded, moderately plastic, slightly sticky, dry.
100%	14–15	1.6/1.5	25,32,38 N=70	SC	Clayey, fine sand with silt. 7.5 YR 6/4. 70% very fine–fine sand, 20% clay, 10% silt; strong HCl reaction, nodular calcite; grains are well–sorted, subangular to subrounded, moderately plastic, moderately sticky, dry.
100%	19–20	1.7/1.5	13,20,25 N=45	SM	Silty sand. 7.5 YR 6/4. 80% very fine–medium sand, 15% silt, trace clay; strong HCl reaction; grains are angular to rounded, not plastic, not sticky, slightly moist.
100%	24–25	1.7/1.5	19,28,43 N=71	SW	Sand with silt and gravel. 7.5 YR 7/4. 70% sand, 15% gravel, 15% silt; strong HCl reaction; poorly–sorted, angular to rounded, not plastic, not sticky, slightly moist.
100%	29–30	2.1/1.5	12,14,15 N=29	SC	Clayey sand with silt. 7.5 YR 6/6. 70% fine sand, 20% clay, 10% silt; strong HCl reaction, calcite nodules and veins; well–sorted, angular to subrounded, not plastic, not sticky, slightly moist.
100%	34–35	2.0/1.5	5,8,10 N=18	CL	Sandy clay with silt. 7.5 YR 5/6. 60% clay, 30% sand, 10% silt; strong HCl reaction, some calcite nodules; grains moderately well–sorted, fine to medium sand, subangular to rounded, plastic, moderately sticky, moist.
100%	39–40	2.0/1.5	9,24,25 N=49	CL	Sandy clay with silt. 7.5 YR 5/6. 60% clay, 30% sand, 10% silt; strong HCl reaction, some calcite nodules; grains moderately well–sorted, fine to medium sand, subangular to rounded, plastic, moderately sticky, moist.
100%	44–45	1.8/1.5	8,23,19 N=42	SM	Silty sand with clay. 7.5 YR 6/4. 70% fine–medium sand, 25% silt, trace clay; strong HCl reaction, calcite nodules; moderately well–sorted, not plastic, not sticky, slightly moist.
100%	49–50	1.7/1.5	19,25,36 N=61	SM	Silty sand with gravel and clay. 7.5 YR 6/4. 60% fine–coarse sand, 20% silt, 10% gravel to 1/4", 10% clay; strong HCl reaction; grains are poorly–sorted, subangular with trace charcoal (?), not plastic, not sticky, slightly moist.
100%	54–55	1.5/1.5	11,14,25 N=39	SW	Medium sand with trace clay. 7.5 YR 6/4. 60% medium–fine sand, 30% gravel and coarse sand, 10% clay; angular to rounded, poorly–sorted, not plastic, not sticky, slightly moist.
90%	59–60	1.3/1.5	24,50 N=50	ML	Sandy clayey silt. 10 YR 6/4. 50% silt, 30% sand fine–coarse, 20% clay; strong HCl reaction; moderately plastic, moderately sticky, slightly moist.
100%	64–65	1.8/1.5	11,14,21 N=35	CL	Silty clay. 10 YR 4/5. 60% clay, 30% silt, 10% white crystalline mineral; no HCl reaction; moderately plastic; moderately sticky, slightly moist.

Geologist: K. Robinson
Driller: Talon LPE
Date completed: 02/11/21
Coordinates: 10500462.66, 1282044.329 U.S. Survey Feet

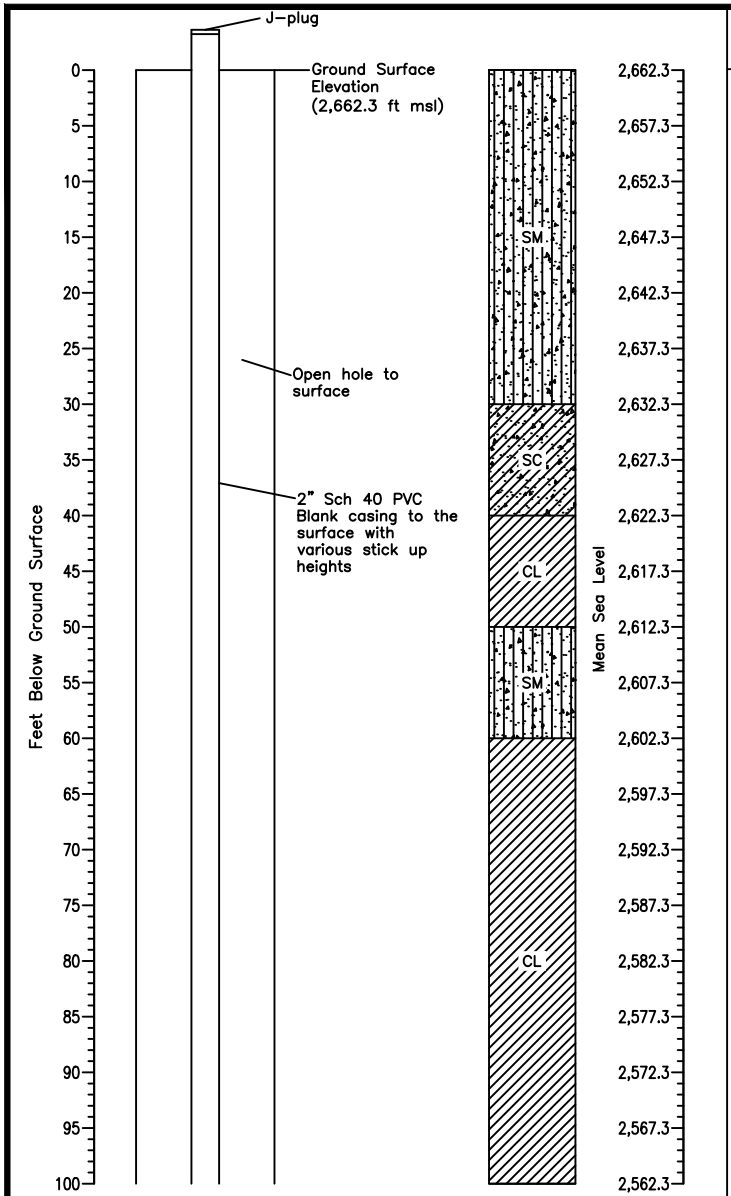
Drilling method: HSA
Bit diameters: 7–7/8" O.D.
Sampling method: 1–3/8" split spoon

Note:
A temporary well was placed after completing the boring in order to take a more representative static water level measurement. A static water measurement was taken 24 hours after boring completion. The temporary well was then removed and the bore hole was plugged and abandoned per regulations.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-3

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	USCS Symbol	Comments and Lithology
	0–10		SM	Silty sand with clay. 10 YR 5/4. 70% coarse–very fine sand, 20% silt, 10% clay; angular to subrounded, not plastic, not sticky.
	10–20		SM	Silty sand with gravel. 10 YR 5/3. 75% fine–very fine sand, 20% silt, gravel to 1/4"; Grains are well–sorted, angular to rounded, not plastic, not sticky.
	20–30		SM	Silty clayey sand. 10 YR 6/4, 50% medium to very fine sand, 30% silt, 20% clay; grains are well–sorted, subangular to subrounded, slightly plastic, moderately sticky.
	30–40		SC	Clayey silty sand with gravel. 10 YR 5/6, 50% coarse to very fine sand, 20% clay, 20% silt, 10% gravel to 3/8"; grains are poorly–sorted, angular to rounded, not plastic, moderately sticky.
	40–50		CL	Sandy silty clay. 10 YR 5/8, 50% clay, 30% fine–very fine sand, 20% silt; grains are well–sorted, angular to rounded, moderately plastic, moderately sticky.
	50–60		SM	Silty sand with clay. 10 YR 4/6, 60% coarse to very–fine sand with trace gravel to 1/4", 30% silt, 10% clay; grains angular to subrounded, not plastic, moderately sticky.
	60–70		CL	Sandy clay with silt. 10 YR 7/4, 60% clay, 30% medium to fine sand, 10% silt; grains are well–sorted, subrounded to subangular, oderately plastic, moderately sticky.
	70–80		CL	Sandy silty clay. 10 YR 6/4, 50% clay, 30% fine to very fine sand, 20% silt; grains are subangular to subrounded, well–sorted, moderately plastic, moderately sticky.
	80–90		CL	Sandy silty clay. 10 YR 6/4, 50% clay, 30% fine to very fine sand, 20% silt; grains are subangular to subrounded, well–sorted, oderately plastic, moderately sticky.
	90–100		CL	Very fine sandy clay. 7.5 YR 7/6, 80% clay, 20% very fine sand; grains are rounded to subangular, well–sorted, moderately plastic, moderately sticky.

Geologist: K. Robinson
Driller: Talon LPE
Date completed: 02/22/21
Coordinates: 10501040.31, 1282428.61 U.S. Survey Feet

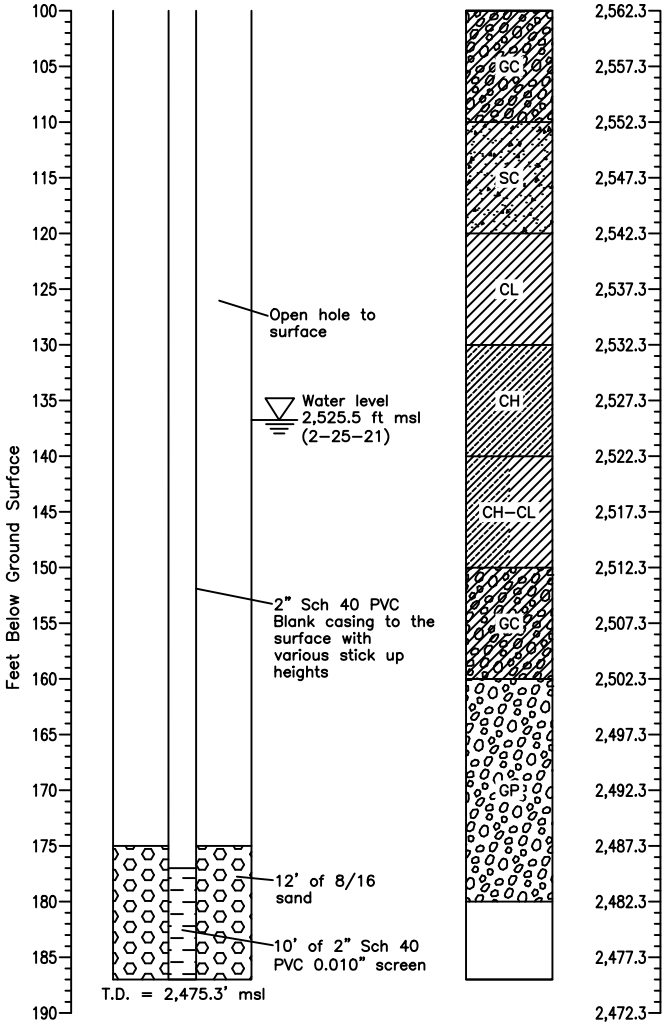
Drilling method: Mud Rotary
Bit diameters: 7–7/8" O.D.
Sampling method: 1–3/8" split spoon

Note:
No temporary well was constructed. Static water level was measured within the open hole slightly under 24 hours before being plugged.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-4a

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	USCS Symbol	Comments and Lithology
	100-110		GC	Clayey gravel. Various colors on lithic fragments, 70% gravel, 30% clay; gravel is angular to rounded, poorly-sorted; matrix is very fine-sandy; moderately plastic, moderately sticky.
	110-120		SC	Gravelly clayey sand. 7.5 YR 6/3, 65% coarse-very fine sand, 20% gravel to 1/4", 15% clay; matrix as above, very fine-sandy; grains are well-graded, angular to rounded, not plastic, moderately sticky.
	120-130		CL	Sandy clay. 7.5 YR 7/3, clay is cohesive, 80% clay, 20% coarse to fine sand; grains are poorly-sorted, angular to rounded, moderately plastic, moderately sticky.
	130-140		CH	Clay with sand. 7.5 YR 5/6, with strong brown mottles; mostly clay with trace medium-very fine sand, not plastic, very sticky.
	140-150		CH-CL	Sandy clay. 70% clay, 30% coarse-very fine sand; grains mostly coarse and angular, subangular also present; clay is moderately plastic, moderately sticky.
	150-160		GC	Sandy gravel with clay. Color varies, matrix is 7.5 YR 5/6, 60% gravel to 1/4", angular to rounded, 25% course-fine sand, poorly-graded, 15% clay.
	160-170		GP	As above, with clay clumps reducing to trace ~5%. Gravel to 1".
	170-180		GP	Gravel with sand. Color varies, 90% gravel to 1", angular to subangular fragments, ~10% coarse sand.

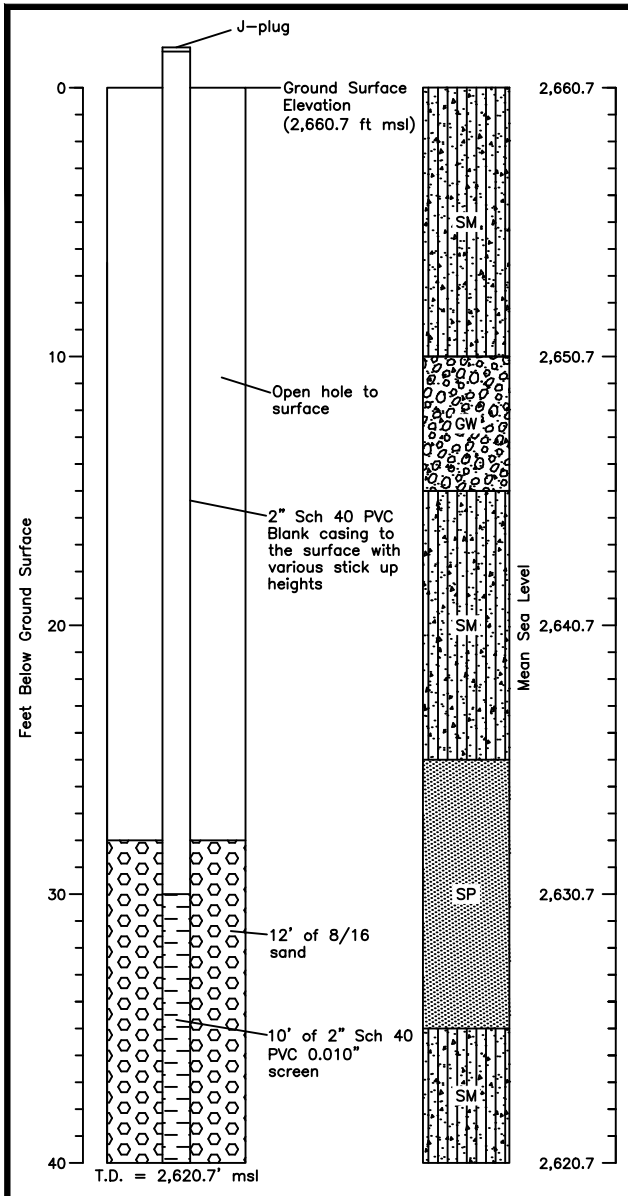
Geologist: K. Robinson
Driller: Talon LPE
Date completed: 02/22/21
Coordinates: 10501040.31, 1282428.61 U.S. Survey Feet

Drilling method: Mud Rotary
Bit diameters: 7-7/8" O.D.
Sampling method: 1-3/8" split spoon

Note:
No temporary well was constructed. Static water level was measured within the open hole slightly under 24 hours before being plugged.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-4b

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
–	0–1	–		SM	Silty fine sand, 7.5 YR 4/6, ~70% fine–very fine sand, 25% silt, trace clay; non–cohesive, strong HCl reaction, well–sorted, rounded to subangular grains, slightly plastic, not sticky, dry.
90%	4–5	1.4/1.5	13,17,19 N=36	SM	Silty sand with clay, 7.5 YR 6/6, 70% medium–fine sand, 25% silt, 5% clay, low strength, strong HCl reaction, rounded to subangular grains, medium– to well–sorted, slightly plastic, not sticky, dry.
100%	9–10	1.5/1.5	25,35,34 N=69	SM	As above, with trace gravel to 3/8", poorly–sorted.
75%	14–15	1.1/1.5	11,14,25 N=39	GW	Gravel with trace sand and silt, color varies, non–cohesive, fines have strong HCl reaction, subrounded to rounded grains, well–graded / poorly–sorted, not plastic, not sticky, dry.
90%	19–20	1.4/1.5	9,15,14 N=29	SM	Silty sand with clay and gravel, 7.5 YR 6/3, 60% fine–coarse sand, 20% silt, 10% clay, 10% gravel to 1/2", low strength, strong HCl reaction, poorly–sorted, angular to rounded grains, slightly plastic, slightly sticky, dry.
100%	24–25	1.6/1.5	13,40,38 N=78	SM	Silty sand with clay, 7.5 YR 6/4, 60% fine–medium sand, 30% silt, 10% clay, moderate strength, moderately–sorted, angular to subrounded grains, slightly plastic, slightly sticky, dry.
90%	29–30	1.4/1.5	25,31,23 N=54	SP	Sand with silt, 7.5 YR 3/6, 80% fine to medium sand, 15% silt, trace clay, no cohesive strength, moderately–sorted, subangular to subrounded grains, not plastic, not sticky, dry.
80%	34–35	1.7/1.5	11,18,26 N=44	SP	As above, slightly moist.
100%	39–40	2.0/1.5	8,10,15 N=25	SM	Silty clayey sand, 7.5 YR 5/6, 65% fine to medium sand, 20% silt, 15% clay, moderate strength, moderate sorting of subangular to rounded grains, moderately plastic, moderately sticky, slightly moist.

Geologist: K. Robinson
Driller: Talon LPE
Date completed: 02/12/21
Coordinates: 10501298.58, 1283311.687 U.S. Survey Feet

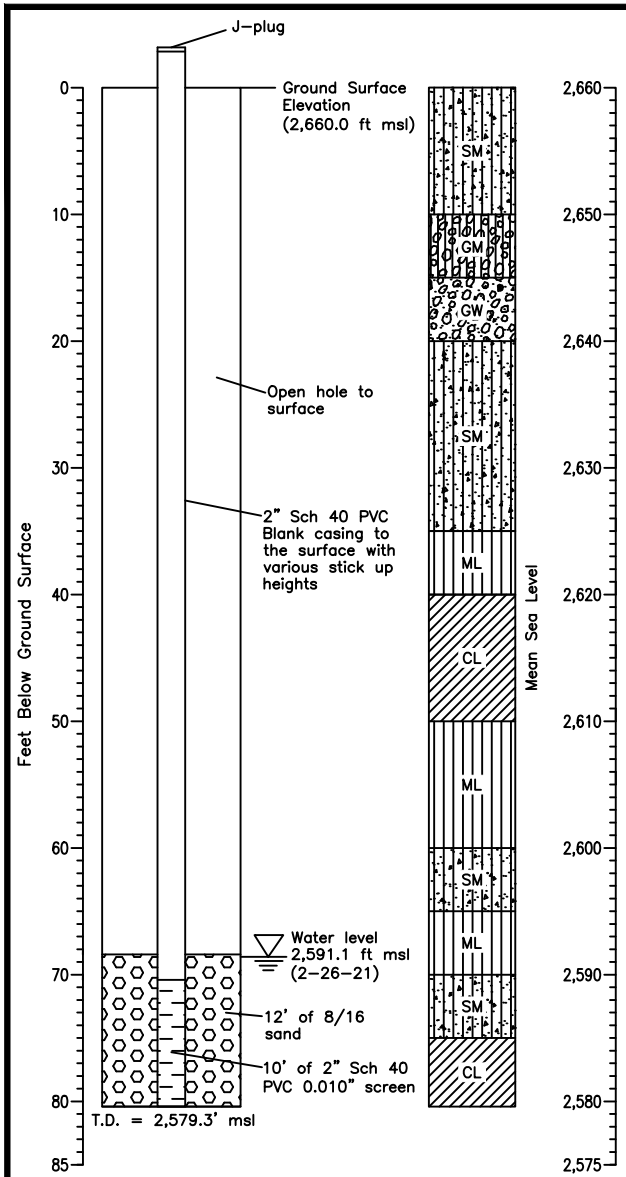
Drilling method: HSA
Bit diameters: 7–7/8" O.D.
Sampling method: 1–3/8" split spoon

Note:
A temporary well was placed after completing the boring in order to take a more representative static water measurement. The temporary well was dry, so no measurements were taken. The temporary well was removed and the bore hole was plugged and abandoned per regulations.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-5

DBS&A
Daniel B. Stephens & Associates, Inc.

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
–	0–1	–		SM	Silty sand, 7.5 YR 6/4, 80% fine–course grained sand, 15% silt, trace clay; loose, strong HCl reaction, moderately well–sorted, grains are angular to subrounded, slightly plastic, slightly sticky, dry.
90%	4–5	1.3/1.5	11,18,24 N=42	SM	Silty sand, 7.5 YR 5/6, 80% fine–medium grained sand, 10% silt, trace clay, moderate dry strength, strong HCl reaction, moderately well–sorted, grains angular to subrounded, slightly plastic, slightly sticky, dry.
100%	9–10	1.5/1.5	18,22,14 N=36	SM	As above.
90%	14–15	1.3/1.5	14,22,26 N=48	GM	Sandy gravel with silt, color varies, 65% gravel 1/8"–2", 20% fine– to coarse–grained sand, 15% silt; strong HCl reaction, grains are poorly–sorted, angular to rounded, not plastic, slightly sticky, dry.
80%	19–20	1.2/1.5	16,31,29 N=60	GW	As above, with silt diminishing to trace amounts, and not sticky.
100%	24–25	2.1/1.5	16,41,46 N=87	SM	Silty sand, 7.5 YR 6/6, 80% coarse to fine grained sand, 10% silt; no cohesion, strong HCl reaction with CaCO3 nodules, grains are angular to subrounded, moderately–sorted, not plastic, not sticky, dry.
100%	29–30	1.6/1.5	13,15,19 N=34	SM	Silty sand, 7.5 YR 5/6, 85% fine sand, 15% silt, trace clay; no cohesion, weak HCl reaction, grains are subangular to rounded, well–sorted, not plastic, not sticky, dry.
100%	34–35	1.8/1.5	11,19,34 N=53	SM	As above, but with a strong HCl reaction with CaCO3 nodules.
100%	39–40	2.1/1.5	13,21,24 N=45	ML	Silty clayey sand, 7.5 YR 6/6, 60% very fine to fine sand, 25% silt, 15% clay, moderate strength, strong HCl reaction, grains subangular to subrounded, well–sorted, moderately plastic, slightly sticky, moderately moist.
100%	44–45	1.7/1.5	7,9,13 N=22	CL	Silty sandy clay, 7.5 YR 6/3, 50% clay, 30% silt, 20% very fine–fine sand, moderate strength, strong HCl reaction, grains subangular to subrounded, moderately plastic, moderately sticky, moderately moist.
100%	49–50	2.3/1.5	8,7,9 N=16	CL	As above.
100%	54–55	1.8/1.5	5,6,7 N=13	ML	Sandy clayey silt, 7.5 YR 5/4, 50% silt, 30% medium to fine sand, 20% clay, weak cohesion, vigorous HCl reaction, grains are moderately–sorted, subangular to subrounded, slightly plastic, slightly sticky, moist.
100%	59–60	1.6/1.5	5,7,13 N=20	ML	As above.
100%	64–65	2.2/1.5	4,8,18 N=26	SM	As above, with an increasing number of CaCO3 nodules.
100%	69–70	1.8/1.5	6,14,20 N=34	ML	As above; now wet.
75%	74–75	1.1/1.5	19,26,35 N=61	SM	Silty sand with clay, 7.5 YR 6/3 with dark gray laminations, 60% medium–very fine sand, 30% silt, 10% clay, no cohesiveness, strong HCl reaction, grains coarse–very fine, angular to rounded, poorly–sorted, not plastic, not sticky, wet.
100%	79–80	2.1/1.5	9,13,19 N=32	CL	Silty sandy clay, 7.5 YR 5/4, 50% clay, 30% silt, 20% course–very fine sand, trace gravel, moderate strength, strong HCl reaction, angular to subrounded, poorly–sorted, moderately plastic, moderately sticky, very moist.

Geologist: K. Robinson
Driller: Talon LPE
Date completed: 02/17/21
Coordinates: 10501675.17, 1283428.173 U.S. Survey Feet

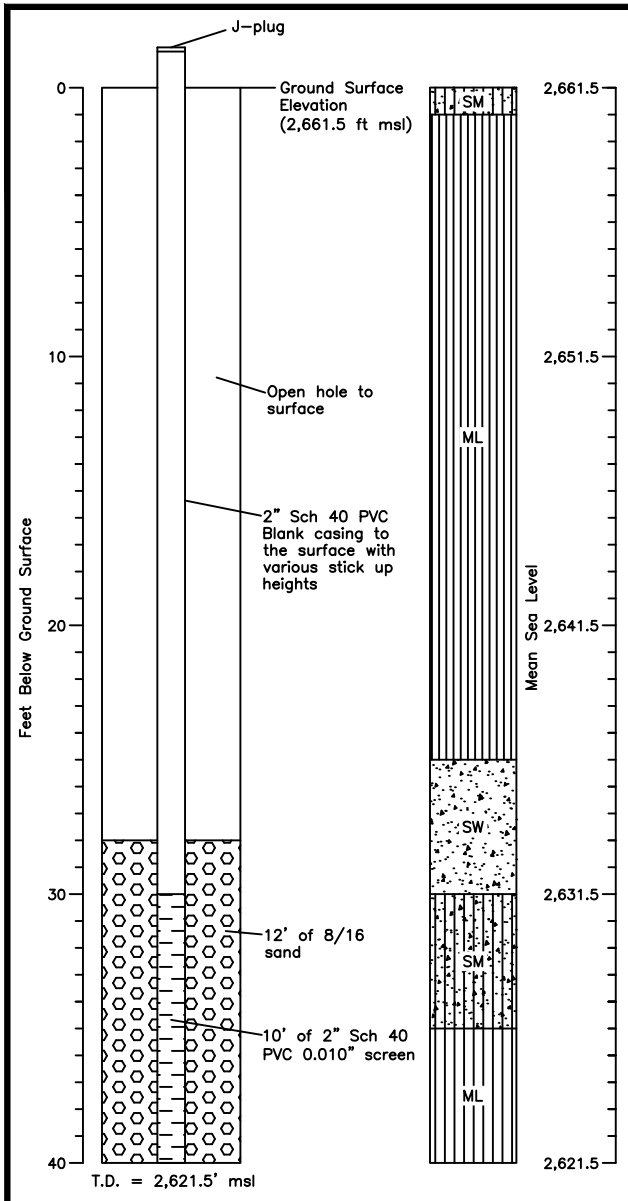
Drilling method: HSA
Bit diameters: 7–7/8" O.D.
Sampling method: 1–3/8" split spoon

Note:
A temporary well was placed after completing the boring in order to take a more representative static water level measurement. A static water measurement was taken 24 hours after boring completion. The temporary well was then removed and the bore hole was plugged and abandoned per regulations.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-6

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
–	0–1	–		SM	Silty sand, 7.5YR 3/3, 80% fine– to very fine– sand, 15% silt, trace clay, some organic material; no cohesion, strong HCl reaction, grains are subrounded to subangular, well–sorted; slightly plastic, slightly sticky, dry.
75%	4–5	1.1/1.5	9,10,12 N=22	ML	Sandy silt with clay, 7.5YR 5/4, 60% silt, 30% coarse to very fine sand, 10% clay; weak to strong cohesion; strong HCl reaction, CaCO3 nodule development; grains subangular to subrounded; poorly–sorted; slightly plastic, not sticky, dry.
70%	9–10	0.7/1.0	30,50 N=50	ML	Sandy silt with clay; 7.5YR 7/4, 70% silt, 20% fine to very fine sand, 10% clay, weak to moderate cohesion, strong HCl reaction, grains subangular to subrounded, well–sorted, slightly plastic, not sticky, dry.
90%	14–15	0.8/0.9	30,50 N=50	ML	As above, with strong cohesion.
100%	19–20	1.6/1.5	18,42,44 N=86	ML	Silty sand with clay, 7.5YR 5/4, 60% coarse to very fine sand, 30% silt, 10% clay, weak dry strength, strong HCl reaction, grains are angular to subrounded, poorly–sorted, slightly plastic, not sticky, dry.
90%	24–25	1.4/1.5	20,37,46 N=83	ML	As above, with increased development of CaCO3 nodules and inclusion of trace gravel to 3/8".
90%	29–30	1.3/1.5	47,43,28 N=71	SW	Gravelly sand with silt, various colors, 70% coarse to very fine sand, 20% gravel to 1/2", 10% silt, no cohesion, matrix has strong HCl reaction, grains are well–graded, angular to rounded, not plastic, not sticky, dry.
100%	34–35	1.8/1.5	6,8,11 N=19	SM	Silty sand; 2.5YR 5/4, 70% coarse to very fine sand, 30% silt, weak cohesion, strong HCl reaction, grains are well–sorted, angular to rounded, not plastic, slightly sticky, slightly moist.
100%	39–40	1.6/1.5	8,10,15 N=25	ML	Clayey sandy silt, 7.5YR 6/4, 60% silt, 25% clay, 15% fine to very fine sand, moderate strength, strong HCl reaction, grains are well–sorted, subangular to subrounded, moderately plastic, moderately sticky, slightly moist.

Geologist: K. Robinson
Driller: Talon LPE
Date completed: 02/16/21
Coordinates: 10499865.32, 1281781.951 U.S. Survey Feet

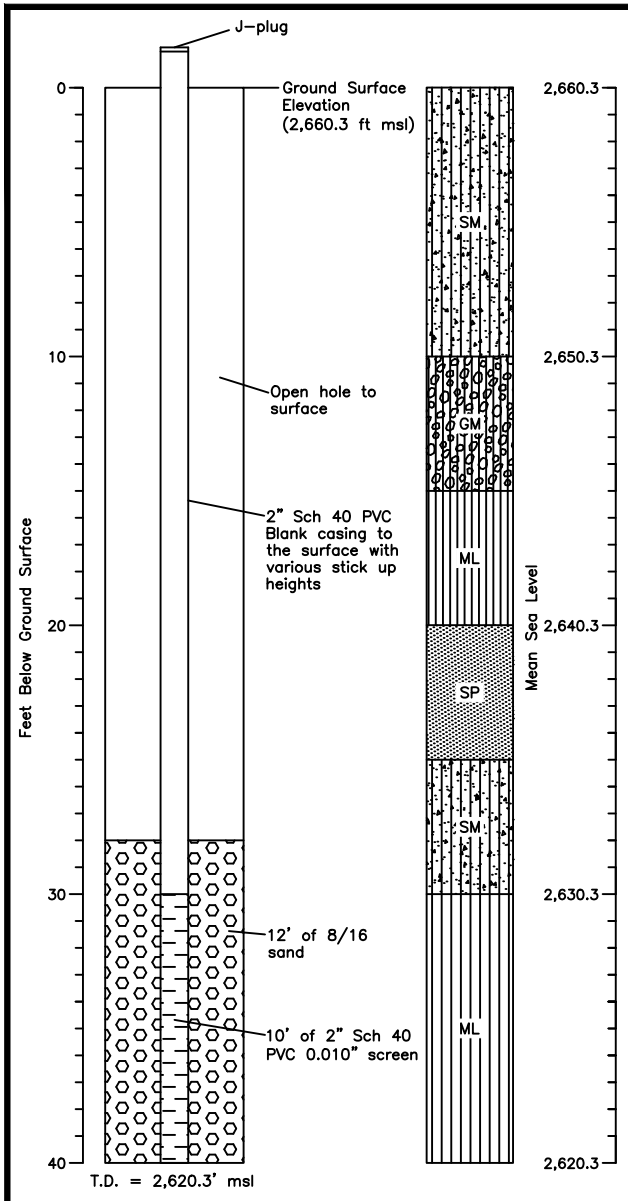
Drilling method: HSA
Bit diameters: 7–7/8" O.D.
Sampling method: 1–3/8" split spoon

Note:
A temporary well was placed after completing the boring in order to take a more representative static water measurement. The temporary well was dry, so no measurements were taken. The temporary well was removed and the bore hole was plugged and abandoned per regulations.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-7

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
–	0–1	–		SM	Silty sand with organic materials, 7.5YR 3/4, 55% sand very fine to medium, 40% silt, trace clay, noncohesive, strong HCl reaction, moderately–sorted, subangular to subrounded, not plastic, not sticky, slightly moist.
75%	4–5	1.1/1.5	13,14,14 N=28	SM	Silty sand with clay, 7.5YR 6/4, 60% sand very fine to medium, 30% silt, 10% clay, cohesiveness from weak to strong in clumps, strong HCl reaction, moderately–sorted, subangular to subrounded, slightly plastic, slightly sticky, dry.
90%	9–10	1.3/1.5	18,30,31 N=61	SM	Silty sand, 7.5YR 6/6, 70% sand, medium to fine, 25% silt, 5% clay, weak cohesion, strong HCl reaction on matrix, moderate sorting, angular to subrounded grains, not plastic, not sticky, dry.
80%	14–15	1.2/1.5	15,27,20 N=47	GM	Sandy silty gravel, colors various, no cohesion, strong HCl reaction on matrix, 50% grains, 1/2 to 1/8 inch, 30% sand coarser fine, 20% silt. poorly–sorted, rounded to angular grains, not plastic, not sticky, dry.
100%	19–20	1.8/1.5	12,22,32 N=54	ML	Sandy silt with clay, moderate cohesion, strong HCl reaction, 60% sand medium to fine, 30% silt, 10% clay. Moderate sorting, angular to subrounded grains, not plastic, not sticky, dry.
100%	24–25	1.7/1.5	21,33,32 N=65	SP	Gravelly sand with silt, colors various, noncohesive, strong HCl reaction. 80% coarse to very fine sand, 15% gravel 1/8 to 1/4 inch trace silt. Grains angular to subrounded, poorly–sorted, not plastic, not sticky, dry.
100%	29–30	1.8/1.5	13,14,19 N=33	SM	Silty sand with clay, 7.5YR 6/6, weak dry strength, strong HCl reaction. 70% sand very fine to medium, strong HCl reaction. 70% sand, 20% silt, 10% clay. Grains moderately–sorted, rounded to subangular, not plastic, not sticky, slightly moist.
100%	34–35	1.7/1.5	6,7,11 N=18	ML	Silty clayey sand, 7.5YR 6/6, moderate strength, strong HCl reaction. 60% fine to medium sand, 25% silt, 15% clay. moderately–sorted, angular to subrounded grains, moderately plastic, slightly sticky, slightly moist.
100%	39–40	2.0/1.5	10,11,15 N=26	ML	Sandy clayey silt, 10YR 7/6, moderate strength, strong HCl reaction. 50% silt, 30% medium to very fine sand, 20% clay. moderately–sorted, angular to subrounded grains, moderate plastic, moderate sticky, slightly moist.

Geologist: K. Robinson
Driller: Talon LPE
Date completed: 02/19/21
Coordinates: 10500101.8, 1282160.045 U.S. Survey Feet

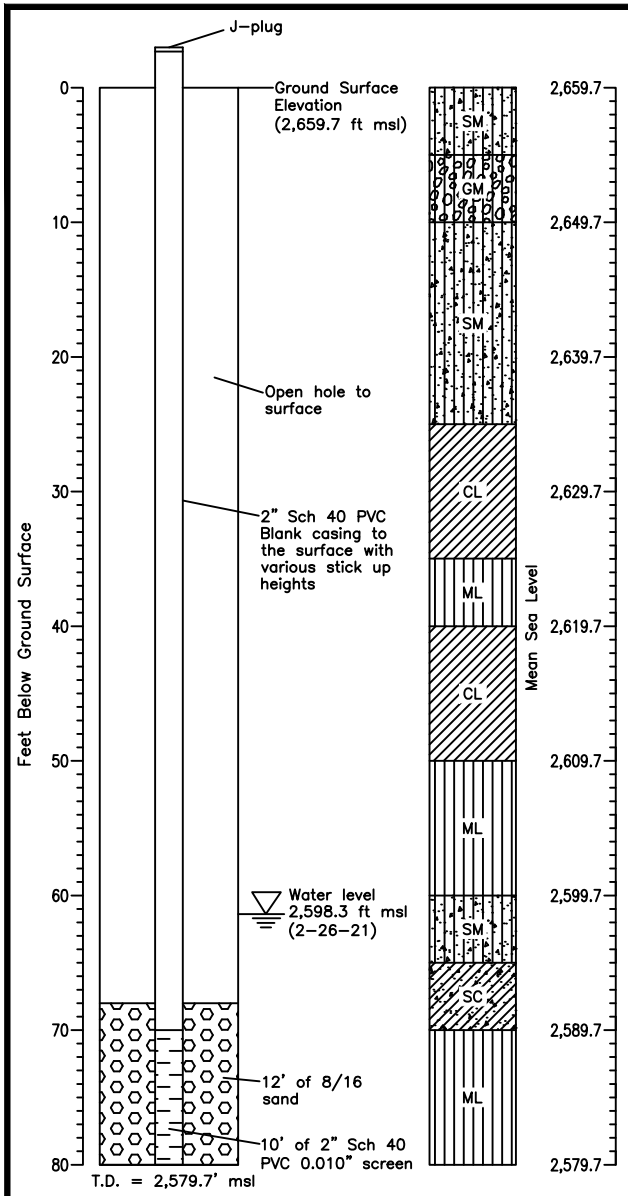
Drilling method: HSA
Bit diameters: 7–7/8" O.D.
Sampling method: 1–3/8" split spoon

Note:
A temporary well was placed after completing the boring in order to take a more representative static water measurement. The temporary well was dry, so no measurements were taken. The temporary well was removed and the bore hole was plugged and abandoned per regulations.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-8

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
–	0–1	–		SM	Silty sand with organic materials, 7.5YR 3/4, 60% sand very fine to medium, 40% trace clay, non–cohesive, strong HCl reaction, moderately–sorted, subangular to subrounded, not plastic, not sticky, slightly moist.
90%	4–5	1.4/1.5	14,23,25 N=48	SM	Silty sand, 10YR 6/8, 70% sand medium to very fine, 25% silt, trace clay, weak dry strength, strong HCl reaction, moderately–sorted, subangular to subrounded slightly plastic, slightly sticky, dry.
60%	9–10	0.9/1.5	7,14,19 N=33	GM	Sand silty gravel, colors vary, 50% grains 1/2" to 1/8", 30% sand coarse to fine, 20% silt, no cohesion, strong HCl reaction on matrix, poorly–sorted, rounded to angular grains, not plastic, not sticky, dry.
70%	14–15	1.0/1.5	16,22,32 N=54	SM	Silty sand, 7.5YR 5/4, 60% coarse to very fine sand, 35%, trace clay, no cohesion, strong HCl reaction, angular to subrounded grains, CaCO3 nodules, poorly–sorted grains, slightly plastic, not sticky, dry.
100%	19–20	1.8/1.5	12,18,27 N=45	SM	As above.
100%	24–25	1.7/1.5	19,26,29 N=55	SM	Silty sand, 7.5YR 6/6, 75% coarse to very fine sand, 25% silt, noncohesive, strong HCl reaction, poorly–sorted grains, rounded to angular, not plastic, not sticky, dry.
75%	29–30	1.1/1.5	13,27,23 N=50	CL	Silty sandy clay, 7.5YR 4/6, 50% clay, 30% silt, 20% sand, strong HCl reaction except at largest crystals, moderately–sorted grains, angular to subrounded, matrix moderately plastic, moderately sticky, moderately moist.
100%	34–35	1.9/1.5	4,7,8 N=15	CL	As above.
80%	39–40	1.2/1.5	1,1,5 N=6	ML	Clayey sandy silt, 7.5YR 5/8, 50% silt, 30% clay, 20% coarse to very fine sand, moderate dry strength, strong HCl reaction, grains moderately–sorted, angular to subrounded, moderately plastic, moderately sticky, moderately moist.
100%	44–45	1.6/1.5	5,6,6 N=12	CL	Silty sandy clay, 7.5YR 5/8, 60% clay, 20% silt, 20% medium to very fine sand, moderate dry strength, strong HCl reaction, grains well–graded angular to subrounded, moderately plastic, moderately sticky, moderately moist.
100%	49–50	2.1/1.5	8,16,16 N=32	CL	As above, with increasing mottles and CaCO3 crystalization.
100%	54–55	1.7/1.5	3,3,7 N=10	ML	Clayey sandy silt, 7.5YR 5/8, 50% silt, 30% coarse to very fine sand, 20% clay, weak cohesion, strong HCl reaction, grains angular to rounded, well–graded, slightly plastic, slightly sticky, moist.
90%	59–60	1.4/1.5	10,12,15 N=27	ML	As above.
100%	64–65	2.1/1.5	15,26,27 N=53	SM	Silty clayey sand, 7.5YR 5/6, 60% medium to very fine sand, 30% silt, 20% clay, weak cohesion, strong HCl reaction, moderately–sorted subangular to subrounded grains, not plastic, not sticky, moist.
100%	69–70	2.1/1.5	11,14,15 N=29	SC	Clayey silty sand, 7.5YR 5/4, 50% medium to very fine sand, 30% clay, 20% silt, weak cohesion, strong HCl reaction, moderately–sorted, subangular to subrounded grains, not plastic, not sticky, moist.
100%	74–75	2.1/1.5	8,14,18 N=32	ML	Silty sandy clay, 7.5YR 5/8, 60% clay, 20% silty, 20% moderate to very fine sand, moderate strength, strong HCl reaction, poorly–sorted, subangular to subrounded grains, moderately plastic, moderately sticky, moist.
100%	79–80	2.1/1.5	13,19,26 N=45	ML	As above.

Geologist: K. Robinson
Driller: Talon LPE
Date completed: 02/18/21
Coordinates: 10500325.37, 1282546.096 U.S. Survey Feet

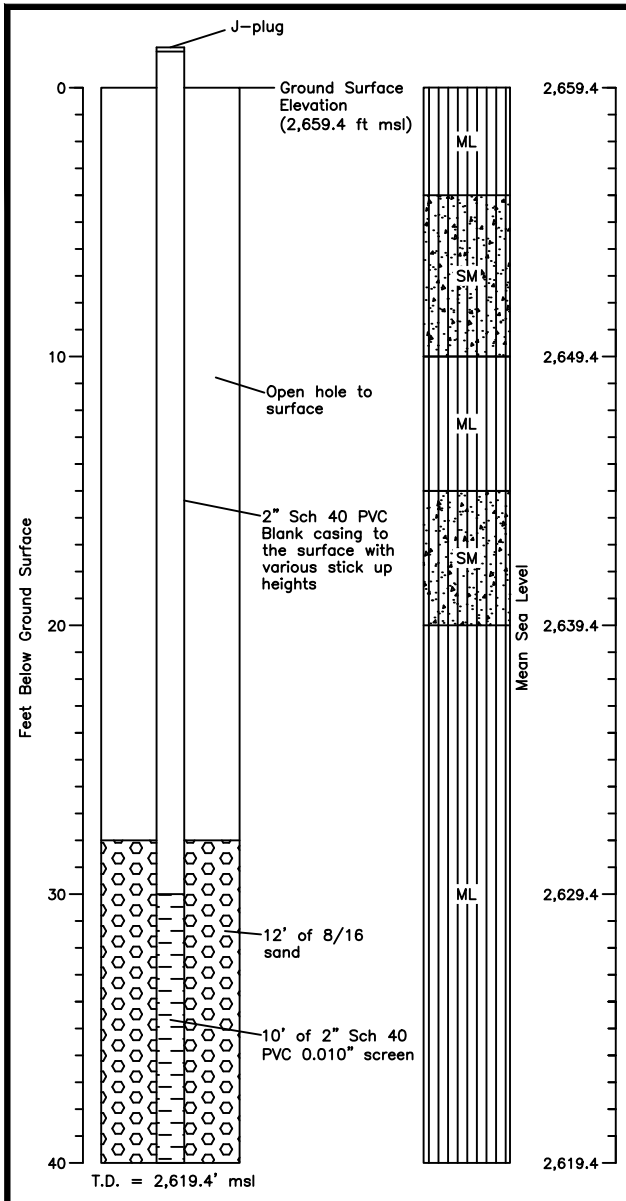
Drilling method: HSA
Bit diameters: 7–7/8" O.D.
Sampling method: 1–3/8" split spoon

Note:
A temporary well was placed after completing the boring in order to take a more representative static water level measurement. A static water measurement was taken 24 hours after boring completion. The temporary well was then removed and the bore hole was plugged and abandoned per regulations.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-9

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
–	0–1	–		ML	Sandy silt with clay, 7.5YR 4/4, 60% silt, 30% coarse to fine sand, 10% clay, no cohesion, strong HCl reaction, grains are well–sorted, subangular to subrounded, slightly plastic, slightly sticky, slightly moist, with trace organic material.
90%	4–5	1.4/1.5	11,13,14 N=27	SM	Silty sand, 7.5YR 5/6, 75% coarse to very fine sand, 25% silt, weekly cohesive, strong HCl reaction, CaCO3 nodules, grains are well–graded, angular to rounded, slightly plastic, slightly sticky, dry.
60%	9–10	0.9/1.5	15,23,26 N=49	SM	As above with 70% sand, 30% silt.
90%	14–15	1.4/1.5	8,16,14 N=30	ML	Sandy clayey silt, 10YR 6/4, 50% silt, 30% medium to fine sand, 20% clay, moderately hard dry strength, strong HCl reaction, indurated carbonate nodules, grains well–sorted subangular to rounded, slightly sticky, slightly plastic, dry.
100%	19–20	1.5/1.5	11,17,22 N=39	SM	Silty sand, 10YR 6/4, 60% coarse to fine sand, 35% silt, trace clay, weak dry strength, strong HCl reaction on CaCO3 nodules, grains are well–graded, angular to rounded, slightly plastic, slightly sticky.
100%	24–25	1.7/1.5	21,41,50 N=91	ML	Silty clayey sand, 10YR 7/4, 60% medium to fine sand, 25% silt, 15% clay, moderate dry strength, strong HCl reaction, grains are well–graded, angular to rounded, slightly plastic, slightly sticky, dry.
100%	29–30	2.0/1.5	17,26,41 N=67	ML	As above, increased CaCO3 development to crystals <1/4".
100%	34–35	1.8/1.5	4,6,7 N=13	ML	Clayey sandy silt, 10YR 6/6, 50% salt, 30% fine to very fine sand, 20% clay, moderate dry strength, grains are subangular to rounded, slightly plastic, slightly sticky, dry.
100%	39–40	2.1/1.5	8,13,15 N=28	ML	Clayey sandy silt, 10YR 5/6, 60% silt, 30% clay, 10% sand, moderate dry strength, grains are very fine to fine, well–sorted, subangular to subrounded, slightly plastic, slightly sticky, dry.

Geologist: K. Robinson
Driller: Talon LPE
Date completed: 02/24/21
Coordinates: 10500567.3, 1282934.909 U.S. Survey Feet

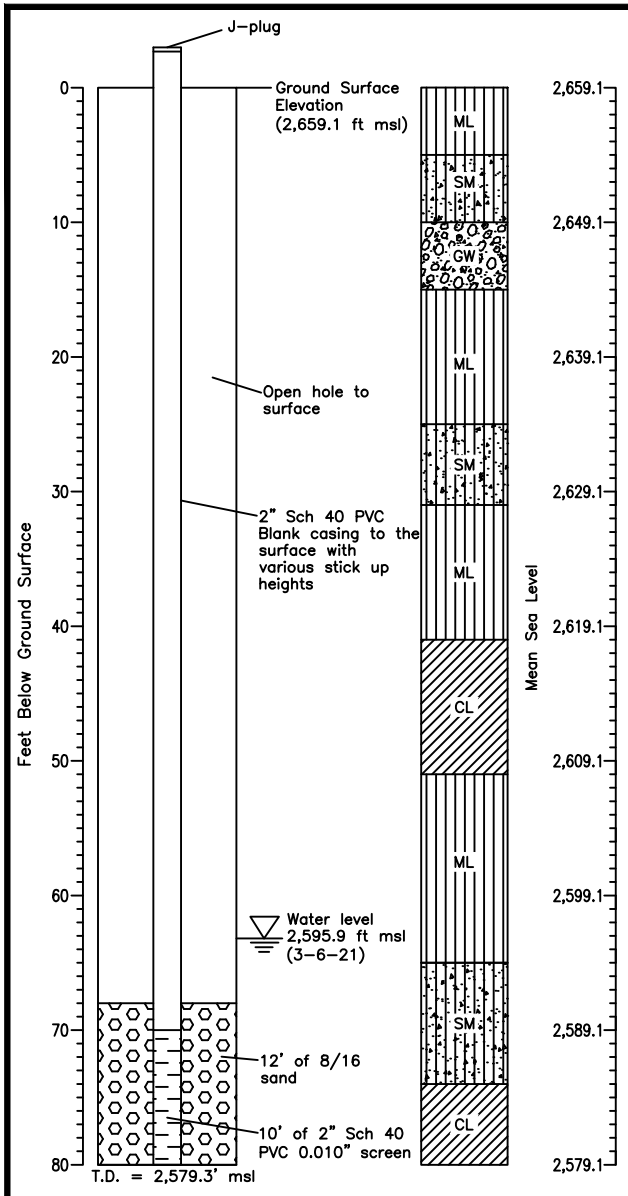
Drilling method: HSA
Bit diameters: 7–7/8" O.D.
Sampling method: 1–3/8" split spoon

Note:
A temporary well was placed after completing the boring in order to take a more representative static water measurement. The temporary well was dry, so no measurements were taken. The temporary well was removed and the bore hole was plugged and abandoned per regulations.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-10

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
–	0–1	–		ML	Sandy silt with clay, 7.5YR 4/4, 60% silt, 30% coarse to fine sand, 10% clay, no cohesion, strong HCl reaction, grains are poorly-graded, subangular to subrounded, slightly plastic, slightly sticky, slightly moist, with trace organic material.
60%	5–6	0.9/1.5	15,23,25 N=48	SM	Sandy silt, 7.5YR 7/4, 70% silt, 30% coarse to fine sand, weak dry strength, strong HCl reactions, grains are well-sorted, subangular to subrounded, not plastic, not sticky, dry.
90%	10–11	1.3/1.5	13,27,26 N=53	GW	Sandy gravel with silt, various colors, 60% gravel to 1/2", angular to rounded, 30% coarse to fine sand, angular to rounded, 10% silt, no cohesion, matrix has strong HCl reaction, grains are well-graded, not plastic, not sticky, dry.
100%	15–16	1.9/1.5	14,16,23 N=39	ML	Sandy clayey silt, 10YR 5/8, 60% silt, 20% fine to very fine sand, 20% clay, moderate dry strength, strong HCl reaction with CaCO3 nodules, grains are subangular-subrounded, well-sorted, slightly plastic, slightly sticky, dry.
100%	20–21	2.2/1.5	12,23,27 N=50	ML	As above.
100%	25–26	1.7/1.5	14,18,23 N=41	SM	Silty clayey sand, 7.5YR 6/6, 50% medium to very fine sand, 30% silt, 20% clay, moderate hardness, strong HCl reaction, grains are subangular to subrounded, not plastic, not sticky, dry.
90%	30–31	1.4/1.5	33,20,33 N=53	SM	As above, 7.5YR 5/4, with calcite crystal development to 1/2".
100%	35–36	2.2/1.5	8,13,11 N=24	ML	Sandy clayey silt, 7.5YR 5/6, 60% silt, 20% medium to very fine sand, 20% clay, moderate hardness, strong HCl reaction, grains are well-graded, subangular to subrounded, slightly plastic, slightly sticky, slightly moist.
100%	40–41	1.9/1.5	13,18,22 N=40	ML	As above.
100%	45–46	2.1/1.5	5,13,14 N=27	CL	Sandy clayey silt, 7.5YR 7/6, 50% clay, 30% moderate to very fine sand, 20% silt, moderate hardness, strong HCl reaction, grains are well-graded, subangular to subrounded, moderately plastic, moderately sticky, slightly moist.
100%	50–51	1.8/1.5	5,8,9 N=17	CL	Silty sandy clay, 7.5YR 6/4, 60% clay, 20% silt, 20% fine to very fine sand, medium hard, strong HCl reaction, grains are subangular-subrounded, well-graded, moderately plastic, moderately sticky, slightly moist.
100%	55–56	1.6/1.5	8,15,16 N=31	ML	Clayey sandy silt, 7.5YR 6/6, 60% silt, 20% clay, 20% sand, weak cohesion, strong HCl reaction and nodule formation, sand grains are fine to very fine, subround to subangular, well-graded. slightly plastic, slightly sticky, slightly moist.
90%	60–61	1.8/1.5	5,8,19 N=27	ML	As above, fractions shifted: 50% silt, 30% sand, 20% clay. Sandy clayey silt.
100%	64–65	1.9/1.5	14,15,20 N=35	ML	As above, fractions shifted: 50% silt, 30% sand, 20% clay. Sandy clayey silt. Sand present as poorly-graded, coarse to very fine particles, angular to subrounded, moderately plastic, moderately sticky, moist.
100%	69–70	2.1/1.5	14,22,27 N=49	SM	Silty sand, 7.5YR 6/6, no cohesion, 60% medium to very fine sand, 40% silt, strong HCl reaction, grains are subrounded to subangular, well-graded, not plastic, not sticky, moist.
100%	74–75	2.1/1.5	17,14,18 N=32	CL	Sandy silty clay, 10YR 6/6, 50% clay, 30% sand, 20% silt, moderate hardness, with well-developed crystals in matrix that do not fizz with HCl, grains are medium to very fine, subangular to rounded, moderately plastic, moderately sticky, moist.
100%	79–80	2.2/1.5	10,14,18 N=32	CL	As above, crystal development is weaker appearance is snowy, does react with HCl strongly.

Geologist: K. Robinson
Driller: Talon LPE
Date completed: 02/25/21
Coordinates: 10500794.51, 1283318.735 U.S. Survey Feet

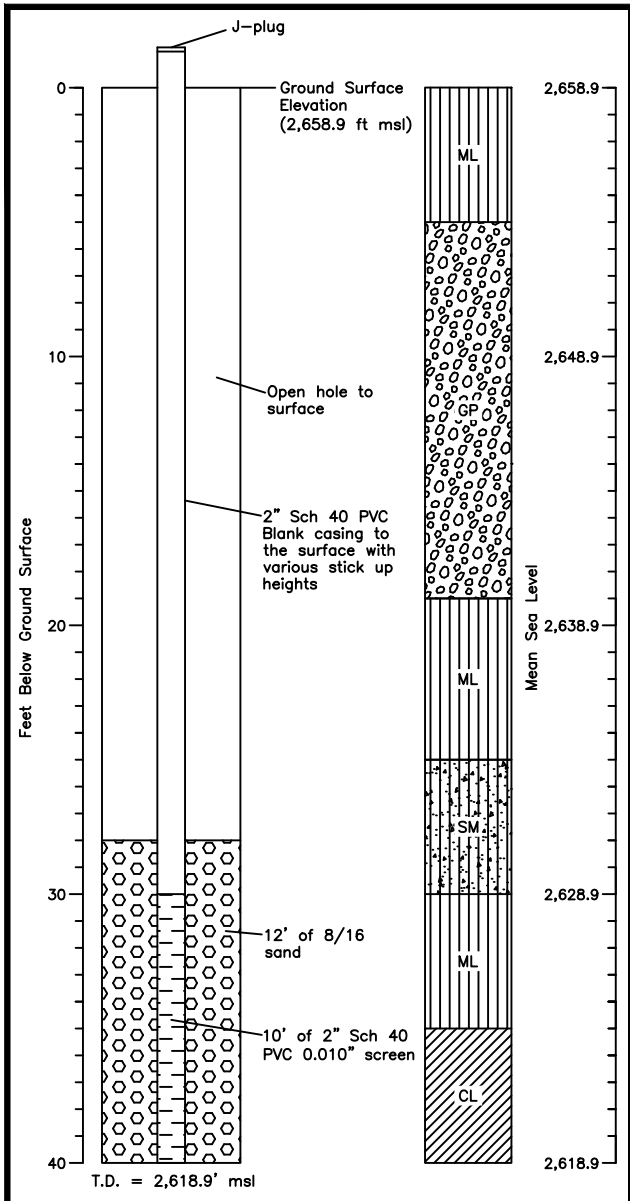
Drilling method: HSA
Bit diameters: 7–7/8" O.D.
Sampling method: 1–3/8" split spoon

Note:
A temporary well was placed after completing the boring in order to take a more representative static water level measurement. A static water measurement was taken 24 hours after boring completion. The temporary well was then removed and the bore hole was plugged and abandoned per regulations.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-11

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
–	0–1	–		ML	Sandy silt with trace, 7.5YR 5/4, 50% silt, 40% coarse to very fine sand, 10% clay, organic material, not consolidated, strong HCl reaction, grains are angular to subrounded, well–graded, slightly plastic, not sticky, dry.
90%	4–5	1.3/1.5	31,39,36 N=75	ML	Sandy silt with clay, 7.5YR 6/4, 50% silt, 35% sand coarse to very fine, 15% clay, moderate dry strength, development of CaCO3 is uniform and advanced, grains are angular to subround, well–sorted, slightly plastic, slightly stick, dry.
75%	9–10	1.1/1.5	9,24,21 N=45	GP	Sandy gravel, colors various, 70% gravel to 1", 30% coarse to very fine sand, non–cohesive, strong HCl reaction, grains are angular to rounded at all sizes, poorly–graded, not plastic, not sticky, dry.
–	14–15	–	7,13,17 N=30	GP	No recovery. Trace sandy material left in tube. Due to the size, friability, and low recovery, I infer an "as above" coarse gravel. (Well rounded pea gravel at top of hole recovered at next sample point.)
100%	19–20	1.5/1.5	18,23,45 N=68	ML	Sandy clayey silt, 7.5YR 6/4, 50% silt, 30% sand coarse to very fine, 20% clay, medium to hard dry strength, strong HCl reaction, development of CaCO3 nodules, grains are subrounded to angular, well–sorted, slightly plastic, slightly sticky, dry.
100%	24–25	2.2/1.5	20,38,42 N=80	ML	As above.
100%	29–30	1.5/1.5	19,23,24 N=47	SM	Silty sand with gravel, 7.5YR 7/6, 70% sand coarse to very fine, 20% silt, 10% gravel <1/4", weak cohesion, grains angular to subrounded, well–graded gravel with fine to very fine sand, not plastic, not sticky, dry.
100%	34–35	2.1/1.5	20,29,50 N=79	ML	Clayey sandy silt, 7.5YR 6/6, 50% silt, 30% clay, 20% sand coarse to very fine, moderate dry strength, strong HCl reaction, CaCO3 cryastals to 1/4", grains from angular to rounded, well–graded, slightly plastic, slightly sticky, slightly moist.
100%	39–40	1.6/1.5	18,23,19 N=42	CL	Silty sandy clay, 7.5YR 7/4, 50% clay, 30% silt, 20% coarse to very fine sand, slight CaCO3 development, grains well–sorted, mostly very fine, subrounded to subangular, moderately plastic, moderately sticky, slightly moist.

Geologist: K. Robinson
Driller: Talon LPE
Date completed: 03/03/21
Coordinates: 10501037.72, 1283705.464 U.S. Survey Feet

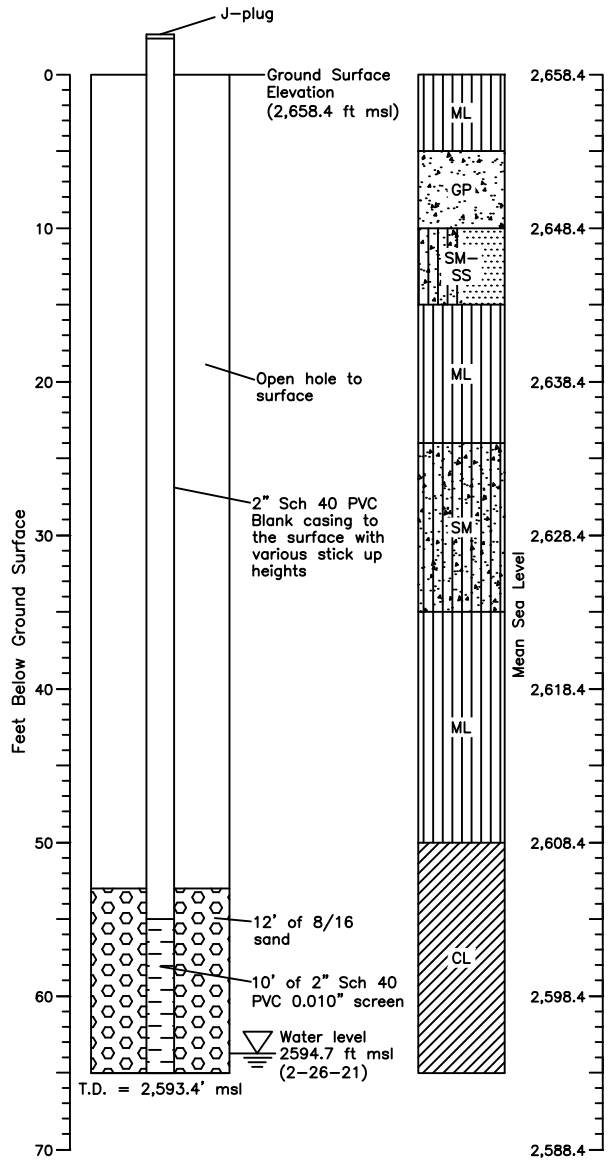
Drilling method: HSA
Bit diameters: 7–7/8" O.D.
Sampling method: 1–3/8" split spoon

Note:
A temporary well was placed after completing the boring in order to take a more representative static water measurement. The temporary well was dry, so no measurements were taken. The temporary well was removed and the bore hole was plugged and abandoned per regulations.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-12

DBS&A
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S:\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\CAD\PRODUCTION\BORING LOGS\SB-13.DWG



Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
–	0–1	–		SM	Silty sand =, 7.5YR 4/4, 80% coarse to very fine sand, 20% silt, trace organics, no cohesion, strong HCl reaction, well-graded, grains are subangular to subrounded, not plastic, not sticky, slightly moist.
90%	4–5	1.3/1.5	21,27,22 N=49	SM	Silty sand with clay, 7.5YR 5/6, 70% coarse to very fine sand, 25% silt, ~5% clay, weak cohesion, strong HCl reaction and CaCO3 coloration, grains are angular to subrounded, well-sorted, not plastic, not sticky, dry.
60%	9–10	0.9/1.5	7,14,33 N=47	SW	Gravelly sand, 7.5YR 6/4, 70% coarse to very fine sand, well-graded, 30% gravel to 1" with fresh fractures in spoon, trace silt, no cohesion, strong HCl reaction, grains are subangular to rounded, not plastic, not sticky, dry.
20%	14–15	0.3/1.5	N=0	SM/ SAND STONE	Sandstone, 10YR 8/6 matrix; ~60% lithic, 40% quartz grains are angular to rounded, hard, carbonate cementation. Sample panel ~1-1/2 inch circle, fractured on foliation planes to 3/8" thick.
100%	19–20	1.7/1.5	9,13,17 N=30	ML	Sandy clayey silt, 7.5YR 7/6, 60% silt, 25% sand coarse to very fine, ~15% clay, medium to hard dry cohesion, strong HCl reaction and carbonate nodule formation, grains are angular to subrounded, well-sorted, slightly plastic, slightly sticky, dry.
100%	24–25	1.8/1.5	22,23,30 N=53	SM	Silty sand with clay, 7.5YR 7/4, 70% sand, 20% silt, 10% clay, weak cementation with strong HCl reaction and carbonate nodule formation, grains are angular to subrounded, well-graded, not plastic, not sticky, dry.
100%	29–30	1.5/1.5	36,36,16 N=52	SM	As above, with moderate cementation and more and larger carbonate nodules.
90%	34–35	1.4/1.5	11,25,24 N=49	SM	As above, development of non-fizzing crystals to 3/8".
100%	39–40	1.7/1.5	11,17,18 N=35	ML	Sandy clayey silt, 7.5YR 5/6, 50% silt, 35% sand, 15% clay, weak dry strength, strong HCl reaction, grains are angular to rounded, poorly-sorted, slightly plastic, slightly sticky, slightly moist.
100%	44–45	1.7/1.5	8,12,17 N=29	ML	As above.
100%	49–50	1.6/1.5	13,19,24 N=43	ML	Sandy silt with clay, 10YR 6/4, 60% silt, 30% sand, 10% clay, weak dry strength, strong HCl reaction, grains are well-sorted, very fine, subangular rounded, not plastic, not sticky, slightly moist.
100%	54–55	2.1/1.5	7,11,10 N=21	CL	Silty clay, 7.5YR 6/4, 50% clay, 40% silt, trace very fine sand, moderately dry strength, strong HCl reaction with carbonate nodule formation, moderately plastic, moderately sticky, slightly moist.
100%	59–60	2.1/1.5	2,3,4 N=7	CL	Silty clay 5YR 6/2, with yellow 5YR 7/8 mottles, 65% clay, 35% silt, moderate dry strength, strong HCL reaction, moderately plastic, moderately sticky, slightly moist.
100%	64–65	2.1/1.5	5,9,11 N=20	CL	Sandy silty clay, 7.5YR 6/4, 50% clay, 30% very fine sand, 20% silt, moderate dry strength, strong HCl reaction and carbonate nodules, gravels are angular to rounded, well-sorted. moderately plastic, moderately sticky, slightly moist.

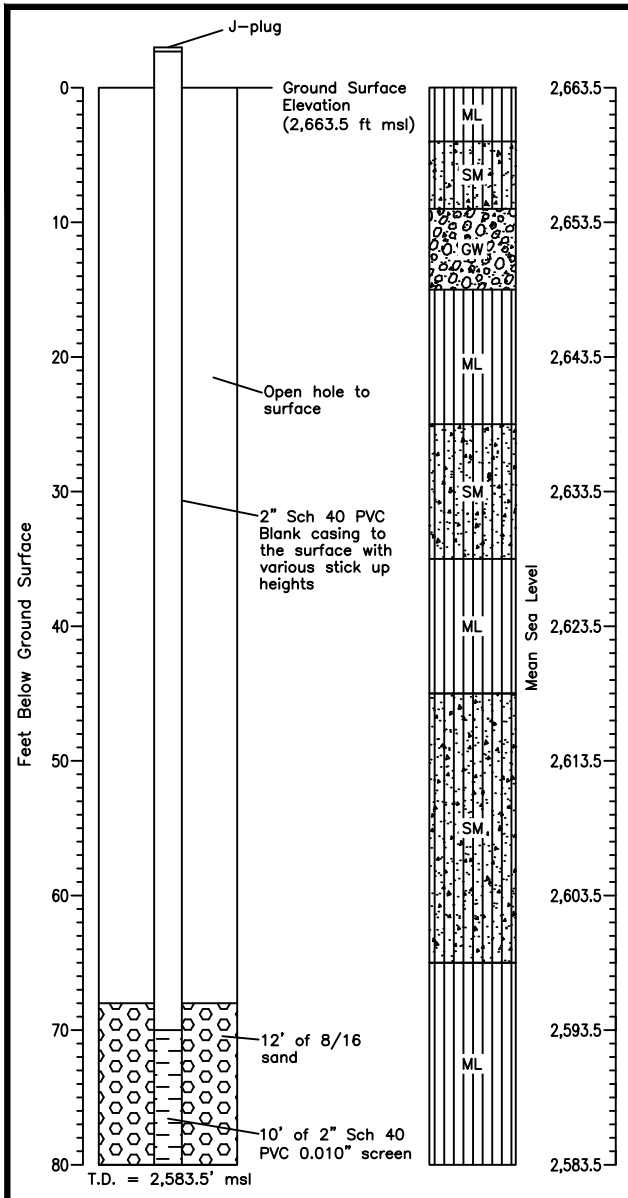
Geologist: K. Robinson
Driller: Talon LPE
Date completed: 03/03/21
Coordinates: 10501330.35, 1284034.046 U.S. Survey Feet

Drilling method: HSA
Bit diameters: 7-7/8" O.D.
Sampling method: 1-3/8" split spoon

Note:
A temporary well was placed after completing the boring in order to take a more representative static water level measurement. A static water measurement was taken 24 hours after boring completion. The temporary well was then removed and the bore hole was plugged and abandoned per regulations.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-13

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
–	0–1	–		ML	Sandy silt, 7.5YR 5/6, 60% silt, 40% medium to fine sand, no cohesion, strong HCl reaction, well–sorted, rounded to subangular, slightly plastic, slightly sticky, dry.
100%	4–5	1.6/1.5	15,23,22 N=45	SM	Silty sand, 7.5YR 6/6, 70% fine to very fine sand, subangular to round, well–sorted, 30% silt, medium dry strength, strong HCl reaction and CaCO3 development, not plastic, not sticky, dry.
70%	9–10	1.0/1.5	14,27,31 N=58	GW	Sandy gravel with silt, colors various, no cohesion, strong HCl reaction, 50% gravel to 3/8 inch. 30% sand coarse to very fine, 20% silt. Angular to subround grains, well–graded. not plastic, not sticky, dry.
70%	14–15	1.0/1.5	8,29,23 N=52	GW	As above, with greater prevalence of rounded particles at the gravel sizes.
100%	19–20	1.5/1.5	11,18,35 N=53	ML	Clayey sandy silt, 7.5YR 5/4, 5% silt, 30% clay, 20% fine to very fine sand, moderate cementation, strong HCl reaction, sugar texture of CaCO3, well–sorted, subangular to rounded, slightly plastic, slightly sticky, dry.
75%	24–25	1.8/2.5	11,21,36 N=57	ML	As above, with more sugar textures of CaCO3 development.
100%	29–30	1.6/1.5	8,22,30 N=52	SM	Sandy silt with gravel, 7.5YR 6/6, 50% silt, 30% sand coarse to very fine, weak dry strength, strong HCl reaction, angular to subround, well–graded, matrix is not plastic, not sticky, dry.
60%	34–35	0.9/1.5	11,50 N=50	SM	Silty sand with gravel, 7.5YR 7/4, 60% sand, coarse to very fine, well–graded, angular, 30% silt, 10% gravel to 3/8", no cohesion, strong HCl reaction, not plastic, not sticky, dry.
100%	39–40	2.2/1.5	7,11,12 N=23	ML	Clayey sandy silt, 7.5YR 5/6, 50% silt, 30% clay, 20% fine to very fine sand, weak dry strength, strong HCl reaction, subangular to rounded, well–sorted, slightly plastic, slightly sticky, dry.
90%	44–45	1.3/1.5	6,7,14 N=21	ML	As above.
100%	49–50	1.6/1.5	26,34,23 N=57	SM	Silty sand, 7.5YR 7/6, 75% medium to very fine sand, well–graded, angular to rounded, 25% silt, weak cohesion, strong HCl reaction, not plastic, not sticky, dry.
100%	54–55	1.9/1.5	16,22,39 N=61	SM	Sandy clayey silt, 7.5 YR 7/6, 50% silt, 30% sand fine to very fine, well–sorted, subangular to rounded 20% clay, weak cohesion, strong HCl reaction, not plastic, not sticky, dry.
90%	59–60	1.4/1.5	14,22,50 N=72	SM	Sandy clayey silt, 7.5YR 8/4, 60% silt, 25% sand, very fine, well–sorted, subangular to rounded, 20% clay, weak cohesion, strong HCl reaction, not plastic, not sticky, dry.
100%	64–65	2.1/1.5	6,9,13 N=22	SM	As above, with mottles to 5 YR 5/6 including trace gravel and increased CaCO3 formation as nodules.
100%	69–70	2.2/1.5	10,14,19 N=33	ML	Clayey sandy silt, 7.5YR 5/6, 60% silt, 25% clay, 15% fine to very fine sand, well–sorted, subangular to rounded, moderate dry strength, strong HCl reaction, slightly plastic, slightly sticky, dry.
75%	74–75	1.1/1.5	6,11,30 N=41	ML	As above.
100%	79–80	2.4/1.5	19,32,50 N=82	ML	As above, with increased carbonate nodule formation.

Geologist: K. Robinson
Driller: Talon LPE
Date completed: 03/04/21
Coordinates: 10499369.02, 1281817.285 U.S. Survey Feet

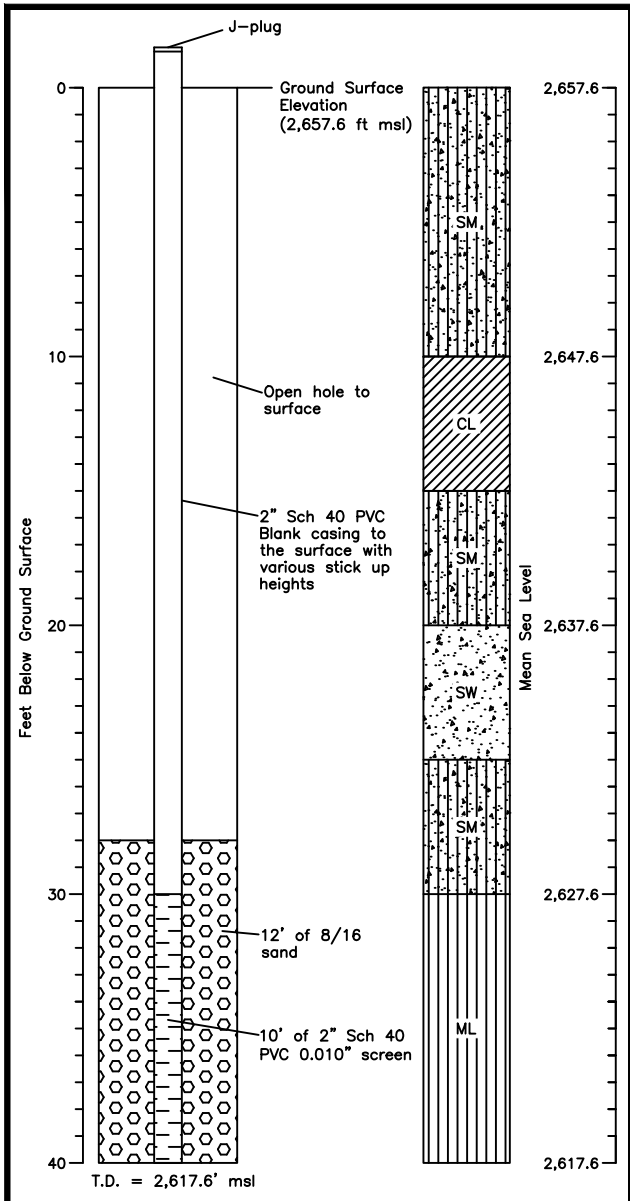
Drilling method: HSA
Bit diameters: 7–7/8" O.D.
Sampling method: 1–3/8" split spoon

Note:
A temporary well was placed after completing the boring in order to take a more representative static water measurement. The temporary well was dry, so no measurements were taken. The temporary well was removed and the bore hole was plugged and abandoned per regulations.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-14

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Daniel B. Stephens & Associates, Inc.

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
–	0–1	–		SM	Silty sand with clay, 7.5YR 4/4, 60% well-graded, medium to very fine sand, 35% silt, 5% clay, trace roots, non-cohesive, strong HCl reaction, grains are subangular to rounded, well-graded, slightly plastic, slightly sticky, slightly moist.
90%	4–5	1.4/1.5	10,11,10 N=21	SM	Silty sand with clay, 7.5YR 5/6, 70% coarse to very fine sand, 25% silt, ~5% clay, trace gravel, non-cohesive, strong HCl reaction, grains are well-graded, subangular to subround, slightly plastic, slightly sticky, dry.
90%	9–10	1.3/1.5	6,7,9 N=16	SM	Silty gravelly sand with clay, 7.5YR 6/6, 50% coarse to very fine sand, well-graded, 20% silt, 20% gravel, <1/4", 10% clay, medium hard cementation, strong HCl reaction, grains rounded to subangular, not plastic, slightly sticky, dry.
90%	14–15	1.4/1.5	36,35,45 N=80	CL	Silty clay with carbonate, clay is 7.5YR 4/4, 60% clay, 40% silt, matrix is medium hard, carbonate is ~60% by volume, snowy to crystalline appearance, crystals >1/4" do not fizz, clay is moderately sticky, moderately plastic, dry.
80%	19–20	1.2/1.5	50 N=0	SM	Silty, clayey sand. 7.5YR 5/8. Moderate cohesion, strong HCl reaction. 50% coarse to very fine sand, well-graded. 30% silt, 20% clay. Slightly plastic, slightly sticky, dry.
100%	24–25	1.8/1.5	14,15,16 N=31	SW	Gravelly silty sand, 7.5YR 5/3, 60% coarse to very fine sand, well-graded, 25% gravel <3/8", 15% silt, no cohesion, weak HCl reaction, grains angular to subangular, mostly lithics, not plastic, not sticky, dry.
100%	29–30	2.1/1.5	14,22,35 N=57	SM	Silty clayey sand, 7.5YR 5/6 with lighter CaCO3 coloration, 50% coarse to very fine sand, well-graded, 30% silt, 20% clay, weakly cohesive, strong HCl reaction, grains are angular to subround, well-graded, not plastic, not sticky, dry.
75%	34–35	1.9/1.5	6,8,14 N=22	ML	Sandy clayey silt, 7.5YR 5/8, 30% medium to very fine sand, 20% clay, 50% silt, moderate cohesion, strong HCl reaction, grains are well-sorted, angular to rounded, slightly plastic, slightly sticky, dry.
100%	39–40	2.1/1.5	10,11,20 N=31	ML	Clayey silt with sand, 7.5YR 7/8, 50% silt, 35% clay, ~15% fine to very fine sand, moderate cohesion, strong HCl reaction, well-sorted, subrounded, slightly plastic, slightly sticky, dry.

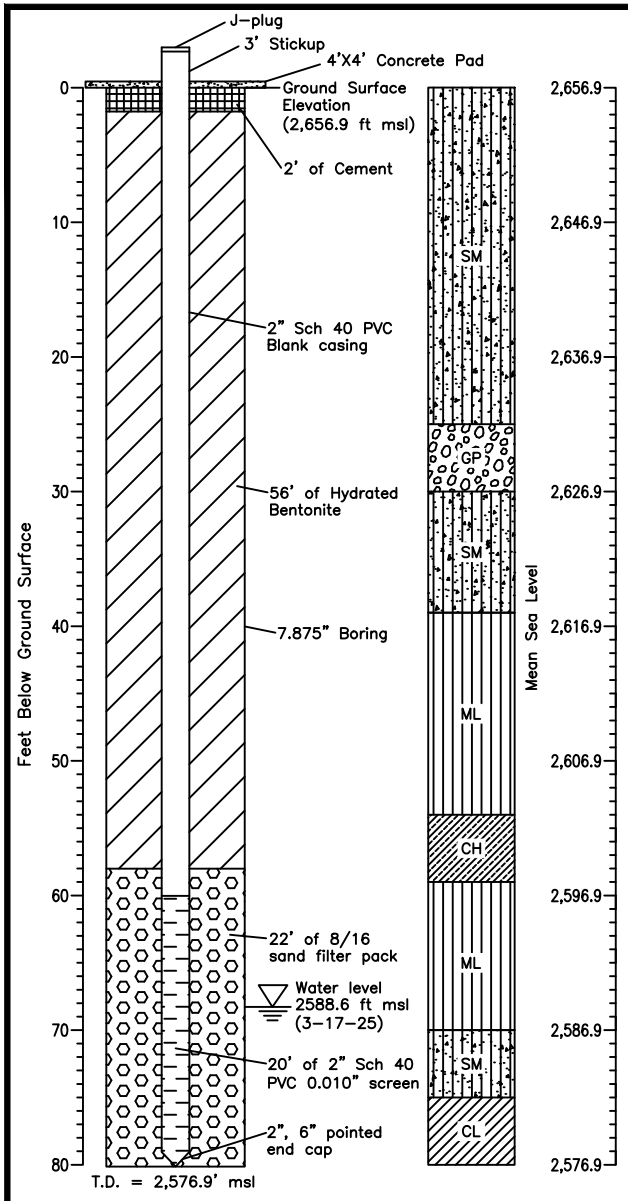
Geologist: K. Robinson
Driller: Talon LPE
Date completed: 03/04/21
Coordinates: 10500087.37, 1282964.942 U.S. Survey Feet

Drilling method: HSA
Bit diameters: 7–7/8" O.D.
Sampling method: 1–3/8" split spoon

Note:
A temporary well was placed after completing the boring in order to take a more representative static water measurement. The temporary well was dry, so no measurements were taken. The temporary well was removed and the bore hole was plugged and abandoned per regulations.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-15

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
–	0–1	–		SM	Silty sand, 7.5 YR 4/6, 60% sand, coarse to very fine angular to rounded, well-graded, 40% silt, unconsolidated, strong HCl reaction, with organic materials, not plastic, not sticky, dry.
50%	4–5	0.7/1.5	16,16,13 N=29	SM	Silty sand, 7.5YR 6/6. Weak cemented, strong HCl reaction. 60% sand, coarse to very fine, angular to rounded, well grade. 40% silt. not plastic, not sticky, dry.
80%	9–10	1.2/1.5	28,34,47 N=81	SM	Silty sand, 10YR 7/4, 60% sand, coarse to very fine, 30% silt, ~10% clay, moderate cementation, strong HCl reaction with sugary appearance, well-graded, subangular to subrounded, not sticky, not plastic, dry.
100%	14–15	1.9/1.5	10,17,21 N=38	SM	Sandy silt with clay, 7.5YR 6/6, 50% silt, 40% sand, coarse to very fine, ~10% clay, weakly cohesive, strong HCl reaction with carbonate nodule development, well-sorted, subangular to subround, not sticky, not plastic, dry.
100%	19–20	1.8/1.5	10,19,29 N=48	SM	As above, with carbonate development in continuous vertical regions and crystal development to 1/4".
100%	24–25	1.8/1.5	9,17,14 N=31	SM	Sandy clayey silt, 7.5YR 6/5, 50% silt, 30% sand, coarse to very fine, moderate cementation, strong HCl reaction, subangular to rounded, well-graded, not plastic, not sticky, dry.
90%	29–30	1.4/1.5	10,25,27 N=52	GP	Sandy gravel. Colors various. No cohesion. Moderate HCl reaction. 60% gravel to 1/2 inch, 40% coarse to medium sand, well-sorted. not plastic, not sticky, dry.
100%	34–35	1.9/1.5	13,21,32 N=53	SM	Silty sand with clay, 7.5YR 6/6, 50% coarse to very fine sand, 40% silt, 10% clay, weak cementation, strong HCl reaction, sugary appearance, well-graded, angular to subround, not plastic, not sticky, dry.
100%	39–40	1.8/1.5	6,8,12 N=18	ML	Clayey sandy silt, 7.5YR 5/6, 50% silt, 30% clay, 20% sand, medium to fine, weak cementation, strong HCl reaction, well-sorted, subangular to subround, slightly plastic, slightly sticky, dry.
100%	44–45	1.7/1.5	5,12,16 N=28	ML	As above, with CaCO3 crystal development to 1/8"
100%	49–50	2.1/1.5	7,15,14 N=29	ML	As above, with crystals to 3/8" and increased CaCO3 nodules.
100%	54–55	2.1/1.5	2,3,4 N=7	CH	Clay, 5Y 7/2, with 5Y 6/8 yellow mottles and some back particulate inclusions, as well as CaCO3 nodule formation in scattered spots, very plastic, very sticky, slightly moist.
100%	59–60	1.7/1.5	5,7,11 N=18	ML	Clayey sandy silt, 5YR 6/6, 50% silt, 35% clay, 15% sand, medium to very fine, weak cementation, strong HCl reaction, well-graded, subangular to rounded, slightly plastic, slightly sticky, slightly moist.
100%	64–65	2.1/1.5	6,10,15 N=25	ML	As above with increased CaCO3 nodule formation.
100%	69–70	2.2/1.5	6,9,17 N=26	ML	Sandy clayey silt, 5YR 5/6, 50% silt, 30% sand, medium to very fine, 20% clay, weak cohesion, strong HCl reaction, well-graded, angular to subround, slightly plastic, slightly sticky, wet.
100%	74–75	2.1/1.5	24,34,44 N=78	SM	Silty sand with clay, 7.5YR 5/6, 60% sand, coarse to very fine, 30% silt, 10% clay, trace 1/4" gravel, no cohesion, strong HCl reaction, well-graded, angular to subround, not plastic, not sticky, dry.
100%	79–80	2.1/1.5	12,28,30 N=58	CL	Silty sandy clay, Gley1 7/5G matrix with 5YR 7/8 nodules including 7.5R 4/8 specks, 50% clay, 30% silt, 20% sand very fine, moderate cohesion, strong HCl reaction, subround, well-sorted, slightly plastic, slightly sticky, wet.

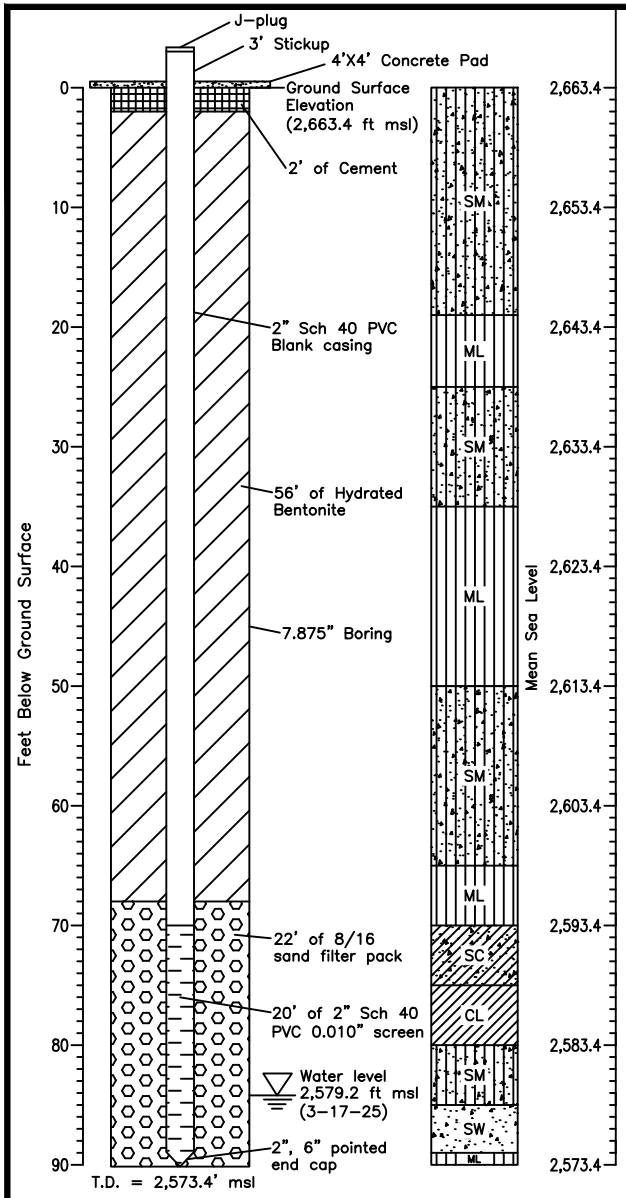
Geologist: K. Robinson
Driller: Talon LPE
Date completed: 03/10/21
Coordinates: 10500840.66, 1283960.125 U.S. Survey Feet

Drilling method: HSA
Bit diameters: 7-7/8" O.D.
Sampling method: 1-3/8" split spoon

WST PERMIAN LANDFILL
REEVES COUNTY, TX

Soil Boring SB-16/MW-1

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
–	0–1	–		SM	Silty sand, 7.5YR 4/6, 55% sand, 45% silt, no cohesion, strong HCl reaction, very well–sorted, subangular to subround, not plastic, not sticky, dry.
75%	4–5	1.1/1.5	14,18,22 N=42	SM	Silty clayey sand, 7.5YR 6/6, 60% fine sand, 35% silt, 15% clay, weak cementation, strong HCl reaction, well–sorted, subangular to subround, not plastic, not sticky, dry.
80%	9–10	1.2/1.5	6,14,16 N=30	SM	Silty gravelly sand, 7.5YR 6/4, 50% sand, coarse to very fine, 35% silt, 15% gravel to 3/8", unconsolidated, strong HCl reaction, poorly–graded, sand is angular to rounded, gravel is rounded, not plastic, not sticky, dry.
75%	14–19	1.1/1.5	9,29,36 N=65	SM	Silty sand, 7.5YR 6/6, 60% very fine sand, 40% silt, unconsolidated, strong HCl reaction, well–sorted, not plastic, not sticky, dry.
100%	19–20	1.8/1.5	10,21,26 N=47	ML	Clayey silt with sand, 7.5YR 6/4, 50% silt, 40% clay, 10% fine to very fine sand, medium hard, strong HCl reaction and sugary appearance, well–sorted, subangular to subround, slightly plastic, slightly sticky, dry.
100%	24–25	2.0/1.5	10,20,27 N=47	ML	As above for soil component; CaCO3 development is extreme, with development of non–fizzing crystals and consequential loss of plasticity.
100%	29–30	1.5/1.5	14,20,22 N=42	SM	Silty sand, 7.5YR 5/6, 80% coarse to very fine sand, 20% silt, weakly cemented, strong HCL reaction, sugary appearance, well–graded, grains are angular to rounded, not plastic, not sticky, dry.
100%	34–35	1.6/1.5	15,21,35 N=56	SM	As above, but lacking visible carbonate development.
100%	39–40	1.5/1.5	7,14,19 N=33	ML	Clayey sandy silt, 7.5YR 5/6, 50% silt, 30% clay, 20% medium to very fine sand, moderate cementation, sugary appearance with crystal development, well–graded, subangular to subround, moderately plastic, moderately sticky, dry.
100%	44–45	1.9/1.5	8,7,8 N=15	ML	As above but lacking crystal development.
100%	49–50	1.9/1.5	5,9,15 N=24	ML	Clayey silt with sand, 7.5YR 6/6, 60% silt, 30% clay, 10% sand, fine to very fine, moderate dry strength, strong HCL reaction, subangular to subrounded, well–sorted, moderately plastic, moderately, sticky, slightly moist.
100%	54–55	1.7/1.5	5,11,12 N=23	SM	Sandy silt, 7.5YR 6/8, 60% silt, 40% sand, coarse to fine, weak cohesion, strong HCl reaction, well–graded, angular to subangular, not plastic, not sticky, slightly moist.
100%	59–60	1.5/1.5	14,19,21 N=40	SM	Silty sand, 7.5YR 9/6, 60% sand, coarse to very fine, 40% silt, no cohesion, strong HCl reaction, well–graded, angular to rounded, not plastic, not sticky, slightly moist.
100%	64–65	1.6/1.5	7,22,50 N=72	SM	Sandy silt as 54–55' bgs.
100%	69–70	2.8/1.5	6,9,15 N=24	ML	Clayey sandy silt, 7.5YR 6/6, 50% silt, 30% clay, 20% fine to very fine sand, weak cohesion, strong HCl reaction, subangular to rounded, well–sorted, slightly plastic, slightly sticky, slightly moist.
100%	74–75	1.9/1.5	7,11,13 N=24	SC	Clayey silty sand, 7.5YR 5/4. Medium hard cohesion. Strong HCl reaction. CaCO3 development to nodules, 50% sand, coarse to very fine, well–graded, angular to subround, slightly plastic, slightly sticky, slightly moist.
100%	79–80	1.7/1.5	15,23,31 N=54	CL	Sandy silty clay, 7.5YR 5/6, 50% clay, 15% silt, 35% sand, coarse to fine, medium–hard cohesion, strong HCl reaction, CaCO3 development to sugary texture, poorly–graded, angular to rounded, moderately plastic, moderately sticky, dry.
100%	84–85	1.7/1.5	14,23,23 N=46	SM	Silty clayey sand, 7.5YR 6/6, 60% sand, coarse to very fine, 25% silt, 15% clay, weekly consolidated, reactive to HCl, well–graded, angular to subangular, not plastic, not sticky, wet.
100%	88.5–89	1.7/1.5	14,23,23 N=46	SW	Sand, 7.5YR 4/4, with variegated pebbles, coarse to very fine grains, trace gravel <1/4", no cohesion, strong HCl reaction, angular to rounded, well–graded, not plastic, not sticky, wet.
100%	89–90	1.8/1.5	14,17,50 N=67	ML	Clayey sandy silt, 7.5YR 5/6, 50% silt, 30% clay, 20% sand, coarse to very fine, weak cohesion, strong HCl reaction, well–graded, angular to subround, slightly plastic, slightly sticky, moist.

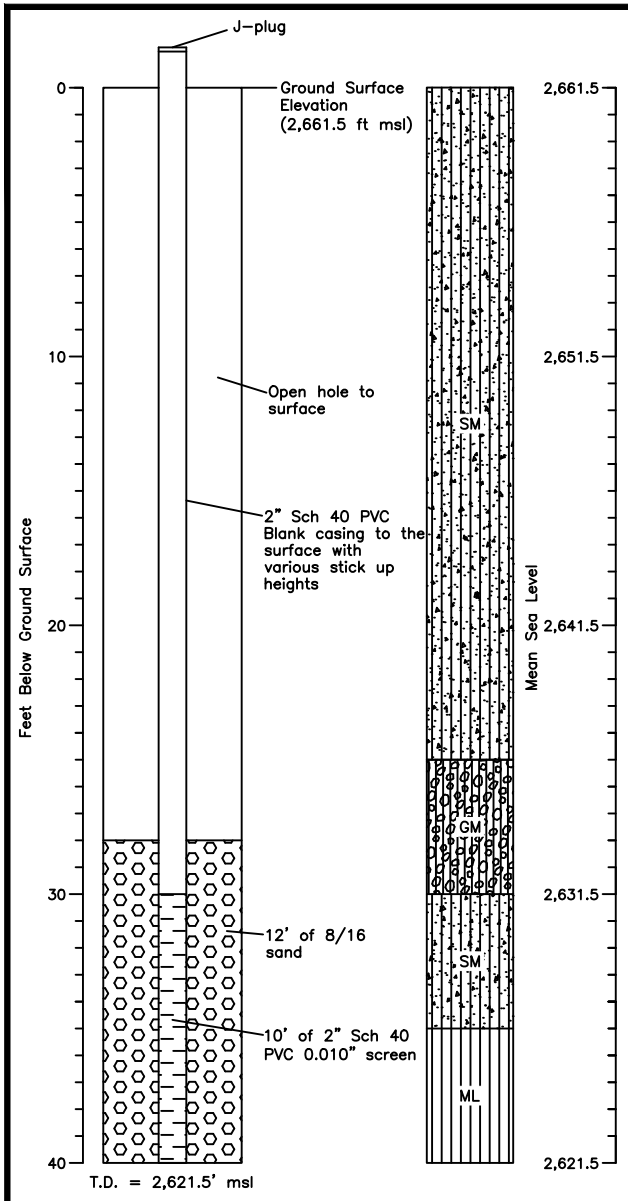
Geologist: K. Robinson
Driller: Talon LPE
Date completed: 03/10/21
Coordinates: 10499110.32, 1282244.112 U.S. Survey Feet

Drilling method: HSA
Bit diameters: 7–7/8" O.D.
Sampling method: 1–3/8" split spoon

DBS&A
Daniel B. Stephens & Associates, Inc.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-17/MW-2

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
–	0–1	–		SM	Silty sand, 7.5YR 5/4, 55% sand, coarse to very fine, 40% silt, ~5% clay, non–cohesive, strong HCl reaction, well–graded, angular to rounded, not sticky, not plastic, slightly moist.
80%	4–5	1.2/1.5	17,25,26 N=51	SM	Silty sand with clay, 7.5 YR 5/4, 50% sand, coarse to very fine, 35% silt, 15% clay, weakly cohesive, strong HCl reaction, well–graded, angular to rounded, slightly sticky, slightly plastic, dry.
70%	9–10	1.3/1.9	17,23,36 N=59	SM	As above, with CaCO3 nodule development and moderate cohesion, 7.5YR 6/4.
75%	14–15	1.1/1.5	27,50 N=50	SM	As above, with increased CaCO3 development to sugary texture, with nodules, and medium–hard cohesion.
75%	19–20	1.1/1.5	17,33,37 N=70	SM	Silty sand, 7.5YR 6/3, 70% medium to very fine sand, 30% silt, medium hard, strong HCL reaction, subangular to rounded, well–graded, not plastic, not sticky, dry.
25%	24–25	1.9/7.5	22,32,47 N=79	SM	As above.
75%	29–30	1.8/2.5	31,33,50 N=83	GM	Silty gravelly sand, 7.5YR 6/4, 50% sand, coarse to very fine, 35% silt, 15% gravel to 3/8", rounded, unconsolidated, strong HCl reaction, poorly–graded, angular to subangular, not plastic, not sticky, dry.
100%	34–35	1.8/1.5	39,28,28 N=56	SM	Sandy clayey silt, 7.5YR 7/4, 50% silt, 30% sand, fine to very fine, 20% clay, weak cohesion, strong HCl reaction with sugary appearance, well–sorted, subangular to subround, not plastic, not sticky, dry.
100%	39–40	2.4/1.5	11,17,22 N=39	ML	Sandy clayey silt, 7.5YR 6/4. 50% silt, 25% sand fine to very fine, 25% clay, moderate cohesion, strong HCl reaction, well–graded, slightly plastic, slightly sticky, slightly moist.

Geologist: K. Robinson
Driller: Talon LPE
Date completed: 03/08/21
Coordinates: 10499358.94, 1282626.033 U.S. Survey Feet

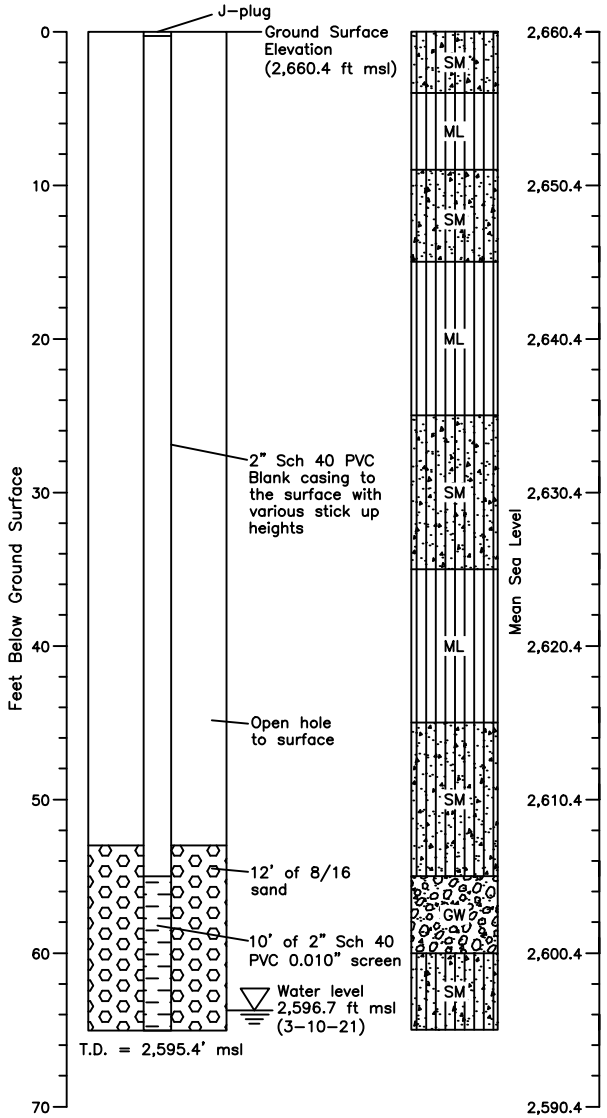
Drilling method: HSA
Bit diameters: 7–7/8" O.D.
Sampling method: 1–3/8" split spoon

Note:
A temporary well was placed after completing the boring in order to take a more representative static water measurement. The temporary well was dry, so no measurements were taken. The temporary well was removed and the bore hole was plugged and abandoned per regulations.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-18

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
–	0–1	–		SM	Sandy silt, 7.5YR 4/6, 60% silt, 40% sand, coarse to very fine, trace organic matter, no cohesion, strong HCl reaction, angular to subround, well-graded, not plastic, not sticky, dry.
80%	4–5	1.2/1.5	13,17,32 N=49	ML	Sandy silt with clay, 7.5YR 6/6, 60% silt, 40% sand, coarse to very fine, 10% clay, medium hard cohesion, strong HCl reaction with sugary appearance, grains are well-graded, subangular to rounded, slightly plastic, slightly sticky, dry.
85%	9–10	1.3/1.5	43,41,39 N=80	SM	Silty sand with clay, 10YR 7/4, 60% sand, coarse to very fine, 30% silt, 10% clay, weak cohesion, strong HCl reaction, sugary appearance, well-graded, angular to subround, not plastic, not sticky, dry.
90%	14–15	1.4/1.5	23,27,38 N=65	ML	Sandy clayey silt, 7.5YR 5/4, 50% silt, 30% sand, coarse to very fine, 20% clay, medium hard, strong HCl reaction with nodule formation, well-graded, angular to subround, slightly sticky, slightly plastic, dry.
85%	19–20	1.3/1.5	13,26,35 N=61	ML	As above, with crystal formations to 1/8".
100%	24–25	1.4/1.5	26,35,50 N=85	ML	As above, absent crystals, carbonate nodule formation more focused and larger than at 14–15 feet.
100%	29–30	1.5/1.5	31,33,36 N=69	SM	Silty sand with clay, 7.5YR 5/6, 85% sand, medium to very fine, 15% silt, trace clay, weakly cohesive, strong HCl reaction, surgery texture, well-graded, angular to rounded, not plastic, not sticky, dry.
100%	34–35	1.5/1.5	24,34,31 N=65	SM	Silty sand, 7.5YR 8/3, 60% sand, coarse to very fine, mostly quartz, 40% silt, no cohesion, strong HCL reaction and surgery texture, well-graded, angular to round, not plastic, not sticky, dry.
100%	39–40	1.9/1.5	4,7,12 N=19	ML	Sandy clayey silt, 7.5YR 5/6, 60% silt, 25% sand, coarse to very fine, 15% clay, weak cohesion, strong HCL reaction, well-graded, angular to subround, slightly plastic, slightly sticky, slightly moist.
100%	44–45	1.7/1.5	21,20,28 N=48	ML	Sandy clayey silt, 7.5YR 6/4, 70% silt, 20% sand, medium to very fine, 10% clay, weak cohesion, strong HCL reaction, well-sorted, angular to rounded, slightly sticky, slightly plastic, slightly moist.
100%	49–50	1.8/1.5	12,17,24 N=41	SM	Sandy silt, 7.5YR 6/6, 60% silt, 40% medium to very fine sand, weakly cohesive, strong HCl reaction, well-sorted, angular to rounded, not plastic, not sticky, slightly moist.
100%	54–55	2.2/1.5	7,13,18 N=31	SM	As above, with dark 7.5YR 3/2 mottles.
90%	59–60	2.1/1.5	10,40,30 N=70	GW	Gravelly sand, 7.5YR 6/3, 75% coarse to very fine sand, 25% gravel to 1/2", no cohesion, strong HCL reaction, snowy appearance, well-graded, subangular to rounded, not plastic, not sticky, slightly moist.
100%	64–65	1.9/1.5	9,14,22 N=36	SM	Silty sand, 7.5YR 6/6, 70% coarse to very fine sand, 30% silt, non-cohesive, strong HCl reaction, well-graded, angular to subrounded, not plastic, not sticky, dry.

