# Administrative Package Cover Page

**This file contains the following documents:**

1. Summary of application (in plain language)
2. First Notice (NORI-Notice of Receipt of Application and Intent to Obtain a Permit)
3. Application Materials

# Plain Language Summary Template and Instructions for Texas Pollutant Discharge Elimination System (TPDES) and Texas Land Application (TLAP) Permit Applications

This template is a guide to assist applicant's in developing a plain language summary as required by 30 Texas Administrative Code Chapter 39 Subchapter H. Applicant's may modify the template as necessary to accurately describe their facility as long as the summary includes the following information: (1) the function of the proposed plant or facility; (2) the expected output of the proposed plant or facility; (3) the expected pollutants that may be emitted or discharged by the proposed plant or facility; and (4) how the applicant will control those pollutants, so that the proposed plant will not have an adverse impact on human health or the environment.

Fill in the blanks below to describe your facility and application. Instructions and examples are provided below. Make any other edits necessary to improve readability or grammar and to comply with the rule requirements.

If you are subject to the alternative language notice requirements in 30 Texas Administrative Code §39.426, **you must provide a translated copy of the completed plain language summary in the appropriate alternative language as part of your application package**. For your convenience, a Spanish template has been provided below.

**ENGLISH TEMPLATE FOR TPDES or TLAP NEW/RENEWAL/AMENDMENT APPLICATIONS**

**DOMESTIC WASTEWATER**

*The following summary is provided for this pending water quality permit application being reviewed by the Texas Commission on Environmental Quality as required by 30 Texas Administrative Code Chapter 39. The information provided in this summary may change during the technical review of the application and are not federal enforceable representations of the permit application.*

Arp Holdings, LP (CN606303071 ) proposes to operate The Garden of Cordell Oaks RN112042049. a Home Site for approximately 115 lots. The facility is located 1313 McKight Rd., in Seguin, Guadalupe County, Texas 78155.

Application for a TLAP permit to authorize the disposal of treated wastewater at a volume not to exceed a daily average flow of 18,000 gallons per day via drip irrigation system and subsurface application. This permit will not authorize a discharge of pollutants into water in the state.

Discharges from the facility are expected to containBOD5 - 30mg/l, TSS – 30mg/l, Ammonia – 100 mg/l, Phosphorus – N/A, Dissolved Oxygen - <2.00 mg/l .Domestic Wastewater will be treated by *None – Subsurface drip disposal.*

## INSTRUCTIONS

1. Enter the name of applicant in this section. The applicant name should match the name associated with the customer number.
2. Enter the Customer Number in this section. Each Individual or Organization is issued a unique 11-digit identification number called a CN (e.g. CN123456789).
3. Choose “operates” in this section for existing facility applications or choose “proposes to operate” for new facility applications.
4. Enter the name of the facility in this section. The facility name should match the name associated with the regulated entity number.
5. Enter the Regulated Entity number in this section. Each site location is issued a unique 11-digit identification number called an RN (e.g. RN123456789).
6. Choose the appropriate article (a or an) to complete the sentence.
7. Enter a description of the facility in this section. For example, a domestic permit might specify: city ISD, MUD, etc.
8. Choose “is” for an existing facility or “will be” for a new facility.
9. Enter the location of the facility in this section.
10. Enter the City nearest the facility in this section.
11. Enter the County nearest the facility in this section.
12. Enter the zip code for the facility address in this section.
13. Enter a summary of the application request in this section. For example: renewal to discharge 25,000 gallons per day of treated domestic wastewater, new application to discharge process wastewater and stormwater on an intermittent and flow-variable basis, major amendment to reduce monitoring frequency for pH, etc. If more than one outfall is included in the application, provide applicable information for each individual outfall.
14. List all pollutants expected in the discharge from this facility in this section. If applicable, refer to the pollutants from any federal numeric effluent limitations that apply to your facility.
15. Enter the discharge types from your facility in this section (e.g., domestic wastewater.)
16. Choose the appropriate verb tense to complete the sentence.
17. Enter a description of the wastewater treatment used at your facility. Include a description of each process, starting with initial treatment and finishing with the outfall/point of disposal. Use additional lines for individual discharge types if necessary.

## Examples

**Example 1: Domestic Wastewater TPDES Renewal application**

*The following summary is provided for this pending water quality permit application being reviewed by the Texas Commission on Environmental Quality as required by 30 Texas Administrative Code Chapter 39. The information provided in this summary may change during the technical review of the application and are not federal enforceable representations of the permit application.*

The City of Texas (CN000000000) operates the City of Texas wastewater treatment plant (RN000000000), an activated sludge process plant operated in the complete mix mode. The facility is located at 123 Texas Street, near the City of More Texas, Texas County, Texas 71234.

This application is for a renewal to discharge at an annual average flow of 1,200,000 gallons per day of treated domestic wastewater via Outfalls 001 and 002.

Discharges from the facility are expected to contain five-day carbonaceous biochemical oxygen demand ($CBOD_5$), total suspended solids (TSS), ammonia nitrogen ($NH_3$-N), and *Escherichia coli*. Additional potential pollutants are included in the Domestic Technical Report 1.0, Section 7. Pollutant Analysis of Treated Effluent and Domestic Worksheet 4.0 in the permit application package. Domestic wastewater is treated by an activated sludge process plant and the treatment units include a bar screen, a grit chamber, aeration basins, final clarifiers, sludge digesters, a belt filter press, chlorine contact chambers and a dechlorination chamber.

**Example 2: TPDES New Application**

*The following summary is provided for this pending water quality permit application being reviewed by the Texas Commission on Environmental Quality as required by 30 Texas Administrative Code Chapter 39. The information provided in this summary may change during the technical review of the application and are not federal enforceable representations of the permit application.*

The City of Texas (CN000000000) proposes to operate the City of Texas wastewater treatment plant (RN000000000), an activated sludge process plant operated in the extended aeration mode. The facility will be located at 123 Texas Street, in the City of More Texas, Texas County, Texas 71234.

This application is for a new application to discharge at a daily average flow of 200,000 gallons per day of treated domestic wastewater.

Discharges from the facility are expected to contain five-day carbonaceous biochemical oxygen demand ($CBOD_5$), total suspended solids (TSS), ammonia nitrogen ($NH_3$-N), and *Escherichia coli*. Additional potential pollutants are included in the Domestic Technical Report 1.0, Section 7. Pollutant Analysis of Treated Effluent in the permit application package. Domestic wastewater will be treated by an activated sludge process plant and the treatment units will include a bar screen, a grit chamber, aeration basins, final clarifiers, sludge digesters, a belt filter press, chlorine contact chambers and a dechlorination chamber.

**Example 3: TLAP Renewal application**

*The following summary is provided for this pending water quality permit application being reviewed by the Texas Commission on Environmental Quality as required by 30 Texas Administrative Code Chapter 39. The information provided in this summary may change during the technical review of the application and are not federal enforceable representations of the permit application.*

The City of Texas (CN000000000) operates the City of Texas wastewater treatment plant (RN000000000), an activated sludge process plant operated in the complete mix mode. The facility is located at 123 Texas Street, near the City of More Texas, Texas County, Texas 71234.

This application is for a renewal to dispose a daily average flow not to exceed 76,500 gallons per day of treated domestic wastewater via public access subsurface drip irrigation system with a minimum area of 32 acres. This permit will not authorize a discharge of pollutants into water in the state.

Land application of domestic wastewater from the facility are expected to contain five-day biochemical oxygen demand ($BOD_5$), total suspended solids (TSS), and *Escherichia coli*. Additional potential pollutants are included in the Domestic Technical Report 1.0, Section 7. Pollutant Analysis of Treated Effluent in the permit application package. Domestic wastewater is treated by an activated sludge process plant and the treatment units include a bar screen, an equalization basin, an aeration basin, a final clarifier, an aerobic sludge digester, tertiary filters, and a chlorine contact chamber. In addition, the facility includes a temporary storage that equals to at least three days of the daily average flow.

# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

**NOTICE OF RECEIPT OF APPLICATION AND INTENT TO OBTAIN WATER QUALITY PERMIT**

**PROPOSED PERMIT NO. WQ0016616001**

**APPLICATION.** Arp Holdings, LP, 223 Hunters Village, New Braunfels, Texas 78132, has applied to the Texas Commission on Environmental Quality (TCEQ) for proposed Texas Land Application Permit (TLAP) No. WQ0016616001 to authorize the disposal of treated wastewater at a volume not to exceed a daily average flow of 18,000 gallons per day via subsurface area drip dispersal irrigation of 4.67 acres of land. The domestic wastewater facility and disposal area will be located at 1313 McKnight Road, in the city of Seguin, in Guadalupe County, Texas 78155. TCEQ received this application on September 9, 2024. The permit application will be available for viewing and copying at Arp Texas Courthouse, record room, 109 West Longview, Arp, Texas prior to the date this notice is published in the newspaper. The application, including any updates, and associated notices are available electronically at the following webpage: https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tlap-applications. This link to an electronic map of the site or facility's general location is provided as a public courtesy and not part of the application or notice. For the exact location, refer to the application. https://gisweb.tceq.texas.gov/LocationMapper/?marker=-97.893333,29.508611&level=18

**ADDITIONAL NOTICE.** TCEQ's Executive Director has determined the application is administratively complete and will conduct a technical review of the application. After technical review of the application is complete, the Executive Director may prepare a draft permit and will issue a preliminary decision on the application. **Notice of the Application and Preliminary Decision will be published and mailed to those who are on the county-wide mailing list and to those who are on the mailing list for this application. That notice will contain the deadline for submitting public comments.**

**PUBLIC COMMENT / PUBLIC MEETING. You may submit public comments or request a public meeting on this application.** The purpose of a public meeting is to provide the opportunity to submit comments or to ask questions about the application. TCEQ will hold a public meeting if the Executive Director determines that there is a significant degree of public interest in the application or if requested by a local legislator. A public meeting is not a contested case hearing.

**OPPORTUNITY FOR A CONTESTED CASE HEARING.** After the deadline for submitting public comments, the Executive Director will consider all timely comments and prepare a response to all relevant and material, or significant public comments. **Unless the application is directly referred for a contested case hearing, the response to comments, and the**

**Executive Director's decision on the application, will be mailed to everyone who submitted public comments and to those persons who are on the mailing list for this application. If comments are received, the mailing will also provide instructions for requesting reconsideration of the Executive Director's decision and for requesting a contested case hearing.** A contested case hearing is a legal proceeding similar to a civil trial in state district court.

**TO REQUEST A CONTESTED CASE HEARING, YOU MUST INCLUDE THE FOLLOWING ITEMS IN YOUR REQUEST: your name, address, phone number; applicant's name and proposed permit number; the location and distance of your property/activities relative to the proposed facility; a specific description of how you would be adversely affected by the facility in a way not common to the general public; a list of all disputed issues of fact that you submit during the comment period and, the statement "[I/we] request a contested case hearing." If the request for contested case hearing is filed on behalf of a group or association, the request must designate the group's representative for receiving future correspondence; identify by name and physical address an individual member of the group who would be adversely affected by the proposed facility or activity; provide the information discussed above regarding the affected member's location and distance from the facility or activity; explain how and why the member would be affected; and explain how the interests the group seeks to protect are relevant to the group's purpose.**

Following the close of all applicable comment and request periods, the Executive Director will forward the application and any requests for reconsideration or for a contested case hearing to the TCEQ Commissioners for their consideration at a scheduled Commission meeting.

The Commission may only grant a request for a contested case hearing on issues the requestor submitted in their timely comments that were not subsequently withdrawn. **If a hearing is granted, the subject of a hearing will be limited to disputed issues of fact or mixed questions of fact and law relating to relevant and material water quality concerns submitted during the comment period.**

**MAILING LIST.** If you submit public comments, a request for a contested case hearing or a reconsideration of the Executive Director's decision, you will be added to the mailing list for this specific application to receive future public notices mailed by the Office of the Chief Clerk. In addition, you may request to be placed on: (1) the permanent mailing list for a specific applicant name and permit number; and/or (2) the mailing list for a specific county. If you wish to be placed on the permanent and/or the county mailing list, clearly specify which list(s) and send your request to TCEQ Office of the Chief Clerk at the address below.

**INFORMATION AVAILABLE ONLINE.** For details about the status of the application, visit the Commissioners' Integrated Database at www.tceq.texas.gov/goto/cid. Search the database using the permit number for this application, which is provided at the top of this notice.

**AGENCY CONTACTS AND INFORMATION.** All public comments and requests must be submitted either electronically at **https://www14.tceq.texas.gov/epic/eComment/**, or in writing to the Texas Commission on Environmental Quality, Office of the Chief Clerk, MC-105, P.O. Box 13087, Austin, Texas 78711-3087. Please be aware that any contact information you provide, including your name, phone number, email address and physical address will become part of the agency's public record. For more information about this permit application or the permitting process, please call the TCEQ Public Education Program, Toll

Free, at 1-800-687-4040 or visit their website at www.tceq.texas.gov/goto/pep. Si desea información en Español, puede llamar al 1-800-687-4040.

Further information may also be obtained from Arp Holdings, LP at the address stated above or by calling Mr. Arp Dustin, General Manager, at 830-357-6116.

Issuance Date: October 18, 2024

Tyler N. Hendrickson, P.E.
W. Wayne Weeks, P.E., retired
Neal E. Velvin, P.E., retired

VELVIN & WEEKS
CONSULTING ENGINEERS, INC.
Texas Registered Engineering Firm F-151
Phone: 903-675-3903 vwce@velvin-weeks.com Fax: 903-675-8345

930 E Corsicana Street
P.O. Box 1007
Athens, Texas 75751

October 14, 2024

Rachel Ellis
Texas Commission on Environmental Quality
Water Quality Division
Applications Review and Processing Team – MC148
PO Box 13087
Austin, Tx 78711-3087

**RE: Arp Holdings, LP – The Garden of Cordell Oaks – Domestic Wastewater Permit Application WQ0016616001, CN606303071, RN112042049**

Dear Rachel,

Please see attachements and responses below in reference to the deficiencies in your letter dated September 24, 2024.

1. Please see attached Core Data Form with corrected SOS No.
2. Please see attached Administrative Report 1.0, Section 7 – DMR/MER Contact Information
3. Please see attached revised USGS Topographic Maps (The USGS maps are on 24X29 from their website)
4. Please see attached revised Landowner's Maps
5. NORI – We confirm it is correct
6. Please see attached Plain Language Survey in a Microsoft Word document

Cordially yours,

**VELVIN & WEEKS CONSULTING ENGINEERS, INC.**

Tracy Kyser

# DOMESTIC WASTEWATER PERMIT APPLICATION WORKSHEET 3.0: LAND DISPOSAL OF EFFLUENT

**The following is required for renewal, new, and amendment permit applications.**

## Section 1. Type of Disposal System (Instructions Page 68)

Identify the method of land disposal:

- ☐ Surface application
- ☐ Irrigation
- ☐ Drip irrigation system
- ☐ Evaporation
- ☐ Subsurface application
- ☐ Subsurface soils absorption
- ☒ Subsurface area drip dispersal system
- ☐ Evapotranspiration beds
- ☐ Other (describe in detail): Click to enter text.

NOTE: All applicants without authorization or proposing new/amended subsurface disposal MUST complete and submit Worksheet 7.0.

**For existing authorizations, provide Registration Number:** Click to enter text.

## Section 2. Land Application Site(s) (Instructions Page 68)

In table 3.0(1), provide the requested information for the land application sites. Include the agricultural or cover crop type (wheat, cotton, alfalfa, bermuda grass, native grasses, etc.), land use (golf course, hayland, pastureland, park, row crop, etc.), irrigation area, amount of effluent applied, and whether or not the public has access to the area. Specify the amount of land area and the amount of effluent that will be allotted to each agricultural or cover crop, if more than one crop will be used.

**Table 3.0(1) – Land Application Site Crops**

| Crop Type & Land Use | Irrigation Area (acres) | Effluent Application (GPD) | Public Access? Y/N |
|---|---|---|---|
| Burmuda with overlay of Winter Rye | 4.67 acres | 18,000 GPD | N |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

If **yes**, indicate by a check mark if:

☐ Authorization granted ☐ Authorization pending

For **new and amendment** applications, provide copies of letters that show proof of contact and the approval letter upon receipt.

**Attachment:** Click to enter text.

**D.** For all applications involving an average daily discharge of 5 MGD or more, provide the names of all counties located within 100 statute miles downstream of the point(s) of discharge: Click to enter text.

## Section 11. TLAP Disposal Information (Instructions Page 32)

**A.** For TLAPs, is the location of the effluent disposal site in the existing permit accurate?

☒ Yes ☐ No

If **no, or a new or amendment permit application**, provide an accurate description of the disposal site location:

The disposal site is approximately 4.67 acres Southeast of the proposed development and treatment plant.

**B.** City nearest the disposal site: Seguin

**C.** County in which the disposal site is located: Guadalupe County

**D.** For **TLAPs**, describe the routing of effluent from the treatment facility to the disposal site:

Click to enter text.

**E.** For **TLAPs**, please identify the nearest watercourse to the disposal site to which rainfall runoff might flow if not contained: Cordell Creek

## Section 12. Miscellaneous Information (Instructions Page 32)

**A.** Is the facility located on or does the treated effluent cross American Indian Land?

☐ Yes ☒ No

**B.** If the existing permit contains an onsite sludge disposal authorization, is the location of the sewage sludge disposal site in the existing permit accurate?

☐ Yes ☐ No ☒ Not Applicable

If No, or if a new onsite sludge disposal authorization is being requested in this permit application, provide an accurate location description of the sewage sludge disposal site.

Click to enter text.

TCEQ Use Only

# TCEQ Core Data Form

For detailed instructions on completing this form, please read the Core Data Form Instructions or call 512-239-5175.