Geologist: K. Robinson
Driller: Talon LPE
Date completed: 03/08/21
Coordinates: 10499592.34, 1283012.396 U.S. Survey Feet

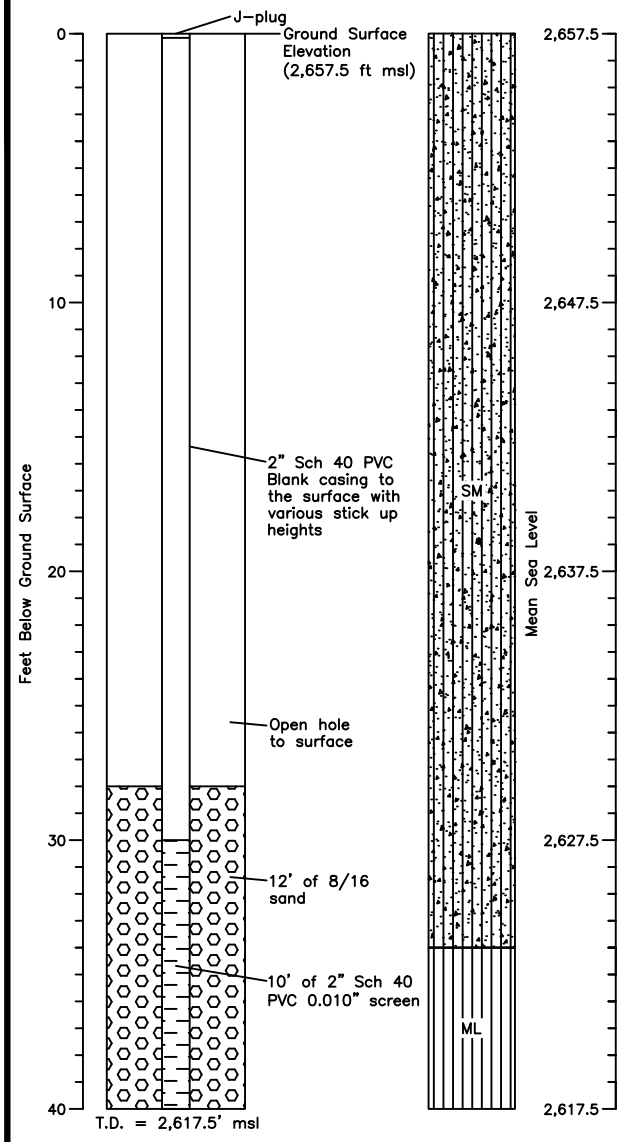
Drilling method: HSA
Bit diameters: 7-7/8" O.D.
Sampling method: 1-3/8" split spoon

Note:
A temporary well was placed after completing the boring in order to take a more representative static water level measurement. A static water measurement was taken 24 hours after boring completion. The temporary well was then removed and the bore hole was plugged and abandoned per regulations.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-19

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
–	0–1	–		SM	Silty sand, 7.5YR 4/4, 60% sand, coarse to very fine, 40% silt, subangular to rounded, no cohesion, strong HCL reaction, not plastic, not sticky, slightly moist.
90%	4–5	1.4/1.5	27,33,34 N=67	SM	Fine sandy silt, 7.5YR 8/3, 70% silt, 30% fine to very fine sand, no cohesion, strong HCL reaction, well–sorted, mostly quartz, subangular to rounded, not plastic, not sticky, dry.
100%	9–10	1.9/1.5	39,46,47 N=93	SM	Silty sand, 7.5YR 6/4, 55% sand, medium to very fine, 45% silt, weakly cohesive, strong HCl reaction, well–graded, subangular to rounded, not plastic, not sticky, dry.
100%	14–15	1.9/1.5	9,18,28 N=46	SM	Silty sand with clay, 7.5YR 5/6, 60% sand, 30% silt, 10% clay, moderate cohesion, strong HCl reaction, grains are medium to very fine, well–graded, subrounded to subangular, not plastic, not sticky, dry.
100%	19–20	2.0/1.5	11,15,19 N=34	SM	As above.
100%	29–30	0.7/1.5	27,50 N=50	SM	Silty sand with gravel, 7.5YR 5/6, 60% sand, coarse to very fine, 30% silt, 10% gravel to 1/2", no cohesion, strong HCl reaction, well–graded, angular to subround, not plastic, not sticky, dry.
100%	34–35	2.2/1.5	8,13,16 N=29	ML	Clayey silt with sand, 7.5YR 6/6, 70% silt, 30% clay, 10% sand, medium to very fine, moderate dry strength, strong HCl reaction, well–sorted, subangular to rounded, slightly plastic, slightly stick, slightly moist.
100%	39–40	2.2/1.5	12,15,16 N=31	ML	As above, with increased CaCO3 development to nodules.

Geologist: K. Robinson
Driller: Talon LPE
Date completed: 03/09/21
Coordinates: 10499832.17, 1283386.316 U.S. Survey Feet

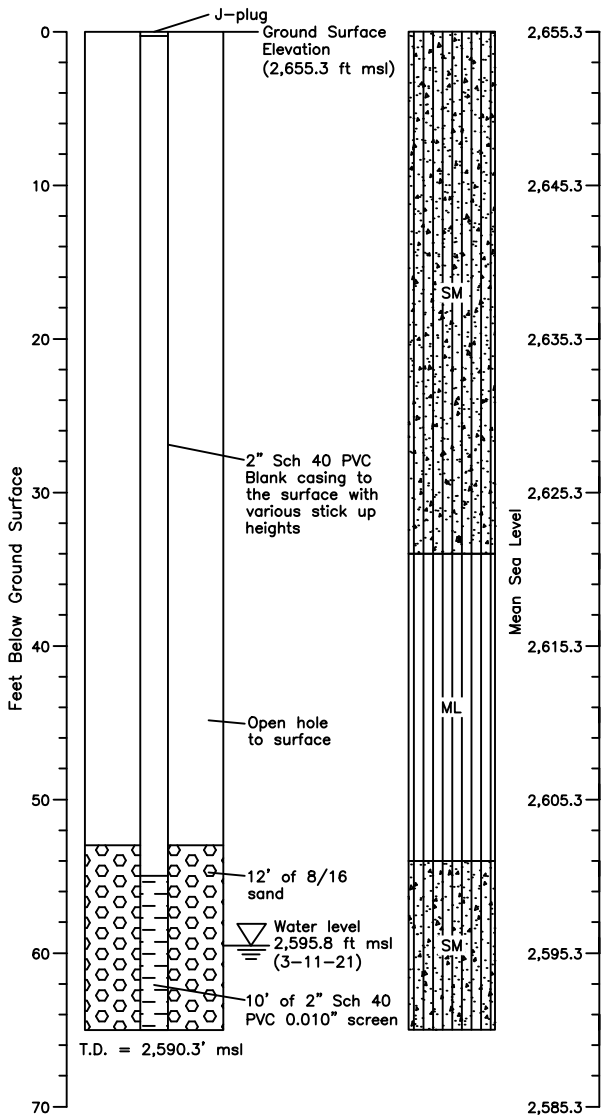
Drilling method: HSA
Bit diameters: 7–7/8" O.D.
Sampling method: 1–3/8" split spoon

Note:
A temporary well was placed after completing the boring in order to take a more representative static water measurement. The temporary well was dry, so no measurements were taken. The temporary well was removed and the bore hole was plugged and abandoned per regulations.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-20

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
–	0–1	–		SM	Silty sand, 10YR 8/4, 70% sand, coarse to very fine, 30% silt, loose, strong HCl reaction, grains are well-graded, angular to subround, not plastic, not sticky, dry.
65%	4–5	1.0/1.5	18,22,19 N=41	SM	Sandy silt, 7.5YR 4/6, 60% silt, 40% sand, coarse to very fine, medium hard cementation, strong HCl reaction, well-graded, angular to subrounded, not plastic, not sticky, dry.
90%	9–10	1.4/1.5	12,33,49 N=82	SM	Silty sand, 7.5YR 7/6, 60% sand coarse to very fine, 40% silt, loose, strong HCl reaction, well-graded, subangular to subrounded, not plastic, not sticky, dry.
100%	14–15	1.6/1.5	23,50 N=50	SM	Silty sand with clay, 10YR 6/6, 50% sand, coarse to very fine, 30% silt, 10% clay, weak cementation, strong HCl reaction, well-graded, subangular to subrounded, not plastic, not sticky, dry.
90%	19–20	1.9/2.1	11,16,22 N=38	SM	As above.
100%	24–25	1.6/1.5	18,29,35 N=64	SM	As above, with increased CaCO3 development to nodules and vertical seams.
100%	29–30	1.5/1.5	12,14,17 N=31	SM	Silty sand, 7.5YR 6/6, 80% sand, 20% silt, unconsolidated, strong HCl reaction, grains are coarse to very fine, angular to subrounded, well-graded, not plastic, not sticky, dry.
100%	34–35	2.3/1.5	5,4,6 N=10	ML	Clayey silt with sand, 10YR 5/4, 60% silt, 30% clay, 10% coarse to very fine sand, weakly consolidated, strong HCl reaction, well-sorted, lacking medium to fine range, angular to subrounded, slightly plastic, slightly sticky, dry.
100%	39–40	1.9/1.5	8,12,20 N=32	ML	As above.
100%	44–45	1.8/1.5	5,10,10 N=20	ML	As above.
100%	49–50	2.1/1.5	6,7,8 N=15	ML	Clayey silt with sand, 10YR 5/6, 60% silt, 30% clay, 10% sand, very fine to medium, weakly consolidated, strong HCl reaction, angular to subrounded, well-graded, slightly plastic, slightly sticky, slightly moist.
100%	54–55	1.8/1.5	6,14,18 N=32	SM	Clayey silt with sand, 7.5YR 5/6, 60% silt, 30% clay, 10% sand, very fine to medium, weakly consolidated, strong HCl reaction, angular to subrounded, well-graded, not sticky, not plastic, dry.
100%	59–60	2.1/1.5	5,6,8 N=14	SM	As above, with non-fizzing crystal development to 1/2" nodules.
100%	64–65	1.9/1.5	6,9,20 N=29	SM	As above, with continued large crystal presence.

Geologist: K. Robinson
Driller: Talon LPE
Date completed: 03/10/21
Coordinates: 10500072.14, 1283770.638 U.S. Survey Feet

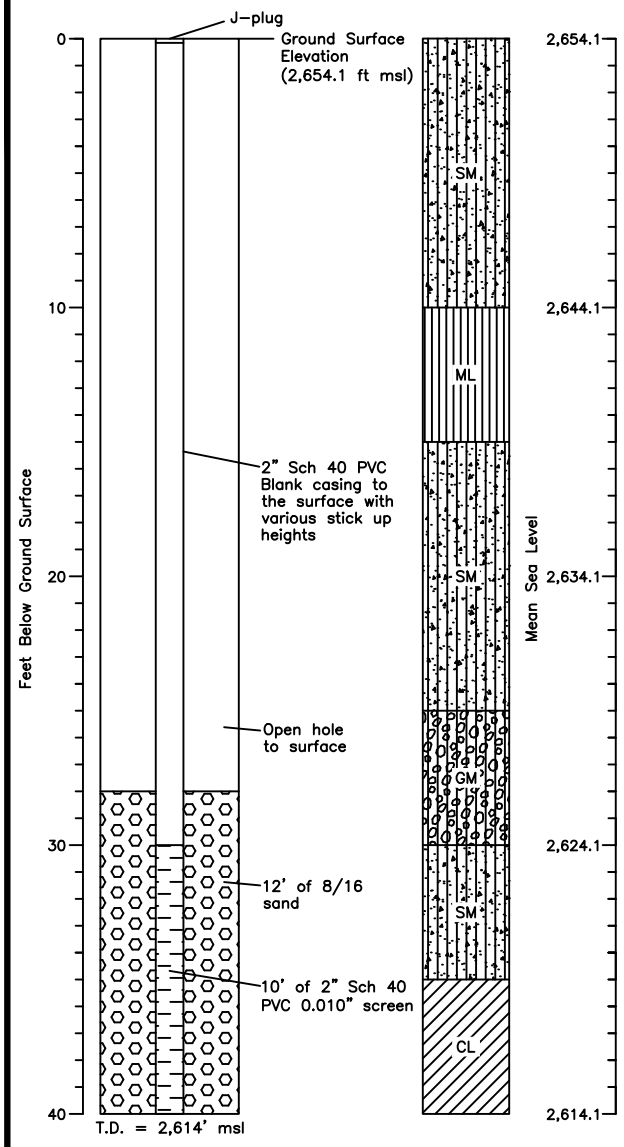
Drilling method: HSA
Bit diameters: 7-7/8" O.D.
Sampling method: 1-3/8" split spoon

Note:
A temporary well was placed after completing the boring in order to take a more representative static water level measurement. A static water measurement was taken 24 hours after boring completion. The temporary well was then removed and the bore hole was plugged and abandoned per regulations.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-21

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
–	0–1	–		SM	Sandy silt, 7.5YR 4/4, 60% silt, 40% sand, coarse to very fine, trace organics, loose, strong HCl reaction, angular to rounded, well-sorted, not plastic, not sticky, slightly moist.
100%	4–5	1.9/1.5	14,20,18 N=38	SM	Silty sand, 7.5YR 4/4, 70% sand, coarse to very fine, 30% silt, trace organics, weak cementation, strong HCl reaction, well-graded, subangular to rounded, not plastic, not sticky, dry.
75%	9–10	1.1/1.0	13,18,10 N=28	SM	As above but 7.5YR 6/4, with visible sugary CaCO3 formation.
80%	14–15	1.2/0.9	26,50 N=50	ML	Silty clayey sand, 7.5YR 6/4, 50% sand, coarse to very fine, 35% silt, 15% clay, moderate dry strength, strong HCl reaction, angular to rounded, well-graded, not plastic, slightly sticky.
100%	19–20	1.7/1.5	30,42,49 N=91	SM	Sandy silt, 10YR 6/4, 60% silt, 35% sand, coarse to very fine, 5% clay, moderate strength, strong HCl reaction, well-graded, angular to rounded, not plastic, not sticky, dry.
100%	24–25	1.7/1.5	11,21,24 N=45	SM	Silty sand, 7.5YR 5/6, 60% coarse to very fine sand, 40% silt, moderate cohesion, strong HCl reaction with sugary appearance and nodule formation, grains are angular to rounded, well-sorted, not plastic, not sticky, dry.
100%	29–30	1.8/1.5	31,30,28 N=58	GM	Gravelly silty sand, 7.5YR 6/4, 50% sand, coarse to very fine, well-graded, angular to subrounded, 30% gravel to 1/4", angular to rounded, well-graded, 20% silt, no cohesion, strong HCl reaction with sugary appearance, not plastic, not sticky, dry.
100%	34–35	2.0/1.5	12,24,15 N=39	SM	Silty sand with gravel, 7.5YR 6/6, 70% sand, coarse to very fine, well-graded, angular to subrounded, 30% silt, 10% clay, loose strong HCl reaction, not plastic, not sticky, dry.
100%	39–40	2.1/1.5	3,8,10 N=18	CL	Silty clay, 7.5YR 5/6, 70% clay, 30% silt, moderate strength, strong HCl reaction, slightly plastic, slightly sticky, dry. Crystal formation to 3/8".

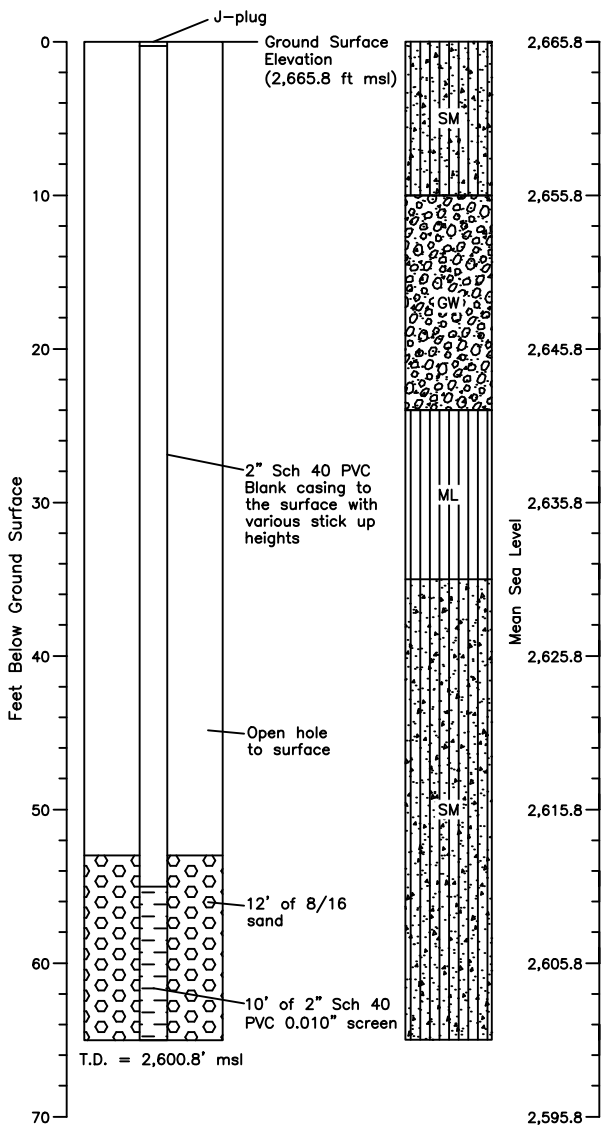
Geologist: K. Robinson
Driller: Talon LPE
Date completed: 03/09/21
Coordinates: 10500305.13, 1284180.117 U.S. Survey Feet

Drilling method: HSA
Bit diameters: 7–7/8" O.D.
Sampling method: 1–3/8" split spoon

Note:
A temporary well was placed after completing the boring in order to take a more representative static water measurement. The temporary well was dry, so no measurements were taken. The temporary well was removed and the bore hole was plugged and abandoned per regulations.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-22

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
–	0–1	–		ML	Sandy silt, 10YR 4/4, 60% silt, 40% sand, medium to very fine, trace organics, loose, strong HCl reaction, well–graded, subangular to subrounded, slightly plastic, slightly sticky, dry.
85%	4–5	1.3/1.5	10,15,16 N=31	SM	Silty sandy, 10YR 6/6, 60% sand, medium to very fine, well–graded, subangular to subrounded, 40% silt, weak cementation, strong HCl reaction, not plastic, not sticky, dry.
80%	9–10	1.2/1.5	13,23,20 N=43	SM	Fine sand with silt, 10YR 7/6, 85% fine to very fine sand, subrounded to subangular, well–sorted, 15% silt, loose, strong HCl reaction, not plastic, not sticky, dry.
80%	14–15	1.2/1.5	13,11,10 N=21	GW	Sandy gravel, various colors, 60% gravel to 1/2", 40% sand, coarse to very fine, well–graded, angular to rounded, loose, strong HCl reaction, not plastic, not sticky, dry.
85%	19–20	1.3/2.1	11,15,7 N=22	GW	As above with fractions altering to 70% gravel, 30% sand.
100%	24–25	1.7/1.5	6,11,17 N=28	ML	Clayey sandy silt, 10 YR 5/6, 60% silt, 25% clay, 15% fine to very fine sand, moderate cohesion, strong HCl reaction, well–sorted, subangular to subround, slightly plastic, slightly sticky, slightly moist. Large crystals present.
100%	29–30	2.1/1.5	12,21,36 N=57	ML	As above, carbonate formation is predominantly as dispersed nodules, no crystals longer than 1/16" noted.
100%	34–35	2.1/1.5	9,16,26 N=42	ML	Clayey silt with sand, 10R 6/6, 70% silt, 20% clay, 10% sand, medium to very fine, moderate cohesion, strong HCl reaction, subangular to subround, well–sorted, slightly plastic, slightly sticky, dry. Large crystals to 3/8".
100%	39–40	1.9/1.5	17,33,39 N=72	SM	Silty clayey sand, 10YR 5/6, 50% sandy, coarse to very fine, angular to subrounded, well–graded, 30% silt, 15% clay, 5% gravel to 3/8", angular to subrounded, moderate cementation, strong HCl reaction, not plastic, not sticky, dry.
100%	44–45	1.7/1.5	5,5,7 N=12	SM	As above, but larger gravels are not present and the fraction of sand is now ~55%.
100%	49–50	1.8/1.5	7,8,14 N=22	SM	Sandy clayey silt, 10YR 6/4, 50% silt, 30% sand, coarse to very fine, 20% clay, weak cohesion, strong HCl reaction, well–graded, angular to rounded, not plastic, not sticky, dry.
100%	54–55	1.7/1.5	8,12,18 N=30	SM	As above, with increased CaCO3 development as snowy texture and small crystals (~1/16").
90%	59–60	1.4/1.5	6,11,20 N=31	SM	Silty sand, 10YR 6/6, 80% sand, coarse to very fine, well–graded, angular to rounded, 20% silt, unconsolidated, strong HCl reaction, not plastic, not sticky, dry.
50%	64–65	0.8/1.5	19,50 N=50	SM	As above, with increased CaCO3 development as nodules and small crystals <1/16".

Geologist: K. Robinson
Driller: Talon LPE
Date completed: 03/11/21
Coordinates: 10498354.05, 1281746.233 U.S. Survey Feet

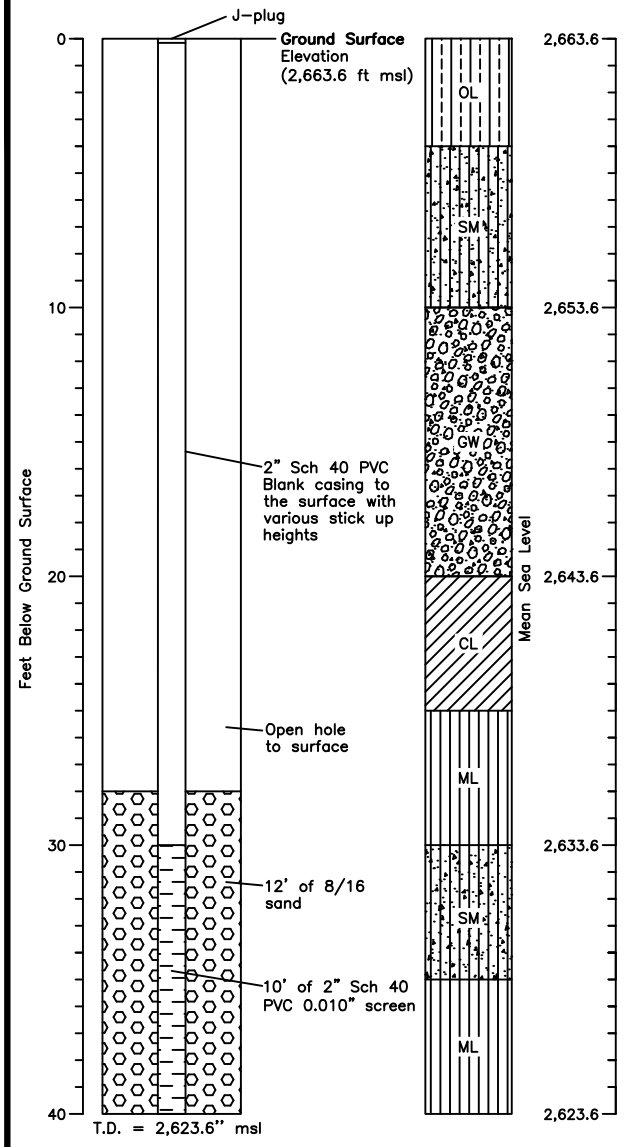
Drilling method: HSA
Bit diameters: 7–7/8" O.D.
Sampling method: 1–3/8" split spoon

Note:
A temporary well was placed after completing the boring in order to take a more representative static water measurement. The temporary well was dry, so no measurements were taken. The temporary well was removed and the bore hole was plugged and abandoned per regulations.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-23

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
–	0–1	–		OL	Silty sand, 7.5YR 4/4, 60% sand, medium to very fine, 40% silt, trace organic material, loose, strong HCl reaction, well-graded, subangular to rounded, slightly plastic, slightly sticky, dry.
75%	4–5	1.1/1.5	16,23,25 N=48	SM	Silty sand, 7.5YR 6/6, 60% sand, coarse to very fine, 40% silt, weakly cemented, strong HCl reaction, well-graded, angular to subrounded, not plastic, not sticky, dry.
80%	9–10	1.2/1.5	22,23,24 N=47	SM	Sandy silt. 7.5YR 8/5, 50% silt, 40% coarse to very fine sand, loose, strong HCl reaction, well-graded, angular to subroundws, not plastic, not sticky, dry.
100%	14–15	1.5/1.5	11,24,28 N=52	GW	Sandy gravel, colors vary, 60% gravel to 1/2", 40% sand, coarse to very fine, loose, strong HCl reaction, angular to rounded, well-graded, not plastic, not sticky, dry.
85%	19–20	1.3/1.5	17,28,35 N=63	GW	Sandy gravel, colors vary, 70% gravel to 3/8 inch, subround to rounded, well-graded, 20% sand, coarse to very fine, subangular to subround, well-graded, loose, strong HCl reaction, not plastic, not sticky, dry.
85%	24–25	1.3/1.5	15,23,37 N=60	CL	Sandy clay with silt, 7.5YR 8/3, 60% clay, 30% sand, fine to very fine, 10% silt, moderate cohesion, strong HCl reaction, grains are subangular to subround, well-sorted, moderately plastic, moderately sticky, slightly moist.
100%	29–30	1.9/1.5	31,37,45 N=82	ML	Clayey sandy silt, 7.5YR 6/4, 50% silt, 30% clay, 20% sandy, medium to very fine, moderate cohesion, strong HCl reaction, well-graded, subangular to subrounded, slightly plastic, slightly sticky, dry.
100%	34–35	2.0/1.5	15,28,34 N=62	SM	Silty sand with clay, 7.5YR 7/5, 50% sand, coarse to very fine, angular to rounded, well-graded, 40% silt, 10% clay, moderate strength, strong HCl reaction with carbonate nodules, not plastic, not sticky, slightly moist.
100%	39–40	2.1/1.5	18,13,15 N=28	ML	Clayey sandy silt, 7.5YR 6/6, 50% silt, 30% clay, 20% sand, fine to very fine, moderate strength, strong HCl reaction, well-sorted, angular to subround, slightly plastic, slightly sticky, slightly moist.

Geologist: K. Robinson
Driller: Talon LPE
Date completed: 03/11/21
Coordinates: 10498639.46, 1282335.868 U.S. Survey Feet

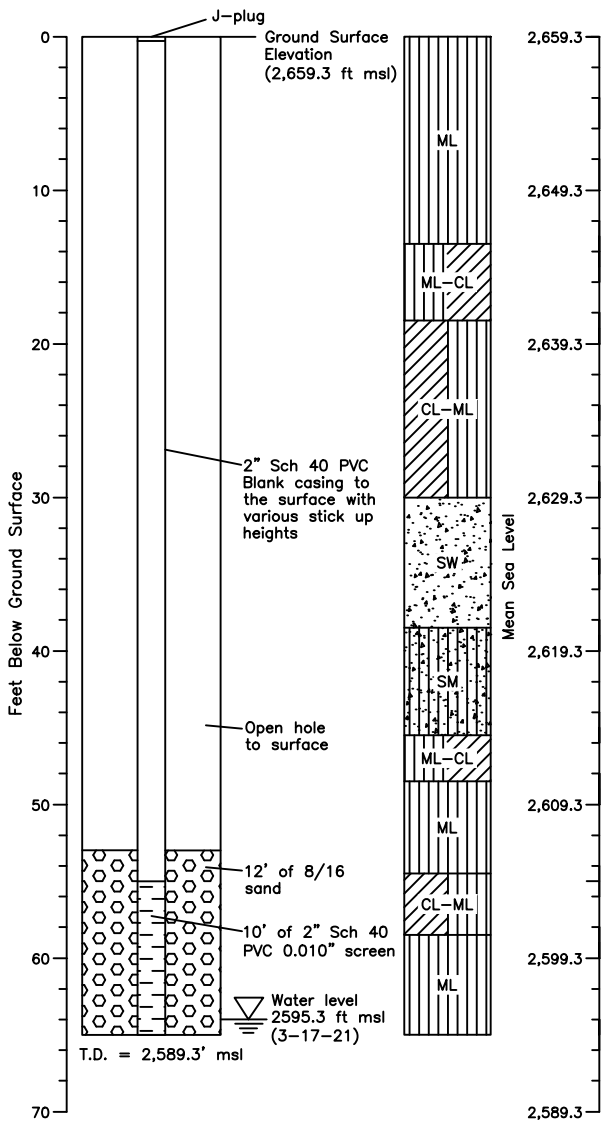
Drilling method: HSA
Bit diameters: 7–7/8" O.D.
Sampling method: 1–3/8" split spoon

Note:
A temporary well was placed after completing the boring in order to take a more representative static water measurement. The temporary well was dry, so no measurements were taken. The temporary well was removed and the bore hole was plugged and abandoned per regulations.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-24

DBS&A
Daniel B. Stephens & Associates, Inc.

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
–	0-1	–		ML	Sandy silt, light brown (7.5YR 6/4), soft, not plastic, medium sticky with trace fine and coarse gravel and organic matter.
85%	3.5-5	1.3/1.5	12,18,40 N=58	ML	Caliche – dry clayey silt with sand, reddish yellow (7.5YR 6/6) grading to pinkish white (7.5YR 8/2), 80% fines, 20% sand, hard, high dry strength, low plasticity, sand is fine to medium grained and well-graded, increasingly calcified and harder with depth.
85%	8.5-10	1.3/1.5	21,22,46 N=68	ML	Caliche – clayey silt with sand, pinkish white (7.5YR 8/2), 85% fines, 15% sand, hard, low dry strength, low to medium plasticity, low toughness and stickiness; sand is fine and poorly-graded with trace calcareous nodules, dry.
50%	13.5-15	0.8/1.5	34,50 N=50	ML-CL	Caliche – clayey silt with sand, 85% fines, 15% sand, pinkish white (7.5YR 8/2), hard, high dry strength, medium plasticity and stickiness and toughness; sand is very fine and poorly-graded, heavily calcified seams, dry, increasing clay content.
85%	18.5-20	1.3/1.5	23,43,28 N=71	CL-ML	Sandy silty clay, reddish yellow (7.5YR 7/6) with white (7.5YR 8/1) calcified sandy seams, 70% fines, 30% sand, hard, medium plasticity and stickiness, high dry strength, sands fine and poorly-graded, dry.
100%	23.5-25	1.5/1.5	27,33,23 N=56	CL-ML	Similar to above but moist with slightly higher percentage of silt.
100%	28.5-30	1.5/1.5	14,21,31 N=52	CL-ML	Sandy silty clay grading to sandy clayey silt, reddish yellow (7.5YR 7/6) with white calcareous seams, 70% fines, 30% sand, hard, high dry strength grading to medium, medium plasticity and stickiness and toughness, increasingly silty and sandy with trace gravel, moist to dry.
65%	33.5-35	1.0/1.5	23,50 N=50	SW	Well-graded sand with gravel, light brown (7.5YR 6/4, 75% fine to coarse sand, 25% fine gravel, very dense, not plastic with trace silt, dry.
100%	38.5-40	1.5/1.5	16,17,20 N=37	SM	Silty sand, reddish yellow (7.5YR 6/8) with white (7.5YR, 8/1) fissures, 70% sand, 30% silt, dense, not plastic, medium dry strength, with trace fine gravel, moist.
100%	43.5-45	1.5/1.5	8,12,17 N=29	ML-CL	Sandy clayey silt, reddish yellow (7.5YR 6/6), 70% fines, 30% sand, very stiff, medium dry strength, medium plasticity, low toughness, sand is poorly-graded with trace calcareous fissures, moist.
100%	48.5-50	1.5/1.5	30,15,20 N=35	ML	Clayey silt with sand, reddish yellow (7.5YR, 6/6), 85% fines, 15% fine sand, hard, low plasticity and stickiness, medium toughness, with trace of quartz sand—all sand is poorly-graded, moist.
100%	53.5-55	1.5/1.5	10,10,22 N=32	CL-ML	Silty clay, reddish yellow (7.5YR 6/6), 90% fines, 10% sand, very stiff, medium to high plasticity, high stickiness, medium toughness with trace quartz sand and fragments up to 1/4", moist.
100%	58.5-60	1.5/1.5	11,15,17 N=32	ML	Sandy silt with clay, reddish yellow (7.5YR 6/6), 65% silt, 20% sand, 10% clay, very stiff, low plasticity, low stickiness, low toughness, sand is fine and poorly-graded with trace quartz sand fissures, moist.
100%	63.5-65	1.5/1.5	3,5,7 N=12	ML	Similar to above, except wet.

Geologist: Y. Morgan
Driller: Talon LPE
Date completed: 03/16/21
Coordinates: 10499259.89, 1283474.713 U.S. Survey Feet

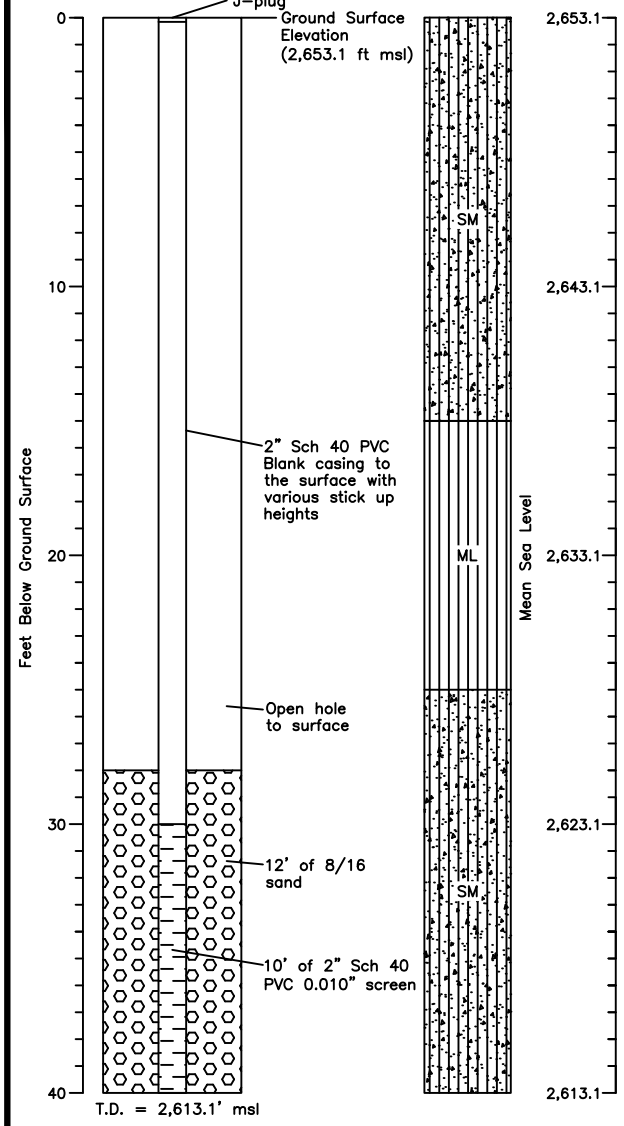
Drilling method: HSA
Bit diameters: 7-7/8" O.D.
Sampling method: 1-3/8" split spoon

Note:
A temporary well was placed after completing the boring in order to take a more representative static water level measurement. A static water measurement was taken 24 hours after boring completion. The temporary well was then removed and the bore hole was plugged and abandoned per regulations.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-25

DBS&A
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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
–	0–1	–		SM	Fine sandy silt, 7.5YR 4/4, 60% silt, 40% fine to very fine sand, loose, strong HCl reaction, well–sorted, subangular to subround, with trace organic material, not plastic, not sticky, slightly moist.
80%	4–5	1.2/1.5	6,22,28 N=50	SM	Sandy silt, 7.5YR 6/3, 60% silt, 40% coarse to very fine sand, weak cohesion, strong HCl reaction, angular to subangular, poorly–graded, not plastic, not sticky, dry.
100%	9–10	1.6/1.5	20,30,40 N=70	SM	As above.
100%	14–15	1.8/1.5	11,12,15 N=27	SM	Sandy clayey silt with trace gravel, 7.5YR 6/6, 50% silt, 20% clay, 25% coarse to very fine sand, moderate cohesion, strong HCl reaction, well–graded, angular, to rounded, trace gravel to 3/8", angular, CaCO3 nodule, crystal development to 3/8", not plastic, not sticky, dry.
100%	19–20	1.8/1.5	13,11,14 N=25	ML	Clayey sandy silt, 7.5YR 5/6, 50% silt, 30% clay, 20% fine to very fine sand, moderate cohesion, strong HCl reaction, well–sorted, subangular to subround, slightly plastic, slightly sticky, slightly moist.
100%	24–25	2.3/1.5	15,19,19 N=38	ML	As above with increased CaCO3 development, concomitant 7.5YR 6/4 color change.
100%	29–30	1.9/1.5	15,24,34 N=58	SM	Silty sand, 7.5YR 6/6, 70% sand, coarse to very fine, 30% silt, weak cohesion, strong HCl reaction and nodule development, well–graded, angular to rounded, not plastic, not sticky, dry.
100%	34–35	1.7/1.5	14,25,30 N=55	SM	As above with increased CaCO3 development from nodules to seams.
100%	39–40	2.1/1.5	10,13,15 N=28	SM	Sand with silt, 7.5 YR 6/6, 80% sand, coarse to very fine, 20% silt, loose, strong HCl reaction, angular to rounded, well–graded, not plastic, not sticky, dry.

Geologist: K. Robinson
Driller: Talon LPE
Date completed: 03/12/21
Coordinates: 10499999.78, 1284500.072 U.S. Survey Feet

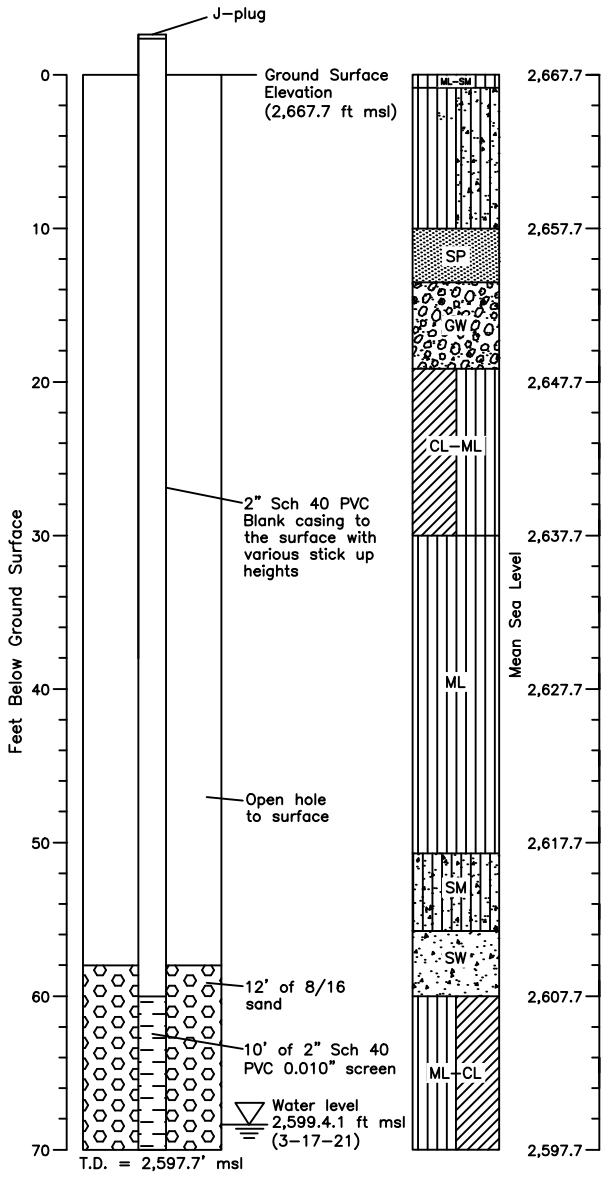
Drilling method: HSA
Bit diameters: 7–7/8" O.D.
Sampling method: 1–3/8" split spoon

Note:
A temporary well was placed after completing the boring in order to take a more representative static water measurement. The temporary well was dry, so no measurements were taken. The temporary well was removed and the bore hole was plugged and abandoned per regulations.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-26

DBS&A
Daniel B. Stephens & Associates, Inc.

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
–	0–1			ML	Sandy silt, light brown (7.5YR 6/4), 70% silt, 30% sand, with trace clay and fine to coarse gravel and organic matter, soft, not plastic, medium stickiness, dry.
100%	3.5–5	1.5/1.5	17,18,24 N=42	ML-SM	Weathered caliche, reddish yellow (7.5YR 6/6) with white fissures, clayey silt with sand and seams of silty sand, 75% fines, 25% sand, seams are ~75% sand and ~25% silt, hard, high dry strength, moderate plasticity, medium tough, not sticky, sand is fine to medium gravel and well-graded, increasingly calcified and hard with depth, dry.
100%	8.5–10	1.5/1.5	15,18,17 N=35	ML-SM	Caliche (as above) grading to: silty sand with gravel, pink (7.5YR, 7/4), 70% fine sand, 15% small gravel, 15% silt, dense, poorly-graded sand, subrounded with calcareous nodules, dry.
100%	13.5–14	1.5/1.5	7,9,22 N=31	SP	Poorly-graded sand, pink (7.5YR 7/3), fine-grained, medium density, subrounded, dry.
–	14–15		N=0	GW	Well-graded gravel with sand, variably colored gravel with pink sand (7.5YR 7/3, 70% gravel, 30% sand, dense, gravel rounded to subangular up to 3/4" diameter, fine, poorly-graded sand, dry.
33%	18.5–19	0.5/1.5	10,22,24 N=46	GW	Sandy gravel similar to above but up to 1" diameter.
100%	23.5–25	1.5/1.5	11,20,21 N=41	CL-ML	Sandy silty clay, reddish yellow (7.5YR 6/6) with extensive white fissures (7.5YR 8/6), 70% fines, 30% sand, hard, medium plastic, medium tough, slight stickiness, with heavily calcified fissures and quartz sand and fragments, moist.
100%	28.5–30	1.5/1.5	8,18,26 N=44	CL-ML	Similar to above but very stiff to hard.
100%	33.5–35	1.5/1.5	19,25,42 N=67	ML	Clayey sandy silt, pink (7.5YR 7/4), 70% fines, 30% fine sand, hard, high dry strength, slightly plastic, medium tough, slight stickiness, moist.
100%	38.5–40	1.5/1.5	13,20,24 N=44	ML	Similar to above but with fissures of quartz sand and CaCO3.
100%	43.5–45	1.5/1.5	11,15,18 N=33	ML	Similar to above but very stiff.
100%	48.5–49.3	1.5/1.5	4,7,16 N=23	ML	Similar to above but stiff.
–	49.3–50		N=0	ML	Silty sand, pink (7.5YR 7/4), 70% fine sand, 30% silt, poorly-graded, medium dense with fissures of quarters and CaCO3, moist.
90%	53.5–54.2	1.4/1.5	7,19,50 N=69	SM	As above.
–	54.2–54.9		N=0	SM	Well-graded sand with gravel, light brown (.75YR 6/4), 80% sand, 20% fine gravel up to 1/4" diameter, very dense, sand is subrounded to rounded, gravel is subangular to rounded, variably colored gravel, dry.
100%	58.5–60	1.5/1.5	4,13,17 N=30	SW	Clayey silt with sand, reddish yellow (7.5YR 6/6), 25% sand, 75% fines, ery stiff, medium dry strength, low to medium plastic, medium toughness, medium sticky with seam of fine sand 0.3' thick trace calcareous fissures at bottom, moist.
100%	63.5–65	1.5/1.5	4,7,11 N=18	ML-CL	Silty sand with sandy silt seams, light brown (7.5YR 6/4), very dense, fine sand, poorly-graded, wet.
100%	68.5–70	1.5/1.5	28,44,47 N=91	ML-CL	

Geologist: Y. Morgan
Driller: Talon LPE
Date completed: 03/16/21
Coordinates: 10496807.28, 1281500.076 U.S. Survey Feet

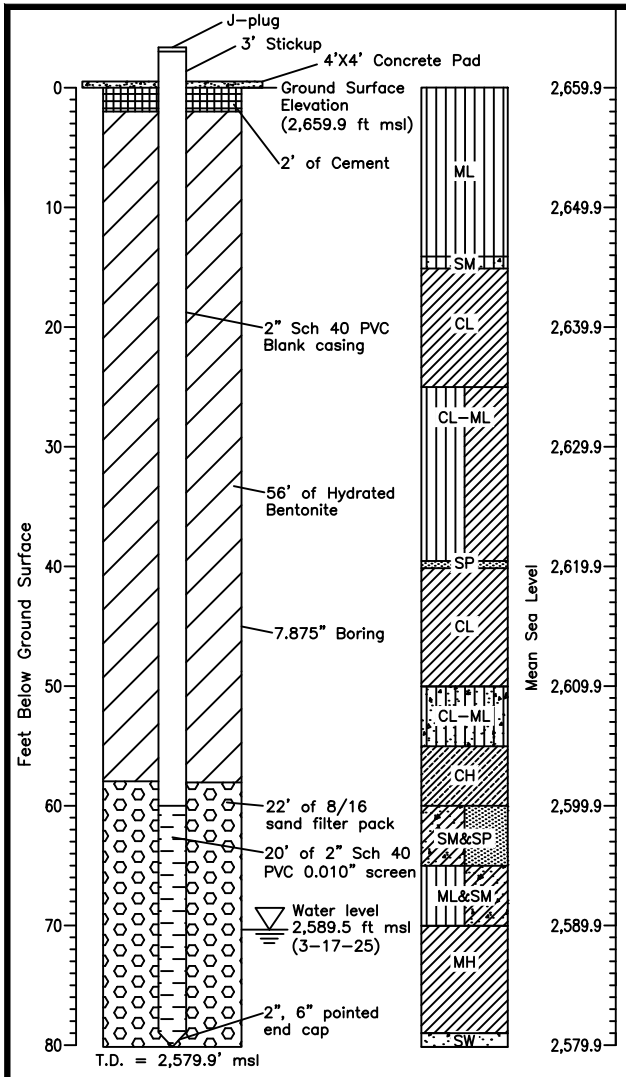
Drilling method: HSA
Bit diameters: 7-7/8" O.D.
Sampling method: 1-3/8" split spoon

Note:
A temporary well was placed after completing the boring in order to take a more representative static water level measurement. A static water measurement was taken 24 hours after boring completion. The temporary well was then removed and the bore hole was plugged and abandoned per regulations.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-27

DBS&A
Daniel B. Stephens & Associates, Inc.

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
–	0–0.1	–		ML	Sandy silt, light brown (7.5 YR 6/4), 70% fines, 30% sand soft, with trace clay, fine to coarse gravel, and organic matter, not plastic, medium sticky, dry.
100%	3.5–5	1.1/1.5	30,31,24 N=55	ML	Weathered caliche, clayey silt with sand, pinkish white (7.5 YR 8/2), 80% fines, 20% sand, hard medium dry strength, low plasticity, medium toughness, dry.
100%	8.5–10	1.2/1.5	24,38,43 N=81	ML	Caliche, clayey silt with sand, reddish yellow (7.5 YR 6/6) and pinkish white (7.5 YR 8/2), 80% fines, 20% fine sand, hard, high dry strength, low plasticity, medium toughness, heavily calcified, fissures with trace calcareous gravels, dry.
85%	13.5–14.3	1.1/1.5	22,33,50 N=83	ML	Caliche, clayey silt with sand, reddish yellow (7.5 YR 6/6) and pinkish white (7.5 YR 8/2), 80% fines, 20% fine sand, hard, high dry strength, low plasticity, medium toughness, heavily calcified, fissures with trace calcareous gravels, dry.
–	14.3–14.8	1.8/1.5	N=0	SM	Silty sand, very pale brown (10 YR 8/3), 85% fine sand, 15% silt, poorly-graded, rounded to subrounded, very dense, not plastic, dry.
100%	18.5–20.0	2.0/1.5	15,22,39 N=61	CL	Sandy silty clay, reddish yellow (7.5 YR 6/6) with extensive white fissures (7.5 YR 8/1), 70% fines, 30% sand, hard, high dry strength, medium plastic, medium stickiness, high toughness, heavily calcified fissures with quartz sand and crystals up to 1/4", moist.
100%	23.5–25.0	1.5/1.5	9,16,23 N=39	CL	Similar to above, but very stiff and with slightly less sand, quartz, and CaCO3.
100%	28.5–30.0	1.6/1.5	11,16,21 N=37	CL-ML	Silty clay with sand, reddish yellow (7.5 YR 7/6), 80% fines, 20% sand, very stiff, medium dry strength, very sticky, medium plasticity, low toughness, with trace fissures of quartz and CaCO3, moist.
100%	33.5–35.0	1.5/1.5	8,13,21 N=34	CL-ML	Similar to above but with more quartz and CaCO3.
100%	38.5–39.5	1.9/1.5	8,11,19 N=30	CL-ML	Similar to 28.5–30 feet, but with more quartz and CaCO3.
–	39.5–40.0	1.9/1.5	N=0	SP	Poorly-graded sand with gravel, pink (7.5 YR 7/4), 85% fine sand, 15% small gravel, rounded to subrounded sand and gravel, with trace silt, medium density, dry.
100%	43.5–45.0	1.7/1.5	2,4,9 N=13	CL	Silty clay with sand, reddish yellow (7.5 YR 7/6) 80% fines, 20% sand, firm, very sticky, medium to high plasticity, low toughness, numerous quartz inclusions, moist.
100%	48.5–50.0	1.5/1.5	3,3,6 N=9	CL	As above.
100%	53.5–55.0	1.6/1.5	16,16,23 N=39	CL-ML	Silty clay with clayey silt lenses, reddish yellow (7.5 YR 7/6), hard, slightly to medium sticky, medium to high plasticity, low toughness, numerous quartz fissures in silty clay but none in clayey silt, trace sand, moist.
100%	58.5–60.0	2.8/1.5	2,3,3 N=6	CH	Fat clay, pink (7.5 YR 7/3) firm, high plasticity and dry strength, very sticky, medium toughness, with trace quartz inclusions, moist.
100%	63.5–65.0	1.9/1.5	7,9,8 N=17	SM&SP	Silty sand with seams of poorly-graded sand, reddish yellow (7.5 YR 6/6), silty sand is 70% sand, 30% silt, sand is poorly-graded, fine-grained, medium dense, rounded, wet seams.
100%	68.5–70.0	1.7/1.5	8,15,23 N=38	ML&SM	Sandy silt with silty sand seams, reddish yellow (7.5 YR 6/6), sandy silt is 60% fines, 40% sand, silty sand seams are 80% sand, 20% fines, very stiff and medium dense, not plastic, slightly sticky, moist with wet seams.
100%	73.5–75.0	1.7/1.5	7,10,12 N=22	MH	Clayey silt with sand, reddish yellow (7.5 YR 6/6), 70% fines, 30% sand, very stiff, slightly to medium plasticity, medium sticky, wet.
–	78.5–79.0	1.7/1.5	6,6,50 N=56	MH	Clayey silt with sand as above, except stiff.
–	79.0–80.0	1.8/1.5		SW	Well-graded sand with trace small gravel, brown (7.5 YR 5/4), 95% sand, 5% gravel, very dense, fine to course sand, various colored sands and gravels, rounded sand, sub-rounded to sub-angular gravel, wet.

Geologist: K. Robinson
Driller: Talon LPE
Date completed: 03/10/21
Coordinates: 10497885.35, 1283243.898 U.S. Survey Feet

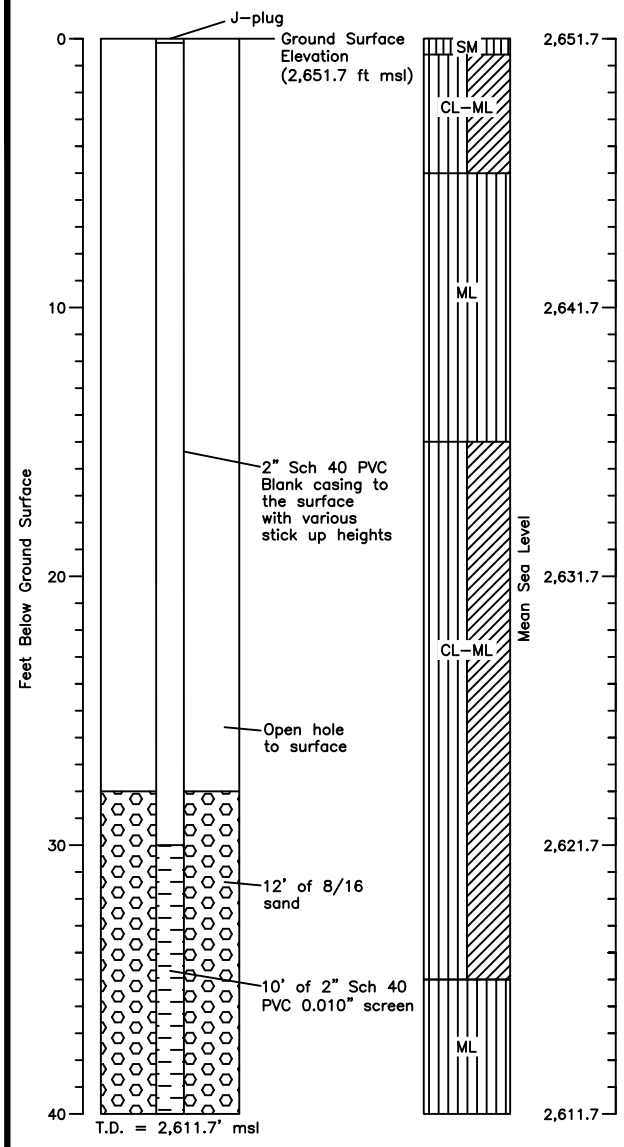
Drilling method: HSA
Bit diameters: 7-7/8" O.D.
Sampling method: 1-3/8" split spoon

WST PERMIAN LANDFILL
REEVES COUNTY, TX

Soil Boring SB-28/MW-3

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Daniel B. Stephens & Associates, Inc.

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	Field Test Results	USCS Symbol	Comments and Lithology
–	0–0.5	–		ML	Sandy silt, light brown (7.5YR 6/4), trace gravel and organic matter, soft, not plastic.
85%	3.5–5	1.3/1.5	10,26,27 N=53	CL–ML	Silty clay with sand, pink (7.5YR 7/4), 70% fines, 29% sand, 1% gravel, hard, medium plastic, medium tough and sticky, sand is medium–grained, well–graded and subrounded, gravel is small with calcareous nodules, dry.
100%	8.5–10	1.5/1.5	33,41,48 N=89	ML	Caliche – clayey silt with sand, white (7.5YR 8/1). 85% fines, 15% sand, hard, high dry strength, low plasticity, with calcareous nodules and heavily calcified seams, dry.
100%	13.5–15	1.5/1.5	20,31,35 N=66	ML	Similar to above, dry.
100%	18.5–20	1.5/1.5	23,48,30 N=78	CL–ML	Caliche as above, grading to: sandy silty clay, reddish yellow (7.5YR 6/6), fines 70% sand 30% with white (7.5YR 8/1) sand calcified seams, hard, high plasticity, toughness and dry strength, sand is fine–grained and poorly–graded with trace calcareous nodules, moist.
100%	23.5–25	1.5/1.5	16,29,34 N=63	CL–ML	Similar to above but with 60% fines, 40% sand and calcareous fragments, moist.
100%	28.5–30	1.5/1.5	10,18,23 N=41	CL–ML	Sandy silty clay, reddish yellow (7.5 YR 6/6), 75% fines, 25% sand, with trace white sand and calcareous seams, very stiff to hard, medium plastic, high toughness and dry strength, medium sticky, sand is fine and poorly–graded, calcareous seams decreasing with depth, moist.
100%	34–35	1.5/1.5	12,20,24 N=44	CL–ML	Similar to above with slightly more CaCO3.
100%	38.5–40	1.5/1.5	15,27,35 N=62	CL–ML	Sandy silty clay, reddish yellow (7.5YR 6/6), 65% fines, 35% sand, with trace white seams of calcareous sand, hard, medium plasticity, toughness, stickiness and dry strength, sand is fine and poorly–graded, moist.

Geologist: K. Robinson
Driller: Talon LPE
Date completed: 03/15/21
Coordinates: 10499661.72, 1285067.752 U.S. Survey Feet

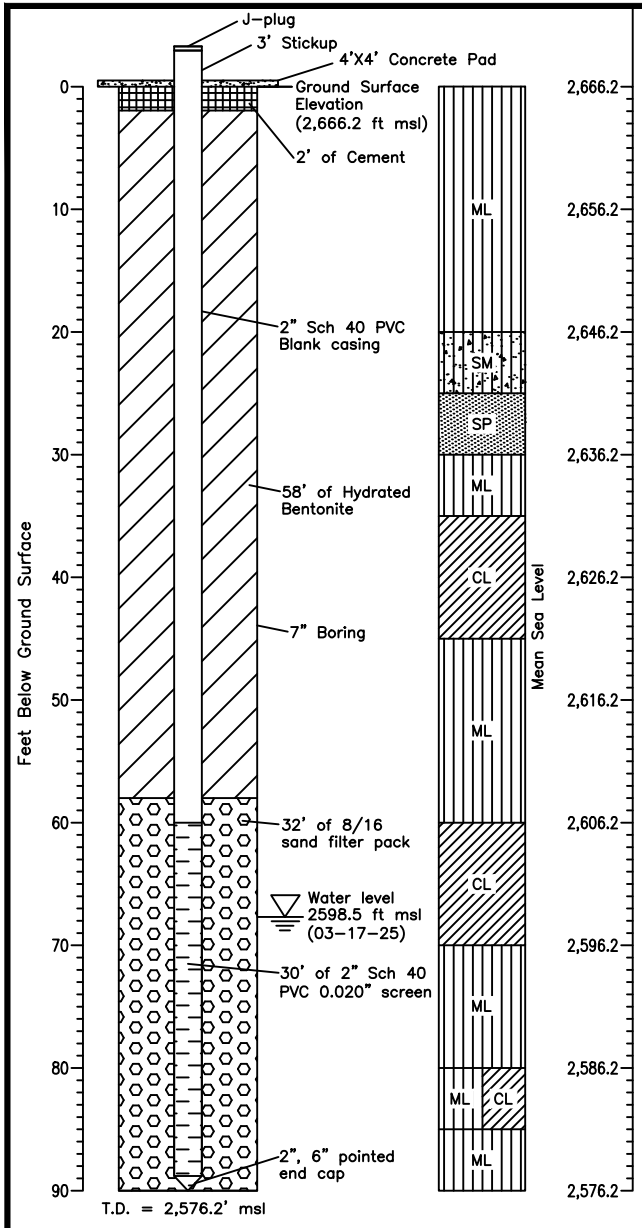
Drilling method: HSA
Bit diameters: 7–7/8" O.D.
Sampling method: 1–3/8" split spoon

Note:
A temporary well was placed after completing the boring in order to take a more representative static water measurement. The temporary well was dry, so no measurements were taken. The temporary well was removed and the bore hole was plugged and abandoned per regulations.

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Soil Boring SB-29

DBS&A
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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	USCS Symbol	Comments and Lithology
N/A	0–5	–	ML	Sandy silt (ML), 5YR 6/4 light reddish brown, dry, ~85–90% silt 10–15% very fine sand, micaceous.
N/A	5–10	–	ML	Silt (ML), 5YR 6/4 light reddish brown, dry, trace very fine sand.
N/A	10–15	–	ML	Silt (ML), 5YR 7/4 pink, dry.
N/A	15–20	–	ML	Silt (ML), 5YR 7/4 pink, dry, micaceous.
N/A	20–25	–	SM	Silty sand (SM), 5YR 7/6 reddish yellow, slightly moist, ~80% very fine to fine sand, 20% silt, trace medium sand, micaceous.
N/A	25–30	–	SP	Sand (SP), 5YR 6/6 reddish yellow, slightly moist, ~90–95% very fine to coarse sand, 5–10% silt, sand is angular to subangular, trace very coarse sand, micaceous.
N/A	30–35	–	ML	Silt (ML), 5YR 6/4 light reddish brown, moist, ~95% silt, 5% very fine sand, trace clay (just enough to roll sample), micaceous.
N/A	35–40	–	CL	Silty clay (CL), 5YR 6/4 light reddish brown, moist, soft, low to moderate plasticity, cohesive when pressed, micaceous.
N/A	40–45	–	CL	Silty clay (CL) with trace coarse sand, 5YR 6/4 light reddish brown, moist, soft, moderate plasticity, cohesive when pressed, micaceous.
N/A	45–50	–	ML	Silt (ML), 5 YR 6/4 light reddish brown, moist, trace clay, micaceous.
N/A	50–55	–	ML	Silt (ML), 5YR light reddish brown, moist, 5% very fine to fine sand, micaceous.
N/A	55–60	–	ML	Silt (ML), 5YR 7/4 pink, moist
N/A	60–65	–	CL	Silty clay (CL), 5YR 6/5 light reddish brown, moist to very moist, soft, moderate plasticity, trace very fine sand (angular) and gravel up to 0.75" (subrounded), caliche.
N/A	65–70	–	CL	Silty sand clay (CL), 5YR 6/3 light reddish brown, moist, soft to medium stiff, moderate plasticity, ~10% very fine to coarse sand, ~5–10% silt, micaceous, trace very fine sand.
N/A	70–75	–	ML	Clayey sandy silt (ML), 5YR 7/4 pink, moist, medium stiff, cohesive, low plasticity, ~10–15% clay, ~10% very fine to medium sand, micaceous.
N/A	75–80	–	ML	Same as above.
N/A	80–85	–	ML/CL	Clayey silt (ML) to silty clay (CL), 5YR 6/3 light reddish brown, moist, portions of sampel are ML, others are CL; ML=10–15% clay with trace very fine to medium sand, CL=soft to medium stiff, low to moderate plasticity; Both=cohesive, micaceous, trace very fine to medium sand.
N/A	85–90	–	ML	Sandy silt (ML), 5YR 7/3 pink, moist, ~15% very fine to medium sand, micaceous, cohesive when pressed.

Geologist: D. Manoukian
Driller: HCI Drilling
Date completed: 05/05/21

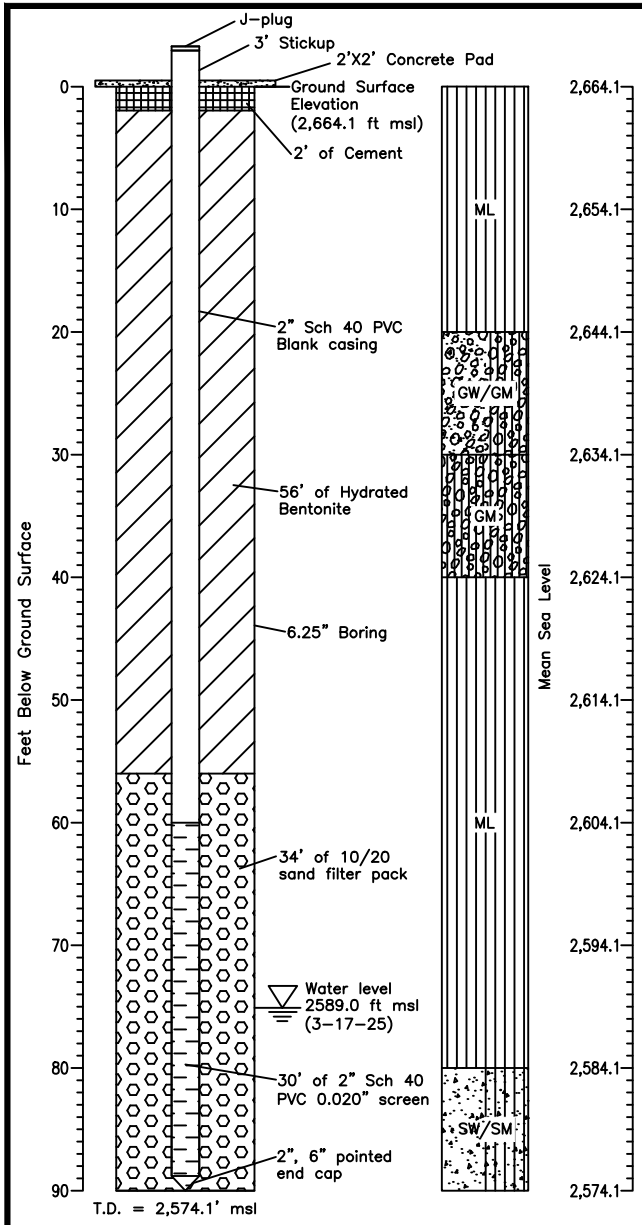
Drilling method: Air Rotary
Bit diameters: 7" O.D.

Coordinates: 10500671.61, 1281949.31 U.S. Survey Feet

DBS&A a Geo-Logic Company

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Monitoring Well GW-3

S:\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\CAD\PRODUCTION\BORING LOGS\GW-6.DWG



Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	USCS Symbol	Comments and Lithology
N/A	–	–	ML	Disturbed soil – mostly silt with sand and gravel as at GW-13 and GW-11.
N/A	0–10	–	ML	Sandy silt, ~40% sand, fine to coarse, ~60% silt, trace gravel, angular to subrounded, <1/4" in diameter, slightly sticky, slightly plastic, 7.5 YR 5/4 brown, strong HCL reaction.
N/A	10–20	–	ML	Sandy silt, ~40% sand, fine to coarse, ~60% silt, trace gravel, angular to subrounded, <1/4" in diameter, slightly sticky, slightly plastic, 7.5 YR 5/4 brown, strong HCL reaction.
N/A	20–30	–	GW/GM	Gravel with sand and silt, ~50% gravel, round to subangular, 1/4" to 4" diameter, ~25% sand, fine to coarse, ~25% silt/clay, moderatly sticky, slightly plastic, 7.5 YR 6/3 light brown, moderate HCL reaction.
N/A	30–40	–	GM	Sandy silt, ~60% silt, ~37% sand, fine to coarse, ~3% gravel, 1/4" to 2" diameter, subrounded to angular, moderately sticky, slightly plastic, 7.5 YR 6/3 light brown, moderate HCL reaction.
N/A	40–50	–	ML	Sandy silt , ~20% sand, fine to coarse, ~80% silt (some clay?), very slightly sticky, slightly plastic, 7.5 YR 6/3 light brown, moderate HCL reaction.
N/A	50–60	–	ML	Silt with clay, ~10% sand, fine to coarse, ~20% clay and clumps in cuttings, ~65% silt, ~5% gravel, 1/4" to 1" diameter, angular to subrounded, very slightly sticky, moderately plastic, 7.5 YR 6/3 light brown, moderate HCL reaction.
N/A	60–70	–	ML	Sandy silt, ~30% sand, fine to coarse, ~70% silt, no gravel, little clay?, very slightly sticky, slightly plastic, 7.5 YR 6/3 light brown, moderate HCL reaction.
N/A	70–80	–	ML	Same as above.
N/A	80–90	–	SW/SM	Silty sand with gravel, ~10% gravel 1/4" to 2" diameter, subrounded to angular, ~30% silt, ~60% sand, fine to coarse, moderately sticky, moderatly plastic, 7.5 YR 6/3 light brown, strong HCL reaction.

Geologist: S. Williams
Driller: HCI Drilling
Date completed: 09/20/21

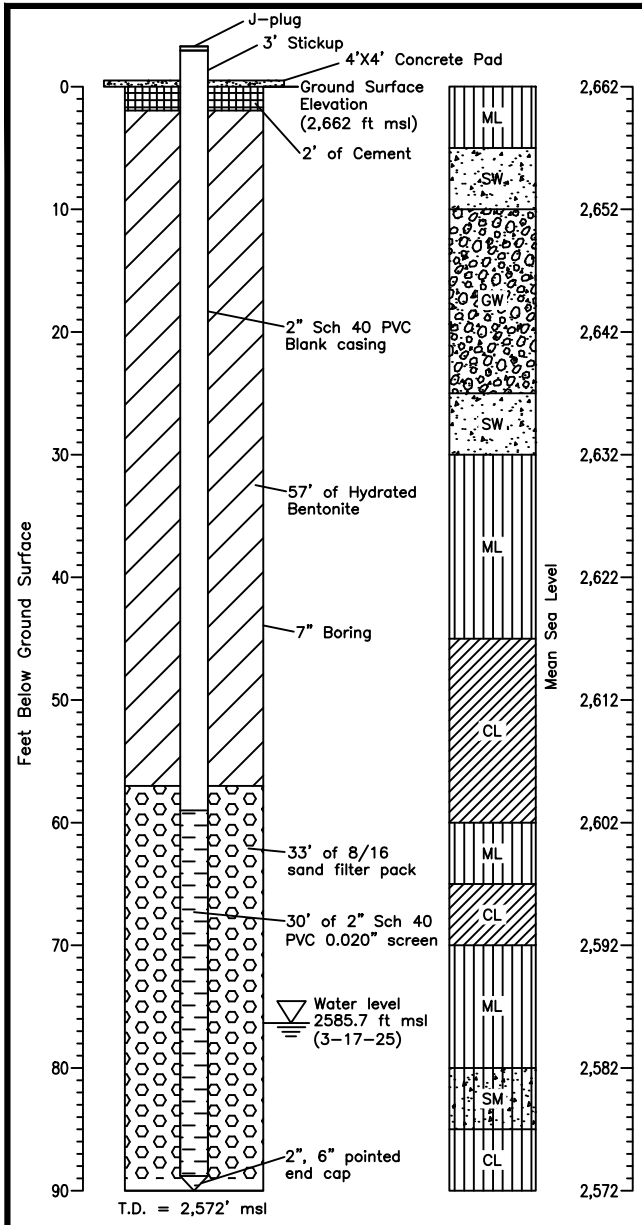
Drilling method: Air Rotary
Bit diameters: 7" O.D.

Coordinates: 10501432.15, 1283210.26 U.S. Survey Feet

DBS&A a Geo-Logic Company

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Monitoring Well GW-6

S:\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\CAD\PRODUCTION\BORING LOGS\GW-7.DWG



Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	USCS Symbol	Comments and Lithology
N/A	0–5	–	ML	Sandy silt (ML), 5YR 7/3 pink, dry, ~15–20% very fine to fine sand, trace gravel, micaceous.
N/A	5–10	–	SW	Sand (SW), 5YR 7/3 pink, dry, ~5–10% silt, very fine to very coarse sand, subangular to subrounded, predominantly fine, fraction of sand ~80% sand is < medium sand, trace rounded gravel up to 1".
N/A	10–15	–	GW	Gravel (GW), 5YR 5/6 reddish brown, loose, dry, ~50 % very fine to very coarse sand, 50% very fine to very coarse gravel, rounded to subrounded, gravel up to 3".
N/A	15–20	–	GW	Gravel (GW), 5YR 5/6 reddish brown, loose, moist to very moist, 100% very coarse sand to medium gravel, rounded to subrounded, sand is subrounded to subangular. Driller began injecting water into borehole for remainder of drilling, moisture in samples are irrelevent moving foward.
N/A	20–25	–	GW	Same as above, saturated.
N/A	25–30	–	SW	Sand (SW), 5YR 7/3 pink, saturated, loose, ~20% silt, 80% very fine to very coarse sand, subangular to subrounded, trace rounded gravel up to 3".
N/A	30–35	–	ML	Sandy silt (ML) 5YR 7/3 pink, saturatated, ~35% very fine to very coarse sand, subangular to subrounded.
N/A	35–40	–	ML	Sandy clayey silt (ML) 5YR 7/3 pink, saturated, ~30% very fine to very coarse sand, subangular to subrounded, ~10–15% clay, trace round gravel up to 1".
N/A	40–45	–	ML	Sandy clayey silt (ML), 5YR 7/3 pink, saturated, ~30% very fine to very coarse sand, subangular to subrounded, ~10–15% clay.
N/A	45–50	–	CL	Silty sandy clay (CL), 5YR 7/3 pink, saturated, ~10% very fine to very coarse sand, subangular to subrounded, ~10–15% silt, plasticity and stiffness indetermined.
N/A	50–55	–	CL	Sitly sandy clay (CL), 5YR 6/5 reddish brown, saturated, ~10 very fine to very coarse sand, subangular to subrounded, ~10–15% silt, plasticity and stiffness indetermined.
N/A	55–60	–	CL	Silty sandy clay (CL) with slightly more clay than above, 5YR 6/5 reddish brown, saturated, ~10% very fine to very coarse sand, subangular to subrounded, ~10% silt, plasticity and stiffness indetermined.
N/A	60–65	–	ML	Sandy silt (ML), 5YR 7/3 pink, saturated, ~90% silt, 10% very fine to very coarse sand, subangular to subrounded.
N/A	65–70	–	CL	Silty sandy clay (CL), 5YR 7/3 pink, saturated, ~20–25% silt, 10% very fine to very coarse sand, subangular to subrounded, plasticity and stiffness indetermined.
N/A	70–75	–	ML	Sandy clayey silt (ML), 5YR 7/3 pink, saturated, ~10–15% clay, 10% very fine to very coarse subrounded to subangular sand.
N/A	75–80	–	ML	Sandy silt (ML), 5YR 7/4 pink, saturated, ~15% very fine to very coarse subangular to subrounded sand.
N/A	80–85	–	SM	Sand (SM), 5YR 7/3 pink, saturated, ~50% silt, 50% very fine to very coarse sand, subangular to subrounded, trace clay.
N/A	85–90	–	CL	Silty sandy clay (CL), 5YR 7/4 pink, saturated, ~15–20% very fine to very coarse sand subangular to subrounded, ~10% silt, stiffness and plasticity indetermined.

Geologist: D. Manoukian
Driller: HCI Drilling
Date completed: 05/05/21

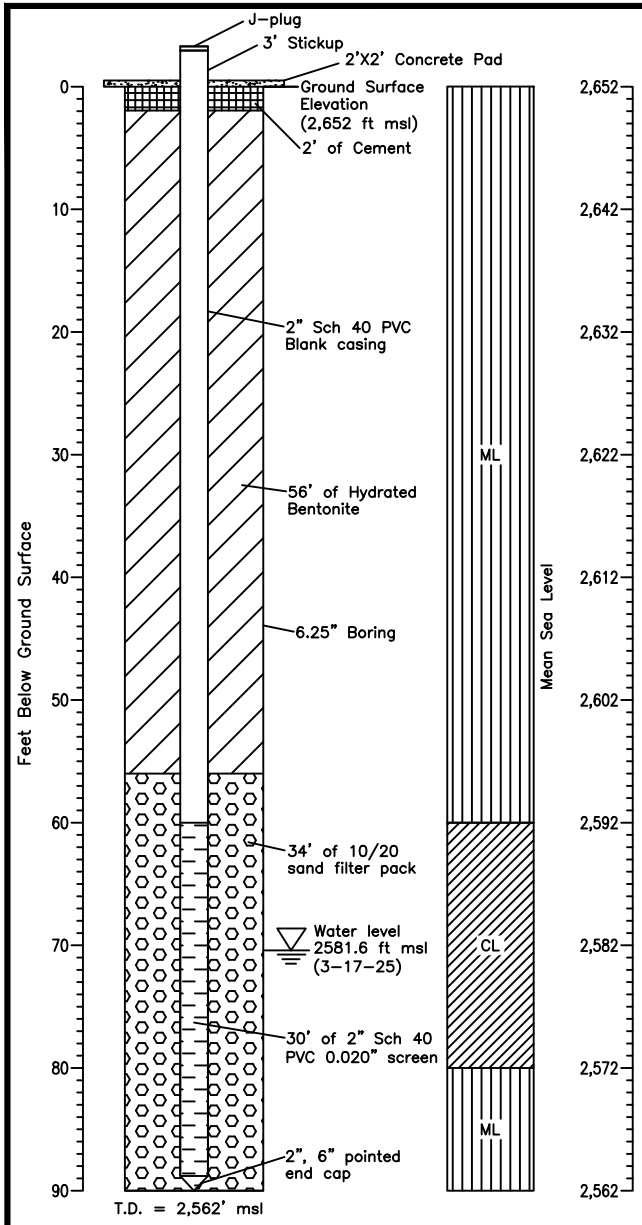
Drilling method: Air Rotary
Bit diameters: 7" O.D.

Coordinates: 10501642.79, 1284031.87 U.S. Survey Feet

DBS&A a Geo-Logic Company

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Monitoring Well GW-7

S:\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\CAD\PRODUCTION\BORING LOGS\GW-11.DWG



Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	USCS Symbol	Comments and Lithology
N/A	–	–	ML	Disturbed surface fill, mostly silt with sand and some gravel.
N/A	0–10	–	ML	Silt with sand, ~5% gravel 1/4" to 1" diameter, round to subangular, ~30% sand, fine to medium, ~65% silt, not sticky, very slightly plastic, 7.5 YR 6/4 light brown, strong HCL reaction.
N/A	10–20	–	ML	Clayey silt with sand, ~30% sand, fine to medium, ~10% clay, ~60% silt, no gravel, sticky, plastic, 7.5 YR 7/3 pink, strong HCL reaction.
N/A	20–30	–	ML	Same as above.
N/A	30–40	–	ML	Same as above.
N/A	40–50	–	ML	Same as above.
N/A	50–60	–	ML	Clayey silt with sand, ~30% sand, fine to medium with few coarse sand grains, ~10% clay, ~60% silt, no gravel, sticky, plastic, 7.5 YR 7/3 pink, strong HCL reaction.
N/A	60–70	–	CL	Silty clay, ~5% sand, fine to coarse, ~40% silt, ~55% clay, moderately sticky, very plastic, 7.5 YR 7/3 pink, strong HCL reaction.
N/A	70–80	–	CL	Same as above.
N/A	80–90	–	ML	Sandy silt, ~40% sand, fine to medium, ~60% silt, no gravel, very slightly sticky, slightly plastic, 7.5 YR 8/2 pinkish white, very strong HCL reaction.

Geologist: S. Williams
Driller: HCI Drilling
Date completed: 09/20/21

Drilling method: Air Rotary
Bit diameters: 7" O.D.

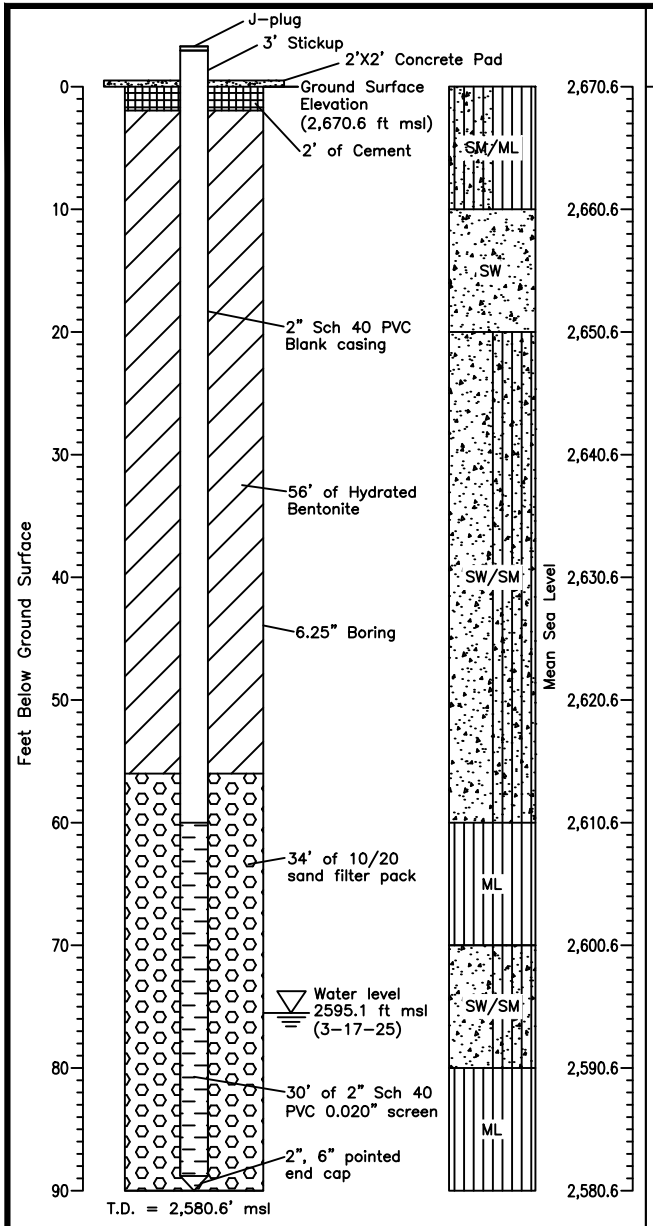
Coordinates: 10499293.22, 1285578.06 U.S. Survey Feet

DBS&A a Geo-Logic Company

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Monitoring Well GW-11

9/11/2023 DB20.1166

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	USCS Symbol	Comments and Lithology
N/A	–	–	ML	Silt , ~95% silt, 5% fine to medium sand, trace gravel, 1/4" to 1" diameter, slightly sticky, not plastic, disturbed surface, 5 YR 5/2 reddish gray brown.
N/A	0–10	–	SM/ML	Silty sand/sandy silt, ~48% sand, fine to coarse, ~48% silt, ~4% clay, no gravel, slightly plastic, slightly sticky, 7.5 YR 5/3 brown.
N/A	10–20	–	SW	Sand with gravel, ~10% silt, ~70% sand, fine to coarse, ~20% gravel 1/4" to 1/2" diameter, subrounded to rounded, not plastic, not sticky, 7.5 YR 6/3 light brown.
N/A	20–30	–	SW/SM	Silty sand with gravel, ~15% gravel 1/4" to 1" diameter, subangular to rounded, ~30% silt, ~55% sand, fine to coarse, sticky, plastic, 7.5 YR 7/3 pink, strong HCL reaction.
N/A	30–40	–	SW/SM	Same as above.
N/A	40–50	–	SW/SM	Same as above.
N/A	50–60	–	SW/SM	Same as above.
N/A	60–70	–	ML	Silt with sand and clay, ~5% gravel, 1/4" to 1" diameter, subangular to rounded, ~20% sand fine to coarse, ~10% clay, ~65% silt, slightly sticky, slightly plastic, 7.5 YR 7/4 pink, stong HCL reaction.
N/A	70–80	–	SW/SM	Silty sand with gravel, ~15% gravel 1/4" to 1" diameter, subangular to rounded, ~30% silt, ~55% sand, fine to coarse, sticky, plastic, 7.5 YR 7/3 pink, strong HCL reaction.
N/A	80–90	–	ML	Silt with sand, ~15% sand fine to coarse, ~10% clay, ~75% silt, trace small gravel, slightly sticky, slightly plastic, 7.5 YR 7/4 pink, moderate HCL reaction.

Geologist: S. Williams
Driller: HCI Drilling
Date completed: 09/20/21

Drilling method: Air Rotary
Bit diameters: 7" O.D.

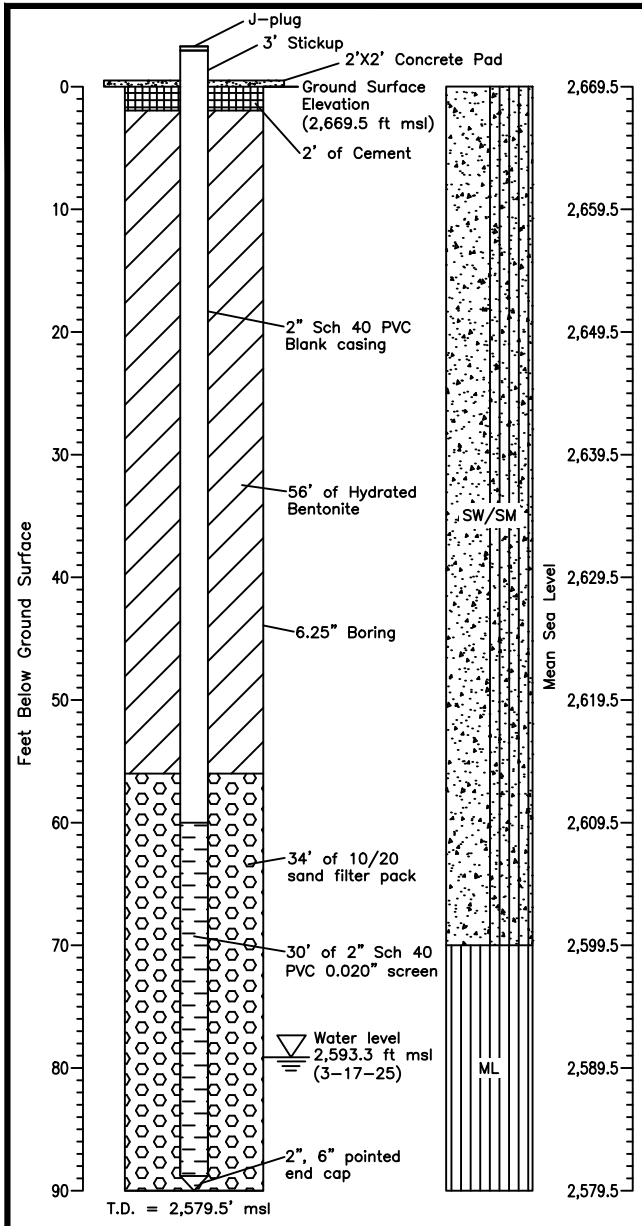
Coordinates: 10496779.73, 1281513.92 U.S. Survey Feet

DBS&A a Geo-Logic Company

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Monitoring Well GW-13

9/11/2023 DB20.1166

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Sample Recovery (%)	Sample Interval (ft)	Sample Depth (ft)	USCS Symbol	Comments and Lithology
N/A	–	–	ML	Silt with sand, ~70% silt, 30% fine to coarse sand, trace gravel, 1/4" diameter, not sticky, not plastic, 5 YR 7/2 pinkish gray, very strong HCL reaction.
N/A	0–10	–	SW/SM	Sand with silt, ~65% fine to coarse sand, ~30% silt/clay, ~5% gravel, <1/4" diameter, rounded to subangular, moderately sticky, moderatly plastic, 7.5 YR 6/4 light brown, very strong HCL reaction.
N/A	10–20	–	SW/SM	Same as above.
N/A	20–30	–	SW/SM	Sand with silt, ~65% fine to coarse sand, ~30% silt/clay, ~5% gravel, <1/4" diameter, rounded to subangular, moderately sticky, moderatly plastic, 7.5 YR 6/2 pinkish gray, moderate HCL reaction.
N/A	30–40	–	SW/SM	Same as above.
N/A	40–50	–	SW/SM	Sand with silt, ~70% sand, fine to coarse, ~2% silt, ~5% clay, no gravel, very sticky, moderately plastic, 7.5 YR 6/3 light brown, moderate HCL reaction.
N/A	50–60	–	SW/SM	Same as above.
N/A	60–70	–	SW/SM	Same as above.
N/A	70–80	–	ML	Clayey silt with sand, ~20% sand, fine to medium, ~20% clay, came up as chunks, ~60% silt, slightly sticky, moderately plastic, 7.5 YR 6/3 light brown, strong HCL reaction.
N/A	80–90	–	ML	Same as above.

Geologist: S. Williams
Driller: HCI Drilling
Date completed: 09/20/21

Drilling method: Air Rotary
Bit diameters: 7" O.D.

Coordinates: 10499527.07, 1279823 U.S. Survey Feet

WST PERMIAN LANDFILL
REEVES COUNTY, TX
Monitoring Well GW-14

DBS&A a Geo-Logic Company

9/11/2023 DB20.1166

Appendix III-5-D

Soil Properties Laboratory Report

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Laboratory Report for

WST Pecos Permitting

DB20.1166.00 P1T1

March 31, 2021

Daniel B. Stephens & Associates, Inc.

4400 Alameda Blvd. NE, Suite C • Albuquerque, New Mexico 87113

March 31, 2021

Chad Johannesen
Daniel B. Stephens & Associates, Inc.
6020 Academy Rd. NE, Suite 100
Albuquerque, NM 87109

Re: DBS&A Laboratory Report for the WST Pecos Permitting Project

Dear Mr. Johannesen:

Enclosed is the report for the WST Pecos Permitting project samples. Please review this report and provide any comments as samples will be held for a maximum of 30 days. After 30 days samples will be returned or disposed of in an appropriate manner.

All testing results were evaluated subjectively for consistency and reasonableness, and the results appear to be reasonably representative of the material tested. However, DBS&A does not assume any responsibility for interpretations or analyses based on the data enclosed, nor can we guarantee that these data are fully representative of the undisturbed materials at the field site. We recommend that careful evaluation of these laboratory results be made for your particular application.

The testing utilized to generate the enclosed report employs methods that are standard for the industry. The results do not constitute a professional opinion by DBS&A, nor can the results affect any professional or expert opinions rendered with respect thereto by DBS&A. You have acknowledged that all the testing undertaken by us, and the report provided, constitutes mere test results using standardized methods, and cannot be used to disqualify DBS&A from rendering any professional or expert opinion, having waived any claim of conflict of interest by DBS&A.

We are pleased to provide this service to DBS&A and look forward to future laboratory testing on other projects. If you have any questions about the enclosed data, please do not hesitate to call.

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES, INC.
SOIL TESTING & RESEARCH LABORATORY

Joleen Hines
Laboratory Manager

Enclosure

Daniel B. Stephens & Associates, Inc.
Soil Testing & Research Laboratory
4400 Alameda Blvd. NE, Suite C 505-889-7752
Albuquerque, NM 87113 FAX 505-889-0258

Summaries

Summary of Tests Performed

Laboratory Sample Number	Initial Soil Properties[1]			Saturated Hydraulic Conductivity[2]			Moisture Characteristics[3]								Particle Size[4]			Specific Gravity[5]		Air Perm-eability	Atterberg Limits	Proctor Compaction
	G	VM	VD	CH	FH	FW	HC	PP	FP	DPP	RH	EP	WHC	K_{unsat}	DS	WS	H	F	C			
SB-11A (24'-25')	X	X		X												X	X				X	
SB-11 (34'-35')	X	X				X										X	X				X	
SB-11 (49'-50')	X	X				X										X	X				X	
SB-11 (59'-60')	X	X				X										X	X				X	
SB-16 (55.5')	X	X				X										X	X				X	
SB-17 (11'-12')	X	X		X												X	X				X	
SB-23 (25.5')	X	X				X										X	X				X	

[1] G = Gravimetric Moisture Content, VM = Volume Measurement Method, VD = Volume Displacement Method

[2] CH = Constant Head Rigid Wall, FH = Falling Head Rigid Wall, FW = Falling Head Rising Tail Flexible Wall

[3] HC = Hanging Column, PP = Pressure Plate, FP = Filter Paper, DPP = Dew Point Potentiometer, RH = Relative Humidity Box, EP = Effective Porosity, WHC = Water Holding Capacity, Kunsat = Calculated Unsaturated Hydraulic Conductivity

[4] DS = Dry Sieve, WS = Wet Sieve, H = Hydrometer

[5] F = Fine (<4.75mm), C = Coarse (>4.75mm)

Notes

Sample Receipt:
Seven samples were hand delivered on March 17, 2021. Each sample was delivered in an 11” length shelby tube sealed with endcaps and tape. The material filled approximately 6” to 9” in length with headspace filled with paper.

Sample Preparation and Testing Notes:
An intact sub-sample was obtained from the bottom of each tube by using a pipe cutter to remove an intact section from the original sample. Five of the sub-samples were extruded from the shelby tube and subjected to initial properties analysis and saturated hydraulic conductivity testing via the flexible wall method. Two of the samples were non-cohesive (SB-11A (24'-25') and SB-17 (11'-12')) and were instead subjected to saturated hydraulic conductivity via the rigid wall method and initial properties analysis.

Adjacent sample material was used for particle size analysis and Atterberg limits testing.

Porosity calculations, and the particle diameter calculations in the hydrometer portion of the particle size analysis testing, are based on the use of an assumed specific gravity value of 2.9.

Summary of Initial Moisture Content, Dry Bulk Density Wet Bulk Density and Calculated Porosity

Sample Number	Moisture Content: As Received Gravimetric (%, g/g)	Moisture Content: As Received Volumetric (%, cm^3/cm^3)	Moisture Content: Remolded Gravimetric (%, g/g)	Moisture Content: Remolded Volumetric (%, cm^3/cm^3)	Dry Bulk Density (g/cm^3)	Wet Bulk Density (g/cm^3)	Calculated Porosity (%)
SB-11A (24'-25')	20.3	31.5	---	---	1.55	1.87	46.5
SB-11 (34'-35')	33.0	44.6	---	---	1.35	1.80	53.5
SB-11 (49'-50')	39.0	51.0	---	---	1.31	1.82	54.9
SB-11 (59'-60')	31.0	42.6	---	---	1.37	1.80	52.7
SB-16 (55.5')	43.6	53.2	---	---	1.22	1.75	58.0
SB-17 (11'-12')	3.9	6.6	---	---	1.68	1.74	42.2
SB-23 (25.5')	18.4	32.3	---	---	1.76	2.08	39.3

NA = Not analyzed

--- = This sample was not remolded

Summary of Saturated Hydraulic Conductivity Tests

Sample Number	K_{sat} (cm/sec)	Oversize Corrected K_{sat} (cm/sec)	Method of Analysis: Constant Head Rigid Wall	Method of Analysis: Falling Head Flexible Wall
SB-11A (24'-25')	2.7E-04	NA	X	
SB-11 (34'-35')	1.5E-04	NA		X
SB-11 (49'-50')	2.3E-06	NA		X
SB-11 (59'-60')	9.6E-05	NA		X
SB-16 (55.5')	5.3E-07	NA		X
SB-17 (11'-12')	8.6E-03	NA	X	
SB-23 (25.5')	6.8E-06	NA		X

--- = Oversize correction is unnecessary since coarse fraction < 5% of composite mass
NR = Not requested
NA = Not applicable

Summary of Particle Size Characteristics

Sample Number	d_{10} (mm)	d_{50} (mm)	d_{60} (mm)	C_u	C_c	Method	ASTM Classification	USDA Classification
SB-11A (24'-25')	0.0031	0.036	0.085	27	0.11	WS/H	Sandy silt s(ML)	Loam
SB-11 (34'-35')	0.0048	0.023	0.063	13	0.10	WS/H	Sandy silt s(ML)	Silt Loam
SB-11 (49'-50')	0.0048	0.023	0.051	11	0.15	WS/H	Sandy lean clay s(CL)	Silt Loam
SB-11 (59'-60')	0.0014	0.043	0.058	41	0.98	WS/H	Sandy silt s(ML)	Loam
SB-16 (55.5')	0.0065	0.0088	0.014	2.2	0.59	WS/H	Silt with sand (ML)s	Silt Loam
SB-17 (11'-12')	0.040	0.39	0.54	14	3.1	WS/H	Silty sand (SM)	Loamy Sand †
SB-23 (25.5')	0.0049	0.058	0.12	24	0.076	WS/H	Sandy lean clay s(CL)	Sandy Loam

Est = Reported values for d_{10}, C_u, C_c, and soil classification are estimates, since extrapolation was required to obtain the d_{10} diameter

$$C_u = \frac{d_{60}}{d_{10}}$$

$$C_c = \frac{(d_{30})^2}{(d_{10})(d_{60})}$$

DS = Dry sieve

H = Hydrometer

WS = Wet sieve

† Greater than 10% of sample is coarse material

d_{50} = Median particle diameter

Percent Gravel, Sand, Silt and Clay*

Sample Number	% Gravel (>4.75mm)	% Sand (<4.75mm, >0.075mm)	% Silt (<0.075mm, >0.002mm)	% Clay (<0.002mm)
SB-11A (24'-25')	0.8	42.5	48.8	7.9
SB-11 (34'-35')	0.0	38.7	55.6	5.7
SB-11 (49'-50')	2.1	27.9	65.7	4.3
SB-11 (59'-60')	0.0	31.0	52.9	16.1
SB-16 (55.5')	0.0	24.5	68.8	6.7
SB-17 (11'-12')	10.1	77.2	10.4	2.4
SB-23 (25.5')	0.0	46.2	48.2	5.6

*USCS classification does not classify clay fraction based on particle size. USDA definition of clay (<0.002mm) used in this table.

Summary of Atterberg Tests

Sample Number	Liquid Limit	Plastic Limit	Plasticity Index	Classification
SB-11A (24'-25')	42	26	16	ML
SB-11 (34'-35')	46	29	17	ML
SB-11 (49'-50')	38	22	16	CL
SB-11 (59'-60')	37	25	12	ML
SB-16 (55.5')	47	28	19	ML
SB-17 (11'-12')	---	---	---	ML
SB-23 (25.5')	35	18	17	CL

--- = Soil requires visual-manual classification due to non-plasticity

Initial Properties

Summary of Initial Moisture Content, Dry Bulk Density Wet Bulk Density and Calculated Porosity

Sample Number	Moisture Content: As Received Gravimetric (%, g/g)	Moisture Content: As Received Volumetric (%, cm^3/cm^3)	Moisture Content: Remolded Gravimetric (%, g/g)	Moisture Content: Remolded Volumetric (%, cm^3/cm^3)	Dry Bulk Density (g/cm^3)	Wet Bulk Density (g/cm^3)	Calculated Porosity (%)
SB-11A (24'-25')	20.3	31.5	---	---	1.55	1.87	46.5
SB-11 (34'-35')	33.0	44.6	---	---	1.35	1.80	53.5
SB-11 (49'-50')	39.0	51.0	---	---	1.31	1.82	54.9
SB-11 (59'-60')	31.0	42.6	---	---	1.37	1.80	52.7
SB-16 (55.5')	43.6	53.2	---	---	1.22	1.75	58.0
SB-17 (11'-12')	3.9	6.6	---	---	1.68	1.74	42.2
SB-23 (25.5')	18.4	32.3	---	---	1.76	2.08	39.3

NA = Not analyzed

--- = This sample was not remolded

Data for Initial Moisture Content, Bulk Density, Porosity, and Percent Saturation

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-11A (24'-25')
Ring Number: NA
Date Received: 3/17/21

	As Received	Remolded
Test Date:	17-Mar-21	---
Field weight of sample* (g)*:*	556.33	
Tare weight, ring (g)*:*	143.46	
Tare weight, pan/plate (g)*:*	0.00	
Tare weight, other (g)*:*	0.00	
Dry weight of sample (g)*:*	343.22	
Sample volume (cm^3)*:*	221.19	
Assumed particle density (g/cm^3)*:*	2.90	
Gravimetric Moisture Content (% g/g)*:*	20.3	
Volumetric Moisture Content (% vol)*:*	31.5	
Dry bulk density (g/cm^3)*:*	1.55	
Wet bulk density (g/cm^3)*:*	1.87	
Calculated Porosity (% vol)*:*	46.5	
Percent Saturation:	67.7	

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Comments:

* Weight including tares
NA = Not applicable
--- = This sample was not remolded

Data for Initial Moisture Content, Bulk Density, Porosity, and Percent Saturation

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-11 (34'-35')
Ring Number: NA
Date Received: 3/17/21

	As Received	Remolded
Test Date:	17-Mar-21	---
Field weight of sample* (g)*:*	424.08	
Tare weight, ring (g)*:*	0.00	
Tare weight, pan/plate (g)*:*	0.00	
Tare weight, other (g)*:*	0.00	
Dry weight of sample (g)*:*	318.78	
Sample volume (cm^3)*:*	236.19	
Assumed particle density (g/cm^3)*:*	2.90	

Gravimetric Moisture Content (% g/g)*:*	33.0
Volumetric Moisture Content (% vol)*:*	44.6
Dry bulk density (g/cm^3)*:*	1.35
Wet bulk density (g/cm^3)*:*	1.80
Calculated Porosity (% vol)*:*	53.5
Percent Saturation:	83.4

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Comments:

* Weight including tares
NA = Not applicable
--- = This sample was not remolded

Data for Initial Moisture Content, Bulk Density, Porosity, and Percent Saturation

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-11 (49'-50')
Ring Number: NA
Date Received: 3/17/21

	As Received	Remolded
Test Date:	17-Mar-21	---
Field weight of sample* (g)*:*	428.42	
Tare weight, ring (g)*:*	0.00	
Tare weight, pan/plate (g)*:*	0.00	
Tare weight, other (g)*:*	0.00	
Dry weight of sample (g)*:*	308.32	
Sample volume (cm^3)*:*	235.68	
Assumed particle density (g/cm^3)*:*	2.90	
Gravimetric Moisture Content (% g/g)*:*	39.0	
Volumetric Moisture Content (% vol)*:*	51.0	
Dry bulk density (g/cm^3)*:*	1.31	
Wet bulk density (g/cm^3)*:*	1.82	
Calculated Porosity (% vol)*:*	54.9	
Percent Saturation:	92.8	

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Comments:

* Weight including tares
NA = Not applicable
--- = This sample was not remolded

Data for Initial Moisture Content, Bulk Density, Porosity, and Percent Saturation

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-11 (59'-60')
Ring Number: NA
Date Received: 3/17/21

	As Received	Remolded
Test Date:	17-Mar-21	---
Field weight of sample* (g)*:*	423.45	
Tare weight, ring (g)*:*	0.00	
Tare weight, pan/plate (g)*:*	0.00	
Tare weight, other (g)*:*	0.00	
Dry weight of sample (g)*:*	323.15	
Sample volume (cm^3)*:*	235.64	
Assumed particle density (g/cm^3)*:*	2.90	
Gravimetric Moisture Content (% g/g)*:*	31.0	
Volumetric Moisture Content (% vol)*:*	42.6	
Dry bulk density (g/cm^3)*:*	1.37	
Wet bulk density (g/cm^3)*:*	1.80	
Calculated Porosity (% vol)*:*	52.7	
Percent Saturation:	80.7	

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Comments:

* Weight including tares
NA = Not applicable
--- = This sample was not remolded

Data for Initial Moisture Content, Bulk Density, Porosity, and Percent Saturation

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-16 (55.5')
Ring Number: NA
Date Received: 3/17/21

	As Received	Remolded
Test Date:	17-Mar-21	---
Field weight of sample* (g)*:*	413.24	
Tare weight, ring (g)*:*	0.00	
Tare weight, pan/plate (g)*:*	0.00	
Tare weight, other (g)*:*	0.00	
Dry weight of sample (g)*:*	287.73	
Sample volume (cm^3)*:*	235.98	
Assumed particle density (g/cm^3)*:*	2.90	
Gravimetric Moisture Content (% g/g)*:*	43.6	
Volumetric Moisture Content (% vol)*:*	53.2	
Dry bulk density (g/cm^3)*:*	1.22	
Wet bulk density (g/cm^3)*:*	1.75	
Calculated Porosity (% vol)*:*	58.0	
Percent Saturation:	91.8	

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Comments:

* Weight including tares
NA = Not applicable
--- = This sample was not remolded

Data for Initial Moisture Content, Bulk Density, Porosity, and Percent Saturation

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-17 (11'-12')
Ring Number: NA
Date Received: 3/17/21

	As Received	Remolded
Test Date:	17-Mar-21	---
Field weight of sample* (g)*:*	767.22	
Tare weight, ring (g)*:*	207.39	
Tare weight, pan/plate (g)*:*	0.00	
Tare weight, other (g)*:*	0.00	
Dry weight of sample (g)*:*	538.67	
Sample volume (cm^3)*:*	321.35	
Assumed particle density (g/cm^3)*:*	2.90	
Gravimetric Moisture Content (% g/g)*:*	3.9	
Volumetric Moisture Content (% vol)*:*	6.6	
Dry bulk density (g/cm^3)*:*	1.68	
Wet bulk density (g/cm^3)*:*	1.74	
Calculated Porosity (% vol)*:*	42.2	
Percent Saturation:	15.6	

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Comments:

* Weight including tares
NA = Not applicable
--- = This sample was not remolded

Data for Initial Moisture Content, Bulk Density, Porosity, and Percent Saturation

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-23 (25.5')
Ring Number: NA
Date Received: 3/17/21

	As Received	Remolded
Test Date:	17-Mar-21	---
Field weight of sample* (g)*:*	490.60	
Tare weight, ring (g)*:*	0.00	
Tare weight, pan/plate (g)*:*	0.00	
Tare weight, other (g)*:*	0.00	
Dry weight of sample (g)*:*	414.43	
Sample volume (cm^3)*:*	235.52	
Assumed particle density (g/cm^3)*:*	2.90	
Gravimetric Moisture Content (% g/g)*:*	18.4	
Volumetric Moisture Content (% vol)*:*	32.3	
Dry bulk density (g/cm^3)*:*	1.76	
Wet bulk density (g/cm^3)*:*	2.08	
Calculated Porosity (% vol)*:*	39.3	
Percent Saturation:	82.2	

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Comments:

* Weight including tares
NA = Not applicable
--- = This sample was not remolded

Saturated Hydraulic Conductivity

Summary of Saturated Hydraulic Conductivity Tests

Sample Number	K_{sat} (cm/sec)	Oversize Corrected K_{sat} (cm/sec)	Method of Analysis: Constant Head Rigid Wall	Method of Analysis: Falling Head Flexible Wall
SB-11A (24'-25')	2.7E-04	NA	X	
SB-11 (34'-35')	1.5E-04	NA		X
SB-11 (49'-50')	2.3E-06	NA		X
SB-11 (59'-60')	9.6E-05	NA		X
SB-16 (55.5')	5.3E-07	NA		X
SB-17 (11'-12')	8.6E-03	NA	X	
SB-23 (25.5')	6.8E-06	NA		X

--- = Oversize correction is unnecessary since coarse fraction < 5% of composite mass
NR = Not requested
NA = Not applicable

Saturated Hydraulic Conductivity
Constant Head Method

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-11A (24'-25')
Ring Number: NA
Date Received: 3/17/21

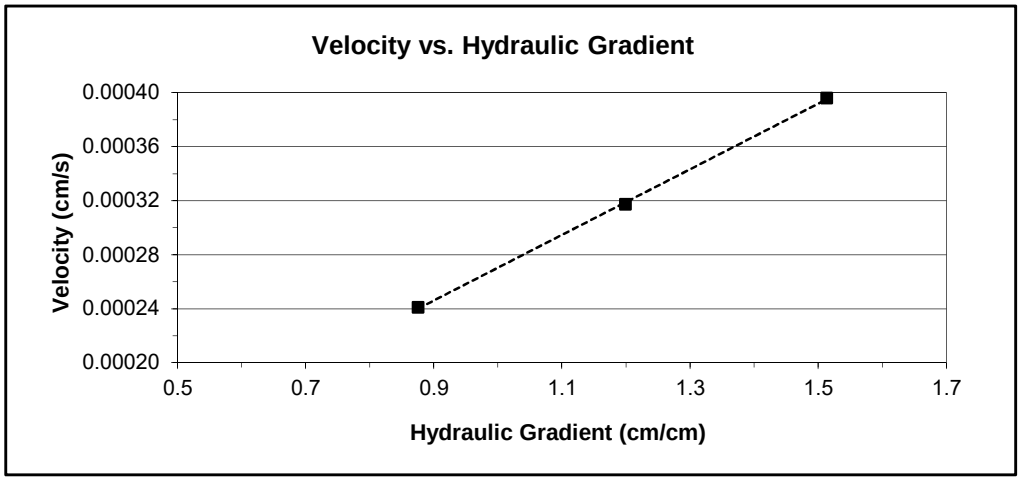
Type of water used: TAP
Collection vessel tare (g)*:* 51.04
Sample length (cm)*:* 5.25
Sample diameter (cm)*:* 7.32
Sample x-sectional area (cm^2)*:* 42.11

Date	Time	Temp (°C)	Head (cm)	Q + Tare (g)	Q (cm^3)	Elapsed time (sec)	Ksat (cm/sec)	Ksat @ 20°C (cm/sec)
Test # 1:								
19-Mar-21	12:25:30	20.0	7.95	57.04	6.0	360	2.6E-04	2.6E-04
19-Mar-21	12:31:30							
Test # 2:								
19-Mar-21	12:58:30	20.0	6.3	55.85	4.8	360	2.6E-04	2.7E-04
19-Mar-21	13:04:30							
Test # 3:								
19-Mar-21	13:13:30	20.0	4.6	54.52	3.5	343	2.8E-04	2.8E-04
19-Mar-21	13:19:13							

Average Ksat* (cm/sec)*: **2.7E-04**
Oversize Corrected Ksat* (cm/sec)*: **NA**

Comments:

--- = Oversize correction is unnecessary since coarse fraction < 5% of composite mass
NA = Not applicable



Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Saturated Hydraulic Conductivity
Flexible Wall Falling Head-Rising Tail Method

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-11 (34'-35')
Ring Number: NA
Date Received: 3/17/21

Remolded or Initial Sample Properties		Post Permeation Sample Properties		Test and Sample Conditions	
Initial Mass (g):	424.08	*Saturated Mass (g):*	441.36	*Permeant liquid used:*	Tap Water
Diameter (cm):	7.317	*Dry Mass (g):*	318.78	*Sample Preparation:*	☑ In situ sample, extruded
Length (cm):	5.617	*Diameter (cm):*	7.256		☐ Remolded Sample
Area (cm^2):	42.05	*Length (cm):*	5.596	*Number of Lifts:*	NA
Volume (cm^3):	236.19	*Deformation (%)**:*	0.38	*Split:*	NA
Dry Density (g/cm^3):	1.35	*Area (cm^2):*	41.35	*Percent Coarse Material (%):*	NA
Dry Density (pcf):	84.3	*Volume (cm^3):*	231.39	*Particle Density(g/cm^3):*	2.9 ☑ Assumed ☐ Measured
Water Content (%, g/g):	33.0	*Dry Density (g/cm^3):*	1.38	*Cell pressure (PSI):*	81.0
Water Content (%, vol):	44.6	*Dry Density (pcf):*	86.0	*Influent pressure (PSI):*	80.0
Void Ratio (e):	1.15	*Water Content (%, g/g):*	38.5	*Effluent pressure (PSI):*	80.0
Porosity (%, vol):	53.5	*Water Content (%, vol):*	53.0	*Panel Used:*	☑ D ☐ E ☐ F
Saturation (%):	83.4	*Void Ratio(e):*	1.11	*Reading:*	☐ Annulus ☑ Pipette
		Porosity (%, vol):	52.5		Date/Time
		Saturation (%):*	100.9	B-Value (% saturation) prior to test*:	0.99 3/21/21 1440
				B-Value (% saturation) post to test:	1.00 3/22/21 1000

* Per ASTM D5084 percent saturation is ensured (B-Value ≥ 95%) prior to testing, as post test saturation values may be exaggerated during depressurizing and sample removal.

**Percent Deformation: based on initial sample length and post permeation sample length.

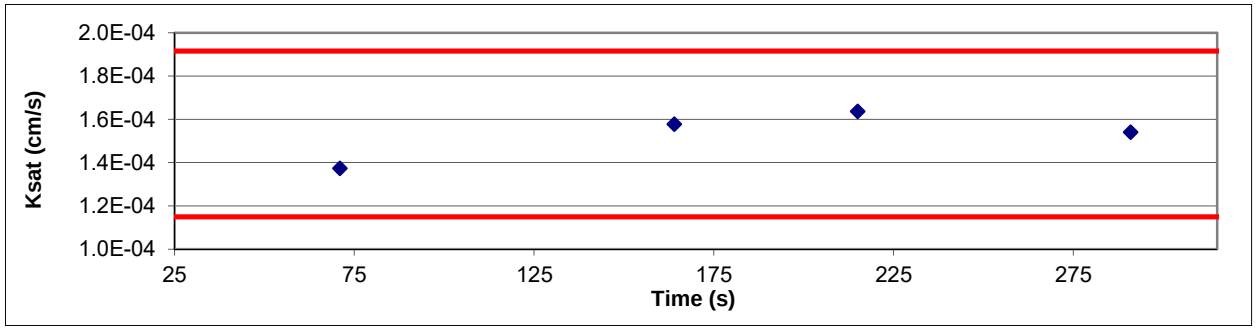
Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Saturated Hydraulic Conductivity
Flexible Wall Falling Head-Rising Tail Method

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-11 (34'-35')
Ring Number: NA
Date Received: 3/17/21

Date	Time	Temp (°C)	Influent Pipette Reading	Effluent Pipette Reading	Gradient (ΔH/ΔL)	Average Flow (cm^3)	Elapsed Time (s)	Ratio (outflow to inflow)	Change in Head (Not to exceed 25%)	k_{sat} T°C (cm/s)	k_{sat} Corrected (cm/s)
Test # 1:											
21-Mar-21	14:59:41	20.3	6.00	19.00	2.68	0.87	71	1.00	15%	1.38E-04	1.37E-04
21-Mar-21	15:00:52	20.3	7.00	18.00	2.27						
Test # 2:											
21-Mar-21	15:02:05	20.3	8.00	17.00	1.86	0.87	93	1.00	22%	1.59E-04	1.58E-04
21-Mar-21	15:03:38	20.3	9.00	16.00	1.44						
Test # 3:											
22-Mar-21	09:37:00	20.4	5.00	20.00	3.10	0.87	51	1.00	13%	1.65E-04	1.64E-04
22-Mar-21	09:37:51	20.4	6.00	19.00	2.68						
Test # 4:											
22-Mar-21	09:38:53	20.4	7.00	18.00	2.27	0.87	76	1.00	18%	1.55E-04	1.54E-04
22-Mar-21	09:40:09	20.4	8.00	17.00	1.86						

***Average Ksat* (cm/sec):** **1.53E-04**
Calculated Gravel Corrected Average Ksat (cm/sec): NA



ASTM Required Range (+/- 25%)

Ksat (-25%) (cm/s): 1.15E-04

Ksat (+25%) (cm/s): 1.91E-04

Saturated Hydraulic Conductivity
Flexible Wall Falling Head-Rising Tail Method

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-11 (49'-50')
Ring Number: NA
Date Received: 3/17/21

Remolded or Initial Sample Properties		Post Permeation Sample Properties		Test and Sample Conditions	
Initial Mass (g):	428.42	*Saturated Mass (g):*	440.38	*Permeant liquid used:*	Tap Water
Diameter (cm):	7.313	*Dry Mass (g):*	308.32	*Sample Preparation:*	☐ In situ sample, extruded
Length (cm):	5.611	*Diameter (cm):*	7.305		☑ Remolded Sample
Area (cm^2):	42.00	*Length (cm):*	5.604	*Number of Lifts:*	NA
Volume (cm^3):	235.68	*Deformation (%)**:*	0.12	*Split:*	NA
Dry Density (g/cm^3):	1.31	*Area (cm^2):*	41.91	*Percent Coarse Material (%):*	0.0
Dry Density (pcf):	81.7	*Volume (cm^3):*	234.88	*Particle Density(g/cm^3):*	2.9 ☑ Assumed ☐ Measured
Water Content (%, g/g):	39.0	*Dry Density (g/cm^3):*	1.31	*Cell pressure (PSI):*	81.0
Water Content (%, vol):	51.0	*Dry Density (pcf):*	81.9	*Influent pressure (PSI):*	80.0
Void Ratio (e):	1.22	*Water Content (%, g/g):*	42.8	*Effluent pressure (PSI):*	80.0
Porosity (%, vol):	54.9	*Water Content (%, vol):*	56.2	*Panel Used:*	☐ D ☑ E ☐ F
Saturation (%):	92.8	*Void Ratio(e):*	1.21	*Reading:*	☐ Annulus ☑ Pipette
		Porosity (%, vol):	54.7		Date/Time
		Saturation (%):*	102.7	B-Value (% saturation) prior to test*:	0.99 3/21/21 1440
				B-Value (% saturation) post to test:	1.00 3/22/21 1028

* Per ASTM D5084 percent saturation is ensured (B-Value ≥ 95%) prior to testing, as post test saturation values may be exaggerated during depressurizing and sample removal.

**Percent Deformation: based on initial sample length and post permeation sample length.

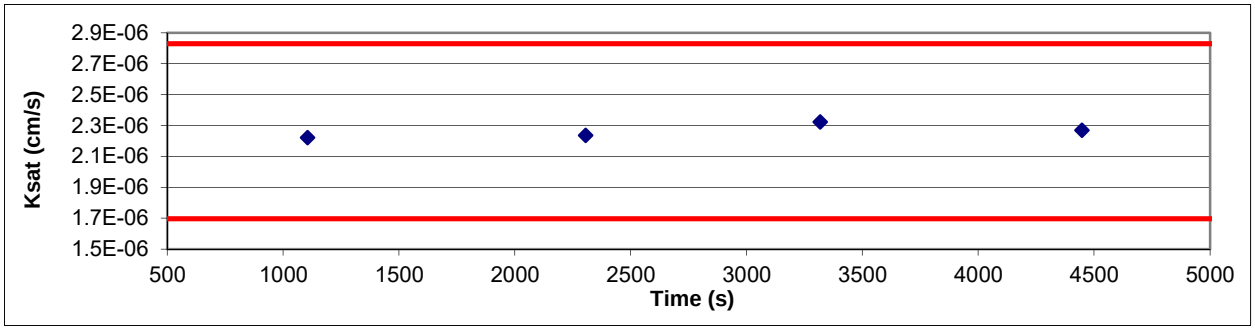
Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Saturated Hydraulic Conductivity
Flexible Wall Falling Head-Rising Tail Method

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-11 (49'-50')
Ring Number: NA
Date Received: 3/17/21

Date	Time	Temp (°C)	Influent Pipette Reading	Effluent Pipette Reading	Gradient (ΔH/ΔL)	Average Flow (cm^3)	Elapsed Time (s)	Ratio (outflow to inflow)	Change in Head (Not to exceed 25%)	k_{sat} T°C (cm/s)	k_{sat} Corrected (cm/s)
Test # 1:											
21-Mar-21	15:12:15	20.3	3.40	22.60	3.96	0.35	1105	1.00	4%	2.24E-06	2.22E-06
21-Mar-21	15:30:40	20.3	3.80	22.20	3.79						
Test # 2:											
21-Mar-21	15:50:15	20.3	4.20	21.80	3.63	0.35	1200	1.00	5%	2.25E-06	2.24E-06
21-Mar-21	16:10:15	20.3	4.60	21.40	3.46						
Test # 3:											
22-Mar-21	09:32:30	20.4	3.00	23.00	4.12	0.35	1013	1.00	4%	2.34E-06	2.32E-06
22-Mar-21	09:49:23	20.4	3.40	22.60	3.96						
Test # 4:											
22-Mar-21	10:07:05	20.4	3.80	22.20	3.79	0.35	1129	1.00	4%	2.29E-06	2.27E-06
22-Mar-21	10:25:54	20.4	4.20	21.80	3.63						

***Average Ksat* (cm/sec):** **2.26E-06**
Calculated Gravel Corrected Average Ksat (cm/sec): NA



ASTM Required Range (+/- 25%)

Ksat (-25%) (cm/s): 1.70E-06

Ksat (+25%) (cm/s): 2.83E-06

Saturated Hydraulic Conductivity
Flexible Wall Falling Head-Rising Tail Method

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-11 (59'-60')
Ring Number: NA
Date Received: 3/17/21

Remolded or Initial Sample Properties		Post Permeation Sample Properties		Test and Sample Conditions	
Initial Mass (g):	423.45	*Saturated Mass (g):*	459.44	*Permeant liquid used:*	Tap Water
Diameter (cm):	7.317	*Dry Mass (g):*	323.15	*Sample Preparation:*	☐ In situ sample, extruded
Length (cm):	5.604	*Diameter (cm):*	7.300		☑ Remolded Sample
Area (cm^2):	42.05	*Length (cm):*	5.596	*Number of Lifts:*	NA
Volume (cm^3):	235.64	*Deformation (%)**:*	0.14	*Split:*	NA
Dry Density (g/cm^3):	1.37	*Area (cm^2):*	41.85	*Percent Coarse Material (%):*	0.0
Dry Density (pcf):	85.6	*Volume (cm^3):*	234.23	*Particle Density(g/cm^3):*	2.9 ☑ Assumed ☐ Measured
Water Content (%, g/g):	31.0	*Dry Density (g/cm^3):*	1.38	*Cell pressure (PSI):*	81.0
Water Content (%, vol):	42.6	*Dry Density (pcf):*	86.1	*Influent pressure (PSI):*	80.0
Void Ratio (e):	1.11	*Water Content (%, g/g):*	42.2	*Effluent pressure (PSI):*	80.0
Porosity (%, vol):	52.7	*Water Content (%, vol):*	58.2	*Panel Used:*	☐ D ☐ E ☑ F
Saturation (%):	80.7	*Void Ratio(e):*	1.10	*Reading:*	☐ Annulus ☑ Pipette
		Porosity (%, vol):	52.4		Date/Time
		Saturation (%):*	111.0	B-Value (% saturation) prior to test*:	0.99 3/21/21 1450
				B-Value (% saturation) post to test:	1.00 3/22/21 1020

* Per ASTM D5084 percent saturation is ensured (B-Value ≥ 95%) prior to testing, as post test saturation values may be exaggerated during depressurizing and sample removal.

**Percent Deformation: based on initial sample length and post permeation sample length.

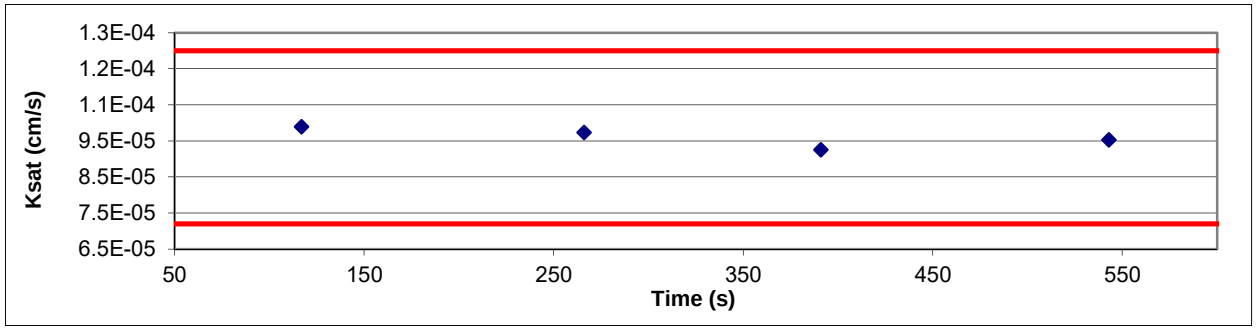
Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Saturated Hydraulic Conductivity
Flexible Wall Falling Head-Rising Tail Method

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-11 (59'-60')
Ring Number: NA
Date Received: 3/17/21

Date	Time	Temp (°C)	Influent Pipette Reading	Effluent Pipette Reading	Gradient (ΔH/ΔL)	Average Flow (cm^3)	Elapsed Time (s)	Ratio (outflow to inflow)	Change in Head (Not to exceed 25%)	k_{sat} T°C (cm/s)	k_{sat} Corrected (cm/s)
Test # 1:											
21-Mar-21	15:00:44	20.3	7.00	18.00	2.27	0.87	117	1.00	18%	9.96E-05	9.89E-05
21-Mar-21	15:02:41	20.3	8.00	17.00	1.86						
Test # 2:											
21-Mar-21	15:02:41	20.3	8.00	17.00	1.86	0.87	149	1.00	22%	9.80E-05	9.73E-05
21-Mar-21	15:05:10	20.3	9.00	16.00	1.44						
Test # 3:											
22-Mar-21	10:08:23	20.4	7.00	18.00	2.27	0.87	125	1.00	18%	9.33E-05	9.25E-05
22-Mar-21	10:10:28	20.4	8.00	17.00	1.86						
Test # 4:											
22-Mar-21	10:10:28	20.4	8.00	17.00	1.86	0.87	152	1.00	22%	9.61E-05	9.53E-05
22-Mar-21	10:13:00	20.4	9.00	16.00	1.44						

***Average Ksat* (cm/sec):** **9.60E-05**
Calculated Gravel Corrected Average Ksat (cm/sec): NA



ASTM Required Range (+/- 25%)

Ksat (-25%) (cm/s): 7.20E-05

Ksat (+25%) (cm/s): 1.20E-04

Saturated Hydraulic Conductivity
Flexible Wall Falling Head-Rising Tail Method

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-16 (55.5')
Ring Number: NA
Date Received: 3/17/21

Remolded or Initial Sample Properties		Post Permeation Sample Properties		Test and Sample Conditions	
Initial Mass (g):	413.24	*Saturated Mass (g):*	421.93	*Permeant liquid used:*	Tap Water
Diameter (cm):	7.319	*Dry Mass (g):*	287.73	*Sample Preparation:*	☑ In situ sample, extruded
Length (cm):	5.609	*Diameter (cm):*	7.335		☐ Remolded Sample
Area (cm^2):	42.07	*Length (cm):*	5.599	*Number of Lifts:*	NA
Volume (cm^3):	235.98	*Deformation (%)**:*	0.18	*Split:*	NA
Dry Density (g/cm^3):	1.22	*Area (cm^2):*	42.26	*Percent Coarse Material (%):*	0.0
Dry Density (pcf):	76.1	*Volume (cm^3):*	236.58	*Particle Density(g/cm^3):*	2.9 ☑ Assumed ☐ Measured
Water Content (%, g/g):	43.6	*Dry Density (g/cm^3):*	1.22	*Cell pressure (PSI):*	81.0
Water Content (%, vol):	53.2	*Dry Density (pcf):*	75.9	*Influent pressure (PSI):*	80.1
Void Ratio (e):	1.38	*Water Content (%, g/g):*	46.6	*Effluent pressure (PSI):*	79.9
Porosity (%, vol):	58.0	*Water Content (%, vol):*	56.7	*Panel Used:*	☑ O ☐ P ☐ Q
Saturation (%):	91.8	*Void Ratio(e):*	1.38	*Reading:*	☐ Annulus ☑ Pipette
		Porosity (%, vol):	58.1		Date/Time
		Saturation (%):*	97.7	B-Value (% saturation) prior to test*:	0.98 3/21/21 1442
				B-Value (% saturation) post to test:	1.00 3/22/21 1035

* Per ASTM D5084 percent saturation is ensured (B-Value ≥ 95%) prior to testing, as post test saturation values may be exaggerated during depressurizing and sample removal.

**Percent Deformation: based on initial sample length and post permeation sample length.

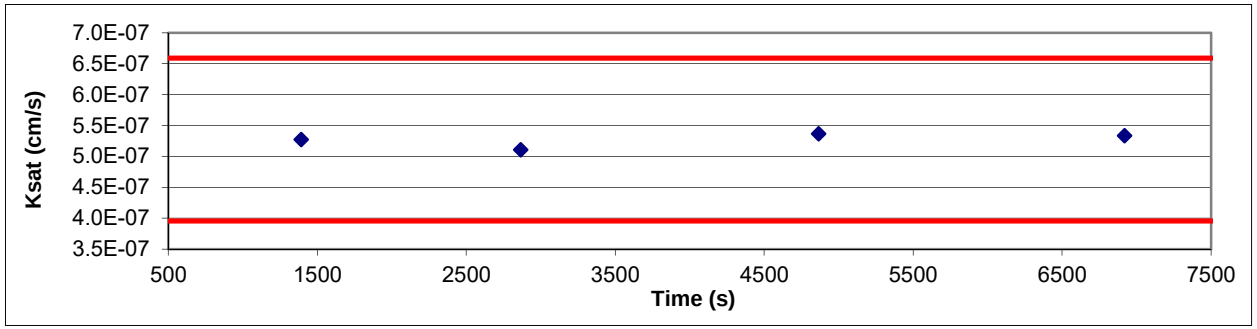
Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Saturated Hydraulic Conductivity
Flexible Wall Falling Head-Rising Tail Method

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-16 (55.5')
Ring Number: NA
Date Received: 3/17/21

Date	Time	Temp (°C)	Influent Pipette Reading	Effluent Pipette Reading	Gradient (ΔH/ΔL)	Average Flow (cm^3)	Elapsed Time (s)	Ratio (outflow to inflow)	Change in Head (Not to exceed 25%)	k_{sat} T°C (cm/s)	k_{sat} Corrected (cm/s)
Test # 1:											
21-Mar-21	15:37:50	20.3	3.40	22.60	6.47	0.17	1391	1.00	1%	5.31E-07	5.27E-07
21-Mar-21	16:01:01	20.3	3.60	22.40	6.39						
Test # 2:											
21-Mar-21	16:23:18	20.3	3.80	22.20	6.31	0.17	1474	1.00	1%	5.14E-07	5.11E-07
21-Mar-21	16:47:52	20.3	4.00	22.00	6.23						
Test # 3:											
22-Mar-21	09:24:00	20.4	3.00	23.00	6.64	0.26	2002	1.00	2%	5.41E-07	5.37E-07
22-Mar-21	09:57:22	20.4	3.30	22.70	6.51						
Test # 4:											
22-Mar-21	09:57:22	20.4	3.30	22.70	6.51	0.26	2053	1.00	2%	5.38E-07	5.33E-07
22-Mar-21	10:31:35	20.4	3.60	22.40	6.39						

***Average Ksat* (cm/sec):** **5.27E-07**
Calculated Gravel Corrected Average Ksat (cm/sec): NA



ASTM Required Range (+/- 25%)

Ksat (-25%) (cm/s): 3.95E-07

Ksat (+25%) (cm/s): 6.59E-07

Saturated Hydraulic Conductivity
Constant Head Method

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-17 (11'-12')
Ring Number: NA
Date Received: 3/17/21

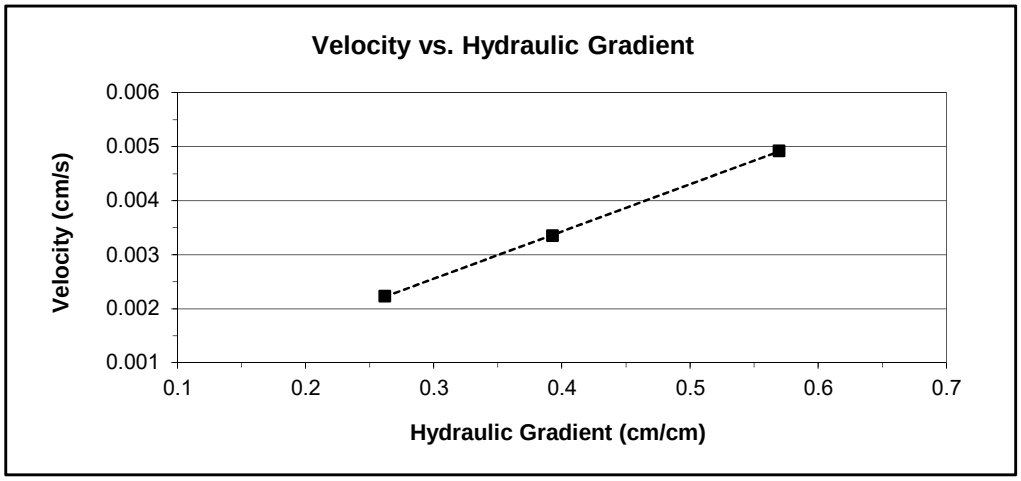
Type of water used: TAP
Collection vessel tare (g)*:* 51.20
Sample length (cm)*:* 7.64
Sample diameter (cm)*:* 7.32
Sample x-sectional area (cm^2)*:* 42.07

Date	Time	Temp (°C)	Head (cm)	Q + Tare (g)	Q (cm^3)	Elapsed time (sec)	Ksat (cm/sec)	Ksat @ 20°C (cm/sec)
Test # 1:								
19-Mar-21	12:27:30	20.0	4.35	76.03	24.8	120	8.6E-03	8.7E-03
19-Mar-21	12:29:30							
Test # 2:								
19-Mar-21	13:00:30	20.0	3	68.13	16.9	120	8.5E-03	8.6E-03
19-Mar-21	13:02:30							
Test # 3:								
19-Mar-21	13:15:30	20.0	2	62.45	11.3	120	8.5E-03	8.5E-03
19-Mar-21	13:17:30							

Average Ksat* (cm/sec)*: **8.6E-03**
Oversize Corrected Ksat* (cm/sec)*: **NA**

Comments:

--- = Oversize correction is unnecessary since coarse fraction < 5% of composite mass
NA = Not applicable



Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Saturated Hydraulic Conductivity
Flexible Wall Falling Head-Rising Tail Method

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-23 (25.5')
Ring Number: NA
Date Received: 3/17/21

Remolded or Initial Sample Properties		Post Permeation Sample Properties		Test and Sample Conditions	
Initial Mass (g):	490.60	*Saturated Mass (g):*	512.36	*Permeant liquid used:*	Tap Water
Diameter (cm):	7.317	*Dry Mass (g):*	414.43	*Sample Preparation:*	☑ In situ sample, extruded
Length (cm):	5.601	*Diameter (cm):*	7.413		☐ Remolded Sample
Area (cm^2):	42.05	*Length (cm):*	5.592	*Number of Lifts:*	NA
Volume (cm^3):	235.52	*Deformation (%)**:*	0.17	*Split:*	NA
Dry Density (g/cm^3):	1.76	*Area (cm^2):*	43.16	*Percent Coarse Material (%):*	0.0
Dry Density (pcf):	109.9	*Volume (cm^3):*	241.33	*Particle Density(g/cm^3):*	2.9 ☑ Assumed ☐ Measured
Water Content (%, g/g):	18.4	*Dry Density (g/cm^3):*	1.72	*Cell pressure (PSI):*	81.0
Water Content (%, vol):	32.3	*Dry Density (pcf):*	107.2	*Influent pressure (PSI):*	80.0
Void Ratio (e):	0.65	*Water Content (%, g/g):*	23.6	*Effluent pressure (PSI):*	80.0
Porosity (%, vol):	39.3	*Water Content (%, vol):*	40.6	*Panel Used:*	☐ O ☑ P ☐ Q
Saturation (%):	82.2	*Void Ratio(e):*	0.69	*Reading:*	☐ Annulus ☑ Pipette
		Porosity (%, vol):	40.8		Date/Time
		Saturation (%):*	99.5	B-Value (% saturation) prior to test*:	0.98 3/21/21 1453
				B-Value (% saturation) post to test:	1.00 3/22/21 1055

* Per ASTM D5084 percent saturation is ensured (B-Value ≥ 95%) prior to testing, as post test saturation values may be exaggerated during depressurizing and sample removal.

**Percent Deformation: based on initial sample length and post permeation sample length.

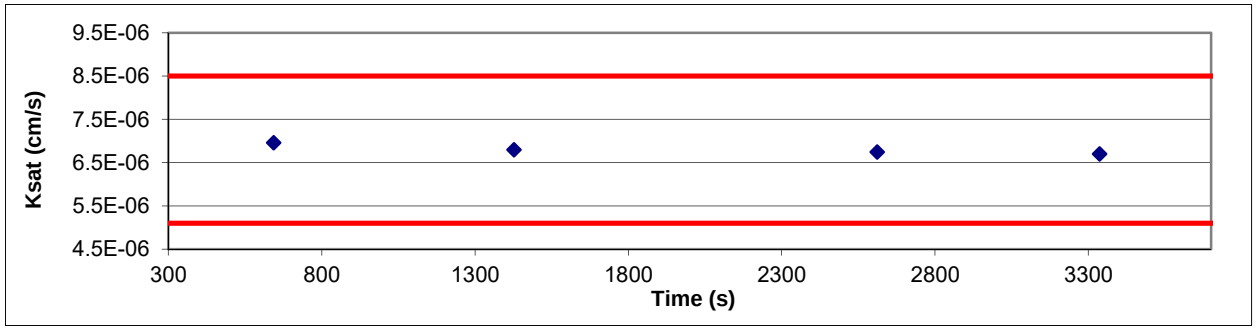
Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Saturated Hydraulic Conductivity
Flexible Wall Falling Head-Rising Tail Method

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-23 (25.5')
Ring Number: NA
Date Received: 3/17/21

Date	Time	Temp (°C)	Influent Pipette Reading	Effluent Pipette Reading	Gradient (ΔH/ΔL)	Average Flow (cm^3)	Elapsed Time (s)	Ratio (outflow to inflow)	Change in Head (Not to exceed 25%)	k_{sat} T°C (cm/s)	k_{sat} Corrected (cm/s)
Test # 1:											
21-Mar-21	15:29:47	20.3	6.00	19.00	2.68	0.43	643	1.00	8%	7.01E-06	6.96E-06
21-Mar-21	15:40:30	20.3	6.50	18.50	2.48						
Test # 2:											
21-Mar-21	15:52:20	20.3	7.00	18.00	2.27	0.43	784	1.00	9%	6.84E-06	6.80E-06
21-Mar-21	16:05:24	20.3	7.50	17.50	2.07						
Test # 3:											
22-Mar-21	10:09:30	20.4	5.00	20.00	3.10	0.87	1185	1.00	13%	6.80E-06	6.74E-06
22-Mar-21	10:29:15	20.4	6.00	19.00	2.68						
Test # 4:											
22-Mar-21	10:39:56	20.4	6.50	18.50	2.48	0.43	725	1.00	8%	6.76E-06	6.70E-06
22-Mar-21	10:52:01	20.4	7.00	18.00	2.27						

***Average Ksat* (cm/sec):** **6.80E-06**
Calculated Gravel Corrected Average Ksat (cm/sec): NA



ASTM Required Range (+/- 25%)

Ksat (-25%) (cm/s): 5.10E-06

Ksat (+25%) (cm/s): 8.50E-06

Particle Size Analysis

Summary of Particle Size Characteristics

Sample Number	d_{10} (mm)	d_{50} (mm)	d_{60} (mm)	C_u	C_c	Method	ASTM Classification	USDA Classification
SB-11A (24'-25')	0.0031	0.036	0.085	27	0.11	WS/H	Sandy silt s(ML)	Loam
SB-11 (34'-35')	0.0048	0.023	0.063	13	0.10	WS/H	Sandy silt s(ML)	Silt Loam
SB-11 (49'-50')	0.0048	0.023	0.051	11	0.15	WS/H	Sandy lean clay s(CL)	Silt Loam
SB-11 (59'-60')	0.0014	0.043	0.058	41	0.98	WS/H	Sandy silt s(ML)	Loam
SB-16 (55.5')	0.0065	0.0088	0.014	2.2	0.59	WS/H	Silt with sand (ML)s	Silt Loam
SB-17 (11'-12')	0.040	0.39	0.54	14	3.1	WS/H	Silty sand (SM)	Loamy Sand †
SB-23 (25.5')	0.0049	0.058	0.12	24	0.076	WS/H	Sandy lean clay s(CL)	Sandy Loam

Est = Reported values for d_{10}, C_u, C_c, and soil classification are estimates, since extrapolation was required to obtain the d_{10} diameter

$$C_u = \frac{d_{60}}{d_{10}}$$

$$C_c = \frac{(d_{30})^2}{(d_{10})(d_{60})}$$

DS = Dry sieve

H = Hydrometer

WS = Wet sieve

† Greater than 10% of sample is coarse material

d_{50} = Median particle diameter

Percent Gravel, Sand, Silt and Clay*

Sample Number	% Gravel (>4.75mm)	% Sand (<4.75mm, >0.075mm)	% Silt (<0.075mm, >0.002mm)	% Clay (<0.002mm)
SB-11A (24'-25')	0.8	42.5	48.8	7.9
SB-11 (34'-35')	0.0	38.7	55.6	5.7
SB-11 (49'-50')	2.1	27.9	65.7	4.3
SB-11 (59'-60')	0.0	31.0	52.9	16.1
SB-16 (55.5')	0.0	24.5	68.8	6.7
SB-17 (11'-12')	10.1	77.2	10.4	2.4
SB-23 (25.5')	0.0	46.2	48.2	5.6

*USCS classification does not classify clay fraction based on particle size. USDA definition of clay (<0.002mm) used in this table.

Particle Size Analysis
Sieve Data (#10 Split)

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-11A (24'-25')
Ring Number: NA
Date Received: 3/17/21
Test Date: 25-Mar-21

Initial Dry Weight of Sample (g): 212.66
Weight Passing #10 (g): 210.94
Weight Retained #10 (g): 1.72
Weight of -10 Sub-Sample (g): 49.01
Calculated Weight of Sieve Sample (g): 49.41

Shape: Angular
Hardness: Soft

Test Fraction	Sieve Number	Diameter (mm)	Wt. Retained	Cum Wt. Retained	Wt. Passing	% Passing
+10						
	3"	75	0.00	0.00	212.66	100.00
	2"	50	0.00	0.00	212.66	100.00
	1.5"	38.1	0.00	0.00	212.66	100.00
	1"	25	0.00	0.00	212.66	100.00
	3/4"	19.0	0.00	0.00	212.66	100.00
	3/8"	9.5	1.30	1.30	211.36	99.39
	4	4.75	0.40	1.70	210.96	99.20
	10	2.00	0.02	1.72	210.94	99.19
-10			(Based on calculated sieve wt.)			
	20	0.85	1.15	1.55	47.86	96.86
	40	0.425	2.00	3.55	45.86	92.82
	60	0.250	3.47	7.02	42.39	85.79
	100	0.150	5.67	12.69	36.72	74.32
	140	0.106	4.29	16.98	32.43	65.63
	200	0.075	4.42	21.40	28.01	56.69
	dry pan		1.13	22.53	26.88	
	wet pan			26.88	0.00	

d_{10} (mm): 0.0031
d_{16} (mm): 0.0038
d_{30} (mm): 0.0053
d_{50} (mm): 0.036
d_{60} (mm): 0.085
d_{84} (mm): 0.23

Median Particle Diameter --d_{50} (mm): 0.036
Uniformity Coefficient, Cu --[d_{60}/d_{10}] (mm): 27
Coefficient of Curvature, Cc --[$(d_{30})^2/(d_{10}*d_{60})$] (mm): 0.11
Mean Particle Diameter --[$(d_{16}+d_{50}+d_{84})/3$] (mm): 0.090

Classification of fines: ML

ASTM Soil Classification: Sandy silt s(ML)
USDA Soil Classification: Loam

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Particle Size Analysis
Hydrometer Data

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-11A (24'-25')
Ring Number: NA
Date Received: 3/17/21
Test Date: 25-Mar-21
Start Time: 7:00

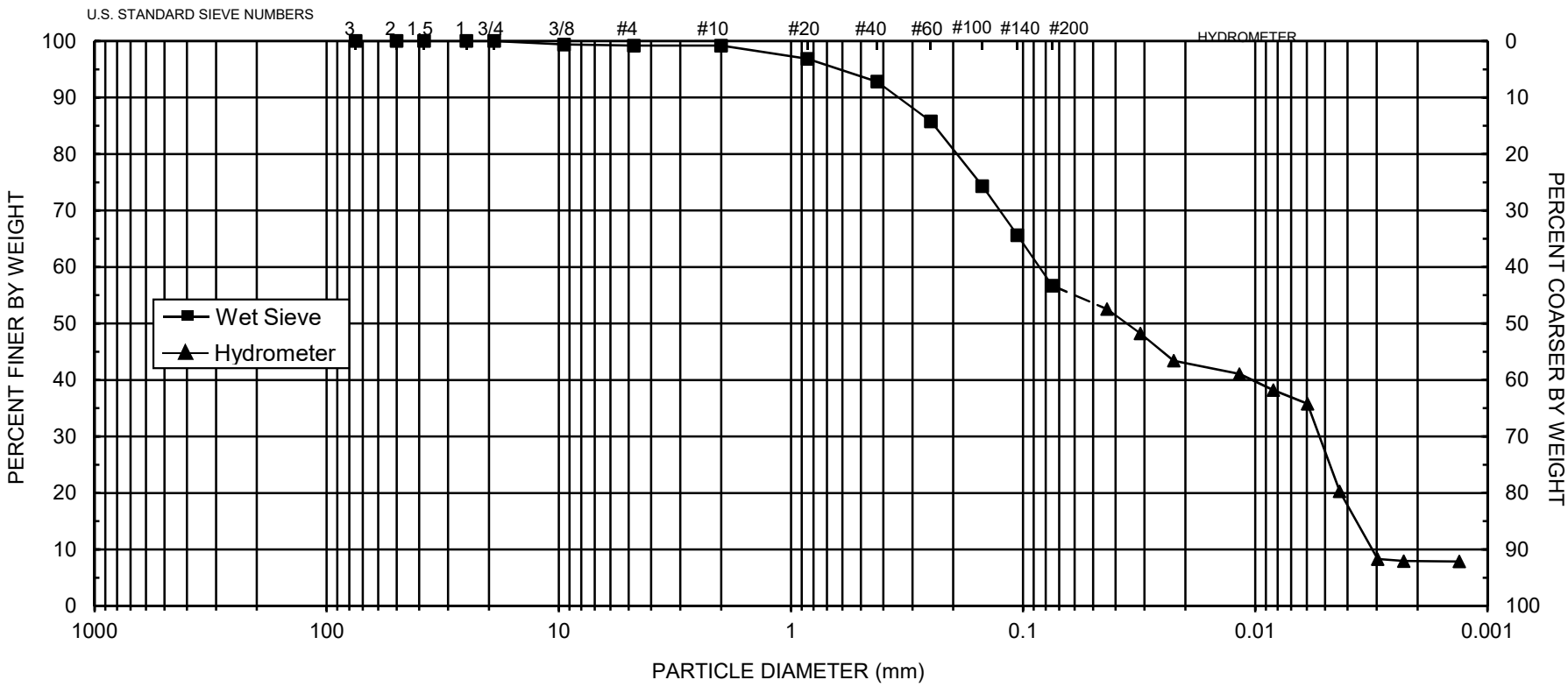
Type of Water Used: DISTILLED
Reaction with H_2O_2*:* NA
Dispersant:* $(NaPO_3)_6$
Assumed particle density: 2.90
Initial Wt. (g)*:* 49.01
Total Sample Wt. (g)*:* 212.66
Wt. Passing #10 (g)*:* 210.94

Date	Time (min)	Temp (°C)	R (g/L)	R_L (g/L)	R_{corr} (g/L)	H_m (cm)	D (mm)	P (%)	% Finer
25-Mar-21	1	19.9	32.75	5.42	27.3	12	0.0435	53	52.6
	2	19.9	30.50	5.42	25.1	12	0.0313	49	48.2
	4	19.9	28.00	5.42	22.6	13	0.0225	44	43.4
	15	19.9	26.75	5.40	21.3	13	0.0117	41	41.1
	30	20.0	25.25	5.39	19.9	13	0.0084	39	38.2
	60	20.0	24.00	5.39	18.6	13	0.0060	36	35.8
	125	19.8	16.00	5.44	10.6	15	0.0043	20	20.3
	285	19.8	9.75	5.44	4.3	16	0.0030	8	8.3
	480	20.0	9.50	5.37	4.1	16	0.0023	8	7.9
26-Mar-21	1440	19.9	9.50	5.40	4.1	16	0.0013	8	7.9

Comments:

* Dispersion device: mechanically operated stirring device

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines



UNIFIED	COBBLES	GRAVEL		SAND		SILT OR CLAY
		Coarse	Fine	Coarse	Medium	Fine
USDA	COBBLES	GRAVEL	SAND			SILT	CLAY
			Very coarse	Coarse	Medium	Fine	Very fine		

d_{10} = **0.0031**	d_{30} = **0.0053**	d_{50} = **0.036**	d_{60} = **0.085**	C_u = **27**	C_c = **0.11**

SAMPLE NUMBER	DATE RECEIVED	ASTM CLASSIFICATION	USDA CLASSIFICATION
SB-11A (24'-25')	**3/17/21**	**Sandy silt s(ML)**	**Loam**

Particle Size Analysis
Sieve Data (#10 Split)

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-11 (34'-35')
Ring Number: NA
Date Received: 3/17/21
Test Date: 18-Mar-21

Initial Dry Weight of Sample (g): 269.42
Weight Passing #10 (g): 269.42
Weight Retained #10 (g): 0.00
Weight of -10 Sub-Sample (g): 65.45
Calculated Weight of Sieve Sample (g): 65.45

Shape: Angular
Hardness: Soft

Test Fraction	Sieve Number	Diameter (mm)	Wt. Retained	Cum Wt. Retained	Wt. Passing	% Passing
+10						
	3"	75	0.00	0.00	269.42	100.00
	2"	50	0.00	0.00	269.42	100.00
	1.5"	38.1	0.00	0.00	269.42	100.00
	1"	25	0.00	0.00	269.42	100.00
	3/4"	19.0	0.00	0.00	269.42	100.00
	3/8"	9.5	0.00	0.00	269.42	100.00
	4	4.75	0.00	0.00	269.42	100.00
	10	2.00	0.00	0.00	269.42	100.00
-10			(Based on calculated sieve wt.)			
	20	0.85	1.35	1.35	64.10	97.94
	40	0.425	3.93	5.28	60.17	91.93
	60	0.250	6.00	11.28	54.17	82.77
	100	0.150	7.27	18.55	46.90	71.66
	140	0.106	3.93	22.48	42.97	65.65
	200	0.075	2.87	25.35	40.10	61.27
	dry pan		0.49	25.84	39.61	
	wet pan			39.61	0.00	

d_{10} (mm): 0.0048
d_{16} (mm): 0.0050
d_{30} (mm): 0.0056
d_{50} (mm): 0.023
d_{60} (mm): 0.063
d_{84} (mm): 0.27

Median Particle Diameter --d_{50} (mm): 0.023
Uniformity Coefficient, Cu --[d_{60}/d_{10}] (mm): 13
Coefficient of Curvature, Cc --[$(d_{30})^2/(d_{10}*d_{60})$] (mm): 0.10
Mean Particle Diameter --[$(d_{16}+d_{50}+d_{84})/3$] (mm): 0.099

Classification of fines: ML

ASTM Soil Classification: Sandy silt s(ML)
USDA Soil Classification: Silt Loam

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Particle Size Analysis
Hydrometer Data

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-11 (34'-35')
Ring Number: NA
Date Received: 3/17/21
Test Date: 22-Mar-21
Start Time: 8:48

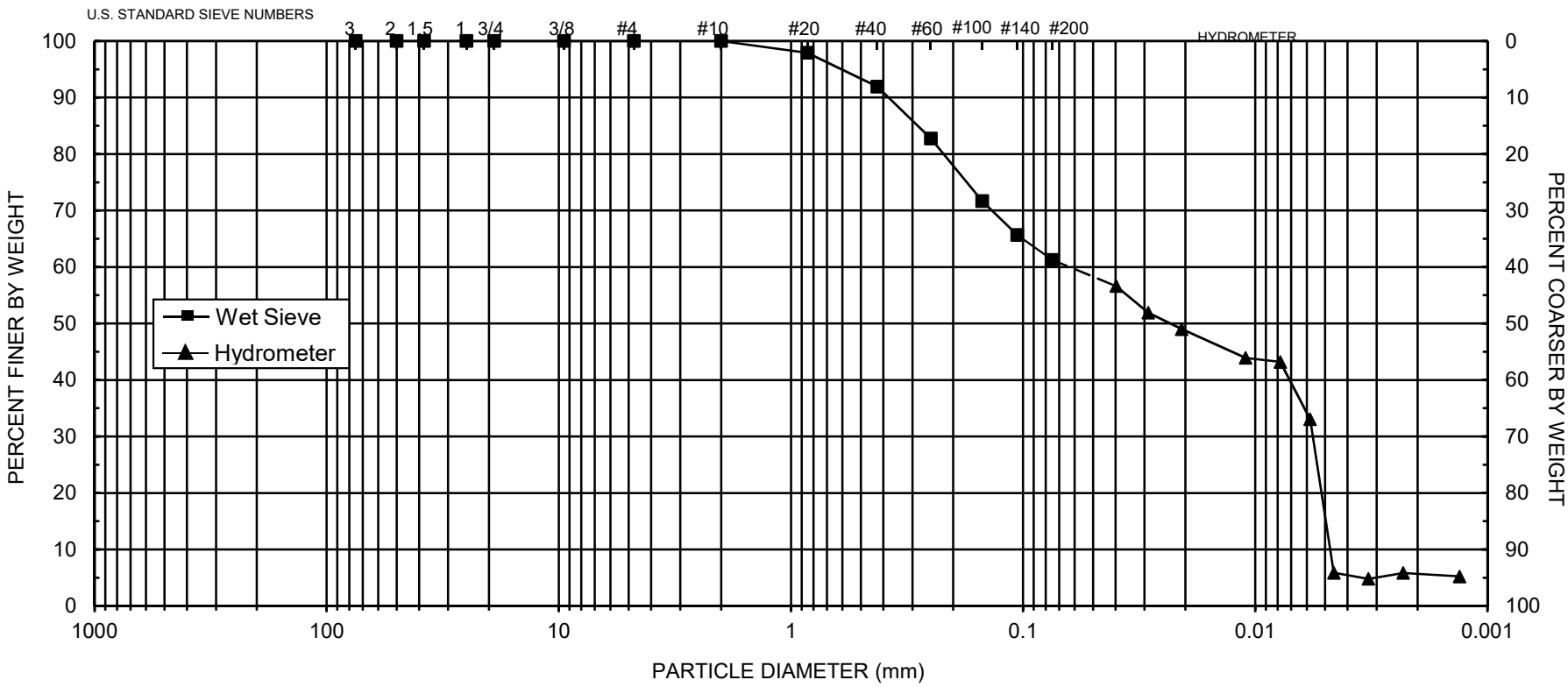
Type of Water Used: DISTILLED
Reaction with H_2O_2*:* NA
Dispersant:* $(NaPO_3)_6$
Assumed particle density: 2.90
Initial Wt. (g)*:* 65.45
Total Sample Wt. (g)*:* 269.42
Wt. Passing #10 (g)*:* 269.42

Date	Time (min)	Temp (°C)	R (g/L)	R_L (g/L)	R_{corr} (g/L)	H_m (cm)	D (mm)	P (%)	% Finer
22-Mar-21	1	20.4	44.25	5.25	39.0	10	0.0398	57	56.6
	2	20.4	41.00	5.25	35.7	10	0.0289	52	51.9
	4	20.4	39.00	5.25	33.7	11	0.0207	49	49.0
	15	20.4	35.50	5.25	30.2	11	0.0110	44	43.9
	30	20.4	35.00	5.25	29.7	11	0.0078	43	43.2
	60	20.4	28.00	5.24	22.8	13	0.0058	33	33.1
	120	20.5	9.25	5.20	4.0	16	0.0046	6	5.9
	240	20.6	8.50	5.19	3.3	16	0.0033	5	4.8
	477	21.2	9.00	4.98	4.0	16	0.0023	6	5.8
23-Mar-21	1457	19.9	9.00	5.40	3.6	16	0.0013	5	5.2

Comments:

* Dispersion device: mechanically operated stirring device

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines



UNIFIED	COBBLES	GRAVEL		SAND		SILT OR CLAY
		Coarse	Fine	Coarse	Medium	Fine
USDA	COBBLES	GRAVEL	SAND			SILT	CLAY
			Very coarse	Coarse	Medium	Fine	Very fine		

d_{10} = **0.0048**	d_{30} = **0.0056**	d_{50} = **0.023**	d_{60} = **0.063**	C_u = **13**	C_c = **0.10**

SAMPLE NUMBER	DATE RECEIVED	ASTM CLASSIFICATION	USDA CLASSIFICATION
SB-11 (34'-35')	**3/17/21**	**Sandy silt s(ML)**	**Silt Loam**

Particle Size Analysis
Sieve Data (#10 Split)

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-11 (49'-50')
Ring Number: NA
Date Received: 3/17/21
Test Date: 19-Mar-21

Initial Dry Weight of Sample (g): 307.27
Weight Passing #10 (g): 294.43
Weight Retained #10 (g): 12.84
Weight of -10 Sub-Sample (g): 52.53
Calculated Weight of Sieve Sample (g): 54.82

Shape: Angular
Hardness: Soft

Test Fraction	Sieve Number	Diameter (mm)	Wt. Retained	Cum Wt. Retained	Wt. Passing	% Passing
+10						
	3"	75	0.00	0.00	307.27	100.00
	2"	50	0.00	0.00	307.27	100.00
	1.5"	38.1	0.00	0.00	307.27	100.00
	1"	25	0.00	0.00	307.27	100.00
	3/4"	19.0	0.00	0.00	307.27	100.00
	3/8"	9.5	2.35	2.35	304.92	99.24
	4	4.75	4.11	6.46	300.81	97.90
	10	2.00	6.38	12.84	294.43	95.82
-10			(Based on calculated sieve wt.)			
	20	0.85	1.11	3.40	51.42	93.80
	40	0.425	1.33	4.73	50.09	91.37
	60	0.250	3.16	7.89	46.93	85.61
	100	0.150	4.01	11.90	42.92	78.29
	140	0.106	2.15	14.05	40.77	74.37
	200	0.075	2.40	16.45	38.37	69.99
	dry pan		0.95	17.40	37.42	
	wet pan			37.42	0.00	

d_{10} (mm): 0.0048
d_{16} (mm): 0.0052
d_{30} (mm): 0.0060
d_{50} (mm): 0.023
d_{60} (mm): 0.051
d_{84} (mm): 0.22

Median Particle Diameter --d_{50} (mm): 0.023
Uniformity Coefficient, Cu --$[d_{60}/d_{10}]$ (mm): 11
Coefficient of Curvature, Cc --$[(d_{30})^2/(d_{10}*d_{60})]$ (mm): 0.15
Mean Particle Diameter --$[(d_{16}+d_{50}+d_{84})/3]$ (mm): 0.083

Classification of fines: CL

ASTM Soil Classification: Sandy lean clay s(CL)
USDA Soil Classification: Silt Loam

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Particle Size Analysis
Hydrometer Data

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-11 (49'-50')
Ring Number: NA
Date Received: 3/17/21
Test Date: 22-Mar-21
Start Time: 8:42

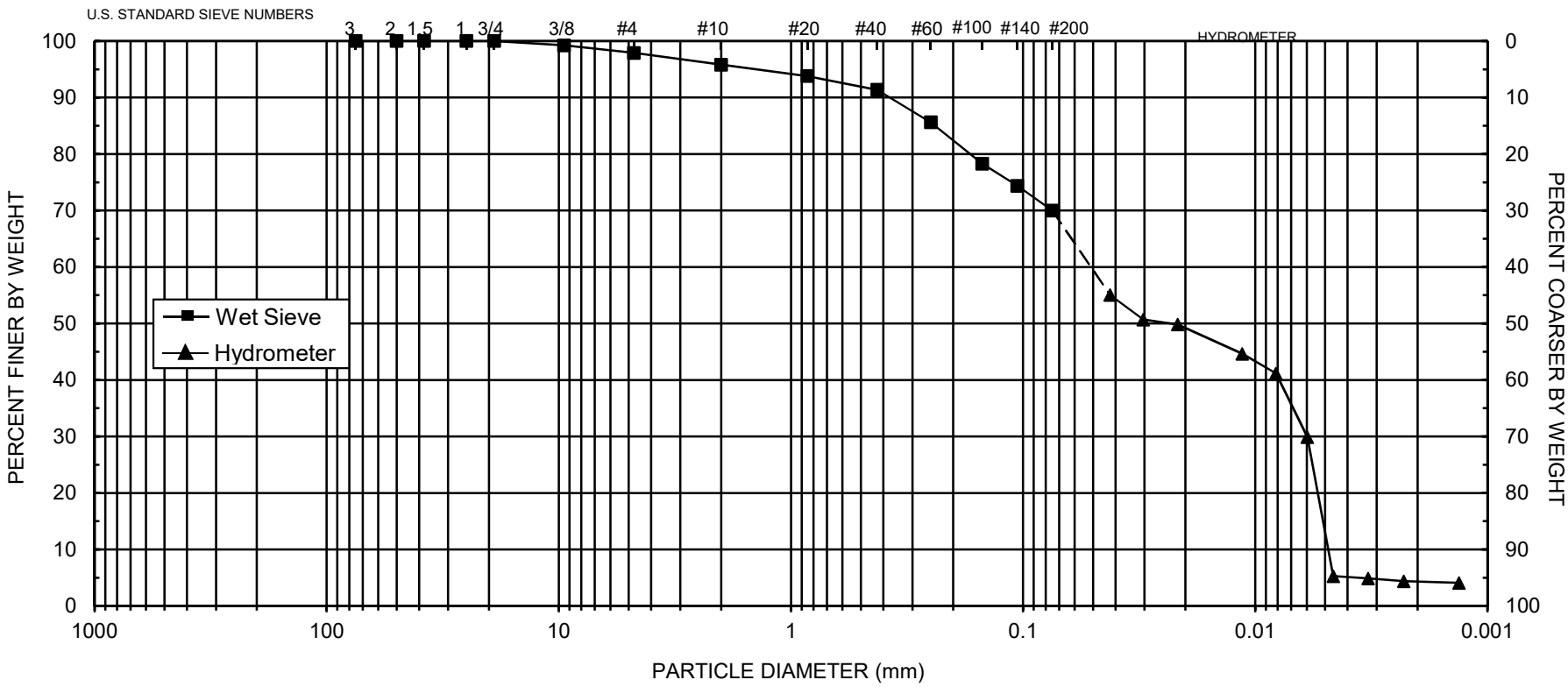
Type of Water Used: DISTILLED
Reaction with H_2O_2*:* NA
Dispersant:* $(NaPO_3)_6$
Assumed particle density: 2.90
Initial Wt. (g)*:* 52.53
Total Sample Wt. (g)*:* 307.27
Wt. Passing #10 (g)*:* 294.43

Date	Time (min)	Temp (°C)	R (g/L)	R_L (g/L)	R_{corr} (g/L)	H_m (cm)	D (mm)	P (%)	% Finer
22-Mar-21	1	20.4	37.00	5.25	31.7	11	0.0422	57	55.0
	2	20.4	34.50	5.25	29.2	11	0.0304	53	50.7
	4	20.4	34.00	5.25	28.7	12	0.0216	52	49.8
	15	20.4	31.00	5.25	25.7	12	0.0114	47	44.6
	30	20.4	29.00	5.25	23.7	12	0.0082	43	41.2
	61	20.4	22.50	5.25	17.2	13	0.0060	31	29.9
	120	20.5	8.25	5.20	3.0	16	0.0046	6	5.3
	240	20.6	8.00	5.19	2.8	16	0.0033	5	4.9
	489	21.2	7.50	4.98	2.5	16	0.0023	5	4.4
23-Mar-21	1462	19.9	7.75	5.40	2.3	16	0.0013	4	4.1

Comments:

* Dispersion device: mechanically operated stirring device

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines



UNIFIED	COBBLES	GRAVEL		SAND			SILT OR CLAY			
		Coarse	Fine	Coarse	Medium	Fine				
USDA	COBBLES	GRAVEL		SAND				SILT	CLAY	
				Very coarse	Coarse	Medium	Fine	Very fine		

d_{10} = **0.0048**	d_{30} = **0.0060**	d_{50} = **0.023**	d_{60} = **0.051**	C_u = **11**	C_c = **0.15**

SAMPLE NUMBER	DATE RECEIVED	ASTM CLASSIFICATION	USDA CLASSIFICATION
SB-11 (49'-50')	**3/17/21**	**Sandy lean clay s(CL)**	**Silt Loam**

Particle Size Analysis
Sieve Data (#10 Split)

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-11 (59'-60')
Ring Number: NA
Date Received: 3/17/21
Test Date: 18-Mar-21

Initial Dry Weight of Sample (g): 287.19
Weight Passing #10 (g): 287.16
Weight Retained #10 (g): 0.03
Weight of -10 Sub-Sample (g): 37.32
Calculated Weight of Sieve Sample (g): 37.32

Shape: Angular
Hardness: Soft

Test Fraction	Sieve Number	Diameter (mm)	Wt. Retained	Cum Wt. Retained	Wt. Passing	% Passing
+10						
	3"	75	0.00	0.00	287.19	100.00
	2"	50	0.00	0.00	287.19	100.00
	1.5"	38.1	0.00	0.00	287.19	100.00
	1"	25	0.00	0.00	287.19	100.00
	3/4"	19.0	0.00	0.00	287.19	100.00
	3/8"	9.5	0.00	0.00	287.19	100.00
	4	4.75	0.00	0.00	287.19	100.00
	10	2.00	0.03	0.03	287.16	99.99
-10			(Based on calculated sieve wt.)			
	20	0.85	0.23	0.23	37.09	99.37
	40	0.425	1.94	2.17	35.15	94.18
	60	0.250	2.63	4.80	32.52	87.13
	100	0.150	2.86	7.66	29.66	79.47
	140	0.106	1.87	9.53	27.79	74.46
	200	0.075	2.04	11.57	25.75	68.99
	dry pan		0.51	12.08	25.24	
	wet pan			25.24	0.00	

d_{10} (mm): 0.0014
d_{16} (mm): 0.0020
d_{30} (mm): 0.0089
d_{50} (mm): 0.043
d_{60} (mm): 0.058
d_{84} (mm): 0.20

Median Particle Diameter --d_{50} (mm): 0.043
Uniformity Coefficient, Cu --[d_{60}/d_{10}] (mm): 41
Coefficient of Curvature, Cc --[$(d_{30})^2/(d_{10}*d_{60})$] (mm): 0.98
Mean Particle Diameter --[$(d_{16}+d_{50}+d_{84})/3$] (mm): 0.082

Classification of fines: ML

ASTM Soil Classification: Sandy silt s(ML)
USDA Soil Classification: Loam

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Particle Size Analysis
Hydrometer Data

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-11 (59'-60')
Ring Number: NA
Date Received: 3/17/21
Test Date: 22-Mar-21
Start Time: 9:12

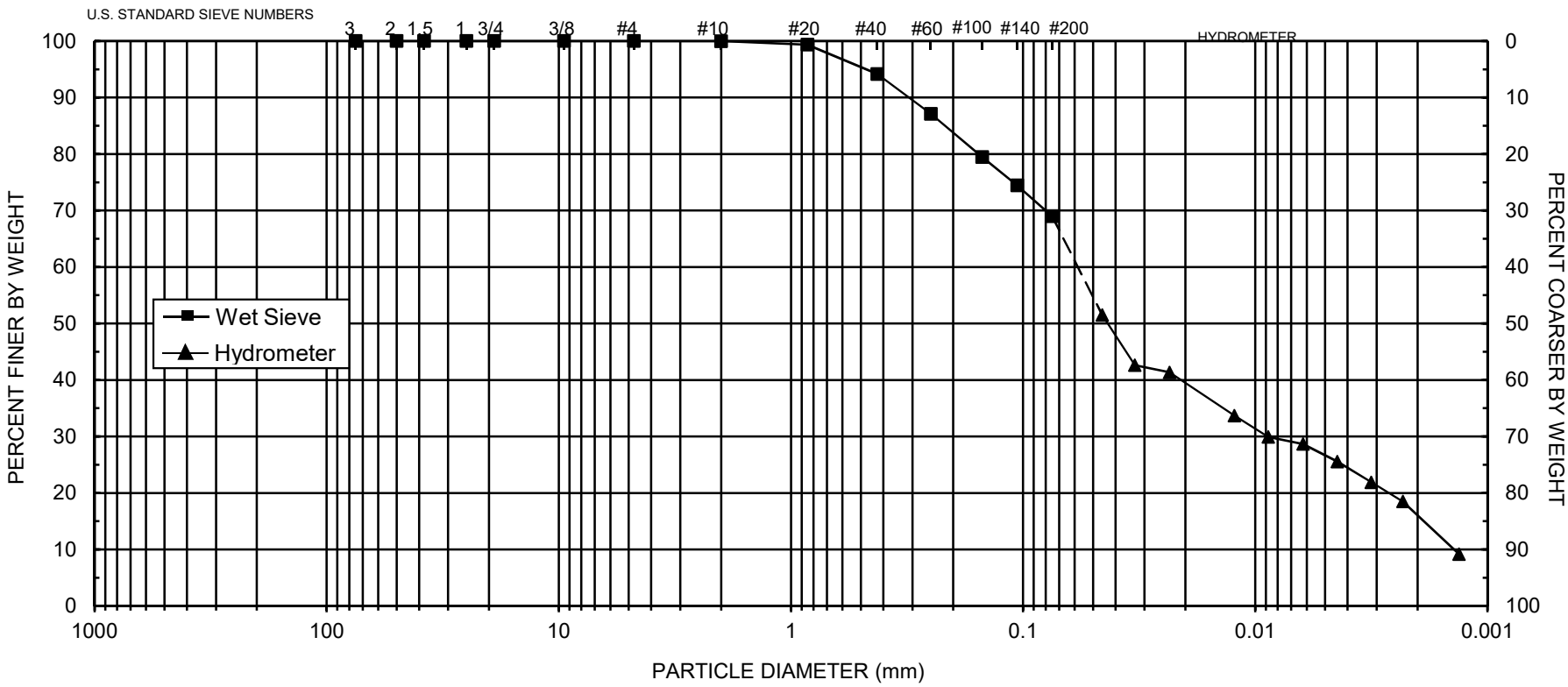
Type of Water Used: DISTILLED
Reaction with H_2O_2*:* NA
Dispersant:* $(NaPO_3)_6$
Assumed particle density: 2.90
Initial Wt. (g)*:* 37.32
Total Sample Wt. (g)*:* 287.19
Wt. Passing #10 (g)*:* 287.16

Date	Time (min)	Temp (°C)	R (g/L)	R_L (g/L)	R_{corr} (g/L)	H_m (cm)	D (mm)	P (%)	% Finer
22-Mar-21	1	20.4	25.50	5.25	20.2	13	0.0457	52	51.5
	2	20.4	22.00	5.25	16.7	14	0.0330	43	42.6
	4	20.4	21.50	5.25	16.2	14	0.0234	41	41.4
	15	20.4	18.50	5.25	13.2	14	0.0123	34	33.7
	30	20.4	17.00	5.25	11.7	14	0.0088	30	29.9
	60	20.4	16.50	5.24	11.3	14	0.0062	29	28.7
	120	20.5	15.25	5.20	10.0	15	0.0044	26	25.6
	240	20.7	13.75	5.15	8.6	15	0.0032	22	21.9
	456	21.2	12.25	4.98	7.3	15	0.0023	19	18.5
23-Mar-21	1439	20.0	9.00	5.39	3.6	16	0.0013	9	9.2

Comments:

* Dispersion device: mechanically operated stirring device

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines



UNIFIED	COBBLES	GRAVEL: Coarse, Fine	SAND: Coarse, Medium, Fine	SILT OR CLAY		
USDA	COBBLES	GRAVEL	SAND: Very coarse, Coarse, Medium, Fine, Very fine	SILT	CLAY	

d_{10} = **0.0014**	d_{30} = **0.0089**	d_{50} = **0.043**	d_{60} = **0.058**	C_u = **41**	C_c = **0.98**

SAMPLE NUMBER	DATE RECEIVED	ASTM CLASSIFICATION	USDA CLASSIFICATION
SB-11 (59'-60')	**3/17/21**	**Sandy silt s(ML)**	**Loam**

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Sieve Data (#10 Split)

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-16 (55.5')
Ring Number: NA
Date Received: 3/17/21
Test Date: 19-Mar-21

Initial Dry Weight of Sample (g): 228.98
Weight Passing #10 (g): 228.98
Weight Retained #10 (g): 0.00
Weight of -10 Sub-Sample (g): 45.66
Calculated Weight of Sieve Sample (g): 45.66

Shape: Angular
Hardness: Soft

Test Fraction	Sieve Number	Diameter (mm)	Wt. Retained	Cum Wt. Retained	Wt. Passing	% Passing
+10						
	3"	75	0.00	0.00	228.98	100.00
	2"	50	0.00	0.00	228.98	100.00
	1.5"	38.1	0.00	0.00	228.98	100.00
	1"	25	0.00	0.00	228.98	100.00
	3/4"	19.0	0.00	0.00	228.98	100.00
	3/8"	9.5	0.00	0.00	228.98	100.00
	4	4.75	0.00	0.00	228.98	100.00
	10	2.00	0.00	0.00	228.98	100.00
-10			(Based on calculated sieve wt.)			
	20	0.85	0.05	0.05	45.61	99.89
	40	0.425	0.55	0.60	45.06	98.69
	60	0.250	1.52	2.12	43.54	95.36
	100	0.150	3.76	5.88	39.78	87.12
	140	0.106	2.95	8.83	36.83	80.66
	200	0.075	2.35	11.18	34.48	75.51
	dry pan		0.47	11.65	34.01	
	wet pan			34.01	0.00	

d_{10} (mm): 0.0065
d_{16} (mm): 0.0067
d_{30} (mm): 0.0073
d_{50} (mm): 0.0088
d_{60} (mm): 0.014
d_{84} (mm): 0.13

Median Particle Diameter --d_{50} (mm): 0.0088
Uniformity Coefficient, Cu --[d_{60}/d_{10}] (mm): 2.2
Coefficient of Curvature, Cc --[$(d_{30})^2/(d_{10}*d_{60})$] (mm): 0.59
Mean Particle Diameter --[$(d_{16}+d_{50}+d_{84})/3$] (mm): 0.049

Classification of fines: ML

ASTM Soil Classification: Silt with sand (ML)s
USDA Soil Classification: Silt Loam

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Particle Size Analysis
Hydrometer Data

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-16 (55.5')
Ring Number: NA
Date Received: 3/17/21
Test Date: 22-Mar-21
Start Time: 8:54

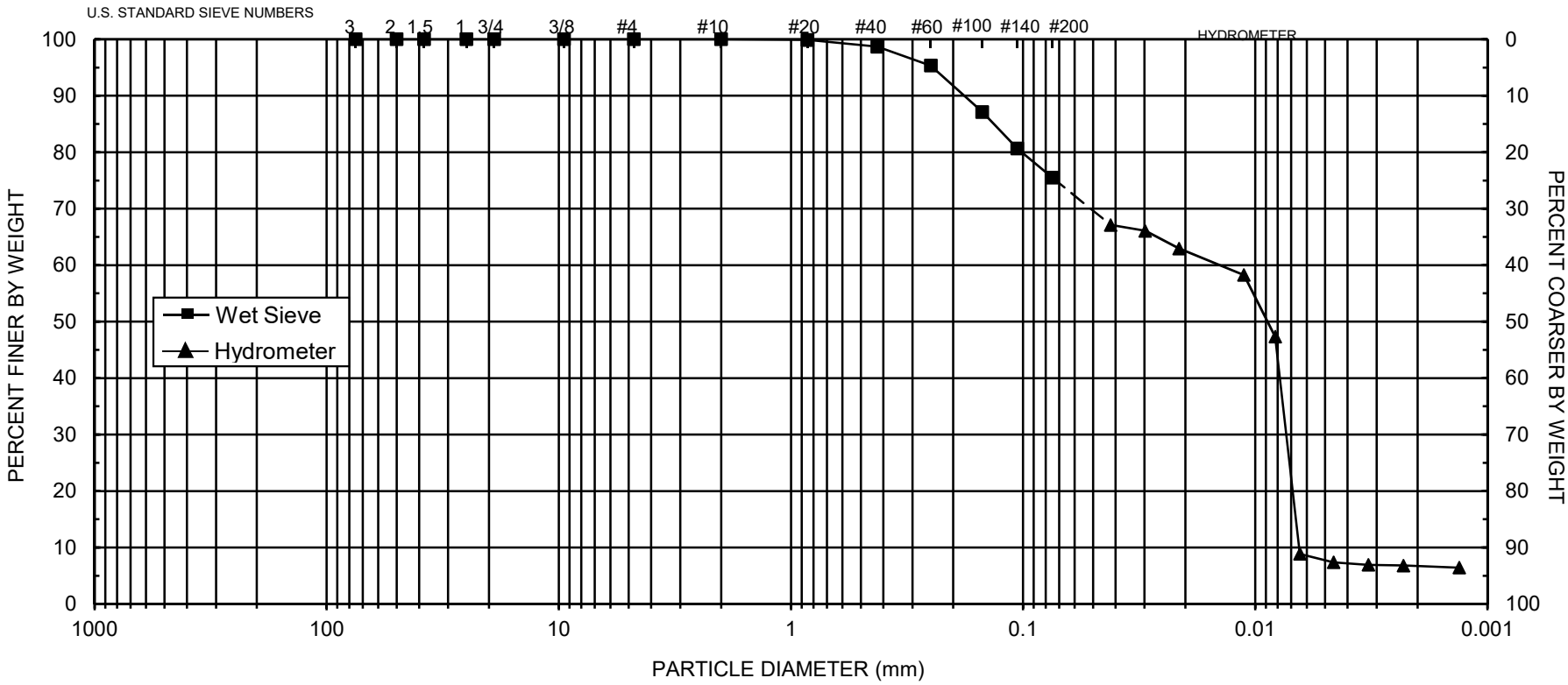
Type of Water Used: DISTILLED
Reaction with H_2O_2*:* na
Dispersant:* $(NaPO_3)_6$
Assumed particle density: 2.90
Initial Wt. (g)*:* 45.66
Total Sample Wt. (g)*:* 228.98
Wt. Passing #10 (g)*:* 228.98

Date	Time (min)	Temp (°C)	R (g/L)	R_L (g/L)	R_{corr} (g/L)	H_m (cm)	D (mm)	P (%)	% Finer
22-Mar-21	1	20.4	37.50	5.25	32.2	11	0.0420	67	67.1
	2	20.4	37.00	5.25	31.7	11	0.0298	66	66.1
	4	20.4	35.50	5.25	30.2	11	0.0213	63	62.9
	15	20.4	33.25	5.25	28.0	12	0.0112	58	58.3
	30	20.4	28.00	5.25	22.7	13	0.0082	47	47.3
	61	20.4	9.50	5.24	4.3	16	0.0064	9	8.9
	120	20.5	8.75	5.20	3.5	16	0.0046	7	7.4
	240	20.6	8.50	5.17	3.3	16	0.0033	7	6.9
	483	21.2	8.25	4.98	3.3	16	0.0023	7	6.8
23-Mar-21	1453	19.9	8.50	5.40	3.1	16	0.0013	6	6.4

Comments:

* Dispersion device: mechanically operated stirring device

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines



UNIFIED	COBBLES	GRAVEL		SAND		SILT OR CLAY
		Coarse	Fine	Coarse	Medium	Fine
USDA	COBBLES	GRAVEL	SAND			SILT	CLAY
			Very coarse	Coarse	Medium	Fine	Very fine		

d_{10} = **0.0065**	d_{30} = **0.0073**	d_{50} = **0.0088**	d_{60} = **0.014**	C_u = **2.2**	C_c = **0.59**

SAMPLE NUMBER	DATE RECEIVED	ASTM CLASSIFICATION	USDA CLASSIFICATION
SB-16 (55.5')	**3/17/21**	**Silt with sand (ML)s**	**Silt Loam**

Particle Size Analysis
Sieve Data (#10 Split)

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-17 (11'-12')
Ring Number: NA
Date Received: 3/17/21
Test Date: 19-Mar-21

Initial Dry Weight of Sample (g): 581.77
Weight Passing #10 (g): 456.19
Weight Retained #10 (g): 125.58
Weight of -10 Sub-Sample (g): 97.50
Calculated Weight of Sieve Sample (g): 124.34

Shape: Angular
Hardness: Soft

Test Fraction	Sieve Number	Diameter (mm)	Wt. Retained	Cum Wt. Retained	Wt. Passing	% Passing
+10						
	3"	75	0.00	0.00	581.77	100.00
	2"	50	0.00	0.00	581.77	100.00
	1.5"	38.1	0.00	0.00	581.77	100.00
	1"	25	0.00	0.00	581.77	100.00
	3/4"	19.0	0.00	0.00	581.77	100.00
	3/8"	9.5	8.14	8.14	573.63	98.60
	4	4.75	50.46	58.60	523.17	89.93
	10	2.00	66.98	125.58	456.19	78.41
-10			(Based on calculated sieve wt.)			
	20	0.85	10.07	36.91	87.43	70.32
	40	0.425	19.56	56.47	67.87	54.58
	60	0.250	33.62	90.09	34.25	27.55
	100	0.150	13.29	103.38	20.96	16.86
	140	0.106	3.27	106.65	17.69	14.23
	200	0.075	1.86	108.51	15.83	12.73
	dry pan		0.18	108.69	15.65	
	wet pan			15.65	0.00	

d_{10} (mm): 0.040
d_{16} (mm): 0.13
d_{30} (mm): 0.26
d_{50} (mm): 0.39
d_{60} (mm): 0.54
d_{84} (mm): 3.0

Median Particle Diameter --d_{50} (mm): 0.39
Uniformity Coefficient, Cu --[d_{60}/d_{10}] (mm): 14
Coefficient of Curvature, Cc --[$(d_{30})^2/(d_{10}*d_{60})$] (mm): 3.1
Mean Particle Diameter --[$(d_{16}+d_{50}+d_{84})/3$] (mm): 1.2

Classification of fines (visual method): ML

ASTM Soil Classification: Silty sand (SM)
USDA Soil Classification: Loamy Sand †

† Greater than 10% of sample is coarse material

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Particle Size Analysis
Hydrometer Data

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-17 (11'-12')
Ring Number: NA
Date Received: 3/17/21
Test Date: 22-Mar-21
Start Time: 8:36

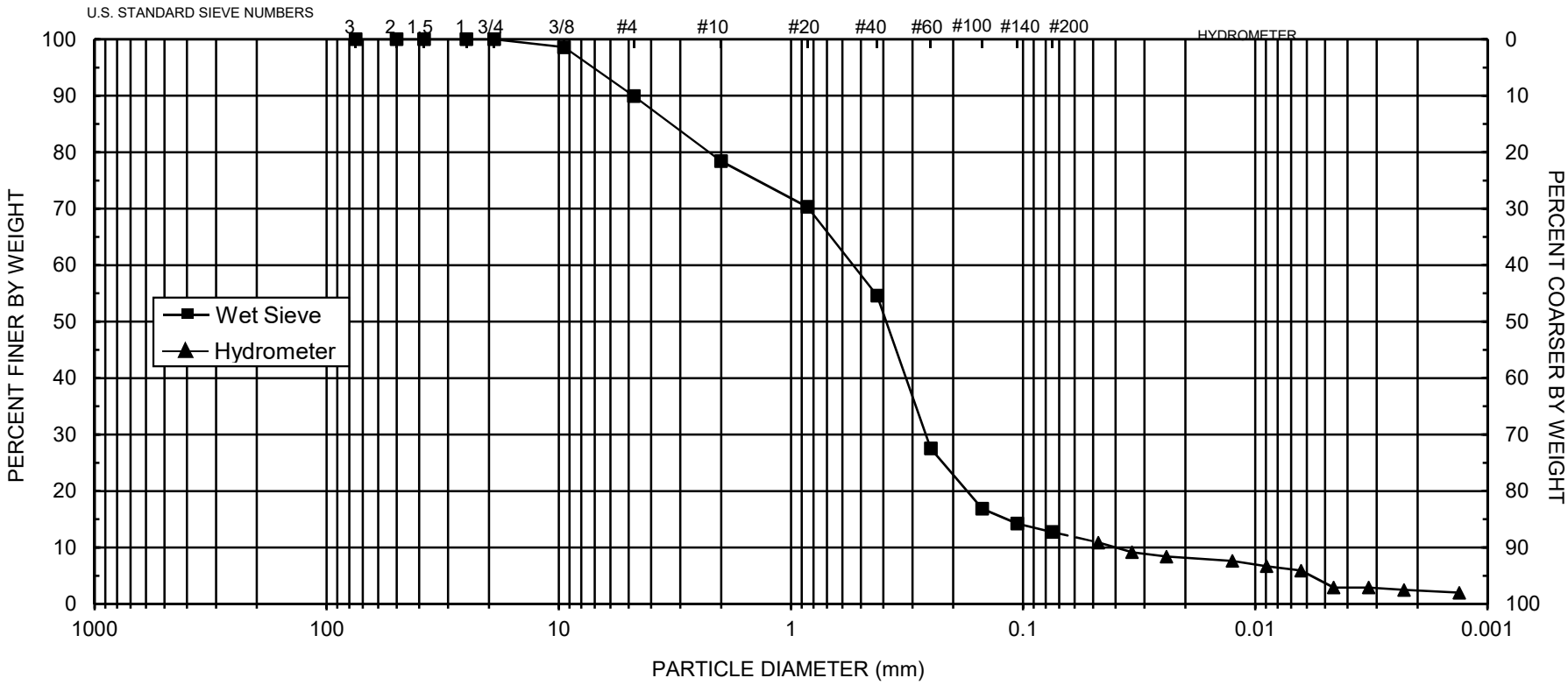
Type of Water Used: DISTILLED
Reaction with H_2O_2*:* NA
Dispersant:* $(NaPO_3)_6$
Assumed particle density: 2.90
Initial Wt. (g)*:* 97.50
Total Sample Wt. (g)*:* 581.77
Wt. Passing #10 (g)*:* 456.19

Date	Time (min)	Temp (°C)	R (g/L)	R_L (g/L)	R_{corr} (g/L)	H_m (cm)	D (mm)	P (%)	% Finer
22-Mar-21	1	20.3	19.50	5.27	14.2	14	0.0474	14	10.9
	2	20.4	17.25	5.25	12.0	14	0.0340	12	9.2
	4	20.4	16.25	5.25	11.0	14	0.0242	11	8.4
	15	20.4	15.25	5.25	10.0	15	0.0125	10	7.6
	30	20.4	14.00	5.25	8.7	15	0.0089	9	6.7
	60	20.4	13.00	5.25	7.7	15	0.0064	8	5.9
	120	20.5	9.00	5.20	3.8	16	0.0046	4	2.9
	240	20.6	9.00	5.19	3.8	16	0.0032	4	2.9
	487	21.2	8.25	4.98	3.3	16	0.0023	3	2.5
23-Mar-21	1466	19.9	8.00	5.40	2.6	16	0.0013	3	2.0

Comments:

* Dispersion device: mechanically operated stirring device

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines



UNIFIED	COBBLES	GRAVEL		SAND			SILT OR CLAY			
		Coarse	Fine	Coarse	Medium	Fine				
USDA	COBBLES	GRAVEL		SAND				SILT	CLAY	
				Very coarse	Coarse	Medium	Fine	Very fine		

d_{10} = **0.040**	d_{30} = **0.26**	d_{50} = **0.39**	d_{60} = **0.54**	C_u = **14**	C_c = **3.1**

SAMPLE NUMBER	DATE RECEIVED	ASTM CLASSIFICATION	USDA CLASSIFICATION
SB-17 (11'-12')	**3/17/21**	**Silty sand (SM)**	**Loamy Sand** †

† Greater than 10% of sample is coarse material

Daniel B. Stephens & Associates, Inc.