## SECTION I: General Information

**1. Reason for Submission** (*If other is checked please describe in space provided.*)

☒ New Permit, Registration or Authorization (*Core Data Form should be submitted with the program application.*)

☐ Renewal (*Core Data Form should be submitted with the renewal form*) ☐ Other

| 2. Customer Reference Number (if issued) | Follow this link to search for CN or RN numbers in Central Registry** | 3. Regulated Entity Reference Number (if issued) |
|---|---|---|
| CN - 606303071 | | RN -112042049 |

## SECTION II: Customer Information

**4. General Customer Information** | **5. Effective Date for Customer Information Updates** (mm/dd/yyyy)

☒ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

***The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).***

**6. Customer Legal Name** (*If an individual, print last name first: eg: Doe, John*) — *If new Customer, enter previous Customer below:*

Arp Holdings, LP

| 7. TX SOS/CPA Filing Number | 8. TX State Tax ID (11 digits) | 9. Federal Tax ID (9 digits) | 10. DUNS Number (if applicable) |
|---|---|---|---|
| 32067852759 | N/A | 86-2045175 | N/A |

**11. Type of Customer:** ☐ Corporation ☐ Individual Partnership: ☐ General ☒ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

**12. Number of Employees**
☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

**13. Independently Owned and Operated?**
☐ Yes ☐ No

**14. Customer Role** (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following*

☒ Owner ☐ Operator ☐ Owner & Operator ☐ Other:
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant

| 15. Mailing Address: | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Arp Holdings, LP | | | | | | | |
| | 223 Hunters Village | | | | | | | |
| | City | New Braunfels | State | TX | ZIP | 73132 | ZIP + 4 | |

| 16. Country Mailing Information (if outside USA) | 17. E-Mail Address (if applicable) |
|---|---|
| | |

| 18. Telephone Number | 19. Extension or Code | 20. Fax Number *(if applicable)* |
|---|---|---|
| ( 830 ) 357-6116 | | ( ) - |

## SECTION III: Regulated Entity Information

**21. General Regulated Entity Information** *(If 'New Regulated Entity" is selected, a new permit application is also required.)*

☒ New Regulated Entity ☐ Update to Regulated Entity Name ☐ Update to Regulated Entity Information

***The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).***

**22. Regulated Entity Name** *(Enter name of the site where the regulated action is taking place.)*

The Garden of Cordell Oaks

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **23. Street Address of the Regulated Entity:** ***(No PO Boxes)*** | 1313 McKight Rd. | | | | | | | |
| | **City** | Seguin | **State** | TX | **ZIP** | 78155 | **ZIP + 4** | |
| **24. County** | | | | | | | | |

**If no Street Address is provided, fields 25-28 are required.**

| **25. Description to Physical Location:** | |
|---|---|

| **26. Nearest City** | **State** | **Nearest ZIP Code** |
|---|---|---|
| Seguin | Tx | 78155 |

***Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).***

| **27. Latitude (N) In Decimal:** | 29.50853 | | **28. Longitude (W) In Decimal:** | -97-89332 | |
|---|---|---|---|---|---|
| Degrees | Minutes | Seconds | Degrees | Minutes | Seconds |
| 29 | 30 | 30.708 | 97 | 53 | 35.952 |

| **29. Primary SIC Code** (4 digits) | **30. Secondary SIC Code** (4 digits) | **31. Primary NAICS Code** (5 or 6 digits) | **32. Secondary NAICS Code** (5 or 6 digits) |
|---|---|---|---|
| | | | |

**33. What is the Primary Business of this entity?** *(Do not repeat the SIC or NAICS description.)*

Manufactured Homes Community

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **34. Mailing Address:** | **Arp Holdings, LP** | | | | | | | |
| | **223 Hunters Village** | | | | | | | |
| | **City** | **New Braunfels** | **State** | **TX** | **ZIP** | **73132** | **ZIP + 4** | |
| **35. E-Mail Address:** | **dustin.arp@sparkhomestexas.com** | | | | | | | |

| **36. Telephone Number** | **37. Extension or Code** | **38. Fax Number** *(if applicable)* |
|---|---|---|
| **( 830 ) 357-6116** | | ( ) - |

**39. TCEQ Programs and ID Numbers** Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

| | | | | |
|---|---|---|---|---|
| ☐ Dam Safety | ☐ Districts | ☐ Edwards Aquifer | ☐ Emissions Inventory Air | ☐ Industrial Hazardous Waste |
| ☐ Municipal Solid Waste | ☐ New Source Review Air | ☐ OSSF | ☐ Petroleum Storage Tank | ☐ PWS |
| ☐ Sludge | ☐ Storm Water | ☐ Title V Air | ☐ Tires | ☐ Used Oil |
| ☐ Voluntary Cleanup | ☒ Wastewater | ☐ Wastewater Agriculture | ☐ Water Rights | ☐ Other: |

## SECTION IV: Preparer Information

| **40. Name:** | Tracy Kyser | **41. Title:** | Permit Coordinator |
|---|---|---|---|

| **42. Telephone Number** | **43. Ext./Code** | **44. Fax Number** | **45. E-Mail Address** |
|---|---|---|---|
| ( 903 ) 675-3903 | | ( ) - | tracyk@velvin-weeks.com |

## SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

| **Company:** | Arp Holdings, Lp | **Job Title:** | Owner |
|---|---|---|---|
| **Name** *(In Print):* | DUSTIN ARP, GENERAL PARTNER | **Phone:** | ( 830 ) 357- 6116 |
| **Signature:** | | **Date:** | 6/25/2024 |

**B.** Prefix: Ms. Last Name, First Name: Kyser, Tracy

Title: Permit Coordinator Credential: Click to enter text.

Organization Name: Velvin & Weeks Consulting Engineers, Inc.

Mailing Address: 930 E. Corsicana St. City, State, Zip Code: Athens, Tx 75751

Phone No.: 903-675-3903 E-mail Address: tracyk@velvin-weeks.com

## Section 6. Billing Contact Information (Instructions Page 27)

The permittee is responsible for paying the annual fee. The annual fee will be assessed to permits ***in effect on September 1 of each year***. The TCEQ will send a bill to the address provided in this section. The permittee is responsible for terminating the permit when it is no longer needed (using form TCEQ-20029).

Prefix: Mr. Last Name, First Name: Arp, Dustin

Title: General Manager Credential: Click to enter text.

Organization Name: Arp Holdings, Lp

Mailing Address: 223 Hunters Village City, State, Zip Code: New Braunfels, Tx 73132

Phone No.: 830-357-6116 E-mail Address: dustin.arp@sparkhomestexas.com

## Section 7. DMR/MER Contact Information (Instructions Page 27)

Provide the name and complete mailing address of the person delegated to receive and submit Discharge Monitoring Reports (DMR) (EPA 3320-1) or maintain Monthly Effluent Reports (MER).

Prefix: Click to enter text. Last Name, First Name: Arp, Dustin

Title: General Manager Credential: Click to enter text.

Organization Name: Arp Holdings, Lp

Mailing Address: 223 Hunters Village City, State, Zip Code: New Braunfels, Tx 73132

Phone No.: 830-357-6116 E-mail Address: dustin.arp@sparkhomestexas.com

## Section 8. Public Notice Information (Instructions Page 27)

**A. Individual Publishing the Notices**

Prefix: Ms. Last Name, First Name: Kyser, Tracy

Title: Permit Coordinator Credential: Click to enter text.

Organization Name: Velvin & Weeks Consulting Engineers, Inc.

Mailing Address: 930 E. Corsicana St. City, State, Zip Code: Athens, Tx 75751

Phone No.: 903-675-3903 E-mail Address: tracyk@velvin-weeks.com

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map
OnDemand Topo

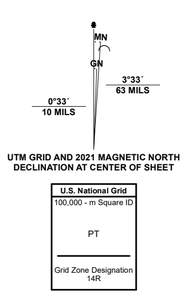
**7.5-MINUTE TOPO QUADRANGLE**
Custom Extent
7.5-MINUTE TOPO


**Produced by the United States Geological Survey**
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 14R

Data is provided by The National Map (TNM), is the best available at the time of map generation, and includes data content from supporting themes of Elevation, Hydrography, Geographic Names, Boundaries, Transportation, Structures, Land Cover, and Orthoimagery. Refer to associated Federal Geographic Data Committee (FGDC) Metadata for additional source data information.

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands. Temporal changes may have occurred since these data were collected and some data may no longer represent actual surface conditions.

Learn About The National Map: https://nationalmap.gov

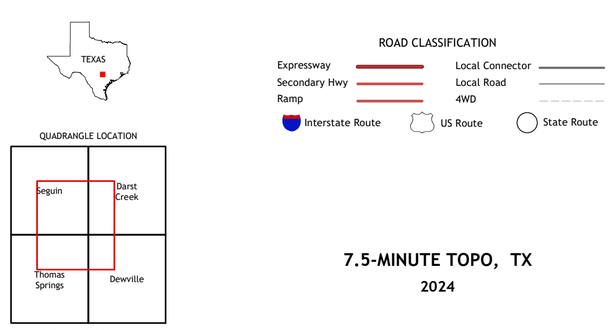



UTM GRID AND 2021 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1 MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 FEET

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988
CONTOUR SMOOTHNESS = Medium




ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

**7.5-MINUTE TOPO, TX**
**2024**

Tyler N. Hendrickson, P.E.
W. Wayne Weeks, P.E., retired
Neal E. Velvin, P.E., retired

VELVIN & WEEKS
CONSULTING ENGINEERS, INC.
Texas Registered Engineering Firm F-151
Phone: 903-675-3903 vwce@velvin-weeks.com Fax: 903-675-8345

930 E Corsicana Street
P.O. Box 1007
Athens, Texas 75751

September 5, 2024

Texas Commission on Environmental Quality
Water Quality Division
Applications Review and Processing Team – MC148
PO Box 13087
Austin, Tx 78711-3087

**RE: Arp Holdings, LP – The Garden of Cordell Oaks – Domestic Wastewater Permit Application**

Please see attached permit application. I have included (1) original and (2) copies. Please feel free to contact me if you have any questions.