Particle Size Analysis
Sieve Data (#10 Split)

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-23 (25.5')
Ring Number: NA
Date Received: 3/17/21
Test Date: 19-Mar-21

Initial Dry Weight of Sample (g): 344.45
Weight Passing #10 (g): 344.45
Weight Retained #10 (g): 0.00
Weight of -10 Sub-Sample (g): 47.02
Calculated Weight of Sieve Sample (g): 47.02

Shape: Angular
Hardness: Soft

Test Fraction	Sieve Number	Diameter (mm)	Wt. Retained	Cum Wt. Retained	Wt. Passing	% Passing
+10						
	3"	75	0.00	0.00	344.45	100.00
	2"	50	0.00	0.00	344.45	100.00
	1.5"	38.1	0.00	0.00	344.45	100.00
	1"	25	0.00	0.00	344.45	100.00
	3/4"	19.0	0.00	0.00	344.45	100.00
	3/8"	9.5	0.00	0.00	344.45	100.00
	4	4.75	0.00	0.00	344.45	100.00
	10	2.00	0.00	0.00	344.45	100.00
-10			(Based on calculated sieve wt.)			
	20	0.85	4.92	4.92	42.10	89.54
	40	0.425	3.37	8.29	38.73	82.37
	60	0.250	5.03	13.32	33.70	71.67
	100	0.150	4.13	17.45	29.57	62.89
	140	0.106	2.14	19.59	27.43	58.34
	200	0.075	2.12	21.71	25.31	53.83
	dry pan		0.50	22.21	24.81	
	wet pan			24.81	0.00	

d_{10} (mm): 0.0049
d_{16} (mm): 0.0053
d_{30} (mm): 0.0067
d_{50} (mm): 0.058
d_{60} (mm): 0.12
d_{84} (mm): 0.50

Median Particle Diameter --d_{50} (mm): 0.058
Uniformity Coefficient, Cu --[d_{60}/d_{10}] (mm): 24
Coefficient of Curvature, Cc --[$(d_{30})^2/(d_{10}*d_{60})$] (mm): 0.076
Mean Particle Diameter --[$(d_{16}+d_{50}+d_{84})/3$] (mm): 0.19

Classification of fines: CL

ASTM Soil Classification: Sandy lean clay s(CL)
USDA Soil Classification: Sandy Loam

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Particle Size Analysis
Hydrometer Data

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-23 (25.5')
Ring Number: NA
Date Received: 3/17/21
Test Date: 22-Mar-21
Start Time: 9:00

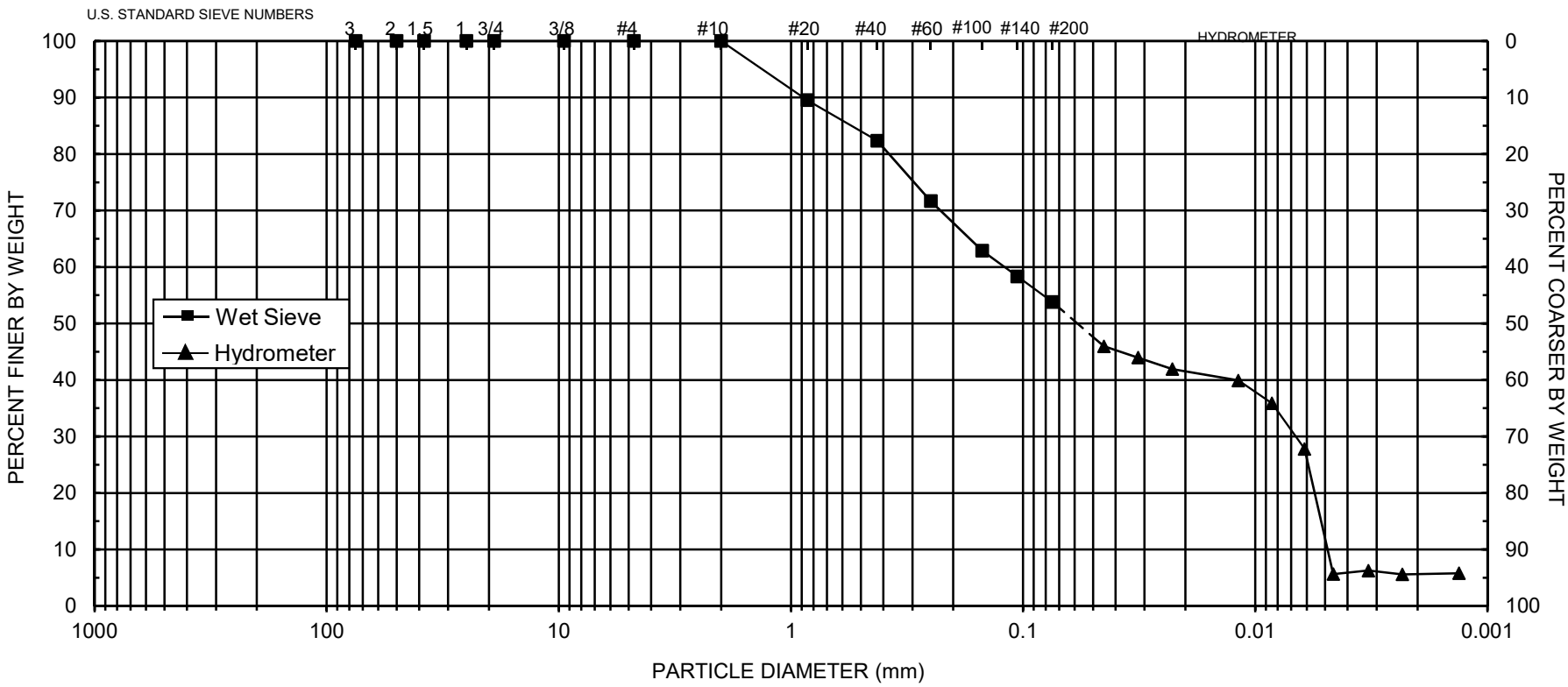
Type of Water Used: DISTILLED
Reaction with H_2O_2*:* NA
Dispersant:* $(NaPO_3)_6$
Assumed particle density: 2.90
Initial Wt. (g)*:* 47.02
Total Sample Wt. (g)*:* 344.45
Wt. Passing #10 (g)*:* 344.45

Date	Time (min)	Temp (°C)	R (g/L)	R_L (g/L)	R_{corr} (g/L)	H_m (cm)	D (mm)	P (%)	% Finer
22-Mar-21	1	20.4	28.00	5.25	22.7	13	0.0449	46	46.0
	2	20.4	27.00	5.25	21.7	13	0.0320	44	44.0
	4	20.4	26.00	5.25	20.7	13	0.0228	42	41.9
	15	20.4	25.00	5.25	19.7	13	0.0118	40	39.9
	30	20.4	23.00	5.25	17.7	13	0.0085	36	35.9
	60	20.4	19.00	5.24	13.8	14	0.0061	28	27.8
	120	20.5	8.00	5.20	2.8	16	0.0046	6	5.7
	240	20.7	8.25	5.15	3.1	16	0.0033	6	6.3
	475	21.2	7.75	4.98	2.8	16	0.0023	6	5.6
23-Mar-21	1448	20.0	8.25	5.39	2.9	16	0.0013	6	5.8

Comments:

* Dispersion device: mechanically operated stirring device

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines



UNIFIED	COBBLES	GRAVEL		SAND		SILT OR CLAY
		Coarse	Fine	Coarse	Medium	Fine
USDA	COBBLES	GRAVEL	SAND			SILT	CLAY
			Very coarse	Coarse	Medium	Fine	Very fine		

d_{10} = **0.0049**	d_{30} = **0.0067**	d_{50} = **0.058**	d_{60} = **0.12**	C_u = **24**	C_c = **0.076**

SAMPLE NUMBER	DATE RECEIVED	ASTM CLASSIFICATION	USDA CLASSIFICATION
SB-23 (25.5')	**3/17/21**	**Sandy lean clay s(CL)**	**Sandy Loam**

Atterberg Limits / Identification of Fines

Summary of Atterberg Tests

Sample Number	Liquid Limit	Plastic Limit	Plasticity Index	Classification
SB-11A (24'-25')	42	26	16	ML
SB-11 (34'-35')	46	29	17	ML
SB-11 (49'-50')	38	22	16	CL
SB-11 (59'-60')	37	25	12	ML
SB-16 (55.5')	47	28	19	ML
SB-17 (11'-12')	---	---	---	ML
SB-23 (25.5')	35	18	17	CL

--- = Soil requires visual-manual classification due to non-plasticity

Atterberg Limits

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-11A (24'-25')
Ring Number: NA
Date Received: 3/17/21

Test Date: 23-Mar-21

Liquid Limit

	Trial 1	Trial 2	Trial 3
Number of drops:	35	27	20
Pan number:	LL1	LL2	LL3
Weight of pan plus moist soil (g):	127.84	131.68	132.41
Weight of pan plus dry soil (g)	123.64	127.25	127.09
Weight of pan (g):	113.08	116.55	114.75
Gravimetric moisture content (% g/g):	39.77	41.40	43.11
Liquid Limit:	42		

Plastic Limit

	Trial 1	Trial 2
Pan number:	PL1	PL2
Weight of pan plus moist soil (g):	118.86	127.10
Weight of pan plus dry soil (g)	117.42	125.47
Weight of pan (g):	111.92	119.32
Gravimetric moisture content (% g/g):	26.18	26.50
Plastic Limit:	26	

Results

Percent of Sample Retained on #40 Sieve: See Sieve

Liquid Limit: 42
Plastic Limit: 26
Plasticity Index: 16

Classification: ML

Comments:

--- = Soil requires visual-manual classification due to non-plasticity
* = 1-point method requested by client

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Atterberg Limits

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-11 (34'-35')
Ring Number: NA
Date Received: 3/17/21

Test Date: 23-Mar-21

Liquid Limit

	Trial 1	Trial 2	Trial 3
Number of drops:	34	26	16
Pan number:	LL1	LL2	LL3
Weight of pan plus moist soil (g):	127.40	127.94	125.10
Weight of pan plus dry soil (g)	123.26	123.34	121.76
Weight of pan (g):	113.98	113.35	114.78
Gravimetric moisture content (% g/g):	44.61	46.05	47.85
Liquid Limit:	46		

Plastic Limit

	Trial 1	Trial 2
Pan number:	PL1	PL2
Weight of pan plus moist soil (g):	124.81	119.99
Weight of pan plus dry soil (g)	122.48	118.18
Weight of pan (g):	114.37	111.85
Gravimetric moisture content (% g/g):	28.73	28.59
Plastic Limit:	29	

Results

Percent of Sample Retained on #40 Sieve: See Sieve

Liquid Limit: 46
Plastic Limit: 29
Plasticity Index: 17

Classification: ML

Comments:

--- = Soil requires visual-manual classification due to non-plasticity
* = 1-point method requested by client

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Atterberg Limits

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-11 (49'-50')
Ring Number: NA
Date Received: 3/17/21

Test Date: 23-Mar-21

Liquid Limit

	Trial 1	Trial 2	Trial 3
Number of drops:	35	25	15
Pan number:	LL1	LL2	LL3
Weight of pan plus moist soil (g):	125.09	128.58	127.65
Weight of pan plus dry soil (g)	121.55	124.05	123.95
Weight of pan (g):	111.79	111.97	114.57
Gravimetric moisture content (% g/g):	36.27	37.50	39.45
Liquid Limit:	38		

Plastic Limit

	Trial 1	Trial 2
Pan number:	PL1	PL2
Weight of pan plus moist soil (g):	117.71	119.79
Weight of pan plus dry soil (g)	116.64	118.63
Weight of pan (g):	111.79	113.35
Gravimetric moisture content (% g/g):	22.06	21.97
Plastic Limit:	22	

Results

Percent of Sample Retained on #40 Sieve: See Sieve

Liquid Limit: 38
Plastic Limit: 22
Plasticity Index: 16

Classification: CL

Comments:

--- = Soil requires visual-manual classification due to non-plasticity
* = 1-point method requested by client

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Atterberg Limits

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-11 (59'-60')
Ring Number: NA
Date Received: 3/17/21

Test Date: 23-Mar-21

Liquid Limit

	Trial 1	Trial 2	Trial 3
Number of drops:	32	24	17
Pan number:	LL1	LL2	LL3
Weight of pan plus moist soil (g):	125.99	125.67	135.06
Weight of pan plus dry soil (g)	122.52	121.55	129.54
Weight of pan (g):	112.96	110.58	115.27
Gravimetric moisture content (% g/g):	36.30	37.56	38.68
Liquid Limit:	37		

Plastic Limit

	Trial 1	Trial 2
Pan number:	PL1	PL2
Weight of pan plus moist soil (g):	119.48	120.26
Weight of pan plus dry soil (g)	118.20	118.87
Weight of pan (g):	113.14	113.32
Gravimetric moisture content (% g/g):	25.30	25.05
Plastic Limit:	25	

Results

Percent of Sample Retained on #40 Sieve: See Sieve

Liquid Limit: 37
Plastic Limit: 25
Plasticity Index: 12

Classification: ML

Comments:

--- = Soil requires visual-manual classification due to non-plasticity
* = 1-point method requested by client

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Atterberg Limits

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-16 (55.5')
Ring Number: NA
Date Received: 3/17/21

Test Date: 23-Mar-21

Liquid Limit

	Trial 1	Trial 2	Trial 3
Number of drops:	32	28	18
Pan number:	LL1	LL2	LL3
Weight of pan plus moist soil (g):	128.70	123.76	124.63
Weight of pan plus dry soil (g)	125.15	120.02	120.42
Weight of pan (g):	117.41	112.02	111.81
Gravimetric moisture content (% g/g):	45.87	46.75	48.90
Liquid Limit:	47		

Plastic Limit

	Trial 1	Trial 2
Pan number:	PL1	PL2
Weight of pan plus moist soil (g):	121.75	117.72
Weight of pan plus dry soil (g)	120.30	116.48
Weight of pan (g):	115.12	111.97
Gravimetric moisture content (% g/g):	27.99	27.49
Plastic Limit:	28	

Results

Percent of Sample Retained on #40 Sieve: See Sieve

Liquid Limit: 47
Plastic Limit: 28
Plasticity Index: 19

Classification: ML

Comments:

--- = Soil requires visual-manual classification due to non-plasticity
* = 1-point method requested by client

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Atterberg Limits

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-17 (11'-12')
Ring Number: NA
Date Received: 3/17/21

Test Date: 23-Mar-21

Liquid Limit

	Trial 1	Trial 2	Trial 3
Number of drops:			
Pan number:			
Weight of pan plus moist soil (g):			
Weight of pan plus dry soil (g)			
Weight of pan (g):			
Gravimetric moisture content (% g/g):	---	---	---
Liquid Limit:	---		

Plastic Limit

	Trial 1	Trial 2
Pan number:		
Weight of pan plus moist soil (g):		
Weight of pan plus dry soil (g)		
Weight of pan (g):		
Gravimetric moisture content (% g/g):	---	---
Plastic Limit:	---	

Results

Percent of Sample Retained on #40 Sieve: See Sieve

Liquid Limit: ---
Plastic Limit: ---
Plasticity Index: ---

Classification (Visual Method): ML

Comments:

--- = Soil requires visual-manual classification due to non-plasticity
* = 1-point method requested by client

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Data for Description and Identification of Fines
(Visual-Manual Procedure)

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-17 (11'-12')
Ring Number: NA
Date Received: 3/17/21

Test Date: 23-Mar-21

Visual-manual classification of material passing the #40 sieve in lieu of Atterberg analysis due to non-plasticity:

Descriptive Information:

Color of Moist Sample: Brown 7.5YR 5/4
Odor: None
Moisture Condition: Moist
HCl Reaction: Strong

Preliminary Identification:

Dry Strength: None
Dilatency: Rapid
Toughness: Low
Plasticity: Non-plastic

Identification of Inorganic Fine Grained Soils:

Silt (ML)

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Atterberg Limits

Job Name: WST Pecos Permitting
Job Number: DB20.1166.00 P1T1
Sample Number: SB-23 (25.5')
Ring Number: NA
Date Received: 3/17/21

Test Date: 23-Mar-21

Liquid Limit

	Trial 1	Trial 2	Trial 3
Number of drops:	35	27	21
Pan number:	LL1	LL2	LL3
Weight of pan plus moist soil (g):	128.52	124.73	128.51
Weight of pan plus dry soil (g)	125.58	121.44	124.65
Weight of pan (g):	116.64	112.09	114.07
Gravimetric moisture content (% g/g):	32.89	35.19	36.48
Liquid Limit:	35		

Plastic Limit

	Trial 1	Trial 2
Pan number:	PL1	PL2
Weight of pan plus moist soil (g):	120.05	123.81
Weight of pan plus dry soil (g)	118.81	122.68
Weight of pan (g):	112.00	116.27
Gravimetric moisture content (% g/g):	18.21	17.63
Plastic Limit:	18	

Results

Percent of Sample Retained on #40 Sieve: See Sieve

Liquid Limit: 35
Plastic Limit: 18
Plasticity Index: 17

Classification: CL

Comments:

--- = Soil requires visual-manual classification due to non-plasticity
* = 1-point method requested by client

Laboratory analysis by: D. O'Dowd
Data entered by: D. O'Dowd
Checked by: J. Hines

Laboratory Tests and Methods

Tests and Methods

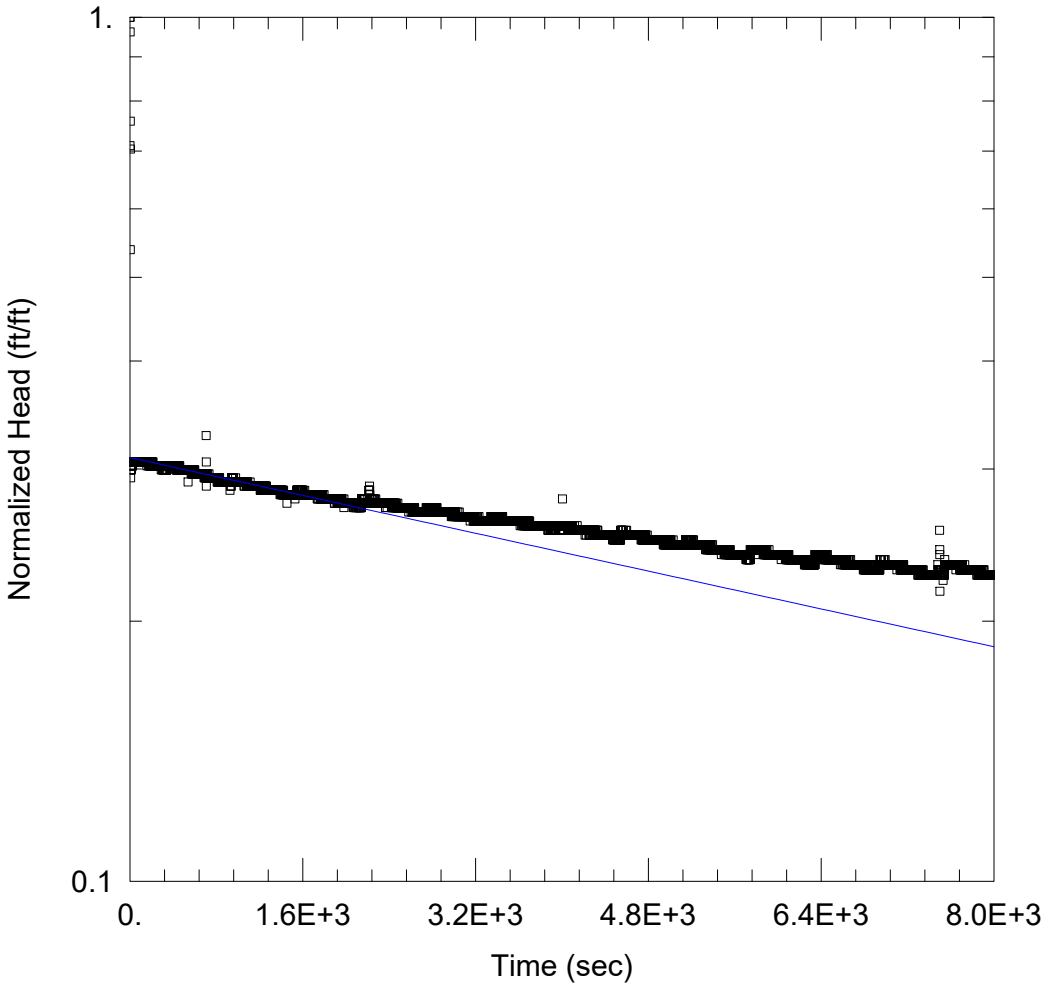
Dry Bulk Density:	ASTM D7263
Moisture Content:	ASTM D7263, ASTM D2216
Calculated Porosity:	ASTM D7263
Saturated Hydraulic Conductivity:	
Falling or Constant Head: (Rigid Wall)	ASTM D5856M
Falling Head Rising Tail: (Flexible Wall)	ASTM D5084
Particle Size Analysis:	ASTM D7928, ASTM D6913
USCS (ASTM) Classification:	ASTM D6913, ASTM D4318, ASTM D2487
USDA Classification:	ASTM D7928, ASTM D6913, USDA Soil Textural Triangle
Atterberg Limits:	ASTM D4318
Visual-Manual Description:	ASTM D2488

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Appendix III-5-E

Slug Test Results

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FALLING HEAD SLUG TEST #1

Data Set: S:\...\GW-3_Falling.aqt
Date: 11/30/23 Time: 12:27:43

PROJECT INFORMATION

Company: Daniel B. Stephens & Assc.
Client: West Sun Tex, LLC
Project: DB20.1166
Location: WST Permian Landfill
Test Well: GW-3
Test Date: 9/28/2023

AQUIFER DATA

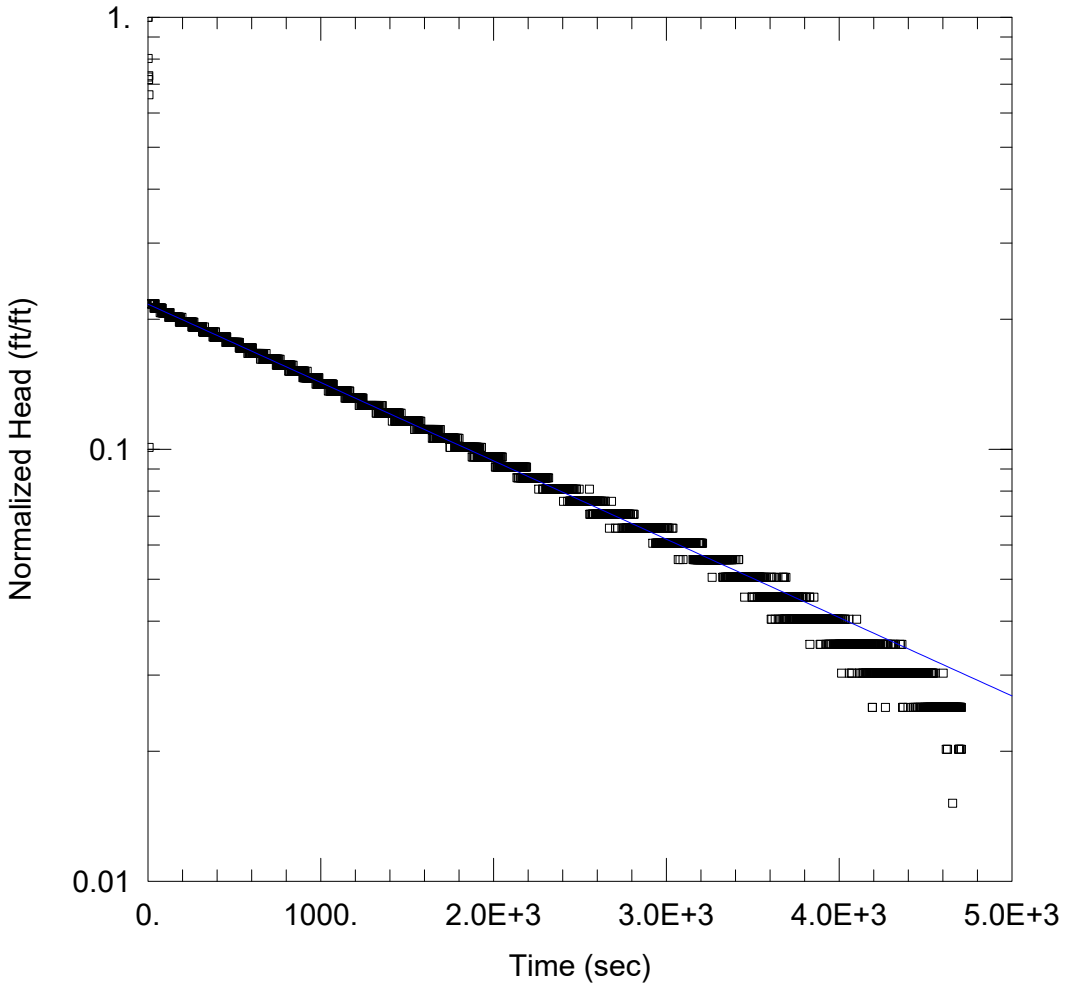
Saturated Thickness: 1000 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (GW-3)

Initial Displacement: 3.14 ft
Static Water Column Height: 26.94 ft
Screen Length: 30. ft
Casing Radius: 0.167 ft
Well Radius: 0.656 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.02815 ft/day
y0 = 0.9711 ft



FALLING HEAD SLUG TEST #1

Data Set: S:\...\GW-11_Falling1.aqt
Date: 11/27/23 Time: 09:58:58

PROJECT INFORMATION

Company: Daniel B. Stephens & Assc.
Client: West Sun Tex, LLC
Project: DB20.1166
Location: WST Permian Landfill
Test Well: GW-11
Test Date: 9/27/2023

AQUIFER DATA

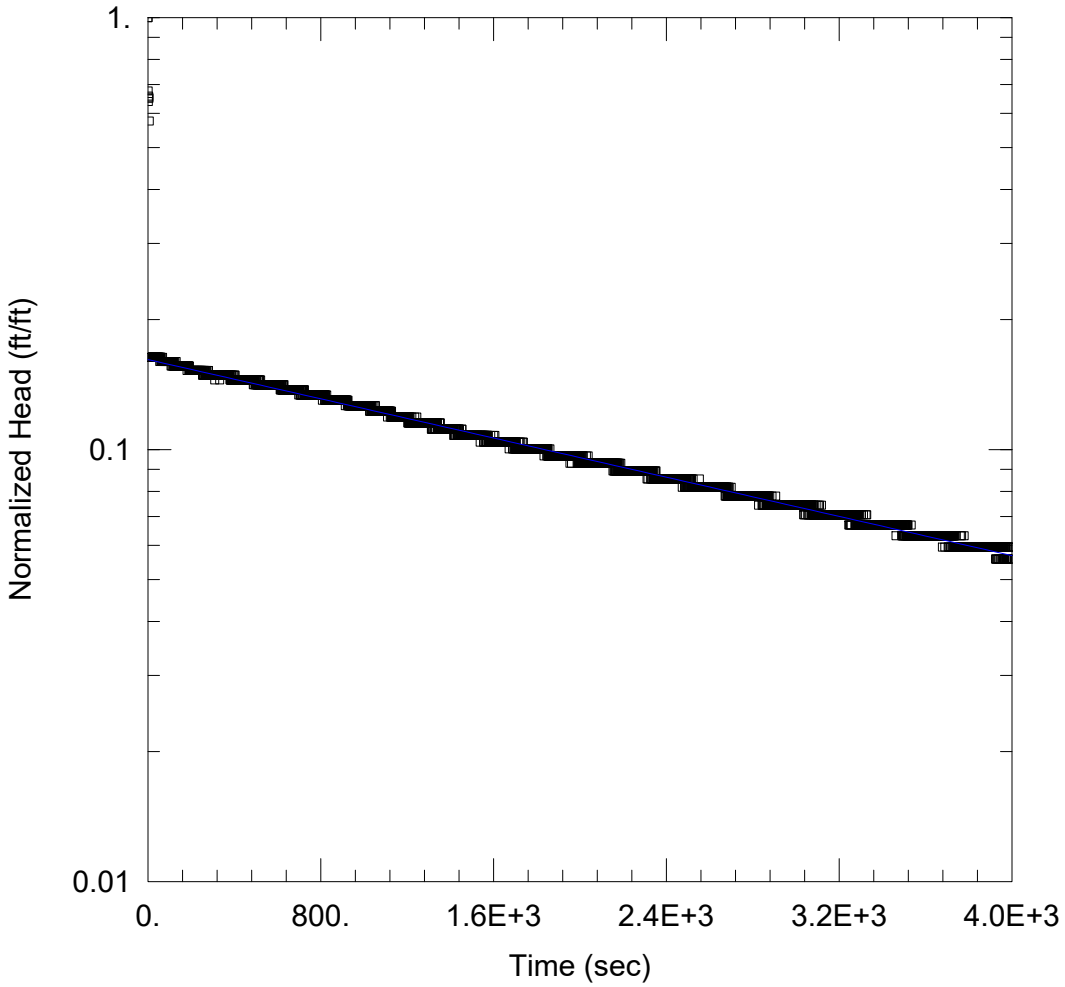
Saturated Thickness: 1000 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (GW-11)

Initial Displacement: 1.98 ft
Static Water Column Height: 24.54 ft
Screen Length: 30. ft
Casing Radius: 0.167 ft
Well Radius: 0.656 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.1929 ft/day
y0 = 0.4291 ft



FALLING HEAD SLUG TEST #2

Data Set: S:\...\GW-11_Falling2.aqt
Date: 11/27/23 Time: 10:18:20

PROJECT INFORMATION

Company: Daniel B. Stephens & Assc.
Client: West Sun Tex, LLC
Project: DB20.1166
Location: WST Permian Landfill
Test Well: GW-11
Test Date: 9/27/2023

AQUIFER DATA

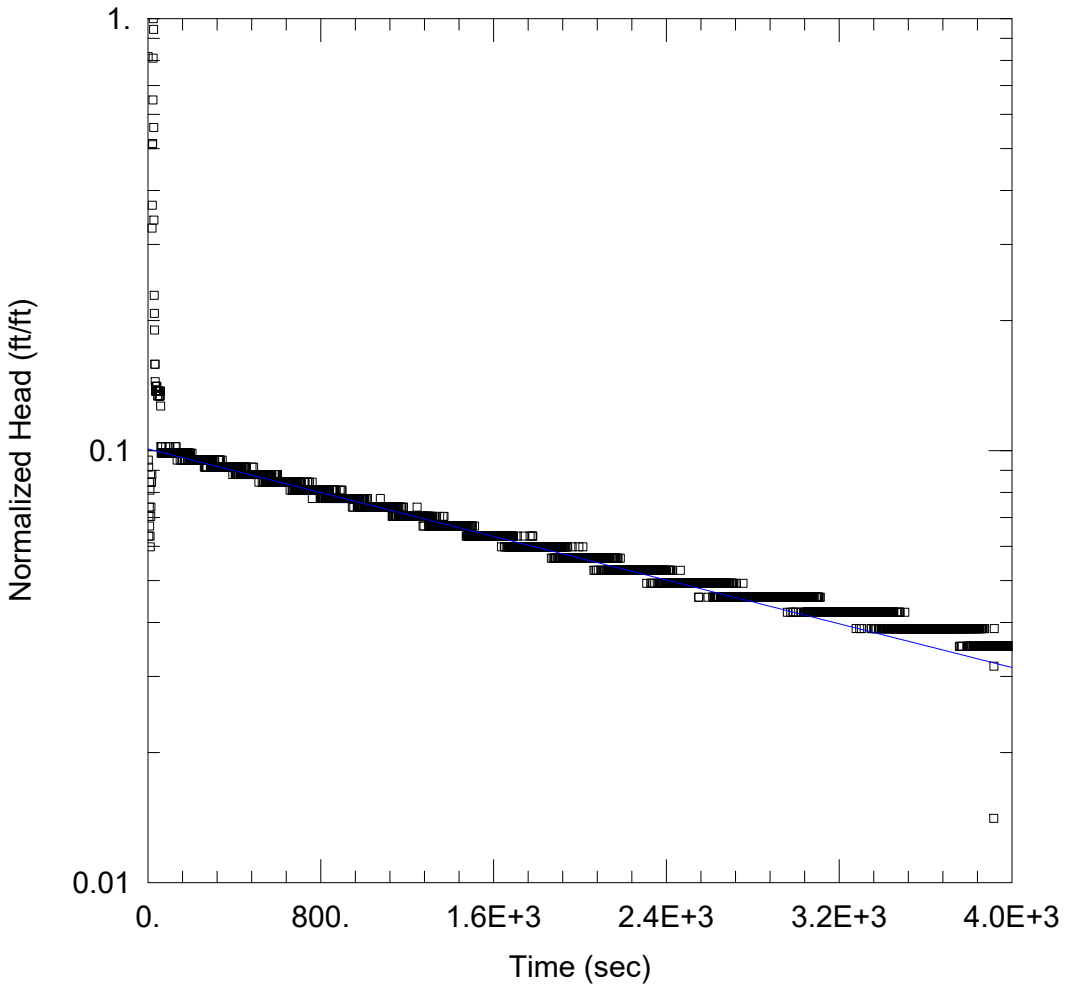
Saturated Thickness: 1000 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (GW-11)

Initial Displacement: 2.69 ft
Static Water Column Height: 24.54 ft
Screen Length: 30. ft
Casing Radius: 0.167 ft
Well Radius: 0.656 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.1207 ft/day
y0 = 0.4346 ft



RISING HEAD SLUG TEST #1

Data Set: S:\...\GW-11_Rising1.aqt
Date: 11/27/23 Time: 10:07:53

PROJECT INFORMATION

Company: Daniel B. Stephens & Assc.
Client: West Sun Tex, LLC
Project: DB20.1166
Location: WST Permian Landfill
Test Well: GW-11
Test Date: 9/27/2023

AQUIFER DATA

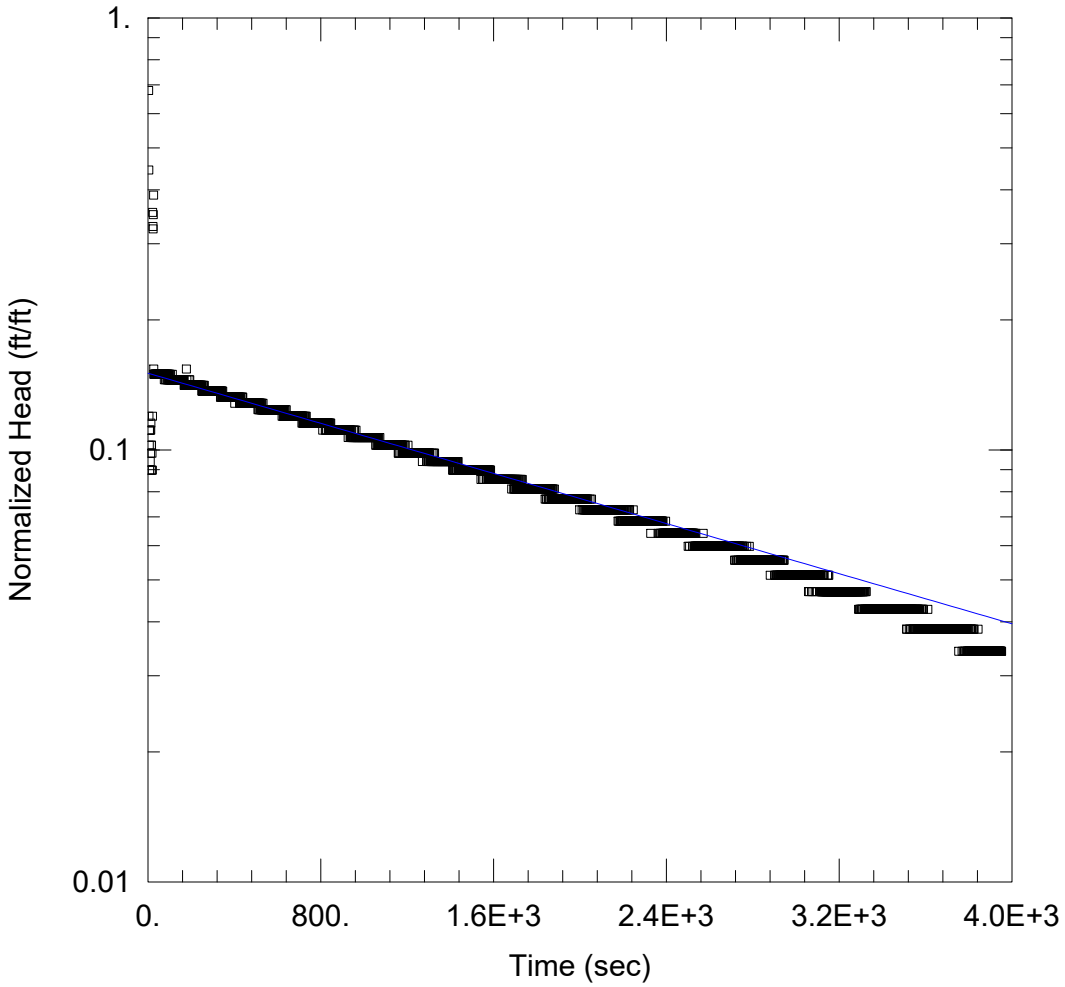
Saturated Thickness: 1000 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (GW-11)

Initial Displacement: -2.84 ft
Static Water Column Height: 24.54 ft
Screen Length: 30. ft
Casing Radius: 0.167 ft
Well Radius: 0.656 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.1346 ft/day
y0 = -0.2865 ft



RISING HEAD SLUG TEST #2

Data Set: S:\...\GW-11_Rising2.aqt
Date: 11/27/23 Time: 10:26:59

PROJECT INFORMATION

Company: Daniel B. Stephens & Assc.
Client: West Sun Tex, LLC
Project: DB20.1166
Location: WST Permian Landfill
Test Well: GW-11
Test Date: 9/27/2023

AQUIFER DATA

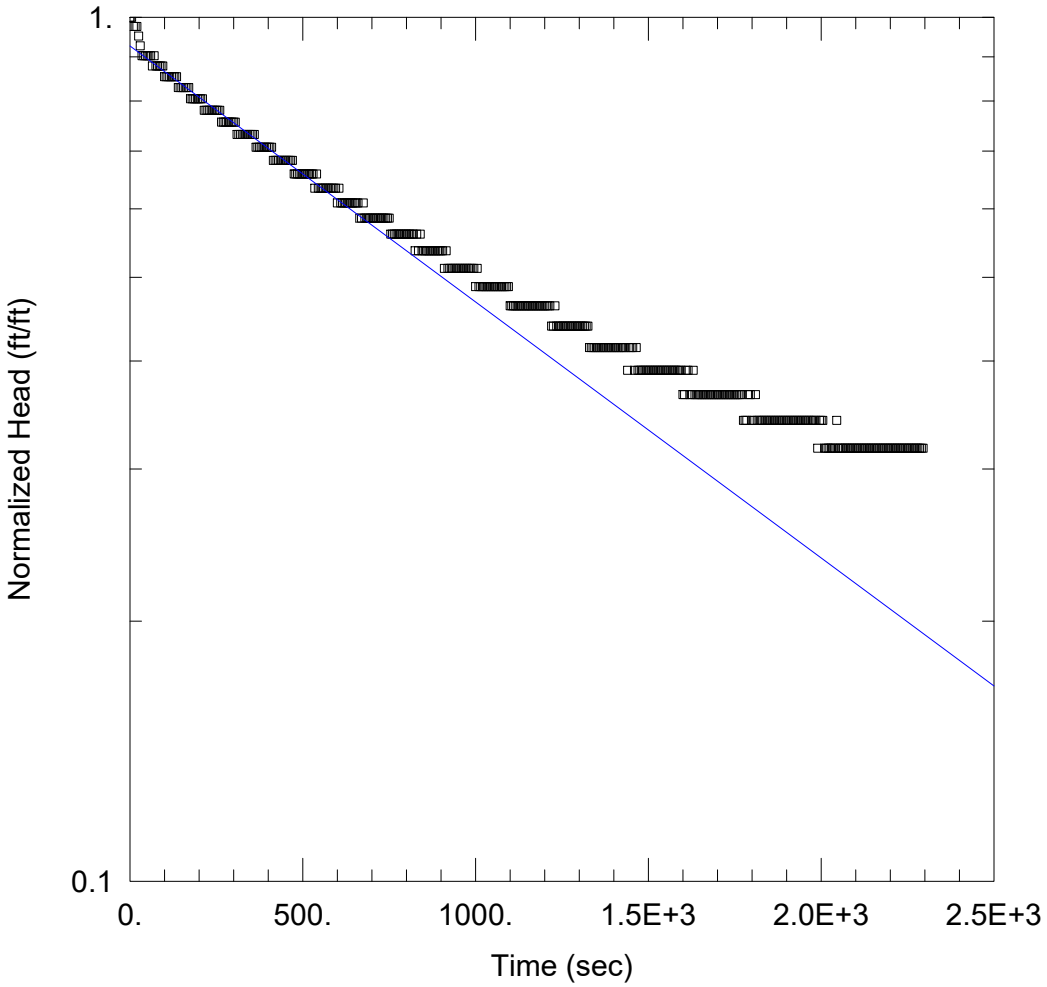
Saturated Thickness: 1000 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (GW-11)

Initial Displacement: -2.34 ft
Static Water Column Height: 24.54 ft
Screen Length: 30. ft
Casing Radius: 0.167 ft
Well Radius: 0.656 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.1543 ft/day
y0 = -0.3522 ft



FALLING HEAD SLUG TEST #1 (9/27/23)

Data Set: S:\...\GW-13_Falling1(0927).aqt
Date: 11/27/23 Time: 14:53:16

PROJECT INFORMATION

Company: Daniel B. Stephens & Assc.
Client: West Sun Tex, LLC
Project: DB20.1166
Location: WST Permian Landfill
Test Well: GW-13
Test Date: 9/27/2023

AQUIFER DATA

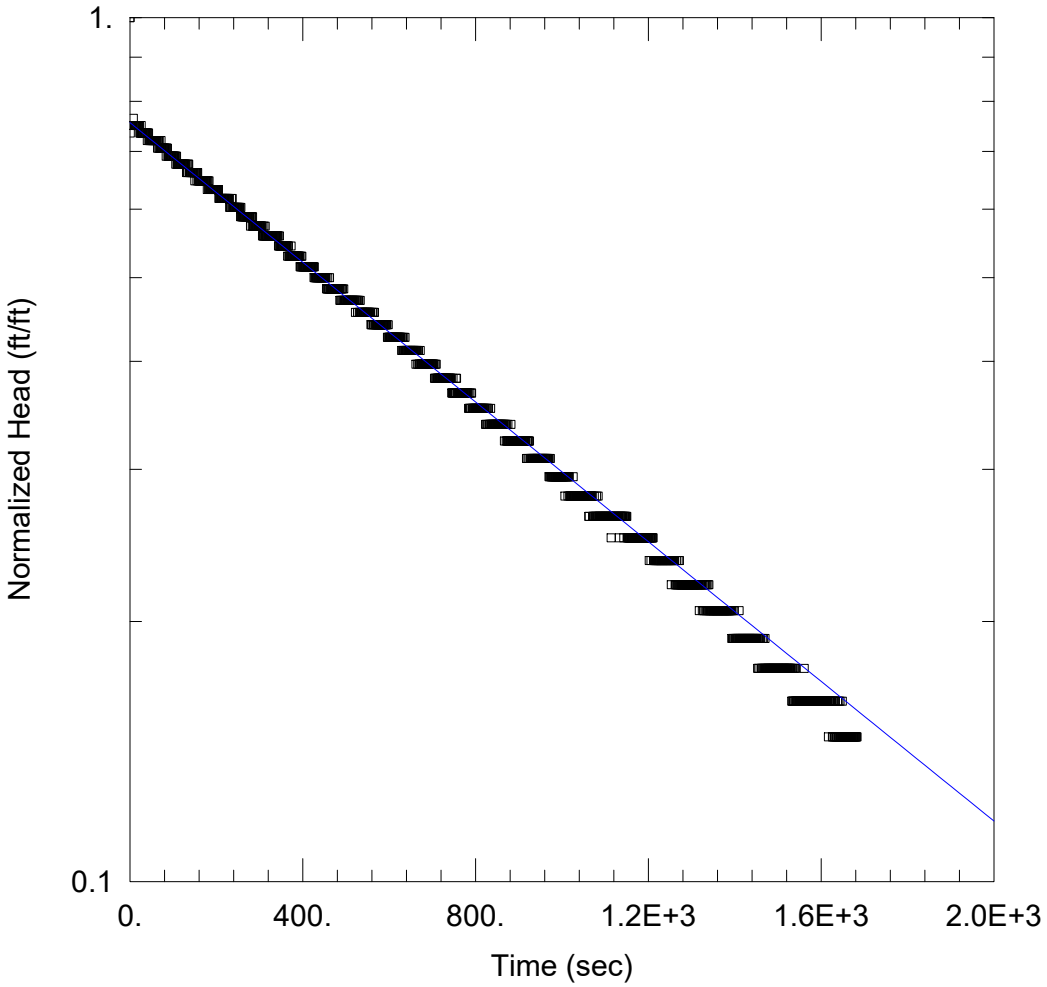
Saturated Thickness: 1000 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (GW-13)

Initial Displacement: 0.41 ft
Static Water Column Height: 19.96 ft
Screen Length: 30. ft
Casing Radius: 0.167 ft
Well Radius: 0.656 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.3152 ft/day
y0 = 0.3797 ft



FALLING HEAD SLUG TEST #1 (9/28/23)

Data Set: S:\...\GW-13_Falling1.aqt
Date: 11/27/23 Time: 14:20:10

PROJECT INFORMATION

Company: Daniel B. Stephens & Assc.
Client: West Sun Tex, LLC
Project: DB20.1166
Location: WST Permian Landfill
Test Well: GW-13
Test Date: 9/28/2023

AQUIFER DATA

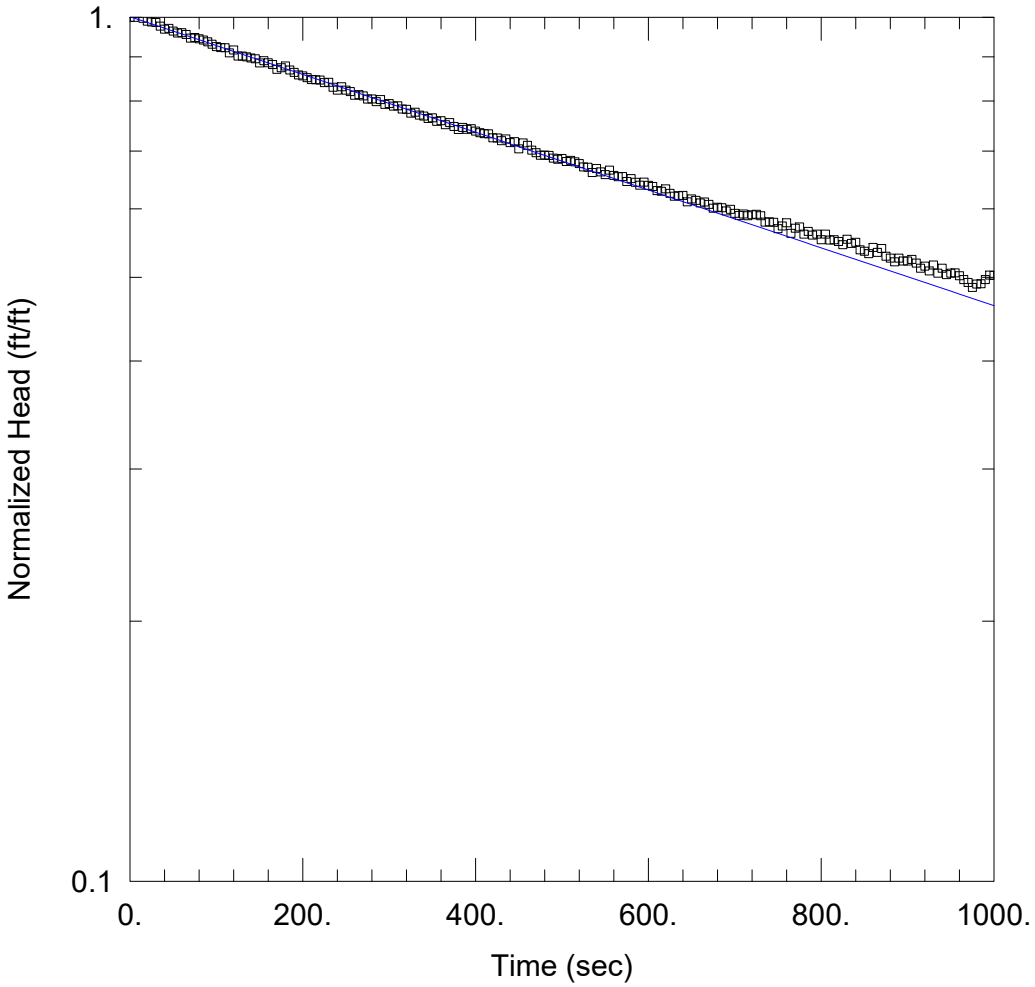
Saturated Thickness: 1000 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (GW-13)

Initial Displacement: 0.68 ft
Static Water Column Height: 20.02 ft
Screen Length: 30. ft
Casing Radius: 0.167 ft
Well Radius: 0.656 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.4299 ft/day
y0 = 0.5139 ft



FALLING HEAD SLUG TEST #2 (9/27/23)

Data Set: S:\...\GW-13_Falling2(0927).aqt
Date: 11/27/23 Time: 14:45:31

PROJECT INFORMATION

Company: Daniel B. Stephens & Assc.
Client: West Sun Tex, LLC
Project: DB20.1166
Location: WST Permian Landfill
Test Well: GW-13
Test Date: 9/27/2023

AQUIFER DATA

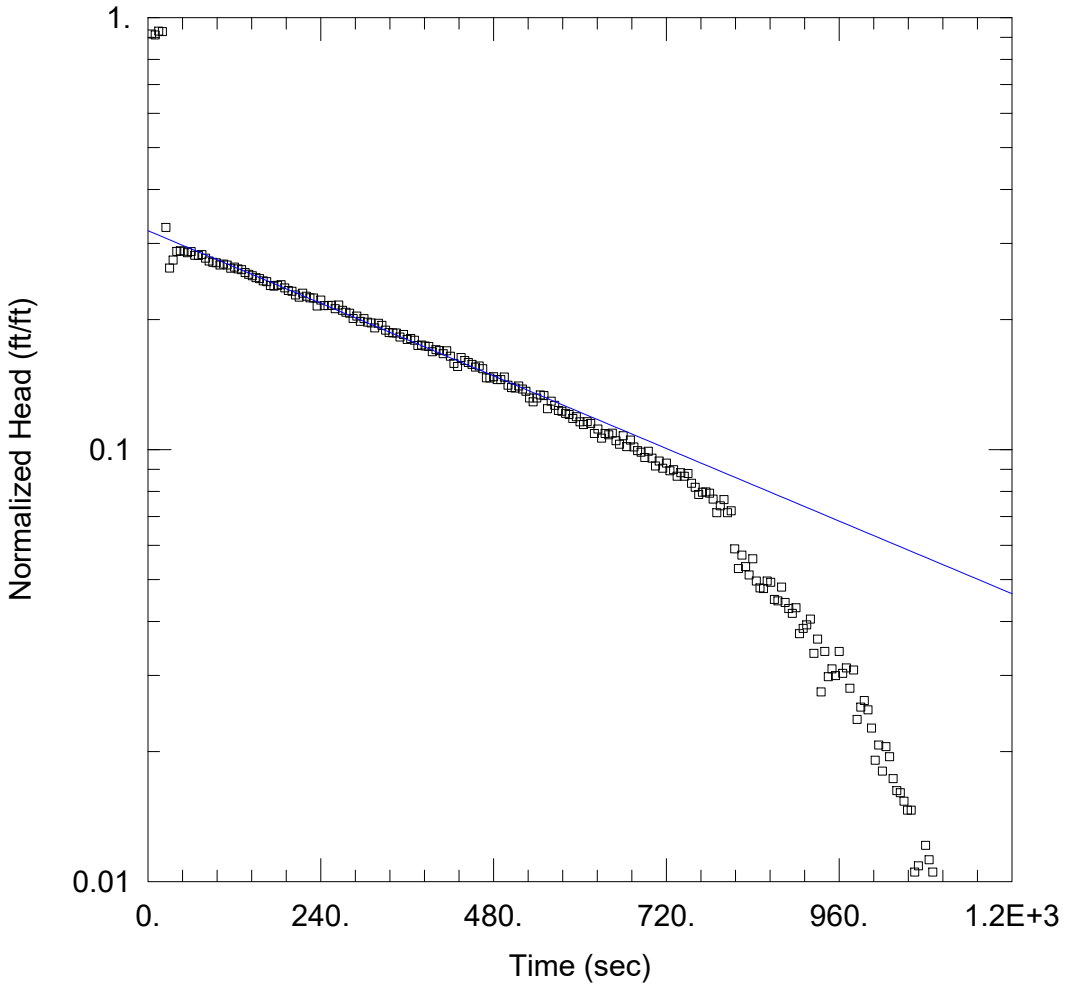
Saturated Thickness: 1000 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (GW-13)

Initial Displacement: 0.27 ft
Static Water Column Height: 19.96 ft
Screen Length: 30. ft
Casing Radius: 0.167 ft
Well Radius: 0.656 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.3557 ft/day
y0 = 0.2704 ft



RISING HEAD SLUG TEST #1 (9/27/23)

Data Set: S:\...\GW-13_Rising1(0927).aqt
Date: 11/27/23 Time: 14:39:46

PROJECT INFORMATION

Company: Daniel B. Stephens & Assc.
Client: West Sun Tex, LLC
Project: DB20.1166
Location: WST Permian Landfill
Test Well: GW-13
Test Date: 9/27/2023

AQUIFER DATA

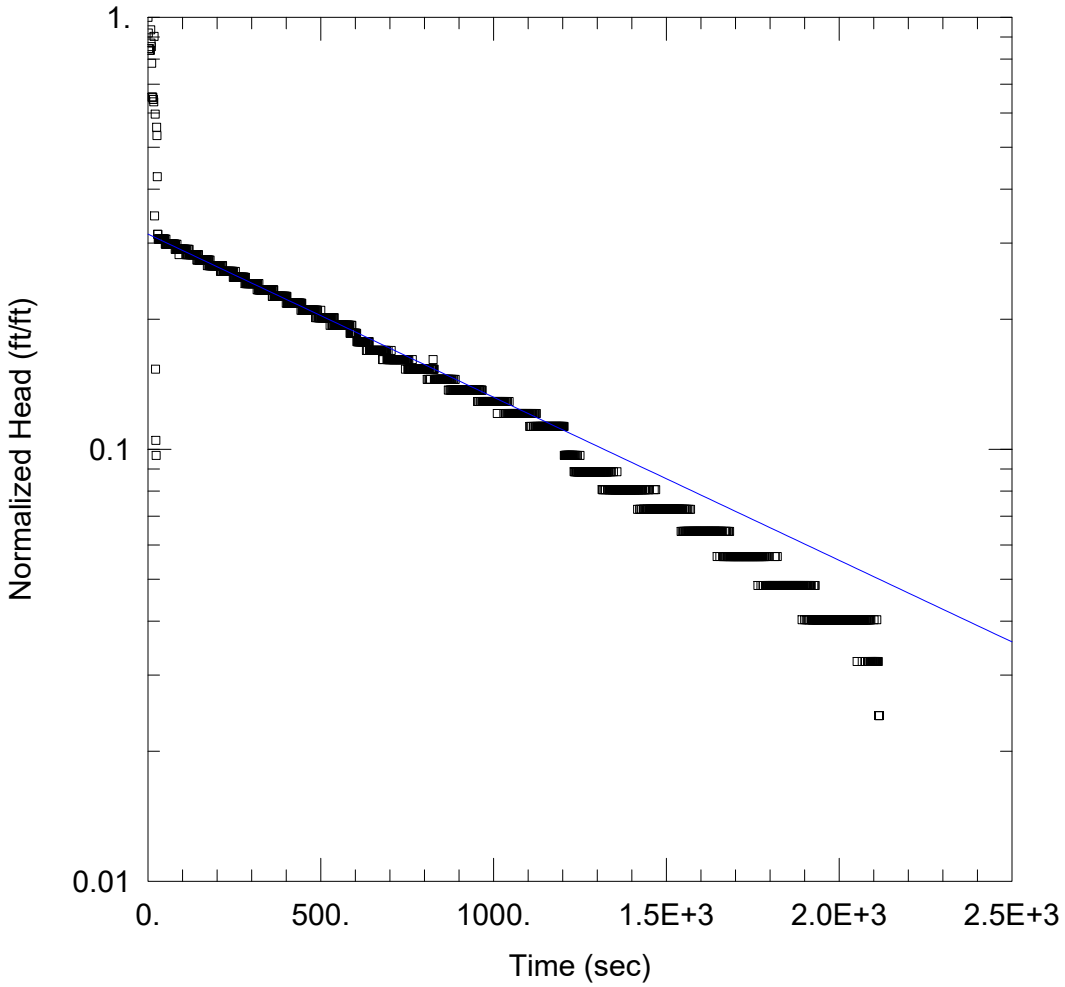
Saturated Thickness: 1000 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (GW-13)

Initial Displacement: -0.56 ft
Static Water Column Height: 19.96 ft
Screen Length: 30. ft
Casing Radius: 0.167 ft
Well Radius: 0.656 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.7448 ft/day
y0 = -0.1798 ft



RISING HEAD SLUG TEST #1 (9/28/23)

Data Set: S:\...\GW-13_Rising1(0928).aqt
Date: 11/27/23 Time: 14:26:05

PROJECT INFORMATION

Company: Daniel B. Stephens & Assc.
Client: West Sun Tex, LLC
Project: DB20.1166
Location: WST Permian Landfill
Test Well: GW-13
Test Date: 9/28/2023

AQUIFER DATA

Saturated Thickness: 1000 ft Anisotropy Ratio (Kz/Kr): 1.

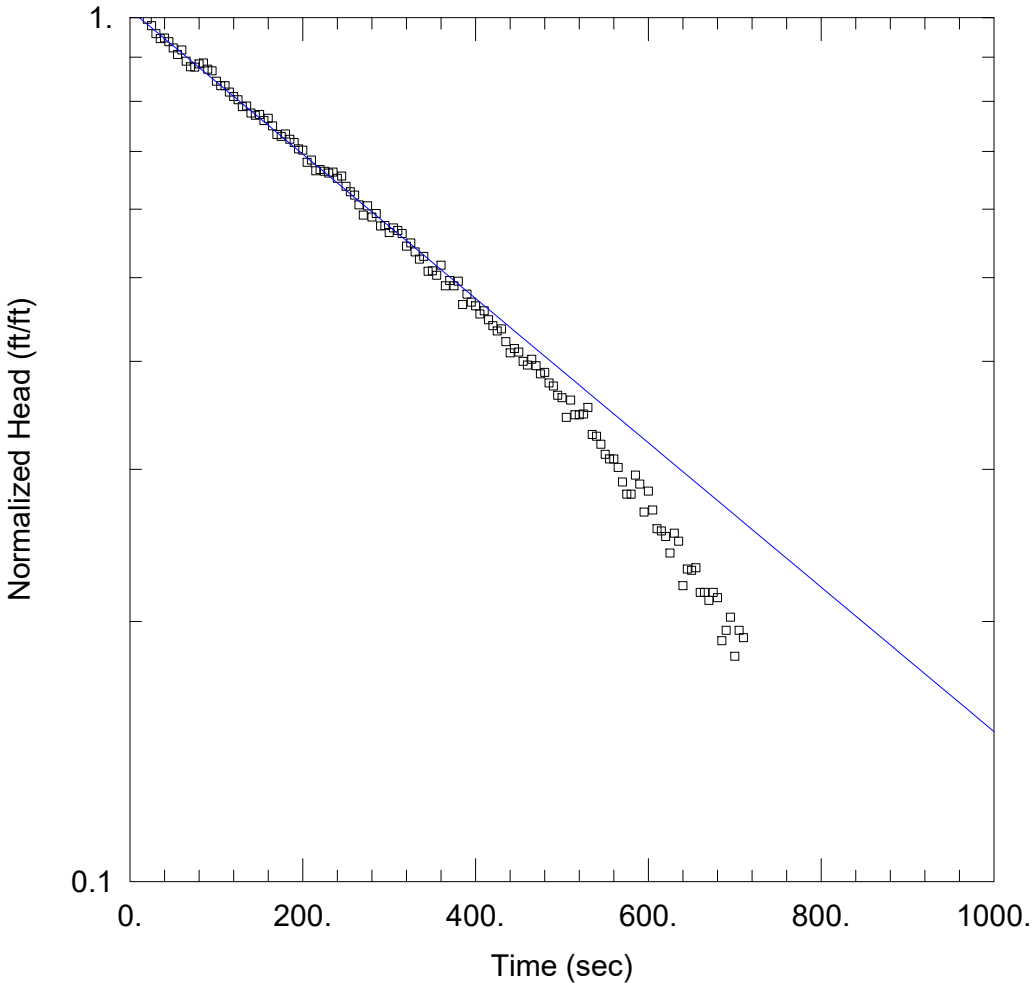
WELL DATA (GW-13)

Initial Displacement: -1.24 ft
Static Water Column Height: 20.02 ft
Screen Length: 30. ft
Casing Radius: 0.167 ft
Well Radius: 0.656 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.4017 ft/day y0 = -0.3904 ft



RISING HEAD SLUG TEST #2 (9/27/23)

Data Set: S:\...\GW-13_Rising2(0927).aqt
Date: 11/27/23 Time: 14:50:13

PROJECT INFORMATION

Company: Daniel B. Stephens & Assc.
Client: West Sun Tex, LLC
Project: DB20.1166
Location: WST Permian Landfill
Test Well: GW-13
Test Date: 9/27/2023

AQUIFER DATA

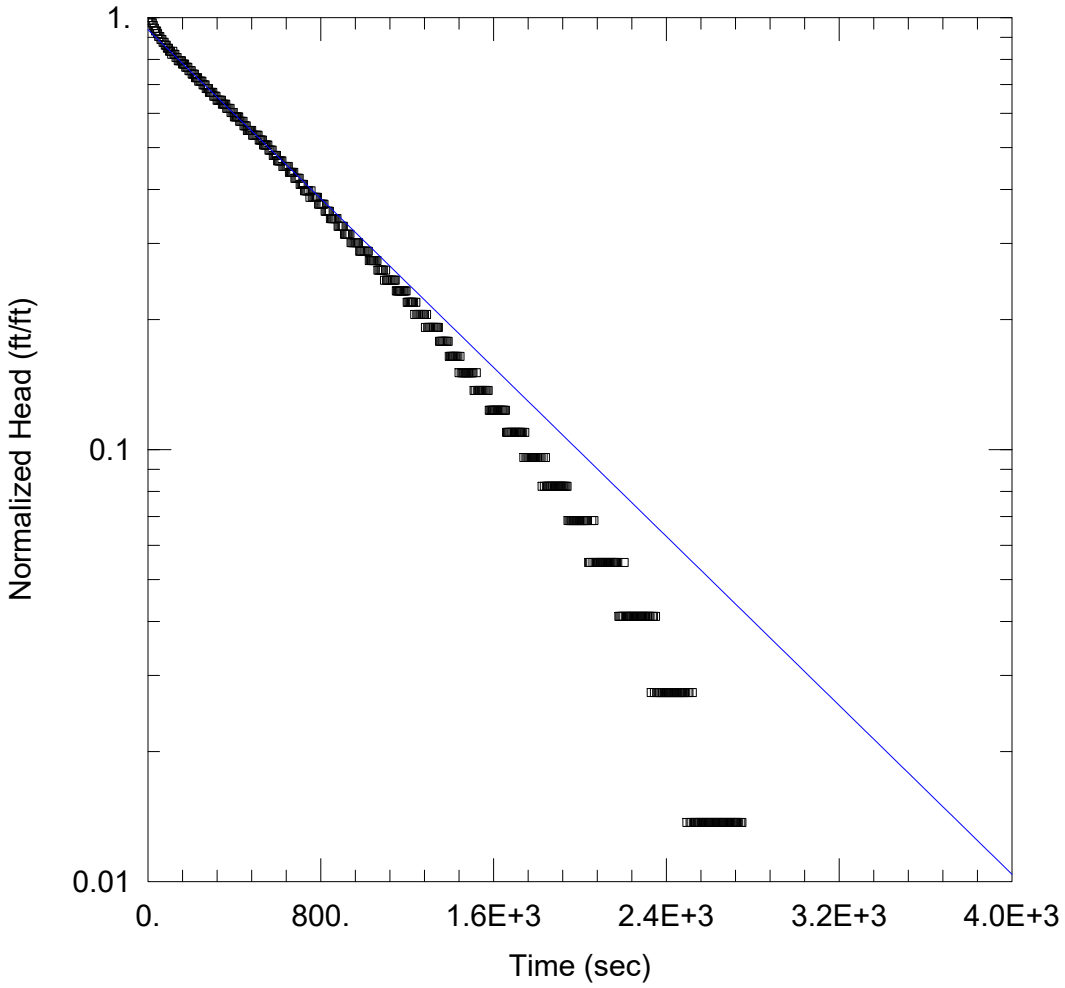
Saturated Thickness: 1000 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (GW-13)

Initial Displacement: -0.13 ft
Static Water Column Height: 19.96 ft
Screen Length: 30. ft
Casing Radius: 0.167 ft
Well Radius: 0.656 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.8886 ft/day
y0 = -0.1327 ft



FALLING HEAD TEST #1

Data Set: S:\...\GW-14_Falling1.aqt
Date: 11/27/23 Time: 13:31:19

PROJECT INFORMATION

Company: Daniel B. Stephens & Assc.
Client: West Sun Tex, LLC
Project: DB20.1166
Location: WST Permian Landfill
Test Well: GW-14
Test Date: 9/27/2023

AQUIFER DATA

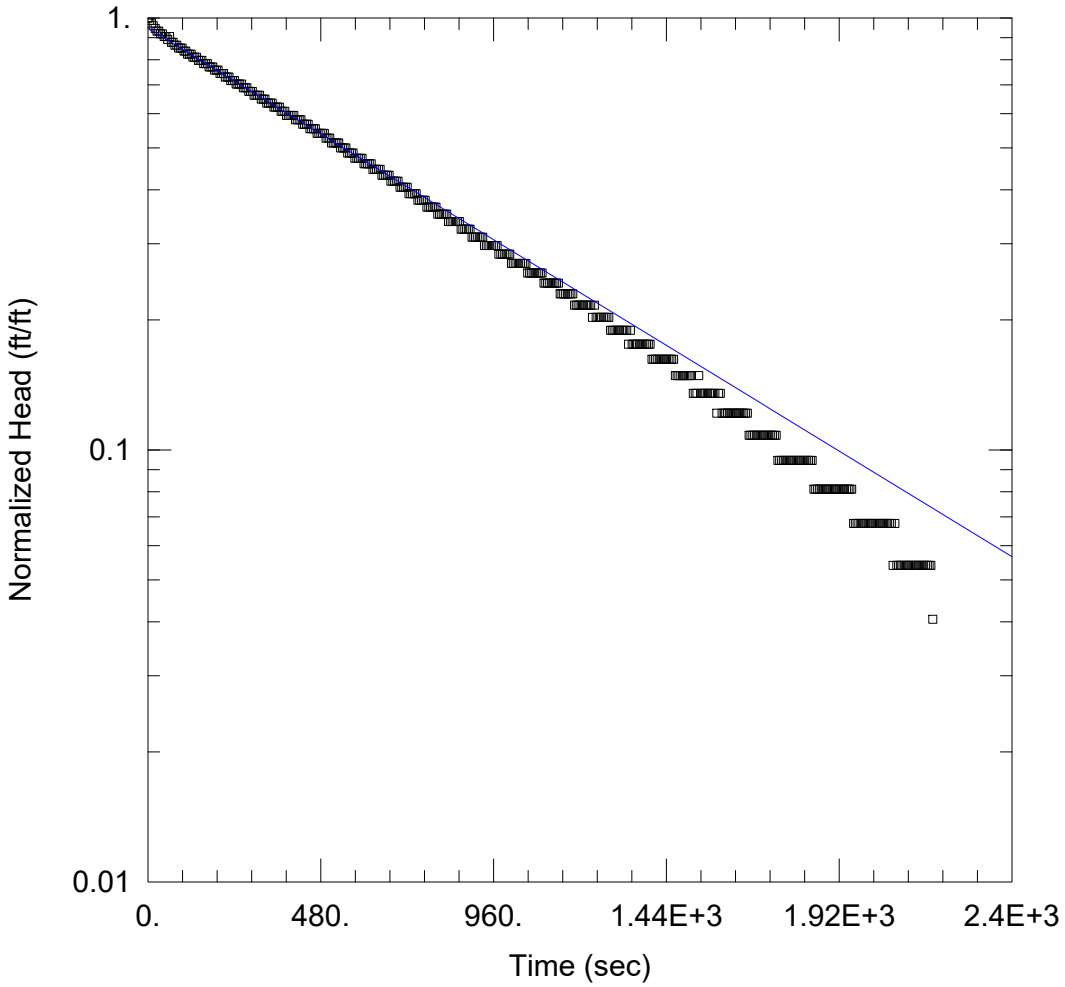
Saturated Thickness: 1000 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (GW-14)

Initial Displacement: 0.73 ft
Static Water Column Height: 15.28 ft
Screen Length: 30. ft
Casing Radius: 0.167 ft
Well Radius: 0.656 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.52 ft/day y0 = 0.6846 ft



FALLING HEAD TEST #2

Data Set: S:\...\GW-14_Falling2.aqt
Date: 11/27/23 Time: 13:54:14

PROJECT INFORMATION

Company: Daniel B. Stephens & Assc.
Client: West Sun Tex, LLC
Project: DB20.1166
Location: WST Permian Landfill
Test Well: GW-14
Test Date: 9/27/2023

AQUIFER DATA

Saturated Thickness: 1000 ft Anisotropy Ratio (Kz/Kr): 1.

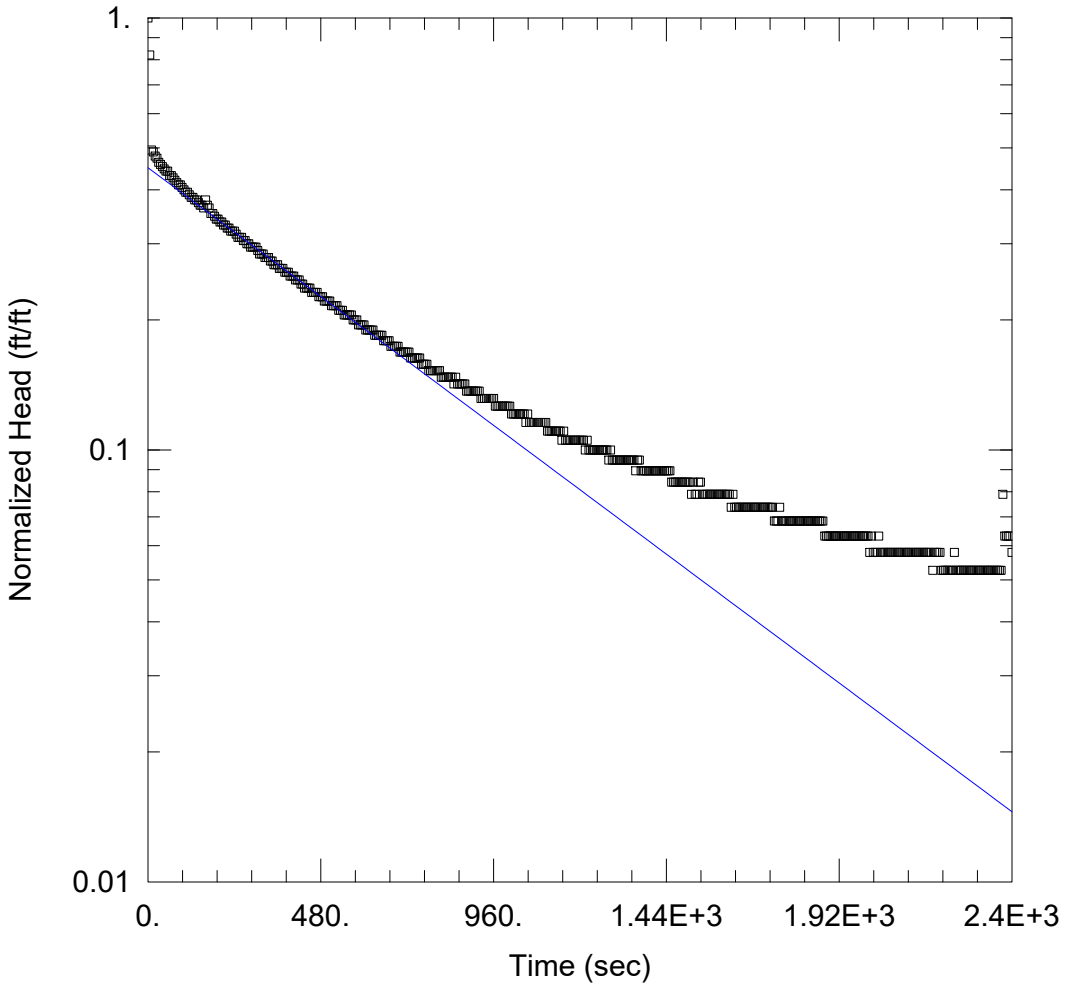
WELL DATA (GW-14)

Initial Displacement: 0.74 ft
Static Water Column Height: 15.28 ft
Screen Length: 30. ft
Casing Radius: 0.167 ft
Well Radius: 0.656 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.5422 ft/day y0 = 0.7002 ft



RISING HEAD TEST #1

Data Set: S:\...\GW-14_Rising1.aqt
Date: 11/27/23 Time: 13:42:55

PROJECT INFORMATION

Company: Daniel B. Stephens & Assc.
Client: West Sun Tex, LLC
Project: DB20.1166
Location: WST Permian Landfill
Test Well: GW-14
Test Date: 9/27/2023

AQUIFER DATA

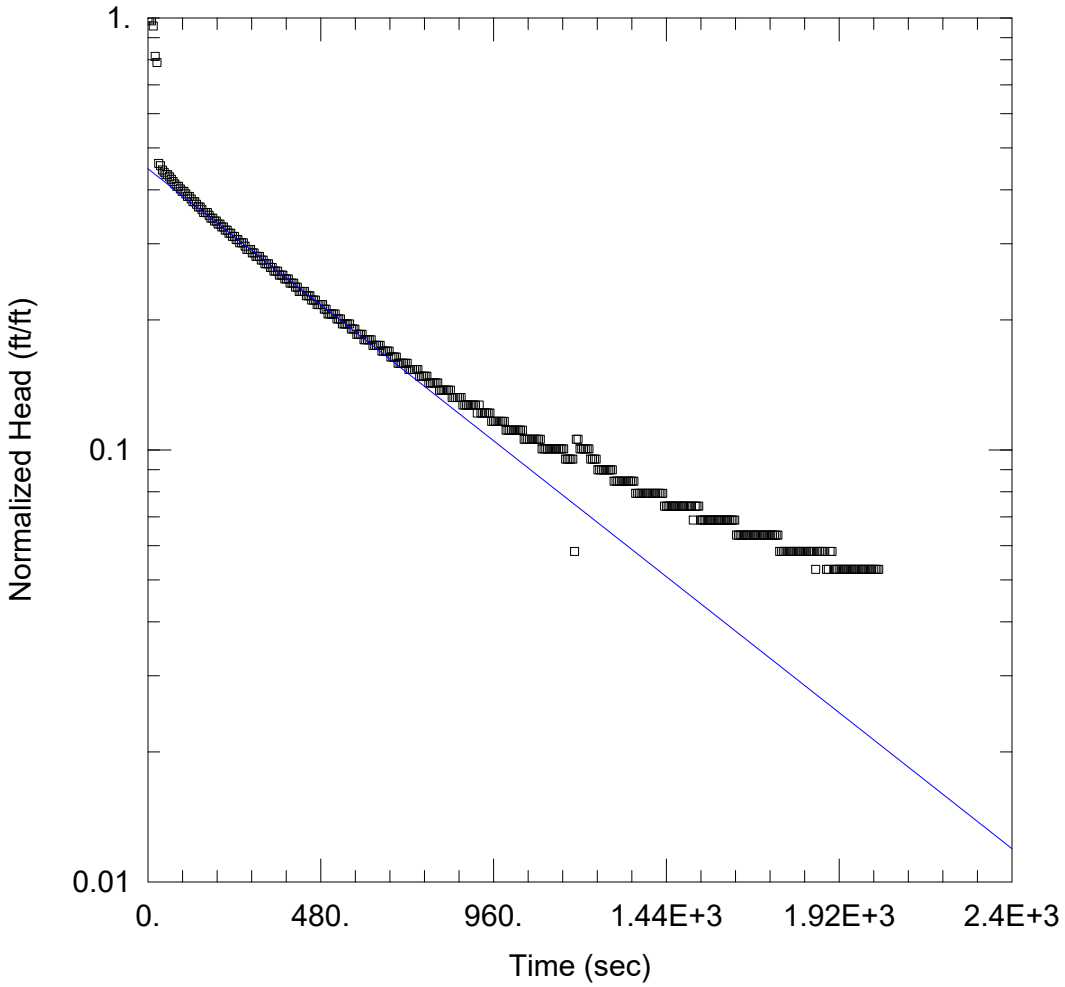
Saturated Thickness: 1000 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (GW-14)

Initial Displacement: -1.9 ft
Static Water Column Height: 15.28 ft
Screen Length: 30. ft
Casing Radius: 0.167 ft
Well Radius: 0.656 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.6608 ft/day y0 = -0.8551 ft



RISING HEAD TEST #2

Data Set: S:\...\GW-14_Rising2.aqt
Date: 11/27/23 Time: 13:59:30

PROJECT INFORMATION

Company: Daniel B. Stephens & Assc.
Client: West Sun Tex, LLC
Project: DB20.1166
Location: WST Permian Landfill
Test Well: GW-14
Test Date: 9/27/2023

AQUIFER DATA

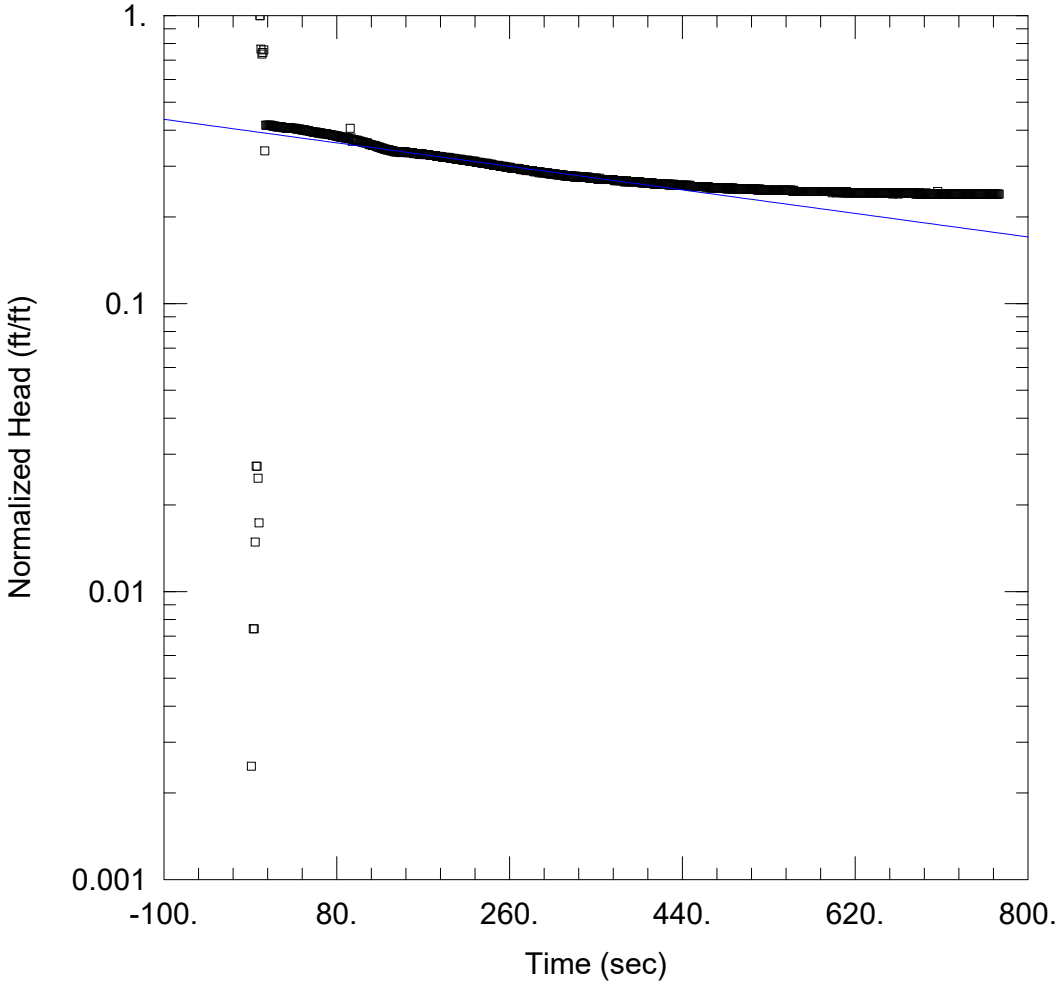
Saturated Thickness: 1000 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (GW-14)

Initial Displacement: -1.89 ft
Static Water Column Height: 15.28 ft
Screen Length: 30. ft
Casing Radius: 0.167 ft
Well Radius: 0.656 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.6976 ft/day y0 = -0.8459 ft



FALLING HEAD SLUG TEST #1

Data Set: S:\...\MW-1_Falling1.aqt
Date: 11/06/23 Time: 13:17:07

PROJECT INFORMATION

Company: Daniel B. Stephens & Assc.
Client: West Sun Tex, LLC
Project: DB20.1166
Location: WST Permian Landfill
Test Well: MW-1
Test Date: 9/28/2023

AQUIFER DATA

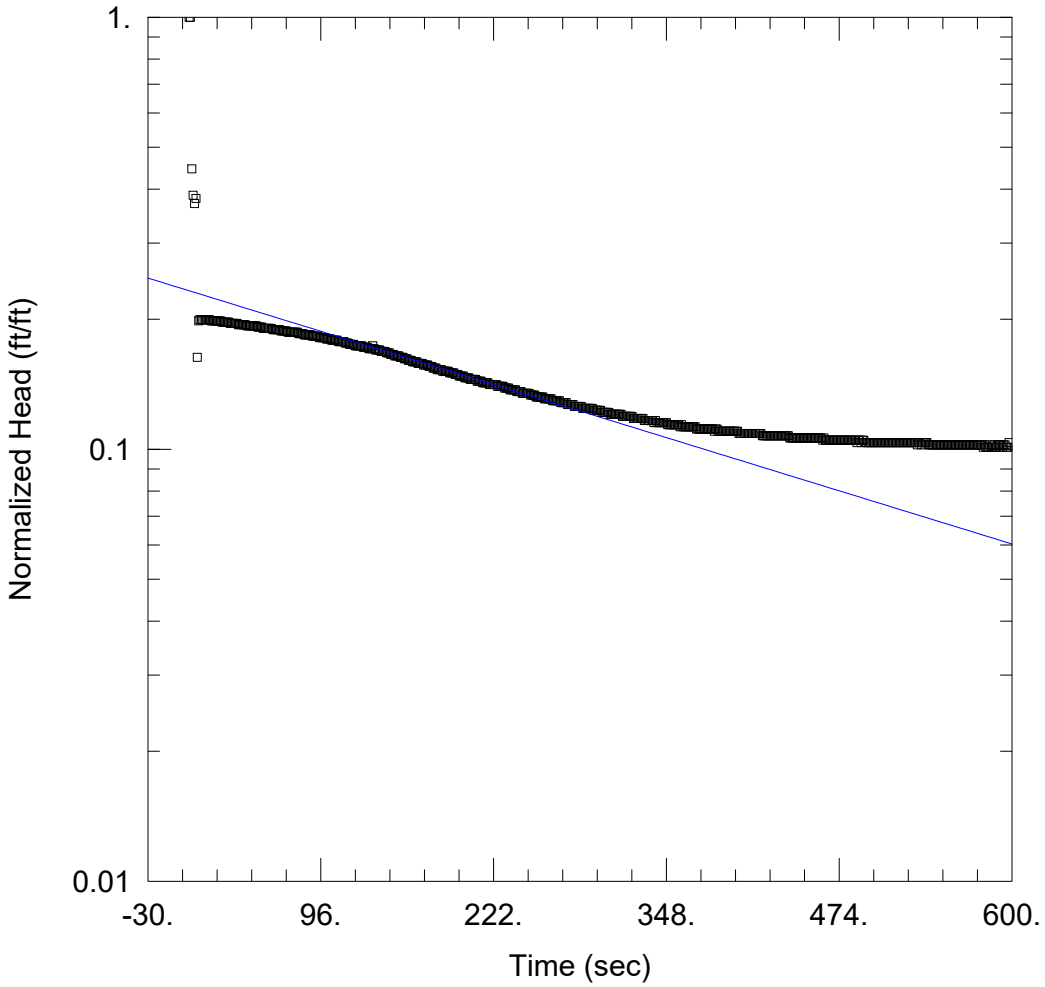
Saturated Thickness: 1000 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-1)

Initial Displacement: 4.04 ft
Static Water Column Height: 16.01 ft
Screen Length: 20. ft
Casing Radius: 0.167 ft
Well Radius: 0.656 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.623 ft/day
y0 = 1.588 ft



FALLING HEAD SLUG TEST #2

Data Set: S:\...\MW-1_Falling2.aqt
Date: 11/06/23 Time: 13:30:00

PROJECT INFORMATION

Company: Daniel B. Stephens & Assc.
Client: West Sun Tex, LLC
Project: DB20.1166
Location: WST Permian Landfill
Test Well: MW-1
Test Date: 9/28/2023

AQUIFER DATA

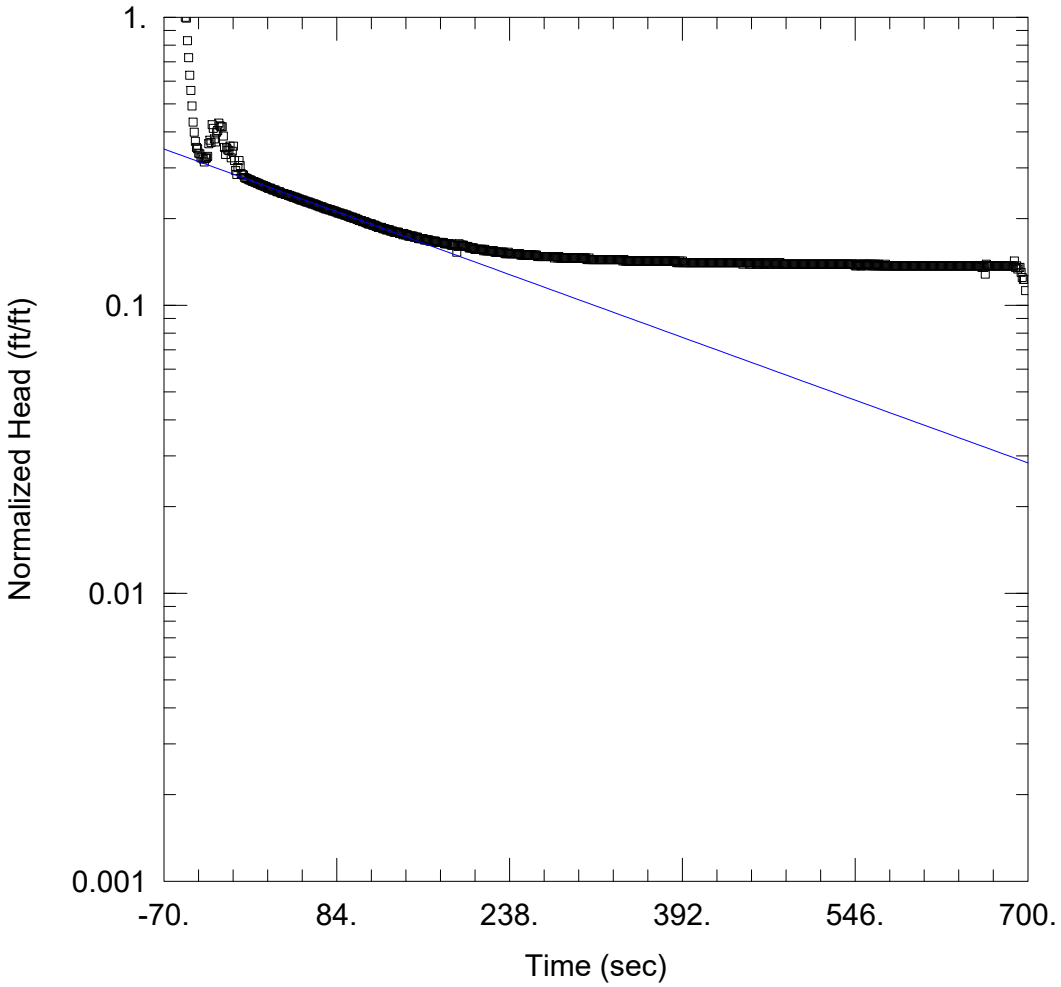
Saturated Thickness: 1000 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-1)

Initial Displacement: 7.72 ft
Static Water Column Height: 16.01 ft
Screen Length: 20. ft
Casing Radius: 0.167 ft
Well Radius: 0.656 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 1.341 ft/day
y0 = 1.797 ft



RISING HEAD SLUG TEST #1

Data Set: S:\...\MW-1_Rising1.aqt
Date: 11/06/23 Time: 13:23:25

PROJECT INFORMATION

Company: Daniel B. Stephens & Assc.
Client: West Sun Tex, LLC
Project: DB20.1166
Location: WST Permian Landfill
Test Well: MW-1
Test Date: 9/28/2023

AQUIFER DATA

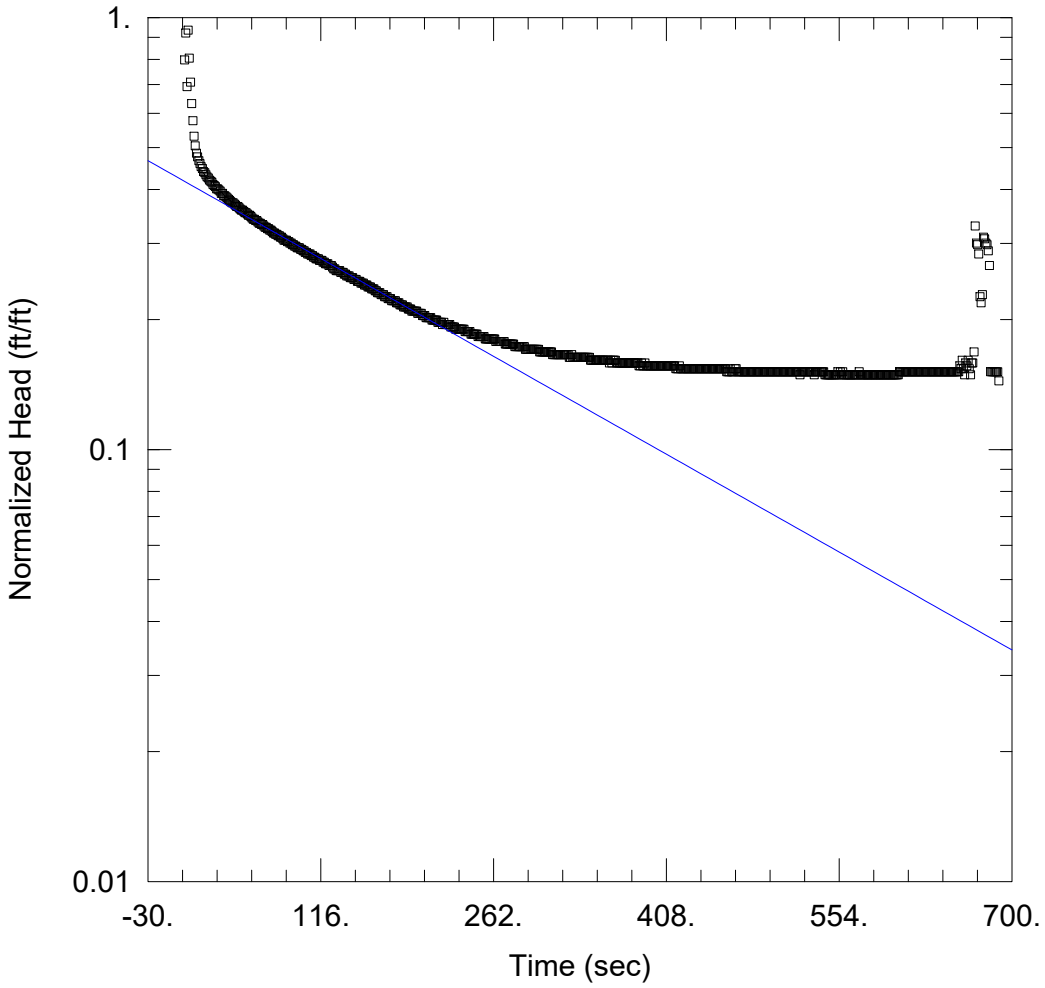
Saturated Thickness: 1000 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-1)

Initial Displacement: -5.69 ft
Static Water Column Height: 16.01 ft
Screen Length: 20. ft
Casing Radius: 0.167 ft
Well Radius: 0.656 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 2.337 ft/day
y0 = -1.58 ft



RISING HEAD SLUG TEST #2

Data Set: S:\...\MW-1_Rising2.aqt
Date: 11/06/23 Time: 13:04:42

PROJECT INFORMATION

Company: Daniel B. Stephens & Assc.
Client: West Sun Tex, LLC
Project: DB20.1166
Location: WST Permian Landfill
Test Well: MW-1
Test Date: 9/28/2023

AQUIFER DATA

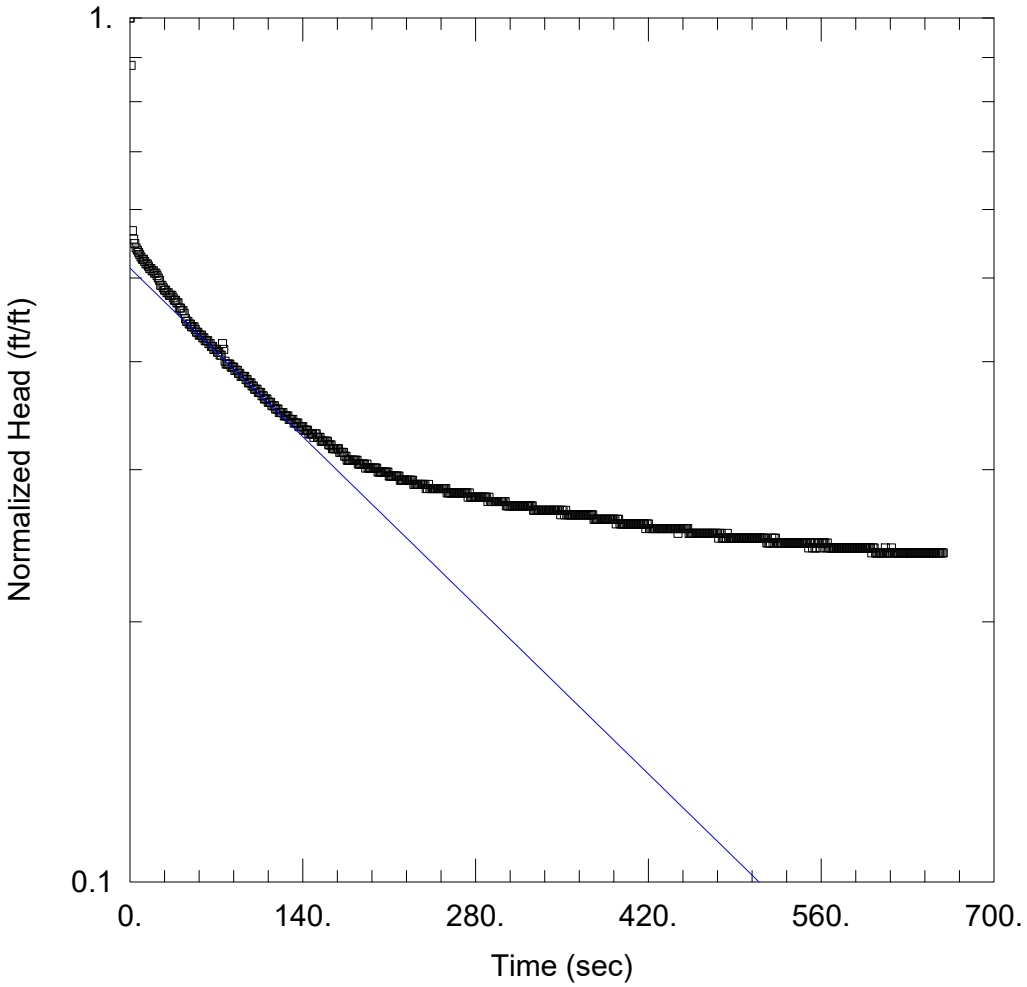
Saturated Thickness: 1000 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-1)

Initial Displacement: -4.16 ft Static Water Column Height: 16.01 ft
Screen Length: 20. ft
Casing Radius: 0.167 ft Well Radius: 0.656 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 2.13 ft/day y0 = -1.743 ft



FALLING HEAD SLUG TEST #1

Data Set: S:\...\MW-2_Falling1.aqt
Date: 11/06/23 Time: 14:52:34

PROJECT INFORMATION

Company: Daniel B. Stephens & Assc.
Client: West Sun Tex, LLC
Project: DB20.1166
Location: WST Permian Landfill
Test Well: MW-2
Test Date: 9/28/2023

AQUIFER DATA

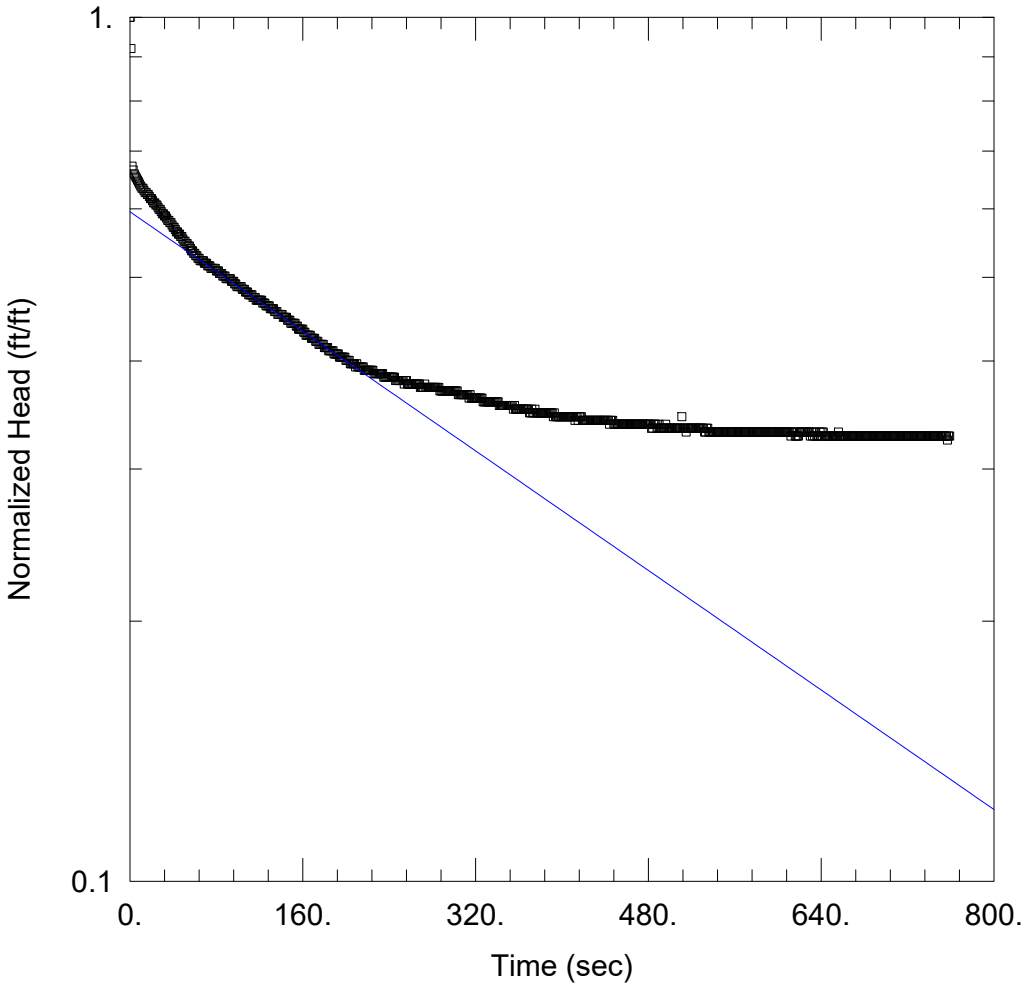
Saturated Thickness: 1000 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-2)

Initial Displacement: 3.12 ft
Static Water Column Height: 10.17 ft
Screen Length: 20. ft
Casing Radius: 0.167 ft
Well Radius: 0.656 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 1.914 ft/day
y0 = 1.602 ft



FALLING HEAD SLUG TEST #2

Data Set: S:\...\MW-2_Falling2.aqt
Date: 11/06/23 Time: 14:56:19

PROJECT INFORMATION

Company: Daniel B. Stephens & Assc.
Client: West Sun Tex, LLC
Project: DB20.1166
Location: WST Permian Landfill
Test Well: MW-2
Test Date: 9/28/2023

AQUIFER DATA

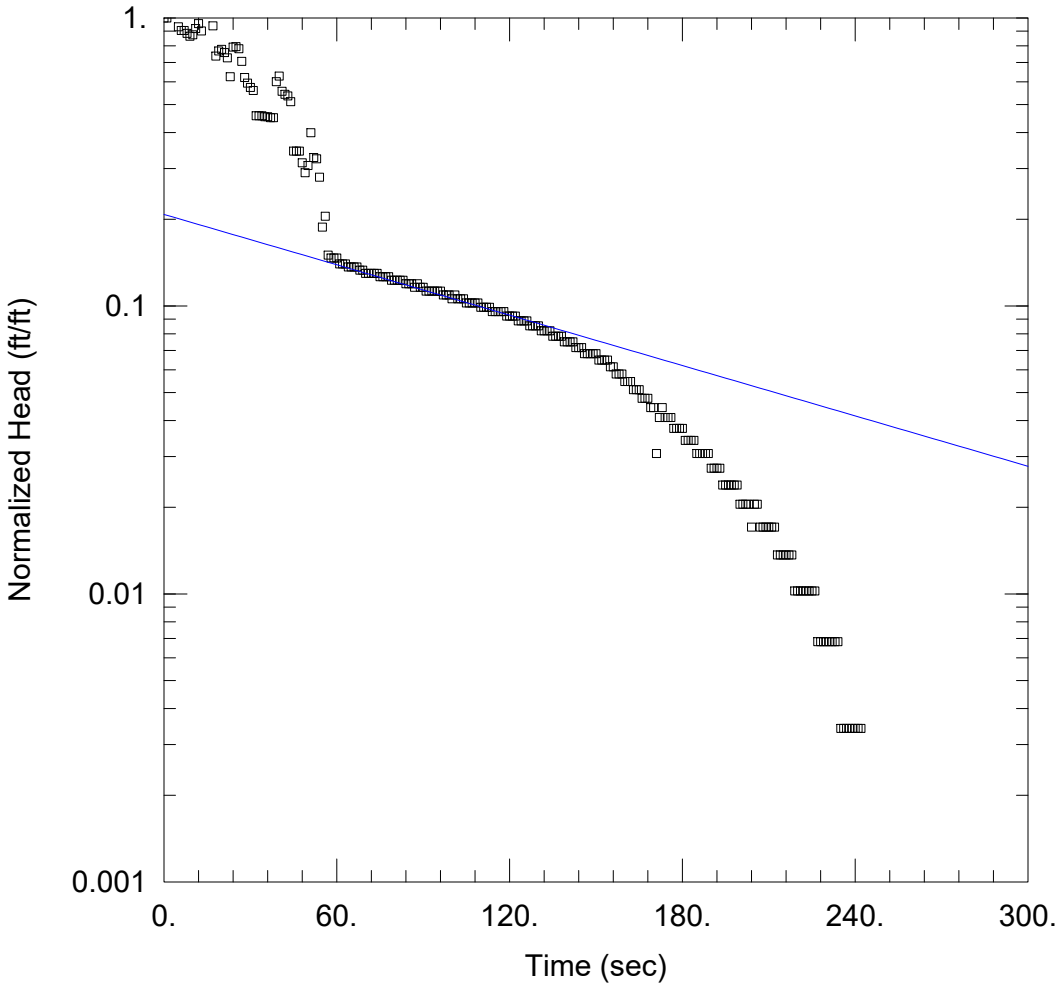
Saturated Thickness: 1000 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-2)

Initial Displacement: 2.87 ft
Static Water Column Height: 10.17 ft
Screen Length: 20. ft
Casing Radius: 0.167 ft
Well Radius: 0.656 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 1.187 ft/day
y0 = 1.709 ft



RISING HEAD SLUG TEST #1

Data Set: S:\...\MW-2_Rising1.aqt
Date: 11/06/23 Time: 14:49:14

PROJECT INFORMATION

Company: Daniel B. Stephens & Assc.
Client: West Sun Tex, LLC
Project: DB20.1166
Location: WST Permian Landfill
Test Well: MW-2
Test Date: 9/28/2023

AQUIFER DATA

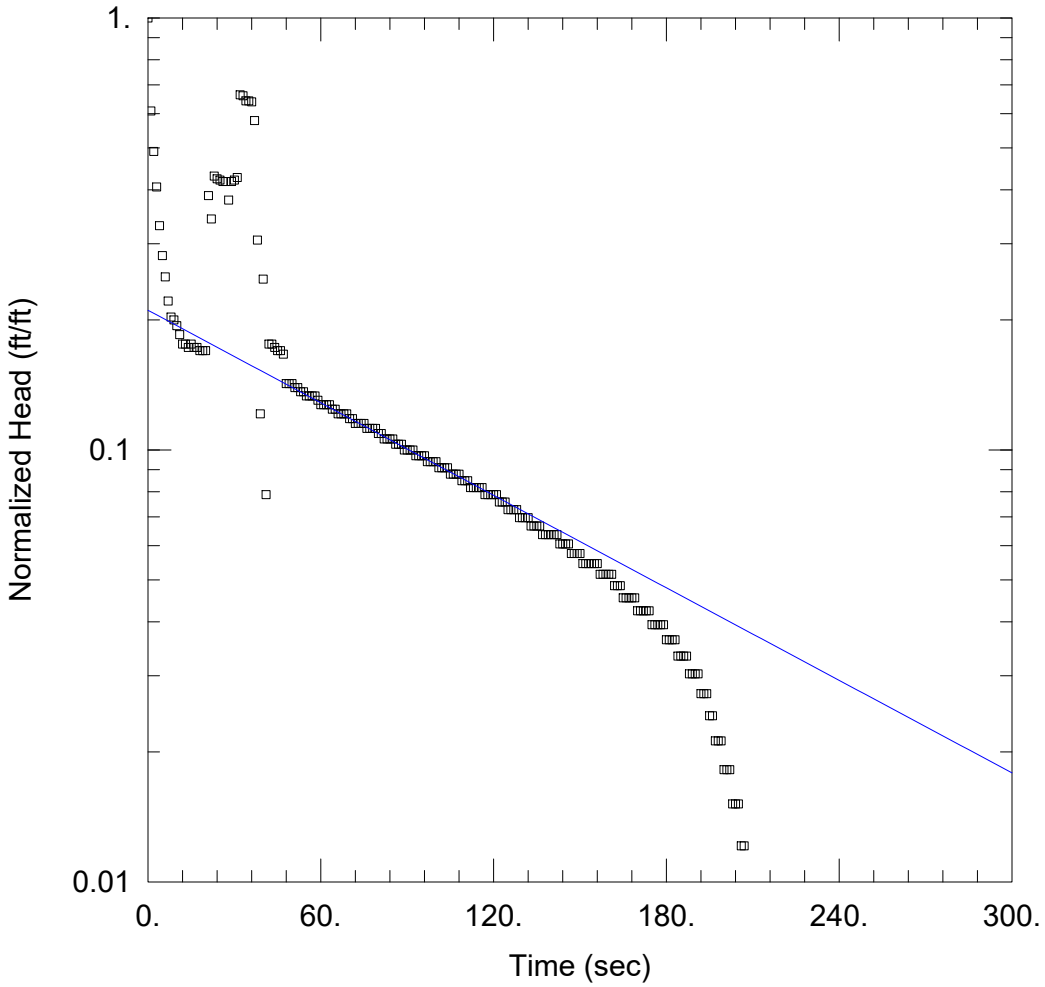
Saturated Thickness: 1000 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-2)

Initial Displacement: -2.93 ft
Static Water Column Height: 10.17 ft
Screen Length: 20. ft
Casing Radius: 0.167 ft
Well Radius: 0.656 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 4.001 ft/day y0 = -0.6089 ft



RISING HEAD SLUG TEST #2

Data Set: S:\...\MW-2_Rising2.aqt
Date: 11/06/23 Time: 15:12:01

PROJECT INFORMATION

Company: Daniel B. Stephens & Assc.
Client: West Sun Tex, LLC
Project: DB20.1166
Location: WST Permian Landfill
Test Well: MW-2
Test Date: 9/28/2023

AQUIFER DATA

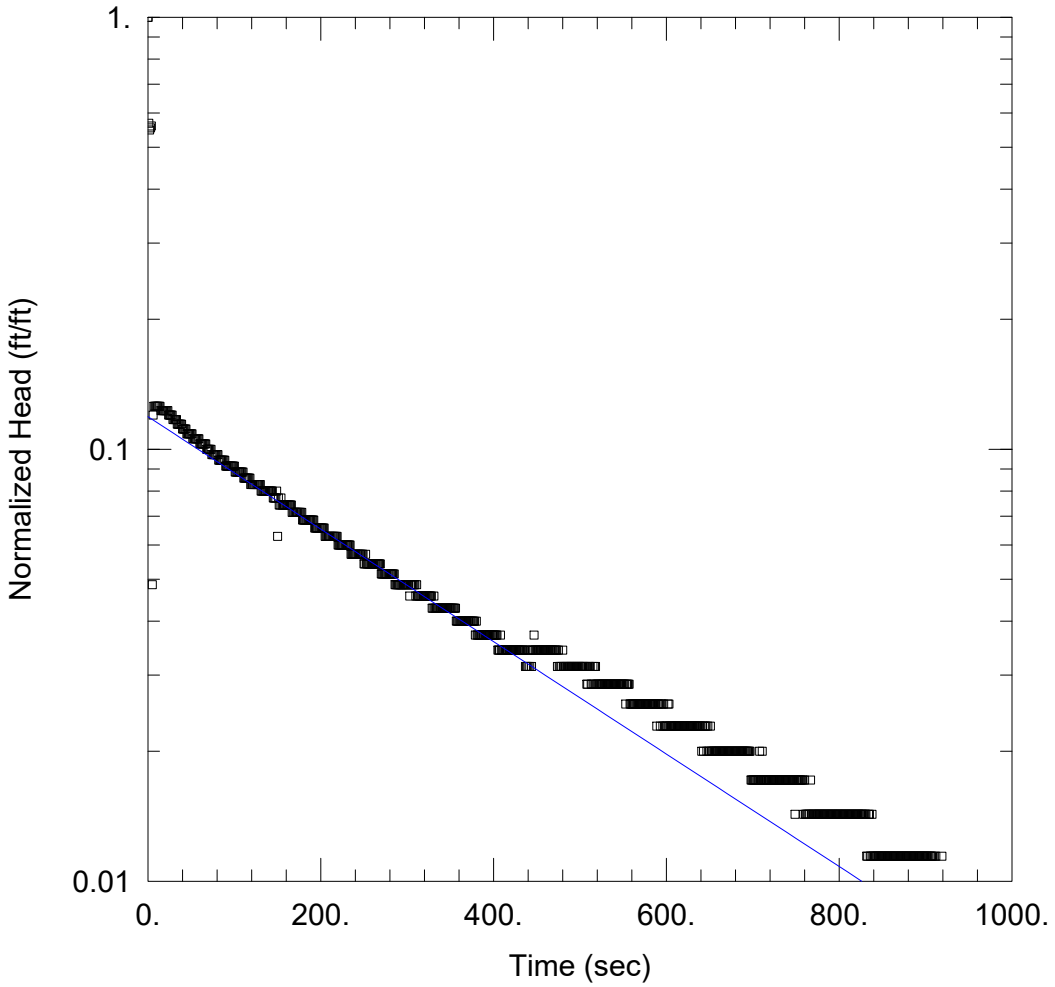
Saturated Thickness: 1000 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-2)

Initial Displacement: -3.3 ft
Static Water Column Height: 10.17 ft
Screen Length: 20. ft
Casing Radius: 0.167 ft
Well Radius: 0.656 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 4.9 ft/day
y0 = -0.6947 ft



FALLING HEAD SLUG TEST #1

Data Set: S:\...\MW-3_Falling1.aqt
Date: 11/10/23 Time: 09:57:07

PROJECT INFORMATION

Company: Daniel B. Stephens & Assc.
Client: West Sun Tex, LLC
Project: DB20.1166
Location: WST Permian Landfill
Test Well: MW-3
Test Date: 9/28/2023

AQUIFER DATA

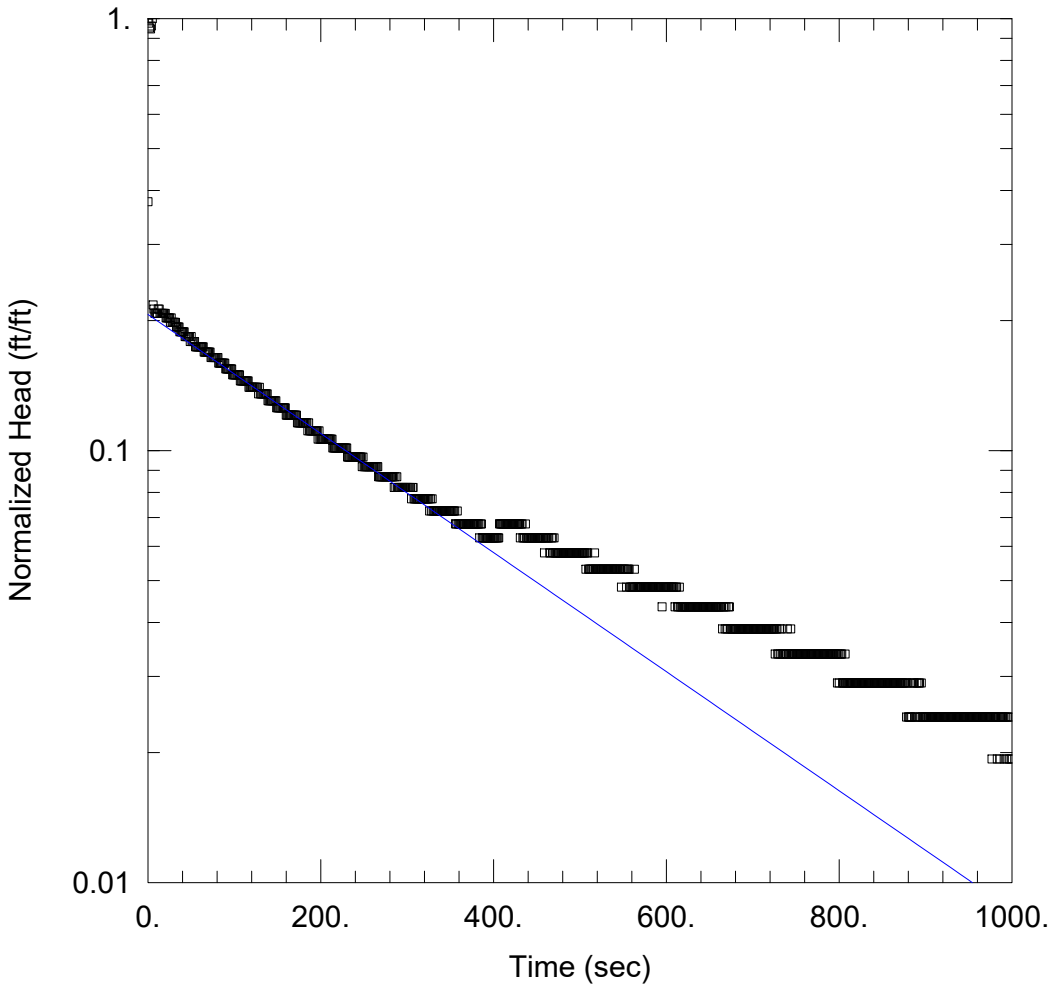
Saturated Thickness: 1000 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-3)

Initial Displacement: 3.5 ft
Static Water Column Height: 14.1 ft
Screen Length: 20. ft
Casing Radius: 0.167 ft
Well Radius: 0.656 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 1.787 ft/day
y0 = 0.4163 ft



FALLING HEAD SLUG TEST #2

Data Set: S:\...\MW-3_Falling2.aqt
Date: 11/10/23 Time: 10:00:48

PROJECT INFORMATION

Company: Daniel B. Stephens & Assc.
Client: West Sun Tex, LLC
Project: DB20.1166
Location: WST Permian Landfill
Test Well: MW-3
Test Date: 9/28/2023

AQUIFER DATA

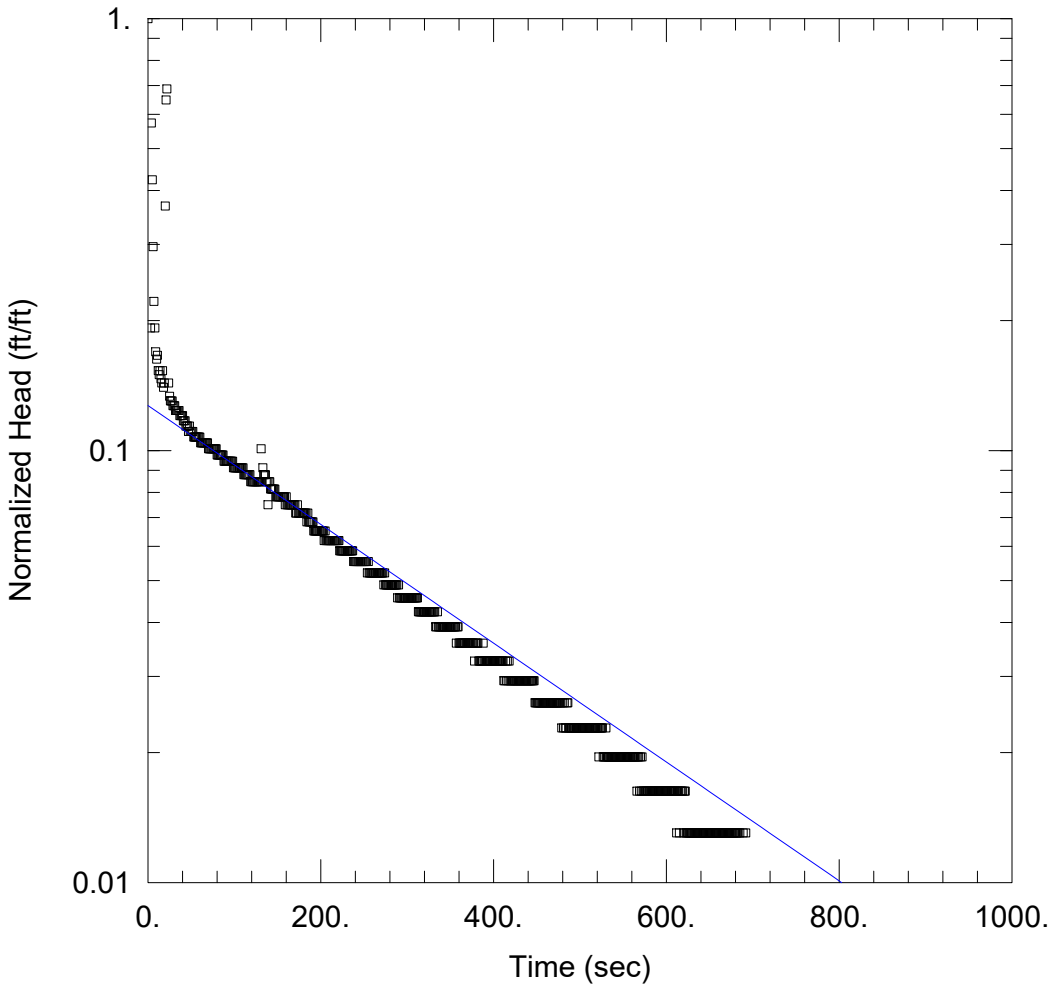
Saturated Thickness: 1000 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-3)

Initial Displacement: 2.07 ft
Static Water Column Height: 14.1 ft
Screen Length: 20. ft
Casing Radius: 0.167 ft
Well Radius: 0.656 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 1.892 ft/day
y0 = 0.4277 ft



RISING HEAD TEST #1

Data Set: S:\...\MW-3_Rising1.aqt
Date: 11/10/23 Time: 10:06:52

PROJECT INFORMATION

Company: Daniel B. Stephens & Assc.
Client: West Sun Tex, LLC
Project: DB20.1166
Location: WST Permian Landfill
Test Well: MW-3
Test Date: 9/28/2023

AQUIFER DATA

Saturated Thickness: 1000 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-3)

Initial Displacement: -3.07 ft
Static Water Column Height: 14.1 ft
Screen Length: 20. ft
Casing Radius: 0.167 ft
Well Radius: 0.656 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 1.888 ft/day
y0 = -0.3903 ft

Appendix III-5-F

Water Quality Data

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Appendix III-5-F: Historical Water Quality Analytical Results

		Field Parameter					Metals (mg/L)															Benzene and other Volatile Organic Compounds (µg/L)
Sample Location	Date of Sample	pH (standard units)	Specific Conductance (µmhos/cm)	Temperature (°C)	Dissolved Oxygen (mg/L)	Oxidation/Reduction Potential (mv)	Silver	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Chromium	Copper	Nickel	Lead	Antimony	Selenium	Thallium	Vanadium	Zinc	
MW-1	9/25/2023	7.17	4,580	22.6	5.09	201.5	ND	0.059	2.2	0.014	0.0023	0.044	0.13	0.082	0.099	0.086	ND	0.0064	0.0021	0.29	0.39B	ND
	1/3/2024	7.38	5,187	20	5.47	104.3	ND	0.018	0.54	0.0031	ND	0.01	0.03	0.02	0.024	0.021	ND	ND	ND	0.074	0.099	ND
	4/2/2024	7.29	4,945	21.1	4.55	173.2	ND	0.012	0.25	ND	ND	0.0053	0.018	0.0098	0.013	0.013	ND	0.01	ND	0.049	0.062	ND
	7/9/2024	7.27	5,293	22.2	5.3	142	ND	0.027	0.79	ND	ND	0.019	0.06	0.033	0.042	0.035	ND	0.015	ND	0.14	0.2	ND
	10/24/2024	7.31	5,020	21.8	4.2	146.3	0.031	0.016	0.23	ND	ND	ND	0.013	ND	0.012	ND	ND	ND	ND	0.048 B	0.11	ND
	10/24/2024 Duplicate	—	—	—	—	—	0.031	0.015	0.27	ND	ND	ND	0.018	0.01	0.013	ND	ND	0.013	ND	0.048 B	ND	ND
	3/18/2025	7.12	5,888	21.4	7.7	145.6	ND	0.014	0.26	ND	ND	0.005	0.017	0.0092	0.014	0.011	ND	0.0052	ND	0.043	0.061	ND
	8/26/2025	7.35	4,558	23.2	5.14	175.2	0.012	0.01	0.11	ND	ND	ND	0.008	0.005	0.011	0.012	ND	0.0086	ND	0.037	ND	ND
GW-3	9/25/2023	7.22	4,138	22.5	4.88	196.7	ND	0.022	0.52	0.0048	0.0013	0.02	0.037	0.039	0.035	0.025	ND	ND	ND	0.096	0.11	ND
	9/25/2023 Duplicate	—	—	—	—	—	ND	0.029	0.71	0.0054	0.0011	0.022	0.053	0.048	0.043	0.027	ND	0.0051	ND	0.13	0.15	ND
	1/3/2024	7.55	4,783	21.1	6.52	8.9	ND	0.018	0.37	0.0028	ND	0.012	0.031	0.025	0.023	0.014	ND	0.0053	ND	0.082	0.084	ND
	1/3/2024 Duplicate	—	—	—	—	—	ND	0.017	0.53	0.0031	ND	0.0095	0.03	0.018	0.023	0.019	ND	ND	ND	0.074	0.094	ND
	4/2/2024	7.45	4,534	20.7	5.15	165.2	ND	0.012	0.19	ND	ND	0.0076	0.021	0.015	0.015	ND	ND	0.0092	ND	0.058	0.095	ND
	4/2/2024 Duplicate	—	—	—	—	—	ND	ND	0.018	ND	ND	ND	ND	ND	ND	ND	ND	0.011	ND	0.0029	ND	ND
	7/9/2024	7.37	4,868	22	5.5	170.3	ND	0.029	0.61	ND	ND	0.021	0.067	0.044	0.046	0.032	ND	0.017	ND	0.15	0.17	ND
	10/24/2024	7.45	4,619	21.5	3.9	101.6	0.019	0.032	0.77	ND	ND	0.024	0.07	0.052	0.053	0.032	ND	0.013	ND	0.17 B	0.25	ND
	3/17/2025	7.31	4,012	25	3.9	180.1	ND	0.019	0.4	ND	ND	0.013	0.043	0.026	0.028	0.019	ND	0.0063	ND	0.099	0.12	ND
	3/17/2025 Duplicate	—	—	—	—	—	ND	0.019	0.39	ND	ND	0.012	0.044	0.025	0.027	0.019	ND	0.0062	ND	0.1	0.11	ND
	8/26/2025	7.49	4,149	21.6	6.27	172.1	0.0084	0.011	0.18	ND	ND	0.0084	0.018	0.015	0.017	0.012	ND	0.0074	ND	0.059	ND	ND
GW-11	9/25/2023	7.13	7,630	22.5	5.79	197.8	ND	0.043	1.6	0.009	0.0017	0.033	0.094	0.065	0.071	0.054	ND	0.017	0.0017	0.22	0.28	ND
	1/3/2024	7.29	8,280	19.7	6.28	49.8	ND	0.016	0.47	0.0025	ND	0.0091	0.027	0.017	0.02	0.016	ND	0.016	ND	0.07	0.079	ND
	4/2/2024	7.31	5,615	20.1	4.32	131.6	ND	0.015	0.29	ND	ND	0.0065	0.024	0.013	0.015	0.012	ND	0.012	ND	0.06	0.089	ND
	7/9/2024	7.28	5,070	21.7	2.4	—	ND	0.02	0.36	ND	ND	ND	0.028	0.015	0.019	0.016	ND	0.013	ND	0.068	ND	ND
	10/24/2024	7.38	4,794	21.4	1.9	86.2	0.03	0.02	0.17	ND	ND	ND	0.01	ND	ND	ND	ND	ND	ND	0.034 B	ND	ND
	3/18/2025	7.26	5,280	21.6	2.38	283	ND	0.057	1.4	0.0069	ND	0.032	0.11	0.062	0.069	0.056	ND	0.013	ND	0.23	0.29	ND
GW-13	9/25/2023	7.08	8,063	22.6	4.54	207.4	ND	ND	0.025	ND	ND	ND	ND	0.0041	ND	ND	ND	0.0066	ND	ND	ND	ND
	1/3/2024	7.22	9,113	19.6	6.45	44.2	ND	ND	0.022	ND	ND	ND	ND	ND	ND	ND	ND	0.007	ND	ND	ND	ND
	4/2/2024	7.09	8,589	21.1	4.63	197.4	ND	ND	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0029	ND	ND
	7/10/2024	7.09	8,580	21.7	6.1	-15.4	ND	ND	0.025	ND	ND	ND	ND	ND	ND	ND	ND	0.0099	ND	ND	ND	ND
	10/24/2024	7.16	8,854	21.7	4.1	95.3	0.031	ND	0.029	ND	ND	ND	ND	ND	ND	ND	ND	0.01	ND	ND	ND	ND
	3/18/2025	7.18	10,790	22.3	6.86	24.6	ND	0.0054	0.025	ND	ND	ND	ND	ND	ND	ND	ND	0.0072	ND	ND	ND	ND
	8/26/2025	7.33	8,041	22	6.04	176.8	0.016	ND	0.022	ND	ND	ND	ND	ND	ND	ND	ND	0.0084	ND	ND	ND	ND
	8/26/2025 Duplicate	—	—	—	—	—	0.016	ND	0.024	ND	ND	ND	ND	ND	ND	ND	ND	0.0086	ND	ND	ND	ND

Appendix III-5-F: Historical Water Quality Analytical Results

		Field Parameter					Metals (mg/L)															Benzene and other Volatile Organic Compounds (µg/L)
Sample Location	Date of Sample	pH (standard units)	Specific Conductance (µmhos/cm)	Temperature (°C)	Dissolved Oxygen (mg/L)	Oxidation/Reduction Potential (mv)	Silver	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Chromium	Copper	Nickel	Lead	Antimony	Selenium	Thallium	Vanadium	Zinc	
GW-14	9/25/2023	6.81	4,543	21.6	5.83	215.4	ND	0.032	0.93	0.0055	0.015	0.024	0.074	0.044	0.058	0.04	ND	0.0063	0.0013	0.16	0.22	ND
	1/3/2024	7.42	5,393	20.1	8.08	232.7	ND	0.019	0.53	0.0038	ND	0.013	0.044	0.025	0.036	0.023	ND	0.0059	ND	0.095	0.13	ND
	4/2/2024	7.2	5,237	20.8	8.32	235.7	ND	0.0067	0.13	ND	ND	0.0034	0.015	0.0061	0.0089	ND	ND	0.0083	ND	0.033	0.032	ND
	7/9/2024	7.14	5,748	21.7	5.9	217.5	ND	0.012	0.2	ND	ND	ND	0.022	0.0094	0.014	0.011	ND	0.0077	ND	0.047	ND	ND
	7/9/2024 Duplicate	—	—	—	—	—	ND	0.015	0.26	ND	ND	ND	0.034	0.015	0.021	0.016	ND	0.015	ND	0.69	ND	ND
	10/24/2024	7.26	5,430	21.7	4.2	153.3	0.034	0.014	0.27	ND	ND	ND	0.024	0.012	0.021	0.011	ND	0.017	ND	0.062 B	0.33	ND
	3/17/2025	7.17	4,681	22.4	11.38	183.5	ND	0.028	0.67	ND	ND	0.019	0.068	0.03	0.046	0.033	ND	0.0096	ND	0.15	0.18	ND
	8/26/2025	—	—	—	—	—	ND	0.034	0.64	0.0044	ND	0.028	0.083	0.043	0.064	0.046	ND	0.018	ND	0.15	0.21	ND
Field Blank	9/25/2023	—	—	—	—	—	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	1/3/2024	—	—	—	—	—	ND	ND	ND	ND	ND	ND	ND	0.011	ND	ND	ND	ND	ND	ND	ND	ND
	4/2/2024	—	—	—	—	—	ND	ND	ND	ND	ND	ND	ND	0.00091	ND	ND	ND	ND	ND	ND	ND	ND
	7/9/2024	—	—	—	—	—	ND	ND	ND	ND	ND	ND	ND	0.0062	ND	ND	ND	ND	ND	ND	ND	ND
	10/24/2024	—	—	—	—	—	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Detect
	3/17/2025	—	—	—	—	—	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	8/26/2025	—	—	—	—	—	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Detect
Trip Blank	9/25/2023	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	ND
	1/3/2024	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	ND
	4/2/2024	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	ND
	7/9/2024	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	ND
	10/24/2024	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	ND
	3/17/2025	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	ND
	8/26/2025	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	ND

NOTES

Constituents listed in 40 CFR Appendix I, as stated in 30 TAC 330.407

µmhos/cm = Micromhos per centimeter

mg/L = Milligrams per liter

mV = Millivolt(s)

µg/L = Micrograms per liter

ND = Not detected

Detect = Volatile organic compound(s) reported. Reference lab reports for details.

J = Result is less than the reporting limit but greater than or equal to the MDL; concentration is approximate value

B = Compound was found in the blank and sample

Appendix III-5-F: Historical Water Quality Analytical Results

Sample Location	Date of Sample	General Chemistry (mg/L)													Total Petroleum Hydrocarbons		
		Carbonate Alkalinity (as $CaCO_3$)	Total Dissolved Solids	Bromide	Calcium	Chloride	Sulfate	Magnesium	Nitrate	Nitrite	Nitrate + Nitrite (as N)	Potassium	pH (pH units)	Sodium	C6-C12 Range Hydrocarbons	>C12-C28 Range Hydrocarbons	>C28-C35 Range Hydrocarbons
MW-1	4/2/2024	ND	4,400	1.8	740	820	1,600	180	44	ND	44	19	7.6	160	ND	ND	ND
	7/9/2024	ND	4,800	1.7	720	790	1,600	170	43	ND	43	18	7.6	150	ND	ND	ND
	10/24/2024	ND	4,100	1.7	870	870	1,800	200	39	ND	39	21	7.8	170	ND	ND	ND
	10/24/2024 Duplicate	ND	4,200	1.7	890	850	1,700	200	41	ND	41	22	7.8 H	170	ND	ND	ND
	3/18/2025	ND	4,000 E	2.1	880	840	1,800	190	—	—	37	29	7.4 H	180	ND	ND	ND
	8/26/2025	ND	5,000	1.5	720	770	1,700	170	42	ND	42	18	7.4 H	160	ND	ND	ND
GW-3	4/2/2024	ND	4,500	1	630	540	1,900	190	37	ND	37	14	7.7 H	210	ND	ND	ND
	4/2/2024 Duplicate	ND	7,500	3.7	980	2,000	1,400	150	130	ND	130	20	4.5	710	ND	ND	ND
	7/9/2024	ND	4,200	0.92	630	520	1,900	180	35 H	ND H	35 H	13	7.6	200	ND	ND	ND
	10/24/2024	ND	4,100 E	0.99	990	590	2,100	220	35	ND	35	31	7.8 H	230	ND	ND	ND
	3/17/2025	ND	4,000	1.3	960	580	2,100	240	—	—	33	31	7.6 H	250	ND	ND	ND
	3/17/2025 Duplicate	ND	4,000	1.3	900	570	2,100	220	—	—	33	30	7.5 H	230	ND	ND	ND
	8/26/2025	ND	4,300	ND	660	560	1,900	200	33	ND	33	14	7.5 H	220	ND	ND	ND
GW-11	4/2/2024	ND	5,000	3	830	1,200	1,500	170	58	ND	58	14	7.6	300	ND	ND	ND
	7/9/2024	ND	4,600	2.2	730	750	1,600	150	43	ND	43	12	7.6	150	ND	ND	ND
	10/24/2024	ND	4,300	2.1	810	810	1,800	170	41	ND	41	14	7.7 H	140	ND	ND	ND
	3/18/2025	ND	4,000	2.2	1,600	670	1,800	220	—	—	36	45	7.5 H	120	ND	ND	ND
GW-13	4/2/2024	ND	7,200	3.7	1,000	2,000	1,400	150	130	ND	130	20	7.6	760	ND	ND	ND
	7/10/2024	ND	7,300	3.4	960	2000	1,500	140	130	ND	130	19	7.6	680	ND	ND	ND
	10/24/2024	ND	7,300	3.7	1,000	2,100	1,500	160	130	ND	130	19	7.8 H	790	ND	ND	ND
	3/18/2025	ND	6,400 E	4.3	940	2,100	1,700	170	—	—	120	22	7.5 H	760	ND	ND	ND
	8/26/2025	ND	7,500	3.2	950	2,200	1,600	150	130	ND	120	21	7.3 H	760	ND	ND	ND
	8/26/2025 Duplicate	ND	8,000	3.2	1,000	2,100	1,600	150	120	ND	120	21	7.3 H	740	ND	ND	ND
GW-14	4/2/2024	ND	5,200	2	850	990	1,400	120	66	ND	66	15	7.5	200	ND	ND	ND
	7/9/2024	ND	5,000	2.1	810	990	1,400	110	66 H	ND H	66 H	14	7.6	190	ND	ND	ND
	7/9/2024 Duplicate	ND	5,200	2.1	810	920	1,300	110	68 H	ND H	68 H	13	7.6	190	ND	ND	ND
	10/24/2024	ND	4,100	2.1	980	1,000	1,400	130	68	ND	68	20	7.7 H	210	ND	ND	ND
	3/17/2025	ND	4,300	2.6	1,300	1,100	1,500	160	—	—	69	36	7.5 H	220	ND	ND	ND
	8/26/2025	ND	4,900	1.9	810	1,000	1,500	110	70	ND	70	14	7.4 H	200	ND	ND	ND
Field Blank	4/2/2024	ND	ND	ND	0.32	ND	0.46	ND	ND	ND	ND	ND	6	0.31	ND	ND	ND
	7/9/2024	ND	33	ND	ND	ND	ND	ND	ND	ND H	ND	ND	5.5	ND	ND	ND	ND
	10/24/2024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.9 H	ND	ND	ND	ND
	3/17/2025	ND	ND	ND	ND	ND	ND	ND	—	—	ND	ND	5.8 H	ND	ND	ND	ND
	8/26/2025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.3 H	ND	ND	ND	ND

NOTES

ND = Not detected

H = Analyzed beyond specified holding time

J = Result is less than the reporting limit but greater than or equal to the MDL; concentration is approximate value

E = Result exceeded calibration range

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Attachment III-6

Groundwater Sampling and Analysis Plan

DBS&A
a Geo-Logic Company

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Sampling and Analysis Plan
WST Landfill
Reeves County, Texas

Prepared for
West Sun Tex, LLC
Pecos, Texas

Prepared by

DBS&A
a Geo-Logic Company

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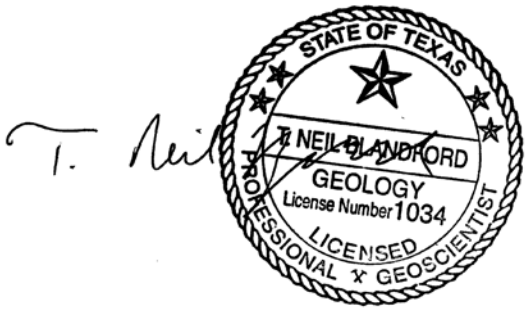
July 2026

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Certification

DBS&A designed the groundwater monitoring system for this facility in accordance with Chapter 330 Subchapter J. Any deviations from these requirements are discussed either below or in Section 8 of the Geology Report (Attachment III-5). All parts of the groundwater monitoring system shall be operated and maintained so that they perform at least to design specifications through the life of the groundwater monitoring program.

A certification letter will be completed and submitted as part of the pre-opening requirements specified in 30 TAC 330.73. The certification will be signed by a qualified groundwater scientist documenting that the facility is in compliance with the groundwater monitoring requirements specified in 30 TAC 330.403, 330.405, 330.407, and 330.409 before waste can be placed in the unit.



T. Neil Blandford, P.G.
Principal Hydrogeologist



Table of Contents

1. Introduction 1

2. Groundwater Sampling Procedures 2
   - 2.1 Preliminary Work 2
     - 2.1.1 Well Inspection 2
     - 2.1.2 Water Level Monitoring 3
   - 2.2 Well Purging 3
     - 2.2.1 Low-Flow Purge Method 3
     - 2.2.2 Non-Low-Flow Purge 5
     - 2.2.3 Bailer Purge 6
   - 2.3 Storage and Disposal of Purge Water 6
   - 2.4 Sample Collection Methods 7
     - 2.4.1 Timing and Sequence of Sampling 7
     - 2.4.2 Cleaning and Decontaminating Field Equipment 8
     - 2.4.3 Field Equipment Calibration 8
     - 2.4.4 Water Quality Indicator Parameters 9
     - 2.4.5 Sample Filtration 9
     - 2.4.6 Sample Collection Procedures 9
     - 2.4.7 Quality Control Samples 11

3. Groundwater Analysis 13
   - 3.1 Constituents Required for Detection Monitoring 13
   - 3.2 Laboratory Accreditation 13
   - 3.3 Laboratory Procedures and Test Methods 13
   - 3.4 Reporting Analytical Results 16
     - 3.4.1 MSW Benchmark PQLs and Laboratory PQLs 19
     - 3.4.2 Results Estimated Below a PQL 19
     - 3.4.3 Quality Control Samples 19

4. Statistical Evaluation of Monitoring Data 20
   - 4.1 Establishment of Background Data 20
   - 4.2 Statistical Methods for Evaluation of Groundwater Data 21
     - 4.2.1 Assumptions, Trends, and Non-Detects 21
     - 4.2.2 Site-Wide False Positive Rates and Statistical Power 21
   - 4.3 Statistically Significant Increases During Detection Monitoring 22
   - 4.4 Statistical Tests 22
   - 4.5 Verification Resampling 23

4.6 Confidence Intervals for Assessment Monitoring and Corrective Action 24
5. Monitoring Frequency and Reporting Requirements 24
5.1 Background Monitoring 24
5.2 Detection Monitoring 25
5.2.1 Verification Resampling 25
5.3 Assessment Monitoring 26
5.4 Assessment of Corrective Measures 27
6. Reporting Requirements 27
6.1 Annual Detection Monitoring Report 27
6.2 Semiannual Monitoring Report 28
6.3 Assessment Monitoring Report 29
6.4 Corrective Action Report 29
6.5 Additional Reporting Information 29
References 29

List of Tables

III-6-1 Groundwater Monitoring Analytical Constituents 14
III-6-2 Analytical Methods 16
III-6-3 Measurement Quality Objectives 17

List of Appendices

III-6-A Proposed Monitor Well Locations and Well Completion Information
III-6-B TCEQ MSW Groundwater Sampling Form (TCEQ-0312)
III-6-C TCEQ Laboratory Review Checklist

1. Introduction

Daniel B. Stephens & Associates, Inc. (DBS&A) has prepared this groundwater sampling and analysis plan (SAP) for the West Sun Tex, LLC (WST) Landfill in Reeves County, Texas. This plan meets the requirements in Title 30, Texas Administrative Code (30 TAC) Sections 330.63(f) and 330.405 through 330.415, and has been prepared in accordance with the Resource Conservation and Recovery Act (RCRA) Subtitle D rules for groundwater monitoring and corrective action in Title 40, Code of Federal Regulations (40 CFR) Part 258, Subpart E. The SAP describes proper methods for sampling and analysis to yield accurate results and evaluation of groundwater conditions at the landfill facility.

This SAP addresses all applicable groundwater monitoring provisions related to sampling and analysis, establishment of background concentrations, and detection monitoring procedures that are consistent with regulations and industry standards. The SAP will be used at background sampling locations and monitor wells identified as the WST Landfill points of compliance. This program will include procedures and techniques for sample collection, preservation, and shipment, analytical procedures, chain of custody control, and quality assurance and quality control (QA/QC). The program is designed to provide an accurate representation of groundwater quality in the vicinity of the landfill.

In accordance with 30 TAC 330.63(f), there is no evidence of hazardous constituents listed in 40 CFR Part 258, Appendix I at or in the vicinity of the facility. Prior to drilling soil borings and installing monitor wells in 2021, there was very little groundwater chemistry data available. Baseline water quality sampling performed from April 2021 through July 2024 indicates that nitrate concentrations in the perched zone monitor wells ranged from 35 to 130 mg/L. The detected nitrate concentrations are likely due to the infiltration of return flow and associated dissolved constituents from fertilizers from when the site was irrigated in the past.

The geology report (Attachment III-5) provides details of the facility geology, hydrology, site history, groundwater elevation, flow direction, flow rate, and groundwater quality characterization, as well as an analysis of the mostly likely pollutant pathway. This information is used in the geology report to determine the locations and screen intervals of monitor wells used in the points of compliance. In support of preparation of the geology report, additional subsurface investigation was completed in 2021. DBS&A submitted the final revised soil boring plan to the Texas Commission on Environmental Quality (TCEQ) on December 11, 2020. The soil

boring locations, soil borings completed as monitoring wells, and monitor well construction diagram are appended to the geology report (Appendix III-5-C). The monitor well locations and planned screen intervals are provided in Appendix III-6-A.

As required in 30 TAC 330.459 and 330.421, the diameters of the soil borings that were completed as monitor wells were drilled at least 4 inches larger than the 2-inch monitor well casings (7⅝-inch-diameter boreholes were drilled). The monitor wells were constructed using 2-inch Schedule 40 polyvinyl chloride (PVC) well materials, including end caps, 0.020-inch slotted screen and casing, 12-20 silica sand filter pack, bentonite seal, cement grout, well riser, and cement pad. Soil borings were drilled and monitor wells were completed by a Texas-licensed water well driller supervised by a Texas-licensed professional geoscientist, and the locations and measuring point elevations of the completed monitor wells were surveyed by a registered professional surveyor.

Additional monitor well installations will comply with the 30 TAC 330.421 monitor well construction specification requirements, and the monitor well detail provided in the drawings (Appendix III-4-A). These requirements include getting advanced approval from TCEQ for any monitor well to be installed in unusual conditions, developing each monitor well after construction to remove any materials left over from the drilling activities, surveying the locations and measuring point elevations by a registered professional surveyor, completing a well installation report that includes the installation and construction details, and submitting the report to TCEQ within 60 days of well completion.

2. Groundwater Sampling Procedures

2.1 Preliminary Work

2.1.1 Well Inspection

Prior to sample collection and water level measurement, monitor wells will be inspected. The well casing will be reviewed for cracks or damage, including the concrete pad, protective collar, and protective barriers. The lid, lock, and well cap will be verified for functionality, and will be secured after sampling. The well cap will be watertight. The sampler will refrain from using organic sprays or other potential contaminants to remove any insects found on or in the casing, or organic lubricants on well components such as hinges and locks. Proximity to possible

contamination sources (including facility roads) will be noted. The landfill manager will be notified if repairs or well replacement is required.

2.1.2 Water Level Monitoring

Water level measurements shall be recorded prior to sampling or purging activities during each monitor event. Total depth or well bottom will be measured at least every two years. Well depth measurements will be taken to the hundredth (0.01) foot from a permanent, clearly marked reference point or datum (a notch or point marked with permanent marker at the top of the well casing). Water level measurements will be documented on the Monitor Well Data Sheet for each well. The water level indicator will be calibrated regularly and decontaminated before use in each well with Liquinox or equivalent, followed by a rinse with deionized water. The sampler will include in the field log a record of calibrations and any indication of organic compounds in the wells. The groundwater elevation for each monitor well will be calculated and reported to the nearest 0.01 foot above mean sea level (foot msl).

Water level measurements will be collected from the highest water elevation to the lowest water elevation wells unless any constituents are detected at concentrations of concern. If the constituents are detected at concentrations of concern, then water level measurements shall be collected from the least to greatest impacted well. The period of time during which groundwater elevations are measured will be short enough to avoid temporal variations in groundwater elevation for a valid determination of groundwater flow rate and direction.

2.2 Well Purging

The purpose of purging the well prior to sampling is to remove stagnant water from the well so that a representative groundwater sample can be collected. Various well purging techniques may be used to provide acceptable monitoring results. Wells may either be equipped with dedicated pumps or purged and sampled with portable pumps or bailers. Low-flow purging will be the preferred sampling method at the WST Landfill; however, if a well is not suited to low-flow purging, then a standard pumping technique or bailer purge method will be used. Pump or bailer material will be Teflon or stainless steel.

2.2.1 Low-Flow Purge Method

Low-flow purging is a sampling technique used to remove well water in a manner that minimizes drawdown, turbidity, and disturbances to the aquifer. This guidance is generally

based on the U.S. Environmental Protection Agency (EPA) publication *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures* (April 1996).

The following procedures should be implemented during low-flow purging:

- Place the pump intake in the middle of the screened interval to avoid mixing formation water with sediments in the well bottom or overlying stagnant water within the well casing. Non-dedicated equipment will be decontaminated between wells to prevent cross-contamination.
- Limit low-flow purging to wells that exhibit no continuous drawdown under sustained pumping.
- Measure and record water levels before pumping.
- Initiate purging and adjust flow to a rate that results in a minimal (<0.33 foot) well drawdown. This goal may be difficult to achieve under some circumstances, and may require adjustment based on site-specific conditions. If the minimal drawdown exceeds 0.33 foot, but remains stable, continue purging.
- Purge rates for low-flow purging will be in range of 0.1 to 0.5 liters per minute (L/min) and will target a rate equivalent to the well recharge rate at the pump intake; purge rates will be determined for each well individually.
- Water level will be monitored in each well and the purge rate will be adjusted to minimize drawdown. The sampler will record water levels and purge rates every 3 to 5 minutes during purging, and upon completion of sampling. At a minimum, the well purge volume will be at least twice the volume contained within the pump and tubing.
- Water quality indicator parameters will be monitored continuously during purging with a flow-through cell. Stabilization of parameters will be used to determine when stagnant casing water has been purged and formation water is available for sampling. Measurements for pH, specific conductance, dissolved oxygen (DO), oxidation/reduction potential (ORP), and temperature shall be recorded every 3 to 5 minutes.
    - Stabilization is considered achieved when all the parameters are within the following ranges for three successive readings:
        - ±0.1 units for pH
        - ±3 percent for specific conductance
        - ±10 millivolts (mV) for ORP

  - ±10 percent for DO

- Field notes will document all purging procedures. The notes will include sampler's name, date, time, weather conditions, outdoor temperature, visual well and wellhead inspection results, initial depth to water, total well depth, calculated height and volume of the water, purge rate, purge method, calculated well volume for three casing volumes, field parameters (at each time measured, with corresponding purge volume), visual observations, odor, and any other relevant information.

2.2.2 Non-Low-Flow Purge

If the pump or well cannot sustain sufficient flow to meet the criteria for low-flow purging, then purging with a submersible pump at higher speeds will be used. A stainless steel or Teflon submersible sampling pump will be used.

The following procedures shall be implemented when purging by a non-low-flow method:

- A dedicated or decontaminated pump and new or dedicated tubing shall be used to minimize cross-contamination between wells. Equipment will be decontaminated with Liquinox or equivalent and deionized water. An equipment blank sample of the rinse deionized water will be collected and analyzed for volatile organic compounds (VOCs) during each event.
- Calculate the volume of water in each well using the following equation:

$$V = \pi r^2 L \qquad (1)$$

where V = volume of water (gallons, by converting from cubic feet [1 ft^3 = 7.48 gallons])
r = radius of well casing (convert inches to feet)
L = length of water column (total well depth minus depth to water, measured during preliminary work stage of sampling event) (feet)

- After the preliminary work has been done and a well is ready to be purged, assemble the pump and discharge tubing and lower the pump into the well. To avoid stirring up accumulated sediments at the bottom of the well, set the pump 3 feet from the bottom of the well, if possible.
- Measure flow rate with an attached flow meter or use a graduated bucket.
- At a minimum, measure applicable field parameters after each 0.5 casing volume is pumped. Field measurements of temperature, electrical conductivity, pH, and DO will be taken at each

well. Purging is generally considered complete when these parameters are approximately stable over at least one casing volume. Wherever possible, purge a minimum of three casing volumes from each well.

- In formations with low permeability, it may not be possible to purge three casing volumes before the well goes dry. When the formation permeability is too low to allow for continuous purging, remove all of the standing water in the well by pumping or bailing. As soon as the well has recharged sufficiently, collect a sample so as to minimize volatilization in the well bore.
- As long as water quality has not been adversely impacted, purge water may be discharged on-site. If anomalous (i.e., above background concentrations) groundwater monitoring results are detected that indicate contamination, all fluid will be contained for disposal by a suitable method (based on the water quality). Results of previous water sampling events will be consulted when determining the purge water management method.
- Field notes will document all purging procedures as described under the low-flow purge sampling details.

2.2.3 Bailer Purge

If pumping is unavailable, a standard bailer sampling method will be used. The bailer will be used to purge the three casing volumes from the well using the well volume calculation method described for under the non-low-flow purge sampling technique. A bottom-emptying device will be used with the bailer, such that the sample is emptied slowly with minimum aeration. New disposable gloves will be worn for each well to avoid cross-contamination. Due to the ease of stirring up accumulated sediments at the bottom of the well, purging will be conducted in a way that minimizes turbidity. The bailer will be lowered gently and steadily pulled to the surface. Purging and recovery should continue until at least three casing volumes have been removed or the well goes dry. Field notes will document all purging procedures as described under the low-flow purge sampling details.

2.3 Storage and Disposal of Purge Water

Based on groundwater sampling that has already been completed, purge water will be discharged to the on-site ground surface. If future sampling indicates groundwater contamination, or if anomalous groundwater monitoring results above background concentrations are detected that indicate contamination, purged well water will be contained for disposal by a suitable method (based on the water quality).

Methods for contaminated water disposal include the following:

- Place in the landfill leachate collection system via storage tanks, accessible risers, evaporation ponds, or other access points, and manage in the same manner as leachate.
- Place in the landfill gas condensate storage tanks and manage in the same manner as condensate.
- Transport off-site or discharge to an authorized wastewater treatment facility or liquid waste processing facility if the water quality is acceptable to the receiving facility.

2.4 Sample Collection Methods

Water samples will be collected with appropriate sampling devices, collection procedures, preservatives, temperature controls, and shipping methods using the procedures provided in the following subsections.

2.4.1 Timing and Sequence of Sampling

Samples shall be collected as soon after purging as is practical, with every effort made to sample within 24 hours. Temporal variations in water level and water chemistry may occur over larger time periods. As necessary, the sampler shall measure the water level in each well again before sampling to determine whether there is enough water for sampling, especially if the well went dry during purging. Where practicable, the water level in a well shall be allowed to recover to 90 percent of the level that existed prior to purging, before collecting a sample. To allow wells that purged dry to recover sufficiently to sample, or suspended sediments to settle, the sampler may have to wait several hours or several days between purging and sampling.

The sampler may allow up to seven days recovery time after purging a well before determining that the well is dry or has not recharged sufficiently to sample. After seven days, if the well has not recovered sufficiently for a complete set of samples, a partial set of samples shall be collected in decreasing order of volatility. That is, VOCs will be sampled first, followed by semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and inorganics, or in another order if warranted by conditions and data needs, until no more samples for the set can be collected.

Whenever possible, groundwater samples will be collected first from wells that have the lowest potential concentrations of analytes of interest and last from the wells with the highest suspected concentrations. Where no contamination is known, the order shall generally be from

the well with the highest water-level elevation to the one with the lowest elevation (that is, from upgradient to downgradient) for wells screened in the same water-bearing unit.

2.4.2 Cleaning and Decontaminating Field Equipment

If non-dedicated and non-disposable sample equipment is used, equipment will be cleaned and decontaminated prior to each sampling event and before sampling at each well. Reuse of sample bottles, bailer rope, pump tubing, rubber hoses, or disposable gloves is prohibited. In addition, the field representative should decontaminate all equipment in the field as required to prevent cross-contamination of samples collected in the field. The procedures described in this section are specifically for field decontamination of sampling equipment. At a minimum, field sampling equipment should be decontaminated using the following procedures:

- Wash the equipment in a solution of non-phosphate detergent (Liquinox) and distilled/deionized water. All surfaces that may come in direct contact with the samples should be washed. Use a clean Nalgene and/or plastic tub to contain the wash solution and a scrub brush to mechanically remove loose particles. Wear clean latex or plastic gloves during all washing and rinsing operations.
- Rinse twice with distilled/deionized water.
- Dry the equipment before use to the extent practicable.
- Wrap equipment for transport with inert material (aluminum foil or plastic wrap) to prevent direct contact with potentially contaminated material.
- All liquid and solid material generated from the decontamination process should be contained and disposed of.

2.4.3 Field Equipment Calibration

All equipment, including water level indicators and water quality meters, shall be calibrated as directed in the manufacturer's instructions prior to sampling. Field instruments will be calibrated routinely in order to ensure that reliable data are generated. The calibration and maintenance of field equipment will be the responsibility of field personnel. The personnel using field instruments are expected to read and be thoroughly familiar with all procedures detailed in these manuals. Documentation of calibrations will be included in the field notebook.

2.4.4 Water Quality Indicator Parameters

Water quality parameters will be monitored through the well purge as specified–including pH, specific conductance, DO, ORP, temperature, and turbidity. The indicator parameters will also be recorded at the time of sample collection.

2.4.5 Sample Filtration

No field filtration will occur per 30 TAC 330.405(c).

2.4.6 Sample Collection Procedures

Low-flow purging with a Teflon or stainless-steel pump is the method of preference for this facility. Acceptable alternatives include non-low-flow purge with a pump or a bailer. Water removed during sampling and not used shall be handled in the same way as purge water.

To prevent contamination, the sampler will keep clean equipment on top of plastic sheeting and not in direct contact with the ground. The sampler shall check the area around the sampling point for possible sources of contamination, particularly when sampling for VOCs. The sampler shall note any potential impacts in the field log. The sampler shall collect all water samples as close to the wellhead as practical. The outlet of the sampling pump discharge tubing or bailer should not come into direct contact with the sample vial or the water within the vial. The sampler shall hold the two as close to each other as possible to reduce aeration. Care shall be taken to ensure that no air is entrapped in the sample vials to be analyzed for VOCs. The sample vial should be held at an angle so that aeration is minimized. A convex meniscus should form across the mouth of the filled vial. When the vial is capped, the vial should be inverted to ensure that no entrapped air is present. If entrapped air is present, the sample will be recollected.

2.4.6.1 Sample Volume and Sampling Containers

The volume of samples and types of sample containers needed depends on the constituents to be analyzed. The sampler shall follow the following EPA recommendations:

- For VOCs, use two [or three] 40-milliliter (mL) glass vials (or laboratory-specified alternate quantity or size) with special caps with Teflon septa, pre-preserved by the laboratory. The septum shall be correctly placed, with the Teflon side toward the sample (shiny side away from the sample).
- For SVOCs, use a 1-liter (L) glass container.

- For metals, use laboratory-provided polyethylene or glass containers that already contain the necessary preservatives.
- For other inorganic constituents, use laboratory-provided polyethylene or glass containers (preservatives generally are not used, except for samples to be analyzed for ammonia).

2.4.6.2 Fill Order for Sample Containers

The sampler shall fill sample containers in the following order, according to volatilization sensitivity (from most to least volatile):

- VOCs
- SVOCs
- Metals
- Other inorganics

When filling containers for VOC samples, the sampler shall allow the water stream to flow down the inner wall of the vial to minimize formation of air bubbles. The sampler shall overflow the containers slightly so that the vial has a positive meniscus. The sampler shall screw the caps on carefully to avoid leaving any air space in the vials. If an air bubble forms in the bottle, the sampler shall not open the bottle to remove it, but collect an additional, separate sample. If the sampler uses bailers for sampling, the sampler shall discard the first part of the sample to remove any sludge or suspended solids, and then fill both VOC vials from a single bailer to minimize differences in the samples.

2.4.6.3 Sample Labels

All sample containers shall be labeled for identification purposes. The labels should include information such as well number, site identification, analysis to be performed, preservatives used, date and time of sample collection, and the name of the sampler. Labels shall be written with permanent ink.

2.4.6.4 Sample Handling and Custody Requirements

Samples collected for laboratory analysis will be transported in ice chests to the laboratory at the end of the sampling trip. The containers will be sealed in clear plastic bags and placed in coolers on bags of ice or frozen ice packs in order to cool the samples to 4°C for shipping. Ice shall be double bagged to preserve labels. Plastic bubble pack or other suitable packing material will be placed in the cooler to prevent breakage of fragile sample bottles. The coolers containing the samples will be delivered to the laboratory as quickly as possible. All samples will

be carefully tracked to ensure that they arrive intact and that holding time requirements are met.

Containers used to collect samples will be tagged with an adhesive label, and the designated sample identification will be applied using waterproof ink. Label information will include the sampling date and time, type of analysis requested, preservative used (if any), and the initials of the sampler.

For analytical data to be valid, samples must be traceable from the time of collection through chemical analysis and final disposition. Chain of custody forms obtained from the contract laboratory will be used for this purpose. A chain of custody form will accompany each cooler. If coolers are shipped by a commercial carrier, a chain of custody seal will be placed on the cooler so that the seal will be broken if the lid is opened.

2.4.6.5 Sampling Documentation

All pertinent sampling information will be recorded in the field notebook or on field data sheets. Data to be recorded include location, date, time, weather conditions, date and time of sample collection, well sampling sequence, types of sample containers used, sample identification numbers, all field measurements including units, field parameter data, name(s) of collector(s), deviations from established sampling protocol (e.g., equipment malfunctions), and collection of QA/QC samples. All the entries should be legible and made in black, permanent ink. Entry errors should be crossed out with a single line, dated, and initialed by the person making the corrections. Field log book and field data sheets should be protected and kept in a safe place.

2.4.7 Quality Control Samples

QA/QC samples, including trip blanks, field duplicates, field blanks, and equipment blanks, will be used as appropriate. The frequency of trip blanks and equipment blanks will be one each per sampling event. A field blank will be collected every 10 wells sampled or once per day. Field duplicates will be collected at a rate of 1 per 20 wells, with at least one collected during each monitoring event. Each type of QA/QC sample is described briefly as follows:

- *Trip blanks*. Trip blanks will be used as a check on possible contamination originating from container preparation methods, shipment, handling, storage, or other site-specific conditions. A trip blank will consist of two 40-mL volatile organic analysis (VOA) vials filled with organic-free water. Trip blanks will be prepared by the laboratory and analyzed for

VOCs using EPA method 8260. One trip blank will be sent to the laboratory with each cooler containing samples to be analyzed for VOCs.

- *Field Blanks*. A field blank is collected by pouring deionized water into sample containers. It is used to verify sampling protocol or airborne contaminants during the time of sample collection. These should be collected near downgradient wells or wells that are known or suspected to be contaminated.
- *Equipment Blanks*. Equipment blanks are samples collected to confirm that the equipment is clean. EPA guidance recommends that equipment blank samples be collected when sampling equipment is decontaminated and reused in the field or when a sample collection vessel will be used (U.S. EPA, 1990).
- *Field Duplicates*. Field duplicates are samples collected in parallel at the same location using the same procedure as the original sample. The same container type, preservative, and sampling technique are used. These samples are submitted to the laboratory as separate samples. The results of these samples are used to document the sampling, preservation, and handling techniques, and to estimate laboratory analytical precision.
    - Field duplicates are submitted "blind" to the laboratory, and the chain of custody and laboratory analytical request forms for the field duplicates must not contain any indication that the samples are duplicates. Field duplicates shall be labeled as a well sample using a name similar to DUP-1.
    - Field duplicates should be collected from various wells used for the monitoring activity, not from the same well repeatedly.
    - Analytical report forms for quality assurance replicates should be marked with appropriate information as soon as received from the laboratory in order to eliminate any doubt concerning the actual location.

In addition to analysis of QA/QC samples, the cation-anion balance will be calculated for all water samples, where possible. After all major cations and anions have been determined, the sum of cations should be equal to the sum of anions (in milliequivalents per liter). For waters of moderate concentration (250 to 1,000 milligrams per liter [mg/L]), the difference between the two sums generally should not exceed 5 percent of the sum of cations plus anions.

3. Groundwater Analysis

3.1 Constituents Required for Detection Monitoring

Groundwater monitor wells will be sampled for the listed constituents in 40 CFR 258 Appendix I, as stated in 30 TAC 330.407. Detection monitoring will be completed for the constituents listed in Table III-6-1. The TCEQ may delete any of the constituents listed in Appendix I and allow facilities to establish an alternative list of inorganic indicator constituents (in place of the constituents listed in Appendix I) if the alternative list ensures a reliable indication of releases from the landfill to the groundwater. TCEQ may also add constituents to the list if they are expected to be in or derived from the waste contained in the landfill.

3.2 Laboratory Accreditation

All environmental testing laboratories shall be accredited in accordance with 30 TAC 25 (except as provided in 30 TAC 25.6). Only accredited laboratories will be used.

3.3 Laboratory Procedures and Test Methods

In accordance with 30 TAC 330.405 through 330.415, this groundwater monitoring program includes consistent sampling and analysis procedures that are designed to ensure results that provide an accurate representation of groundwater quality at the background and point-of-compliance wells. Table III-6-2 shows the parameters and associated analytical methods employed in the monitoring program.

All samples sent to the laboratory will be labeled with the appropriate and required analytical analyses. Upon receipt of samples the laboratory will verify analytical tests and methods with sampler; discrepancies will be corrected prior to analysis including edits to the chain of custody.

Laboratory test methods will be in accordance with the following two publications: *Test Methods for Evaluating Solid Waste* (a publication of the EPA; also known as SW-846, as revised), and *Standard Methods for the Examination of Water and Wastewater* (a joint publication of the American Public Health Association, the American Water Works Association, and the Water Environment Federation, as revised). Any alternative inorganic constituents will be analyzed by the methods described in one of these two references. Suggested analytical test methods based on SW-846 include 6020A for metals, 8260 for VOCs, and 8270 for SVOCs (https://www.tceq.texas.gov/assets/public/permitting/waste/msw/msw-pqls.pdf).

Table III-6-1. Groundwater Monitoring Analytical Constituents
Page 1 of 2

Constituent	Type or CAS Number [a]
Inorganic Constituents	
(1) Antimony	(Total)
(2) Arsenic	(Total)
(3) Barium	(Total)
(4) Beryllium	(Total)
(5) Cadmium	(Total)
(6) Chromium	(Total)
(7) Cobalt	(Total)
(8) Copper	(Total)
(9) Lead	(Total)
(10) Nickel	(Total)
(11) Selenium	(Total)
(12) Silver	(Total)
(13) Thallium	(Total)
(14) Vanadium	(Total)
(15) Zinc	(Total)
Organic Constituents	
(16) Acetone	67-64-1
(17) Acrylonitrile	107-13-1
(18) Benzene	71-43-2
(19) Bromochloromethane	74-97-5
(20) Bromodichloromethane	75-27-4
(21) Bromoform, Tribromomethane	75-25-2
(22) Carbon disulfide	75-15-0
(23) Carbon tetrachloride	56-23-5
(24) Chlorobenzene	108-90-7
(25) Chloroethane, Ethyl chloride	75-00-3
(26) Chloroform, Trichloromethane	67-66-3
(27) Dibromochloromethane, Chlorodibromomethane	124-48-1
(28) 1,2-Dibromo-3-chloropropane (DBCP)	96-12-8
(29) 1,2-Dibromoethane, Ethylene dibromide (EDB)	106-93-4
(30) o-Dichlorobenzene, 1,2-Dichlorobenzene	95-50-1
(31) p-Dichlorobenzene, 1,4-Dichlorobenzene	106-46-7
(32) trans-1,4-Dichloro-2-butene	110-57-6

Notes are provided at the end of the table.

Table III-6-1. Groundwater Monitoring Analytical Constituents
Page 2 of 2

Constituent	Type or CAS Number [a]
Organic Constituents (cont.)	
(33) 1,1-Dichlorethane, Ethylidene chloride	75-34-3
(34) 1,2-Dichlorethane, Ethylene dichloride	107-06-2
(35) 1,1-Dichloroethylene, 1,1-Dichloroethene, Vinylidene chloride	75-35-4
(36) cis-1,2-Dichloroethylene, cis-1,2-Dichloroethene	156-59-2
(37) trans-1,2-Dichloroethylene, trans-1,2-Dichloroethene	156-60-5
(38) 1,2-Dichloropropane, Propylene dichloride	78-87-5
(39) cis-1,3-Dichloropropene	10061-01-5
(40) trans-1,3-Dichloropropene	10061-02-6
(41) Ethylbenzene	100-41-4
(42) 2-Hexanone, Methyl butyl ketone	591-78-6
(43) Methyl bromide, Bromomethane	74-83-9
(44) Methyl chloride, Chloromethane	74-87-3
(45) Methylene bromide, Dibromomethane	74-95-3
(46) Methylene chloride, Dichloromethane	75-09-2
(47) Methyl ethyl ketone (MEK), 2-Butanone	78-93-3
(48) Methyl iodide, Idomethane	74-88-4
(49) 4-Methyl-2-pentanone, Methyl isobutyl ketone	108-10-1
(50) Styrene	100-42-5
(51) 1,1,1,2-Tetrachloroethane	630-20-6
(52) 1,1,2,2-Tetrachloroethane	79-34-5
(53) Tetrachloroethylene, Tetrachloroethene, Perchloroethylene (PCE)	127-18-4
(54) Toluene	108-88-3
(55) 1,1,1-Trichloroethane, Methylchloroform	71-55-6
(56) 1,1,2-Trichloroethane	79-00-5
(57) Trichloroethylene, Trichloroethene (TCE)	79-01-6
(58) Trichlorofluoromethane, CFC-11	75-69-4
(59) 1,2,3-Trichloropropane	96-18-4
(60) Vinyl acetate	108-05-4
(61) Vinyl chloride	75-01-4
(62) Xylenes	1330-20-7

[a] Chemical Abstract Service (CAS) registry number; (Total) indicates that samples will be analyzed for the metals content both dissolved in the water and present in the particulates present in the water (samples will not be filtered prior to analysis).

Table III-6-2. Analytical Methods

Parameter	Method
pH	EPA method 150.1, 150.2, or equivalent
Total dissolved solids (TDS)	EPA method 2540C or equivalent
Total petroleum hydrocarbons (TPH)	Method TX1005
Benzene	EPA method 602 or equivalent
Soluble cations: calcium, magnesium, potassium, and sodium	EPA method 6010/6020 or equivalent
Soluble anions: bromides, chlorides, nitrates, and sulfates	EPA method 300/9056 or equivalent
Carbonate alkalinity as $CaCO_3$	SM 2320B
Total metals	EPA method 6020B
Volatile organic compounds by GC/MS	SW846 8260D

Laboratory equipment will be maintained, including proper calibration, as recommended by the manufacturer using protocol established by the National Institute of Standards and Technology (NIST). Documentation of calibration and any necessary corrective actions will be maintained by the laboratory.

3.4 Reporting Analytical Results

Analytical results from landfill groundwater monitor wells will be reported using the TCEQ municipal solid waste (MSW) benchmark practical quantitation limit (PQL). 30 TAC 330.405(f)(5) defines the PQL as the lowest concentration level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. Any statistical method used to evaluate groundwater monitoring data shall account for data below the limit of detection using statistical procedures that are protective of human health and the environment, as required in 30 TAC 330.405(f)(5). All data will be presented with information regarding precision, bias, and accuracy. Data will be flagged appropriately for any samples outside of the quality control limits.

For each constituent listed in 40 CFR 258, Appendix I or Appendix II, or for each groundwater parameter that has a groundwater protection standard (GWPS), the laboratory shall demonstrate that the method and procedure used in the analysis can attain a PQL at or below the GWPS. Laboratory quality control samples will meet the precision and accuracy data-quality objectives that are listed Table III-6-3.

Table III-6-3. Measurement Quality Objectives

Chemical of Concern	Precision (% RSD)	Accuracy (% recovery)
Metals	10	70–130
VOCs	20	50–150
SVOCs	30	50–150

The laboratory will report non-detected results as less than the value of the PQL. When the limits for precision and accuracy listed in Table III-6-3 cannot be met, the owner or operator will submit information to support a recommendation for using alternative precision and accuracy limits.

All analytical data submitted under the requirements of this permit will be examined by the owner or operator, to ensure that the data quality objectives are considered and met, prior to submittal for the commission's review. The owner or operator will determine if the results for a sample are accurate and complete. The quality control results, supporting data, and data review by the laboratory must be included when the owner or operator reviews the data. The owner or operator will report any anomalies that were identified in the laboratory case-narrative summary.

The owner or operator will ensure that the laboratory documents and reports all problems and anomalies associated with the analysis. If analysis of the data indicates that the data fails to meet quality control goals, the owner or operator will determine if the data is usable. If the owner or operator determines that the analytical data may be used, all problems and corrective action that the laboratory identified during the analysis will be included in the report submitted to the TCEQ.

A laboratory case narrative (LCN) for all problems and anomalies observed will be submitted by the owner or operator. The LCN will provide the following information:

- The exact number of samples, constituents analyzed, and sample matrices.
- The name of the laboratory performing analyses. If more than one laboratory is used, all laboratories will be identified in the case narrative.
- Explanation of each failed precision and accuracy measurement determined to be outside of the laboratory or method control limits.

- Explanation if the failed precision and accuracy measurements cause a positive or negative bias on the results.
- Identification and explanation of problems associated with the sample results, along with the limitations on data usability.
- When appropriate and when requested, a statement on the estimated uncertainty of analytical results of the samples.
- A statement of compliance or noncompliance with data quality objectives. Holding-time exceedances and matrix interferences must be identified. Dilutions must be identified, and if dilutions are necessary, they must be done to the smallest dilution possible to effectively minimize matrix interferences and bring the sample into control for analysis.
- Identification of all applicable quality assurance and quality control samples that will require special attention by the reviewer.

In addition to the LCN, a laboratory report will include the following:

- A table identifying the field sample name with the sample identification in the laboratory report.
- Chain of custody.
- For each sample, a report (certificate of analysis) of the constituents analyzed, the analytical methods, and the laboratory PQLs.
- A release statement provided by the laboratory, with the following wording: "I am responsible for the release of this laboratory data package. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge that all problems or anomalies that were observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory in the laboratory review checklist (LRC), and no information or data have been knowingly withheld that would affect the quality of the data."
- If an in-house laboratory is used, the laboratory release statement must also include the following: "This laboratory is an in-house laboratory controlled by the person responding to the rule. The official signing the cover page of the rule-required report in which these data

are used is responsible for releasing this data package and is by signature affirming that the above release statement is true."

- Sample results shall be reported using laboratory MSW benchmark PQLs (listed in a letter to MSW landfill owners and operators, dated May 25, 2010); the letter is available at www.tceq.texas.gov/goto/msw-pqls. Once the method and PQL for a constituent at the Landfill is established, the equivalent or better method and PQL shall be used for future analyses.
- An MSW LRC. For every "exception report"—a response of "No," "NA," or "NR"—on the checklist, the permittee will ensure that the laboratory provides a detailed description of the exception in the summary of the LCN.

3.4.1 MSW Benchmark PQLs and Laboratory PQLs

The laboratory will use the MSW benchmark PQLs as established within a letter to MSW landfill owners and operators (TCEQ, 2010). The letter is available for review at www.tceq.texas.gov/goto/msw-pqls. Upon establishment of the appropriate method and PQL, that method and PQL will be used for each constituent throughout the duration of monitoring unless modified due to the laboratory's inability to meet the PQL or the availability of an alternative test method. Each analyte's PQL shall be below or equal to the established groundwater protection standard for each analyte unless otherwise approved by TCEQ.

3.4.2 Results Estimated Below a PQL

Estimated analytical results, which are typically flagged with a "J" qualifier, are described as concentration results that indicate a detection but could not be quantified because the value is below the PQL (U.S. EPA, 2009). The EPA has determined and this SAP plan will follow the guidance that "J-flagged" data may be used as valid measurements for statistical purposes only.

3.4.3 Quality Control Samples

Laboratories will provide results for quality control samples—samples that are used to verify precision and accuracy. The laboratory has defined acceptable limits of deviation for each analytical test method. Any results outside of the acceptable limits may still be used as long as they have been flagged by the laboratory and noted in the LCN to describe the issue and the corrective action taken to resolve it. The owner or operator will review all data and verify that the laboratory has completed the required quality assurance, quality control and documented all

issues and corrective action. The laboratory will adhere to all record keeping requirements defined by the National Environmental Laboratory Accreditation Conference (NELAC).

4. Statistical Evaluation of Monitoring Data

In accordance with 30 TAC 330.405(e) and (f), statistical evaluation of analytical results from groundwater samples will be used to determine if the landfill has impacted groundwater quality. Statistical procedures will provide an objective way for characterizing the analytical results, including (1) establishment of background groundwater quality, (2) assessment of the variations in groundwater quality for significance, (3) determination of whether constituents of concern are above groundwater protection standards, and (4) to decide if corrective action is necessary. Statistical methods used will be appropriate for the distribution of tested constituents and the EPA Unified Guidance document will be consulted (U.S. EPA, 2009).

4.1 Establishment of Background Data

Background water quality is critical to assess whether or not the landfill has impacted the local groundwater. To assess the pre-landfill groundwater quality, 30 TAC 330.407 specifies that a minimum of four statistically independent background samples be collected prior to landfill construction. In accordance with TCEQ recommendations, eight background samples will be collected prior to landfill operation (seven have been collected to date, see Appendix III-5-F). Once the landfill is constructed, water quality samples will be collected once per quarter from each of the 17 groundwater monitor wells at this facility, including 14 wells screened in the perched zone and 3 wells screened in the uppermost aquifer. Quarterly background sampling will yield statistical independence and capture any seasonal variation in groundwater data over the course of the background monitoring period. Background water quality is assumed to be stable through time. If the background monitoring results for newly installed monitor wells reveal an increasing or decreasing trend in water quality constituents, it may be necessary to discard initially collected observations and wait for the well construction materials to stabilize.

Background limits will be updated every two years using semiannual detection monitoring results from wells that are upgradient and unaffected by landfill activities. Intrawell background data will be updated every two years, when at least four new quarterly measurements are available. Detection monitoring results from initial groundwater sampling events will be used to establish background limits for each constituent.

4.2 Statistical Methods for Evaluation of Groundwater Data

Groundwater monitoring data will be compared to background groundwater data using statistical methods to evaluate significant variations in water quality. Statistical analysis will be completed in accordance with 30 TAC 330.405 for each constituent listed in Table III-6-1. Statistically independent samples will be collected quarterly (background monitoring) and semiannually (detection monitoring). Resampling for verification of detections will be completed on a 30-day time frame as described below.

4.2.1 Assumptions, Trends, and Non-Detects

Due to expected variations in water quality across the site, an intrawell statistical evaluation will be performed with control charts or prediction intervals. Intrawell analysis is well suited to the landfill, as background water quality will be established prior to any waste disposal starting at the site. Interwell analysis will only be used as a secondary consideration or if water quality data indicate the presence of contaminants that may be from sources other than the landfill.

Parametric or non-parametric tests will be used depending on the constituent, with the assumption that the data will be normally distributed. Outliers will only be removed based on technical knowledge or information that can be identified and support a decision for removal, such as a laboratory error. In general, outliers will not be removed, as recommended in the EPA Unified Guidance (U.S. EPA, 2009). A correction for seasonal variability will be used as necessary.

Non-detections or sample results reported below the MSW PQL or reporting limit will be valued for statistical analysis as one-half the reporting limit per the EPA Unified Guidance (U.S. EPA, 2009) recommendation. For wells and constituents with an exorbitant number of non-detections, a nonparametric limit will be used and values will be set to the reporting limit.

4.2.2 Site-Wide False Positive Rates and Statistical Power

Site-wide false positives are background concentrations that exceed the background limit. If a false positive is recorded, the EPA Unified Guidance (U.S. EPA, 2009) recommendations will be implemented, including the use of EPA power curves or the application of a 10 percent per year annual cumulative site-wide false positive rate design target.

4.3 Statistically Significant Increases During Detection Monitoring

Upon completion of background monitoring data collection and in accordance with 30 TAC 330.405(e) and (f) and 30 TAC 330.407(b), WST will perform a statistical analysis comparing detection monitoring results to background limits through prediction limits. Prediction limits must first be approved through the submittal of a background evaluation report (BER). If the analysis shows a statistically significant increase (SSI) in groundwater concentration, WST will implement a verification resampling event within 30 days after receiving the laboratory results. An SSI is defined to occur when the concentration of a constituent increases above its background limit. The declaration of a SSI will be made only after verification resampling. The SSI triggers assessment monitoring unless the SSI, through submittal and approval of an alternative source demonstration (ASD), can be attributed to a source other than the landfill, an identified error in the sampling, laboratory analysis, or statistical analysis, or a natural variation in the groundwater quality.

4.4 Statistical Tests

Statistical tools typically used to evaluate landfill monitoring data include prediction limits, control charts, and confidence intervals. Prediction limits and control charts will be used to evaluate detection monitoring results. Confidence intervals are used when assessment monitoring and corrective action are required. In addition, the "double-quantification rule" may be used for results that yield a detection in a constituent that has never been detected or has not been detected in a long time. Under this rule, a constituent that has not historically been detected should not be included in site-wide false positive rate computations. However, if the constituent is detected for two consecutive semiannual sampling events, it should be treated as an SSI and added to computations.

Prediction limits identify an estimate of an interval that will include values of future measurements based on previous measurements within a confidence interval. For background data, prediction limits must be normal or normalized using a transformation (natural logarithm).

Combined Shewhart-CUSUM control charts are used during detection monitoring as an alternative to prediction limits. The Shewhart-CUSUM control chart method is a graphical intrawell testing method that provides a visual tool to detect trends and changes in water quality parameter concentrations. This control chart test is used to monitor statistical variation in data and to identify data trends and flag anomalous results. Shewhart-CUSUM control chart

plots will be prepared for each parameter detected above the PQL. Each new measurement will be compared to the control limit and to the CUSUM, which is the cumulative sum of each measurement's exceedance away from the threshold limit. In practice, both the control limit and CUSUM limit can be set to the same value. An SSI is identified if either the control limit or the CUSUM is exceeded.

Trend tests can be used for situations that do not meet the requirements for prediction limits analysis. A trend analysis can be useful in historically contaminated wells, and will identify whether a well is exhibiting a statistically significant increasing, decreasing, or insignificant trend.

Alternative statistical methods may need to be used as the dataset grows over time. For example, the methods used to handle non-detect results for concentrations reported below the PQL may need to change if the percentage of non-detect results changes significantly over time. Appropriate statistical methods vary depending on the percentage of non-detect results. Some statistical methods call for a large sample set that will require several years to compile.

4.5 Verification Resampling

Verification sampling will be completed at WST's discretion to verify sampling results for an initial exceedance. An initial exceedance occurs when a detection is observed above the background limit. This initial exceedance is not an SSI. A confirmed SSI is not declared unless the resampled concentration is also above the background limit. If a constituent exceeds the background limit, one or more resamples will be collected from that monitor well. A resampling statistical evaluation must include all recollected samples.

Prediction limits are useful for the evaluation of resamples. If the resample is collected for a constituent that is evaluated using a parametric method with eight background measurements, the initial exceedance is disconfirmed if the constituent concentration in the resample does not exceed the prediction limit (pass one of one resample). For two resamples, the initial exceedance is disconfirmed if the constituent concentration in the first or second resample does not exceed the prediction limit (pass one of two resamples); if the first resample passes, the second resample does not need to be taken.

4.6 Confidence Intervals for Assessment Monitoring and Corrective Action

Confidence intervals will be used in assessment monitoring and corrective action as recommended in the EPA Unified Guidance (U.S. EPA, 2009). Confidence intervals will be constructed using at least four measurements—for the current event and the three previous monitoring events.

During assessment monitoring, the lower confidence limit will be used to determine if the constituent exceeds the GWPS with statistical significance. A corrective action is needed if the lower confidence limit exceeds the GWPS, unless another source or error can be identified.

During corrective action monitoring, the upper confidence limit is compared to the constituent's GWPS. Corrective action is complete once the upper confidence limit has not exceeded the GWPS for three years.

5. Monitoring Frequency and Reporting Requirements

5.1 Background Monitoring

This SAP will establish background water quality using all groundwater monitor wells prior to landfill activity. The site's full groundwater monitoring network will be installed prior to waste disposal, including upgradient wells that will be used for ongoing background groundwater quality monitoring once the facility is in operation. As stated previously, seven quarterly background monitoring events have been conducted, and water quality samples analyzed for the constituent list required in 40 CFR 258, Appendix I. Additional background monitoring events are planned prior to landfill construction. Background data will be evaluated to ensure that the data adequately represent background water quality. The analysis will be submitted to TCEQ in a BER for approval prior to landfill operation. Each BER will include the site-wide false positive rate and the statistical power for the given background dataset. The updated BERs will be submitted to TCEQ for review and approval. Background data will also be updated every two years in a semiannual report detailing the semiannual monitoring results.

5.2 Detection Monitoring

Upon TCEQ approval of the WST Landfill background monitoring results, the monitor wells will be monitored on a semiannual basis unless otherwise advised by TCEQ. Groundwater monitoring will continue for the life of the landfill and into the post-closure care period to identify any groundwater chemistry changes that may indicate a landfill contaminant release. Any change in groundwater chemistry will be determined using the statistical methods outlined in this SAP, including comparison of detection monitor results for each constituent at each well to the established prediction limit or statistical background limit. WST will identify any initial exceedance within 60 days of the monitoring event. In the case of an initial exceedance, the TCEQ and any local pollution prevention agency that has requested to be notified will be notified in writing within 14 days. An initial exceedance occurs if the original sample collected (not resamples) exceeds the statistical limit.

If the detection monitoring program cannot satisfy the requirements under 30 TAC 330.407, the owner will submit a permit amendment or modification.

5.2.1 Verification Resampling

In compliance with 30 TAC 330.407, resampling will be completed within 60 days of the statistical analysis identifying an initial exceedance. The results from the resampling will be used to verify the initial exceedance. When a resample confirms the constituent exceedance, an SSI has occurred and the assessment monitoring is required. In the event of an SSI, WST will notify the TCEQ in writing within 14 days of the SSI determination.

In the event that an SSI over the background limit has occurred for any constituent at any site monitor well and WST suspects the SSI may have been caused by a source other than the landfill, the owner may submit a report explaining the potential alternative source. If the owner plans to demonstrate that the SSI was caused by another source or is in error, WST must state in the 14-day notice that an ASD report will be submitted. The ASD report must be submitted for TCEQ approval within 90 days of the SSI determination. Detection monitoring will continue when the resampling does not yield an exceedance, or when the ASD report has been approved as satisfactory by the TCEQ. If the ASD report is not satisfactory, assessment monitoring will be required.

As part of the ASD, the owner shall not filter groundwater samples before laboratory analysis for the constituent(s) with the SSI over background, as required in 30 TAC 330.407(b)(3)(c) and 30 TAC 330.409.

5.3 Assessment Monitoring

When an SSI is identified over the background limit for any constituent at any site monitor well, assessment monitoring is required within 60 days of the sampling event with the SSI over background. Assessment monitoring includes sample collection of the well with the SSI and two adjacent wells for the full constituent list in Appendix II of 40 CFR 258. Assessment monitoring must be completed within 90 days of the SSI determination.

After the first assessment sampling event, the TCEQ may remove constituents from the Appendix II list. During assessment monitoring, background limits and a GWPS will be established for detected Appendix II constituents. If there are any new detections of an Appendix II constituent, a background limit will be established for that constituent based on four statistically independent samples from each background well.

The GWPS must be set as follows:

- For constituents with a maximum contaminant level (MCL) under 40 CFR 141 Safe Drinking Water Act, the GWPS will be the MCL.
- For constituents without an MCL, the GWPS will be the background concentration for the constituent, as determined in accordance with 30 TAC 330.405(d).
- For constituents with a background level that is higher than the MCL or the health based standard, the GWPS will be set as the background concentration.
- In accordance with 30 TAC 330.409(i), the TCEQ Executive Director may set an alternative GWPS for any 40 CFR 258, Appendix II constituent without an established MCL. The alternate GWPS will be reasonably set with consideration for health-based standards.

Assessment sampling will be conducted at least annually until the well results meet background standards or the TCEQ has authorized a reduction of the sampling frequency. If concentrations of any of the Appendix II constituents are identified above the newly established background limits (and below the GWPS), assessment monitoring will continue. Detection monitoring may resume with TCEQ approval once the monitoring results are shown to be below background concentrations for two consecutive sampling events.

If assessment monitoring yields a concentration above the GWPS for any of the Appendix II constituents, WST will send notice to TCEQ and appropriate government officials within 7 days of the determination. WST will also characterize and identify the extent of contamination by installing additional monitor wells. At least one additional monitor well will be installed between

the monitor well with the SSI and the next adjacent monitor well along the point of compliance, before the next sampling event is conducted. The newly installed monitor well will be sampled for Appendix I parameters, as well as additional constituents from Appendix II. WST will also send written notification to all persons who own or occupy the affected land, initiate an assessment of corrective measures within 90 days of the notice to TCEQ and, if applicable, submit a report to TCEQ that establishes another source other than the landfill that caused the contamination. The report will be prepared by a qualified groundwater scientist in compliance with all other regulations in 30 TAC 330.409(g)(2)(D). The facility will begin assessment of corrective action.

5.4 Assessment of Corrective Measures

Following a detection from the 40 CFR 258, Appendix II constituent list above the applicable GWPS, WST will begin assessment of corrective action and send notice to TCEQ within 90 days. The corrective action assessment shall be completed within 180 days, and will evaluate potential corrective measures. Corrective measures will be assessed based on performance (contamination control), feasibility (control of contamination, time required for initiation and completion), cost, sustainability, and any necessary permits. Results of the corrective action assessment shall be presented in a public meeting before selection of a remedy, in accordance with 30 TAC 39.501(e)(3).

Upon completion of the corrective action assessment, a remedy will be chosen, and a report will be submitted to TCEQ within 30 days. The remedy will be described in detail and comply with corrective standards laid out in 30 TAC 330.413(b). Upon TCEQ approval, WST will implement the selected remediation according to the specified schedule. Correction action is deemed complete after three years of sampling results where all constituent concentrations remain at or below the GWPS.

6. Reporting Requirements

6.1 Annual Detection Monitoring Report

An annual report with detection monitoring results will be submitted to TCEQ within 90 days of the final groundwater monitoring event in a calendar year.

This report will contain all information since the last monitoring report and will include the following:

- Statistical analysis calculations and a statement regarding SSI status and any SSI over the background constituent concentrations for the calendar year.
- Groundwater monitoring results: testing, analytical work, summary of background water quality, statistical analysis and calculations, chemistry comparisons, and plots.
- TCEQ MSW groundwater sampling report form (Appendix III-6-B).
- Laboratory results and report: chemical parameter, test method (EPA or equivalent), MDL, PQL, laboratory identification sample number, chain of custody documentation, date of sampling, date sample received at the laboratory, date analysis commenced, qualifier code (e.g., J), method of sample preservation, QA/QC summary report (laboratory blanks, spike recoveries, etc.).
- LCN, including report of anomalies (e.g., non-conformance with QA/QC, corrective actions, etc.) and the TCEQ laboratory review checklist (Appendix III-6-C).
- Groundwater elevation contour map with flow rate, direction, and all data/documentation acquired to determine this information. Data collected from background and compliance monitor wells will be used.
- Approved background concentration levels and GWPS.
- Certification by a qualified groundwater scientist that standards have or have not been exceeded.
- Recommendations for any necessary changes.
- Any other items as requested by TCEQ.

6.2 Semiannual Monitoring Report

Semiannual reports are not required under the MSW rules; however, such reports are strongly encouraged by TCEQ. WST will submit a semiannual report within 74 days following the monitoring activities completed during the first half of the year. Data such as TCEQ forms, laboratory data, statistical analysis, and results from the first monitoring event will be included in this report. The semiannual report shall not be duplicated in the annual report, but a summary of the semiannual report will be included in the annual report.

6.3 Assessment Monitoring Report

Assessment monitoring results will be submitted to the TCEQ in a report no later than 60 days after the completion of the sampling event. These results will be complied into an annual assessment monitoring report, to be submitted within 60 days of the second semiannual sampling event, which will include a discussion of any constituents that were observed at an SSI above the GWPS for the calendar year. The assessment report may be submitted as part of the detection monitoring reports.

6.4 Corrective Action Report

A corrective action report as discussed in Section 5.4 will be submitted by March 1 of each year if the landfill has entered into corrective action.

6.5 Additional Reporting Information

Additional guidance on requirements for groundwater monitoring at MSW Type 1 facilities is available on the TCEQ website:
https://www.tceq.texas.gov/permitting/waste_permits/msw_permits/msw_gwmon_coract.html

References

Texas Commission on Environmental Quality (TCEQ). 2010. Letter to Type I and IV Municipal Solid Waste (MSW) Landfill Operators regarding Progression of the inter-laboratory MSW-practical quantitation limit (PQL) study. May 25, 2010. Available at <https://www.tceq.texas.gov/assets/public/permitting/waste/msw/msw-pqls.pdf>.

U.S. Environmental Protection Agency (EPA). 1990. *Preparation of a U.S. EPA Region 9 field sampling plan for private and state-lead Superfund projects*. Quality Assurance Management Section. April 1990.

U.S. EPA. 1996. *Low-flow (minimal drawdown) ground-water sampling procedures*. Groundwater Issue. EPA/540/S-95/504. April 1996.

U.S. EPA. 2009. *Statistical analysis of groundwater monitoring data at RCRA facilities, Unified Guidance*. Office of Resource Conservation and Recovery, Program Implementation and Information Division. March 2009.

Appendix III-6-A

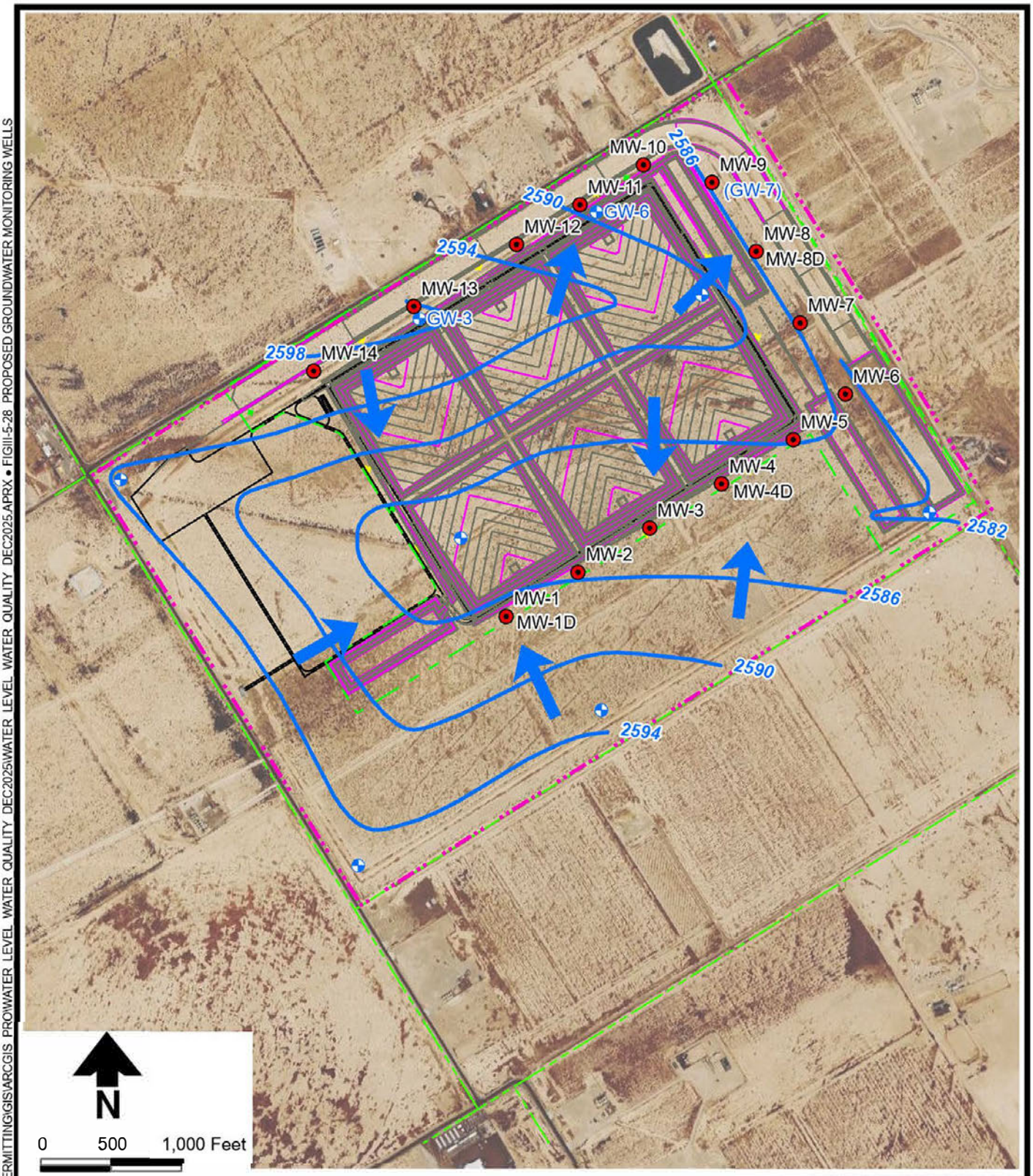
Proposed Monitor Well Locations and Well Completion Information

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Table III-6-A-1. Proposed Monitor Wells

Proposed Well	State Plane Coordinates (feet)		Total Depth (feet bgs)	Top of Screen (feet bgs)	Bottom of Screen (feet bgs)	Distance from Prior Well (feet)
	X	Y				
MW-1	1,282,567	10,498,553	97	66	96	—
MW-1D	1,282,562	10,498,548	156	125	155	NA
MW-2	1,283,078	10,498,867	96	65	95	600
MW-3	1,283,589	10,499,182	95	64	94	600
MW-4	1,284,100	10,499,497	93	62	92	600
MW-4D	1,284,105	10,499,502	156	125	155	NA
MW-5	1,284,611	10,499,811	88	57	87	600
MW-6	1,284,981	10,500,136	89	58	88	493
MW-7	1,284,660	10,500,642	88	57	87	600
MW-8	1,284,347	10,501,151	92	61	91	598
MW-8D	1,284,352	10,501,146	156	125	155	NA
MW-9 [a]	1,284,032	10,501,643	94	63	93	584
MW-10	1,283,544	10,501,767	90	59	89	503
MW-11	1,283,093	10,501,484	94	63	93	533
MW-12	1,282,641	10,501,201	91	60	90	533
MW-13	1,281,910	10,500,760	91	60	90	851
MW-14	1,281,197	10,500,300	89	58	88	851

[a] Proposed well MW-9 is the same as existing monitor well GW-7. No other proposed wells are existing wells.
bgs = Below ground surface
NA = Not applicable



Aerial Photograph: ESRI et al.

Explanation

- Proposed groundwater monitor well
- Existing monitor well
- Perched zone August 2025 water level elevation (feet msl)
- Site location

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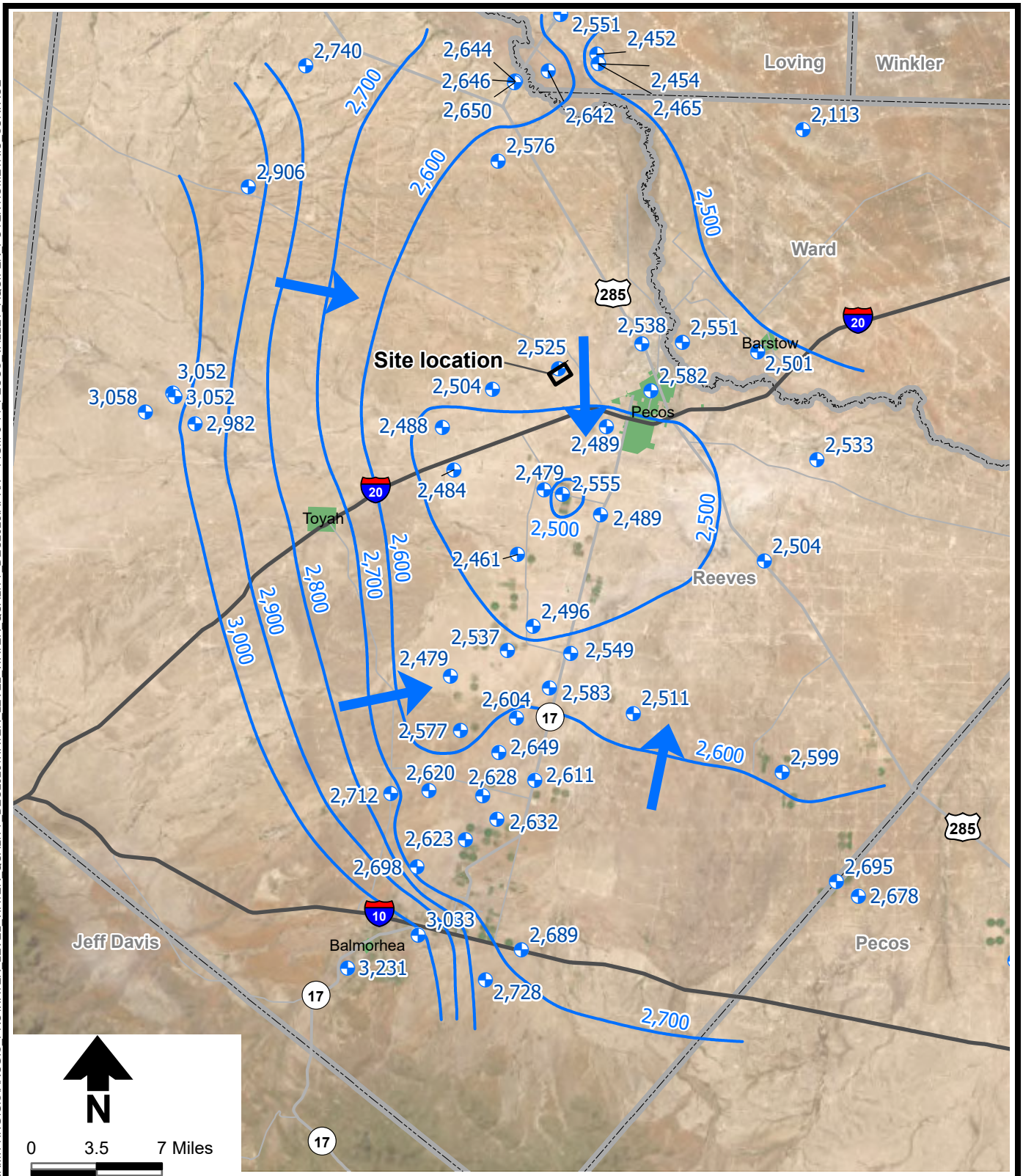
WST LANDFILL

Proposed Groundwater Monitor Wells

6/18/2026 DB20.1166

Figure III-6-A-1

S:\PROJECTS\DB20.1166 WST PECOS PERMITTING\GIS\ARCGIS PRO\WATER LEVEL WATER QUALITY DEC2025\WATER LEVEL WATER QUALITY DEC2025.APRX • FIGIII-5-28 PROPOSED GROUNDWATER MONITORING WELLS



Explanation

- 2,728 Water level elevation (ft msl)
- Well
- Water level elevation contour (ft msl)
- Site location
- County boundary
- Groundwater flow direction

Note: Water level elevation data from March 2021 through November 2025.

Aerial Photograph: ESRI et al.

DBS&A a Geo-Logic Company

2/25/2026 DB20.1166

Rev 2: July 2026 (Rev 0: March 2026)

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WST LANDFILL

Pecos Valley Aquifer Water Table Elevation

Figure III-6-A-2

S:\PROJECTS\DB20.1166 WST PECOS PERMITTING\GIS\ARCGIS PRO\WATER LEVEL WATER QUALITY DEC2025\WATER LEVEL WATER QUALITY DEC2025.APRX • FIGIII-5-14 PECOS VALLEY AQUIFER POTENTIOMETRIC SURFACE

Appendix III-6-B

TCEQ MSW Groundwater Sampling Form (TCEQ-0312)

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Texas Commission on Environmental Quality
Waste Permits Division, Municipal Solid Waste Permits Section
Groundwater Sampling Report

Facility name_____

Permittee_____

County_____

Name of sampler_____

Affiliation of sampler_____

If split-sampled, with whom?_____

Integrity of well_____

Installation date_____

5. Purging/Sampling method_____
(enter Bailer or Pump)

Were low-flow methods used? [ ] yes [ ] no
(check one)

If yes, what volume was purged?_____

6. Well volumes purged_____
(enter 1, 2, 2.5, 3, etc)

7. Was the well dry before purging? [ ] yes [ ] no
(check one)

8. Was the well dry after purging? [ ] yes [ ] no
(check one)

9. How long before sampling?_____
(enter time)

10. Unit of measure?_____
(days, hours, or mins)

1. MSW permit no. _____
(Essential Field)

2. Monitor well no. _____
(Essential Field)

3. Date of sampling _____
(Essential Field)

Most recent previous sampling_____

Date of water level measurements_____

Datum reference point_____

Datum elevation*_____

Depth to water (below datum)*_____

4. Water level elevation*_____

11. Sample Event_____
(enter one of the selections below)

- Background
- Detection Monitoring
- Assessment
- Corrective Action
- Other

12. Sample Schedule_____
(enter one of the selections below)

- Quarterly
- Semi-Annual
- Annual
- Fourth Year
- Other

13. Sample Type_____
(enter one of the selections below)

- Regular
- Duplicate
- Resample
- Split
- Other

Field Measurements: 14. pH _____

15. Spec. cond._____ 16. [ ] umho/cm or [ ] mmho/cm *(check one)*

17. Temp. _____ 18. [ ] °F or [ ] °C *(check one)*

Laboratory: 19. Name _____ Phone _____

Address _____

Representative _____
(name) *(signature)* *(date)*

Site operator or representative_____
(name) *(signature)* *(date)*

***Report depth to water and elevations to nearest 0.01 foot relative to mean sea level (MSL).**

Texas Commission on Environmental Quality
Waste Permits Division, Municipal Solid Waste Permits Section
Groundwater Sampling Report

Heavy Metals

Constituent		Concentration	Reporting Limits[-3]	Method
Antimony	T[1] D[2]	µg/l	µg/l	
Arsenic	T D	µg/l	µg/l	
Barium	T D	µg/l	µg/l	
Beryllium	T D	µg/l	µg/l	
Cadmium	T D	µg/l	µg/l	
Chromium	T D	µg/l	µg/l	
Cobalt	T D	µg/l	µg/l	
Copper	T D	µg/l	µg/l	
Lead	T D	µg/l	µg/l	
Mercury	T D	µg/l	µg/l	
Nickel	T D	µg/l	µg/l	
Selenium	T D	µg/l	µg/l	
Silver	T D	µg/l	µg/l	
Thallium	T D	µg/l	µg/l	
Vanadium	T D	µg/l	µg/l	
Zinc	T D	µg/l	µg/l	
Iron	T D	µg/l	µg/l	
Manganese	T D	µg/l	µg/l	

[1, 2] Indicate whether analyses for Total (T) or Dissolved (D); use two pages if both are run. If analyses for dissolved concentrations, indicate filter pore size [ ] 0.45, [ ] 1, [ ] 10, [ ] ____ micron, and whether filtered [ ] in field or [ ] in laboratory.

[3] Indicate if reporting limits are _____ PQLs or _____ MDLs.

Texas Commission on Environmental Quality
Waste Permits Division, Municipal Solid Waste Permits Section
Groundwater Sampling Report

Volatile Organic Compounds (VOCs) [1]

Constituent	Concentration (µg/L)	Reporting Limit (µg/L) [2]	Method	CAS No.
Acetone				67-64-1
Acrylonitrile				107-13-1
Benzene				71-43-2
Bromochloromethane				74-97-5
Bromodichloromethane				75-27-4
Bromoform				75-25-2
Carbon disulfide				75-15-0
Carbon tetrachloride				56-23-5
Chlorobenzene				108-90-7
Chloroethane				75-00-3
Chloroform				67-66-3
Dibromochloromethane				124-48-1
1,2-Dibromo-3-chloropropane				96-12-8
1,2-Dibromoethane				106-93-4
o-Dichlorobenzene (1,2)				95-50-1
p-Dichlorobenzene (1,4)				106-46-7
trans-1,4-Dichloro-2-butene				110-57-6
1,1-Dichloroethane				75-34-3
1,2-Dichloroethane				107-06-2
1,1-Dichloroethylene				75-35-4
cis-1,2-Dichloroethylene				156-59-2
trans-1,2-Dichloroethylene				156-60-5
1,2-Dichloropropane				78-87-5
cis-1,3-Dichloropropene				10061-01-5
trans-1,3-Dichloropropene				10061-02-6
Ethylbenzene				100-41-4
2-Hexanone				591-78-6
Methyl bromide				74-83-9
Methyl chloride				74-87-3
Methylene bromide				74-95-3
Methylene chloride				75-09-2
Methyl ethyl ketone				78-93-3
Methyl iodide				74-88-4
4-Methyl-2-pentanone				108-10-1
Styrene				100-42-5
1,1,1,2-Tetrachloroethane				630-20-6
1,1,2,2-Tetrachloroethane				79-34-5
Tetrachloroethylene				127-18-4
Toluene				108-88-3
1,1,1-Trichloroethane				71-55-6
1,1,2-Trichloroethane				79-00-5
Trichloroethylene				79-01-6
Trichlorofluoromethane				75-69-4
1,2,3-trichloropropane				96-18-4
Vinyl acetate				108-05-4
Vinyl chloride				75-01-4
Xylenes (total)				1330-20-7

[1] Samples for VOCs must not be filtered.

[2] Indicate if reporting limits are _____ PQLs or _____ MDLs.

Texas Commission on Environmental Quality
Waste Permits Division, Municipal Solid Waste Permits Section
Groundwater Sampling Report

Other Constituents

Constituent [1]	Concentration [2]	Reporting Limit [2, 3]	Method

Appendix III-6-C

TCEQ Laboratory Review Checklist

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Municipal Solid Waste Laboratory Review Checklist

This data package consists of:

☐ This signature page, and the laboratory review checklist consisting of Table 1, Reportable Data (which includes the reportable data identified on this page), Table 2, Supporting Data, and Table 3, Exception Reports.

☐ R1 Field chain-of-custody documentation

☐ R2 Sample identification cross-reference

☐ R3 Test reports (analytical data sheets) for each environmental sample that includes:
- (a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
- (b) Dilution factors
- (c) Preparation methods
- (d) Cleanup methods
- (e) If required for the project, tentatively identified compounds (TICs)

☐ R4 Surrogate recovery data including:
- (a) Calculated recovery (%R)
- (b) The laboratory's surrogate QC limits

☐ R5 Test reports/summary forms for blank samples

☐ R6 Test reports/summary forms for laboratory control samples (LCSs) including:
- (a) LCS spiking amounts
- (b) Calculated %R for each analyte
- (c) The laboratory's LCS QC limits

☐ R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
- (a) Samples associated with the MS/MSD clearly identified
- (b) MS/MSD spiking amounts
- (c) Concentration of each MS/MSD analyte measured in the parent and spiked samples
- (d) Calculated %Rs and relative percent differences (RPDs)
- (e) The laboratory's MS/MSD QC limits

☐ R8 Laboratory analytical duplicate (if applicable) recovery and precision:
- (a) The amount of analyte measured in the duplicate
- (b) The calculated RPD
- (c) The laboratory's QC limits for analytical duplicates

☐ R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix

☐ R10 Other problems or anomalies

☐ The Exception Report for every item for which the result is "No" or "NR" (Not Reviewed)

Release Statement: I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Check, if applicable: [ ] This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

_____	_____	_____	_____
Name (printed)	Signature	Official Title	Date

Table 1. Reportable Data.

Laboratory Name: _____

Project Name: _____

Reviewer Name: _____

LRC Date: _____

Laboratory Job Number: _____

Prep Batch Number(s): _____

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
R1	O, I	**Chain-of-custody (COC)**		
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		
		Were all departures from standard conditions described in an exception report?		
R2	O, I	**Sample and quality control (QC) identification**		
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?		
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?		
R3	O, I	**Test reports**		
		Were all samples prepared and analyzed within holding times?		
		Other than those results < MQL, were all other raw values bracketed by calibration standards?		
		Were calculations checked by a peer or supervisor?		
		Were all analyte identifications checked by a peer or supervisor?		
		Were sample quantitation limits reported for all analytes not detected?		
		Were all results for soil and sediment samples reported on a dry weight basis?		
		Was % moisture (or solids) reported for all soil and sediment samples?		
		If required for the project, TICs reported?		
R4	O	**Surrogate recovery data**		
		Were surrogates added prior to extraction?		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		
R5	O, I	**Test reports/summary forms for blank samples**		
		Were appropriate type(s) of blanks analyzed?		
		Were blanks analyzed at the appropriate frequency?		

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?		
		Were blank concentrations < MQL?		
R6	O, I	**Laboratory control samples (LCS):**		
		Were all COCs included in the LCS?		
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?		
		Were LCSs analyzed at the required frequency?		
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?		
		Was the LCSD RPD within QC limits?		
R7	O, I	**Matrix spike (MS) and matrix spike duplicate (MSD) data**		
		Were the project/method specified analytes included in the MS and MSD?		
		Were MS/MSD analyzed at the appropriate frequency?		
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		
		Were MS/MSD RPDs within laboratory QC limits?		
R8	O, I	**Analytical duplicate data**		
		Were appropriate analytical duplicates analyzed for each matrix?		
		Were analytical duplicates analyzed at the appropriate frequency?		
		Were RPDs or relative standard deviations within the laboratory QC limits?		
R9	O, I	**Method quantitation limits (MQLs):**		
		Are the MQLs for each method analyte included in the laboratory data package?		
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?		
		Are unadjusted MQLs included in the laboratory data package?		
R10	O, I	**Other problems/anomalies**		
		Are all known problems/anomalies/special conditions noted in this LRC and ER?		
		Were all necessary corrective actions performed for the reported data?		
		Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?		

Table 2. Supporting Data.

Laboratory Name: _____

Project Name: _____

Reviewer Name: _____

LRC Date: _____

Laboratory Job Number: _____

Prep Batch Number(s): _____

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S1	O, I	**Initial calibration (ICAL)**		
		Were response factors and/or relative response factors for each analyte within QC limits?		
		Were percent RSDs or correlation coefficient criteria met?		
		Was the number of standards recommended in the method used for all analytes?		
		Were all points generated between the lowest and highest standard used to calculate the curve?		
		Are ICAL data available for all instruments used?		
		Has the initial calibration curve been verified using an appropriate second source standard?		
S2	O, I	**Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):**		
		Was the CCV analyzed at the method-required frequency?		
		Were percent differences for each analyte within the method-required QC limits?		
		Was the ICAL curve verified for each analyte?		
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?		
S3	O	**Mass spectral tuning:**		
		Was the appropriate compound for the method used for tuning?		
		Were ion abundance data within the method-required QC limits?		
S4	O	**Internal standards (IS):**		
		Were IS area counts and retention times within the method-required QC limits?		
S5	O, I	**Raw data (NELAC section 1 appendix A glossary, and section 5.)**		
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?		
		Were data associated with manual integrations flagged on the raw data?		