Cordially yours,

**VELVIN & WEEKS CONSULTING ENGINEERS, INC.**

Tracy Kyser

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

# DOMESTIC WASTEWATER PERMIT APPLICATION CHECKLIST

**Complete and submit this checklist with the application.**

APPLICANT NAME: Arp Holdings, LP

PERMIT NUMBER (If new, leave blank): WQ00 Click to enter text.

**Indicate if each of the following items is included in your application.**

| | Y | N | | Y | N |
|---|---|---|---|---|---|
| Administrative Report 1.0 | ☒ | ☐ | Original USGS Map | ☒ | ☐ |
| Administrative Report 1.1 | ☒ | ☐ | Affected Landowners Map | ☒ | ☐ |
| SPIF | ☐ | ☐ | Landowner Disk or Labels | ☐ | ☐ |
| Core Data Form | ☒ | ☐ | Buffer Zone Map | ☒ | ☐ |
| Public Involvement Plan Form | ☒ | ☐ | Flow Diagram | ☒ | ☐ |
| Technical Report 1.0 | ☒ | ☐ | Site Drawing | ☒ | ☐ |
| Technical Report 1.1 | ☒ | ☐ | Original Photographs | ☐ | ☐ |
| Worksheet 2.0 | ☐ | ☐ | Design Calculations | ☒ | ☐ |
| Worksheet 2.1 | ☐ | ☐ | Solids Management Plan | ☐ | ☐ |
| Worksheet 3.0 | ☒ | ☐ | Water Balance | ☐ | ☐ |
| Worksheet 3.1 | ☐ | ☐ | | | |
| Worksheet 3.2 | ☐ | ☐ | | | |
| Worksheet 3.3 | ☒ | ☐ | | | |
| Worksheet 4.0 | ☐ | ☐ | | | |
| Worksheet 5.0 | ☐ | ☐ | | | |
| Worksheet 6.0 | ☐ | ☐ | | | |
| Worksheet 7.0 | ☒ | ☐ | | | |



For TCEQ Use Only

Segment Number _____County _____
Expiration Date _____Region_____
Permit Number _____

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

# DOMESTIC WASTEWATER PERMIT APPLICATION ADMINISTRATIVE REPORT 1.0

**For any questions about this form, please contact the Applications Review and Processing Team at 512-239-4671.**

## Section 1. Application Fees (Instructions Page 26)

**Indicate the amount submitted for the application fee (check only one).**

| Flow | New/Major Amendment | Renewal |
|---|---|---|
| <0.05 MGD | $350.00 ☐ | $315.00 ☐ |
| ≥0.05 but <0.10 MGD | $550.00 ☐ | $515.00 ☐ |
| ≥0.10 but <0.25 MGD | $850.00 ☒ | $815.00 ☐ |
| ≥0.25 but <0.50 MGD | $1,250.00 ☐ | $1,215.00 ☐ |
| ≥0.50 but <1.0 MGD | $1,650.00 ☐ | $1,615.00 ☐ |
| ≥1.0 MGD | $2,050.00 ☐ | $2,015.00 ☐ |

Minor Amendment (for any flow) $150.00 ☐

**Payment Information:**

Mailed — Check/Money Order Number: 50705

Check/Money Order Amount: $850.00

Name Printed on Check: Velvin & Weeks Consulting Engineers, Inc.

EPAY — Voucher Number: Click to enter text.

Copy of Payment Voucher enclosed? Yes ☐

## Section 2. Type of Application (Instructions Page 26)

**a.** Check the box next to the appropriate authorization type.

☐ Publicly-Owned Domestic Wastewater

☒ Privately-Owned Domestic Wastewater

☐ Conventional Wastewater Treatment

**b.** Check the box next to the appropriate facility status.

☐ Active ☒ Inactive

**c.** Check the box next to the appropriate permit type.

- ☐ TPDES Permit
- ☒ TLAP
- ☐ TPDES Permit with TLAP component
- ☐ Subsurface Area Drip Dispersal System (SADDS)

**d.** Check the box next to the appropriate application type

- ☒ New
- ☐ Major Amendment *with* Renewal
- ☐ Major Amendment *without* Renewal
- ☐ Renewal without changes
- ☐ Minor Amendment *with* Renewal
- ☐ Minor Amendment *without* Renewal
- ☐ Minor Modification of permit

**e.** For amendments or modifications, describe the proposed changes: Click to enter text.

**f. For existing permits**:

Permit Number: WQ00 TBD

EPA I.D. (TPDES only): TX Click to enter text.

Expiration Date: Click to enter text.

## Section 3. Facility Owner (Applicant) and Co-Applicant Information (Instructions Page 26)

**A. The owner of the facility must apply for the permit.**

What is the Legal Name of the entity (applicant) applying for this permit?

Arp Holdings, LP

*(The legal name must be spelled exactly as filed with the Texas Secretary of State, County, or in the legal documents forming the entity.)*

If the applicant is currently a customer with the TCEQ, what is the Customer Number (CN)? You may search for your CN on the TCEQ website at http://www15.tceq.texas.gov/crpub/

CN: TBD

What is the name and title of the person signing the application? The person must be an executive official meeting signatory requirements in *30 TAC § 305.44*.

Prefix: Mr. Last Name, First Name: Arp, Dustin

Title: General Manager Credential: Click to enter text.

**B. Co-applicant information.** Complete this section only if another person or entity is required to apply as a co-permittee.

What is the Legal Name of the co-applicant applying for this permit?

Click to enter text.

*(The legal name must be spelled exactly as filed with the TX SOS, with the County, or in the legal documents forming the entity.)*

If the co-applicant is currently a customer with the TCEQ, what is the Customer Number (CN)? You may search for your CN on the TCEQ website at: http://www15.tceq.texas.gov/crpub/

CN: Click to enter text.

What is the name and title of the person signing the application? The person must be an executive official meeting signatory requirements in *30 TAC § 305.44*.

Prefix: Mr. Last Name, First Name: Arp, Dustin

Title: General Manager Credential: Click to enter text.

Provide a brief description of the need for a co-permittee: Click to enter text.

**C. Core Data Form**

Complete the Core Data Form for each customer and include as an attachment. If the customer type selected on the Core Data Form is **Individual**, complete **Attachment 1** of Administrative Report 1.0. See Attachment A

## Section 4. Application Contact Information (Instructions Page 27)

This is the person(s) TCEQ will contact if additional information is needed about this application. Provide a contact for administrative questions and technical questions.

**A.** Prefix: Mr. Last Name, First Name: Prochaska, Jim

Title: P.E. Credential: P.E.

Organization Name: JNM Technologies

Mailing Address: 3607 Colson Rd. City, State, Zip Code: Bryan, Tx 77808

Phone No.: 979-779-6500 E-mail Address: jim@jnmtechnologies.com

Check one or both: ☒ Administrative Contact ☒ Technical Contact

**B.** Prefix: Ms. Last Name, First Name: Kyser, Tracy

Title: Permit Coordinator Credential: Click to enter text.

Organization Name: Velvin & Weeks Consulting Engineers, Inc.

Mailing Address: 930 E. Corsicana St. City, State, Zip Code: Athens, Tx 75751

Phone No.: 903-675-3903 E-mail Address: tracyk@velvin-weeks.com

Check one or both: ☒ Administrative Contact ☒ Technical Contact

## Section 5. Permit Contact Information (Instructions Page 27)

Provide the names and contact information for two individuals that can be contacted throughout the permit term.

**A.** Prefix: Mr. Last Name, First Name: Prochaska, Jim

Title: Click to enter text. Credential: P.E.

Organization Name: JNM Technologies

Mailing Address: 3607 Colson Rd. City, State, Zip Code: Bryan, Tx 77808

Phone No.: 979-779-6500 E-mail Address: jim@jnmtechnologies.com

**B.** Prefix: Ms. Last Name, First Name: Kyser, Tracy

Title: Permit Coordinator Credential: Click to enter text.

Organization Name: Velvin & Weeks Consulting Engineers, Inc.

Mailing Address: 930 E. Corsicana St. City, State, Zip Code: Athens, Tx 75751

Phone No.: 903-675-3903 E-mail Address: tracyk@velvin-weeks.com

## Section 6. Billing Contact Information (Instructions Page 27)

The permittee is responsible for paying the annual fee. The annual fee will be assessed to permits ***in effect on September 1 of each year***. The TCEQ will send a bill to the address provided in this section. The permittee is responsible for terminating the permit when it is no longer needed (using form TCEQ-20029).

Prefix: Mr. Last Name, First Name: Arp, Dustin

Title: General Manager Credential: Click to enter text.

Organization Name: Arp Holdings, Lp

Mailing Address: 223 Hunters Village City, State, Zip Code: New Braunfels, Tx 73132

Phone No.: 830-357-6116 E-mail Address: dustin.arp@sparkhomestexas.com

## Section 7. DMR/MER Contact Information (Instructions Page 27)

Provide the name and complete mailing address of the person delegated to receive and submit Discharge Monitoring Reports (DMR) (EPA 3320-1) or maintain Monthly Effluent Reports (MER).