Item[1]	Analytes[2]	Description	Result (Yes, No, NA, NR)[3]	Exception Report No.[4]
S6	O	**Dual column confirmation**		
		Did dual column confirmation results meet the method-required QC?		
S7	O	**Tentatively identified compounds (TICs):**		
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?		
S8	I	**Interference Check Sample (ICS) results:**		
		Were percent recoveries within method QC limits?		
S9	I	**Serial dilutions, post digestion spikes, and method of standard additions**		
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?		
S10	O, I	**Method detection limit (MDL) studies**		
		Was a MDL study performed for each reported analyte?		
		Is the MDL either adjusted or supported by the analysis of DCSs?		
S11	O, I	**Proficiency test reports:**		
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?		
S12	O, I	**Standards documentation**		
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?		
S13	O, I	**Compound/analyte identification procedures**		
		Are the procedures for compound/analyte identification documented?		
S14	O, I	**Demonstration of analyst competency (DOC)**		
		Was DOC conducted consistent with NELAC Chapter 5C?		
		Is documentation of the analyst's competency up-to-date and on file?		
S15	O, I	**Verification/validation documentation for methods (NELAC Chap 5n 5)**		
		Are all the methods used to generate the data documented, verified, and validated, where applicable?		
S16	O, I	**Laboratory standard operating procedures (SOPs):**		
		Are laboratory SOPs current and on file for each method performed?		

Table 3. Exception Reports.

Laboratory Name: _____

Project Name: _____

Reviewer Name: _____

LRC Date: _____

Laboratory Job Number: _____

Prep Batch Number(s): _____

Exception Report No.	Description

[1] Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
[2] O - organic analyses; I - inorganic analyses (including general chemistry constituents, when applicable).
[3] NA - Not applicable; NR - Not reviewed.
[4] Exception Report identification number; an Exception Report should be completed for an item if the result is "No" or "NR."

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Attachment III-7

Landfill Gas Management Plan

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Landfill Gas Management Plan
WST Landfill
Reeves County, Texas

Prepared for
West Sun Tex, LLC
Pecos, Texas

Prepared by

DBS&A
a Geo-Logic Company

Texas Registered Engineering Firm F-286
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DB20.1166



July 2026

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Table of Contents

1. Purpose 1
2. LFG Management 2
   2.1 Subsurface Lateral Migration Management 2
   2.2 Surface Emissions Management 2
3. Future Site Development 3
   3.1 Lateral Migration Management 3
      3.1.1 Site Characteristics 3
      3.1.2 Perimeter Monitoring Network [30 TAC 330.371(h)] 4
      3.1.3 Monitoring and Recordkeeping Procedures 5
      3.1.4 Action Plan [30 TAC 330.371(c)(1) through (3)] 7
   3.2 Surface Emissions Management 9
      3.2.1 GCCS Description 10
      3.2.2 GCCS Installation and Timeline 12
      3.2.3 GCCS Monitoring Procedures 12
      3.2.4 GCCS Post-Closure 12
4. System Maintenance 13
   4.1 System Maintenance Plan 13
      4.1.1 Routine Inspection and Maintenance Procedures 13
      4.1.2 Procedures for Downtimes 14
   4.2 Backup Plan 15
      4.2.1 Perimeter Monitoring Network and Structures 15
      4.2.2 GCCS 15
5. Post-Closure 15
   5.1 Monitoring [30 TAC 330.371(e)] 16
   5.2 Changes to Maintain Effective Gas Monitoring [30 TAC 330.371(f)] 16

List of Appendices

III-7-A Forms
III-7-B Inspection and Routine Maintenance



1. Purpose

This landfill gas management plan (LFGMP) provides guidelines for monitoring and managing landfill gas (LFG) generated by the WST Landfill (the landfill) to meet the following required thresholds of 30 Texas Administrative Code (TAC) 330.371(a)(1) and (2):

1. The concentration of methane gas generated by the facility does not exceed 1.25 percent by volume in facility structures (excluding gas control or recovery components); and

2. The concentration of methane gas does not exceed 5 percent volume in monitoring points, probes, subsurface soils, or other matrices at the facility boundary defined by the legal description in the permit or permit by rule.

As required by 30 TAC 330.371(e), this LFGMP will continue for 30 years after certification of final closure of the landfill or until the landfill receives authorization for alternative time frame.

This LFGMP has been developed based on the design of the proposed municipal solid waste (MSW) landfill. If site conditions, the proposed design, or operations change, this LFGMP may need to be modified to provide effective monitoring and control. Applications to modify the LFGMP will be submitted to the Texas Commission on Environmental Quality (TCEQ) as required by 30 TAC 305.70.

This LFGMP provides the following information, as required by 30 TAC 330.371(g) for a LFGMP:

1. A description of how landfill gases will be managed and controlled
2. A description of the proposed system(s) including installation procedures and timeline for installation, monitoring procedures, and procedures to be used during maintenance
3. A backup plan to be used if the main system breaks down or becomes ineffective

Additionally, this LFGMP includes guidelines to comply with the additional requirements of 30 TAC 330.371, as well as 30 TAC 330.63(g).

In addition to 30 TAC 330.371, a number of federal and state regulations will apply to the landfill. Federal regulations include New Source Performance Standards (NSPS), New Source Review (NSR), Prevention of Significant Deterioration (PSD), Title V, and the National Emission Standards for Hazardous Air Pollutants (NESHAP).

The landfill will be regulated by 40 CFR 60 Subpart XXX upon commencement of construction of the landfill. The projected design capacity of the MSW landfill is greater than 2.5 million cubic meters and 2.5 million megagrams of waste. Once the nonmethane organic compound (NMOC) emissions are greater than 34 megagrams per year, the landfill will be required to install and operate a gas collection and control system (GCCS). Prior to installation, the landfill will be required to prepare and submit for approval a Title V operating permit application and an NSPS GCCS design plan. This NSPS GCCS design plan will be incorporated into the LFGMP at the time of applicability.

2. LFG Management

This section provides a description of how landfill gases will be managed and controlled, in accordance with 30 TAC 330.371(g)(1).

LFG management consists of controlling subsurface lateral migration and surface emissions. The potential for subsurface lateral migration is affected by pressure gradients caused by the generation of landfill gas, the site geology, and hydrogeology. Coarse, porous soils such as sand and gravel allow greater lateral gas migration into the neighboring soils and/or groundwater than finer-grained soils such as clay. Surface emissions occur when generated LFG is emitted into the atmosphere through the cover and/or surface of the landfill.

2.1 Subsurface Lateral Migration Management

Engineered systems, including liner and cover systems and gas vent or extraction systems will limit, eliminate, or control the movement of landfill gas to desired locations for collection.

The primary method to monitor lateral migration consists of installing and monitoring a network of gas monitoring probes around the perimeter of the landfill boundary, as well as monitoring on-site structures. If monitoring indicates an exceedance, response measures will be implemented as described in Section 3.1.4.2 of this LFGMP.

2.2 Surface Emissions Management

Multiple industry standard practices are used to limit and control surface emissions. Temporary cover material will be placed during the active phases of the landfilling along with proper cover slope maintenance to minimize moisture in the waste. Additionally, a GCCS consisting of wells, pipe networks, gas mover devices, and control devices is used to control surface emissions from

LFG generation. Federal and state regulations provide stipulations as to when a GCCS is to be installed. The landfill will install a GCCS when required by regulations to control the estimated maximum peak LFG generation.

3. Future Site Development

In accordance with 30 TAC 330.371(g), this section provides a description of how landfill gas will be managed and controlled, including installation, implementation schedules, and monitoring procedures for lateral migration (Section 3.1) and surface emissions (Section 3.2).

3.1 Lateral Migration Management

This section provides the required information of subchapter 30 TAC 330.371(b)-(k).

3.1.1 Site Characteristics

This section describes the information required for site characteristics required by 30 TAC 330.371(b)(1)(A) through (E).

3.1.1.1 Soil Conditions [30 TAC 330.371(b)(1)(A)]

The geological and geotechnical conditions present on the landfill and the landfill's neighboring properties are discussed in Part I/II. As discussed, the site soils include Hoban silty clay loam, Hodgins silty clay loam, Orla clay loam, Reeves clay loam, and Upton gravelly loam. Additionally, the geotechnical report prepared by Terracon in September 2014 indicates that the soils consist of clays, silts, and sands, with some minor gravel.

3.1.1.2 Hydrogeologic Conditions [30 TAC 330.371(b)(1)(B)]

Part I/II describes the hydrogeologic conditions of WST Landfill. The depth of the gas monitoring probe will be governed by monitoring data from on-site groundwater monitor wells and the elevation of the cell excavation within 1,000 feet of the proposed gas monitoring probe.

3.1.1.3 Hydraulic Conditions [30 TAC 330.371(b)(C)]

The surface water drainage report (Attachment III-3) discusses surface water flow on the site. The site's topography slopes slightly from the northwest to the southeast and surface water generally flows along this path. No major streams, creeks, or rivers flow through the site; the closest surface water is the Pecos river several miles to the east. Stormwater control features have been designed to direct surface water away from and around the new waste disposal cells.

These features are relatively shallow; therefore, the stormwater control features will not influence the gas monitoring probe's ability to monitor potential off-site LFG migration, as the gas monitoring probe will be installed at a depth below the bottom of these stormwater control features. Additionally, the gas monitoring probe will be installed in an area with an elevation higher than stormwater control features to direct surface water away from the gas monitoring probe.

3.1.1.4 Structures Within Landfill Property Boundary [30 TAC 330.371(b)(1)(D)]

Three buildings—an office, a scale house, and an administrative building—will be located on the property, but outside the permit boundary. The buildings will serve facilities for both the oil and gas permit and the MSW permit. Because the permits do not overlap, they ended up outside the MSW permit boundary. The buildings, associated equipment, and underlying land will remain under the control of the permittee and will be accessible to TCEQ personnel for inspection as if they were within the permit boundary. The permittee will operate and maintain these items in accordance with applicable permit and regulatory requirements.

Although these structures are outside the permit boundary, they are included in the landfill gas monitoring network due to their proximity to the landfill and association with landfill operations. These buildings will be monitored for methane following the procedures discussed in Section 3.1.3.1 of this LFGMP. Other structures or enclosed areas associated with the landfill, including subsurface vaults, utilities, or other locations where landfill gas could accumulate, will also be monitored, as appropriate, in accordance with 30 TAC 330.371(i).

3.1.1.5 Underground Utilities [30 TAC 330.371(b)(1)(E)]

The only utilities located near the property are within the right-of-way adjacent to and associated with the roads on the north and west sides of the landfill. No existing underground utilities cross the property specifically in the proposed waste disposal area. Gas monitoring probes will be installed between the landfill and the right-of-way. As a result, these gas monitoring probes will provide the means to monitor potential subsurface lateral migration of LFG.

3.1.2 Perimeter Monitoring Network [30 TAC 330.371(h)]

This section relates to the perimeter monitoring network as required by 30 TAC 330.371(h). The proposed landfill is a Type I landfill; therefore, 30 TAC 330.371(h)(1) does not apply to the landfill.

3.1.2.1 Description

The perimeter monitoring network consists of gas monitoring probes that will be installed between the property line and the waste limits of the disposal cell. The gas monitoring probes serve as the monitoring devices to detect subsurface lateral gas migration as required by 30 TAC 330.371(h)(2). The gas monitoring probes will be placed with a maximum spacing of 1,000 feet. Drawing C-13 (Part III, Attachment 4) shows the proposed locations of the monitoring probes. If it is determined that the proposed location for a gas monitoring probe is not feasible due to topography, dense vegetation, untrafficable conditions and/or unforeseen conflicts, a permit modification will be submitted to TCEQ for the new proposed gas monitoring probe(s) location(s).

Each gas monitoring probe will be placed at a depth that will effectively detect subsurface lateral migration of LFG. The depth of the gas monitoring probe will initially be determined based on the lowest elevation of the groundwater if applicable, or the depth of the gas monitoring probe will be based on the deepest design elevation of the cell excavation within 1,000 feet of the proposed gas monitoring probe location.

Drawing C-16 (Part III, Attachment 4) shows a typical detail of a gas monitoring probe. Each gas monitoring probe will consist of a perforated pipe with a depth based upon the factors discussed previously. Solid pipe will be placed above the perforated pipe, and will extend through the ground surface. The gas monitoring probe will be capped and locked.

3.1.2.2 Timeline

Gas monitoring probes that monitor subsurface lateral migration from the initial waste disposal cell to be constructed will be installed following approval of the application and prior to waste disposal in the initial cell. The remaining gas monitoring probes will be installed incrementally prior to placement of waste within 1,000 feet of the proposed gas monitoring probe location.

3.1.3 Monitoring and Recordkeeping Procedures

This section provides the monitoring and recordkeeping requirements for the perimeter monitoring network and structures.

3.1.3.1 Monitoring Requirements [30 TAC 330.371(b)(2)(i) and (j)]

The landfill will meet the following monitoring requirements:

- *Perimeter Monitoring Network*. The primary purpose of the perimeter monitoring network is to verify that the concentration of methane gas does not exceed 5 percent by volume in the

gas monitoring probes, as required by 30 TAC 330.371(a)(2). The perimeter monitoring network will consist of gas monitoring probes installed around the perimeter of the landfill near the property line. A portable LFG meter that is calibrated and maintained as recommended by the manufacturer will be used. Each gas monitoring probe will be sampled for methane concentration by volume. Monitoring will be performed by trained staff under the supervision of the General Manager. Monitoring results and calibration records will be maintained as discussed in Section 3.1.3.2.

If monitoring results indicate that methane concentrations are greater than 5 percent at a gas monitoring probe, the Action Plan and notification procedures described in Section 3.1.4 of this LFGMP will be implemented. If required by TCEQ, the landfill will sample the gas monitoring probes showing lateral migration for trace gases to determine if there is a potential of exposure to carcinogenic or toxic compounds.

Monitoring of the perimeter monitoring network will be performed on a minimum quarterly basis as defined by the following:

- First quarter: January to March
- Second quarter: April to June
- Third quarter: July to September
- Fourth Quarter: October to December

As indicated in Section 3.1.4, the monitoring frequency may be increased if the gas monitoring probes continue to show elevated methane concentrations. No alternative compliance schedule under 30 TAC 330.371(d) is proposed; however, any alternative schedule established by the executive director will be implemented.

- *Structures*. Structures located within the property lines will be monitored for methane concentrations with a stationary continuous methane meter, regardless of whether they are located inside or outside the permit boundary. This includes the office, scale house, and administrative building. The meter will have an alarm that sounds when methane concentrations exceed 1.25 percent. If continuous monitors malfunction and/or are not operating, methane concentrations will be monitored following the same schedule and procedures as the perimeter monitoring network until continuous monitoring can be restored.

If methane concentrations exceed the 1.25 percent methane concentration limit, the structure will be immediately evacuated and ventilated. Verification procedures discussed in Section 3.1.4 shall be implemented.

3.1.3.2 Recordkeeping Requirements

Monitoring and calibration records shall be maintained and kept on-site. Monitoring results for the perimeter monitoring network and the structures shall be recorded on the forms (or something similar) found in Appendix III-7-A, if applicable.

3.1.4 Action Plan [30 TAC 330.371(c)(1) through (3)]

The purpose of the Action Plan is to protect the public health and the environment in the event that methane concentrations exceed regulatory limits at the landfill property line or within structures, per 30 TAC 330.371(c). Section 3.1.4.1 provides the immediate emergency response procedures. Response actions for the perimeter monitoring network and structures are discussed in Section 3.1.4.2.

3.1.4.1 Immediate Emergency Response [30 TAC 330.371(c)(1) and (2)]

If an exceedance has been recorded in a gas monitoring probe or structure, actions will be taken to protect human health and the environment. Initially, monitoring personnel will take the following steps:

- Notify the General Manager if a gas monitoring probe(s) exhibits methane concentrations greater than 5 percent.
- Notify the General Manager and evacuate personnel if methane concentrations in a structure exceed 1.25 percent.

Once the General Manager has been notified, monitoring personnel will inspect monitoring equipment for proper operation and then recalibrate the equipment. Once recalibrated, monitoring personnel will take another reading, on the same day as the original reading, to verify the validity of the original recording. If the second measurement provides the same results, the General Manager will notify TCEQ, local and county officials, emergency response personnel, and the public of potential subsurface lateral migration. The General Manager will implement the verification procedures detailed in Section 3.1.4.1 to determine the extent of the off-site LFG migration. Once the verification procedures have been performed, the General Manager will send TCEQ, local and county officials, emergency officials, and the public a follow-up notification that will include the following:

- Summary of the verification procedure and the results
- Statement that indicates whether or not the exceedance remains

Documentation of the exceedance(s) and description of the actions taken addressing the exceedances to protect human health and the environment will be placed within the site records within 7 days after the verification procedures have been completed, as required by 30 TAC 330.371(c)(2).

- *Perimeter Monitoring Network*. The following procedures will be used to determine if monitoring continues to show an exceedance at the original location.
  - Recalibrate the portable LFG meter following manufacturer recommendations.
  - Remonitor the perimeter monitoring network the day after the initial exceedance.

  If monitoring results indicate that the exceedance remains, daily monitoring will continue for up to 7 days after the initial exceedance. If the daily monitoring results indicate no exceedances, daily monitoring will cease and routine monitoring will resume. However, if monitoring results indicate that the exceedance remains, the remedial action plan discussed in Section 3.1.4.2 will be implemented.

- *Structures*. Verification of exceedances within structures will be performed by trained personnel with the following procedures. These verification procedures apply to all structures included in the LFG monitoring network, including landfill-associated buildings outside the permit boundary.
  - Recalibrate the portable LFG meter if used during the initial detection in accordance with manufacturer recommendations.
  - Monitor methane and oxygen levels throughout the structure using a calibrated portable LFG meter. Readings will be taken in each room and in confined spaces. If natural gas appliances are used in the structure, they will be checked for leaks.
  - If continuous monitoring equipment has been installed in the structure, verify that the monitor has been operating properly. Additionally, verify the operation of the continuous monitoring equipment by monitoring the structure with a portable monitoring device.

  If the exceedance(s) remains and/or monitoring results indicate that an oxygen-deficient atmosphere remains, daily monitoring of the structure using a portable LFG meter will be performed for 7 days. If the daily monitoring results after 7 days show no exceedance, then

daily monitoring will cease and routine monitoring (whether with a portable LFG meter or a continuous monitor) will resume. If monitoring results indicate that the exceedance remains, the actions described in the remedial action plan shall be taken (Section 3.1.4.2).

3.1.4.2 Remedial Action Plan [30 TAC 330.371(c)(3)]

Once an investigation into the cause of the subsurface lateral migration has been performed, a remedial action plan to address the exceedances will be prepared and submitted to TCEQ. The investigation will be made to determine the appropriate method to address the subsurface lateral migration. Potential actions taken in the investigation include the following:

- Bar-hole probe or hydropunch testing in the vicinity of the impacted gas monitoring probe or structure
- Installation of additional gas monitoring probes
- Sampling and laboratory analysis of the gas monitoring probe to determine the concentrations of methane and other LFG constituents, if applicable

Other investigative measures may be taken to determine the cause of the subsurface lateral migration based on site conditions. Based on the results of the investigation, the corrective actions to address the lateral migration will be determined. Corrective actions will depend on the site-specific incident, but may include installing passive LFG vents or an active GCCS.

Within 60 days after the initial exceedance, a remedial action plan will be implemented to address the subsurface lateral migration. The remedial action plan will describe the exceedance, investigation results, and the actions to remediate the exceedance. Copies of the remedial action plan will be placed into the site records. The remedial action plan will be sent to the TCEQ for approval, consistent with 30 TAC 305.70(k)(3). Once approved, a notification that the remedial action plan has been implemented will be sent to TCEQ.

3.2 Surface Emissions Management

Surface emissions will be controlled through installation of a GCCS as required by 40 CFR 60 Subpart XXX. The landfill will install the GCCS when and if required by 40 CFR 60 Subpart XXX, or if monitoring results for subsurface lateral migration indicate that a GCCS is warranted. The LFGMP does not provide specific design information and details for the GCCS; this information will be included in the NSPS GCCS design plan required by 40 CFR 60 Subpart XXX. When applicable, an application for a permit modification will be submitted to the TCEQ to incorporate the NSPS GCCS design plan into this LFGMP by reference.

The following subsections summarize the components, the installation timeline, and the monitoring procedures for the proposed GCCS.

3.2.1 GCCS Description

The GCCS will be designed to control the maximum LFG generation potential, as required by 40 CFR 60 Subpart XXX. The NSPS GCCS design plan will serve as the primary plan for design and operation of the GCCS, along with the air permit for design and operation of the GCCS. The landfill will prepare the NSPS GCCS Design Plan and drawings once required by 40 CFR 60 Subpart XXX. Anticipated components of the GCCS include the following:

- Collection system
- Control system
- Gas condensate control

The following subsections describe each of these components of the GCCS in further detail.

3.2.1.1 Gas Collection System

The future NSPS GCCS design plan will include a proposed design for the gas collection system, which will be designed to be readily expanded as waste fill operations proceed. The number of wells and their placement will be designed to manage surface emissions and lateral migration.

The gas collection system will consist of vertical and/or horizontal extraction wells composed of high-density polyethylene (HDPE) or polyvinyl chloride (PVC). Vertical extraction wells will typically be installed in areas that have reached final waste grade. Additionally, vertical extraction wells and/or horizontal extraction wells may be installed as temporary control measures in disposal areas that have been in place for more than five years that are not yet at final refuse grades. Depending on their condition when final cover is placed, extraction wells installed as temporary measures may become permanent and be used in the final GCCS system. However, most temporary extraction wells will be abandoned and replaced throughout waste disposal operations; once final grades have been met, permanent wells will be installed.

LFG extraction well spacing will be determined using the method described in the book Methane Generation and Recovery from Landfills (EMCON, 1982). The values developed by this method will be compared to those developed by the equation from the 1991 NSPS background information document, with a more conservative EMCON value used for design purposes. This

method is consistent with spacing criteria used at other landfills, and should effectively control surface emissions and subsurface migration of LFG.

Temporary horizontal LFG extraction wells may also be used in areas that will not reach final grade within five years of initial waste disposal. Horizontal LFG extraction wells will be installed in areas that are shallow or are not easily accessible to vertical extraction wells. Horizontal extraction wells in waste older than five years will be used to collect LFG once a sufficient barrier of waste is placed above the collector to reduce the potential for air infiltration. Potential horizontal extraction wells will be spaced at a frequency of not more than 250 feet horizontally and 30 to 50 feet vertically. Although no sections of the disposal area have been designated for the construction of horizontal gas collection trenches, the landfill reserves the right to install these components if warranted by future operations.

Another component of the gas collection system is the piping network. Permanent lateral and header pipes will be installed below ground surface and will be constructed of HDPE pipe. Temporary piping may be installed either above or below ground surface. LFG is conveyed through this pipe network to the control system.

3.2.1.2 Gas Control System

The NSPS GCCS design plan will also include information on the control system. The two components of the gas control system consist of the gas mover system and the control device. The gas mover system will consist of either a blower or compressor system that has the capacity to handle the maximum LFG generation potential. To extract LFG, the gas mover system will induce vacuum on the gas collection system. Then, the gas mover system will route the collected LFG to a control device.

The gas control device serves to destruct the NMOCs, as required by 40 CFR 60 Subpart XXX. Control devices used for managing NMOC emissions from landfills include open flares, enclosed flares, high-MMBTU plants, treatment systems, engines, and other devices for beneficial reuse. When applicable, the landfill plans to install one of these devices for control. The final NSPS GCCS design plan will identify the selected control device and describe how collected LFG, including excess LFG will be managed and controlled.

3.2.1.3 Gas Condensate Control

Condensate that forms in the GCCS piping will be gravity drained or pumped though a force main to the leachate collection system (LCS) via direct connections to LCS cleanout/access risers or to condensate pump stations located around the perimeter of the disposal area. Condensate

will be commingled with landfill leachate and treated in accordance with the requirements of the facility's permit.

LFG transmission header and lateral piping will be sloped to promote gravity flow of condensate to engineered low points in the GCCS for condensate collection. Condensate collection pump stations or drains to LCS components will be located at these low points to collect the condensate and remove it from the transmission piping. Condensate collected in the drains will be discharged into the existing leachate cleanouts located around the disposal area, contaminated water tanks, or the contaminated water evaporation pond. Areas outside the Subtitle D liner system will collect condensate in pump stations for periodic discharge to the LCS, contaminated water tanks, or the contaminated water evaporation pond within the Subtitle D area through a force main(s).

3.2.2 GCCS Installation and Timeline

The landfill will install a GCCS when required by the regulations. The GCCS will be installed in phases to accommodate waste disposal operations and to meet the requirements of 40 CFR 60 Subpart XXX. The landfill will initially install the GCCS once the annual NMOC generation rate calculations indicate an NMOC generation rate of 34 megagrams per year. After the initial installation, the GCCS will be expanded, at a minimum, into areas of waste that are five years or older or areas that are two years old or more that have reached final grade. Additionally, if lateral migration or odors due to LFG emissions are detected, the landfill will install a gas collection system in the area and connect it to the gas control system.

3.2.3 GCCS Monitoring Procedures

When applicable, the landfill will monitor the GCCS following the requirements of 40 CFR 60 Subpart XXX. Monitoring for the gas collection system includes monthly monitoring of the installed wellfield and quarterly monitoring for surface emissions. The landfill will also monitor continuously (or at least every 15 minutes) the amount of LFG flow delivered to the control device. Depending on the control device, the combustion temperature or the pilot flame, respectively, will be monitored continuously (or at least every 15 minutes). Records of monitoring events will be maintained on-site.

3.2.4 GCCS Post-Closure

Post-closure procedures will follow the requirements of 30 TAC 330.371(e) and (f), as well as 40 CFR 60 Subpart XXX. Section 5 of this LFGMP provides post-closure requirements for 30 TAC

330.371(e) and (f); these requirements will be the same for the GCCS. 40 CFR 60 CFR Subpart XXX includes criteria for when the GCCS can be removed from sections of a closed area, as well as for when the GCCS can be removed from the landfill. These regulations will apply if a NSPS GCCS is installed.

4. System Maintenance

This section provides the requirements of 30 TAC 330.371(g) for a description of the proposed procedures to be used during maintenance and a backup plan to be used if the main system breaks down or becomes ineffective.

4.1 System Maintenance Plan

The system maintenance plan (SMP) outlines preventive maintenance procedures and to identify problems before they impact the performance of the perimeter monitoring network, the structure monitors, and the GCCS or its components. Failure to perform proper inspections and maintenance may result in failure of critical components that could render these systems inoperable or reduce operational life. Additionally, the SMP provides guidelines regarding actions to be performed during downtimes of the GCCS caused by shutdowns or malfunctions.

4.1.1 Routine Inspection and Maintenance Procedures

Routine inspection and maintenance are important in maintaining system integrity and protecting human health and the environment. Inspection and maintenance procedures for the devices for managing subsurface lateral migration and surface emissions are discussed in the following subsections.

4.1.1.1 Lateral Migration LFG Monitoring

This section describes routine inspection and maintenance procedures for the perimeter monitoring network and monitors within structures.

- *Perimeter Monitoring Network*. Field personnel will inspect the integrity of each gas monitoring probe during each monitoring event. For each gas monitoring probe, field personnel will verify that:
  - The label is clearly visible.
  - The lock on the security casing is operational.

- The security casing is intact and not bent or extremely rusted.
- The concrete apron has no cracks or evidence of heaving.
- The sample port of the gas monitoring probe is functional and not leaking.
- The casing or pipe of the gas monitoring probe is in good condition.

If field personnel find a gas monitoring probe damaged or exhibiting excessive wear, the General Manager shall be notified and the gas monitoring probe shall be repaired. However, if it is potentially impossible to repair the gas monitoring probe and the damage potentially impedes monitoring of the gas monitoring probe, the gas monitoring probe will be abandoned and replaced with another gas monitoring probe following the guidelines discussed in Section 3.1.2.1.

Inspection results and repairs to the gas monitoring probe, as applicable, shall be recorded on a form like the one found in Appendix III-7-A.

- *Structures*. Monitoring instruments within structures shall be calibrated and maintained following manufacturer recommendations. If the monitoring instrument has alarms, they shall be tested as outlined by the manufacturer. The operation and maintenance (O&M) manual for the monitoring instruments will be maintained in the site records.

4.1.1.2 Surface Emissions Management

Routine inspection and maintenance procedures are key actions in preventing and abating malfunctions of the GCCS. Appendix III-7-B shows items to be inspected and maintained on a routine basis, including the frequency. This list of activities is not intended to be exhaustive. Refer also to the O&M manuals for the equipment identified in Appendix III-7-B, which typically include guidelines for routine maintenance and inspection. The inspection results should be documented.

4.1.2 Procedures for Downtimes

GCCS downtimes are typically due to shutting down the system for maintenance or a malfunction. An appropriate startup, shutdown, malfunction plan will be developed with the development of the GCCS design.

4.2 Backup Plan

4.2.1 Perimeter Monitoring Network and Structures

The following backup plan will be used when gas monitoring probes or monitoring devices within structures become inoperable.

- Perimeter monitoring network
  - Repair gas monitoring probes within 65 days of discovery.
  - Replace gas monitoring probe within 120 days of discovery if probe is unrepairable
  - Install a geoprobe next to the damaged gas monitoring probe for use during a monitoring event if the damaged gas monitoring probe has not been replaced or repaired.
- Structures
  - Damaged or malfunctioning stationary continuous methane monitors/alarms will be repaired or replaced upon discovery.
  - Alternatively, monitor each room in each structure with a portable LFG meter calibrated to 1.25 percent methane and operated in accordance with the meter manufactures specifications. Monitoring will be performed, at a minimum, quarterly in conjunction with perimeter probe monitoring.

4.2.2 GCCS

There may be incidents that cause components of the GCCS to malfunction, thereby preventing the GCCS from operating. These incidents include, but are not limited to, tornados, hurricanes, and other acts of God. During these times, the site is to make every effort to make the repairs as efficiently as possible. However, if the gas mover system (e.g., blower, compressor) and/or control device (e.g., flare) becomes inoperable, the site will rent a portable unit to temporarily extract LFG from the GCCS until the existing gas mover system and/or control device is repaired.

5. Post-Closure

This section discusses post-closure monitoring procedures and changes to the gas monitoring and control systems after closure as required by 30 TAC 330.371(e) and 30 TAC 330.371(f).

5.1 Monitoring [30 TAC 330.371(e)]

As required by 30 TAC 330.371(e), the gas monitoring and control program will continue for 30 years after certification of closure of the facility. If it is determined that this time frame should be changed, a request to modify the time frame for the gas monitoring control program will be submitted to TCEQ for approval.

5.2 Changes to Maintain Effective Gas Monitoring [30 TAC 330.371(f)]

Following 30 TAC 330.371(f), the gas monitoring and control system will be modified as needed to maintain current and effective gas monitoring and control. Changes may include installing or expanding a GCCS as site conditions warrant or as required by 40 CFR 60 Subpart XXX.

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Appendix III-7-A

Forms

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WST Landfill
Gas Probe Monitoring and Inspection
Records

Sampled By: _____

Date and Time: _____

Weather: _____

Monitoring Equipment _____

Date of Calibration: _____

Probe ID	Methane %	Oxygen %	Static Pressure in. W.C.	Probe Integrity Verification - Comments/ Repairs needed?

WST Landfill
Structure Methane Monitoring and Inspection Records

Sampled By: _____

Date and Time: _____

Weather: _____

Date of Calibration: _____

Stationary Continuous Methane Monitor/Alarm Records

Structures	Continuous LFG Alarm Operational		Alarm Activated During Previous		Repairs?
	Yes	No	Yes	No	

WST Landfill
Structure Methane Monitoring and Inspection Records

Sampled By: _____

Date and Time: _____

Weather: _____

Date of Calibration: _____

Portable LFG Meter Montoring Results in Structures

Structure	% Methane	%Oxygen	Inspection Comments and Results

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Appendix III-7-B

Inspection and Routine Maintenance

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Appendix III-7-B. Inspection and Routine Maintenance

Gas Collection System

Equipment	Inspection Interval	Routine Maintenance Interval	Items to be Inspected and Routine Maintenance items
Well Casing	Monthly	Monthly	▪ Above-grade well casings and surrounding areas for signs of damage, deterioration, or potential problems ▪ Integrity of below-grade components when GCCS ▪ Monitoring data warrant
Joints	Monthly	Monthly	▪ Mechanical joints (flexible coupler, flange, electrofusion collar, etc.) on the wellhead and casing for leaks ▪ Inspect for hissing sounds or staining or accumulation of liquid on well casing or wellhead. ▪ Clamps and mechanical fasteners for tightness and operation
Wellhead Valves	Monthly	Monthly	▪ Condition and functionality of valves ▪ Operation of valve to verify range of motion of the valve (open and close valve completely}
Sample Ports	Monthly	Monthly	▪ Cracks and damage in ports and O-rings ▪ Tightness ▪ Free of debris ▪ Sample port caps for damage or deterioration
Permanent Thermometers	Annually	Annually	▪ Proper operation ○ Compare measurements with known standard to determine accuracy ○ Rotate to ensure proper dial operation ○ Inspect O-rings or seals for damage or wear ○ Replace thermometer, if necessary, to ensure accuracy

Gas Collection System

Equipment	Inspection Interval	Routine Maintenance Interval	Items to be Inspected and Routine Maintenance items
Temporary Thermometers (thermometers with quick connect fittings)	Quarterly	Quarterly	Proper operation (see operation and maintenance manual for further instructions).
Flex Hose	Monthly	Monthly	▪ Cracks, brittleness, and deterioration ▪ Kinks and constrictions ▪ Proper length ○ Appropriate length to promotecondensate drainage ○ Hose is not to be in tension and should be long enough to accommodate slight differential movement of well pipe and lateral riser
Geosynthetic Cap Penetrations	Monthly	Monthly	▪ Seal between boot and well casing, valve extension, sump is intact ▪ Integrity of the geosynthetic material is intact, and has not torn, stretched, and otherwise failed.
Landfill Cover	Monthly	Monthly	▪ Area around each well casing for soil that is desiccating or pulling away from the well casing ▪ Surface water erosion, ponding, leachate breakouts, or staining ▪ Settlement of the cover around well casings.
Piping network valves	Semiannual	Semiannual	▪ Full range of motion ▪ Vacuum on both sides of valve to verify proper operation

Gas Mover System

Equipment	Inspection Interval	Routine Maintenance Interval	Items to be Inspected and Routine Maintenance items
System Operation	Quarterly	Quarterly	Failsafe components for proper operation
Blower Bearing Temperature	Monthly	Monthly	Excessive bearing temperature (relative to design or manufacturer's suggested operating temperature)
Blower/Motor	Daily (except for excessive vibration)	Daily	▪ Proper operation (see operation and maintenance manual for further details) ▪ Lubrication of moving parts, per manufacturer's recommendations ▪ Excessive vibration relative to normal operating conditions ○ Inspect for vibrations during each monitoring event
Belts	Quarterly	Quarterly	Wear and tear
Flexible Couplers (Direct Drive Units, where applicable)	Quarterly	Quarterly	Wear and damage
Blower/Motor Safety Devices	Monthly	Monthly	Ensure that safety devices (belt shrouds, cages, shields, etc.) are installed and functioning properly

Gas Control System

Equipment	Inspection Interval	Routine Maintenance Interval	Items to be Inspected and Routine Maintenance items
Mode of System Operation	Daily	Daily	Verify if operating in automatic mode
Fail Safe Operation of System	Quarterly	Quarterly	▪ Proper fail-safe operation during forced shutdown ▪ Observe all fail-safe components for proper operation
Control Panel	Monthly	Monthly	▪ Indicator lights, gauges, and other components are operational ▪ Check for loose wires ▪ Check for and remove debris, rodents, and insects
Flame Arrestor	Monthly	Monthly	Difference in pressure across flame arrestor in inches water column
	Annually	Annually	Verify condition of flame arrestor and clean or when differential pressure is above manufacturer's specification
Thermocouples	Monthly	Monthly	Indications of thermocouple failure
	Annually	Annually	Heat damage
Valves	Monthly and during each forced shutdown	Monthly and during each forced shutdown	Exercise each valve for complete operational range
Pilot System	Monthly and during each forced shutdown	Monthly and during each forced shutdown	▪ Supply of pilot gas ▪ Condition of igniter ▪ Pilot fuel tank level and cylinder pressure
Flow Meter	Quarterly	Quarterly	▪ Cleanliness ▪ Proper position and orientation ▪ Meter is properly zeroed during shutdowns ▪ Verify calibration is up to date
Chart Recording Device (Paper or Digital)	Daily	Daily	▪ Proper orientation (Paper Chart Recorder) ▪ Hardware for damage ▪ Program operating correctly ▪ Verify time on recorder is correct ▪ Verify the recorder is operating and recording data continuously

Gas Control System

Equipment	Inspection Interval	Routine Maintenance Interval	Items to be Inspected and Routine Maintenance items
Auto-Dialer	During all shutdowns and forced shutdowns	During all shutdowns and forced shutdowns	Operation
	Monthly	Monthly	Notification service (text messaging) is operational
	Semiannual	Semiannual	Proper programming
Air Compressor	Monthly	Monthly	▪ Oil level ▪ Filters ▪ Belts ▪ Hour meter ▪ Operation of the air dryer ▪ Date of media change of the air dryer

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Attachment III-8

Closure Plan and Cost Estimate (TCEQ-20720 and TCEQ-20721)

DBS&A a Geo-Logic Company

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Texas Commission on Environmental Quality

Closure Plan for Municipal Solid Waste Type I Landfill Units and Final Facility Closure

This form is for use by applicants or site operators of Municipal Solid Waste (MSW) Type I landfills to detail the plan for closure of a landfill unit, closure of associated storage or processing units, and final closure of the facility to meet the requirements in 30 TAC Chapter 330, §330.63(h) and 30 TAC Chapter 330 Subchapter K for a MSW Type I facility.

If you need assistance in completing this form, please contact the MSW Permits Section in the Waste Permits Division at (512) 239-2335.

I. General Information

Facility Name: WST Landfill

MSW Permit No.: 2431

Site Operator/Permittee Name: West Sun Tex, LLC

II. Landfill and Other Waste Management Units and Operations Requiring Closure at the Facility

A. Facility Units

Table 1. Description of Landfill Units.

Name or Descriptor of Unit	Operating Status of Unit	Type of Liner System Under Unit	Above Grade Class 1 Disposal Cells in this Unit	Below Grade Class 1 Disposal Cells in this Unit	Other Class 1 Disposal Cells in this Unit (describe)	Size of Unit's Waste Footprint (acres)	Maximum Inventory of Waste Ever in Unit (indicate cubic yards or tons)	Other Necessary Information that Pertains to the Unit
WST Landfill	Proposed	Composite Liner (GCL, FML)	☐	☒	☐	120.9	12,007,634 CY	
Totals						120.9	12,007,634 CY	

Table 2. Description of Waste Storage or Processing Units or Operations Associated with this Permit.

Type of Storage or Processing Unit or Operation (individual units may be closed at any time prior to or during the final facility closure as described in this plan)	Operational Status of Unit	Size of the Area Used for the Storage or Processing Unit or Operation (Acres)	Maximum Inventory of Waste Ever in Storage or Processing Unit or Operation (indicate cubic yards or tons)	Other Information (enter other necessary information that pertains to the unit)
Contact Stormwater/ Leachate evaporation pond	Proposed	0.92	5,948 ☒cubic yards ☐tons	Accepts leachate from Existing Area
Leachate Storage Tank	Proposed	0.02	15 ☒cubic yards ☐tons	Accepts leachate from Existing Area (1 tank)
Leachate Storage Tanks	Future	0.04	30 ☒cubic yards ☐tons	Will accept leachate from Existing Area (2 tanks)
Totals		0.98	5,993 CY	

B. Waste Inventory Summary

Table 3. Maximum Inventory of Wastes Ever On Site.

Item	Quantity (indicate cubic yards or tons)
Maximum inventory of waste in landfill units (total from Table 1)	12,007,634 ☒cubic yards or ☐tons
Maximum inventory of waste in storage or processing units or operations (total from Table 2)	5,948 ☒cubic yards or ☐tons
Total Maximum Inventory of Wastes ever on site over the active life of the MSW facility (sum of totals from Tables 1 and 2)	12,013,582 ☒cubic yards or ☐tons

C. Drawings Showing Details of the Waste Management Units at Closure

Table 4. Location of the Drawings showing Details of the Waste Management Units at Closure (outlines, dimensions, maximum elevations of waste and final cover of landfill units, and waste storage or processing units or operations at closure of the facility).

Drawing Location in the SDP	Drawing Figure Number	Drawing Title	Waste Management Units Details Shown
Appendix III-4-A	C-3 and C-13	Stormwater Management System (C-3) and Final Contours (C-13)	Final cover elevations, locations of stormwater management drainage swales and downchutes
Appendix III-4-A	C-1 and C-15	Cross Sections 1 and 2	Final cover sections, maximum elevations of waste and final cover of the landfill and soil borings
Appendix III-4-A	C-18	Civil Details 3	Detail 3: Final Cover Section Detail

III. Description of the Final Cover System Design

A. Types and Descriptions of the Final Cover Systems

Table 5. Types and Descriptions of the Final Cover Systems Permitted or Proposed for Closure of the Landfill Units.

Final cover system components will be the same for all landfill cells, including both Class 1 and non-Class 1 cells. Class 1 industrial solid waste will be covered with a 4-foot layer of compacted clay-rich soil in accordance with §330.457(a)(2), prior to placement of additional aerial fill (MSW).

Landfill Unit Name or Descriptor	Type of Final Cover System	Final Cover System Components Description	Other Information (Enter other information as applicable)
WST Landfill	Conventional composite	A geomembrane, consisting of 40-mil LLDPE, will be placed over the waste material in accordance with §330.457(a)(1). The geomembrane will be overlain with a clay-rich soil cover layer consisting of a minimum of 18 inches of earthen material with a coefficient of permeability no greater than 1×10^{-5} centimeters per second (cm/s). A 6-inch-deep vegetative layer will be placed on top of the clay-rich fill material and serve as the erosion layer in accordance with §330.457(a)(3).	N/A

B. Design Details

Table 6. Design Details of the Final Cover Top and Side Slopes for the Landfill Units.

Landfill Unit Name or Descriptor	Maximum Final Elevation of Waste (feet above mean sea level [ft-msl])	Maximum Elevation of Top of Final Cover (ft-msl)	Minimum Grade of the Final Cover Top Slope (%)	Maximum Grade of the Final Cover Side Slope (%)	Other Information (enter other information as applicable, e.g. above-grade Class 1 Cell Dikes)
WST Landfill	2,788	2,790	2%	15%	N/A

C. Final Cover Drainage Features

Stormwater drainage and erosion and sediment control features incorporated on the final cover of the landfill units to protect the integrity and effectiveness of the final cover system include *(please list and describe the drainage features to be installed on the final cover at or prior to closure for each landfill unit, or list the drainage features and provide cross references on the location(s) of the descriptive and details (drawing) information in other parts of the SDP)*:

Drawing C-3 (Appendix III-4-A) shows the overall site plan for the drainage channels and stormwater storage ponds. The final cover drainage swales and downchutes are shown on Drawing C-3. Drawing C-10 contains the details for the downchutes, unlined ditches, culvert road crossings, and final cover drainage swales.

D. Final Cover Vegetation or Other Ground Cover Material

The final cover will be seeded and/or sodded with native plants immediately following the application of the final cover in order to minimize erosion. Other materials, including **N/A**, may be incorporated over the final cover soil surface to ensure sufficient coverage of the ground surface to minimize erosion. The estimated percent ground cover to minimize soil loss and maintain long-term erosional stability of the final cover top and side slopes is: **70**%. The minimum material specifications for other ground cover materials are summarized in the table below.

For a landfill with water balance final cover design, the percentage vegetation cover (excluding other ground cover types) will not be less than that assumed in the water balance final cover model.

Table 7. Minimum Specification for Ground Cover Materials Other Than Vegetation, if Applicable.

Other Ground Cover Material	Maximum Particle Size (inches)	Minimum Particle Size (inches)	Material Placement Method	Thickness of Layer (inches)	Percentage Coverage (%)	Other (specify)
N/A						

E. Final Contour Map

Drawing C-13, a facility final contour map, is provided in Appendix III-4-A. The map shows the final contours of the landfill units and the entire facility at closure.

Drawing C-14 and C-15 showing the cross sections of the landfill units at closure are also provided in Appendix III-4-A.

The facility final contour and cross-section maps/drawings depict the following information:

(1) Final constructed contours of the landfill at closure.

(2) Top slopes and side slopes of the landfill units.

(3) Surface drainage features.

(4) 100-year floodplain, as applicable – not applicable

(5) Constructed features providing protection of/from the 100-year floodplain – not applicable

(6) Other (specify): not applicable

IV. Description of the Final Cover System Installation Procedure

A. Mode of Installation

Table 8. Mode of Final Cover Installation on the Landfill Units.

Landfill Unit Name or Descriptor	Largest Area of Unit Ever Requiring Final Cover (Acres)	Check this Column if Final Cover will be Placed in Installments as Permitted Elevation is Reached	Check this Column if Final Cover will be Placed when Entire Unit Area Reaches Permitted Elevation	Final Cover Installation Status
WST Landfill	20.9 (if landfill closed with one active cell; all phases of cover installation shown in Appendix III-4-A are smaller than this)	☒	☐	N/A

B. Installation Drawings for Final Cover and Drainage Features

The following attached plan and cross-section drawings show the final cover design details, the largest area requiring final cover, details of the sequence of installation of the final cover system, and all drainage features.

Table 9. List of Installation Drawings for Final Cover and Drainage Features. (All drawings are provided in Part III, Attachment 4, Appendix A)

Drawing No.	Drawing Title	Description of Information Contained in Drawing
C-14 and C-15	Cross Sections 1; Cross Sections 2	Final cover cross sections
C-13 and C-3	Final Contours; Stormwater Management System	Final cover layout, placement of stormwater drainage features
C-1	Drainage Details	Details of all drainage features on the final cover, final cover installation details
Appendix III-8-A	Landfill Final Cover Sequencing	Largest area requiring final cover, sequence of installation of the final cover system
		Other: N/A

C. Final Cover Quality Control Plan

A final cover quality control plan (FCQCP) is provided in Appendix III-4-C. The FCQCP describes the final cover system design, construction, and evaluation protocol and processes, including the personnel, materials, methods, sampling and testing standards, procedures, and practices to be used in procuring, handling, installing, and evaluating all elements of the final cover system. It establishes the material requirements; personnel qualifications and roles; installation requirements; quality control and quality assurance monitoring, testing, documentation, and reporting programs to be used during construction of each component of the final cover system to assure and to verify that the final cover system is constructed as designed and in accordance with applicable rules and technical standards.

D. Documentation and Reporting of Final Cover System Construction and Testing

The professional of record will document all aspects and stages of the final cover installation, including materials used, equipment and construction methods, and the type and rate of sampling and quality control testing performed. Following completion of construction of the final cover, the site operator/permittee will submit to the TCEQ executive director, a Final Cover System Evaluation Report (FCSER) for each landfill unit.

V. Closure Activities and Completion Schedules for Each Landfill Unit and for the Final Facility Closure

A. Closure of a Landfill Unit

The following activities will be conducted to satisfy the closure criteria for a landfill unit:

(1) Closure Notification to the TCEQ Executive Director:

The site operator will inform the executive director of the TCEQ, in writing, of the intent to close the unit no later than 45 days prior to the initiation of closure activities and place this notice of intent in the operating record.

(2) Stoppage of Waste Acceptance and Commencement of Other Closure Activities for the Unit:

The site operator will stop accepting waste upon receiving the known final receipt of waste. The site operator will ensure that the permitted top elevations of the in-place waste, as depicted in/derived from the unit's final contour map approved by the TCEQ executive director, are not exceeded at any section or part of the landfill unit. The site operator will begin closure activities for the unit no later than:

- 30 days after the date on which the unit receives the known final receipt of wastes; or

- One year after the most recent receipt of wastes if the unit has remaining capacity and there is a reasonable likelihood that the unit will receive additional wastes.

(3) Request for Extension Beyond the 1-Year Deadline for Commencing Closure Activities for a Unit:

The site operator may submit a written request to the executive director of the TCEQ for review and approval for an extension beyond the one-year deadline for the initiation of closure. The request will include the following:

(a) All applicable documentation necessary to demonstrate that the unit has the capacity to receive additional waste; and

(b) All documentation necessary to demonstrate that the site operator has taken and will continue to take all steps necessary to prevent threats to human health and the environment from the MSW landfill unit.

(4) Construction of Final Cover:

The site operator will construct the permitted final cover over the waste mass using methods, procedures, and specifications described in the FCQCP. The final constructed contours, elevations, and slopes of the installed final cover will match the permitted final cover contours, elevations, and slopes shown in closure drawings contained in this closure plan.

(5) Construction of Drainage Features:

The site operator will construct the drainage structures shown in drawings referenced or contained in this closure plan or in the facility surface water drainage report.

(6) Completion of Outstanding or Replacement of Damaged Groundwater or Landfill Gas Monitoring Components:

The site operator will complete installation of any outstanding or replacement of any damaged groundwater or landfill gas monitoring system components and landfill gas control systems as needed to maintain current and effective groundwater or landfill gas monitoring and control systems.

(7) Submittal of Final Cover System Evaluation Report (FCSER) to the TCEQ Executive Director:

Following completion of construction of the final cover for the subject landfill unit, the site operator will submit to the TCEQ executive director for review and acceptance, a FCSER for the unit.

(8) Completion of Closure Activities for the Landfill Unit:

The site operator will complete closure activities for the unit within 180 days following the start of closure activities, unless the executive director of the TCEQ grants an extension as described in Item V.A.8(a) below.

(a) Request for Extension of the Completion of Closure Activities for the Landfill Unit:

The site operator may submit a written request for an extension for the completion of closure activities to the TCEQ for review and approval. The extension request will include:

- All applicable documentation necessary to demonstrate that closure will, of necessity, take longer than 180 days; and
- All applicable documentation necessary to document that all steps have been taken and will continue to be taken to prevent threats to human health and the environment from the unclosed MSW landfill unit.

(9) Submittal of Engineer's Certification of Closure to the TCEQ Executive Director and Request of Closure Inspection to TCEQ Regional Office:

Following completion of all closure activities for the landfill unit, the site operator will submit:

(a) Closure Inspection

A written request to the local TCEQ regional office for a closure inspection of the unit.

(b) Closure Certification

A certification, signed by an independent licensed professional engineer, to the executive director of the TCEQ for review and approval verifying that closure has been completed in accordance with this closure plan. The site operator will submit the certification via registered mail, and the submittal will contain all applicable documentation necessary for certification of closure of the unit, including:

- A final cover system evaluation report (FCSER) documenting the installation of the final cover. The FCSER may be submitted as a separate document for review and approval following the completion of the final cover installation. In that case, the certification of closure will be submitted subsequently;
- A final contour map as described under Section III.E that includes the relevant unit; and
- Copy of the letter to the TCEQ regional office requesting a closure inspection of the relevant unit.

(10) TCEQ's Acknowledgement of Termination of Operation and Closure of a Unit:

Upon receipt, the TCEQ executive director will review the closure documents for completeness and accuracy; and following receipt of the closure inspection report from the agency's regional office verifying proper closure of the MSW landfill unit according to this closure plan, the executive director will, in writing, acknowledge the termination of operation and closure of the unit and deem it properly closed. Thereafter, the site operator will comply with the post-closure care requirements described in the post-closure care plan for the unit.

(11) Deed Recordation for Disposed Regulated Asbestos Containing Materials (RACM):

Upon closure of the unit that accepted RACM, the site operator will place a specific notation that the unit accepted RACM in the deed records for the facility with a diagram identifying the RACM disposal areas. Concurrently, the site operator will submit to the TCEQ executive director, a notice of the deed recordation and a copy of the diagram identifying the asbestos disposal areas.

(12) Placement of all Closure Documentation in the Site Operating Record:

Once approved, the closure certification and all other documentation of closure will be placed in the site operating record.

(13) Closure Schedule for the Landfill Unit:

A closure schedule is provided in Appendix III-8-B. The schedule shows all the closure activities listed within Section V.A and the timelines for commencing and completing each activity. Also, the schedule shows that closure activities for the landfill unit will be completed within 180 days following the initiation of closure activities as required, unless an extension is granted by the TCEQ executive director.

(14) Other: (enter as applicable).

N/A

B. Closure of the Waste Storage or Processing Units or Operations

Closure of the waste storage or processing units or operations authorized under this permit will include removal of all waste, waste residues, and any recovered materials. The facility units and operations will either be dismantled and removed off-site or decontaminated. The site operator will dispose at the landfill or evacuate all materials (including feedstock, in process, and processed) to an authorized facility and disinfect all leachate handling units, tipping areas, processing areas, and post-processing areas. If there is evidence of a release from a unit or operation, the site operator will conduct an investigation, as approved by the TCEQ executive director, into the nature and extent of the release and an assessment of measures necessary to correct an impact to groundwater.

C. Final Closure of the Facility

In addition to the closure activities listed in Section V.A above for closing a landfill unit, the site operator will conduct the following activities for the closure of the entire facility:

(1) Publish Final Closure Notice and Place the closure Plan in a Public Place:

No later than 90 days prior to the initiation of the final facility closure, the site operator will:

(a) Publication of Notice:

The site operator will publish notice in the newspaper(s) of largest circulation in the vicinity of the facility to inform the public of the final closure of the facility. This notice will include:

- The name of the facility;
- The address, and physical location of the facility;
- The facility's permit number; and
- The last date of intended receipt of waste.

(b) Place Copies of the Closure Plan in a Public Place:

The site operator will also make available an adequate number of copies of the approved final closure and post-closure plans for public access and review at the Reeves County Library at 315 S Oak St, Pecos, TX 79772.

(2) Submit Written Notice of "Intent to Close the Facility" to the TCEQ Executive Director:

The site operator will provide written notification to the TCEQ executive director of the intent to close the facility. This notice will be provided to the executive director no later than 90 days prior to the initiation of the final facility closure, and thereafter be placed in the site operating record.

(3) Post Signs and Install Barriers:

Upon notifying the executive director of the intent to close the facility and no later than 90 days prior to the initiation of final facility closure, the site operator will:

(a) Post Final Closure Signs:

The site operator will post a minimum of one sign at the main entrance and all other frequently used points of access for the facility notifying all persons who may use the facility of the date of closing for the entire facility and the prohibition against further receipt of waste materials after the stated date.

(b) Install Barriers:

Also, the site/operator will install suitable barriers at all gates or access points to adequately prevent the unauthorized dumping of solid waste at the closed facility.

(4) Filling of "Affidavit to the Public" and Performance of the Final Deed Recording:

Upon closure of all the landfill units or upon final closure of the facility, the site operator will:

(a) File Affidavit

File with the county deed records an "Affidavit to the Public" in a form provided by the TCEQ executive director that includes an updated metes and bounds description of the extent of the disposal areas at the facility and the restrictions to future use of the land in accordance with applicable provisions under 30 TAC Chapter 330, Subchapter T.

(b) Record a Notation on the Deed

Record a certified notation on the deed to the facility property, or on some other instrument that is normally examined during title search, that will in perpetuity notify any potential purchaser of the property that the land has been used as a landfill facility and use of the land is restricted according to the provisions under 30 TAC Chapter 330, Subchapter T.

(c) Place Documents in the Operating Record

Place a copy of the "Affidavit to the Public" and a copy of the modified deed in the site operating record.

(5) Submittal of a Copy of the "Affidavit to the Public" and the "Modified Deed" to the TCEQ Executive Director:

Within 10 days after completion of final closure activities of the facility, the site operator will submit the following to the TCEQ executive director by registered mail:

(a) A certified copy of the "Affidavit to the Public";

(b) A certified copy of the modified deed to the facility property; and

(c) A certification, signed by an independent licensed professional engineer, verifying that final facility closure has been completed in accordance with the approved closure plan. The submittal will contain all applicable documentation necessary for certification of final facility closure, including:

- Final Cover System Evaluation Report (FCSER) documenting the installation of the final cover. The FCSER may be submitted earlier as a separate document for review and approval following the completion of

the final cover installation. In that case, the certification of closure will be submitted subsequently;

- A final contour map as described under Item III.G above;
- Copy of a letter to the TCEQ regional office requesting a final closure inspection of the facility; and
- Copies of documents verifying newspaper publication of the notice of the final facility closure.

(6) Other

Additional items relating to the schedule for final facility closure, and additional closure activities specific to the final closure of this facility include:

N/A

(7) TCEQ's Acceptance of Termination of Operation and Closure of a Landfill Facility:

Following the TCEQ executive director's receipt and completion of the review of the professional engineer's certification of the completion of facility closure and the final closure documents, and receipt of the inspection report from the agency's regional office verifying proper closure of the facility according to this closure plan, the executive director will, in writing, accept the termination of operation and closure of the facility and deem it properly closed. Thereafter, the site operator will comply with the post closure care requirements described in the post closure plan for the facility.

(8) Final Closure Schedule for the Facility:

Appendix C, Final Closure Schedule, provides the closure schedule for the final facility closure. It incorporates the schedule for closure of a unit as discussed in Section V.A and also shows the commencement and completion timelines for the final closure activities listed within this Section.

VI. Summary of Attachments

A. Appendix A Drawings and Maps

The following Drawings and Maps are attached as part of this plan (Appendix III-8-A).

- Landfill Final Cover Sequence

B. Appendix B and C Documents

- Appendix III-8-B, Final Closure Schedule.
- Appendix III-8-C, Closure Cost Estimate (Form TCEQ-20721)
- Other: Attachment

C. Additional Items Attached (enter as applicable)

N/A

VII. Professional Engineer's Statement, Seal, and Signature

Name: Gundar Peterson, P.E.

Title: President

Date: July 2026

Company Name: Daniel B. Stephens & Associates, Inc.

Firm Registration Number: F-286

Professional Engineer's Seal

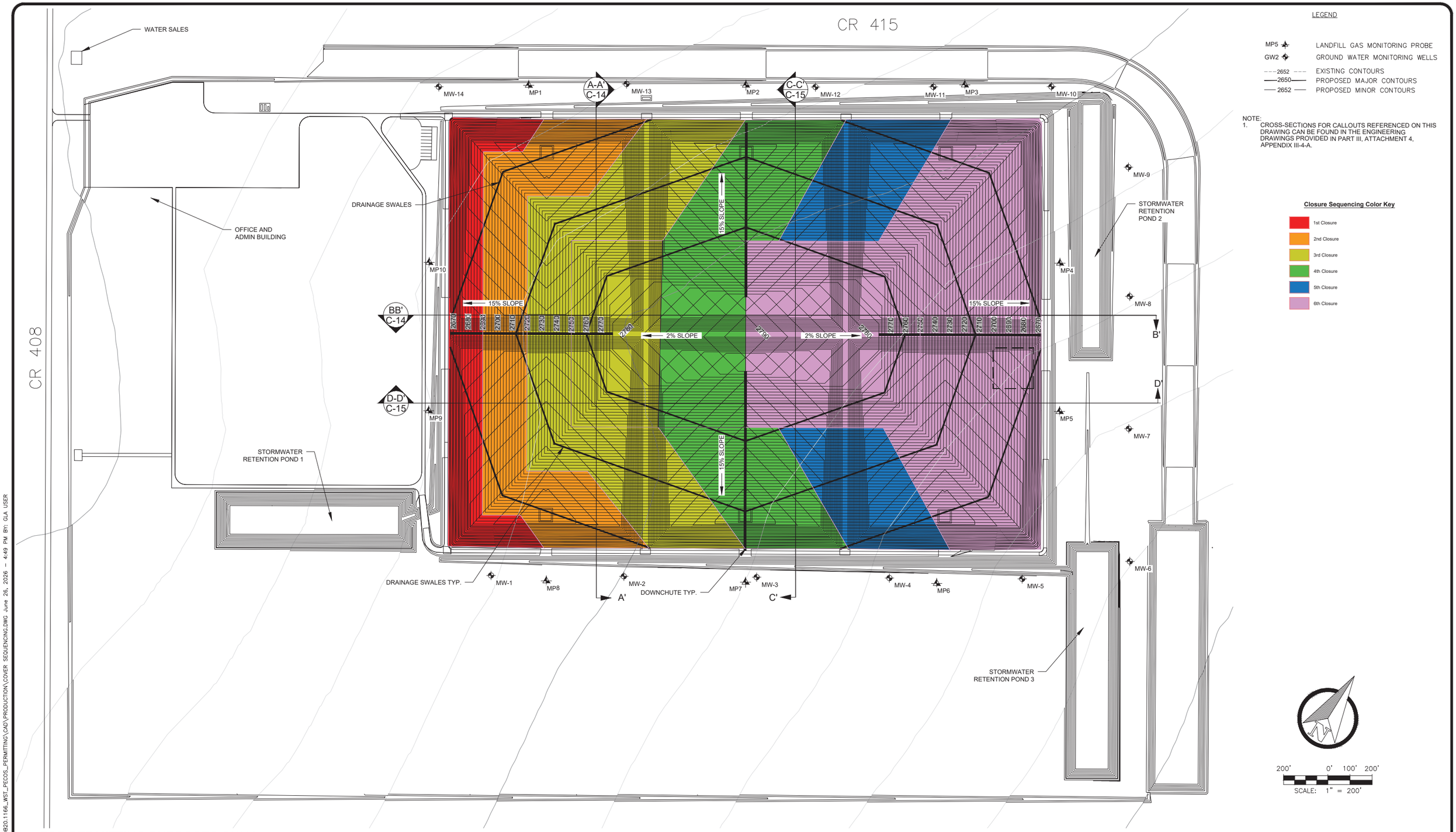


Signature

Appendix III-8-A

Final Cover Sequence

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FOR PERMITTING PURPOSES ONLY

REV. NO.	DATE	DESCRIPTION	APPROVED BY

DATE OF ISSUE: 2/10/2026
DESIGNED BY: KJ
DRAWN BY: CK, JA, ML
CHECKED BY: GP
APPROVED BY: GP

STATE OF TEXAS
GUNDAR PETERSON
103091
LICENSED
PROFESSIONAL ENGINEER
7/22/2026

DBS&A
a Geo-Logic Company
TEXAS REGISTERED ENGINEERING FIRM F-286

WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

WST LANDFILL
REEVES COUNTY, TEXAS

LANDFILL FINAL COVER LAYOUT

Appendix 111-8-A

JOB NO. DB20.1166

Z:\1X\MWTX\S\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\CAD\PRODUCTION\COVER SEQUENCING.DWG June 26, 2026 – 4:49 PM BY: GLA USER

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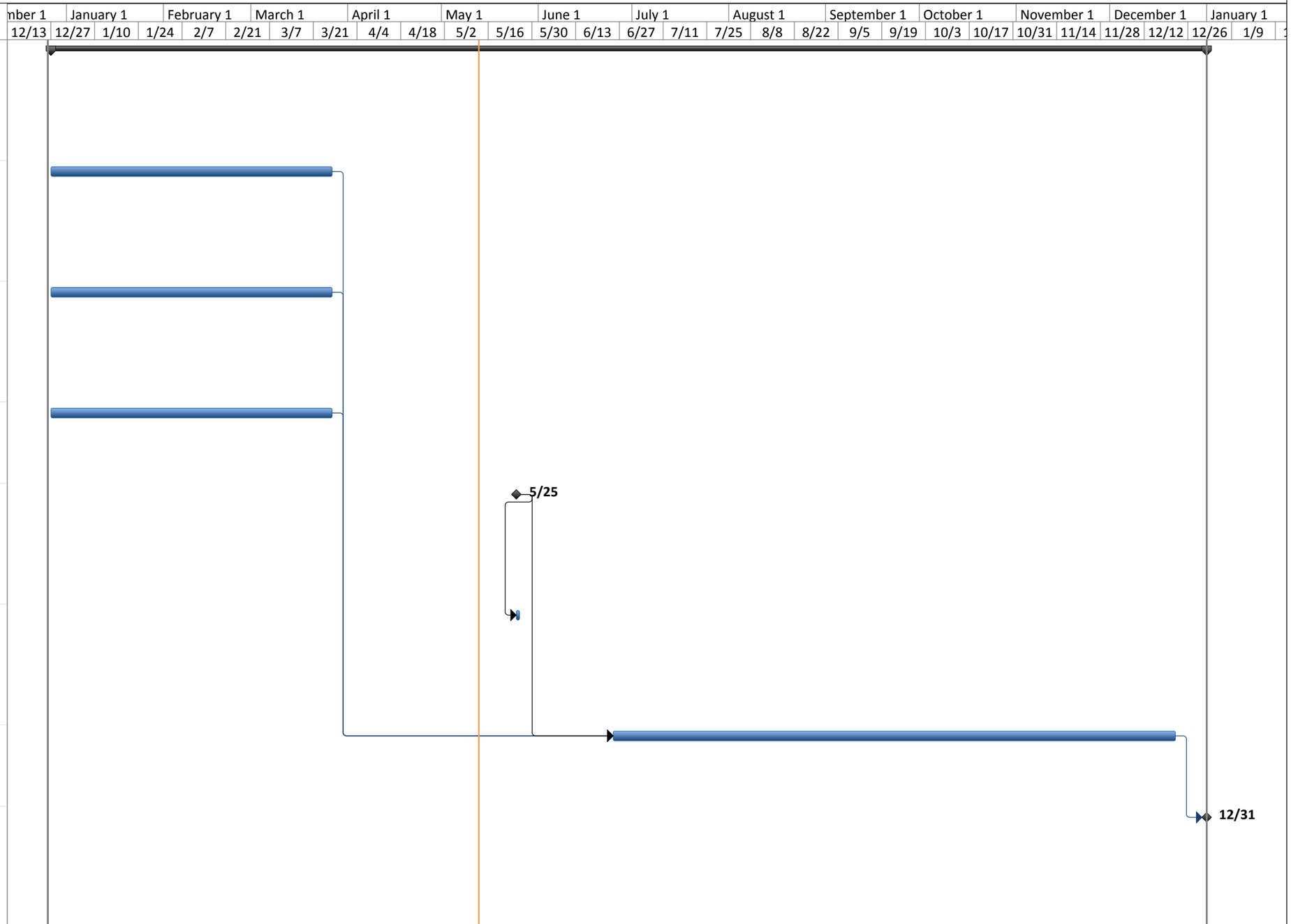
Appendix III-8-B

Final Closure Schedule

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WST Landfill - Final Closure Schedule

Task Name	Duration
Final Closure Activities	**370 days**
Publish Final Closure Notice and Place the closure Plan in a Public Place - NLT 90 days prior to closure initiation	90 days
Written Notice of "Intent to Close the Facility" to the TCEQ Executive Director - NLT 90 days prior to closure initiation	90 days
Post Signs upon Written Notice - NLT 90 days prior to closure initiation	90 days
Receipt of Final Waste (RFW)	1 day
Install Barriers	1 day
Closure activities to start NLT 30 days after RFW, complete NLT 180 days after initiation	180 days
Submit copy of "Affidavit to the Public", Copy of the "Modified Deed", and the FCSER.	10 days



Task Milestone Summary

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Appendix III-8-C

Closure Cost Estimate (Form TCEQ-20721)

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Texas Commission on Environmental Quality

Closure Cost Estimate Form for Municipal Solid Waste Type I Landfills

This form is for use by applicants or site operators to provide cost estimates for closure of MSW Type I landfills to meet the requirements in 30 Texas Administrative Code (TAC) Chapter 330, Section 330.63(j) and 30 TAC Chapter 330 Subchapter L. The costs to be provided herein are cost estimates for hiring a third party to close the largest waste fill area that could potentially be open in the year to follow and those areas that have not received final cover. If you need assistance in completing this form, please contact the MSW Permits Section in the Waste Permits Division at (512) 239-2335.

Facility Name: WST Landfill

MSW Permit No.: 2431

Site Operator/Permittee Name and Mailing Address: West Sun Tex, LLC

600 N Carroll Ave Suite 100 Southlake, TX 76092

Total Closure Cost Estimate (2026 Dollar Amount): $3,163,600

I. Professional Engineer's Statement, Seal, and Signature

I am a licensed professional engineer in the State of Texas. To the best of my knowledge, this Closure Cost Estimate has been completed in substantial conformance with the facility Closure Plan and, in my professional opinion, is in compliance with Title 30 of the Texas Administrative Code, Chapter 330.

Name: Gundar Peterson, P.E. Title: President

Date: July 2026

Company Name: Daniel B. Stephens & Associates, Inc., Firm Registration Number: F-286

Professional Engineer's Seal



Professional Engineer's Signature

II. Annual Review of Permit Conditions, Cost Estimates, Inflation Factor, and Financial Assurance

The permittee/site operator acknowledges that he/she will:

(1) Review the facility's permit conditions on an annual basis and verify that the current active and inactive waste fill areas of the landfill match the areas on which closure cost estimates are based.

(2) Request in writing via a permit modification application for an increase in the closure cost estimate and the amount of financial assurance provided if changes to the closure plan or the landfill conditions increase the maximum cost of closure at any time during the remaining active life of the landfill.

(3) Request in writing via a permit modification application for a reduction in the cost estimate and the amount of financial assurance provided if the cost estimate exceeds the maximum cost of closure at any time during the remaining active life of the landfill. The permit modification application will include a description of the situation and a detailed justification for the reduction of the closure cost estimate and the amount of financial assurance.

(4) Establish financial assurance for closure of the unit in an amount no less than the current closure cost estimate in accordance with 30 TAC Chapter 37, Subchapter R.

(5) Adjust the current cost estimate for inflation within 60 days prior to the anniversary date of the first establishment of the financial assurance mechanism.

(6) Provide annual inflation adjustments to the closure costs and financial assurance during the active life of the facility, until the facility is officially placed under the post closure care period and all requirements of the final closure plan have been approved in writing by the TCEQ executive director. The adjustment will be made using an inflation factor derived from the most recent annual Implicit Price Deflator for Gross National Product published by the United States Department of Commerce in its Survey of Current Business, as specified in paragraphs (1) and (2) of 30 TAC §37.131. The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year.

(7) Provide continuous financial assurance coverage for closure until the facility is officially placed under the post-closure care period.

III. Description of the Closure Cost Estimates Worksheet

The following descriptions of the items on the closure cost estimates worksheet provide guidance for identifying the minimum work or cost elements and estimating the unit or lump sum cost of each item as applicable. Enter additional detail for each item in the field following the item as necessary and as site-specific condition warrants. The cost items are grouped under closure costs for engineering, construction, and storage and processing units. Include attachments to detail any additional work and associated costs necessary to close the site that is not already included as a line item on the worksheet. Reference the attachments and list the work or cost items in the fields under "Additional Engineering Cost Items Not Listed on the Worksheet," "Additional Construction Cost Items Not Listed on the Worksheet," or "Additional Storage and Processing Units Items Not Listed on the Worksheet" as applicable. Provide the total cost of the additional work or cost items in each cost category on the worksheet line that precedes the cost subtotal for each cost group.

1. Engineering Costs

The engineering tasks have been subdivided into seven items and are described below. Other related costs may be added as site-specific issues warrant.

1.1. Topographic Survey

A topographic survey will be required to verify the existing elevation and slopes of the landfill to ensure conformance with the final cover system, drainage system, and final grading designs.

Enter additional topographic survey work or cost element details as site-specific conditions warrant: The topographic survey is required for the largest area requiring closure (assuming only one active cell).

1.2. Boundary Survey

The metes and bounds description is required for filing of the affidavit of closure and deed recording of any area of the site which has received waste. Other activities to be included here are publication of the public notice of closing activities.

Enter additional boundary survey work or cost element details as site-specific conditions warrant: A boundary survey of any area of the site that has received waste will be completed, and public notice will be published/posted as described in the closure plan. No site specific conditions are anticipated that would cause this task to have higher than normal costs.

1.3. Site Evaluation

The evaluation includes a site inspection to identify waste disposal areas, analyze drainage and erosion protection needs, and to determine other site operational features that are not in compliance with the permit. The site evaluation also includes verifying the need for new or relocation of existing

groundwater monitor wells and landfill gas monitoring probes, analysis of groundwater samples, and review of site operating record. The third-party consultant who performed the site evaluation will prepare and submit an engineering report to the executive director to document the status of the site. The report will identify all areas of work and the associated implementation costs necessary to safely close the landfill operations with recommendations on how to fulfill these needs.

Enter additional site evaluation work or cost element details as site-specific conditions warrant: The site evaluation applies to the entire area to be administratively closed (the entire site). No site specific conditions are anticipated that would cause this task to have higher than normal costs.

1.4. Development of Plans

The final closure, plan the final cover system design and specifications, grading and drainage plans, specification for revegetation, design of any other improvements to bring the site into compliance with the permit, the closure schedule, and coordination with the TCEQ and provision of closure notice to the public.

Enter additional development of plans work or cost element details as site-specific conditions warrant: N/A

1.5. Contract Administration (bidding and award)

The third-party consultant will advertise the project, receive the bids, evaluate the bids, award the closure construction contract and administer the contract during construction.

Enter additional contract administration work or cost element details as site-specific conditions warrant: 5% of the subtotal costs of items 1.1 through 1.5 will account for the cost of contract administration.

1.6. Closure Inspection and Testing

The professional of record will observe closure construction, perform cover thickness and permeability verification, and prepare an evaluation report upon completion of closure.

Enter additional closure inspection or testing work or cost element details as site-specific conditions warrant: Inspection and testing applies to the largest area requiring closure and is estimated based on previous quotes.

1.7. TPDES and other Permits

The third-party consultant will prepare plans, specifications, and other documents necessary for compliance with applicable federal and state laws and requirements, including the Clean Water Act, for the proper closure of the site.

Enter additional TPES or other permits work or cost element details as site-specific conditions warrant: N/A

1.8. Additional Engineering Cost Items Not Listed on the Worksheet

List the Attachment(s) detailing any additional engineering cost items necessary to close the site that is not already included as a line item on the worksheet: N/A. Also, reference these Attachments in the "Units" column on this line of the worksheet. Provide the total cost of all additional engineering cost items in the "Cost" column.

1.9. Engineering Costs Subtotal

1.9.1. Enter the sum of engineering costs in Items 1.1 through 1.8.

2. Construction Costs

Closure construction costs include those for construction of the final cover system, site grading, and drainage improvements. Other costs may be added as site-specific issues warrant.

2.1. Mobilization

2.1.1. Mobilization of Personnel and Equipment

The cost of mobilizing personnel and construction heavy equipment must be included as part of the construction costs.

Enter additional work or cost element details for mobilization of personnel and equipment as site-specific conditions warrant: 5% of the subtotal construction costs will account for the cost of mobilization.

2.2. Final Cover System

The owner or operator must install a final cover system that is designed to minimize infiltration and erosion. The final cover system is subdivided into the sideslope cover and cap cover with their associated components to facilitate cost calculations. The permeability control data of the final cover's 18 inches of compacted clay-rich soil shall be provided to the agency. If an alternative final cover is proposed, the closure cost estimate will still be based on a design that uses the conventional composite cover system.

Enter additional final cover system work or cost element details as site-specific conditions warrant: Side slope and top slope cover unit costs are the same for this cover system, so both have been included together in Section 2.2.1 of the cost estimate. All elements required for Class I cells will be constructed with the cells; therefore, no costs are included during closure.

2.2.1. Side Slope Cover

Enter information for Items 2.2.1a through 2.2.1h.

2.2.2. Top Slope Cover

Enter information for Items 2.2.2a through 2.2.2h.

2.2.3. Cells for Class 1 Nonhazardous Industrial Waste

2.3. Site Grading

Site grading includes the final grading of the site, including the landfill cap and sideslopes.

Enter additional site grading work or cost element details as site-specific conditions warrant: N/A

2.4. Site Fencing and Security

Site fencing and security must be included for the area which has received waste and have no existing approved fencing.

Enter additional site fencing and security work or cost element details as site-specific conditions warrant: This estimate assumes that there is adequate fencing and security already in place for the site, but to account for fencing modifications or replacement during closure activities, an allowance is included as a lump sum.

2.5. Landfill Gas Monitoring and Control Systems

Enter information for Items 2.5.1 through 2.5.6.

Final installation of the landfill gas monitoring and control systems must include the installation costs of pipes and appurtenances. In the event of a forced closure, the systems may not have been completed, thus, the estimated costs to complete the landfill gas monitoring and control system must be provided.

Enter additional landfill gas monitoring and control systems work or cost element details as site-specific conditions warrant: The cost estimate to install the LFG monitoring probes is included in this section of the cost estimate. A Landfill Gas Control system is not required at the site (per air regulations) within the next year.

2.6. Groundwater Monitoring System

2.6.1. Monitor Well Installation

Upon closure of the site, it may be necessary to relocate the compliance boundary. This requires the installation of new monitor wells.

Enter additional groundwater monitoring system work or cost element details as site-specific conditions warrant: The cost estimate assumes that the monitor well network does not need to be modified at closure.

2.6.2. Piezometer and Monitor Well Plugging and Abandonment

Piezometer or monitor well abandonment is the cost of abandoning (plugging) piezometers or monitor wells that are no longer needed. Determine the number of piezometers or monitor wells to be abandoned and include the total cost.

Enter additional plugging and abandonment work or cost element details as site-specific conditions warrant: This cost estimate assumes that two groundwater monitor wells will be abandoned during closure activities.

2.7. Leachate Management

2.7.1. Completion of Existing Leachate Collection System

In the event of a forced closure, there may be circumstances where the leachate collection system has not been completed. In this event, the leachate collection system must be closed with a permanent outfalls and permanent cleanouts installed.

Enter additional leachate management work or cost element details as site-specific conditions warrant: The forced closure scenario assumes that the leachate management system has been installed. No expenses are projected for this item.

2.8. Stormwater Management

2.8.1. Stormwater Drainage Management System

To reduce the potential long-term impacts of the landfill on surface water quality, drainage features must be incorporated into the final cover design to direct runoff, minimize erosion, control sediments, and avoid ponding of stormwater. The drainage system construction costs must be included.

Enter additional stormwater drainage management work or cost element details as site-specific conditions warrant: The cost estimate to complete the stormwater system assumes the ponds and culverts are already in place. Costs for other infrastructure, such as downchutes and drainage swales, are based on the surface area of one cell.

2.9. Additional Construction Cost Items Not Listed on Worksheet

List the Attachments detailing any additional construction cost items necessary to close the site that is not already included as a line item on the worksheet: N/A.

Also, reference these Attachments in the "Units" column on this line of the worksheet. Provide the total cost of all additional construction cost items in the "Cost" column.

2.10. Construction Costs Subtotal

2.10.1. Enter the sum of construction costs in Items 2.1 through 2.9.

3. Storage and Processing Unit Closure Costs

For landfills that incorporate storage and/or processing operations that are not separately authorized, all waste and processed and unprocessed materials associated with storage and/or processing units must be removed during the closure process.

3.1. Waste Disposal

The cost of disposal of waste at an authorized facility. *Enter additional waste disposal work or cost element information as necessary.*

N/A

3.2. Material Removal and Disinfection

The cost of removal, including transportation, of any remaining processed and unprocessed materials to an authorized off-site location. *Enter additional material removal and disinfection work or cost element information as necessary.*

N/A

3.3. Demolition and Disposal

The cost of dismantling and/or disinfection of storage and/or processing units and disposal, as applicable. *Enter additional demolition and disposal work or cost element information as necessary.*

N/A

3.4. Additional Storage and Processing Unit Closure Cost Items Not Listed in Worksheet

List the Attachments detailing any additional storage and processing unit closure cost items necessary to close the site that is not already included as a line item on the worksheet. Also, reference these Attachments in the "Units" column on this line of the worksheet. Provide the total cost of all additional storage and processing unit closure cost items in the "Cost" column.

The cost for this item includes dismantling and closure of the on-site contact stormwater pond and assicated facilities, including disposal of the anticipated maximum volume of leachate.

3.5. Storage and Processing Unit Closure Costs Subtotal

N/A

4. Sum of Cost Subtotals

4.1. Enter the sum of engineering, construction, and storage and processing unit closure cost subtotals from lines 1.9.1, 2.10.1, and 3.5.1.

5. Contingency

5.1. Add an amount equal to at least 10 percent of the sum of cost subtotals to cover unanticipated events during implementation of closure activities.

6. Contract Performance Bond

6.1. Add an amount equal to at least 2 percent of the sum of cost subtotals for purchase of a surety bond to guarantee satisfactory completion of the closure activities.

7. Third Party Administration and Project Management Costs

7.1. Add an amount equal to at least 2.5 percent of the sum of cost subtotals to cover the cost for a third party hired by TCEQ to administer the closure activities.

8. Total Closure Cost

8.1. Enter the sum of the amounts on lines 4.1, 5.1, 6.1, and 7.1.

IV. Closure Cost Estimates Worksheet

A. Landfill Data

Total Permitted Waste Disposal Area: 120.9 acres

Largest Area Requiring Final Cover in the year to follow: 20.9 acres

Total Filled Area with Constructed Final Cover: 0 acres

Total Area Certified Closed: 0 acres

Number of Monitor Wells to be Installed for Closure: 0

Number of Gas Probes to be Installed for Closure: 8

Total Acreage Needing LFG Collection and Control System: 120.9 acres

The unit or lump sum cost for each item is based on the work items and cost elements described in Section III of this Closure Cost Estimate document:

Yes ☒ No ☐ Partially ☐

(if "No" or "Partially" is checked, please include attachments describing the additional work items and detailing the unit, quantities, and costs for the additional items)

B. Facility Drawings and Financial Assurance Documentation

- Facility drawings
  - Complete site drawings are provided in Appendix III-4-A.
- Financial assurance documentation
  - This is a new facility, a copy of the required documentation shall be submitted 60 days prior to the initial receipt of waste.

C. Attachments

- Additional Engineering, Construction, and Storage and Processing Units Cost Items Details

D. Closure Cost Estimates Worksheet

If any item listed in this worksheet is not applicable to the subject facility, enter "NA" (Not Applicable) in the affected field.

Closure Cost Estimate for MSW Type I Landfill

Facility Name: WST Landfill Revision No.: 2

Permit No: 2431 Date: July 2026

Table 1. Closure Cost Estimates Worksheet.

Item No.	Item Description	Units[1]	Quantity	Unit Cost	Cost[2]	Source of Unit Cost Estimate[3]
1. Engineering Costs						
1.1	Topographic Survey	Acres	20.9	$175	$3,700	(2)
1.2	Boundary Survey	Acres	424.3	$20	$8,500	(2)
1.3	Site Evaluation	Acres	424.3	$80	$34,000	(2)
1.4	Development of Plans	Lump Sum	NA	NA	$25,000	(3)
1.5	Contract Administration (bidding and award)	Lump Sum	NA	NA	$4,000	(3)
1.6	Closure Inspection and Testing	Lump Sum	NA	NA	$38,000	(2)
1.7	TPDES and other Permits	Lump Sum	NA	NA	$61,000	(3)
1.8	Additional Engineering Cost Items (describe in attachments)	NA	NA	NA	NA	NA
1.9 Engineering Costs Subtotal						
1.9.1	Engineering Costs Subtotal	NA	NA	NA	$174,200	NA
2. Construction Costs						
2.1 Mobilization						
2.1.1	Mobilization of Personnel and Equipment	Lump Sum	NA	NA	$95,800	(4)
2.2 Final Cover System						
2.2.1 Side Slope and Top Slope Cover						
2.2.1a	Infiltration Layer – Compacted Clay	Cubic Yards	50,600	$5.00	$253,000	(3)
2.2.1b	Infiltration Layer – Geosynthetic Clay Liner	Square Feet	NA	NA	NA	NA
2.2.1c	Flexible Membrane Cover – HDPE	Square Feet	NA	NA	NA	NA
2.2.1d	Flexible Membrane Cover – LLDPE	Square Feet	910,500	$0.65	$591,900	(2)
2.2.1e	Drainage Layer – Aggregate	Cubic Yards	NA	NA	NA	NA
2.2.1f	Drainage Layer – Drainage Geocomposite Material	Square Feet	910,500	$0.85	$774,000	(2)

Closure Cost Estimate for MSW Type I Landfill

Facility Name: WST Landfill Revision No.: 2

Permit No: 2431 Date: July 2026

Item No.	Item Description	Units[1]	Quantity	Unit Cost	Cost[2]	Source of Unit Cost Estimate[3]
2.2.1g	Erosion Layer	Cubic Yards	16,900	$2.00	$33,800	(3)
2.2.1h	Vegetation	Acres	20.9	$2,210	$46,200	(3)
2.2.2 Top Slope Cover – NA, Included in the Above						
2.2.2a	Infiltration Layer – Compacted Clay	Cubic Yards	NA	NA	NA	NA
2.2.2b	Infiltration Layer – Geosynthetic Clay Liner	Square Feet	NA	NA	NA	NA
2.2.2c	Flexible Membrane Cover – HDPE	Square Feet	NA	NA	NA	NA
2.2.2d	Flexible Membrane Cover – LLDPE	Square Feet	NA	NA	NA	NA
2.2.2e	Drainage Layer – Aggregate	Cubic Yards	NA	NA	NA	NA
2.2.2f	Drainage Layer – Drainage Geocomposite Material	Square Feet	NA	NA	NA	NA
2.2.2g	Erosion Layer	Cubic Yards	NA	NA	NA	NA
2.2.2h	Vegetation	Acres	NA	NA	NA	NA
2.2.3 Cells for Class 1 Nonhazardous Industrial Waste						
2.2.3a	Dike Construction	NA	NA	NA	NA	NA
2.3 Site Grading						
2.3.1	Site Grading	Acres	20.9	$1,500	$31,400	(3)
2.4 Site Fencing and Security						
2.4.1	Site Fencing and Security	Lump Sum	NA	NA	$18,300	(3)
2.5 Landfill Gas Monitoring and Control System						
2.5.1	Gas Control Wells	NA	NA	NA	NA	NA
2.5.2	Gas Header Piping	NA	NA	NA	NA	NA
2.5.3	Gas Lateral Piping	NA	NA	NA	NA	NA
2.5.4	Flare Station	NA	NA	NA	NA	NA
2.5.5	Condensate Sumps	NA	NA	NA	NA	NA
2.5.6	Completion of LFG Monitoring System	Each	8	$5,000	$40,000	(2)

Closure Cost Estimate for MSW Type I Landfill

Facility Name: WST Landfill Revision No.: 2

Permit No: 2431 Date: July 2026

Item No.	Item Description	Units[1]	Quantity	Unit Cost	Cost[2]	Source of Unit Cost Estimate[3]
2.6 Groundwater Monitoring System						
2.6.1	Groundwater Monitoring Well Installation	Each	NA	NA	NA	Completed prior to closure
2.6.2	Piezometer and Monitor Well Plugging and Abandonment	Each	2	$1,000	$2,000	(2)
2.7 Leachate Management						
2.7.1	Completion of Leachate Management System	NA	NA	NA	NA	NA
2.8 Stormwater Management						
2.8.1	Stormwater Drainage Management System	Acres	20.9	$6,000	$125,400	(2)
2.9 Other Cost Items						
2.9.1	Additional Construction Cost Items (describe in attachments)	NA	NA	NA	NA	NA
2.10 Construction Costs Subtotal						
2.10.1	Construction Costs Subtotal	NA	NA	NA	$2,011,800	NA
3. Storage and Processing Unit Closure Costs						
3.1	Waste Disposal	☐ Tons ☐ Cubic Yards	NA	NA	NA	NA
3.2	Material Removal and Disinfection	NA	NA	NA	NA	NA
3.3	Demolition and Disposal Units	NA	NA	NA	NA	NA
3.4.1	Additional Storage and Processing Unit Closure Cost Items (describe in attachments) - TANK	LS	1	$19,900	$19,900	(2,3)
3.4.2	Additional Storage and Processing Unit Closure Cost Items (describe in attachments) – EVAP POND	LS	1	$651,000	$557,000	(2,3)
3.5 Storage and Processing Unit Closure Costs Subtotal						
3.5.1	Storage and Processing Unit Closure Costs Subtotal	NA	NA	NA	$576,900	NA

Closure Cost Estimate for MSW Type I Landfill

Facility Name: WST Landfill Revision No.: 2

Permit No: 2431 Date: July 2026

Item No.	Item Description	Units[1]	Quantity	Unit Cost	Cost[2]	Source of Unit Cost Estimate[3]
4. Sum of Engineering, Construction, and Storage and Processing Unit Closure Costs						
4.1	Sum of Engineering, Construction, and Storage and Processing Unit Closure Cost Subtotals	NA	NA	NA	$2,762,900	NA
5. Contingency						
5.1	Contingency (10% of Sum of Engineering, Construction, and Storage and Processing Unit Closure Cost Subtotals)	NA	NA	NA	$276,300	NA
6. Contract Performance Bond						
6.1	Contract Performance Bond (2% of Sum of Engineering, Construction, and Storage and Processing Unit Closure Cost Subtotals)	NA	NA	NA	$55,300	NA
7. Third Party Administration and Project Management Costs						
7.1	Third Party Administration and Project Management Costs (2.5% of Sum of Engineering, Construction, and Storage and Processing Unit Closure Cost Subtotals)	NA	NA	NA	$69,100	NA
8. Total Closure Costs						
8.1	Total Closure Costs (sum of amounts in Sections 4, 5, 6, and 7)	NA	NA	NA	$3,163,600	NA

[1] For items marked "specify," the responsible professional engineer will enter appropriate unit of measurement

[2] Where applicable, the calculated "Cost" ("Quantity" x "Unit Cost") has been rounded up to the nearest $100.

[3] Sources of Unit Costs for Cost Estimates table may include:
(1) Published Cost Estimator Manuals (e.g., RS Means);
(2) Third Party Quotes (e.g., Environmental Field Services Contractors);
(3) Verifiable Data based on Actual Operations; or
(4) Other sources of cost acceptable to the executive director of the TCEQ.

Attachment III-9

Post-Closure Plan and Cost Estimate (TCEQ-20722 and TCEQ-20723)

DBS&A
a Geo-Logic Company

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Texas Commission on Environmental Quality

Post-Closure Care Plan for Municipal Solid Waste Type I Landfill Units and Facilities

This form is for use by applicants or site operators of Municipal Solid Waste (MSW) Type I landfills to provide landfill unit or final facility post-closure care closure plans to meet the requirements in 30 TAC Chapter 330, §330.63(h) and as set out under 30 TAC Chapter 330 Subchapter K for a MSW Type I facility.

If you need assistance in completing this form, please contact the MSW Permits Section in the Waste Permits Division at (512) 239-2335.

I. General Information

Facility Name: WST Landfill

MSW Permit No.: 2431

Site Operator/Permittee Name: West Sun Tex, LLC

II. Party Responsible for Overseeing and Conducting Post Closure Care Activities

Name (Person or Office Responsible): Tariq Mussani

Position or Title: Manager

Mailing Address: 600 N Carroll Ave, Ste 100

City: Southlake

State: Texas

Zip Code: 76092

Telephone Number: (575) 605-6716

III. Post-Closure Care Status of Landfill Units at the Facility

Check the applicable box for the post-closure care status of the units at the facility and complete the applicable tables as indicated:

A. ☒ No landfill unit is in post-closure care in this facility at the time this application is submitted (skip Table 1 and complete Table 2 below if you check this item)

B. ☐ This facility includes landfill units currently in post-closure care and landfill units that are not yet in post-closure care (complete Tables 1 and 2 below if you check this item).

C. ☐ This facility contains only landfill units currently in post-closure care (complete Table 1 below if you check this item; do not complete Table 2).

Table 1: Landfill Units Currently in Post-Closure Care

Landfill Unit Name	Drawing Number Showing the Landfill Unit	Date TCEQ Acknowledged Closure of Unit	Date Post-Closure Care Commenced	Projected Date of End of Post-Closure Care

Table 2: Landfill Units Not yet in Post-Closure Care

Category of Landfill Unit (Regarding Status of Waste Receipt)	Landfill Unit Names or Descriptors	Site Development Plan Drawing Titles and Numbers Showing the Units
Stopped Receiving Waste Prior to October 9, 1993	N/A	N/A
Received Waste on or after October 9, 1993	N/A	N/A
Proposed to be Constructed	WST Landfill	C-1, C-2, C-12, C-13, C-14, C-15
Other (enter as applicable)	N/A	N/A

List of Drawings (Provided in Appendix III-4-A):

C-1 Site Plan

C-2 Cell Layout and CCS

C-12 Excavation Plan

C-13 Final Contours

C-14 Cross Sections 1

C-15 Cross Sections 2

IV. Post-Closure Care Maintenance Requirements and Activities to be Conducted

A. Categories of Landfill Units and Applicable Post-Closure Care Maintenance Requirements and Activities

Check the appropriate boxes to indicate the categories of landfill units at the facility and complete the applicable section of the post-closure care maintenance requirements and activities below.

This facility includes landfill units that:

☐ Stopped receiving waste prior to October 9, 1993

If you check this item, complete the post-closure care maintenance requirements and activities specified in Subsection IV.B below. Skip Subsection IV.B if this item does not apply to your facility.

☐ Received waste on or after October 9, 1993

If you check this item, complete the post-closure care maintenance requirements and activities specified in Subsection IV.C below. Skip Subsection IV.C if this item does not apply to your facility.

☒ Are proposed to be constructed

If you check this item, complete the post-closure care maintenance requirements and activities specified in Subsection IV.C below. Skip Subsection IV.B, unless your facility also contains units that stopped receiving waste prior to October 9, 1993.

B. Post-Closure Care Maintenance Requirements and Activities for the Landfill Units that Stopped Receiving Waste Prior to October 9, 1993

The site operator will commence and conduct post-closure care maintenance of the units that stopped receiving waste prior to October 9, 1993 for a minimum of the first **five years** following commencement of post-closure care as specified below and in accordance with applicable rules under 30 TAC §330.463(a). Post-closure care maintenance will start on the date the professional engineer's certification of the completion of closure is accepted in writing by the TCEQ executive director and the site operator will carry out the following activities and operations during the period.

1. Maintenance of Right of Entry and Rights of Way

The site operator will retain the right of entry to and maintain all rights-of-way of the closed units in order to conduct periodic inspections of the units throughout the post-closure care period. TCEQ staff will have access to the site to conduct inspection or investigation that may be necessary during the period.

2. Inspection Activities and Correction of Problems

The site operator will conduct inspection of the closed landfill units at the frequencies indicated in Table 3 below, utilizing the inspection protocol maintained in the site operating record, and will correct all identified problems as needed.

Table 3: Inspection Activities Schedule

Post-Closure Care Inspection Item	Frequency of Inspection	Types of Deficiency Conditions to be looked for during Inspection
Final Cover Condition		
Vegetation		
Leachate Management Systems		
Landfill Gas Monitoring and Control Systems		

Post-Closure Care Inspection Item	Frequency of Inspection	Types of Deficiency Conditions to be looked for during Inspection
Groundwater Monitoring Systems		
Drainage Structures		
Ponding of Water		
Other:		

3. Continuation of Monitoring Programs during Post-Closure Care Period

The site operator will continue the monitoring programs listed in Table 4 during the post-closure care period. The monitoring programs will be conducted as specified in the applicable section of the facility's Site Development Plan and applicable rules.

Table 4: Monitoring and Reporting Schedule

Monitoring Program	Frequency of Monitoring	Frequency of Reporting of Results
Groundwater monitoring		
Landfill gas monitoring		
Other:		

4. Detection of a Release, Nature and Extent Investigation, and Corrective Action to Address Release from the MSW Unit

Upon detection of any evidence of a release from the landfill or other associated waste management units at the facility, the site operator will:

- Notify the executive director of the TCEQ of the condition detected;

- Investigate, if so directed by the executive director of the TCEQ, whether a release from the landfill or other associated waste management units at the facility has occurred;
- Investigate the nature and extent of the release, if a release is confirmed;
- Assess measures necessary to correct any impact to groundwater;
- Submit a corrective action plan via a permit modification for TCEQ executive director's review and approval; and
- Conduct corrective action as approved by the TCEQ executive director.

5. Extension of Post-Closure Care Period

If any of the problems listed in Table 3 occurs, or corrective action as indicated in Subsection IV.B.4 above continues, after the end of the five-year post-closure care period or persists for longer than the first five years of post-closure care, the site operator will be responsible for their correction and will continue to conduct post-closure care maintenance until the TCEQ executive director determines that all problems have been adequately resolved.

6. Reduction of Post-Closure Care Period

The site operator may request in writing for the TCEQ executive director to reduce the post-closure care period for the units if all wastes and waste residues have been removed during closure and any new or on-going corrective action to address confirmed releases from the landfill have been completed as acknowledged in writing by the executive director.

C. Post-Closure Care Requirements and Activities for Municipal Solid Waste Landfill Units that Receive Waste on or after October 9, 1993 and for New Units

The site operator will commence and conduct post-closure care maintenance of the units that receive waste on or after October 9, 1993 and new units constructed under this permit as follows and in accordance with applicable rules under 30 TAC §330.463.

1. Commencement of Post-Closure Care

Post-closure care maintenance will start on the date the professional engineer's certification of the completion of closure is accepted in writing by

the TCEQ executive director and the site operator will carry out the following activities and operations during the period.

2. Period of Post-Closure Care

The site operator will conduct post-closure care for the landfill units for a period of **30 years**, unless this time period is increased or reduced by the executive director as discussed in Subsection IV.C.11.

3. Maintenance of Right of Entry and Rights of Way

The site operator will retain the right of entry to the closed units and the facility and will maintain all rights-of-way of the closed units in order to conduct periodic inspection and maintenance of the closed units until the end of the post-closure care period.

4. Inspection Activities

The site operator will conduct periodic inspection of the closed units to identify and document deficiency conditions and conduct maintenance and corrective action to maintain compliance. Sections IV.C. 8.(a)-(c) provide information on the inspection items and deficiency conditions that the site operator will look for during inspection of the major components of the landfill and the site during the post-closure care period. Other inspection and maintenance provisions that apply during the post-closure care period as specified in the facility's site operating plan, site development plan, or applicable rules will remain in effect.

5. Documentation of Inspection

The site operator will document and maintain records of the post-closure care inspections in the site operating record. The records will include:

- The date of inspection;
- Components and items inspected;
- Problems detected or observed; and
- The name of the personnel who conducted the inspection.

6. Corrective Actions

Based on the results of the inspection activities, the site operator will conduct needed restoration and remediation actions on the closed unit no later than

the next scheduled inspection event. Also, the site operator will conduct maintenance action on regular periodic schedule in order to:

- Maintain the integrity and effectiveness of all final cover, facility vegetation, and drainage control systems;
- Correct any effects of settlement, subsidence, ponded water, erosion, or other events or failures detrimental to the integrity of the closed unit; and
- Prevent any surface run-on and runoff from eroding or otherwise damaging the final cover system during the post-closure care period.

7. Documentation of Corrective Actions

The site operator will document and maintain, in the facility's site operating record, records of the restoration, remediation, and maintenance activities performed, including the date of completion of the activities.

8. Inspection Activities Schedules

(a) Final Cover Inspection

Inspection Frequency: Annually

Other Inspection Occasions/Events: N/A

Table 5: Final Cover Inspection Items

Inspection Item	Types of Deficiency Conditions to be looked for during Inspection
Vegetation and other Ground Cover Materials	Overgrowth or loss of vegetation, vegetation stress
Settlement	Cracks, subsidence, ponding
Subsidence	Cracks, subsidence, ponding
Ponded Water	Saturated soils, overgrowth of vegetation, vectors
Erosion	Erosional rill, animal burrowing, exposed geosynthetics

Inspection Item	Types of Deficiency Conditions to be looked for during Inspection
Other (enter other events or failures detrimental to the integrity and effectiveness of the final cover):	N/A
Other (enter other events or failures detrimental to the integrity and effectiveness of the final cover):	N/A

(b) *Drainage Control System Inspection*

Inspection Frequency: Annually

Other Inspection Occasions/Events: N/A

Table 6: Drainage Control System Inspection Items

Inspection Item	Types of Deficiency Conditions to be looked for during Inspection
Vegetation within Drainage Control Structures	Flow obstruction, reduced channel/swale/pond capacity
Component Failures	Structural damage to culverts or channel/swale outlets, flow obstruction
Wash Outs	Excessive channel erosion, sediment build-up, overgrowth of vegetation
Sediment Build Up	Siltation, flow obstruction, reduced channel/swale/pond capacity
Other (enter other events or failures detrimental to the integrity and effectiveness of drainage structures): N/A	N/A

(c) *Access and Rights-of-Way*

Inspection Frequency: Annually

Other Inspection Occasions/Events: N/A

Table 7: Access and Rights of Way Inspection Items

Inspection Item	Types of Deficiency Conditions to be looked for During Inspection
Gates, Gate Locks and Barriers	Missing/damaged locks, damaged gates, trespassing detected
Fence and other Access Control Barriers	Damaged fencing, trespassing detected
Vegetation Control in Areas of the Facility other than the Final Cover	Overgrowth into roadways, overgrowth at monitoring locations
Other (enter other access control and rights-of-way inspection items):	Damaged roadways (potholes, erosion, other failure)

9. Continuation of Operation and Maintenance of the Leachate Collection and Removal Systems (LCRS)

The site operator will continue the operation and maintenance of the LCRS and disposal of leachate during the post-closure care period in accordance with the leachate and contaminated water plan (LCWP) (Appendix III-4-B) and consistent with applicable provisions under 30 TAC 330.331 and 330.333.

(a) Performance Monitoring and Inspection of the LCRS

During the post-closure care period, the site operator will monitor the performance of the LCRS on a semiannual basis to assure continuous compliance with the design criteria and inspect the LCRS components on a semiannual basis, at a minimum, to determine the need for repair or maintenance. Inspection and monitoring will follow the procedure described in the LCWP (Appendix III-4-B). Results of the monitoring and inspection activities will be documented in the site operating record. The items and components of the leachate collection and

removal system to be inspected will include but are not limited to the items in Table 8 below.

Table 8: Leachate Collection and Removal System Inspection

Inspection Item/Component	Types of Deficiency Conditions to be looked for during Inspection
Pump	Repair needed, malfunctioning sensors or other components
Risers	Repair needed

(b) LCR Maintenance and Repairs

During the post-closure care period, the site operator will perform routine and needed maintenance or repairs of the LCRS items and components based on the monitoring and inspection results. Maintenance and repair will be completed prior to the next scheduled monitoring event and documented within the site operating record.

(c) Discontinuation of Leachate Management

The site operator may submit data and information from the closed units to the TCEQ executive director to demonstrate that leachate no longer poses a threat to human health and the environment. Upon the executive director's approval of the demonstration, the site operator will be allowed to stop managing leachate at the closed unit.

10. Continuation of Monitoring Systems Operation and Maintenance:

The site operator will continue to conduct monitoring systems operation and maintenance activities to ensure the integrity of the containment system and to promptly detect and control releases to the environment during the post-closure care period as follows.

(a) Groundwater Monitoring System

The site operator will continue groundwater monitoring activities (including sampling, analysis, reporting, etc.) in accordance with the approved site-specific groundwater sampling and analysis plan (SAP) (Attachment III-6) and the Groundwater Monitoring Plan (Section 8 of Attachment III-5) and consistent with the provisions under 30 TAC

Chapter 330 Subchapter J. Groundwater monitoring will be conducted semiannually or as otherwise approved by the TCEQ executive director during the post-closure care period.

i. Inspection of the Groundwater Monitoring System

During each groundwater monitoring event, the site operator will perform inspection of all the groundwater monitoring wells that are part of the groundwater monitoring system and other items discussed in the SAP (Attachment III-6) or the Groundwater Monitoring Plan (Section 8 of Attachment III-5). The items and components of the groundwater monitoring system to be inspected are included in Table 9:

Table 9: Groundwater Monitoring Systems Inspection

Inspection Item/Component	Types of Deficiency Conditions to be looked for during Inspection
Wells	Damaged well housing/casing, locks are present and operable

ii. Maintenance and Repair of the Groundwater Monitoring System

The site operator will perform needed maintenance and/or repairs of the groundwater monitoring system items and components based on the inspection results. Maintenance and/or repairs will be performed no later than the next scheduled monitoring event.

iii. Documentation of Inspection, Maintenance, and Repairs

The site operator will document and discuss the results of the groundwater monitoring system inspection, maintenance, and repair activities in the groundwater monitoring report submitted to the TCEQ executive director and maintain the documents in the site operating record.

(b) Landfill Gas Management System

During the post-closure care, the site operator will continue landfill gas monitoring operations and activities, documentation, and reporting in accordance with the facility's landfill gas management plan

(Attachment III-7) and consistent with the requirements under 30 TAC Chapter 330, Subchapter I.

i. LFG Monitoring and Monitoring System Inspection

All structures and perimeter gas monitoring probes will be sampled quarterly or more frequently as approved by the TCEQ executive director. The site operator will conduct routine inspections of the landfill gas management system components as provided in the landfill gas management plan during the post-closure care period. The items and components to be inspected are included in Table 10.

Table 10: Landfill Gas Management System Inspection

Inspection Item/Component	Types of Deficiency Conditions to be looked for during Inspection
Landfill gas extraction wells	Landfill gas piping excessive movement, issues with wellheads
Landfill gas flare equipment	Equipment malfunction, alarms
Landfill gas condensation collection equipment	Equipment malfunction, alarms
Probes	Damaged well housing/casing/port, locks are present and operable

ii. LFG Management System Maintenance

The site operator will perform routine and needed maintenance of the landfill gas management system including calibration of the monitoring equipment. Needed maintenance and/or repair work will be performed based on the inspection and monitoring results no later than the next scheduled monitoring event.

(c) Continuation of Earth Electrical Resistivity Survey

The site operator will, if applicable, continue earth electrical resistivity surveys as applicable at the frequency stated in the approved site development plan or as otherwise approved by the TCEQ executive director.

11. Detection of a Release, Nature and Extent Investigation, and Corrective Action to Address Release from the MSW Unit

If there is evidence of a release from the landfill or other associated waste management units at the facility, the site operator will:

- Notify the executive director of the TCEQ of the condition detected;
- Investigate, if so directed by the executive director of the TCEQ, whether a release from the landfill or other associated waste management units at the facility has occurred;
- Investigate the nature and extent of the release, if a release is confirmed;
- Assess measures necessary to correct any impact to groundwater;
- Submit a corrective action plan via a permit modification for TCEQ executive director's review and approval; and
- Conduct corrective action as approved by the TCEQ executive director.

12. Revision of the Length of Post-Closure Care Period

(a) The Post-Closure Care Period May Be Decreased

The length of the post-closure care period may be decreased by the TCEQ executive director if the site operator submits a documented certification signed by a licensed professional engineer and including all applicable supporting documentation that demonstrates that the reduced period is sufficient to protect human health and the environment, and the executive director approves the decrease in writing after review.

(b) The Post-Closure Care Period May be Increased

The length of the post-closure care period may be increased by the TCEQ executive director if it is determined that the longer period is necessary to protect human health and the environment.

V. Recordkeeping

The site operator will place a copy of this post-closure plan in the facility's site operating record by the initial receipt of waste at the units proposed at the time of this application. Also, the site operator will document and maintain records of all inspection, monitoring, maintenance, repair, or remediation activities, and detail the results of any inspection and schedules of any other actions to be taken to maintain compliance, in the site operating record.

VI. Planned Use of the Land during and after the Post-Closure Care Period

Post-closure use of the property will not disturb the final cover, liners, or other containment or monitoring systems unless such disturbance is necessary for the proposed use or to protect human health and the environment and is authorized by the TCEQ executive director consistent with provisions under 30 TAC Chapter 330 Subchapter T.

Description of the Planned Use of the Land during or after the Post-Closure Care Period *(describe the planned use of the land during or after the post-closure care period; if not known at this time, enter "NOT KNOWN")*:

NOT KNOWN

VII. Post-Closure Care and Corrective Action Cost Estimates

A detailed written cost estimate in current dollars for conducting post closure care is provided in *(enter location of the post-closure care cost estimate in the application/permit document)*:

Appendix A to this plan (Form 20723)

The cost estimate for corrective action will be provided as needed, via a permit modification, during the life and/or post-closure care period of the unit or facility.

VIII. Certification of Completion of Post-Closure Care

Upon completion of the post-closure care maintenance period for each municipal solid waste landfill unit, the site operator will submit to the TCEQ executive director for review and approval a certification, signed by an independent licensed professional engineer, verifying that post-closure care has been completed in accordance with the approved post-closure plan. The submittal to the executive director shall include all applicable documentation necessary for the certification of completion of post-closure care. These will include information relating to the condition and status of:

- The final cover integrity and stability, including the condition of the soil, vegetation, drainage structures, etc.
- Groundwater quality at the site, as determined from on-going groundwater detection or assessment monitoring or corrective measures data during the period.
- Landfill gas (methane) migration, as determined from on-going landfill gas monitoring and remediation data during the period.
- Leachate generation rate and quantity as determined from on-going leachate management data over the period.
- The surface water management system.
- Access control structures.

The engineer's certification of post-closure will show that, based on a summary of monitoring and inspection results, the final cover system continues to maintain its integrity, stability, and function; groundwater remains uncontaminated and monitoring is no longer required; landfill gas is not migrating beyond the facility boundary or accumulating in structures at action levels and monitoring is no longer required; leachate generation rate and quantity will not result in greater than 12 inches of head above the liner, no breakouts have occurred, and all slopes remain as approved and leachate management is no longer required; the surface water management system continues to function as designed; and the access control structures remain intact.

Documentation supporting the professional engineer's certification will be furnished to the TCEQ executive director upon request and will be maintained in the site operating record until the executive director acknowledges termination of post-closure in writing.

IX. Voluntary Revocation Request

Upon completion of the post-closure care period for the final unit at the facility, the site operator will submit to the executive director a request for voluntary revocation of the facility permit.

X. Attachments

The following figures and documents are attached as part of this post-closure care plan:

Appendix III-9-A: Post-Closure Cost Estimate (Form TCEQ 20723)

XI. Engineer's Seal and Signature

Name: Gundar Peterson Title: President

Date: July 2026

Company Name: Daniel B. Stephens & Associates, Inc.

Firm Registration Number: F-286

Professional Engineer's Seal



Signature

Appendix III-9-A

Post-Closure Care Cost Estimate (TCEQ-20723)

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Texas Commission on Environmental Quality

Post-Closure Care Cost Estimate Form for Municipal Solid Waste Type I Landfills

This form is for use by applicants or site operators to provide post-closure care cost estimates for post-closure care of MSW Type I landfills to meet the requirements in 30 Texas Administrative Code (TAC) Chapter 330, Section 330.63(j) and 30 TAC Chapter 330 Subchapter L. The costs to be provided herein are cost estimates for hiring a third party to conduct post-closure care of the largest waste fill area that has been certified closed in writing by the TCEQ executive director.

If you need assistance in completing this form, please contact the MSW Permits Section in the Waste Permits Division at (512) 239-2335.

I. General Information

Facility Name: WST Landfill

MSW Permit No.: 2431

Date: July 2026

Revision Number: 2

Site Operator/Permittee Name and Mailing Address: West Sun Tex, LLC

600 N Carroll Ave Suite 100 Southlake, TX 76092

Total Post-Closure Care Cost Estimate (2026 Dollar Amount): $4,989,900

II. Professional Engineer's Statement, Seal, and Signature

I am a licensed professional engineer in the State of Texas. To the best of my knowledge, this Post- Closure Care Cost Estimate has been completed in substantial conformance with the facility Post-Closure Care Plan and, in my professional opinion, is in compliance with Title 30 of the Texas Administrative Code, Chapter 330.

Name: Gundar Peterson, P.E. Title: President

Date: July 2026

Company Name: Daniel B. Stephens & Associates, Inc., Firm Registration Number: F-286

Professional Engineer's Seal



Signature

III. Annual Review of Permit Conditions, Cost Estimates, Adjustments for Inflation, and Financial Assurance

The site operator/permittee acknowledges that he/she will:

1. Revise and increase the post-closure care cost estimate and the amount of financial assurance provided whenever changes in the post-closure care plan or the landfill conditions increase the maximum cost of post-closure care at any time during the remaining active life of the landfill and until the facility is officially released from the post-closure care period in writing by the executive director.
2. Request a reduction in the post-closure care cost estimate and the amount of financial assurance as a permit modification whenever the post-closure care cost estimate exceeds the maximum cost of post-closure care remaining over the post-closure period. The permit modification will include a detailed justification for the reduction of the post-closure care cost estimate and the amount of financial assurance.
3. Establish financial assurance for post-closure care of the unit in an amount no less than the current post-closure care cost estimate in accordance with 30 TAC Chapter 37
4. Adjust the current post-closure care cost estimate for inflation within 60 days prior to the anniversary date of the first establishment of the financial assurance mechanism.
5. Provide annual inflation adjustments to the post-closure care costs and financial assurance during the active life of the facility and during the post closure care period. The adjustment will be made using an inflation factor derived from the most recent annual Implicit Price Deflator for Gross National Product published by the United States Department of Commerce in its Survey of Current Business, as specified in 30 TAC Chapter 37. The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year.
6. Provide continuous financial assurance coverage for post-closure care until the facility is officially released in writing by the executive director from the post-closure care period in accordance with all requirements of the post-closure care plan.

IV. Description of Worksheet Items of the Post-Closure Care Cost Estimates

The following descriptions of the worksheet items provide guidance for identifying the minimum work or cost elements for estimating the unit or lump sum cost of each item as applicable. Enter additional detail for each item in the field following the item as necessary and as site-specific conditions warrant. The cost items are grouped under post-closure care costs for engineering, construction, and leachate management. Include attachments to detail any additional work and associated costs necessary for the post-closure care of the unit or facility that is not already included as a line item on the worksheet. Reference the attachments and list the work or cost items in the fields under "Additional Engineering Cost Items Not Listed on the Worksheet," "Additional Construction Cost Items Not Listed on the Worksheet," or Additional Leachate Management Costs Not Listed on the Worksheet" as applicable. Provide the total cost of additional work or cost items in each cost category on the worksheet line that precedes the cost subtotal for each cost group.

1. Engineering Costs

1.1. Site Inspection and Recordkeeping

Regularly scheduled and event-driven site inspection must be performed to identify areas experiencing settlement, subsidence, erosion, or other drainage related problems, and note the conditions of the environmental control and monitoring systems, including leachate collection, groundwater monitoring, and landfill gas monitoring systems*. Enter additional site inspection and recordkeeping work or cost element detail as site-specific conditions warrant.*

Site inspection and recordkeeping applies to the entire WST Landfill site. Includes costs for site inspection performed at least annually for identification of areas experiencing settlement or subsidence, erosion or other drainage-related problems, inspection of the leachate collection system, gas monitoring system and LFG monitoring system.

1.2. Correctional Plans and Specifications

The cost for an engineering consultant to prepare corrective measure construction plans and specifications to correct problems identified during site inspections. *Enter additional work or cost element details for correctional plans and specifications as site-specific conditions warrant.*

Correctional plans are assumed to be needed infrequently. The cost for plans is assumed to be $20,000 (including any required survey), and is assumed to only occur every 10 years, so $2,000 is included as an "annual" cost.

1.3. Site Monitoring

The cost of performing semiannual groundwater (including costs for sampling and analyzing parameters, and assessment and reporting) and quarterly landfill gas monitoring (including costs for sampling and reporting) and the monitoring of other site-specific systems at the landfill during the post-

closure period. *Enter additional site monitoring work or cost element details as site-specific conditions warrant.*

Site monitoring includes semiannual sampling and analysis of groundwater monitor wells and quarterly monitoring for gas probes. Costs to abandon all of the groundwater monitoring wells and LFG probes are included as an annual cost based on the total cost to abandon all wells and probes after 30 years.

1.4. Additional Engineering Cost Items Not Listed on the Worksheet

List the Attachments detailing additional post-closure care engineering cost items not already included as a line item on the worksheet. (Also, reference these Attachments in the "Units" column of this line of the worksheet. Provide the total cost of all additional engineering cost items in the "Cost" column).

There are no additional engineering cost items for this site.

2. Construction Costs

2.1. Cap and Sideslopes Repairs and Revegetation

The cost of repair of the cap and cap drainage control structures due to erosion or structural integrity failures and maintaining final cover vegetation to minimize erosion. *Enter additional cap and sideslopes repair and revegetation work or cost element details as site-specific conditions warrant.*

It is assumed that only 1% of the final cover and associated drainage control structures will require repair each year.

2.2. Mowing and Vegetation Control

The cost of controlling vegetation growth on the final cover and other areas of the landfill. *Enter additional mowing and vegetation control work or cost element details as site-specific conditions warrant.*

It is assumed that mowing and vegetation control apply to the final cover area over the entire landfill.

2.3. Groundwater Monitoring System Maintenance

The cost of repairs/replacement and routine maintenance. *Enter additional groundwater monitoring system maintenance work or cost element details as site-specific conditions warrant.*

It is assumed that two monitor wells will need replacing in 30 years and the cost is divided by 30 to create an annual figure.

2.4. LFG Monitoring Probes Maintenance

The cost of repairs/replacement and routine maintenance. Enter additional LFG monitoring probes maintenance work or cost element details as site-specific conditions warrant.

It is assumed that two LFG monitor probes will need replacing in 30 years and the cost is divided by 30 to create an annual figure.

2.5. LFG Collection System Maintenance

The cost of repairs and routine maintenance. *Enter additional LFG collection system maintenance work or cost element details as site-specific conditions warrant.*

It is assumed that an LFG collection system will only be required for the first few years of post-closure, so a small "annual" number is included to cover the cost of maintenance for a few years.

2.6. Perimeter Fence and Gates Maintenance

The cost of maintaining perimeter fence and gates to restrict unauthorized access to the closed landfill. *Enter additional perimeter fence and gates maintenance work or cost element details as site-specific conditions warrant.*

The cost listed in the table for fence and gate maintenance is based on past landfill project experience.

2.7. Access and Rights of Way Maintenance

The cost of maintaining the access roads and other rights of way to the closed landfill to conduct inspections, environmental sampling, routing maintenance and other post-closure activities. *Enter additional access and rights of way maintenance work or cost element details as site-specific conditions warrant.*

It is projected that 1.5 miles of caliche or gravel road will be required to conduct post-closure activities on-site. Cost are based on these caliche or gravel roads being regraded once a year.

2.8. Drainage System Cleanout and Repairs

The cost to include costs for maintaining and repairing ditches, conveyance structures, and ponds/basins. *Enter additional drainage system cleanout and repairs work or cost element details as site-specific conditions warrant.*

Recent project experience was used to generate the yearly costs for maintaining and repairing ditches, conveyance structures, and basins.

2.9. Additional Construction and Maintenance Cost Items Not Listed on the Worksheet

List the Attachments detailing any additional construction and maintenance cost items necessary for post-closure care that are not already covered on the worksheet. (Also, reference these Attachments in the "Units" column on this line of the worksheet. Provide the total cost of all additional construction and maintenance cost items in the "Cost" column.)

Additional construction and maintenance items are not applicable to this site.

3. Leachate Management Costs

3.1. Leachate Collection and Removal System Operation and Maintenance

The cost of operation, routine maintenance and repairs. *Enter additional work or cost element details for leachate collection and removal system operation and maintenance as site-specific conditions warrant.*

Leachate collection and removal, including operation and maintenance costs, are based on recent landfill project experience.

3.2. Leachate Disposal

The cost of leachate disposal off-site. *Enter additional work or cost element details for leachate disposal as site-specific conditions warrant*.

Annual leachate disposal costs in Table 1 are estimated based on total acreage of waste units at full build out.

3.3. Additional leachate management cost items not listed on the worksheet.

List the Attachments detailing any additional leachate management cost items necessary for post-closure care that are not already covered on the worksheet. (Also, reference these Attachments in the "Units" column on this line of the worksheet. Provide the total cost of all additional leachate management cost items in the "Cost" column.)

Additional leachate management cost items are not applicable to this site.

4. Sum of Cost Subtotals

Enter the sum of engineering, construction, and storage and leachate management post-closure care cost subtotals from lines 1.5.1, 2.10.1, and 3.5.1.

5. Contingency

The cost added to cover unanticipated events during implementation of post-closure activities. (Enter additional work or cost element information as necessary)

A contingency of 10% of the sum of engineering, construction and maintenance, and leachate management is used.

6. Third Party Administration and Project Management Costs

The cost for the third party hired by TCEQ to administer the post-closure activities. (Enter additional work or cost element information as necessary)

A value of 2.5% of the sum of engineering, construction and maintenance, and leachate management is used.

V. Post-Closure Care Cost Estimates Worksheet

Post-Closure Care Period – 30 years

Total Permitted Acreage: 424.3 acres

Total Permitted Waste Footprint: 120.9 acres

Number of Groundwater Monitoring Wells: 18

Number of GW Monitoring Events: 2/year

Number of Gas Probes: 8

Number of LFG Monitoring Events: 4/year

The unit or lump sum cost for each item is based on the work items and cost elements described in Section III of this Post-Closure Cost Estimate document:

Yes ☒ No ☐ Partially ☐

If "No" or "Partially" is checked, please attach a written description of work items and cost elements which form the bases of unit or lump sum cost for the affected items.

(NOTE: If any item listed in this worksheet is not applicable to the subject facility, enter Not Applicable (N/A) in the affected fields)

Attachments

Additional Engineering, Construction, and Leachate Management Cost Items Details.

Table 1: Post-Closure Care Cost Estimates

Item No.	Item Description	Units	Annual Qty.	Unit Cost	Annual Cost	Source of Unit Cost Estimate[i]
1.0 Engineering Costs						
1.1	Site Inspection and Recordkeeping[ii]	Each	1	$33,360	$33,360	(3)
1.2	Correctional Plans and Specifications	Each	1	$4,000	$4,000	(3)
1.3 Site Monitoring						
1.3.1 Groundwater Monitoring System						
1.3.1(a)	Sampling and Analysis of GW Monitoring Wells (Quantity = 2 x Number of wells)	Wells	36	$920	$33,120	(3)
1.3.1(b)	Piezometers/Well Abandonment	Lump Sum	NA	NA	$500	(3)
1.3.2 LFG Monitoring System						
1.3.2(a)	LFG Quarterly Monitoring (Quarterly)	Each	4	$770	$3,080	(3)
1.3.2(b)	LFG Probe Plugging and Abandonment	Lump Sum	NA	NA	$110	(3)
1.4 Additional Engineering Cost Items (Detail in Attachments)						
1.4.1	Additional Engineering Cost Items (describe in attachments)	NA	NA	NA	NA	NA
1.5 Engineering Costs Subtotal						
1.5.1	Engineering Costs Subtotal	NA	NA	NA	$74,170	NA
2.0 Construction and Maintenance Costs						
2.1	Cap and Sideslopes Repairs and Revegetation	Acres	1.2	$630	$760	(3)
2.2	Mowing and Vegetation Management	Acres	120.9	$210	$25,390	(1)

Item No.	Item Description	Units	Annual Qty.	Unit Cost	Annual Cost	Source of Unit Cost Estimate[i]
2.3	Groundwater Monitoring System Maintenance	Lump Sum	1	$980	$980	(3)
2.4	LFG Monitoring Probes Maintenance	Lump Sum	1	$330	$330	(3)
2.5	LFG Collection System Maintenance	Lump Sum	1	$250	$250	
2.6	Perimeter Fence and Gates Maintenance	Lump Sum	1	$3,050	$3,050	(3)
2.7	Access Roads Maintenance	Lump Sum	1	$10,160	$10,160	(1)
2.8	Drainage System Cleanout/Repairs	Lump Sum	1	$9,150	$9,150	(3)
2.9 Additional Construction and Maintenance Cost Items (Details in Attachments)						
2.9.1	Additional Construction and Maintenance Cost Items (details in attachments)	NA	NA	NA	NA	NA
2.10 Construction and Maintenance Costs Subtotal						
2.10.1	Construction and Maintenance Costs Subtotal	NA	NA	NA	$50,070	NA
3.0 Leachate Management						
3.1	Leachate Management System Operation and Maintenance	Lump Sum	1	$2,440	$2,440	(3)
3.2	Leachate Disposal	Acres	120.9	$175	$21,160	(3)
3.3 Additional Leachate Management Cost Items (Details in Attachments)						
3.4	Additional Leachate Management Cost Items (details in attachments)	NA	NA	NA	NA	NA

Item No.	Item Description	Units	Annual Qty.	Unit Cost	Annual Cost	Source of Unit Cost Estimate[i]
3.5 Leachate Management Costs Subtotal						
3.5.1	Leachate Management Costs Subtotal	NA	NA	NA	$23,600	NA
4.0 Sum of Engineering, Construction, and Leachate Management Costs						
4.1	Sum of Engineering, Construction, and Leachate Management Cost Subtotals	NA	NA	NA	$147,840	NA
5.0 Contingency						
5.1	Contingency (10% of Sum of Engineering, Construction, and Leachate Management Cost Subtotals)	NA	NA	NA	$14,790	NA
6.0 Third Party Administration and Project Management Costs						
6.1	Third Party Administration and Project Management Costs (2.5% of Sum of Engineering, Construction, and Leachate Management Cost Subtotals)	NA	NA	NA	$3,700	NA
7. Total Post-Closure Cost						
7.1	Total Annual Post-Closure Cost (Sum of amounts in Sections 4, 5, and 6)	NA	NA	NA	$166,330	NA
7.2	30 Year Post-Closure Costs (Total Annual Post-Closure Cost x 30)	NA	NA	NA	$4,989,900	NA

[i] Sources of Unit Cost Estimates may include:
(1) RSMeans 2020, Heavy Construction Costs, By Gordian
(2) Third Party Quotes
(3) Recent previous landfill and groundwater monitoring experience with verifiable data based on actual operations

[ii] Example Description for Item No. 1.1 – "Includes costs for site inspection performed at least annually for identification of areas experiencing settlement or subsidence, erosion or other drainage-related problems, inspection of the leachate collection system, gas monitoring system and LFG monitoring system."

Attachment III-10

Final Cover Quality Control Plan

DBS&A a Geo-Logic Company

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Final Cover Quality Control Plan
WST Landfill
Reeves County, Texas

Prepared for
West Sun Tex, LLC
Pecos, Texas

Prepared by

DBS&A
a Geo-Logic Company

Texas Registered Engineering Firm F-286
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Table of Contents

1. Introduction 1
1.1 Purpose 1
1.2 Definitions 1
2. Design Criteria 3
2.1 Final Cover System 3
2.2 Construction Monitoring 4
2.3 Documentation 5
3. Subgrade 5
3.1 Intermediate Cover and In-Situ Soils 5
3.2 Final Subgrade Inspection, Testing, and Acceptance 5
4. Compacted Clay-Rich Soil 6
4.1 Material Properties 6
4.2 Delivery, Off-Loading, and Storage 6
4.3 Quality Assurance Testing and Certification 6
4.4 Clay-Rich Soil Placement 7
4.5 Final Compacted Clay-Rich Soil Inspection, Testing, and Acceptance 7
5. Geomembrane Liner 8
5.1 Material Properties 8
5.2 Delivery, Off-Loading, and Storage 8
5.3 Quality Assurance Testing and Certification 10
5.4 Installation 11
5.5 Seaming 12
5.6 Repairs 13
5.7 Field Quality Control Testing 13
5.7.1 Destructive Tests 13
5.7.2 Non-Destructive Tests 14
5.8 Geomembrane Acceptance 14
6. Geocomposite Drainage Layer 15
6.1 Material Properties 15
6.2 Delivery, Off-Loading, and Storage 15
6.3 Quality Assurance Testing and Certification 17
6.4 Installation 17
7. Documentation and Reporting 19

References.....20

List of Tables

III-10-1 Geomembrane Delivery, Off-Loading, and Storage Requirements.....9
III-10-2 Geomembrane Installation Requirements.....11
III-10-3 Required Properties for Geocomposite.....15
III-10-4 Geonet and Geocomposite Delivery, Off-Loading, and Storage Requirements.....16
III-10-5 Geonet and Geocomposite Installation Requirements.....18

List of Appendices

III-10-A Final Cover System Details
III-10-B Testing Requirements for System Components

1. Introduction

1.1 Purpose

Daniel B. Stephens & Associates, Inc. (DBS&A) has prepared this final cover quality control plan (FCQCP) for WST Landfill to establish procedures to ensure compliance with the Texas Commission on Environmental Quality (TCEQ) municipal solid waste (MSW) rules. Guidance regarding quality control of construction and quality assurance of sampling and testing procedures are provided in this document; however, personnel shall follow the latest technical guidelines of the TCEQ Executive Director (ED) where applicable. This FCQCP addresses the soil and geosynthetic components of the final cover system at WST Landfill.

This FCQCP is intended for use during construction and installation of the final cover system at WST Landfill. The FCQCP was developed in accordance with TCEQ regulatory guidance (TCEQ, 2017), industry standards such as Daniel and Koerner (1993), and other applicable technical references.

1.2 Definitions

This section provides definitions for terms used in this FCQCP.

- *ASTM International (ASTM):* An international organization that develops and publishes voluntary technical standards for a range of products, systems, materials, and services.
- *Construction quality assurance (CQA):* CQA is a planned system of activities that provides the owner and permitting agency assurance that the facility was constructed as specified in the design. CQA includes observation, evaluation, and testing procedures necessary to assess and document the quality of the constructed facility. It also includes measures to be taken by the CQA organization to assess whether work complies with the plans, specifications, and permit requirements for a project.
- *Contractor:* The firm or agency responsible for performance of the construction contract, including the performance of all subcontractors.
- *Final cover system evaluation report (FCSER):* Report confirming completion of closure activities, submitted to TCEQ for approval, which will include documentation necessary for certification of closure.

- *Geocomposite:* Drainage component consisting of a geonet with non-woven geotextile heat-bonded on one or both sides, assembled by the manufacturer.
- *Geonet:* A net-like configuration of extruded high-density polyethylene (HDPE) ribs used as a planar conductor of liquids.
- *Geosynthetics:* A planar product manufactured from polymeric material used with soil, rock, earth, or other geotechnical engineering related material as an integral part of a manmade project, structure, or system.
- *Geotechnical professional (GP):* Person(s) or firm(s) authorized by the owner to manage and oversee the execution of work. Any individual designated as the GP must be a professional engineer (P.E.) as licensed by the State of Texas. The GP is responsible for observing, testing, and documenting activities related to geosynthetics QA during installation of the final cover system. The GP shall also be responsible for issuing and signing the FCSER. The GP or his/her representative shall be on-site for final cover construction and testing. All completed work is subject to approval of the GP.

  The GP may also be mentioned in applicable regulations and guidelines as the GP, resident project representative, geotechnical quality control/quality assurance professional (GQCP), or professional of record (POR).
- *Geotextile:* A permeable synthetic textile used with soil, rock, sand, gravel, or any other similar materials as an integral part of a drainage system. It serves as a filter interface between two types of soil materials, as a drainage conductor, or as soil reinforcement.
- *Linear low-density polyethylene (LLDPE):* A polymer prepared by low-pressure polymerization of ethylene as the principal monomer and having the characteristics of ASTM D4976, Class I and II polyethylene. Such polymer resins have densities less than or equal to 0.940 gram per cubic centimeter (g/cm^3) as noted in ASTM D4976.
- *Manufacturer:* Firm(s) responsible for the production of geomembrane, geotextile, and geonet materials, pipes, fittings, and other equipment.
- *Owner:* West Sun Tex, LLC (WST).
- *Panel:* A unit area of geosynthetic materials which will be seamed in the field.
- *Project plans and specifications:* All project-related plans and specifications, including design modifications and as-built plans.

- *Qualified engineering technician (QET):* A qualified representative of the GP who meets the qualifications of a NICET certified in Geotechnical Engineering Technology at Level 2 or higher, who is an engineering technician with a minimum of four years of directly related experience, or who is a graduate engineer or geologist with at least one year of directly related experience.
- *Quality assurance (QA):* Actions taken by the GP to assure conformity of final cover system production and installation with the FCQCP, drawings, and specifications. QA is provided by a party independent of installation.
- *QA laboratory:* The firm responsible for conducting tests on geosynthetic samples taken from the site. The laboratory shall be independent of the owner, manufacturer, contractor, and any party involved with the manufacture and/or installation of any part of the final cover system.
- *Work:* All tools, equipment, supervision, labor, material, or supplies necessary to complete the project as specified herein and as shown on the plans.

2. Design Criteria

WST Landfill intends to accept solid waste resulting from municipal, commercial, institutional, and recreational activities, including garbage, construction waste, brush, and rubbish, Class 1, 2, and 3 nonhazardous industrial waste, petroleum-contaminated soils, wastewater treatment facility sludge, and special waste as defined in the facility's permit. To protect human health and the environment, the WST Landfill final cover system is designed to meet or exceed the requirements stated in 30 TAC 330.457. Components of the final cover system shall be constructed as outlined in this document. Details for the final cover system are provided on Drawings C-10 and C-18 of the engineering drawings (Appendix III-10-A).

2.1 Final Cover System

The final cover system for WST Landfill shall be equivalent for all landfill cells. The final cover system consists of four primary components and shall be constructed atop the final grade of interim/daily cover in each landfill cell which has reached design capacity. This FCQCP assumes that a 4-foot-thick compacted barrier of clay-rich soil has been placed above Class 1 waste as described in the Waste Management Unit Design narrative (Attachment III-4). Further procedures regarding the commencement of closure and application of final cover can be found

in the Closure Plan (Attachment III-8). The purpose of the final cover system is to prevent precipitation from eroding the cover and waste materials, minimize rain infiltration, control odor, and reduce landfill gas emissions. The liner system for final cover at WST Landfill shall consist of the following components, from the bottom up:

- An 18-inch layer of compacted clay-rich soil with a permeability no greater than 1×10^{-5} centimeters per second (cm/s)
- A layer of flexible geomembrane (40-mil linear low-density polyethylene [LLDPE]) installed in direct and uniform contact with the compacted clay-rich soil
- A drainage layer comprised of geocomposite placed over the geomembrane
- A minimum 6-inch layer of earthen material that is capable of sustaining native plant growth, which shall be seeded or sodded immediately following the application of final cover

2.2 Construction Monitoring

Continuous on-site monitoring is necessary to ensure that the components of the final cover system are constructed in accordance with this FCQCP. This plan establishes the quantitative criteria that will be used in the field and laboratory to measure the quality of the liner subgrade, compacted clay-rich soil layer, liner installation, drainage layer, and vegetative layer. Attachment III-10-A provides minimum testing frequencies and acceptable testing methods for such components.

It is the objective of this FCQCP to ensure that test results meet applicable specified values. Should a test result not achieve the specified value for a material, it must be replaced or repaired. This operation must be repeated until test results are acceptable. The GP understands that variations due to isolated anomalies in materials, sample disturbances, human testing errors, or other factors may result in failing tests. If the GP believes that these tests are not indicative of the general quality of construction, the GP may accept a small percentage of outliers.

The GP will document and certify that applicable components of WST Landfill were constructed in accordance with this FCQCP. The GP shall make sufficient site visits to observe critical construction activities and to verify that the construction and quality assurance activities are performed in accordance with this FCQCP.

2.3 Documentation

The GP shall maintain current records of quality control operations, inspections, and tests performed relative to the work of suppliers and contractors at WST Landfill. These records shall be reported through appropriate CQA documents including daily summary reports, geosynthetics inventory forms (Form TCEQ-10075A), field compaction test logs, certificate of acceptance of soil subgrade forms (Form TCEQ-10075B), geosynthetics deployment logs, geomembrane field quality control logs, and panel layout drawings.

Photographs shall also be used to document the progress and acceptability of work, and shall be incorporated into daily summary reports. Each photograph in a daily summary report shall denote the date, time, and location of the photograph, as well as other pertinent details.

3. Subgrade

Subgrade preparation prior to installation of the final cover system will include the preparation of previously-installed intermediate cover and the placement of structural fill where required.

3.1 Intermediate Cover and In-Situ Soils

Where required, structural fill will be placed to meet final cover design elevations. The surface of the underlying soils shall be scarified prior to the placement of structural fill. Structural fill will be placed following procedures for intermediate cover as detailed in the Site Operating Plan (Part IV). The surface of the intermediate cover will be compacted to prepare a surface suitable for inspection by the GP.

Subgrade soils shall be proof-rolled in the presence of the GP or QET with rubber-tired construction equipment or a compactor to detect soft zones or areas subject to pumping. Areas of soft soils will be reworked and areas subject to pumping will be undercut to firm material and backfilled with general fill as outlined in Section 3.4. Proof-rolling and visual examination of the subgrade preparation by the GP or QET will generally be sufficient to evaluate suitability of the subgrade as a foundation for the final cover system.

3.2 Final Subgrade Inspection, Testing, and Acceptance

Upon completion of subgrade preparation, the GP or QET shall visually inspect the final subgrade for protruding debris, foreign objects, angular stones, vegetation, frozen materials, or

any rocks or rock clods larger than 1 inch. Elevations of the subgrade shall be verified by survey methods consistent with design specifications, including design grades specified for stormwater management. If traffic, erosion, settlement, or other damage causes deterioration of the subgrade following its initial preparation, the surface must be reworked, inspected, tested, and accepted prior to deployment of the final cover system over these areas.

4. Compacted Clay-Rich Soil

4.1 Material Properties

A minimum 18-inch layer of compacted clay-rich soil shall be placed in direct contact atop the intermediate cover and structural fill in a cell which is designated to be closed. Compacted clay-rich material shall consist either of readily available on-site materials or materials delivered to the site that are free from debris, rubbish, frozen materials, foreign objects, organic substances, and other deleterious matter. Material shall be free of rock clods or gravel larger than ⅜ inch and shall have rounded particle shapes to avoid potential for damage to overlying geosynthetics. Pre-construction testing requirements and frequencies to verify clay-rich soil material properties are detailed in Appendix III-10-B (Table III-10-B-1).

4.2 Delivery, Off-Loading, and Storage

If on-site soils are not adequate for the compacted clay-rich soil layer, materials may be delivered to the project site. Clay-rich materials that are delivered to the site prior to approval by the GP shall be stockpiled on-site in areas as dictated by owner. Provision shall be implemented to minimize surface water impact on the stockpile(s). Removal and placement of the materials shall be conducted in a manner to minimize intrusion of native soils adjacent to and beneath the stockpile(s).

4.3 Quality Assurance Testing and Certification

Clay-rich soil materials shall undergo pre-construction testing as specified in Appendix III-10-B (Table III-10-B-1). Sampling of the materials shall be performed by the GP, QET, or contractor in the presence of the GP or QET as specified by contract documents. Samples of the clay-rich soils shall be representative of the materials which are placed in the final cover system. Pre-construction test results shall be reviewed and accepted by the GP prior to placement of the material.

4.4 Clay-Rich Soil Placement

The surface of the underlying intermediate cover or structural fill shall be scarified prior to placement of the compacted clay-rich soil layer. The compacted clay-rich soils shall be placed in loose lifts no greater than 8 inches, moisture conditioned and compacted, tested for in-place density and moisture, and approved by the QET or GP between the placement of each lift using the field methods and frequencies detailed in Appendix III-10-B (Table III-10-B-1). Lifts shall be compacted to a minimum of 95 percent of maximum dry density as determined by the standard Proctor test (ASTM D698) at a moisture content within +2 percent of the optimum moisture content. Results of in-place density and moisture tests shall be recorded on field compaction test logs. Exposed subgrade that has significantly dried or exhibits desiccation shall be wetted and compacted prior to fill placement. Areas with failing tests shall be reworked and recompacted, and then retested with passing results before a subsequent lift can be placed. The specified moisture content of each lift shall be maintained during the construction process. Abrupt changes of grade shall be regraded. The final lift shall be wetted and smooth rolled.

4.5 Final Compacted Clay-Rich Soil Inspection, Testing, and Acceptance

Upon completing preparation of the compacted clay-rich soil layer, the GP or QET shall visually inspect the final subgrade for protruding debris, foreign objects, angular stones, vegetation, frozen materials, or any rocks or rock clods larger than ⅜ inch. Elevations of the subgrade shall be verified by survey methods on an established grid system with not less than one verification point per 5,000 square feet of surface.

The compacted clay-rich soil layer shall be analyzed for permeability as required by 30 TAC 330.457(c) following the methods and frequencies given in Table III-10-B-1. Sampling of the 18-inch layer of compacted clay-rich soil shall be performed by the GP, QET, owner, representative of the owner, or contractor in the presence of the GP or QET as specified by contract documents. The compacted clay soils shall have a permeability of no greater than 1×10^{-5} cm/s. All test results shall meet the requirements of project specifications or be approved by the GP as equivalent.

Immediately in advance of the installation of geomembrane, the contractor shall document acceptance of the subgrade using Form TCEQ-10075B. This form shall also be signed by the GP (or QET) and owner. If traffic, erosion, settlement, or other damage causes deterioration of the

subgrade following its initial preparation, the surface must be reworked, inspected, tested, and accepted prior to deployment of geomembrane over these areas.

5. Geomembrane Liner

5.1 Material Properties

The geomembrane liner shall consist of LLDPE materials. Geomembrane material properties shall meet or exceed the values detailed in project plans and specifications and the GRI-GM17 Standard Specification (LLDPE). These material properties shall be evaluated in accordance with the frequencies specified in Appendix III-10-B (Table III-10-B-2).

The geomembrane shall be manufactured of new, prime first-quality products designed and produced specifically for the purpose of liquid containment in hydraulic structures and chemically resistant to leachate. Reground, reworked, or trim material in the form of chips or edge strips may be added if the material is from the same manufacturer and is exactly the same formulation as the geomembrane being produced. Recycled or reclaimed materials must not be used in the manufacturing process. The geomembrane material shall be produced so as to be free of holes, blisters, undispersed raw materials, or any sign of contamination by foreign matter. The geomembrane rolls shall be packaged and shipped by appropriate means to prevent damage to the material. The extrudate welding rod shall be of the same compound as the geomembrane and supplied by the same manufacturer, and shall be delivered in their original sealed containers.

5.2 Delivery, Off-Loading, and Storage

Table III-10-1 summarizes requirements regarding the delivery, off-loading, and storage of geomembrane liner materials.

All liner materials shall be shipped in rolls labeled with the following information:

- Manufacturer's name
- Polymer identification/grade and thickness
- Roll and lot/batch number
- Roll dimensions
- Any other information which is necessary to trace the quality assurance documentation

Table III-10-1. Geomembrane Delivery, Off-Loading, and Storage Requirements

Geomembrane Topic	Delivery, Off-Loading, and Storage Requirements
Delivery and Off-Loading	▪ Geomembrane rolls shall be off-loaded using equipment and methods in accordance with manufacturer recommendations and which do not cause damage or excessive strain on the materials. ▪ Do not push, slide, or drag rolls or pallets of geomembrane. ▪ Inspect the delivered materials for damage and defects (conducted by the GP or QET). ▪ Geomembrane sheets must be free from pinholes, surface blemishes, scratches, or other defects (e.g., non-uniform color, streaking, roughness, agglomerates of carbon black or other additives or fillers, visibly discernible regrind or rework, etc.).
Temporary On-Site Storage	▪ Store geomembrane in an area on-site where standing water cannot accumulate at any time. ▪ Protect geomembrane materials from soft, wet, rocky, and rough ground. ▪ Ensure that the storage area is suitably prepared so that no stones or other rough objects, which could damage the geomembrane materials, are present on the ground. ▪ Protect rolls of geomembrane from crushing of the core or flattening of the rolls. Achieve this by stacking no more than 5 rolls, or following the manufacturer's stacking recommendations. ▪ Secure the rolls or pallets to prevent shifting, abrasion, or other adverse movement. ▪ Cover or provide a temporary shelter for rolls or pallets of geomembranes stored longer than 6 months to protect against precipitation, ultraviolet exposure, and accidental damage.

The geomembrane manufacturer shall also supply the GP or owner with the origin, identification, and production of the resin (supplier's name, brand name, and production plant). Off-loading and storage of the geomembrane is the responsibility of the contractor, unless material deliveries occur prior to contractor mobilization. In such instances, off-loading and storage of the geomembrane falls under the responsibility of the owner. The responsible party shall store and protect the geomembrane materials according to Table III-10-1 immediately following off-loading.

The geomembrane storage area shall be designated by the owner. The GP or QET shall inspect delivered materials and ensure that all MQC testing, conformance testing, and manufacturer certifications are sufficient and applicable to the geomembrane materials delivered to the site.

The GP or QET shall document all delivered geomembrane materials using a geomembrane inventory log (Form TCEQ-10075A), including any damages incurred during shipping, off-loading, or storage of the materials.

Following mobilization, the contractor shall preserve the integrity of geomembrane materials and the readability of material labels. The contractor shall be responsible for the transportation of each roll of geomembrane from the storage area to its proposed panel location.

5.3 Quality Assurance Testing and Certification

Geomembrane material conformance and MQC testing requirements are summarized in Appendix III-10-B (Table III-10-B-2). The geomembrane manufacturer shall provide written certification(s) of quality control pertaining to the manufacturing process. Quality control certificates shall be provided by the geomembrane manufacturer for all rolls delivered to the site. Each certificate shall include roll identification numbers and results of all MQC tests. Test methods and results shall comply with project plans and specifications in addition to the material's GRI Standard Specification (GRI-GM17 for LLDPE).

Sampling of the geomembrane for conformance testing by an independent QA laboratory may be performed by a representative of the owner, a representative of the third-party independent laboratory, the GP, or QET. Sampling may occur prior to the rolls being delivered on-site as long as the tested roll numbers are those delivered for each lot and are verified by the GP or QET. Samples shall be pulled from randomly selected rolls in units that are evenly spaced and span the entire roll width. Samples shall be marked with the machine direction and corresponding roll identification number. The GP may, at his/her discretion, subdivide the manufacturer's listed lots into smaller lots for purposes of conformance testing.

Conformance test results shall be reviewed by the GP and lots shall be accepted or rejected prior to placement of the liner. Test results shall meet or exceed the property values listed in project plans and specifications and the material's GRI Standard Specification. In the case of failing test results for any given lot sample, the lot shall be resampled and retested. If test results from resamples comply with acceptable values, the lot shall be accepted.

Field testing and quality assurance requirements concerning geomembrane are specified in this FCQCP in Section 5.7.

5.4 Installation

Geomembrane installation shall be conducted in accordance with manufacturer recommendations to maintain the material's integrity and performance. Minimum requirements for geomembrane installation are summarized in Table III-10-2. The GP (or QET under explicit guidance of the GP) and contractor must accept the underlying liner components and confirm all required quality assurance activities have been completed prior to the placement of geomembrane.

CQA activities performed during the installation of geomembrane materials shall be recorded on applicable CQA forms. Geomembrane panel numbers shall also be recorded on a panel layout drawing by the GP or QET immediately upon deployment.

Table III-10-2. Geomembrane Installation Requirements

Geomembrane Topic	Installation Requirements
Deployment	▪ Follow all manufacturer's recommendations. ▪ Folded or creased sections of panels are not acceptable and shall not be used unless they are a normal part of the manufacturing process. ▪ Install geomembrane in direct and uniform contact with the underlying geosynthetics. ▪ Ensure that underlying geosynthetics are not damaged during deployment. ▪ Prevent construction equipment from traveling directly on the lower geosynthetic material if geomembrane is placed over geosynthetic. ▪ Do not place geomembrane during inclement weather (rain, high winds, or freezing temperatures).
Equipment on Geomembrane	▪ Limit vehicular traffic on the liner to low-ground-pressure supporting equipment only. Areas damaged by vehicular traffic must be repaired. ▪ Prohibit personnel working on the geomembrane from: ○ Smoking; ○ Wearing damaging shoes; or ○ Engaging in any other activity likely to damage the geomembrane.
Placement	▪ Only unroll geomembrane sheets that are to be placed and seamed in one day. ▪ Position geomembrane with the overlap recommended by manufacturer. ▪ GP or QET must visually inspect placement and overlap of geomembrane to verify compliance with the FCQCP.

Table III-10-2 (cont.)

Geomembrane Topic	
Folds, Large Wrinkles, and Fish Mouths	▪ Walk-out or remove wrinkles prior to field seaming. Folds, large wrinkles, or fish mouths are not allowed in the seam. Only normal factory-induced creasing may be acceptable. ▪ Cut, overlap, and weld the material where wrinkles or folds occur. This process should be accomplished in such a manner that constructed seams are not required to carry significant tensile loads. ○ During wrinkle or fold repairs, adjacent geomembrane may not necessarily be required to meet the 3-inch minimum overlap if approved by the GP or QET. ▪ Remove dirt, water, oil, etc. from the area to be bonded. ▪ Bond and seal all completed seams tightly.
Tack Welds	▪ Do not use double-sided tape, glue, or other method when extrusion or fusion welding is used for bonding.
Geomembrane Seaming	▪ Follow manufacturer recommendations for field seaming and repairs.
Seam Joints	▪ Orient seams on side slopes (e.g. slopes steeper than 6H:1V) parallel to the side slope direction. ▪ Locate seams that join side slopes and bottom sections at least 5 feet from the toe of the slope and along the floor. ▪ Minimize the number of seams in corners and odd-shaped geometric locations.
Temperature	▪ Do not attempt seaming when the ambient air temperature is above 104°F. ▪ Follow GRI Test Method GM9 for seaming geomembrane when the ambient air temperature is below 32°F.
End of Each Work Day	▪ Anchor all unseamed edges with sand bags or other approved devices at the end of each day or installation segment. ▪ Do not use staples, U-shaped rods, or other penetrating anchors.

5.5 Seaming

Field seams between sheets of geomembrane material will be made using approved fusion-welding systems, equipment, and techniques. Approved fusion-welding systems include fillet weld using extrudate, lap weld using extrudate, and lap weld using single or double wedge welder. Only operators who have completed accepted trials welds shall be allowed to weld panel seams.

Field trial seam testing requirements are listed in Appendix III-10-B (Table III-10-B-3). During geomembrane seaming operations, the GP or QET must provide full-time observation and documentation of compliance with the installation requirements listed in Table III-10-2. In addition, CQA personnel shall:

- Observe the condition of the seams and note any defects. All defects must be repaired in accordance with the requirements of Section 5.6.
- Observe that seam grinding has been completed less that one hour before extrusion welding and the extrudate has been purged from extrusion welders.
- Observe that there are no horizontal seams on side slopes and that textured materials extend a minimum of 5 feet past the toe of slope.

5.6 Repairs

Destructive and non-destructive tests shall be performed on geomembrane seams in accordance with Section 5.7 to assure their integrity as part of the liner CQA program. All seam leaks detected by non-destructive tests and locations of samples for destructive tests shall be repaired by installing patches or cap strips over the damaged area. The patch or cap strip must be of the same liner material and extend for a distance of at least 6 inches in all directions of the damage. Extrusion welding methods shall be utilized to adhere patches or cap strips on geomembrane materials. At a minimum, these repairs must be retested non-destructively and possibly destructively (refer to destructive testing criteria for repaired seams as described in Appendix III-10-B (Table III-10-B-4).

Each repair shall be numbered and logged by the contractor and GP (or QET). Repairs that pass non-destructive testing shall be accepted as adequate repairs. Repairs that fail non-destructive testing must be redone and retested until passing test results are achieved. The GP or QET shall observe the non-destructive testing of repairs. The contractor and GP (or QET) shall record the number of each repair, date, and non-destructive test outcome.

5.7 Field Quality Control Testing

5.7.1 Destructive Tests

During field-seaming operations, destructive samples will be marked by the GP or QET and collected by the contractor. Destructive testing methods are detailed in Appendix III-10-B (Table III-10-B-4). Destructive testing shall be performed at a frequency of one stratified test

location per 500 linear feet of seamed length. Repairs over 10 feet long shall be included in the total seam length. Samples collected for destructive testing shall be 45 inches long and 12 inches wide (with the seam centered along the length of the sample). A sufficient amount of seam shall be removed to conduct (1) field seam testing, (2) independent laboratory testing, and (3) archiving of enough material to retest the seam if necessary. Field testing shall be conducted by the contractor and shall include at least two peel tests per sample (four when possible for testing both tracks on dual-track fusion-welded seams) and two shear tests per sample. Prior to field destructive testing, the GP or QET shall verify that the extensometer testing apparatus used for peel and shear tests has an updated calibration certificate that is traceable to the National Institute of Standards and Technology (NIST). The GP or QET shall observe all field destructive testing and record results in appropriate CQA logs. All field seams must have a film tear bond in peel and shear compliant with GRI-GM19a Standard Specification.

5.7.2 Non-Destructive Tests

Non-destructive seam testing shall be conducted for the entire length of each seam in accordance with Appendix III-10-B (Table III-10-B-5). Non-destructive seam tests include vacuum tests and air pressure tests. The GP or QET must observe all non-destructive testing to assure that equipment operators are properly conducting and recording tests. The GP or QET shall observe that the entire length of each seam is tested and shall record all tests results in appropriate CQA forms. The GP or QET shall identify any failed seams and ensure that the contractor performs repairs and retests as needed.

5.8 Geomembrane Acceptance

The contractor shall retain ownership and responsibility for the geomembrane until acceptance by the owner. The geomembrane liner shall be accepted by the owner when the following conditions are met:

- Installation is finished.
- Verification in the form of a certificate of acceptance of the adequacy of field seams and repairs, including associated testing, is complete.
- Certification is completed by the GP that confirms the liner system was installed in accordance with the construction drawings, project plans and specifications, contract documents, this FCQCP, and manufacturer recommendations.

- Certification, including as-built drawing(s) and installation documentation, is provided by the contractor to the GP.

6. Geocomposite Drainage Layer

A drainage layer will be placed above the geomembrane liner. The drainage layer will consist of a heat-bonded HDPE geonet/geotextile drainage composite (geocomposite). A double-sided geocomposite will be used in the final cover system. The vegetative layer will be placed on top of the drainage collection layer.

6.1 Material Properties

Geonet or geocomposite shall be installed in direct and uniform contact with the underlying geomembrane in systems addressed in this FCQCP. These materials shall be manufactured specifically for the purpose of planar drainage of liquid and chemically resistant to leachate. Material properties shall meet or exceed the values listed in the project plans and specifications and Table III-10-3. These material properties shall be evaluated in accordance with the frequencies specified in Appendix III-10-B (Table III-10-B-6). The rolls of geonet and geocomposite shall be packaged and shipped by appropriate means to prevent damage of the materials.

Table III-10-3. Required Properties for Geocomposite

Component	Property	Standard	Value
HDPE Drainage Net	Specific gravity	ASTM D1505	0.93 g/cm^3
	Thickness	ASTM D5199	0.2 inch
	Carbon black	ASTM D1603	Minimum 2%, maximum 3%
Geocomposite [a]	Transmissivity	ASTM D4716	5 x 10^{-4} m^2/s

[a] Only required for geocomposite materials.

6.2 Delivery, Off-Loading, and Storage

Table III-10-4 summarizes requirements regarding the delivery, off-loading, and storage of geonet and geocomposite materials. Each roll of material delivered to the project site shall have a label containing the following information:

- Manufacturer's name
- Product identification/style
- Roll and lot/batch number
- Any other information which is necessary to trace the quality assurance documentation

Off-loading and storage of the geonet and geocomposite is the responsibility of the contractor, unless material deliveries occur prior to contractor mobilization. In such instances, off-loading and storage of the material falls under the responsibility of the owner. The responsible party shall store and protect the geonet and geocomposite materials according to Table III-10-4 immediately following off-loading.

Table III-10-4. Geonet and Geocomposite Delivery, Off-Loading, and Storage Requirements

Geonet and Geocomposite Topic	Delivery, Off-Loading, and Storage Requirements
Delivery and Off-Loading	▪ Rolls shall be off-loaded using equipment and methods in accordance with manufacturer recommendations and which do not cause damage or excessive strain on the materials. ▪ Inspect the delivered materials for damage and defects (conducted by the Site CQA Manager). ▪ Materials shall be free from surface blemishes, tears, discoloration, and other irregularities. ▪ Do not push, slide, or drag rolls or pallets of geonet or geocomposite.
Temporary On-Site Storage	▪ Store geonet and geocomposite in an area on-site where standing water cannot accumulate at any time. ▪ Ensure that the storage area is suitably prepared so that no stones or other rough objects, which could damage the materials, are present on the ground. ▪ Follow the manufacturer's stacking recommendations to protect rolls of geonet and geocomposite from crushing of the core or flattening of the rolls. ▪ Secure the rolls or pallets to prevent shifting, abrasion, or other adverse movement. ▪ Cover or provide a temporary shelter for rolls or pallets of geonet and geocomposite stored at the site longer than 6 months to protect against precipitation, ultraviolet exposure, and accidental damage.

The geonet and geocomposite storage area shall be designated by the owner. The GP or QET shall inspect delivered materials and ensure that all MQC testing, conformance testing, and

manufacturer certifications are sufficient and applicable the materials delivered to the site. The GP or QET shall document all delivered materials using an inventory log (Form TCEQ-10075A), including any damages incurred during shipping, off-loading, or storage of the materials.

Following mobilization, the contractor shall preserve the integrity of the materials and the readability of material labels. The contractor shall be responsible for the transportation of each roll of geonet and geocomposite from the storage area to its proposed panel location.

6.3 Quality Assurance Testing and Certification

Geonet and geocomposite testing requirements are summarized in Appendix III-10-B (Table III-10-B-6). The manufacturer shall supply the GP or owner written certification(s) of quality control pertaining to the manufacturing process. Quality control certificates shall be provided by the manufacturer for all rolls delivered to the site. Each certificate shall include roll identification numbers and results of all MQC tests. Test methods and results shall comply with project plans and specifications, Table III-10-3, and Appendix III-10-B (Table III-10-B-6).

Sampling of the geonet and geocomposite for conformance testing by an independent QA laboratory may be performed by a representative of the owner, a representative of the third-party independent laboratory, the GP, or QET. Sampling may occur prior to the rolls being delivered on-site as long as the tested roll numbers are those delivered for each lot and are verified by the GP or QET. Samples shall be pulled from randomly selected rolls in units that are evenly spaced and span the entire roll width. Samples shall be marked with the corresponding roll identification number. The GP may, at his/her discretion, subdivide the manufacturer's listed lots into smaller lots for purposes of conformance testing.

Conformance test results shall be reviewed by the GP and lots shall be accepted or rejected prior to placement of the material. Test results shall meet or exceed the property values listed in project plans and specifications and Table III-10-3. In the case of failing test results for any given lot sample, the lot shall be resampled and retested. If test results from resamples comply with acceptable values, the lot shall be accepted.

6.4 Installation

Table III-10-5 details installation requirements of geonet and geocomposite following guidance from Chapter 6 of the U.S. EPA technical guidance document *Quality Assurance and Quality Control for Waste Containment Facilities*. Installation of geonet and geocomposite shall also follow manufacturer recommendations to maintain the material's integrity and performance.

The GP (or QET under explicit guidance of the GP) and contractor must accept the underlying liner components and confirm that all required quality assurance activities have been completed prior to the placement of the materials.

CQA activities performed during the installation of geonet and geocomposite materials shall be recorded on applicable CQA forms.

Table III-10-5. Geonet and Geocomposite Installation Requirements

Geonet and Geocomposite Topic	Installation Requirements
Deployment	▪ Follow all recommendations from the manufacturer. ▪ Install geonet or geocomposite in direct and uniform contact with the underlying geomembrane. ▪ Care shall be taken to keep the material clean and free from debris prior to installation. If the geonet or geocomposite is not clean, it should be washed using a high-pressured hose prior to installation. ▪ Ensure the underlying geosynthetics are not damaged during deployment. ▪ Prevent construction equipment from traveling directly on the lower geosynthetic materials. ▪ On slopes, the geonet or geocomposite shall be secured and rolled down the slope in such a manner as to keep the geonet panel in tension continually. If necessary, the material shall be positioned by hand after being unrolled to minimize wrinkles. ▪ During placement of geonet and geocomposite, care shall be taken not to entrap soil or excessive dust within the material that could cause clogging of the drainage system and/or stones that could damage the adjacent geomembrane.
Equipment on Geocomposite	▪ Limit vehicular traffic on the liner to low-ground-pressure supporting equipment only. ▪ Prohibit personnel working on the geomembrane from: ○ Smoking. ○ Wearing damaging shoes. ○ Engaging in any other activity likely to damage the geosynthetics.
Placement	▪ Only unroll geonet and geocomposite panels that are to be placed and seamed in one day. ▪ Position geonet or geocomposite with the overlap recommended by manufacturer, but not less than 4 inches on adjacent seams and 8 inches on end seams. ▪ GP or QET must visually inspect placement and overlap of materials to verify requirements.

Geonet and Geocomposite Topic	Installation Requirements
Geocomposite Seaming	▪ Follow manufacturer recommendations for field seaming and repairs. ▪ Overlaps shall be secured by tying. Tying can be achieved by HDPE fasteners or polymer braids. Tying devices shall be white or yellow for easy inspection. Metallic devices will not be permitted. Tying shall be every 5 feet along the slope and base, every 6 inches in the anchor trench, and every 6 inches along end-to-end seams. ▪ Horizontal seams on side slopes shall be minimized. Only those horizontal seams shown on the contractor's Panel Layout Drawing, as approved by the GP shall be allowed. Horizontal seams on side slopes shall be staggered. ▪ The geonet or geocomposite shall not be welded or adhered to the HDPE geomembrane. ▪ The uppermost geotextile overlap of each pair of adjacent geocomposite panels shall be sewn together. Heat seaming of longitudinal seams will not be allowed. Seams will be sewn using a white polymetric thread with chemical resistance equal to or exceeding that of the geotextile. All seams will be continuous. Seam strength (defined as strength of the seam divided by strength of geotextile) will be a minimum of 80 percent.
Seam Joints	▪ Orient seams on side slopes (e.g. slopes steeper than 6H:1V) parallel to the side slope direction. ▪ Locate seams that join side slopes and bottom sections at least 5 feet from the side slope and along the floor. ▪ Minimize the number of seams in corners and odd-shaped geometric locations.

7. Documentation and Reporting

Final cover CQA testing must be performed in conformance with this FCQCP to demonstrate that the final cover system has been installed in compliance with the project plans and specifications and the FCQCP as required by 30 TAC 330.457. The data must be submitted as a final cover system evaluation report (FCSER). The FCSER shall be sealed by a professional engineer registered in good standing with Texas and countersigned by the owner, site operator, or his/her authorized representative.

The FCSER will contain a narrative describing conduct of work and testing programs required by FCQCP, as-built and/or record drawings, and appendices of field and laboratory data. Additional data will be included in appendices, as needed, as recommended in TCEQ guidelines.

At a minimum, the FCSER will contain:

- A summary of all construction activities
- All laboratory and field test results
- Third party conformance test results for geocomposite transmissivity
- Manufacturer's certifications for all geosynthetics
- Documentation of thickness of the compacted clay and erosion layers by survey
- Sampling and testing location drawings
- A description of significant construction problems and the resolution of these problems
- As-built record drawings, including all previous FCSER submittals and dates of TCEQ approval
- A statement of compliance with the permit FCQCP and construction plans

References

Daniel, D.E. and R.M. Koerner. 1993. *Technical guidance document: Quality assurance and quality control for waste containment facilities*. EPA/600/R-93/182 (NTIS PB94-159100).

Daniel, D.E. and R.M. Koerner. 2007. *Waste containment facilities: Guidance for construction quality assurance and construction quality control of liner and cover systems, 2nd edition*. ASCE Press.

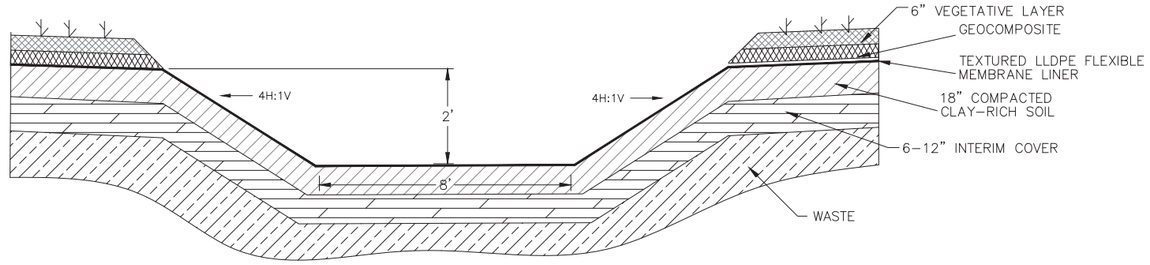
GRI Standard Specifications: available at <https://geosynthetic-institute.org/specs.htm>.

Texas Commission on Environmental Quality (TCEQ). 2017. *Guidance for liner construction and testing for a municipal solid waste landfill*. Regulatory Guidance RG-534.

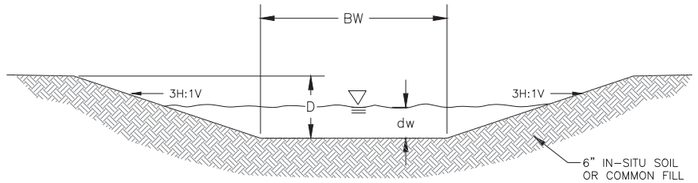
Appendix III-10-A

Final Cover System Details

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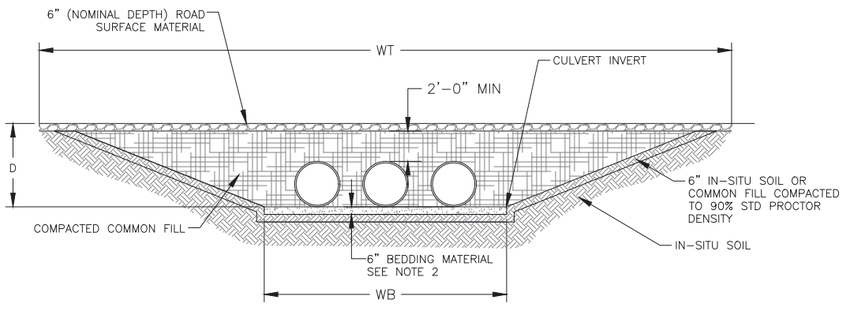
DOWN DRAIN DETAIL (1 / -)
NTS



SCHEDULE OF DIMENSIONS

CHANNEL	SLOPE	D (FEET)	BW (FEET)	dw (FEET)
WEST	0.5%	2.5-9	5.0	2.04
NORTH	0.5%	3-9.5	9.5	1.7
SOUTH	0.5%	3-6.2	7.0	1.9
EAST	0.5%	3-3.5	5.0	0.63

TYPICAL UNLINED DITCH SECTION DETAIL (2 / -)
NTS



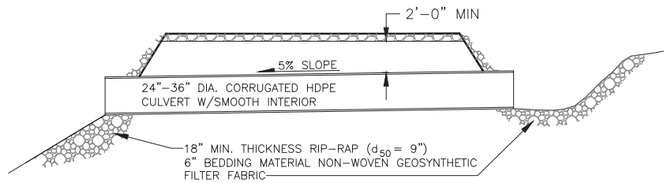
SECTION

SCHEDULE OF DIMENSIONS

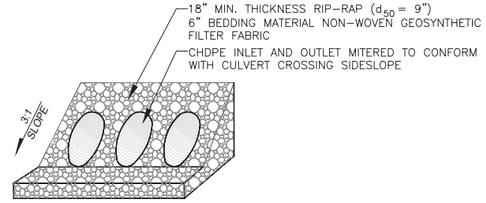
CULVERT DIA (IN)	CULVERT LENGTH (FT)	WT (FT)	WB (FT)	D (FT)	SLOPE (FT/FT)
24	±30.0	34.5	7.5	4.5	0.05
36	36.0	47.0	13.5	5.5	0.05

NOTES:

1. SEE SHEET C-3 FOR LOCATIONS OF CULVERT CROSSINGS.
2. BEDDING MATERIAL SHALL BE SHAPED TO PROVIDE UNIFORM CONTACT WITH THE BOTTOM OF THE CULVERTS.
3. ALL CULVERTS ARE CORRUGATED HDPE WITH SMOOTH INTERIOR.
4. 18" MINIMUM SPACING BETWEEN EACH CULVERT PIPE, WALL TO WALL.

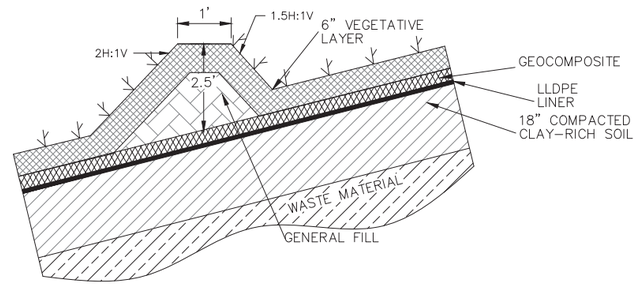


SIDE VIEW SECTION



TYPICAL CULVERT INLET AND OUTLET DETAIL

CULVERT ROAD CROSSING DETAILS (3 / -)
NTS



DIVERSION BERM DETAIL (4 / -)
NTS

FOR PERMITTING PURPOSES ONLY

REV. NO.	DATE	DESCRIPTION	APPROVED BY

DATE OF ISSUE: 07/22/2026
DESIGNED BY: KJ
DRAWN BY: CK, JA, ML
CHECKED BY: GP
APPROVED BY: GP

STATE OF TEXAS — GUNDAR PETERSON — 103091 — LICENSED PROFESSIONAL ENGINEER — 7/22/2026

DBS&A a Geo-Logic Company
TEXAS REGISTERED ENGINEERING FIRM F-286

WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

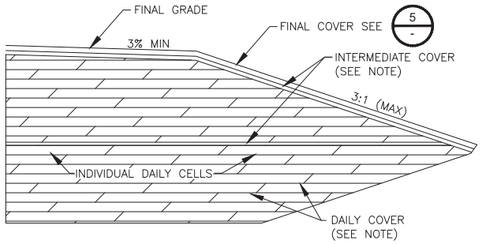
WST LANDFILL
REEVES COUNTY, TEXAS

DRAINAGE DETAILS

SHEET 12 OF 21
DWG NO. C-10

JOB NO. DB20.1166

Z:\1X\MMTA\S\PROJECTS\DB20.1166_WST_PECOS_PERMITTING\CAD\PRODUCTION\C-10 DRAINAGE DETAILS.DWG July 14, 2026 - 3:04 PM BY: GLA USER

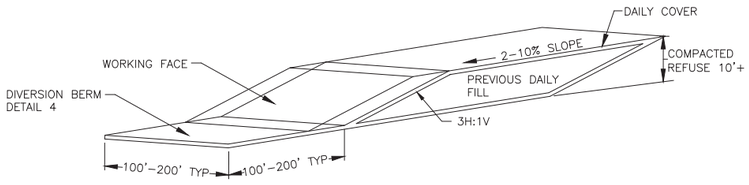


INTERMEDIATE COVER MINIMUM 12" SOIL APPLIED AND COMPACTED ON LIFTS WHICH HAVE NOT BEEN ACTIVE WITHIN 180 DAYS.

DAILY COVER ALTERNATE DAILY COVER OR MINIMUM 6" SOIL APPLIED AT THE END OF EACH WORKING DAY.

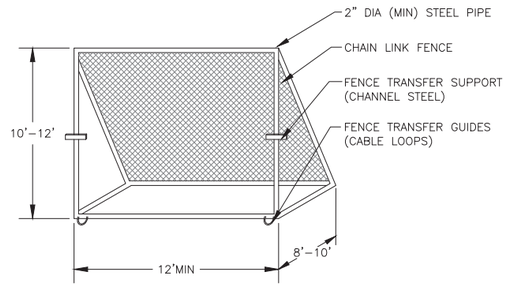
CLASS 1 SOIL BARRIER 4-FOOT-THICK CLAY RICH SOIL BARRIER AT MAXIMUM CLASS 1 WASTE HEIGHT

TYPICAL CROSS SECTION COVER APPLICATION 1 -
NTS

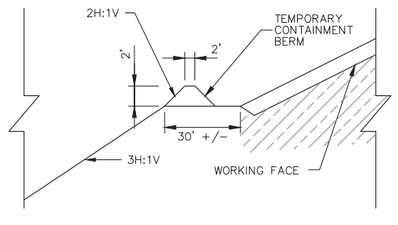


NOTE: REFUSE APPLIED IN LAYERS 2'-3' THICK TYPICAL AND COMPACTED BY REPEATED PASSES BY LANDFILL EQUIPMENT (COMPACTOR OR BULLDOZER)

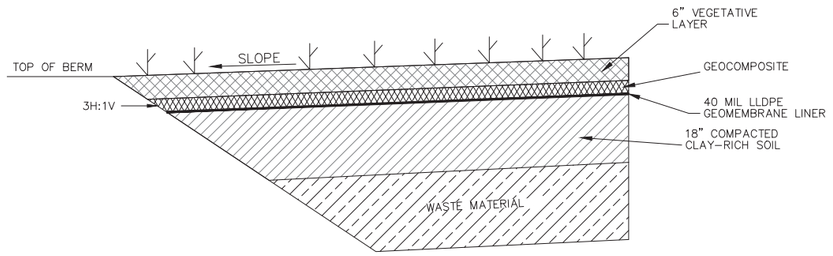
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NTS



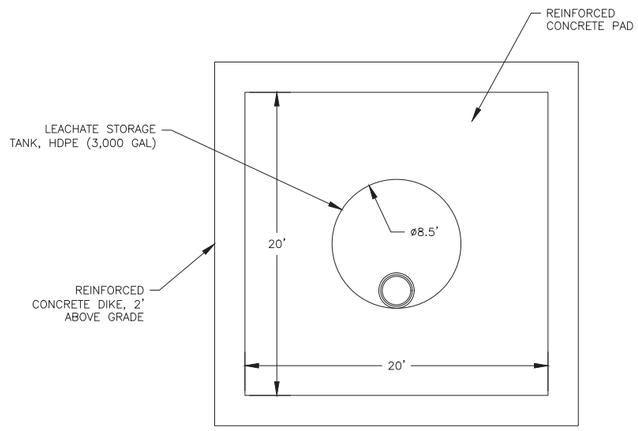
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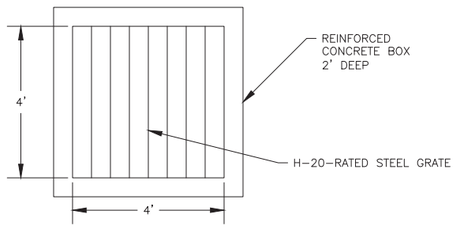
CONTACT WATER CONTAINMENT BERM 4 -
SCALE: NTS



FINAL COVER SECTION DETAIL 5 -
SCALE: NTS



LEACHATE STORAGE DETAIL 6 C-1
NTS



CITIZEN COLLECTION STATION SUMP DETAIL 7 C-1
NTS

FOR PERMITTING PURPOSES ONLY

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STATE OF TEXAS — GUNDAR PETERSON — 103091 — LICENSED PROFESSIONAL ENGINEER — 7/22/2026

DBS&A a Geo-Logic Company
TEXAS REGISTERED ENGINEERING FIRM F-286

WEST SUN TEX, LLC
600 N CAROLL AVE, SUITE 100
SOUTHLAKE, TEXAS 76092

WST LANDFILL
REEVES COUNTY, TEXAS

CIVIL DETAILS 3

SHEET 20 OF 21
DWG NO. C-18

JOB NO. DB20.1166

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Appendix III-10-B

Testing Requirements for System Components

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Appendix III-10-B: Testing Requirements for Liner System Components

Table III-10-B-1. Standard Tests for Soils

Soil Test Category	Type of Test	Standard Test Methods [a]	Minimum Frequency of Testing
Compacted Clay-Rich Soil	Sieve (gradation)	ASTM C136	One per representative source
	Atterberg Limits	ASTM D4318	
	Standard Proctor test	ASTM D698	
	In-Place Density	ASTM D6938	One per 20,000 ft^2 of surface area per 10-inch compacted lift
	Coefficient of Permeability	ASTM D5084 or CoE EM1110-2-1906	One per acre of final cover

[a] The GP may propose equivalent or better tests.

Table III-10-B-2. Standard Tests for Geomembranes

Test Category	Type of Test	Standard Test Methods [a]	Frequency of Testing
Resin	Specific Gravity/Density	ASTM D792 or D1505	One per 100,000 ft^2 and every resin lot
	Melt Flow Index	ASTM D1238	
Geomembrane Manufacturer	MQC	Testing per GRI-GM13 Standard Specification	Testing per GRI-GM13 Standard Specification
Conformance Testing by Third-Party Independent Laboratory	Thickness	ASTM D5199 (smooth) or D5994 (textured)	One per 50,000 ft^2 and every resin lot
	Specific Gravity/Density	ASTM D792 or D1505	
	Carbon Black Content	ASTM D1603	One per 100,000 ft^2 and every resin lot
	Carbon Black Dispersion	ASTM D5596	
	Tensile Properties	ASTM D6693	
Destructive Seam Field Testing	Shear	ASTM D6392	Varies for field, laboratory, and archive
	Peel	ASTM D4437	
Non-Destructive Seam Field Testing	Air Pressure	GRI Test Method GM29 or ASTM D5820	All dual-track fusion
	Vacuum	ASTM D5641	All non-air-pressure-tested seams when possible

[a] The GP may propose equivalent or better tests.

Table III-10-B-3. Trial Seam Testing Requirements for Geomembranes

Trial Seam Testing Topic	Trial Seam Testing Requirements
Trial Seam Testing	Each day, prior to commencing field seaming: ▪ Create test seams on fragment pieces of geomembrane to verify that seaming conditions are adequate. ○ Have every individual employee preforming seamer activities make at least one test seam each day they perform field seaming. ▪ Test the welder and the machine for each new trial seam when using extrusion welding. ▪ Test the machine only for each new trial seam when using fusion welding (since the machine is not operator dependent).
Trial Seam Test Criteria	▪ Make trial seams least 3 feet long by 1 foot wide. ▪ Die-cut four (six when possible if using dual track fusion welding) adjoining 1-inch-wide specimens from the test seam sample. ○ Test two specimens in the field for shear. ○ Test two for peel (four when possible if testing both inner and outer welds for dual track fusion welding). ▪ Ensure that the extensometer testing apparatus used for peel and shear tests has an updated calibration certificate that is traceable to National Bureau of Standards prior to the start of testing.
Trial Seam Failure Criteria	▪ Trial seam failure criteria are the same as for destructive seam testing. ▪ Test specimens exhibit acceptable break codes and properties specified in the most current version of GRI-GM19a Standard Specification. ▪ Elongation measurements are not required for trial seams. ▪ For failed test specimens: ○ If one test specimen fails, repeat the trial seam. ○ If the repeated trial seam also fails, then construct and test two more trial seams. ○ Repeat this process until all test seams pass. ▪ Do not begin field welding, for the machine or welder (if applicable), until all test seams pass.
Additional Trial Seams	Make additional trial seams: ▪ At the beginning of each seaming period for each seaming apparatus used that day (the beginning of each seaming period is considered to be the morning, and immediately after a break); ▪ For each occurrence of significantly different environmental conditions (such as temperature, humidity, dust, etc.); ▪ Any time the machine is turned off for more than 30 minutes; and ▪ When seaming different geomembrane (e.g. tie-ins and smooth to textured).

Table III-10-B-4. Geomembrane Destructive Testing Requirements

Destructive Testing Topic	Destructive Testing Requirements
Testing Frequency	Alternative Testing Frequency: ▪ Use (1) the method of attributes and (2) control charts to determine the testing frequencies for destructive seam testing. ▪ The procedures should follow GRI-GM14 and GRI-GM20 and must be submitted and approved by the ED prior to implementation. ▪ Standard Testing Frequency: ○ Take destructive test samples of field seams at a minimum of one stratified location for every 500 linear feet or major fraction thereof. ○ Take destructive test samples of repaired geomembrane leaks and seams at a frequency of one stratified test every 500 linear feet or major fraction thereof. Individual repairs of leaks or failed seams, which are greater than 10 feet, shall count toward the 500 linear foot testing interval. ○ Conduct, at a minimum, a destructive test for each welding machine used for seaming or repairs. ○ Take additional destructive test samples if deemed necessary by the GP or QET.
Test Specimens	▪ Maintain a sufficient amount of the seam to conduct field testing, independent laboratory testing, and to retest the seam when necessary (archiving). ▪ Include at least two peel test specimens (four when possible for testing both tracks on dual track fusion welded seams) and two shear test specimens for field testing.
Repairs	Destructive seam testing locations shall be repaired by installing a cap strip over the entire length of failed seam. The cap strip must be of the same liner material and extend at least 6 inches in all directions over the failed seam. The cap strip shall be completely seamed by extrusion welding to the parent geomembrane. Test capped sections non-destructively except as specified above in "Testing Frequency."
Passing Criteria	▪ Meet the break codes, strength, elongation, and percent peel separation as described in GRI-GM19a Standard Specification for all laboratory-tested specimens from a destructive test location. ▪ Meet the break codes and strengths as described in GRI-GM19a Standard Specification for field-tested specimens.
Retesting	If a destructive test fails: ▪ Conduct additional destructive test at least 10 feet on both sides of the failed destructive test. ○ If any of these additional destructive tests fail, repeat the sampling and testing process until the failed seam is located by passing destructive tests. ▪ Cap any failed seam between passing destructive tests. Alternatively, all seams done by the welder or machine within the time period (between passing destructive tests or trial welds) represented by the failed destructive test may be capped.

Table III-10-B-5. Geomembrane Non-Destructive Testing Requirements

Non-Destructive Testing Topic	Non-Destructive Testing Requirements
Non-Destructive Testing	▪ Perform continuous non-destructive testing (by the installer) on all factory and field seams. ▪ Observe all non-destructive testing (GP or QET). ▪ Conduct: ○ Air-pressure testing for dual-track fusion welds. ○ Vacuum-box testing for all extrusion welds. ○ Request prior approval from the Executive Director for all other types of non-destructive testing. ▪ Isolate all indicated leaks and repair leaks in accordance with the FCQCP.
Air Pressure Testing	1. Seal the ends of the air channel of the dual-track fusion weld and pressurize to approximately 30 psi for HDPE geomembrane. 2. Shut off air pump (after pressure of 30 psi is reached). 3. Wait 5 minutes. 4. Observe the air pressure. Understanding your results: ▪ A loss of <4 psi is acceptable if it is determined that the air channel is not blocked between the sealed ends. ▪ A loss ≥4 psi indicates the presence of a seam leak that must then be isolated and repaired.
Vacuum Box Testing	A suction value of approximately 4 to 8 psi must be applied to all extrusion welded seams that can be tested in this manner. Examples of extrusion welded seams that do not easily lend themselves to vacuum testing would be around boots, appurtenances, etc. The seam must be observed for leaks for at least 10 seconds while subjected to this vacuum.

Table III-10-B-6. Standard Tests for Geonet and Geocomposite Material

Test Category	Product	Test [a]	Test Method [b]	Testing Frequency
Manufacturer	Resin (geonet)	Density	ASTM D792 or D1505	One test per 100,000 ft^2 and every resin lot
		Melt Flow Index	ASTM D1238	
	Geonet	Density	ASTM D792 or D1505	
		Mass/Area	ASTM D5261	
		Thickness	ASTM D5199	
		Compression	ASTM D1621	
		Transmissivity	ASTM D4716	
	Geotextile [c]	Mass/Area	ASTM D5261	
		Grab Tensile Strength	ASTM D4632	
		Trapezoidal Tear Strength	ASTM D4533	
		Burst Strength	ASTM D3786	
		Puncture Strength	ASTM D4833	
		Thickness	ASTM D5199	
		Apparent Opening Size	ASTM D4751	
		Permittivity	ASTM D4491	
QA Laboratory	Geocomposite Product [c]	Transmissivity	ASTM D4716	One test per product type
		Interface Shear or Ply Adhesion	ASTM D5321 or D413	One test per project

[a] Adapted from EPA/600/R-93/182, September 1993, and *Designing with Geosynthetics*, 6th ed.

[b] The GP may propose equivalent or better tests.

[c] Only required for geocomposite materials.

Part IV Application for Municipal Solid Waste Facility: Site Operating Plan

WST Landfill

Reeves County, Texas

Prepared for

Operator: West Sun Tex, LLC
Application No.: 2431
Revision: 2

Prepared by

DBS&A
a Geo-Logic Company

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July 2026

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Table of Contents

1. Introduction [30 TAC 330.65 and 330.121] 1
1.1 General 1
1.2 Site Description 2
1.3 Waste Management Units 2
1.4 Texas Pollutant Discharge Elimination System 2
2. Pre-Operation Notice [30 TAC 330.123] 3
3. Recordkeeping and Reporting [30 TAC 330.125] 3
4. Site Operating Plan [30 TAC 330.127] 6
4.1 Personnel [30 TAC 330.127(1)] 6
4.1.1 Functions and Minimum Qualifications of Key Personnel 6
4.1.2 Landfill Staffing 8
4.2 Equipment [30 TAC 330.127(2)] 8
4.3 General Operating Requirements [30 TAC 330.127(3)] 9
4.4 Personnel Training [30 TAC 330.127(4)] 11
4.5 Prohibited Waste Detection and Prevention 330.127(5) 13
4.5.1 Prohibited Waste 13
4.5.2 Prohibited Waste Detection Measures 15
4.5.3 Random Inspection of Incoming Loads 16
4.5.4 Waste Inspection Procedures 16
5. Fire Protection Plan [30 TAC 330.129] 18
5.1 General Rules for Fires 18
5.2 Landfill Fires 19
5.2.1 Fires at the Citizens' Collection Station 20
5.2.2 Demonstration of Adequate Fire Cover 20
6. Access Control [30 TAC 330.131] 21
6.1 Boundary Posts/Fencing 22
7. Unloading of Waste [30 TAC 330.133] 23
7.1 MSW or Class 1 Active Areas 23
7.2 Special Requirements for Industrial Waste 24
7.3 Citizens' Collection Station 24
8. Operating Hours [30 TAC 330.135] 25
9. Site Sign [30 TAC 330.137] 25
10. Windblown Waste and Litter [30 TAC 330.139] 26

10.1 Litter Control [30 TAC 330.139] 26
11. Easements and Buffer Zones [30 TAC 330.141] 27
12. Landfill Markers and Benchmark [30 TAC 330.143] 28
13. Materials Along the Route to the Site [30 TAC 330.145] 29
14. Disposal of Large Items [30 TAC 330.147] 29
15. Odor Management Plan [30 TAC 330.149] 30
16. Disease Vector Control [30 TAC 330.151] 31
17. Site Access Roads [30 TAC 330.153] 32
18. Salvaging and Scavenging [30 TAC 330.155] 33
18.1 Scavenging 33
18.2 Salvaging, Recycling, and Temporary Storage 33
19. Endangered Species Protection [30 TAC 330.157] 34
20. Landfill Gas Control [30 TAC 330.159] 36
21. Oil, Gas, and Water Wells [30 TAC 330.161] 36
22. Compaction [30 TAC 330.163] 37
23. Landfill Cover [30 TAC 330.165] 37
23.1 Daily Cover 38
23.2 Alternate Daily Cover 38
23.3 Intermediate Cover 39
23.4 Final Cover 39
23.5 Cover Inspections 40
24. Ponded Water [30 TAC 330.167] 40
25. Enclosed Containers or Vehicles at Type IV Landfills [30 TAC 330.169] 41
26. Disposal of Special Wastes [30 TAC 330.171] 41
26.1 Petroleum-Contaminated Soil 42
26.2 Untreated Medical Waste 42
26.3 Dead Animals or Slaughterhouse Waste [30 TAC 330.171(c)(2)] 42
26.4 Empty Containers used for Pesticides, Herbicides, Fungicides, or Rodenticides [30 TAC 330.171(c)(5)] 43
26.5 Municipal Hazardous Waste from Very Small Quantity Generators [30 TAC 330.171(c)(6)] 43
26.6 Sludge, Grease, and Grit Trap Waste and Liquid Waste from Municipal Sources [30 TAC 330.171(c)(7)] 44
26.7 Household-Generated Used Oil Filters [30 TAC 330.171(d)] 44

26.8 Soil Contaminated by Petroleum Products or Other Constituents [30 TAC 330.171(b)(4)] 45
27. Disposal of Industrial Wastes [30 TAC 330.173] 45
27.1 Sludge, Liquid Waste, Grease Trap Waste, and Grit Trap Waste from Commercial or Industrial Generators 46
27.2 Class 1 Non-Hazardous Industrial Solid Waste (excluding asbestos-containing materials) [30 TAC 330.173(e)] 46
27.3 Class 2 Non-Hazardous Industrial Solid Waste [30 TAC 330.173(i)] 47
27.4 Class 3 Non-Hazardous Industrial Solid Waste [30 TAC 330.173(j)] 47
28. Visual Screening of Deposited Waste [30 TAC 330.175] 48
29. Leachate and Gas Condensate Recirculation [30 TAC 330.177] 48
30. Operational Requirements for Class 1 Industrial Solid Waste [30 TAC 330.179] 48
30.1 Facility Inspection and Maintenance Schedule [30 TAC 330.179(a)(1) and 330.585] 48
30.2 Personnel Training [30 TAC 330.179(a)(2) and 335.586] 49
30.3 Waste Analysis [30 TAC 330.179(a)(3) and 335.587] 49
30.4 Ignitable, Reactive, or Incompatible Wastes [30 TAC 330.179(a)(4) and 335.588] 50
30.5 Contingency Plan [30 TAC 330.179(a)(5) and 335.589] 51
30.6 Whole or Scrap Tires 51
30.7 Facility-Generated Wastes [30 TAC 330.205(a)] 52

List of Figures

IV-1 Organizational Chart

List of Tables

IV-1 Recordkeeping Requirements 4
IV-2 List of Equipment and Uses for Landfill Operations 9
IV-3 Site Inspection and Maintenance Activities 10
IV-4 Training Requirements by Job Position 13
IV-5 Adequate Soil Volume for Fire Contingency at the Working Face 20
IV-6 Access Control Breach Repair and Notification 22

List of Attachments

IV-1 Contingency Plan
IV-2 Waste Inspection Form
IV-3 Daily Facility Inspection Form

List of Acronyms and Abbreviations

ADC	alternative daily cover
CCS	citizens' collection station
CESQG	conditionally exempt small quantity generator
CFC	chlorinated fluorocarbon
CFR	Code of Federal Regulations
CR	County Road
DOT	Department of Transportation
EPA	U.S. Environmental Protection Agency
GLER	geomembrane liner evaluation report
LCWP	leachate and contaminated water plan
MBTA	Migratory Bird Treaty Act
mph	miles per hour
msl	above mean sea level
MSW	municipal solid waste
NOI	notice of intent
PCBs	polychlorinated biphenyls
PCS	petroleum-contaminated soil
POTW	publicly owned treatment works
PPE	personal protective equipment
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
ROW	right-of-way
RRC	Railroad Commission of Texas
SLER	soil liner evaluation report
SOP	Site Operating Plan
SOR	site operating record
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
TPWD	Texas Parks and Wildlife Department
TPDES	Texas Pollutant Discharge Elimination System
TPH	total petroleum hydrocarbons
USFWS	U.S. Fish and Wildlife Service
VSQG	very small quantity generator
WST	West Sun Tex, LLC

1. Introduction [30 TAC 330.65 and 330.121]

1.1 General

This site operating plan (SOP) has been prepared for WST Landfill, a municipal solid waste facility owned and operated by West Sun Tex, LLC (WST) in Reeves County, Texas. This plan is included as Part IV of WST's Type I municipal solid waste (MSW) permit on-file with the Texas Commission on Environmental Quality (TCEQ). This plan has been created to meet and/or exceed the TCEQ requirements as detailed in 30 TAC 330, and to ensure the protection of public health and safety. The outline of this plan generally follows 30 TAC 330 Subchapters D and E as applicable. Any deviation from the permit and incorporated plans or other related documents associated with the permit is a violation of 30 TAC 330.

This SOP, along with all other plans required by 30 TAC 330, shall become operational requirements and shall be considered a part of the site operating record (SOR) of the facility. This document, the permit, and the permit application will be kept on-site during the active life of the facility and through the post-closure care maintenance period. The SOR will be kept at the scale house at the entrance to the facility.

This SOP provides provisions for management and operating personnel regarding the operation of WST Landfill. This plan also provides guidelines for maintaining compliance with engineering designs and applicable regulatory requirements of TCEQ. Generally, this SOP contains descriptions of how the applicable items required in 30 TAC Chapter 330, Subchapter D (relating to Operational Standards for Municipal Solid Waste Landfill Facilities) and Subchapter E (relating to Operational Standards for Municipal Solid Storage and Processing Units Waste Landfill Facilities) shall be implemented.

The anticipated waste generation area for the WST Landfill includes areas within about 50 miles of the facility. This area generally includes portions of six adjacent counties—Culberson, Jeff Davis, Loving, Pecos, Reeves, and Ward. This is not regarded as a limiting parameter to the facility's permit and future areas that may use the facility will depend on many factors.

WST Landfill does not have an environmental management system such as that described in 30 TAC 90.

1.2 Site Description

WST Landfill is located in north-central Reeves County at the intersection of County Road (CR) 4087 and CR 415, in Section 46, Block 4, H. & G.N. RR Co. Survey. The facility is in an area with flat topography that slopes gently to the east and is dominated by desert scrub and grass vegetation.

In April 2016, WST obtained a permit to receive, store, handle, and treat certain non-hazardous oil and gas wastes from the Railroad Commission of Texas (RRC) on a 440-acre parcel of land that currently includes the footprint of the MSW landfill. This oil and gas waste facility, called the Reeves County Commercial Disposal and Reclamation Facility, will be reduced in footprint and replaced in part by WST Landfill once permitted by TCEQ. Land use in the vicinity of the site is for agriculture and oil and gas development, rural residences, and undeveloped land. The WST property has been used for agricultural production in the past, but has been out of cultivation for over 20 years.

1.3 Waste Management Units

Waste management units to be used at the WST Landfill include the following:

- Type 1 MSW landfill that accepts Class 1, 2, or 3 non-hazardous industrial waste.
- Citizens' collection station (CCS) located near the facility entrance and scale house to reduce traffic within the landfill and at the working face.
- A storage area for large items, white goods, and whole tires.
- A leachate, contaminated water, and gas condensate storage facility consisting of storage tanks and/or evaporation pond.

As required by 30 TAC 330.65(c), the recirculation of leachate and gas condensate will not be performed at WST Landfill and no related provisions have been included.

1.4 Texas Pollutant Discharge Elimination System

WST Landfill will obtain coverage under the Texas Pollutant Discharge Elimination System (TPDES) if needed. WST will file a Notice of Intent (NOI) for coverage under General Permit TXR 050000 when appropriate. WST may arrange for transportation and disposal of any contaminated liquid to a publicly owned treatment works (POTW) provided that the wastewater meets the POTW requirements. Local pretreatment or discharge authorizations may be required

from the POTW facilities that accept these materials, and these authorizations will be obtained prior to initiating that method of disposal. Copies of such authorizations will be kept in the SOR.

2. Pre-Operation Notice [30 TAC 330.123]

For each subsequent disposal area constructed at WST Landfill after the initial site construction described in Attachment III-2, the facility shall provide written notice to TCEQ in the form of a geomembrane liner evaluation report (GLER) and/or soil liner evaluation report (SLER) concerning the construction and lining as required by 30 TAC 330.341. WST will allow 14 days for TCEQ to review the report and provide a verbal or written response prior to the placement of waste, as required by 30 TAC 330.123. If, by the end of the fourteenth day following TCEQ's receipt of the report, no comments are received, WST may begin placing waste.

3. Recordkeeping and Reporting [30 TAC 330.125]

WST will maintain a compilation of site documents, including the permit, the approved site development plan, this SOP, the final closure and post-closure maintenance plans, the landfill gas management plan, and any other plans required by permit, along with all issued modifications and any temporary authorizations granted. Files of inspections, monitoring results, activity logs, and notifications sent to regulatory authorities, documents associated with special waste and prohibited waste, quarterly and annual waste acceptance rates, copies of correspondence and responses related to facility operation, and copies of staff training requirements and certification of current completion will also be maintained.

If the annual waste acceptance rate exceeds the rate estimated in the landfill permit application and the waste increase is not due to a temporary occurrence, an application to modify the permit application will be filed, including the revised estimated waste acceptance rate, in accordance with 30 TAC 305.70(k). The application will be filed within 90 days of the exceedance, as established by the sum of the previous four quarterly waste acceptance rate summary reports.

See Table IV-1 for a listing of records to be organized and maintained at the facility as part of the SOR.

Table IV-1. Recordkeeping Requirements

Requirement	Regulation(s)
All location restriction demonstrations	30 TAC 330.125(b)(1)
Inspection records, training procedures, and notification procedures related to excluding prohibited waste	30 TAC 330.125(b)(2)
Results from gas monitoring and any remediation plans relating to explosive and other gases	30 TAC 330.125(b)(3), 330.371(c)
Design documentation for the placement of leachate or gas condensate in a landfill – Not applicable for WST Landfill	30 TAC 330.125(b)(4)
Demonstrations, certifications, findings, monitoring, testing, and analytical data relating to groundwater monitoring and corrective or remedial action	30 TAC 330.125(b)(5)
Closure and post-closure care plans and any monitoring, testing, or analytical data relating to post-closure requirements	30 TAC 330.125(b)(6)
Cost estimates and financial assurance documentation relating to closure and post-closure	30 TAC 330.125(b)(7)
Small Community exemption demonstration - Not applicable for WST Landfill	30 TAC 330.125(b)(8)
Correspondence and responses relating to the operation of the facility, modifications to the permit, approvals, and other matters pertaining to technical assistance	30 TAC 330.125(b)(9)
Documents, manifests, shipping documents, trip tickets, etc., involving special waste	30 TAC 330.125(b)(10), 330.219(b)(6)
Records of the application rate and total amount ADC applied to the working face on those days in which ADC is applied	30 TAC 330.125(b)(11)
Any other documents required by the permit or the TCEQ	30 TAC 330.125(b)(12)
Documents related to the annual waste acceptance rate, including quarterly and annual solid waste summary reports	30 TAC 330.125(h)
A record of any operating hours used outside of the standard hours	30 TAC 330.135(d)
A record of unauthorized waste removal from the landfill	30 TAC 330.133(b)
Cover application record	30 TAC 330.165(h)
Inspection of daily cover	30 TAC 330.165(h)
Inspection of intermediate cover	30 TAC 330.165(h)
Inspection of final cover	30 TAC 330.165(h)
Access control inspections (ex. perimeter fences, berms, and gates)	30 TAC 330.131
Personal training requirements and records and operating licenses	30 TAC 335.586(d)-(e), 125(e) (f)
Record of any incident which requires implementing a contingency plan	30 TAC 335.589(f)(11)

Operating personnel will also use log books and schedules to document compliance. The following information will also be kept, maintained, and filed as part of the SOR:

- Access control inspection.
- Windblown waste and litter control operations
- Management and disposal of large items and whole tires
- Dust control efforts

The SOR will be maintained at the entrance scale house for the facility, which is located prior to entering the MSW facility boundary but on property owned by WST. Records will be maintained for the life of the facility and any post-closure care period.

The SOR will be updated within seven working days of completing an event or receiving analytical data. All information contained in the SOR will be furnished upon request to TCEQ and will be made available at all reasonable times for inspection. The executive director may set an alternative schedule for recordkeeping and notification per 30 TAC 330.125(h).

Employee training will be provided to all personnel within 6 months of hiring or assignment to a position that requires training. Training refreshers shall be conducted on an annual basis per 30 TAC 335.586. This SOP shall be available for review by employees involved in the daily operations of the facility and to other parties and regulatory agencies as requested. Documentation of training will be kept in the SOR along with any operator licenses issued in accordance with Chapter 30, Subchapter F of this title (relating to Municipal Solid Waste Facility Supervisors).

If modifications to the operational procedures described in this SOP become necessary, regulatory requirements will be assessed to verify that new or modified procedures satisfy compliance criteria. If necessary, a modification to the site permit will be requested.

Per 30 TAC 330.673 and 330.675, WST will maintain records of waste acceptance and will prepare quarterly and annual solid waste summary reports and place them in the facility's SOR. These reports will be completed using forms provided by TCEQ. A copy of the quarterly fee report will be submitted to TCEQ as required under 30 TAC 330.675.

The amount of waste received will be reported in tons. In the unlikely event that the received waste is not weighed on scales (e.g., if the scale being temporarily out-of-service), the following will be considered. Conversion factors to be used for waste transport vehicles relative to waste

volume and weight in vehicles shall be as follows unless site-specific data are documented for use:

- 1 cubic yard = 400 pounds (no compaction)
- 1 cubic yard = 667 pounds (medium compaction)
- 1 cubic yard = 800 pounds (heavy compaction)

For industrial waste (non-hazardous), a reasonable conversion factor will be used based on site-specific data developed by WST.

4. Site Operating Plan [30 TAC 330.127]

WST Landfill will be operated according to this SOP, the site development plan, the final closure plan, the post-closure care plan, the landfill gas management plan, the groundwater sampling and analysis plan, and any other required plan or other related document. WST will not conduct operations at the landfill contrary to any of the permit documents without revision and prior approval from TCEQ or knowingly in violation of any relevant regulation.