Prefix: TBD Last Name, First Name: Click to enter text.

Title: Click to enter text. Credential: Click to enter text.

Organization Name: Click to enter text.

Mailing Address: Click to enter text. City, State, Zip Code: Click to enter text.

Phone No.: Click to enter text. E-mail Address: Click to enter text.

## Section 8. Public Notice Information (Instructions Page 27)

**A. Individual Publishing the Notices**

Prefix: Ms. Last Name, First Name: Kyser, Tracy

Title: Permit Coordinator Credential: Click to enter text.

Organization Name: Velvin & Weeks Consulting Engineers, Inc.

Mailing Address: 930 E. Corsicana St. City, State, Zip Code: Athens, Tx 75751

Phone No.: 903-675-3903 E-mail Address: tracyk@velvin-weeks.com

**B. Method for Receiving Notice of Receipt and Intent to Obtain a Water Quality Permit Package**

Indicate by a check mark the preferred method for receiving the first notice and instructions:

☒ E-mail Address

☐ Fax

☐ Regular Mail

**C. Contact permit to be listed in the Notices**

Prefix: Mr. Last Name, First Name: Arp, Dustin

Title: General Manager Credential: Click to enter text.

Organization Name: Arp Holdins, Lp

Mailing Address: 223 Hunters Village City, State, Zip Code: New Braunfels, Tx 73132

Phone No.: 830-357-6116 E-mail Address: dustin.arp@sparkhomestexas.com

**D. Public Viewing Information**

*If the facility or outfall is located in more than one county, a public viewing place for each county must be provided.*

Public building name: Arp Texas Courthouse

Location within the building: Record Room

Physical Address of Building: 109 W. Longview

City: Arp, Tx 75750 County: Smith

Contact (Last Name, First Name): Robinson, Daina

Phone No.: 903-859-6131 Ext.: Click to enter text.

**E. Bilingual Notice Requirements**

This information **is required** for **new, major amendment, minor amendment or minor modification, and renewal** applications.

This section of the application is only used to determine if alternative language notices will be needed. Complete instructions on publishing the alternative language notices will be in your public notice package.

Please call the bilingual/ESL coordinator at the nearest elementary and middle schools and obtain the following information to determine whether an alternative language notices are required.

1. Is a bilingual education program required by the Texas Education Code at the elementary or middle school nearest to the facility or proposed facility?

   ☐ Yes ☒ No

   If **no**, publication of an alternative language notice is not required; **skip to** Section 9 below.

2. Are the students who attend either the elementary school or the middle school enrolled in a bilingual education program at that school?

   ☐ Yes ☒ No

3. Do the students at these schools attend a bilingual education program at another location?

   ☐ Yes ☒ No

4. Would the school be required to provide a bilingual education program but the school has waived out of this requirement under 19 TAC §89.1205(g)?

   ☐ Yes ☒ No

5. If the answer is **yes** to **question 1, 2, 3, or 4**, public notices in an alternative language are required. Which language is required by the bilingual program? N/A

**F. Plain Language Summary Template**

Complete the Plain Language Summary (TCEQ Form 20972) and include as an attachment.

**Attachment:** See attachment B

**G. Public Involvement Plan Form**

Complete the Public Involvement Plan Form (TCEQ Form 20960) for each application for a **new permit or major amendment to a permit** and include as an attachment.

**Attachment:** See attachment C

## Section 9. Regulated Entity and Permitted Site Information (Instructions Page 29)

**A.** If the site is currently regulated by TCEQ, provide the Regulated Entity Number (RN) issued to this site. **RN** TBD

Search the TCEQ's Central Registry at http://www15.tceq.texas.gov/crpub/ to determine if the site is currently regulated by TCEQ.

**B.** Name of project or site (the name known by the community where located):

The Garden of Cordell Oaks

**C.** Owner of treatment facility: Arp Holdings, LP

Ownership of Facility: ☐ Public ☒ Private ☐ Both ☐ Federal

**D.** Owner of land where treatment facility is or will be:

Prefix: Mr. Last Name, First Name: Arp, Dustin

Title: General Manager Credential: Click to enter text.

Organization Name: Arp Holdings, LP

Mailing Address: 223 Hunters Village City, State, Zip Code: New Braunfels, Tx 73132

Phone No.: 830-357-6116 E-mail Address: justin.arp@sparkhomestexas.com

If the landowner is not the same person as the facility owner or co-applicant, attach a lease agreement or deed recorded easement. See instructions.

**Attachment:** N/A

**E.** Owner of effluent disposal site:

Prefix: Click to enter text. Last Name, First Name: Arp, Dustin

Title: General Manager Credential: Click to enter text.

Organization Name: Arp Holdings, LP

Mailing Address: 223 Hunters Village City, State, Zip Code: New Braunfels, Tx 73132

Phone No.: 830-357-6116 E-mail Address: justin.arp@sparkhomestexas.com

If the landowner is not the same person as the facility owner or co-applicant, attach a lease agreement or deed recorded easement. See instructions.

**Attachment:** Click to enter text.

**F.** Owner sewage sludge disposal site (if authorization is requested for sludge disposal on property owned or controlled by the applicant)::

Prefix: TBD Last Name, First Name: Click to enter text.

Title: Click to enter text. Credential: Click to enter text.

Organization Name: Click to enter text.

Mailing Address: Click to enter text. City, State, Zip Code: Click to enter text.

Phone No.: Click to enter text. E-mail Address: Click to enter text.

If the landowner is not the same person as the facility owner or co-applicant, attach a lease agreement or deed recorded easement. See instructions.

**Attachment:** Click to enter text.

## Section 10. TPDES Discharge Information (Instructions Page 31)

**A.** Is the wastewater treatment facility location in the existing permit accurate?

☐ Yes ☐ No

If **no, or a new permit application**, please give an accurate description:

N/A

**B.** Are the point(s) of discharge and the discharge route(s) in the existing permit correct?

☐ Yes ☐ No

If **no, or a new or amendment permit application**, provide an accurate description of the point of discharge and the discharge route to the nearest classified segment as defined in 30 TAC Chapter 307:

N/A

City nearest the outfall(s): Click to enter text.

County in which the outfalls(s) is/are located: Click to enter text.

**C.** Is or will the treated wastewater discharge to a city, county, or state highway right-of-way, or a flood control district drainage ditch?

☐ Yes ☒ No

If **yes**, indicate by a check mark if:

☐ Authorization granted ☐ Authorization pending

For **new and amendment** applications, provide copies of letters that show proof of contact and the approval letter upon receipt.

**Attachment:** Click to enter text.

**D.** For all applications involving an average daily discharge of 5 MGD or more, provide the names of all counties located within 100 statute miles downstream of the point(s) of discharge: Click to enter text.

## Section 11. TLAP Disposal Information (Instructions Page 32)

**A.** For TLAPs, is the location of the effluent disposal site in the existing permit accurate?

☒ Yes ☐ No

If **no, or a new or amendment permit application,** provide an accurate description of the disposal site location:

The disposal site is approximately 504 acres Southeast of the proposed development and treatment plant.

**B.** City nearest the disposal site: Seguin

**C.** County in which the disposal site is located: Guadalupe County

**D.** For **TLAPs,** describe the routing of effluent from the treatment facility to the disposal site:

Click to enter text.

**E.** For **TLAPs,** please identify the nearest watercourse to the disposal site to which rainfall runoff might flow if not contained: Cordell Creek

## Section 12. Miscellaneous Information (Instructions Page 32)

**A.** Is the facility located on or does the treated effluent cross American Indian Land?

☐ Yes ☒ No

**B.** If the existing permit contains an onsite sludge disposal authorization, is the location of the sewage sludge disposal site in the existing permit accurate?

☐ Yes ☐ No ☒ Not Applicable

If No, or if a new onsite sludge disposal authorization is being requested in this permit application, provide an accurate location description of the sewage sludge disposal site.

Click to enter text.

**C.** Did any person formerly employed by the TCEQ represent your company and get paid for service regarding this application?

☐ Yes ☒ No

If yes, list each person formerly employed by the TCEQ who represented your company and was paid for service regarding the application: Click to enter text.

**D.** Do you owe any fees to the TCEQ?

☐ Yes ☒ No

If **yes**, provide the following information:

Account number: Click to enter text.

Amount past due: Click to enter text.

**E.** Do you owe any penalties to the TCEQ?

☐ Yes ☒ No

If **yes**, please provide the following information:

Enforcement order number: Click to enter text.

Amount past due: Click to enter text.

## Section 13. Attachments (Instructions Page 33)

Indicate which attachments are included with the Administrative Report. Check all that apply:

☐ Lease agreement or deed recorded easement, if the land where the treatment facility is located or the effluent disposal site are not owned by the applicant or co-applicant.

☒ Original full-size USGS Topographic Map with the following information:

- Applicant's property boundary
- Treatment facility boundary
- Labeled point of discharge for each discharge point (TPDES only)
- Highlighted discharge route for each discharge point (TPDES only)
- Onsite sewage sludge disposal site (if applicable)
- Effluent disposal site boundaries (TLAP only)
- New and future construction (if applicable)
- 1 mile radius information
- 3 miles downstream information (TPDES only)
- All ponds.

☐ Attachment 1 for Individuals as co-applicants

☐ Other Attachments. Please specify: Click to enter text.

## Section 14. Signature Page (Instructions Page 39)

***If co-applicants are necessary, each entity must submit an original, separate signature page.***

Permit Number:

Applicant: ARP HOLDINGS, LP

Certification:

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.

I further certify that I am authorized under 30 Texas Administrative Code § 305.44 to sign and submit this document, and can provide documentation in proof of such authorization upon request.

Signatory name (typed or printed): DUSTIN ARP

Signatory title: GENERAL PARTNER

Signature: _____ Date: 01-11-24

(Use blue ink)

Subscribed and Sworn to before me by the said Dustin Arp

on this 11th day of January, 2024.

My commission expires on the 17th day of October, 2024.

Tera Jerulle

Notary Public

TERA JERULLE
Notary Public, State of Texas
My Commission Expires
October 17, 2026
NOTARY ID 13401823-0

*[SEAL]*

Comal

County, Texas

# DOMESTIC WASTEWATER PERMIT APPLICATION ADMINISTRATIVE REPORT 1.0

The following information is required for new and amendment applications.

## Section 1. Affected Landowner Information (Instructions Page 36)

**A.** Indicate by a check mark that the landowners map or drawing, with scale, includes the following information, as applicable:

- ☒ The applicant's property boundaries
- ☒ The facility site boundaries within the applicant's property boundaries
- ☒ The distance the buffer zone falls into adjacent properties and the property boundaries of the landowners located within the buffer zone
- ☒ The property boundaries of all landowners surrounding the applicant's property (Note: if the application is a major amendment for a lignite mine, the map must include the property boundaries of all landowners adjacent to the new facility (ponds).)
- ☐ The point(s) of discharge and highlighted discharge route(s) clearly shown for one mile downstream
- ☐ The property boundaries of the landowners located on both sides of the discharge route for one full stream mile downstream of the point of discharge
- ☐ The property boundaries of the landowners along the watercourse for a one-half mile radius from the point of discharge if the point of discharge is into a lake, bay, estuary, or affected by tides
- ☒ The boundaries of the effluent disposal site (for example, irrigation area or subsurface drainfield site) and all evaporation/holding ponds within the applicant's property
- ☒ The property boundaries of all landowners surrounding the effluent disposal site
- ☐ The boundaries of the sludge land application site (for land application of sewage sludge for beneficial use) and the property boundaries of landowners surrounding the applicant's property boundaries where the sewage sludge land application site is located
- ☐ The property boundaries of landowners within one-half mile in all directions from the applicant's property boundaries where the sewage sludge disposal site (for example, sludge surface disposal site or sludge monofill) is located

**B.** ☒ Indicate by a check mark that a separate list with the landowners' names and mailing addresses cross-referenced to the landowner's map has been provided.

**C.** Indicate by a check mark in which format the landowners list is submitted:

☒ USB Drive ☐ Four sets of labels

**D.** Provide the source of the landowners' names and mailing addresses: Guadalupe County CAD

**E.** As required by *Texas Water Code § 5.115*, is any permanent school fund land affected by this application?

☐ Yes ☒ No

If **yes**, provide the location and foreseeable impacts and effects this application has on the land(s):

Click to enter text.

## Section 2. Original Photographs (Instructions Page 38)

Provide original ground level photographs. Indicate with checkmarks that the following information is provided.

☒ At least one original photograph of the new or expanded treatment unit location

☐ At least two photographs of the existing/proposed point of discharge and as much area downstream (photo 1) and upstream (photo 2) as can be captured. If the discharge is to an open water body (e.g., lake, bay), the point of discharge should be in the right or left edge of each photograph showing the open water and with as much area on each respective side of the discharge as can be captured.

☐ At least one photograph of the existing/proposed effluent disposal site

☐ A plot plan or map showing the location and direction of each photograph

## Section 3. Buffer Zone Map (Instructions Page 38)

**A.** Buffer zone map. Provide a buffer zone map on 8.5 x 11-inch paper with all of the following information. The applicant's property line and the buffer zone line may be distinguished by using dashes or symbols and appropriate labels.

- The applicant's property boundary;
- The required buffer zone; and
- Each treatment unit; and
- The distance from each treatment unit to the property boundaries.

**B.** Buffer zone compliance method. Indicate how the buffer zone requirements will be met. Check all that apply.

☒ Ownership

☐ Restrictive easement

☐ Nuisance odor control

☐ Variance

**C.** Unsuitable site characteristics. Does the facility comply with the requirements regarding unsuitable site characteristic found in 30 TAC § 309.13(a) through (d)?

☒ Yes ☐ No

# DOMESTIC WASTEWATER PERMIT APPLICATION

# SUPPLEMENTAL PERMIT INFORMATION FORM (SPIF)

This form applies to TPDES permit applications only. Complete and attach the Supplemental Permit information Form (SPIF) (TCEQ Form 20971).

**Attachment:** Click to enter text.

# WATER QUALITY PERMIT

# PAYMENT SUBMITTAL FORM

**Use this form to submit the Application Fee, if the mailing the payment.**

- Complete items 1 through 5 below.
- Staple the check or money order in the space provided at the bottom of this document.
- **Do Not mail this form with the application form.**
- Do not mail this form to the same address as the application.
- Do not submit a copy of the application with this form as it could cause duplicate permit entries.

**Mail this form and the check or money order to:**

*BY REGULAR U.S. MAIL*

Texas Commission on Environmental Quality
Financial Administration Division
Cashier's Office, MC-214
P.O. Box 13088
Austin, Texas 78711-3088

*BY OVERNIGHT/EXPRESS MAIL*

Texas Commission on Environmental Quality
Financial Administration Division
Cashier's Office, MC-214
12100 Park 35 Circle
Austin, Texas 78753

**Fee Code: WQP** **Waste Permit No:** TBD

1. Check or Money Order Number: 50705
2. Check or Money Order Amount: $850.00
3. Date of Check or Money Order: 6/25/24
4. Name on Check or Money Order: Velvin-Weeks Consulting Engineers, Inc.
5. APPLICATION INFORMATION

   Name of Project or Site: Arp Holdings, LP

   Physical Address of Project or Site: 1313 McKnight Rd, Seguin, Tx 78155

   If the check is for more than one application, attach a list which includes the name of each Project or Site (RE) and Physical Address, exactly as provided on the application.

**Staple Check or Money Order in This Space**

# ATTACHMENT 1

# INDIVIDUAL INFORMATION

## Section 1. Individual Information (Instructions Page 41)

Complete this attachment if the facility applicant or co-applicant is an individual. Make additional copies of this attachment if both are individuals.

Prefix (Mr., Ms., Miss): Click to enter text.

Full legal name (Last Name, First Name, Middle Initial): Click to enter text.

Driver's License or State Identification Number: Click to enter text.

Date of Birth: Click to enter text.

Mailing Address: Click to enter text.

City, State, and Zip Code: Click to enter text.

Phone Number: Click to enter text. Fax Number: Click to enter text.

E-mail Address: Click to enter text.

CN: Click to enter text.

**For Commission Use Only:**
Customer Number:
Regulated Entity Number:
Permit Number:

# DOMESTIC WASTEWATER PERMIT APPLICATION CHECKLIST OF COMMON DEFICIENCIES

Below is a list of common deficiencies found during the administrative review of domestic wastewater permit applications. To ensure the timely processing of this application, please review the items below and indicate by checking Yes that each item is complete and in accordance applicable rules at 30 TAC Chapters 21, 281, and 305. If an item is not required this application, indicate by checking N/A where appropriate. Please do not submit the application until the items below have been addressed.

Core Data Form (TCEQ Form No. 10400) ☐ Yes
*(Required for all application types. Must be completed in its entirety and signed. Note: Form may be signed by applicant representative.)*

Correct and Current Industrial Wastewater Permit Application Forms ☐ Yes
*(TCEQ Form Nos. 10053 and 10054. Version dated 6/25/2018 or later.)*

Water Quality Permit Payment Submittal Form (Page 19) ☐ Yes
*(Original payment sent to TCEQ Revenue Section. See instructions for mailing address.)*

7.5 Minute USGS Quadrangle Topographic Map Attached ☐ Yes
*(Full-size map if seeking "New" permit. 8 ½ x 11 acceptable for Renewals and Amendments)*

Current/Non-Expired, Executed Lease Agreement or Easement ☐ N/A ☐ Yes

Landowners Map ☐ N/A ☐ Yes
*(See instructions for landowner requirements)*

**Things to Know:**

- All the items shown on the map must be labeled.
- The applicant's complete property boundaries must be delineated which includes boundaries of contiguous property owned by the applicant.
- The applicant cannot be its own adjacent landowner. You must identify the landowners immediately adjacent to their property, regardless of how far they are from the actual facility.
- If the applicant's property is adjacent to a road, creek, or stream, the landowners on the opposite side must be identified. Although the properties are not adjacent to applicant's property boundary, they are considered potentially affected landowners. If the adjacent road is a divided highway as identified on the USGS topographic map, the applicant does not have to identify the landowners on the opposite side of the highway.