The SOP and other permit documents will be retained during the active life of the facility and throughout the post-closure care period. The following subsections provide additional details of the WST Landfill operating requirements as required by 30 TAC 330.127(3).

4.1 Personnel [30 TAC 330.127(1)]

Landfill management determines the staffing and training needed to ensure that the operation of the landfill is efficient and compliant. Landfill personnel may include, but are not limited to, General Manager, Site Operations Manager, Equipment Operators, Mechanics, Cashiers/ Customer Service Representatives, laborers, and special waste, environmental, and compliance support personnel. Personnel training records are maintained as part of the SOR. An organizational chart is provided as Figure IV-1.

4.1.1 Functions and Minimum Qualifications of Key Personnel

4.1.1.1 General Manager

4.1.1.1.1 Functions

The General Manager shall be a Class A licensed facility supervisor per 30 TAC Chapter 30, Subchapter F. The General Manager is responsible for daily operations at WST Landfill and

verifies that it is operating in accordance with the SOP and TCEQ regulations. They will ensure its successful financial operation, compliance with TCEQ requirements, fulfillment of payroll, and retainment of adequate staffing. In addition, the General Manager shall serve as the emergency coordinator during emergencies, contingencies, or regulatory issues with governing agencies. They will also monitor facility operations and personnel and identify any threats to public safety or the environment. If not on the site, the General Manager shall delegate responsibilities (typically to the Site Operations Manager).

4.1.1.1.2 Qualifications

The General Manager shall have familiarity with TCEQ regulations and landfill equipment and possess a Class A MSW Operator license.

4.1.1.2 Site Operations Manager

4.1.1.2.1 Functions

The Site Operations Manager shall generally be responsible for all activities on the working face and other tasks as assigned by the General Manager. They shall ensure that all personnel are properly trained and operate in accordance with this SOP and applicable TCEQ requirements. The Site Operations Manager shall continually monitor for any threats to public safety or the environment and supervise Equipment Operators. They shall be capable of assuming the responsibilities of the General Manager or Equipment Operators when needed.

4.1.1.2.2 Qualifications

The Site Operations Manager shall have familiarity with TCEQ regulations and landfill equipment and possess a Class A MSW Operator license. They shall maintain current training in landfill operations.

4.1.1.3 Equipment Operators

4.1.1.3.1 Functions

Equipment Operators shall operate on-site machinery and ensure waste compaction, placement of cover, emergency response, and facility maintenance while monitoring for any threats to public safety or the environment. Equipment Operators shall visually inspect loads as they are deposited for prohibited and hazardous wastes to ensure compliance with the waste acceptance rules outlined in this SOP. They shall be adequately trained to detect such wastes. Equipment Operators shall also perform facility maintenance activities as assigned by the General Manager and/or Site Operations Manager.

4.1.1.3.2 Qualifications

Equipment Operators shall have at least one year of experience with operating machinery relevant to landfill activities, shall maintain current training in landfill operations, and shall demonstrate proficiency in the operation of all on-site equipment.

4.1.1.4 Mechanics

4.1.1.4.1 Functions

Mechanics will maintain and repair on-site equipment. Responsibilities may overlap with those of Equipment Operators. Mechanic duties may be provided by an outside company.

4.1.1.4.2 Qualifications

Mechanics will maintain current training in landfill operations and be proficient in the repair, maintenance, and operation of all on-site equipment.

4.1.1.5 Cashiers/Customer Service Representatives

4.1.1.5.1 Functions

At least one Cashier/Customer Service Representative will be stationed at the scale house during landfill operating hours. They will be responsible for recording the weight of arriving loads, assessing fees, and collecting payments. They will also oversee customer service interactions, explain landfill policies and procedures to the public, screen for prohibited and hazardous wastes and be trained in the detection of such wastes, direct incoming vehicles to the working face, and monitor for threats to public safety or the environment.

4.1.1.5.2 Qualifications

Cashiers/Customer Service Representatives will undergo mandatory WST Landfill training.

4.1.2 Landfill Staffing

During operating hours, sufficient staff will be present on-site to implement all aspects of the SOP and applicable TCEQ requirements. Minimum staff on-site will be two people—a cashier and a Site Operator/equipment operator—but additional personnel may be assigned to implement landfill operations at the discretion of the General Manager.

4.2 Equipment [30 TAC 330.127(2)]

The types of equipment that will typically be available at WST Landfill are listed in Table IV-2. The minimum number of each type of equipment may vary with the waste acceptance rate; however, the anticipated initial waste acceptance rate of 61,600 tons per year is well below the

equipment's capacity. If the actual waste acceptance rate exceeds this rate, the equipment list will be reevaluated and updated as necessary. Additional or different units of equipment may be provided as necessary to enhance operational efficiency.

Table IV-2. List of Equipment and Uses for Landfill Operations

Equipment Type	Number (Minimum)	Minimum Size	Function
Dozer - track type	1	Caterpillar D8 or equivalent	Spreading and compacting waste and cover, excavating cover material, rough grading of cover, and road and ditch maintenance.
Compactor	1	Caterpillar 826 or equivalent	Spreading and compacting waste and cover soil and miscellaneous soil compaction.
Water Truck	1	1,000 gallons or larger	Dust control, firefighting support, and moisture conditioning soil to facilitate compaction.
Off road Truck	See note	Caterpillar 750 or equivalent	Hauling cover soil and site maintenance
Wheel Tractor–Scraper	See note	Caterpillar 623 or equivalent	Excavating and hauling cover material and miscellaneous soil borrow
Excavator	See note	Caterpillar 330 B or equivalent	Soil excavation, loading trucks, and drainage maintenance.

Note: The landfill operations will require either a wheel tractor–scraper or an excavator and truck for cover soil operations.

Should there be longer periods of equipment breakdown or extended maintenance required, temporary backup equipment may be needed. It will be obtained from rental agencies in the region if the waste acceptance rate cannot be accommodated by the site's existing serviceable equipment.

4.3 General Operating Requirements [30 TAC 330.127(3)]

Table IV-3 outlines general requirements for site inspection and maintenance at WST Landfill. The items in the list will be completed using on-site labor and equipment. Documentation of the inspection and maintenance will be kept in the SOR.

Any item that is determined to need attention will be presented to the General Manager or Site Operations Manager for appropriate action. Records of inspections will be maintained in the SOR. The landfill will maintain inspection logs that include the date and time of inspection, inspector's name, observations made, and the date and nature of repairs.

Table IV-3. Site Inspection and Maintenance Activities

Item	Task	Frequency
Fence/gates	Inspect any perimeter fence and gates for damage. Make repairs if necessary.	Weekly
Site signs	Inspect all site signs for damage, color coding, general location, and accuracy of posted information. Correct or replace damaged markers within 15 days of discovery.	Monthly
Windblown waste	Inspect the working face area, any wind fences, all access roads, entrance area, storage areas and perimeter fence(s) for fugitive trash. Clean up the items as necessary and return waste to the working face.	Daily when the site is accepting waste
Waste spilled on route(s) to site	On days the facility accepts waste, inspect entrance areas and all roads used to access the facility at least 2 miles from the site entrances for waste spilled along and within the right-of-way. Clean up as necessary and return waste to the working face.	Daily when the site is accepting waste
Working Face(s)	Waste disposal area size is minimized, the lifts sufficiently compacted and other appropriate waste handling procedures are followed. Run-on/runoff controls prevent water from entering or leaving the working area.	Daily when the site is accepting waste
Landfill markers	Inspect landfill markers for damage, color-coding, and general location. Correct or replace any markers needed within 15 days of any determination.	Monthly
Site access road	Inspect site access road(s) for damage (i.e. vehicle traffic, erosion, excess mud accumulation). Maintain for safe and efficient access, including dust control as needed.	Daily when the site is accepting waste
Dust control	Spray haul roads with water to control and reduce particulate matter emissions	Daily (during dry weather)
Ponds and drainage channels	Inspect on-site drainage channels and ponds. Maintain/repair as needed for proper function.	Monthly and within 72 hours of rainfall of 0.5 inch or more in 24 hours
Odor control	Inspect site for potential odors at property line. If present, determine source and possible remedy.	Daily when the site is accepting waste
Daily cover	Inspect cover for proper placement, thickness, and compaction. If ADC used, document application rate and coverage.	Daily - Class 1 and MSW areas
Fire Control Stockpile	Inspect working face area for sufficient soil stockpile for covering in the event of a fire at each working face	Daily when facility is in operation

Item	Task	Frequency
Intermediate cover	Inspect cover for proper placement and thickness, erosion, compaction, exposed waste, or other contamination.	Monthly and within 72 hours of rainfall of 0.5 inch or more in 24 hours
Final cover	Inspect for proper placement, thickness, compaction, slope, settlement, erosion and exposed waste, or other contamination. Inspection and maintenance will continue throughout the post-closure care period.	Semiannual and within 72 hours of rainfall of 0.5 inch or more in 24 hours
Ponded water	Inspect site for ponded water over waste. Fill or drain areas as needed.	Monthly and within 72 hours of rainfall event 0.5 inch or more
Disease Vector Control	Inspect landfill facility for insects and rodent populations and use appropriate control measures where needed.	Monthly
Leachate	Measure depth of leachate in sump(s) and observe for outbreaks in above grade fill areas. Verify that pumps and measuring equipment are working properly.	Quarterly
Gas collection and control system	Inspect and verify system is properly operated and maintained.	Monthly when system is active

4.4 Personnel Training [30 TAC 330.127(4)]

WST Landfill will follow all applicable training requirements as specified under 30 TAC 335.586 and 30 TAC 330. Facility personnel will successfully complete a program of classroom instruction and/or on-the-job training as provided by WST. The training will specify how to perform the job duties, the applicable requirements of the TCEQ, any site-specific health and safety plan, and all other applicable rules. The General Manager or Site Operations Manager will verify that this instruction program adequately covers the job's description. All instructions will be directed by a person trained in proper waste management procedures, and will include instructions on waste management procedures (including contingency plan implementation) relevant to the individual positions.

Landfill personnel will be trained on the following operational, contingency, and emergency procedures within six months after the date of their employment, assignment to the landfill or to a new position. No employee will work in an unsupervised position until they have completed the training requirements. All employees will maintain current training in landfill operations and will have refreshers of their initial training at least once per year. Training requirements will be reviewed by the General Manager or Site Operations Manager during this refresher to verify that

the program continues to be adequate for the position. All records of employee training will be retained in the SOR.

4.4.1.1 Emergency Procedures

Appropriate personnel will be trained on emergency procedures for the following events, which are further detailed in the contingency plan (Attachment IV-1):

- Response to fires and/or explosions at the landfill
- Release of toxic/hazardous materials
- Communications and alarm systems
- Using, inspecting, repairing, and replacing facility emergency and monitoring equipment
- Response to groundwater contamination incidents
- Shutdown of landfill operations
- Personal protection and protective equipment (including respirator fit tests, if required)
- Spill response

4.4.1.2 Operational Procedures

Personnel will be trained in the following operational procedures where applicable to the position:

- Safety
- Accepted waste classifications
- Prohibited waste detection and management
- Random inspections
- Special waste disposal and potential health effects
- Unloading of waste
- Landfill cover requirements
- Methane gas properties and safety
- Litter control
- Disease vector control
- Equipment operation and maintenance
- Paperwork, manifesting, and notification requirements

Table IV-4 outlines the applicable training requirements by landfill position. These requirements may be updated or expanded as needed to meet ongoing operational requirements.

Table IV-4. Training Requirements by Job Position

Position	Facility Orientation	Operations	Endangered Species	Job-Specific Safety	Fire Prevention/Control	Waste Load Inspection	Random Inspections	Haz Waste Identification	Prohibited Wastes	SPCC	Emergency Response	TCEQ MSW License	Equipment	Litter Control	SWPPP
General Manager/Site Operations Manager	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Heavy Equipment Operators	X	X	X	X	X	X		X	X	X	X		X	X	
Mechanic	X			X	X					X	X				
Laborer	X	X		X	X									X	
Cashier/Customer Service Representative	X	X		X	X	X	X	X	X		X			X	

4.5 Prohibited Waste Detection and Prevention 330.127(5)

Landfill personnel that routinely perform waste disposal duties will be trained to recognize prohibited wastes. This training will be provided annually and the completion will be documented in the SOR. A sign will be posted prominently at the facility entrance warning against the disposal of prohibited waste. Waste delivered to the landfill will be observed by trained landfill staff for the presence of prohibited wastes.

If a landfill staff member observes prohibited waste prior to or during unloading, the load will be rejected and removed by the transporter or generator and the Waste Inspection Report (Attachment IV-2) will be completed. If the waste is suspected to be hazardous or containing polychlorinated biphenyls (PCBs), WST will notify TCEQ and any local pollution agency that has requested to be notified.

4.5.1 Prohibited Waste

Waste types that are prohibited and will not be accepted into the landfill include but are not limited to hazardous wastes, free liquids or waste containing a large quantity of free liquids, and

radioactive waste. A person that violates the provisions of this section may be subject to the criminal and/or civil penalties found in the Texas Health and Safety Code or other presiding jurisdictions. The following wastes are prohibited from disposal at the WST Landfill and will not be intentionally or knowingly accepted:

- Any waste not authorized for disposal, including those for which "No" has been indicated on the waste acceptance plan form.
- Untreated medical waste unless authorized in writing by the TCEQ to protect human health and the environment from the effects of a natural or manmade disaster [30 TAC 330.171(c)(1)].
- Lead-acid storage batteries [30 TAC 330.15(e)(1)].
- Used motor vehicle oil [30 TAC 330.15(e)(2)].
- Used oil filters from internal combustion engines except for used oil filters from households that have been processed as described in this SOP [30 TAC 330.15(e)(3)].
- Whole used or scrap tires unless processed in a manner acceptable to TCEQ [30 TAC 330.15(e)(4)].
- Refrigerators, freezers, air conditioners, and any other items containing chlorinated fluorocarbons (CFCs) that have not been handled in accordance with 40 CFR 82.156 [30 TAC 330.15(e)(5)].
- Bulk or non-containerized liquid waste unless the waste is household waste that has been tested in accordance with Test Method 9095 (Paint Filter Liquids Test) and is certified to contain no free liquids [30 TAC 330.15(e)(6)].
- Containers or drums holding liquid waste, unless (1) the container is similar in size to those found in household waste, (2) the container is designated to hold liquids for other than storage, or (3) the waste is household waste [30 TAC 330.15(e)(6)].
- Regulated hazardous waste [40 CFR 261.3] that was not generated by a Resource Conservation and Recovery Act (RCRA) conditionally exempt small quantity generator (CESQG) or a very small quantity generator (VSQG).
- PCB wastes [40 CFR 761], unless authorized by the U.S. Environmental Protection Agency (EPA) [30 TAC 330.15(e)(8)].

- Tanks, drums, or containers used for shipping or storing any material that has been listed as a hazardous constituent in 40 CFR 261, Appendix VIII but has not been listed as a commercial chemical product in 40 CFR 261.33(e) or (f).
- Radioactive materials, except as authorized in 30 TAC 336 or that are subject to an exemption of the Department of State Health Services [30 TAC 330.15(e)(9)].

4.5.2 Prohibited Waste Detection Measures

The following actions will be employed at WST Landfill to detect and prevent the disposal of prohibited waste:

- Inform customers of wastes prohibited at the site by posting signs at entrance.
- Provide customers with a written list of prohibited wastes.
- Inform the operators of transfer stations that deliver waste to facility of prohibited wastes.
- Personnel training activities.
- Random inspections of incoming loads as discussed below.
- Notification of TCEQ of any incident involving regulated hazardous or PCB wastes at landfill. The facility will also notify any local pollution agency with jurisdiction that has requested to be notified.
- Remediation of any regulated hazardous or PCB wastes discovered at the site.

In addition to training listed elsewhere, personnel involved in solid waste disposal will be trained to inspect vehicles entering the facility and in the identification of regulated hazardous, PCBs, and other prohibited wastes. Records of employee training regarding control procedures will be maintained in the facility SOR. Personnel will be trained to look for the following indications of possible prohibited waste:

- Department of Transportation (DOT) hazard placards or markings
- 55-gallon drums
- 85-gallon overpack drums
- Liquids
- Powders or dusts
- Odors or chemical fumes
- Bright or unusual colored wastes

- Yellow hazardous waste or PCB labels
- Wet sludge

If any incoming load is suspected of containing any prohibited waste, that load will be directed to an area out of the way of ongoing operations for further inspection as discussed below. If the waste load is determined to contain prohibited waste, the load will be rejected and directed back to the generator or transporter. Landfill personnel will be diligent in observing waste loads from potential sources of prohibited waste such as industrial facilities, electronic companies, metal-plating industries, automotive and vehicle repair service companies, and dry-cleaning establishments.

In addition to the inspection of loads suspected of containing prohibited waste, WST will conduct periodic load inspections. As described in this section, WST will note findings on an inspection form (Attachment IV-2). These forms will be kept in the SOR.

4.5.3 Random Inspection of Incoming Loads

At least 1 percent (1 out of every 100) of vehicles delivering waste to the facility will be chosen for a more comprehensive inspection. The cashier/customer service representative will identify loads to be inspected and inform the driver to proceed to the waste inspection area to determine if unacceptable wastes are present. A Waste Inspection Report (Attachment IV-2) will be completed and retained in the SOR.

4.5.4 Waste Inspection Procedures

Waste loads suspected of containing unauthorized waste material or that are chosen for a random inspection will be reviewed to determine the presence or absence of hazardous or prohibited wastes. The inspections will be conducted by landfill personnel who are trained and qualified to identify hazardous waste, asbestos-containing materials, PCBs, and other wastes not accepted at the landfill. All inspections will be conducted according to the following procedures:

- All personnel conducting waste inspections will receive training to identify unacceptable wastes.
- All personnel conducting waste inspections will receive training on safety equipment and personal protective equipment (PPE).
- The waste will be unloaded in a lined area near but not immediately next to the active face to prevent interference.

- The waste will be carefully spread for observation.
- Any container with contents not easily identifiable (unmarked drums, containers, bags) will be separated if a visual inspection determines that such movement will not cause the drum to rupture, and will be opened and inspected only by trained personnel.
- If the waste is determined to be acceptable, it shall be transferred to the working face for disposal.
- Known unacceptable waste detected during inspections or unloading will be immediately returned to the hauler. If the hauler is unavailable or has left the site, the waste will be safely stored until provisions for removal by the hauler and/or disposal at an authorized facility can be arranged.

The following information, at a minimum, will be recorded during each inspection:

- Date and time of inspection
- Name of employee(s) conducting the inspection
- Commercial hauler name and driver name
- Vehicle description, license plate number, vehicle number
- Pertinent observations made during inspection
- Any unauthorized materials detected
- Generator of unauthorized materials, if known
- Actions taken to manage, reject, and assure proper disposition of unauthorized materials

Wastes that are suspected of being unacceptable will be handled, stored, and isolated in a designated area and managed appropriately until a proper determination can be made through analysis. In the event that hazardous or PCB wastes are identified, landfill personnel will reject the loads and contact TCEQ, the hauler, the generator, and any local pollution agency with jurisdiction that wishes to be notified, within 24 hours (if unacceptable medical waste is identified, the local health department will be contacted). If wastes temporarily stored at the site are determined to be hazardous and the origin of the waste is unknown, the operator will immediately contact the Reeves County Emergency Management Agency, who will act as first responder for hazardous materials and will implement their emergency response plan. In addition, TCEQ will be contacted to provide guidance and instructions for removal and disposal of hazardous waste. All hazardous waste will be removed from the facility by a licensed transporter and disposed at a permitted treatment, storage, or disposal facility. WST Landfill will

maintain certifications for licensed hazardous waste transporters that could be employed, and they will be made available for inspection by TCEQ.

5. Fire Protection Plan [30 TAC 330.129]

Fire protection procedures for WST Landfill are discussed in this section. Additional information is available in the Contingency Plan provided as Attachment IV-1. Fire prevention will be a main component of fire protection. The following activities are intended to prevent fires:

- Open burning is not allowed.
- Personnel will be alert for signs of burning waste such as smoke, steam, or heat being released from incoming loads.
- Smoking will not be allowed near active areas of the landfill and only in designated areas.
- Fuel spills will be contained and cleaned up immediately.
- All mobile equipment will be equipped with fire extinguishers.
- Equipment will be cleaned routinely.
- Daily cover will be placed over exposed waste.
- Vegetation will be maintained to prevent fires from starting or spreading.

Fire response training shall be provided to all landfill personnel as part of their initial and annual trainings, and firefighting equipment shall be readily available at all times.

5.1 General Rules for Fires

WST will meet with the local fire department in a pre-planning session to discuss fire prevention and standard operating procedures in the event of a fire. In case of a fire, the following guidelines will be followed:

- No one will attempt to manage (in case of controlled) or fight a fire alone.
- No attempt to manage or fight a fire will be made without adequate PPE or fire suppression equipment.
- All landfill equipment will be furnished with handheld fire extinguishers.
- All facility personnel will be alerted to the fire, and landfill customers will be removed from the vicinity of the fire.

- All landfill employees will be trained and familiar with on-site firefighting equipment and its limitations.
- If fire occurs at the working face, burning material will be either pushed away from the active area or fire breaks will be constructed to isolate the fire. If that is not possible due to safety or practicality, the working face will immediately be covered in earthen material.
- Any fire that is beyond safe control with the personnel and equipment on-site will necessitate a full evacuation of the facility.
- Any fire extinguished by staff will be thoroughly inspected to ensure that it is fully extinguished.
- Any fire that cannot be extinguished within 10 minutes of discovery will be reported to the TCEQ Regional office.

5.2 Landfill Fires

In addition to the general fire safety rules listed above, a supply of soil (detailed in Section 5.2.2) will be maintained to extinguish any fire at or near the working face. The soil stockpile or source will be of adequate amount to cover any waste received for disposal that is not already covered with 6 inches of earthen material. On-site equipment must be available and capable of covering the active disposal area with 6-inches of soil within one hour of fire detection.

If a fire occurs that is not extinguished within 10 minutes of detection, TCEQ's Midland regional office will be contacted within 4 hours by telephone and within 14 days in writing with a description of the fire and resulting response.

Landfill personnel will be prepared and equipped to provide immediate fire suppression in the event of a fire/explosion at the landfill. Should a fire occur, the General Manager, Site Operations Manager, or designee will:

- Notify any on-site personnel and the landfill office
- Make an assessment as to whether the landfill can expose and douse the fire using site equipment or if the fire department is required
- Use fire extinguishers (located on all landfill equipment/vehicles and in the gatehouse) or stockpiled soil to extinguish the fire
- Call 911 and contact the Reeves County Emergency Management Agency if fire lasts more than 10 minutes

- Restrict access to the critical area (evacuate, if necessary) until informed by the proper authorities that the threat has been eliminated
- Record a written account of the incident in the SOR including actions taken

5.2.1 Fires at the Citizens' Collection Station

Fire extinguishers will be the predominant method used for fighting any fires that arise at the CCS. Should the fire become too large to extinguish using handheld fire extinguishers, a water spray using a water hose or truck will be used. Where the fire is contained within a roll-off dumpster or other steel container, soil may also be used to smother the fire. Should burning waste be delivered to the station, it will be located away from other ignitable sources and immediately sprayed or covered with clean soil.

5.2.2 Demonstration of Adequate Fire Cover

The working face will, in general, be maintained at the smallest size possible and will not exceed a maximum area of 6,000 square feet (120 feet by 50 feet); however, it will often be smaller. To ensure that WST Landfill can sufficiently control and suppress a fire that may arise at the working face, a stockpile of soil shall be maintained at or near the working face that can be used to cover the open area to a depth of 6 inches. Table IV-5 details the soil amounts that WST Landfill shall maintain at or near the working face for adequate fire suppression. The stated volumetric figures include a safety factor of 1.2.

Table IV-5. Adequate Soil Volume for Fire Contingency at the Working Face

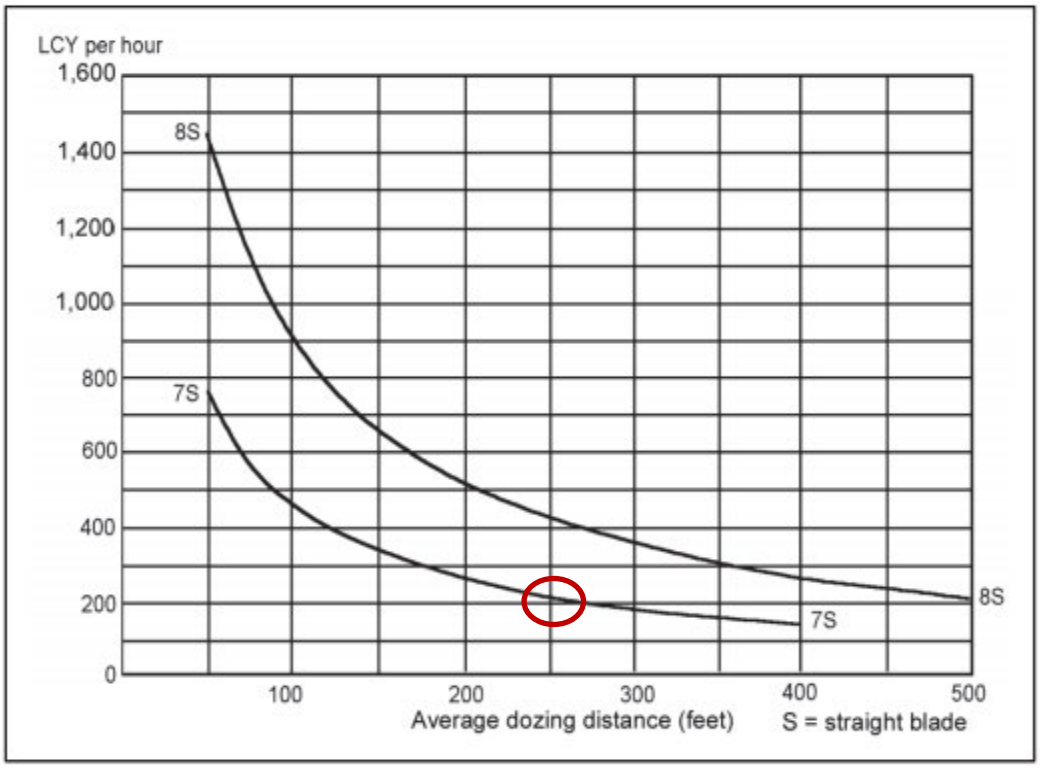
Size of Working Face (square feet)	Soil Volume Required	
	cubic feet	cubic yards
1,000	600	22
2,000	1,200	44
3,000	1,800	67
4,000	2,400	89
5,000	3,000	111
6,000	3,600	133

WST Landfill will maintain the following fire protection earth-moving equipment on-site:

- One crawler-dozer: Cat D7, D8, or equivalent
- One water truck: 1,000 to 4,000 gallons

The following graph shows the earth-moving capabilities of D7 and D8 Cat Crawler-dozers (reproduced from the U.S. Army Manual on Earthmoving Operations dated June 2012). The D7 dozer (the smaller of the two possible options on-site) is capable of moving over 200 loose cubic yards (LCY) of soil a distance of 250 feet in 1 hour. This is in excess of the amount required to cover the maximum size of the working face to a depth of 6 inches. This cover would be effective at suppressing any fires that may arise near the working face. Other on-site equipment, including the water truck, will assist in fighting fires.

A soil stockpile will be available at all active areas. If a separate disposal area is utilized for the disposal of Class 1 waste, a spoil stockpile will be provided when the area is active.



Source: U.S. Army Manual on Earthmoving Operations, June 2012

6. Access Control [30 TAC 330.131]

Public access to WST Landfill will be controlled by means of artificial barriers, such as berms, fences, stormwater conveyance channels, and gates or a combination thereof, appropriate to protect human health and safety and the environment. Uncontrolled access to the facility will

be prevented. Fences and gates are at strategic locations to allow authorized access where appropriate. All gates will be locked when not in use.

No trespassing signs will be placed around the perimeter of the facility. Informational signs will be prominently displayed at the entrance with the hours of operation and emergency contact numbers. An attendant shall be on-site during operating hours and will lock all gates outside of standard operating hours or when not in use. The attendant and/or signs will direct incoming vehicles to the unloading area.

Access control features will be inspected monthly and maintained as needed. If a breach in the access control features is observed, the breach will be promptly repaired and the TCEQ notified according to Table IV-6.

Table IV-6. Access Control Breach Repair and Notification

Requirement	Access Breach (repaired within 8 hours)	Access Breach (not repaired in 8 hours)
Notify TCEQ Region Office of breach and repair schedule	Not required	Within 24 hours
Make temporary repairs	Not required	Within 24 hours
Make permanent repairs	Within 8 hours	Within schedule submitted to TCEQ
Notify TCEQ Region Office when permanent repair completed	Not required	Within schedule submitted to TCEQ

6.1 Boundary Posts/Fencing

The landfill operator shall ensure that boundary posts remain clearly visible and that fences and berms surrounding the facility and its operations are maintained in clean and functional condition in accordance with 30 TAC 330.131. The boundary fence or berm at the entrance to the facility will be inspected daily for any sign of breaches or disrepair. TCEQ's regional office and any local pollution agency with jurisdiction which has requested to be notified will be informed of any breaches and needed repairs within 24 hours of detection, unless the area can be permanently repaired within 8 hours. Temporary repairs will be made within 24 hours and permanent repairs shall be executed as soon as reasonably possible. Any active breach will be continuously monitored until sealed.

7. Unloading of Waste [30 TAC 330.133]

Unloading of waste at WST Landfill may occur at three potential locations. These include an MSW active area, a Class 1 waste area, and the CCS. Class 1 waste may be deposited with the MSW or a separate area may be provided. Active working areas will be confined to as small an area as practical. This helps to increases compaction, requires the use of less cover material and helps to prevent blowing or fugitive litter. WST Landfill is not required to accept any solid waste that may cause problems in maintaining full and continuous compliance with this SOP.

7.1 MSW or Class 1 Active Areas

Waste haulers are directed to the appropriate landfill working area (tipping face) or CCS to unload.

The unloading of waste in unauthorized areas of the landfill is prohibited. Any waste deposited in an unauthorized area will be removed immediately and disposed of properly. At any given time, there may be two authorized and active locations of unloading (MSW and Class 1). At least one trained personnel shall be stationed at each location during all times of unloading. There shall be no unsupervised disposal of solid waste at WST Landfill. Trained landfill staff will strictly direct and monitor all unloading to ensure it is conducted appropriately. The staff involved with the unloading or inspection of waste will have the authority and responsibility to (1) reject unauthorized loads, (2) have unauthorized material removed by the transporter, (3) assess appropriate surcharges if deemed applicable, (4) have the unauthorized material removed by on-site personnel or otherwise properly managed by the facility or (5) have access to landfill staff with this authority. A record of unauthorized material removal shall be maintained in the SOR.

On average, the MSW working face will be confined to the smallest practical area, ranging from 2,000 to 6,000 square feet (dimensions 40 feet by 50 feet to 120 feet by 50 feet). The depth of the operational lift will range from 5 to 15 feet. A dedicated Class 1 disposal area will be much smaller (about 20 percent), about 400 to 1,200 square feet.

To prevent landfill equipment from damaging a landfill unit's liner system, the initial layer of waste shall be placed in a 5-foot-thick lift. The first 5-foot lift will consist of "soft" waste, primarily residential waste free of construction debris, large or bulky items, limbs, or any other material that may damage the composite liner system.

Any whole used or scrap tires that are found in the waste at the active working face area will be retrieved if it is safe to do so. Waste compactors may be able to push these to one side for later removal. Retrieved tires will be stored near the CCS until sufficient quantities accumulate to justify transportation to an authorized tire processor.

7.2 Special Requirements for Industrial Waste

Non-hazardous industrial waste may be placed above natural grade consistent with 30 TAC 330.179(b) if lateral containment dikes complying with 30 TAC 335.590(24) (F) (i)–(vi) are provided. Alternately, as provided in 30 TAC 335.590(24)(F)(vii), dikes are not required if a satisfactory demonstration that the standards of 30 TAC 335.590(24)(F)(i) can be met has been submitted to and approved by the TCEQ. As required in 30 TAC 335.588, wastes that are ignitable, reactive, or otherwise incompatible with other accepted wastes will be separated and protected from ignition sources or chemical reactions.

7.3 Citizens' Collection Station

A CCS shall be located near the entrance of WST Landfill for use by individuals or small haulers to dispose of solid waste. The CCS may consist of one or more storage containers, bins, or trailers that are compatible with the anticipated waste. Signage shall be posted at the CCS and will contain a listing of acceptable wastes and unloading instructions.

WST will transport the deposited waste to the working face of the landfill on a scheduled basis and supervise the facility to maintain it in a sanitary condition. All containers will be emptied at the end of the day or the containers covered. Containers for waste will be designed to prevent spillage or leakage during storage, handling, or transport.

An area will be reserved near the CCS for white goods, bulky items, and tires. This storage area will be kept neat and tidy to minimize vector attraction. The area will be under an overhead cover, or tarps will be used to help reduce odor potential and to minimize contact with rainfall.

Materials in storage areas will be collected and removed often enough to prevent them from becoming a nuisance and to preclude the discharge of pollutants from the area.

8. Operating Hours [30 TAC 330.135]

The anticipated hours of waste acceptance at the WST Landfill will be Monday through Saturday, 7:00 a.m. to 7:00 p.m. Actual hours of waste acceptance within this time frame will be posted at the entrance to the facility.

Transportation of materials and heavy equipment operation will be limited to Monday through Saturday, 5:00 a.m. to 9:00 p.m. There will be at least two landfill employees on-site at all times during waste acceptance hours. The operation of heavy equipment at the landfill will not occur between 9:00 p.m. and 5:00 a.m.

To accommodate special occasions, special purpose events, holidays, or other special occasions, WST may accept waste from 5:00 a.m. to 11:00 p.m. on selected days. These days include the following and may be changed with notification to the TCEQ Region office:

- January 2
- Tuesday following Memorial Day
- July 5
- Friday after Thanksgiving
- December 26

The TCEQ regional office may allow additional temporary waste acceptance or operating hours to address disasters, other emergency situations, or other unforeseen circumstances that could result in the disruption of waste management services in the area. Prior to operating outside of the hours approved by permit, WST will seek written approval from the TCEQ regional office.

Any operating hours outside of the standard hours will be documented in the SOR with the date, time, and duration of each occurrence.

9. Site Sign [30 TAC 330.137]

The landfill operator shall ensure that there is a conspicuously displayed sign at the landfill entrance that measures at least 4 feet by 4 feet with letters at least 3 inches high stating (1) the facility name, (2) the type of facility, (3) the hours and days of operation, (4) emergency 24-hour contact phone number(s), (5) the local emergency fire department phone number, (6) a warning against the disposal of prohibited materials, and (7) the facility's permit number.

The emergency contact number must reach individual(s) with the authority to obligate the facility at all times that the facility is closed. The sign(s) must be readable from the facility entrance.

Signs will also be maintained at the CCS and will specify who may use the station, which wastes are accepted and prohibited, and any other information WST deems necessary for safe and efficient operation.

10. Windblown Waste and Litter [30 TAC 330.139]

10.1 Litter Control [30 TAC 330.139]

Operational procedures shall be implemented at WST Landfill to minimize the generation of litter and debris that is tracked, blown, or spilled off-site as discussed in this section. Solid waste haulers will be required to cover their loads prior to entering WST Landfill; tarps will not be removed until the haul vehicle reaches the working face. If needed, the site may institute a combination of permanent and portable litter control fences to catch windblown litter and debris. Portable fences will be deployed as a disposal operation progresses through a given cell. Solid waste personnel will be responsible for collecting litter accumulated throughout the facility, along fences and access roads, along the entrance road within property boundaries and adjacent properties, and at the facility's gate on a daily basis that waste is being received at the facility. Specific litter control activities are detailed as following:

- Daily cover shall be applied at the end of each operating day to secure waste.
- All incoming loads shall be assessed at the scale house and additional fees will be charged for any unsecured loads.
- A 4-foot-high berm will surround the property to prevent litter or debris from being blown off-site by wind. Solid waste personnel will inspect and remove any litter that rests against or becomes attached to the berm. In addition, landfill personnel will retrieve loose solid waste that passes beyond the immediate area of the berm and return it to the working face on a daily basis.
- Landfill personnel will consult with Reeves County to coordinate daily cleanups of adjacent right-of-way (ROW) within 2 miles of the site when WST Landfill is open for waste acceptance, as required by 30 TAC 330.145.

- Portable wind fences shall be used as an additional means of controlling windblown litter. These fences may be moved by landfill personnel throughout the day to achieve complete control of blowing debris resulting from sudden changes in wind direction. During high wind events, waste placement will occur in areas of the active cells that are minimally impacted by the wind, such as areas that are located at lower elevations or are shielded by the surroundings.
- During periods of high wind, disposal operations shall either be controlled by applying soil cover in an accelerated manner or by relocating to areas which receive minimal wind impact.
- Containers located within the CCS will be covered by a tarp or similar device at the end of each working day or taken and emptied at the active disposal area to prevent the generation of windblown litter and debris. Any spilled waste leading to the CCS will be picked up and disposed of at the working face on a daily basis during the time that the CCS is being used. Portable or permanent fencing or enclosures may be used at the CCS if needed to control the scattering of litter or debris.

11. Easements and Buffer Zones [30 TAC 330.141]

No solid waste unloading, storage, disposal, or processing operations will occur within any easement, buffer zone, or ROW that crosses the permit boundary [30 TAC 330.141]. No solid waste disposal shall occur within 25 feet of the centerline of any utility line or pipeline easement, unless otherwise authorized by TCEQ. All pipeline and utility easements must be clearly marked with posts that extend at least 6 feet above ground level and spaced at intervals no greater than 300 feet. As previously mentioned in the landfill permit, there are no conflicts with existing easements.

WST shall establish and maintain 125-foot buffer zones within and adjacent to the facility boundary on property owned or controlled by WST. The buffer zones shall not be narrower than 20 feet or as necessary to provide for safe passage for fire-fighting and other emergency vehicles.

12. Landfill Markers and Benchmark [30 TAC 330.143]

All required landfill markers and the benchmark will be clearly visible and marked for landfill personnel and state officials. A permanent bronze benchmark set in concrete has been established at the facility in the northwest corner of the property, away from landfill operations, and is marked with its survey date and elevation. All markers will be posts extending at least 6 feet above ground level, will be clearly visible, and will not be obscured by vegetation. Markers will be installed at the following locations and color coded as follows:

- Black: facility boundary markers
- Yellow: buffer zone markers
- Green: easement and ROW markers (if applicable)
- White: landfill grid system markers
- Red: soil liner or geomembrane liner area markers
- Blue: 100-year flood protection area (if applicable)

Facility boundary markers will be placed at each corner of the facility and along each boundary line at intervals no greater than 300 feet. Easement and ROW markers shall be placed along the centerline of the easement or along the boundary of an ROW at each corner within the facility and at the intersection of the facility boundary. WST shall replace any markers within 15 days of removal, destruction, or a determination that the markers do not meet regulatory requirements. WST will inspect landfill markers on a monthly basis and maintain records of all inspections at the facility.

A landfill grid system has been established for the facility. Markers along the grid system will encompass at least the area expected to be filled within the next three-year period. Landfill grid markers will be maintained during the active life of the facility. Although not required, the grid system may be maintained through the post-closure care period of the landfill if determined to assist during this time. Markers for the grid system shall be spaced within 100 feet of each other measured along perpendicular lines, and intermediate markers will be installed where markers cannot be seen from opposite boundaries. Grid markers may be placed along the boundary of a buffer zone and are not required in areas of active fill.

Soil liner or geomembrane liner area markers will be placed so that all areas for which a SLER or GLER has been submitted are readily determinable. These markers must be tied into the landfill

grid system and must be reported on each liner evaluation report submitted. Liner markers shall not be placed inside construction areas to prevent damage to liner. Soil liner or geomembrane liner area markers will be maintained through the construction and operation period.

Landfill markers and the benchmark shall be clearly visible. Per the drainage report (Attachment III-3), no flood protection markers are needed.

Latitudinal and longitudinal geographic coordinates of site benchmark are as follows:

- Latitude: N 31°26′23.66762″
- Longitude: W 103°34′50.57074″
- Elevation: 2,659.30 feet above mean sea level (feet msl), North American Vertical Datum of 1988 (NAVD 88)

13. Materials Along the Route to the Site [30 TAC 330.145]

WST will take steps to encourage vehicles hauling waste to the landfill to use a tarpaulin, net, or other means to effectively secure their load to prevent the load from blowing or spilling debris. WST will post signs and report offenders to law enforcement. WST may also add surcharges, or implement similar measures as needed. On days that the landfill accepts waste, WST will clean up waste materials spilled along and within ROW of public access roads serving the facility for 2 miles in either direction from the entrance used to access the facility. WST will consult with Reeves County concerning cleanup of public access roads and ROW.

14. Disposal of Large Items [30 TAC 330.147]

Large, heavy, or bulky items detected during unloading that are not designated as prohibited waste and that cannot be incorporated in the regular spreading, compaction, and covering operations at the landfill shall be placed in a designated large-item salvage area. This large-item salvage area is located near the CCS and will consist of temporary storage roll-off containers or an area with an improved surface. Large, heavy, or bulky items may include, but are not limited to, white goods (household appliances), air conditioner units, metal tanks, large metal pieces, and automobiles.

Should large, heavy, or bulky items be received in mixed loads and not observed until unloading, they will be removed from the active face if it is determined safe to do so and will be staged near the active working face until the end of the day and/or immediately moved to the designated large-item salvage area. Whole scrap or used tires will also be stored in the large-item salvage area until transported off-site for management.

Refrigerators, freezers, air conditioners, and any other items containing CFCs will be handled in accordance with 40 CFS 82.156. WST will remove large items and tires from the designated storage area often enough to prevent them from becoming a nuisance and to preclude the discharge of any pollutants from the area, at a frequency no longer than every 180 days.

15. Odor Management Plan [30 TAC 330.149]

WST Landfill will follow all applicable air pollution regulations. Open burning is not allowed.

While odorless methane and carbon dioxide gases comprise over 99 percent of all landfill gases, an incoming load of waste may occasionally exhibit a unique odor. Such odors typically result from trace-level gases produced during the decomposition of landfilled waste. WST Landfill shall enact various measures to ensure odor control. Any potential odor observed at WST Landfill will be investigated to determine the source and any mitigation efforts.

To ensure that odors are kept at a minimum, the working face shall be limited in size to restrict any exposed waste to a small area. At the close of each operational day, all exposed solid waste shall be covered with a minimum of 6 inches of daily cover or an approved alternate daily cover (ADC). All other areas of WST Landfill will be monitored as part of the daily operation of the facility and, during those occasions when solid waste is found exposed, the waste will be sufficiently covered to ensure that odors are kept to a minimum.

Other mitigation methods for odor control within the waste disposal footprint include removal of contaminated water in accordance with the leachate and contaminated water plan (LCWP) (Appendix III-4-B).

Landfill personnel will be trained to identify and mitigate odors for waste requiring special attention such as septage, sludges, and dead animals. Specific handling instructions for each special waste are detailed in Section 26 of this SOP. Cashiers/customer service representatives will monitor for odorous waste as it arrives. If odorous wastes are delivered on a routine basis, landfill personnel shall coordinate with the waste generator to schedule such deliveries.

Odorous wastes requiring special attention shall be promptly covered, and any spills of such waste shall be cleaned up.

Containers located within the CCS, large-item salvage area, and tire storage area shall be monitored by landfill personnel and covered with a tarp or similar device to prevent the accumulation of rainfall and mitigate potential odors. Containers will be cleaned when needed. The CCS is constructed of containers on an improved surface bordered by a 6-inch curb and can be cleaned. Should waste material spill onto the surface, the material will be picked up and disposed of at the working face or into containers for later removal to the working face. The surfaces will be cleaned as needed by washing down with water, at least weekly. Wash water from the containers or surfaces shall be contained and treated as contaminated water in accordance with the LCWP.

Implementation of the LCWP described in Attachment III-4 (Waste Management Unit Design) is an integral component of the odor management program. Leachate and contaminated water will be contained, collected, and managed in accordance with the LCWP to prevent ponding and prolonged exposure of odorous liquids. The contact stormwater/contaminated water pond or tanks will be monitored daily by landfill personnel for odors. Should odors from the leachate pond or tanks become a nuisance, WST will investigate the reason and employee mitigation efforts.

16. Disease Vector Control [30 TAC 330.151]

Disease vector control at WST Landfill will consist of procedures for compaction, grading, and soil cover. The active face shall be compacted and graded on a daily basis and covered by either 6 inches of soil not previously mixed with garbage, rubbish, or other solid waste or other approved ADC. Dead animals will be covered immediately in accordance with Section 26 of this SOP. These procedures will prevent vector access and harborage in the waste mass. The application of daily cover will also eliminate any entry spaces, food sources, and nesting areas. Surface water control measures and liquid waste restrictions will minimize the presence of standing water and decrease insect breeding areas. Mosquito populations will be controlled by preventing the accumulation of stagnate water through routine grading of slopes and maintaining surface grades that are adequate to prevent ponding.

The CCS, large-item salvage, and tire storage area will be inspected daily for animal scavenging or vector accumulation. Any spilled waste shall be collected daily and returned to the containers or disposed of at the working face. Containers used in this area shall be emptied at the working

face and cleaned as needed. Any water resulting from the cleaning of the CCS area or its containers shall be contained and treated as contaminated water in accordance with the LCWP.

Landfill personnel will perform weekly inspections to check for insect or rodent infestations. If insect or rodent infestations occur despite the measures outlined herein, approved insecticides or pesticides shall be applied by a pest control professional licensed in the State of Texas.

17. Site Access Roads [30 TAC 330.153]

The main access road to WST Landfill is a paved, all-weather road. Interior facility access roads will be constructed from crushed stone, gravel, caliche, concrete paving, asphalt paving, or other suitable material. Roadways shall be maintained to provide functional, safe, and clean passage for vehicular traffic year-round. In addition, traffic control measures will be implemented to direct incoming and outgoing traffic. The landfill personnel will ensure that all traffic control measures are operational and properly maintained.

Interior roads will be maintained to provide reasonable all-weather access for arriving vehicles. Roads will be regraded semiannually at a minimum to minimize depressions, ruts, and potholes per 30 TAC 330.153. In the case of muddy conditions, roads will be inspected continuously by landfill personnel. Excessive mud on roadways that may lead to difficult driving conditions will be removed daily and as needed to maintain site access. Equipment such as a grader, bulldozer, skid steer, or other appropriate earth mover will be used. As needed, gravel, crushed stone, or other suitable material will be applied to maintain roadways during wet weather. Dust will be suppressed on site roads by periodic spraying from a water truck. During wet weather, the all-weather surfaced site access roads, rock vehicle tracking pad, cattleguard, and the entrance road to the site will allow vehicles to throw off any mud from their tires prior to entering public roadways. Should mud and associated debris be tracked onto CR 408, the materials will be removed at least once daily, typically by using the water truck and/or motor grader or mechanical sweeper.

The approach to the working face shall be maintained so that two or more vehicles will be able to unload side-by-side. A turnaround area of sufficient size will be maintained so that vehicles may maneuver safely into and out of the unloading area. Vehicles will not be allowed to loiter at the working face.

The potential for development of dust will be minimized through proper operating procedures. Speed limits will be enforced on access roads and the roads will be sprayed using a water truck

to control dust as necessary. Water for dust control will be obtained from detention ponds or a water well. If necessary, commercial dust-control may be sprayed on the road surfaces to retard the spread of dust.

On-site roads will be maintained on a regular basis. Access roadways will be regraded to minimize depressions, ruts, and potholes when they would interfere with access to the unloading area. Typically, regrading will be required after significant rain events and will be performed while the materials are sufficiently moist to facilitate grading and recompaction. Road repair materials such as cold mix asphalt, stone, or gravel will be stockpiled on-site for use as necessary.

18. Salvaging and Scavenging [30 TAC 330.155]

18.1 Scavenging

Scavenging is characterized as the uncontrolled or unauthorized removal of materials at any point in the solid waste management system. Scavenging is prohibited at the WST Landfill.

18.2 Salvaging, Recycling, and Temporary Storage

Salvaging is characterized as the controlled removal of waste materials for use, recycling, or sale. Salvaging that interferes with the prompt sanitary disposal of solid waste or that creates a public health nuisance is prohibited. At WST Landfill, salvaged materials are primarily white goods and used tires. Salvaged materials will be removed from the facility regularly and will not be stored in excess of 180 days to prevent them from becoming a nuisance.

WST Landfill shall collect large and bulky items that cannot be incorporated into the regular operations at the landfill and shall place them into a designated large-item storage area. Users of the CCS will be instructed on how to separate salvageable items from the material to be disposed of and where to place the items.

Class 1 industrial waste and other special wastes received at the disposal facility shall not be eligible for salvage. Pesticide, fungicide, rodenticide, and herbicide containers shall not be salvaged. No salvage operations by members of the public will be allowed.

19. Endangered Species Protection [30 TAC 330.157]

A comprehensive biological evaluation (BE) was performed in January 2022 for the WST Landfill site. The evaluation included a physical biological survey conducted in September 2021. The BE is provided in Attachment I/II-11. The evaluation found no critical habitat within the boundaries of the proposed facility; however, the study did reveal potential impacts to several federally threatened, endangered, or candidate species as defined by the U.S. Fish and Wildlife Service (USFWS), as well as various state-listed rare species as defined by the Texas Parks and Wildlife Department (TPWD). The BE was provided to TPWD for review, and TPWD returned a letter with recommendations to safeguard any wildlife that may be impacted by facility operations. WST Landfill will implement procedures to identify, avoid, and mitigate any interferences. TPWD provided the following recommendation that WST Landfill will incorporate in operations:

- Landfill personnel shall provide training on protected species to any contractors on-site. Training shall include the identification of Texas horned lizards and their primary food source (harvester ants), and shall describe appropriate protocols to avoid the impact of the Texas horned lizard or any other rare or protected species. Harvester ant mounds shall be avoided.
- Burrows shall be identified and avoided. Excavation of such habitats may be detrimental to eggs, young, or adults, and may be in direct violation of the Migratory Bird Treaty Act (MBTA). If black-tailed prairie dogs are encountered within the construction footprint, WST Landfill shall contact a prairie dog relocation specialist.
- If possible, construction activities shall take place outside of the general bird nesting season (March 15 through September 15) and vegetation removal or disturbance shall occur outside of the peak nesting period (March through August). If clearing vegetation during these periods is unavoidable, a physical survey shall be performed no more than five days prior to the activity to identify active bird nests (containing eggs or young). If any active nests are observed, a minimum 150-foot buffer of vegetation shall remain around the location during disturbance activities. Any vegetation or other open areas where occupied nests are located shall not be disturbed until the eggs have hatched and the young have fledged. WST Landfill shall not allow the catching, killing, injuring, pursuance, or possession of any bird that is not a game bird per Texas Park and Wildlife Code.
- In cold weather, reptiles may have slower metabolisms and a restricted ability to flee from danger. Construction personnel shall be alerted this fact when working in cold weather to avoid impact on dormant reptiles.

- The clearing of native vegetation shall be minimized, particularly mature native trees, riparian vegetation, and shrubs, to the greatest extent practicable. The disturbance or removal of downed trees, rotting stumps, and leaf litter shall be avoided where feasible.
- Revegetation shall be conducted using no-till drilling, hydromulching, and/or hydroseeding of regionally adapted native species including native flowering species. Colonization by invasive species shall be actively prevented. If soil stabilization or erosion prevention measures are desired, materials shall be chosen that do not pose entanglement hazards to wildlife. The use of plastic mesh matting shall be avoided due to entanglement risk as much as practicable.
- If any protected species are encountered, they shall be avoided and allowed to leave the project area on their own. If the relocation of wildlife is necessary, WST Landfill shall consult a qualified biologist (authorized to handle any threatened, endangered, and state-listed species) to perform the relocation. Relocations shall occur at the minimum distance possible, no greater than 1 mile, and ideally within 100 to 200 yards from the initial location of the encounter.
- Exclusion or sediment control fencing shall be used judiciously to preclude wildlife from construction areas. The fencing shall be buried at least 6 inches and extend to at least 24 inches in height. It shall be maintained for the life of the project and only removed once the construction is complete and the disturbed area is reestablished with native vegetation.
    - Construction personnel shall be encouraged to examine the exclusion area daily for trapped wildlife and provide safe egress opportunities prior to the commencement of construction activities.
- Open trenches and excavated pits may be covered overnight to prevent the accidental trapping of wildlife species. Trenches and pits shall be inspected daily prior to the commencement of construction activities and escape ramps at an angle of no greater than 45 degrees (1:1) shall be erected in any uncovered areas.
- Dark-sky lighting practices shall be implemented which minimize blue light emissions and sky glow. Light shall be focused downward to avoid emitting light above the horizontal, and night-time lighting shall be of the minimum brightness needed to achieve safety and security.
- A no-kill wildlife policy shall be adopted, which includes avoiding injury or harm to any snakes encountered during clearing and construction.

- Speed limits in the project area shall be reduced to at most 15 miles per hour (mph) to prevent vehicle-induced mortality of wildlife.

20. Landfill Gas Control [30 TAC 330.159]

Landfill gases will be monitored in accordance with the landfill gas management plan (LGMP) (Attachment III-7). Reports and other submittals will be included in the facility SOR and submitted to TCEQ as required.

When required, WST will apply for a standard air permit in accordance with Subchapter U of 30 TAC 330. WST will apply for any other authorization or permit required by regulation.

21. Oil, Gas, and Water Wells [30 TAC 330.161]

There are no active crude oil wells, gas wells, or other wells associated with mineral recovery known to exist within the MSW facility permit boundary. There are no known abandoned oil wells or water wells within the permit boundary.

The current water supply well at WST Landfill is, and any future supply wells will be, located outside of the waste footprint and will not be impacted by landfill operations. The current well is constructed to prevent any cross-contamination from waste at the landfill to the water well production zone and between any water-bearing zones. Any future supply well will be approved by the TCEQ Executive Director and will conform to all standards set forth in 30 TAC 330.161. Details regarding the sampling schedule are provided in the groundwater sampling and analysis plan (Attachment III-6).

If any crude oil or natural gas well, or other well associated with mineral recovery that is under the jurisdiction of RRC is discovered within the facility boundary during the course of facility development, WST will, within 30 days of discovery, notify TCEQ in writing regarding the location of such well(s). Within 30 days after plugging of any such well, WST will provide TCEQ with written certification that the well has been properly capped, plugged, and closed in accordance with all applicable RRC rules and regulations.

Any well to be capped, plugged, and closed will be exposed, with the casing cut to a minimum of 2 feet below ground surface (or, if the well location is within the proposed landfill footprint, a minimum of 2 feet below the excavation depth), and the well will be capped and plugged in

accordance with all applicable rules and regulations of TCEQ, RRC, or other applicable state agency. A copy of the well plugging report required to be submitted to the appropriate state agency will be submitted to TCEQ within 30 days after the well has been plugged.

WST will submit for TCEQ approval a permit modification identifying any proposed changes to the liner installation plan as a result of any well abandonment.

22. Compaction [30 TAC 330.163]

Compaction of incoming waste will be conducted to minimize future consolidation and settlement, maximize the use of developed disposal capacity, and provide for the proper application of intermediate and final cover. Waste compaction will be conducted using a landfill compactor or dozer with a minimum weight of 40,000 pounds. After unloading, the waste will be spread in approximately 3-foot-thick layers and each layer will be compacted with a minimum of two machine passes of the landfill compactor or four machine passes with a dozer. The layer thickness may be increased if proven to be satisfactorily compacted with the available compaction equipment.

23. Landfill Cover [30 TAC 330.165]

Landfill cover is an important aspect in protecting public health and the environment. There are three types cover required: daily cover (including ADC), intermediate cover, and final cover.

The following procedures will be implemented regarding placement of cover:

- The cover material will be spread and compacted by heavy equipment to minimize infiltration of stormwater and will not have waste visibly protruding from it.
- The General Manager, Site Operations Manager, or designee will visually inspect the cover to verify that the correct thickness of compacted soil is placed and that there is no erosion that may jeopardize placement of future cover material. The results of this inspection will be included in the SOR, and any recorded damage will be repaired within five days (weather permitting).
- After every significant precipitation event, the General Manager, Site Operations Manager, or designee will inspect all covered areas for erosion, exposed waste, or other damage and oversee its repair as needed.

- All cover will be sloped to drain runoff toward stormwater management structures.

23.1 Daily Cover

WST Landfill will follow daily cover requirements per 30 TAC 330.165 unless the waste in discussion falls under a special waste category and requires distinctive treatment as prescribed in Section 26 of this SOP. WST Landfill will cover the active face(s) of the landfill at the end of each working day with 6 inches of soil material not previously mixed with garbage, rubbish, or other solid waste. This practice will assist in controlling vectors, fires, odors, windblown litter and scavenging. Runoff from areas where the daily cover has maintained its integrity is considered to not have come in contact with the working face or leachate and will not be treated as contaminated water.

23.2 Alternate Daily Cover

ADC will only be allowed by a temporary authorization under 30 TAC 305.62(k) followed by a major amendment or a modification in accordance with 30 TAC 305.70(k)(1). The use of ADC will be limited to a 24-hour period (unless otherwise approved by the TCEQ), after which either waste or other cover material will be placed over it. If requesting an amendment or modification to allow for the use of ADC, WST will provide an ADC operating plan that includes the criteria listed in 30 TAC 330.165(d)(1)(A)-(E).

WST will submit a status report on the ADC on a two-month basis to the Executive Director during the temporary authorization period describing the effectiveness of the ADC material, any problems that have occurred, and corrective actions required as a result of such problems. At the discretion of TCEQ, status reports may not be necessary if no unresolved problems occur within the temporary authorization period.

The following types of ADC or similar materials will be used consistent with the approval granted by TCEQ and at the discretion of the operator.

- Tarpaulins: Typical nominal weight of 10 ounces per square yard.
- Contaminated soil: Soil that has been exposed to petroleum products but has been demonstrated by analysis to have a total petroleum hydrocarbon (TPH) concentration less than 1,500 parts per million (ppm). The soil may contain other contaminants, but shall comply with 30 TAC 330.165(d)(4) & (5) and shall have a waste classification of Class 2 or 3 industrial.

Contaminated soils proposed to be used as ADC must not exceed composition limitations imposed on the waste authorized to be disposed of within that landfill unit, including constituents such as TPH, PCBs, or CFCs (see Section 26), and other constituents listed in Table 1 of 30 TAC 335.521(a)(1).

23.3 Intermediate Cover

All areas that have received waste but will be inactive for longer than 180 days will be covered with intermediate or final cover. Intermediate cover will include 6 inches of suitable earthen material that is capable of sustaining native plant growth and will be seeded or sodded following its placement to control erosion, or will be a material approved by TCEQ for intermediate cover that will otherwise control erosion. The total thickness of the intermediate cover will not be less than 12 inches of suitable earthen material. The intermediate cover will be sloped to shed stormwater runoff away from the active area and to prevent ponding. Plant growth or other erosion control features will be maintained. Runoff from areas that have intact intermediate cover is not considered as having come into contact with the working face or leachate and is not contaminated water.

The General Manager or designee will inspect intermediate cover at least monthly or within 72 hours of a rainfall event of 0.5 inch or more for erosion, ponded water, seeps, protruding waste, or other issues that may result in contaminated runoff, and will record the results in the SOR. If an area containing intermediate cover is later revisited for the acceptance of waste, the intermediate cover may be stripped and reused if the cover is not contaminated with garbage, rubbish, or other solid waste material.

23.4 Final Cover

The final cover system design and placement are described in the Final Closure Plan (Attachment III-8), maintained as part of the SOR. The General Manager or designee will inspect final cover at least semiannually or within 72 hours of a rainfall event of 0.5 inch or more for erosion, ponded water, seeps, protruding waste, or other issues that may result in contaminated runoff, and will record the results in the SOR. Final cover monitoring during the post-closure period is outlined in the Post-Closure Maintenance Plan (Attachment III-9), which is also maintained as part of the SOR.

23.5 Cover Inspections

As soon as practicable after a rainfall event of 0.5 inch or greater, the General Manager or their designee will inspect daily, intermediate, and final cover areas for erosion gullies, washed out areas, or other damage. Erosion rills or gullies or washouts deeper than approximately 4 inches will be repaired as soon as practicable, but not later than five days after detection. Periodic inspections and restorations will be required during the operational life and the post-closure care maintenance period.

Throughout the landfill operation, a cover application record will be kept on-site readily available for inspection by TCEQ representatives and authorized agents or employees of local governments having jurisdiction. For daily and intermediate cover and ADC, the record will specify the date cover was accomplished (no exposed waste), how it was accomplished (soil or ADC type and method of placement), and the last area covered. For final cover, the record will specify the area covered, the date the cover was applied, and the thickness applied that date. Each entry will be certified by the signature of the inspector that work was accomplished as stated in the record.

24. Ponded Water [30 TAC 330.167]

The prevention of ponding water over waste is necessary to prevent infiltration and reduce the volume of leachate produced at the facility. Ponded water may also result in odors and act as a breeding ground for disease vectors. The ponding prevention plan is described as follows:

- The ponding of water on cover over waste will be avoided by good compaction of the waste material and cover. The cover will be placed with adequate slope or the inclusion of diversion berms to promote runoff and to accommodate more localized settlement without forming depressions.
- Cover areas will be inspected as described above and as soon as practicable after significant rainfall events (0.5 inch or more) to detect areas that may be ponding water.
- The removal of water, filling, and grading of any ponded areas with soil will be used to eliminate any ponding that is observed.

Ponded water that is discovered in any active or closed portion of the landfill will be eliminated, and the area in which the ponding occurred will be filled in and regraded within seven days of the occurrence.

Ponded water removed from cover depressions will typically be stormwater and may be used to aid in dust control or discharged as stormwater. However, if the cover has been damaged to the extent that the ponded water has come in contact with waste, leachate, or waste-contaminated soil, the water will be treated as contaminated water consistent with the LCWP.

Containers used at the CCS will be covered by a tarp or similar device to prevent the accumulation of rainfall when not in use. When the containers are full and at the end of the working day, the containers will be emptied at the active area for disposal.

The large-item and tire storage area will be graded to prevent ponding. Any water that may pond will be removed and the area filled with soil to prevent reoccurrence.

Repairs to areas that pond water will be documented in the SOR.

25. Enclosed Containers or Vehicles at Type IV Landfills [30 TAC 330.169]

WST Landfill is not a Type IV landfill and the requirements of 30 TAC 330.169 are not applicable.

26. Disposal of Special Wastes [30 TAC 330.171]

WST Landfill may accept special waste consistent with the Waste Acceptance Plan (Attachment I/II-9) and as approved by TCEQ. Special wastes listed under 30 TAC 330.171(c) and that are listed below will be managed per the handling procedures identified in 30 TAC 330.171(c)(1)-(7) and (d). Any special waste not identified in this section will not be accepted without prior written waste-specific and site-specific approval from the TCEQ.

Requests for approval to accept special wastes will be submitted by the generator to WST Landfill. If acceptable to WST Landfill, a request will be submitted to TCEQ for acceptance of the waste. Approval will be granted prior to accepting the waste.

Specific special wastes authorized for acceptance at the WST Landfill, along with their handling procedures, are listed below.

26.1 Petroleum-Contaminated Soil

Definition

Petroleum-contaminated soil (PCS) is soil contaminated by petroleum products, crude oils, or chemicals. PCS may be accepted for disposal provided that the TPH concentration is not greater than 1,500 ppm.

Special Handling Procedures:

PCS may be incorporated into the active disposal area or used as ADC if approved by TCEQ. See Section 23.2.

26.2 Untreated Medical Waste [30 TAC 330.171(c)(1)]

Definition

Untreated medical waste is special waste from health care-related facilities that consists of animal waste, bulk blood, bulk human blood, bulk human body fluids, microbiological waste, pathological waste, and sharps as those terms are defined in 25 TAC 1.132 (relating to Definitions). Health care-related facilities do not include single or multi-family dwellings and hotels, motels, or other establishments that provide lodging and related services for the public.

Special Handling Procedures

Medical wastes that have not been treated will not be accepted at the landfill unless authorized in writing by TCEQ. Accepted medical waste will be covered by either 3 feet of solid waste or at least 2 feet of earthen material immediately upon receipt.

26.3 Dead Animals or Slaughterhouse Waste [30 TAC 330.171(c)(2)]

Definition

This waste consists of carcasses and animal part waste from slaughterhouses, farms, or hatcheries.

Special Handling Procedures

Dead animals and/or slaughterhouse waste will be covered by 3 feet of other solid waste or at least 2 feet of earthen material upon receipt.

26.4 Empty Containers used for Pesticides, Herbicides, Fungicides, or Rodenticides [30 TAC 330.171(c)(5)]

Definition

These wastes consist of vessels that were previously used to contain pesticides, herbicides, fungicides, or rodenticides.

Special Handling Procedures

The containers must be triple-rinsed and rendered useless prior to receipt at the landfill. If the provisions of waste acceptance are met, empty containers will be placed on the active working face of the landfill and covered by the end of the operating day. Containers for which triple-rinsing is not feasible or practical (e.g., paper bags, cardboard containers) and are empty may be accepted and treated as Class 1 non-hazardous waste and disposed in an area approved for Class 1 non-hazardous waste. The weight or volume of such waste shall be factored into the total permissible amount of Class 1 non-hazardous waste allowed for disposal at the facility per 30 TAC 330.173(e).

26.5 Municipal Hazardous Waste from Very Small Quantity Generators [30 TAC 330.171(c)(6)]

Definition

This waste is generated by RCRA CESQGs or VSQGs, and consists of any municipal solid waste that has been identified or is listed as a hazardous waste but is generated in quantities less than 220 pounds per month or as listed in 30TAC330.3(177).

Special Handling Procedures

Review and keep track of accepted municipal hazardous wastes for each VSQG per month to verify that no more than 220 pounds of waste is accepted.

26.6 Sludge, Grease, and Grit Trap Waste and Liquid Waste from Municipal Sources [30 TAC 330.171(c)(7)]

Definition

This waste is any solid, semi-solid, or liquid waste generated from a municipal or domestic wastewater treatment plant, sewage treatment plant, water-supply treatment plant, septic tank, grease trap, or grit trap, exclusive of the treated effluent from a wastewater treatment plant.

Special Handling Procedures

Verify that all waste has been treated/processed prior to delivery to pass the paint filter liquids test. The waste will be covered with other waste or soil immediately if it is odorous.

26.7 Household-Generated Used Oil Filters [30 TAC 330.171(d)]

Definition

This waste consists of used oil filters from internal combustion engines that originate from households as defined in 30 TAC 330.3(67)171.

Special Handling Procedures

Used oil filters from non-household generators shall not be accepted. Used oil filters from a household generator shall not be intentionally and knowingly accepted for disposal unless the filter has undergone one of the following processing methods prior to receipt at the landfill:

(1) the filter has been crushed to less than 20% of its original volume to remove all free-flowing used oil;

(2) the filter has been separated into component parts and any the free-flowing liquids have been removed from the filter element by some means of compression;

(3) the used filter element of a filter consisting of a replaceable filtration element in a reusable or permanent housing has been removed from the housing and pressed to remove free-flowing used oil; or

(4) the housing has been punctured and the filter has drained for at least 24 hours.

26.8 Soil Contaminated by Petroleum Products or Other Constituents [30 TAC 330.171(b)(4)]

Definition

This waste is soil contaminated by petroleum products, crude oil, or chemicals in concentrations of greater than 1,500 milligrams per kilogram (mg/kg) TPH or contaminated by constituents of concern at concentrations exceeding the limits listed in Table 1 of 30 TAC 335.521(a)(1).

Special Handling Procedures

Contaminated soils meeting these criteria shall be disposed of in a Class 1 landfill unit and incorporated with other waste.

27. Disposal of Industrial Wastes [30 TAC 330.173]

WST Landfill will not accept hazardous waste, but may accept industrial waste material that is classified as Class 1 non-hazardous, Class 2, or Class 3. Industrial non-hazardous waste is defined in 30 TAC 330.3 as solid waste resulting from or incidental to any process of industry or manufacturing, or mining or agricultural operations.

WST Landfill will not accept Class 1 waste without prior approval from TCEQ or specific authorization as presented below. The Operations Manager or designee will sign manifests for authorized shipments of Class 1 waste. WST Landfill will not accept or sign for shipments of Class 1 waste unless authorization to accept the waste is provided by TCEQ. The disposal facility copy of the manifest shall be retained by the operator for a period of at least 3 years or as directed by TCEQ.

Class 1 waste will not be placed above the perimeter berm in Class 1 units. The amount of Class 1 industrial waste received at the WST Landfill will not exceed 20 percent of the total amount of all waste accepted for disposal (not including the Class 1 waste) during the current or previous year per 30 TAC 330.173(e). The amount of waste will be determined by either volume or by weight. The same unit of measure will be used for each year unless a variance is authorized by TCEQ.

A written report of Class 1 wastes received will be submitted to TCEQ no later than the 25th day of the month following receipt of Class 1 waste. The monthly report will be submitted on forms provided by TCEQ and will be completely filled out with all required information. Monthly

reports will be submitted every month following the initial receipt of Class 1 waste, even for months during which no Class 1 waste was accepted.

Industrial wastes to be accepted at WST Landfill, along with handling procedures, are presented in the following subsections.

27.1 Sludge, Liquid Waste, Grease Trap Waste, and Grit Trap Waste from Commercial or Industrial Generators

Definition

This waste includes any non-hazardous solid, semi-solid, or liquid waste generated from a commercial or industrial wastewater treatment plant, grease trap, or grit trap, exclusive of the treated effluent from a wastewater treatment plant. All sludge and liquid waste must treated/ processed prior to receipt at WST Landfill to remove all free liquids as defined by EPA Method 9095 (Paint Filter Liquids Test), *described in Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods* (EPA Publication Number SW-846), as amended. Industrial waste generators are responsible for properly classifying their waste under Subchapter R of 30 TAC Chapter 335.

Special Handling Procedures

Written approval from WST Landfill prior to delivery to the site is required for disposal of this waste. Verify that all sludge and liquid waste has been treated/processed and tested in accordance with the paint filter liquids test, and is certified to contain no free liquids. Cover the waste immediately if it is odorous; otherwise, incorporate with other waste.

27.2 Class 1 Non-Hazardous Industrial Solid Waste (excluding asbestos-containing materials) [30 TAC 330.173(e)]

Definition

This waste includes any industrial solid waste or mixture of industrial solid wastes that because of its concentration or physical or chemical characteristics is toxic, corrosive, flammable, a strong sensitizer or irritant, a generator of sudden pressure by decomposition, heat, or other means, or may pose a substantial present or potential danger to human health or the environment when improperly processed, stored, transported, or disposed of or otherwise managed, as further defined in 30 TAC 335.505(1)-(7). Industrial waste generators are responsible for properly classifying their waste under Subchapter R of 30 TAC Chapter 335.

Special Handling Procedures

Written approval from WST Landfill is required prior to delivery to the site for the disposal of this waste. Generators will be responsible for the manifest of Class 1 solid waste as required by 30 TAC 335.10 (relating to Shipping and Reporting Procedures Applicable to Generators of Hazardous Waste or Class 1 Waste and Primary Exporters of Hazardous Waste). The generator will be required to provide a satisfactory waste analysis consistent with 30 TAC 335.587 for any wastes suspected to be hazardous or Class 1. WST will obtain and review the manifest provided by the generator as required by 30 TAC 330.173(g). The manifest will be signed by the facility operator or a designated representative. WST Landfill will not accept or sign for shipments of Class 1 waste for which the authorization to accept has not been granted by TCEQ or that is included in this section. Upon receipt of non-hazardous Class 1 waste, it shall be placed below the top of the perimeter berm at the active face of a Class 1 unit. The waste will be placed away from exterior slopes and covered by at least 12 inches of earthen material or 3 feet of solid waste not classified as Class 1.

27.3 Class 2 Non-Hazardous Industrial Solid Waste [30 TAC 330.173(i)]

Definition

This waste includes any individual solid waste or combination of industrial solid wastes that cannot be described as hazardous, Class 1, or Class 3, as defined in 30 TAC 335.506 (relating to Class 2 waste determination).

Special Handling Procedures

WST Landfill will accept Class 2 non-hazardous waste provided that acceptance of the waste does not interfere with the landfill's operation. The waste will be incorporated with other waste at the active working face as part of normal operations.

27.4 Class 3 Non-Hazardous Industrial Solid Waste [30 TAC 330.173(j)]

Definition

This waste consists of inert and essentially insoluble industrial solid waste, including materials such as rock, brick, glass, dirt, and certain plastics and rubber, etc. that are not readily decomposable as defined in 30 TAC 335.507 (relating to Class 3 waste determination).

Special Handling Procedures

WST Landfill will accept Class 3 non-hazardous waste provided that acceptance of the waste does not interfere with the landfill's operation. The waste will be incorporated with other waste at the active working as part of normal operations.

28. Visual Screening of Deposited Waste [30 TAC 330.175]

Waste will be screened from view, if needed, by strategic placement of mobile wind fence sections and soil berms, and by initially constructing above-grade exterior slopes and then working behind the completed slopes. Additional screening will be provided by daily/ intermediate cover.

29. Leachate and Gas Condensate Recirculation [30 TAC 330.177]

Recirculation of leachate or gas condensate will not be conducted at WST Landfill. The amount of contaminated water, including leachate and gas condensate, is anticipated to be minimal and easily managed with storage tanks or evaporation ponds.

30. Operational Requirements for Class 1 Industrial Solid Waste [30 TAC 330.179]

WST Landfill is designed for acceptance of Class 1 industrial waste that is determined to be non-hazardous. The acceptance procedures are discussed above. WST will complete facility maintenance and periodic inspections to verify that the facility remains in satisfactory operating condition.

30.1 Facility Inspection and Maintenance Schedule [30 TAC 330.179(a)(1) and 330.585]

Consistent with 30 TAC 335.585, the facility maintenance and inspection checklist (Table IV-3) will be used to verify that the site remains in satisfactory operating condition. The inspection

schedule will be maintained at the facility. Records of the inspections, including the date and time, inspector's name, observations, and any repair information (i.e., date and time and nature of the repairs) are also maintained in the SOR. If inspections reveal any deterioration or malfunction of equipment, remedial action will be implemented to prevent an environment or human health hazard. If such a hazard is believed to be imminent or to be occurring, repairs will be conducted immediately.

30.2 Personnel Training [30 TAC 330.179(a)(2) and 335.586]

WST will implement programs (classroom and on-the-job) to train facility personnel to perform their duties in a safe manner and in compliance with this SOP. Training will also instruct personnel on waste management procedures and implementation of the contingency plan as is relevant to their position. This provides knowledge to respond effectively to emergencies consistent with 30 TAC 335.586. Training requirements and recordkeeping is detailed in Section 4.4 of this SOP. The contingency plan developed for WST Landfill is provided as Attachment IV-1.

30.3 Waste Analysis [30 TAC 330.179(a)(3) and 335.587]

WST will follow the waste analysis requirements of 30 TAC 335.587 for any waste that may be classified as industrial Class 1 or Class 2. MSW from municipal waste generators or haulers and industrial Class 3 waste from known sources will not require analysis. WST may require analysis to verify Class 3 status or to determine if specific handling requirements are recommended. An analysis of the waste may include the following:

- Waste generator's records of analysis conducted on the waste or studies conducted on waste generated from similar processes
- Any current information that WST or TCEQ determines would help in developing waste specific handling protocols, if needed
- Data developed under Subchapter R of 30 TAC 335 relating to waste classification

WST will inspect and analyze (if necessary) each Class 1 or 2 waste received to determine if it matches the waste specified on the accompanying manifest. The analysis must be repeated as necessary if there is reason to believe that the waste generation process or operation has changed. Additionally, if inspection of the waste does not match the designation on the accompanying manifest or shipping paper, WST will require additional analysis from the generator.

Prior to the receipt of Class 1 or 2 industrial waste, WST will develop a written waste analysis plan consistent with 30 TAC 330.587(b) that describes the waste analysis procedures that will be followed. The plan will include the following:

- The parameters to be analyzed for each waste and the rationale for selection of the parameters
- The test methods to be used
- The sampling method to be used to obtain a representative sample of the waste
- The frequency with which the analysis will be reviewed or repeated
- The waste analysis that the generators have agreed to supply, if any
- Where applicable, the methods used to determine if a waste is ignitable, reactive, or incompatible.

The waste analysis plan and results from any testing will be submitted to TCEQ for approval, if needed. Any recommended handling procedures will be included with the request. The waste will not be accepted until authorized by TCEQ.

30.4 Ignitable, Reactive, or Incompatible Wastes [30 TAC 330.179(a)(4) and 335.588]

WST Landfill will take precautions to prevent accidental ignition or reaction of wastes that are ignitable or reactive as defined in 30 TAC 335.505. If accepted, waste of this nature will be separated and protected from sources of ignition or reaction. Potential sources include, but are not limited to:

- Open flames
- Smoking
- Cutting and welding
- Hot surfaces
- Frictional heat
- Sparks (static, electrical, or mechanical)
- Spontaneous ignition (e.g., from heat-producing chemical reactions)
- Radiant heat

While ignitable or reactive waste is being handled, the landfill will confine smoking and open flame to specially designated locations. "No Smoking" signs will be conspicuously placed wherever there is a hazard from ignitable or reactive waste. Incompatible waste will not be accepted.

The landfill will take precautions to prevent reactions that:

- Generate extreme heat or pressure, fire or explosions, or violent reactions
- Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment
- Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions
- Damage the structural integrity of the facility
- Threaten human health or the environment

Should there be a fire or explosion at WST Landfill, on-site personnel will follow the procedures discussed in the Contingency Plan (Attachment IV-1)

WST will document compliance with the requirements listed in 30 TAC 335.588. This documentation may be based on references to published scientific or engineering literature, data from trial tests (e.g., bench-scale or pilot-scale tests), waste analyses as specified in 30 TAC 335.587 and above, or the results of the treatment of similar wastes by similar treatment processes and under similar operating conditions. Documentation will be placed in the SOR.

30.5 Contingency Plan [30 TAC 330.179(a)(5) and 335.589]

WST has developed a contingency plan for personnel to follow to minimize hazards to human health or the environment from fires, explosions, or any unplanned release of waste. The contingency plan is provided as Attachment IV-1 to this SOP.

30.6 Whole or Scrap Tires

Whole or scrap tires that arrive at WST Landfill shall be placed in designated roll-off containers for temporary storage and shall not be incorporated in the regular spreading, compaction, and covering operations of the landfill. WST Landfill shall remove items from the storage area often enough to prevent them from becoming a nuisance and to preclude the discharge of any

pollutants from the area. Additional measures shall be taken to minimize the area's risk to human health or the environment as described in Section 7 of this SOP.

30.7 Facility-Generated Wastes [30 TAC 330.205(a)]

WST Landfill does not expect to generate a significant volume of waste on-site. The landfill will follow 30 TAC 330.205 for all facility-generated wastes. All contaminated water, such as leachate, will be collected and contained until properly managed, and then disposed of according to 30 TAC 330.207. The contact stormwater/leachate pond processing unit will have a synthetic liner, and the liner shall be constructed in accordance with the Liner Quality Control Plan (Appendix III-4-C). This processing unit shall be designed to control and contain spills and contaminated water from leaving the facility. The design shall be sufficient to control and contain a worst-case spill or release. In accordance with 30 TAC 330.207, 1 foot of freeboard for the 25-year, 24-hour rainfall event shall be provided. Leachate will be stored in the pond until it evaporates or stored in a storage tank, or shall be transported to an off-site water treatment facility. The landfill is not connected to a municipal sewer system and will not discharge to any such system. The landfill will not discharge contaminated water without authorization from TCEQ or any other government entity with jurisdiction.

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Figure

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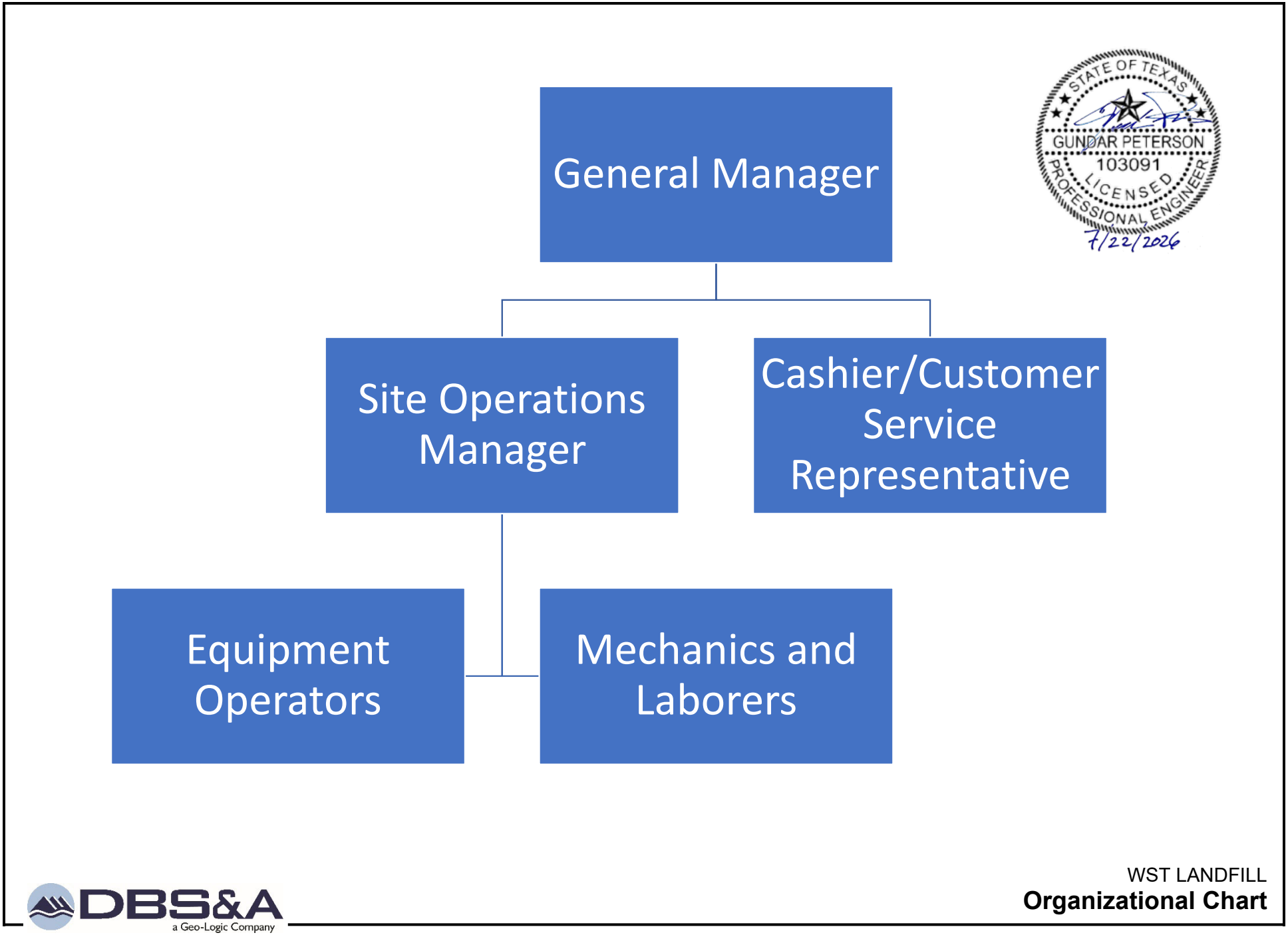


Figure IV-1

WST LANDFILL
Organizational Chart

DBS&A a Geo-Logic Company

3/13/2026 DB20.1166

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Attachment IV-1

Contingency Plan

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Contingency Plan
WST Landfill
Reeves County, Texas

Prepared for
West Sun Tex, LLC

Prepared by

DBS&A
a Geo-Logic Company

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July 2026

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Table of Contents

1. Introduction 1
2. Implementing Criteria 1
3. Emergency Preparedness 2
   3.1 Emergency Coordinator 2
   3.2 Emergency Equipment 5
   3.3 Emergency Actions 5
   3.4 Coordination with Local Authorities 6
4. Emergency Response 7
   4.1 Notification Procedures 7
   4.2 On-Site Personal Injury 7
   4.3 Fire or Explosion 8
   4.4 Release of Prohibited or Hazardous Material 9
   4.5 General Spill Cleanup Procedures 9
   4.6 Evacuation Procedures 10



1. Introduction

This Contingency Plan for the WST Landfill has been developed to minimize possible hazards to human health and the environment from fires, explosions, and any unplanned sudden or non-sudden releases of waste or waste constituents. This plan meets the requirements outlined in 30 TAC 335.589. This document describes the sequences, procedures, and requirements to be implemented to protect workers and the public from exposure to releases or spills that may cause an imminent and substantial danger to present or future public health and safety or the environment. The provisions of this plan shall be executed immediately upon discovery of any incident or existing situation that may pose any of the aforementioned threats.

A copy of this Contingency Plan and all revisions to the plan will be maintained at the landfill. The plan will be submitted to local police departments, fire departments, hospitals, and state and local emergency response teams that may be called upon to provide emergency services.

This Contingency Plan will be reviewed, and immediately updated, if necessary, whenever the facility permit is revised, the plan fails in an emergency or any changes are made to facility operations.

In addition, WST Landfill maintains a list of personnel qualified to act as emergency coordinator. The list indicates the primary emergency coordinator if two names are shown. This list is kept up-to-date and will be made available with this contingency plan at all times.

Routine cleanup operations shall be performed by operating personnel without implementing this contingency plan.

2. Implementing Criteria

At least one employee designated as the emergency coordinator (EC) will be on the facility premises or on call (available to respond to an emergency) with the responsibility for coordinating emergency response measures. The EC will be knowledgeable of all aspects of this contingency plan, all operations and activities at the facility, the facility layout, and the location of records within the facility. The EC will have the authority to commit the resources needed to carry out this Contingency Plan.

The decision to implement this Contingency Plan depends upon whether an existing or imminent situation may threaten human health or the environment. This section provides guidance to the EC when conditions warrant the need for a contingency action response. Emergencies may occur at any time as a result of carelessness, accidents such as spills or fires, natural forces, and other situations which disrupt normal operations. Some of the types of situations which may require the implementation of this Contingency Plan include:

- Serious on-site injury
- Fire
- Detection of explosive gases
- Release of hazardous materials

3. Emergency Preparedness

3.1 Emergency Coordinator

A list of names, addresses, and telephone numbers (office and home/cell) of all individuals qualified to act as EC is kept up-to-date in the landfill office.

In the event of an emergency, the EC (or designee) will immediately perform the following tasks, as appropriate:

1. Activate alarms or communication systems, where applicable, to notify all facility personnel.
2. Assess the extent of the emergency.
    - Identify the amount, character, source, and areal extent of any released materials. This can be performed by visual observation, a review of facility records or manifests, or, if necessary, chemical analysis.
    - Possible hazards to human health or the environment, both direct and indirect, that may result from the release, fire, or explosion will be assessed. This assessment will include the effects of any irritating or asphyxiating gases that may have been generated, or the effects of any water runoff used to control fire and/or heat-induced explosions.
3. Contact appropriate emergency support agencies as needed.
4. If the incident may threaten human health or the environment outside of the facility boundaries, and if the EC's assessment indicates that evacuation of local areas may be

advisable, the EC (or designee) will immediately notify the appropriate local authorities and will be available to help local officials in making the final determination.

5. If any oil, chemical, radiological, biological, or etiological discharges are suspected, the EC will notify the National Response Center (see Table 1) with the following information:
   - Name and telephone number of reporter
   - Name and address of the facility
   - Time and type of the incident (e.g., release, fire)
   - Name and quantity of material(s) involved, to the extent known
   - The extent of injuries, if any
   - The possible hazards to human health, or environment, including any outside the facility

Table 1. Example List of Emergency Coordinators

Notification Priority	Employee Title	Employee Name	Mobile Phone	Office Phone	Address
1	General Manager				
2	Site Operations Manager				
3	Equipment Operator				

Note: Emergency coordinators are assigned by position and not by name. Names given are for the current landfill employee holding that position, and should personnel assignments change, the replacement personnel shall be trained and assume the emergency team position listed for their title.

6. If necessary, the EC will designate an employee to be in charge at the incident area to temporarily supervise immediate control action and to provide updates to the EC on conditions.
7. All reasonable precautions will be taken to prevent the spread of fire or other emergency conditions. These measures may include, where applicable, stopping the receipt of incoming waste or compaction operations, collecting and containing any released waste material, and removing or isolating containers.
8. If the facility must cease operations in response to an emergency, the EC will monitor for leaks, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

9. Evacuate non-essential personnel from the incident area.
10. Assemble all landfill personnel at a designated area for instructions and to perform a personnel count. Instruct any personnel that are assisting in the response on procedures to mitigate the fire or explosion, if appropriate, and/or wait for emergency personnel to arrive. Upon arrival of emergency personnel, assist in their efforts.
11. Prevent additional traffic from entering the incident area.
12. Clear road(s) for the safe passage of emergency vehicles and equipment.
13. Determine the need to evacuate the site based on evaluation of the following:
    - The areal extent of the incident
    - The nature of waste involved
    - Weather conditions (most notably wind)
    - An estimate of the time required and equipment needed to bring the incident under control
    - Any other special conditions or factors that may impact the severity of the incident
14. In the event of a fire, consider smoke visibility in off-site areas. Advise the responding fire department personnel appropriately.
15. For incidents requiring local traffic control, contact the Reeves County Sheriff's Department to coordinate activities, if necessary.
16. Immediately after the incident, make an assessment to determine the need for disposing of recovered waste, contaminated water, or any other materials used to control the incident at the facility. WST will classify all recovered waste, contaminated soil or water, or any other material that results from a release, fire, or explosion at the facility.
17. Evaluate the nature of materials (such as fire suppressants, neutralizing agents, waste residuals) used in the incident area to determine if special cleanup efforts must be initiated before operation of the facility is resumed.
18. Ensure that all emergency equipment listed below is cleaned and fit for its intended use before facility operations are resumed.
19. Ensure that no waste that may be incompatible with the released material is treated, stored, or disposed of in the area of the incident until cleanup procedures are completed.

3.2 Emergency Equipment

The following list of emergency equipment will be kept at the facility and maintained at all times in operable condition.

- Fire extinguishers: On all equipment, near fueling station and Citizen Collection Station and other locations as deemed relevant by WST.
- Cat D7 (or similar) for soil covering of working face in the event of fire
- Water truck: At maintenance building when not in use to assist in fire fighting
- Eye wash and other first aid supplies: At scale house or maintenance shed
- Level D Personal protective equipment: At scale house or maintenance shed

Inspect fire extinguishers for general condition and proper operation annually at a minimum. Replace or refill as needed.

3.3 Emergency Actions

In the event of an emergency, WST will perform the following tasks:

1. Notify TCEQ and appropriate state and local authorities that the facility has or will assess the need for disposing of recovered waste, contaminated water, or any other materials used to control the incident.
2. Place a note in the operating record of the time, date, and details of any incident that requires implementing this contingency plan. Within 15 days after the incident, WST will submit a written report on the incident to TCEQ. The report will include the following:
    - Name, address, and telephone number of the owner or operator
    - Name, address, and telephone number of the facility
    - Date, time, and type of incident (ex. fire, explosion)
    - Name and quantity of material(s) involved
    - The extent of injuries, if any
    - An assessment of actual or potential hazards to human health or the environment, where applicable
    - Estimated quantity and disposition of recovered material that resulted from the incident

3.4 Coordination with Local Authorities

WST will maintain contact with local police and fire departments, hospitals, emergency contractors, equipment suppliers, and state and local emergency response teams. Maintaining relations with these providers will assist WST in coordinating emergency services if needed. A copy of this contingency plan will be provided to local emergency personnel and WST will familiarize them with the layout of the facility, properties of the waste handled and potential hazards, places where facility personnel normally would be working, entrances to and inside the facility, and possible evacuation routes. See Table 2 for a list of emergency contacts. This list will be updated as information changes.

Table 2. List of Emergency Contacts

Service Provider	Primary Phone Number	Secondary Phone Number	Address
Pecos Police Department	911	(432) 445-4911	172 Raul Florez Blvd. Pecos, TX 79772
Fire/EMS - Reeves County Emergency Services District No. 1 & 2	911	(432) 447-1966	2269 Ocotillo Dr. Pecos, TX 79772
Reeves County Sheriff	911	(432) 445-4901	500 South Oak St. Pecos, TX 79772
Reeves Regional Health	911	(432) 447-3551	2349 Texas St. Pecos, TX 79772
Reeves County Emergency Management Office	(432) 287-0242	(432) 231-9691	1714 Schmidt Dr RM 326, Pecos, TX 79772
State of Texas Spill Reporting Hotline/State Emergency Response Commission	(800) 832-8224	—	—
TCEQ Region 7 (Midland) Office	(432) 570-1359	—	10 Desta Drive Suite 350E Midland, TX 79705
National Response Center	(800) 424-8802	—	—

4. Emergency Response

4.1 Notification Procedures

Should an emergency situation arise, the EC will be notified immediately. The EC will then contact the appropriate personnel and authorities.

Emergency services may be obtained by dialing 911.

4.2 On-Site Personal Injury

The primary on-site injuries that may occur at the landfill are the following:

- Accidents involving the use of heavy machinery
- Asphyxiation caused by entrance into confined spaces or excavation
- Fire and explosion injuries
- Minor cuts, scrapes, and bruises
- Injuries due to slipping and falling

Training on the prevention of injuries will be provided by WST to help minimize and prevent many of these injuries. Should a serious, or potentially serious, injury occurs at or near the site, the assisting personnel will decide whether immediate first aid is required. The EC will be contacted for help in making this determination, if needed. If confined space is involved, the assisting personnel should not enter the confined space until the situation has been corrected or a corrective action has been taken to assure the health and safety of all involved.

If immediate first aid is required, it will be given to the injured person. If possible, the assisting personnel or other available personnel will contact the EC for additional help (e.g., ambulance, fire department) as needed.

If the injury is not serious and only requires minor first aid, first aid kits will be available at the scale house or maintenance shed. All injuries, minor or serious, will be reported to the EC for injury records and to receive further instruction. The incident will be reviewed to determine if any actions are needed to prevent or minimize the potential for this type of injury.

4.3 Fire or Explosion

Upon discovery of a fire or explosion at or near the facility, the EC will contact the necessary personnel to mitigate the fire. This may include employees trained in the proper methods of firefighting and/or other emergency response personnel. All untrained personnel will be required to vacate the area of the incident. In addition, the EC will direct all cleanup operations, determine the proper level of personal protective equipment, and decide on the appropriate cleanup materials. Specific Information regarding fire prevention and general rules for fire-fighting is contained in Section 5 (Fire Protection Plan) of the Site Operating Plan (SOP).

Regardless of the location of the fire or explosion, the EC is responsible for:

- Determining any environmental impact potential.
- Determining any potential threats to surrounding areas of the facility or adjacent properties.
- Determining any life-threatening potential.

Upon discovery of a fire or explosion, landfill personnel will initiate the fire/explosion action procedures as described below:

1. Notify the emergency coordinator (EC) or designee. (Note: Home and office phone numbers will be included on a list and kept with this Contingency Plan and be prominently displayed on signs at the facility.)
    - ◇ The EC or designee will subsequently notify local emergency personnel and other appropriate emergency response agencies, as necessary.
2. Control access to the area. Evacuate any haulers and patrons from the area. Clear all non-essential personnel from the incident area.
3. Extinguish fire with available equipment, if possible, or take other immediate action to mitigate the emergency (e.g., isolate the fire) until emergency response personnel arrive.
4. Take all reasonable measures necessary to ensure that fires, explosions, or releases do not occur or spread to other areas. These measures will include, but not be limited to, the removal of unaffected equipment from the area, separation of affected and unaffected wastes, and dowsing adjacent areas with water or other suppressants. Water may not be effective on burning waste at the active face and smothering with soil may be a better alternative.

4.4 Release of Prohibited or Hazardous Material

Access to and use of the facility will be strictly and continuously controlled by fencing, gates, and signs. Training of facility personnel includes the identification of prohibited or hazardous waste. If prohibited or hazardous waste is detected prior to unloading, it will be immediately rejected. WST facility personnel will then contact the Operations Manager and identify the hauler involved. Action shall be taken to ensure that the incident does not reoccur.

If prohibited waste is inadvertently disposed of on-site, every effort will be made to identify the hauler involved, and measures will be taken to handle the waste in an appropriate manner. These measures may include, but are not limited to, removal of the waste by the hauler and assessment of a surcharge to pay for the removal of the waste by the generator. It may be necessary to segregate the waste until a thorough assessment is conducted.

In the unlikely event that hazardous or prohibited waste which is considered a threat to human health and the environment is delivered to or spilled at the facility, WST will implement the following procedures:

- The emergency coordinator will be immediately notified of the discharge.
- TCEQ will be contacted and informed of the facility location and spill description.
- If necessary, berms shall be constructed to prevent the spill, or discharge, from spreading.
- All discharged material will be collected, handled and disposed of properly.

4.5 General Spill Cleanup Procedures

On-site spill cleanup is aimed at recovering as much of the spilled material as possible for disposal as quickly as possible to minimize any hazards to human health and the environment. There are several techniques available for on-site cleanup. Choice of a cleanup method must be determined at the time of the incident considering the extent of the spill.

All waste generated from cleanups involving waste material shall be collected and disposed of according to its characteristics. Any equipment used in collecting waste material shall be decontaminated prior to use elsewhere. Any liquid generated from decontamination procedures will be collected for proper disposal. Some cleanup alternatives include the following:

- Sorbents: Spill scavengers and cleanup agents that absorb the spilled product are the most common method for handling spills or residual product. These agents may be packaged in

pillows, large bats, or booms which may absorb a large amount of liquid and allow for easier disposal. For corrosive materials, lime or other neutralizers are practical. Three classes of sorbents are natural products (straw, sawdust, clays, and vermiculite), modified natural products (expanded perlite, cloth rags, charcoal, and silicon-coated sawdust), and synthetic products (imbiber beads, imbiber bead blankets, and foam products). When using sorbents, it is necessary to dispose of spent products properly, unless recoverable sorbents are used.

- Direct suction pumping in tank trucks or similar.
- Removal: This is an initial, rapid response method for the removal of a contaminants before it migrates. Soil and any waste that is excavated from an incident site will be properly disposed of.

4.6 Evacuation Procedures

If the EC determines that an incident warrants evacuation of the facility, the EC (or designee) will notify site personnel of evacuation of a specific area of the facility or complete evacuation of the facility by using cellular telephones, radios or other means. All personnel in the immediate area of an evacuation will be required to leave the area immediately and report to a designated area away from the incident. Site personnel will be familiar with the designated meeting area to ensure safe and efficient evacuation in case of an emergency. Upon gathering at this designated area, a head count will be taken of the employees. If any personnel are unaccounted for, the names of those employees and their last known location will be reported to the EC immediately. Further evacuation procedures shall be implemented in accordance with direction received from the EC.

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Attachment IV-2

Waste Inspection Form

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Waste Inspection Form

Date and Time of Inspection	
Name of Driver and Hauling Company	
Contact Phone Number	
Type of Vehicle	
License Plate Number	
Size and Source of Load	
Contents of Load	
Indicators of Prohibited Wastes	
Results of the Inspection	

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Attachment IV-3

Daily Facility Inspection Form

DBS&A a Geo-Logic Company

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WST Landfill Daily Inspection Form
Page 1 of 2

Date and Time of Inspection: _____

Completed By: _____

Item	Inspected	Notes
Run-on/runoff control systems are functioning and prevent water from entering or leaving active trench areas	**Yes** **No**	
On-site ponding outside stormwater systems	**Yes** **No**	
On-site litter - windblown waste collection and clean-up, waste materials along route to site	**Yes** **No**	
Breaches in cover or fill	**Yes** **No**	
Threats to public health and safety and the environment	**Yes** **No**	
Access gates, fences, and signs are maintained (including entrance sign)	**Yes** **No**	
Boundary posts, monuments, and benchmarks	**Yes** **No**	
Perimeter fence/berm and gate inspections	**Yes** **No**	
Roads are maintained	**Yes** **No**	
Dust suppression	**Yes** **No**	

WST Landfill Daily Inspection Form
Page 2 of 2

Item	Inspected	Notes
Landfill area is free of wind-blown debris	**Yes No**	
Suspect vehicles and periodic loads are being inspected	**Yes No**	
Waste handling procedures are followed	**Yes No**	
Unloading area minimization	**Yes No**	
Wastes are sufficiently compacted	**Yes No**	
Daily Cover or ADC correctly applied	**Yes No**	
Erosion gullies or washed-out areas deep enough to jeopardize the final or intermediate cover.	**Yes No**	