Landowners Cross Reference List ☐ N/A ☐ Yes
*(See instructions for landowner requirements)*

Landowners Labels or USB Drive attached ☐ N/A ☐ Yes
*(See instructions for landowner requirements)*

Original signature per 30 TAC § 305.44 – Blue Ink Preferred ☐ Yes
*(If signature page is not signed by an elected official or principle executive officer, a copy of signature authority/delegation letter must be attached)*

Plain Language Summary ☐ Yes

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

# DOMESTIC WASTEWATER PERMIT APPLICATION TECHNICAL REPORT 1.0

For any questions about this form, please contact the Domestic Wastewater Permitting Team at 512-239-4671.

The following information is required for all renewal, new, and amendment applications.

## Section 1. Permitted or Proposed Flows (Instructions Page 43)

**A. Existing/Interim I Phase**

Design Flow (MGD): N/A

2-Hr Peak Flow (MGD): Click to enter text.

Estimated construction start date: Click to enter text.

Estimated waste disposal start date: Click to enter text.

**B. Interim II Phase**

Design Flow (MGD): N/A

2-Hr Peak Flow (MGD): Click to enter text.

Estimated construction start date: Click to enter text.

Estimated waste disposal start date: Click to enter text.

**C. Final Phase**

Design Flow (MGD): 0.018

2-Hr Peak Flow (MGD): Click to enter text.

Estimated construction start date: Click to enter text.

Estimated waste disposal start date: Click to enter text.

**D. Current Operating Phase**

Provide the startup date of the facility: Click to enter text.

## Section 2. Treatment Process (Instructions Page 43)

**A. Current Operating Phase**

Provide a detailed description of the treatment process. **Include the type of treatment plant, mode of operation, and all treatment units.** Start with the plant's head works and

finish with the point of discharge. Include all sludge processing and drying units. **If more than one phase exists or is proposed, a description of *each phase* must be provided.**

| See attachment I |
|---|

**B. Treatment Units**

In Table 1.0(1), provide the treatment unit type, the number of units, and dimensions (length, width, depth) **of each treatment unit, accounting for *all* phases of operation.**

**Table 1.0(1) - Treatment Units**

| Treatment Unit Type | Number of Units | Dimensions (L x W x D) |
|---|---|---|
| **Trash Trap** | 1 | 6,000 gallons |
| **Flow Equalization Tank** | 1 | 6,000 gallons |
| **Aeration Tank** | 2 | 22,000 gallons |
| **Clarifier** | 1 | 30,000 gallons |
| **Effluent Tanks** | 1 | 88,000 gallons |
| | | |

**C. Process Flow Diagram**

Provide flow diagrams for the existing facilities and **each** proposed phase of construction.

**Attachment**: See attachment J

## Section 3. Site Information and Drawing (Instructions Page 44)

Provide the TPDES discharge outfall latitude and longitude. Enter N/A if not applicable.

- Latitude: N/A
- Longitude: N/A

Provide the TLAP disposal site latitude and longitude. Enter N/A if not applicable.

- Latitude: N/A
- Longitude: N/A

Provide a site drawing for the facility that shows the following:

- The boundaries of the treatment facility;
- The boundaries of the area served by the treatment facility;
- If land disposal of effluent, the boundaries of the disposal site and all storage/holding ponds; and
- If sludge disposal is authorized in the permit, the boundaries of the land application or disposal site.

**Attachment**: See attachment K

Provide the name **and** a description of the area served by the treatment facility.

| |
|---|
| The development is called The Garden of Cordell Oaks and will be the home site for approximately 115 lots in Seguin, Texas, Guadalupe County. |

Collection System Information **for wastewater TPDES permits only**: Provide information for each **uniquely owned** collection system, existing and new, served by this facility, including satellite collection systems. **Please see the instructions for a detailed explanation and examples.**

**Collection System Information**

| Collection System Name | Owner Name | Owner Type | Population Served |
|---|---|---|---|
| | | Choose an item. | |
| | | Choose an item. | |
| | | Choose an item. | |
| | | Choose an item. | |

## Section 4. Unbuilt Phases (Instructions Page 45)

Is the application for a renewal of a permit that contains an unbuilt phase or phases?

☐ Yes ☐ N/ANo

**If yes**, does the existing permit contain a phase that has not been constructed **within five years** of being authorized by the TCEQ?

☐ Yes ☐ No

**If yes**, provide a detailed discussion regarding the continued need for the unbuilt phase. **Failure to provide sufficient justification may result in the Executive Director recommending denial of the unbuilt phase or phases.**

| |
|---|
| N/A |

## Section 5. Closure Plans (Instructions Page 45)

Have any treatment units been taken out of service permanently, or will any units be taken out of service in the next five years?

☐ Yes ☒ No

**If yes**, was a closure plan submitted to the TCEQ?

☐ Yes ☐ No

**If yes**, provide a brief description of the closure and the date of plan approval.

N/A

## Section 6. Permit Specific Requirements (Instructions Page 45)

**For applicants with an existing permit, check the Other Requirements or Special Provisions of the permit.**

### A. Summary transmittal

Have plans and specifications been approved for the existing facilities and each proposed phase?

☐ Yes ☒ No

**If yes**, provide the date(s) of approval for each phase: Click to enter text.

Provide information, including dates, on any actions taken to meet a *requirement or provision* pertaining to the submission of a summary transmittal letter. **Provide a copy of an approval letter from the TCEQ, if applicable.**

N/A

### B. Buffer zones

Have the buffer zone requirements been met?

☒ Yes ☐ No

Provide information below, including dates, on any actions taken to meet the conditions of the buffer zone. If available, provide any new documentation relevant to maintaining the buffer zones.

Ownership – See attachment L

## C. Other actions required by the current permit

Does the *Other Requirements* or *Special Provisions* section in the existing permit require submission of any other information or other required actions? Examples include Notification of Completion, progress reports, soil monitoring data, etc.

☐ Yes ☒ No

**If yes**, provide information below on the status of any actions taken to meet the conditions of an *Other Requirement* or *Special Provision.*

Click to enter text.

## D. Grit and grease treatment

### 1. *Acceptance of grit and grease waste*

Does the facility have a grit and/or grease processing facility onsite that treats and decants or accepts transported loads of grit and grease waste that are discharged directly to the wastewater treatment plant prior to any treatment?

☐ Yes ☒ No

**If No**, stop here and continue with Subsection E. Stormwater Management.

### 2. *Grit and grease processing*

Describe below how the grit and grease waste is treated at the facility. In your description, include how and where the grit and grease is introduced to the treatment works and how it is separated or processed. Provide a flow diagram showing how grit and grease is processed at the facility.

N/A

### 3. *Grit disposal*

Does the facility have a Municipal Solid Waste (MSW) registration or permit for grit disposal?

☐ Yes ☒ No

**If No**, contact the TCEQ Municipal Solid Waste team at 512-239-2335. Note: A registration or permit is required for grit disposal. Grit shall not be combined with treatment plant sludge. See the instruction booklet for additional information on grit disposal requirements and restrictions.

Describe the method of grit disposal.

| |
|---|
| Click to enter text. |

4. ***Grease and decanted liquid disposal***

Note: A registration or permit is required for grease disposal. Grease shall not be combined with treatment plant sludge. For more information, contact the TCEQ Municipal Solid Waste team at 512-239-2335.

Describe how the decant and grease are treated and disposed of after grit separation.

| |
|---|
| N/A |

## E. Stormwater management

1. ***Applicability***

Does the facility have a design flow of 1.0 MGD or greater in any phase?

☐ Yes ☒ No

Does the facility have an approved pretreatment program, under 40 CFR Part 403?

☐ Yes ☒ No

**If no to both of the above**, then skip to Subsection F, Other Wastes Received.

2. ***MSGP coverage***

Is the stormwater runoff from the WWTP and dedicated lands for sewage disposal currently permitted under the TPDES Multi-Sector General Permit (MSGP), TXR050000?

☐ Yes ☐ No

**If yes**, please provide MSGP Authorization Number and skip to Subsection F, Other Wastes Received:

TXR05 Click to enter text. or TXRNE Click to enter text.

**If no**, do you intend to seek coverage under TXR050000?

☐ Yes ☐ No

3. ***Conditional exclusion***

Alternatively, do you intend to apply for a conditional exclusion from permitting based TXR050000 (Multi Sector General Permit) Part II B.2 or TXR050000 (Multi Sector General Permit) Part V, Sector T 3(b)?

☐ Yes ☐ No

**If yes**, please explain below then proceed to Subsection F, Other Wastes Received:

Click to enter text.

4. ***Existing coverage in individual permit***

Is your stormwater discharge currently permitted through this individual TPDES or TLAP permit?

☐ Yes ☐ No

**If yes**, provide a description of stormwater runoff management practices at the site that are authorized in the wastewater permit then skip to Subsection F, Other Wastes Received.

Click to enter text.

5. ***Zero stormwater discharge***

Do you intend to have no discharge of stormwater via use of evaporation or other means?

☐ Yes ☐ No

**If yes**, explain below then skip to Subsection F. Other Wastes Received.

Click to enter text.

Note: If there is a potential to discharge any stormwater to surface water in the state as the result of any storm event, then permit coverage is required under the MSGP or an individual discharge permit. This requirement applies to all areas of facilities with treatment plants or systems that treat, store, recycle, or reclaim domestic sewage, wastewater or sewage sludge (including dedicated lands for sewage sludge disposal located within the onsite property boundaries) that meet the applicability criteria of above. You have the option of obtaining coverage under the MSGP for direct discharges, (recommended), or obtaining coverage under this individual permit.

6. ***Request for coverage in individual permit***

Are you requesting coverage of stormwater discharges associated with your treatment plant under this individual permit?

☐ Yes ☐ No

**If yes**, provide a description of stormwater runoff management practices at the site for which you are requesting authorization in this individual wastewater permit and describe whether you intend to comingle this discharge with your treated effluent or discharge it via a separate dedicated stormwater outfall. Please also indicate if you

intend to divert stormwater to the treatment plant headworks and indirectly discharge it to water in the state.

Click to enter text.

Note: Direct stormwater discharges to waters in the state authorized through this individual permit will require the development and implementation of a stormwater pollution prevention plan (SWPPP) and will be subject to additional monitoring and reporting requirements. Indirect discharges of stormwater via headworks recycling will require compliance with all individual permit requirements including 2-hour peak flow limitations. All stormwater discharge authorization requests will require additional information during the technical review of your application.

## F. Discharges to the Lake Houston Watershed

Does the facility discharge in the Lake Houston watershed?

☐ Yes ☒ No

If yes, attach a Sewage Sludge Solids Management Plan. See Example 5 in the instructions.
N/A

## G. Other wastes received including sludge from other WWTPs and septic waste

### 1. *Acceptance of sludge from other WWTPs*

Does or will the facility accept sludge from other treatment plants at the facility site?

☐ Yes ☒ No

**If yes, attach sewage sludge solids management plan. See Example 5 of instructions.**

In addition, provide the date the plant started or is anticipated to start accepting sludge, an estimate of monthly sludge acceptance (gallons or millions of gallons), an estimate of the $BOD_5$ concentration of the sludge, and the design $BOD_5$ concentration of the influent from the collection system. Also note if this information has or has not changed since the last permit action.

Click to enter text.

Note: Permits that accept sludge from other wastewater treatment plants may be required to have influent flow and organic loading monitoring.

### 2. *Acceptance of septic waste*

Is the facility accepting or will it accept septic waste?

☐ Yes ☒ No

**If yes**, does the facility have a Type V processing unit?

☐ Yes ☒ No

**If yes**, does the unit have a Municipal Solid Waste permit?

☐ Yes ☒ No

**If yes to any of the above**, provide the date the plant started or is anticipated to start accepting septic waste, an estimate of monthly septic waste acceptance (gallons or millions of gallons), an estimate of the $BOD_5$ concentration of the septic waste, and the design $BOD_5$ concentration of the influent from the collection system. Also note if this information has or has not changed since the last permit action.

| |
|---|
| N/A |

Note: Permits that accept sludge from other wastewater treatment plants may be required to have influent flow and organic loading monitoring.

3. ***Acceptance of other wastes (not including septic, grease, grit, or RCRA, CERCLA or as discharged by IUs listed in Worksheet 6)***

Is or will the facility accept wastes that are not domestic in nature excluding the categories listed above?

☐ Yes ☒ No

**If yes**, provide the date that the plant started accepting the waste, an estimate how much waste is accepted on a monthly basis (gallons or millions of gallons), a description of the entities generating the waste, and any distinguishing chemical or other physical characteristic of the waste. Also note if this information has or has not changed since the last permit action.

| |
|---|
| N/A |

## Section 7. Pollutant Analysis of Treated Effluent (Instructions Page 50)

Is the facility in operation?

☐ Yes ☒ No

**If no**, this section is not applicable. Proceed to Section 8.

**If yes**, provide effluent analysis data for the listed pollutants. ***Wastewater treatment facilities*** complete Table 1.0(2). ***Water treatment facilities*** discharging filter backwash water, complete Table 1.0(3). Provide copies of the laboratory results sheets. **These tables are not applicable for a minor amendment without renewal.** See the instructions for guidance.

Note: The sample date must be within 1 year of application submission.

**Table1.0(2) – Pollutant Analysis for Wastewater Treatment Facilities**

| Pollutant | Average Conc. | Max Conc. | No. of Samples | Sample Type | Sample Date/Time |
|---|---|---|---|---|---|
| $CBOD_5$, mg/l | | | | | |
| Total Suspended Solids, mg/l | | | | | |
| Ammonia Nitrogen, mg/l | | | | | |
| Nitrate Nitrogen, mg/l | | | | | |
| Total Kjeldahl Nitrogen, mg/l | | | | | |
| Sulfate, mg/l | | | | | |
| Chloride, mg/l | | | | | |
| Total Phosphorus, mg/l | | | | | |
| pH, standard units | | | | | |
| Dissolved Oxygen*, mg/l | | | | | |
| Chlorine Residual, mg/l | | | | | |
| *E.coli* (CFU/100ml) freshwater | | | | | |
| Entercocci (CFU/100ml) saltwater | | | | | |
| Total Dissolved Solids, mg/l | | | | | |
| Electrical Conductivity, µmohs/cm, † | | | | | |
| Oil & Grease, mg/l | | | | | |
| Alkalinity ($CaCO_3$)*, mg/l | | | | | |

*TPDES permits only
†TLAP permits only

**Table1.0(3) – Pollutant Analysis for Water Treatment Facilities**

| Pollutant | Average Conc. | Max Conc. | No. of Samples | Sample Type | Sample Date/Time |
|---|---|---|---|---|---|
| Total Suspended Solids, mg/l | | | | | |
| Total Dissolved Solids, mg/l | | | | | |
| pH, standard units | | | | | |
| Fluoride, mg/l | | | | | |
| Aluminum, mg/l | | | | | |
| Alkalinity ($CaCO_3$), mg/l | | | | | |

## Section 8. Facility Operator (Instructions Page 50)

Facility Operator Name: TBD

Facility Operator's License Classification and Level: Click to enter text.

Facility Operator's License Number: Click to enter text.

## Section 9. Sludge and Biosolids Management and Disposal (Instructions Page 51)

### A. WWTP's Biosolids Management Facility Type

Check all that apply. See instructions for guidance

- ☐ Design flow>= 1 MGD
- ☐ Serves >= 10,000 people
- ☐ Class I Sludge Management Facility (per 40 CFR § 503.9)
- ☐ Biosolids generator
- ☐ Biosolids end user - land application (onsite)
- ☐ Biosolids end user - surface disposal (onsite)
- ☐ Biosolids end user - incinerator (onsite)

### B. WWTP's Biosolids Treatment Process

Check all that apply. See instructions for guidance.

- ☐ Aerobic Digestion
- ☐ Air Drying (or sludge drying beds)
- ☐ Lower Temperature Composting
- ☐ Lime Stabilization
- ☐ Higher Temperature Composting
- ☐ Heat Drying
- ☐ Thermophilic Aerobic Digestion
- ☐ Beta Ray Irradiation
- ☐ Gamma Ray Irradiation
- ☐ Pasteurization
- ☐ Preliminary Operation (e.g. grinding, de-gritting, blending)
- ☐ Thickening (e.g. gravity thickening, centrifugation, filter press, vacuum filter)
- ☐ Sludge Lagoon
- ☐ Temporary Storage (< 2 years)
- ☐ Long Term Storage (>= 2 years)
- ☐ Methane or Biogas Recovery
- ☐ Other Treatment Process: Click to enter text.

### C. Biosolids Management

Provide information on the *intended* biosolids management practice. Do not enter every management practice that you want authorized in the permit, as the permit will authorize

all biosolids management practices listed in the instructions. Rather indicate the management practice the facility plans to use.

**Biosolids Management**

| Management Practice | Handler or Preparer Type | Bulk or Bag Container | Amount (dry metric tons) | Pathogen Reduction Options | Vector Attraction Reduction Option |
|---|---|---|---|---|---|
| Choose an item. | Choose an item. | Choose an item. | | Choose an item. | Choose an item. |
| Choose an item. | Choose an item. | Choose an item. | | Choose an item. | Choose an item. |
| Choose an item. | Choose an item. | Choose an item. | | Choose an item. | Choose an item. |

If "Other" is selected for Management Practice, please explain (e.g. monofill or transport to another WWTP): Click to enter text.

**D. Disposal site**

Disposal site name: Click to enter text.

TCEQ permit or registration number: Click to enter text.

County where disposal site is located: Click to enter text.

**E. Transportation method**

Method of transportation (truck, train, pipe, other): Click to enter text.

Name of the hauler: Click to enter text.

Hauler registration number: Click to enter text.

Sludge is transported as a:

Liquid ☐ semi-liquid ☐ semi-solid ☐ solid ☐

## Section 10. Permit Authorization for Sewage Sludge Disposal (Instructions Page 53)

**A. Beneficial use authorization**

Does the existing permit include authorization for land application of sewage sludge for beneficial use?

☐ Yes ☒ No

**If yes**, are you requesting to continue this authorization to land apply sewage sludge for beneficial use?

☐ Yes ☐ No

**If yes**, is the completed **Application for Permit for Beneficial Land Use of Sewage Sludge (TCEQ Form No. 10451)** attached to this permit application (see the instructions for details)?

☐ Yes ☐ No

**B. Sludge processing authorization**

Does the existing permit include authorization for any of the following sludge processing, storage or disposal options?

| | | |
|---|---|---|
| Sludge Composting | ☐ Yes | ☐ No |
| Marketing and Distribution of sludge | ☐ Yes | ☐ No |
| Sludge Surface Disposal or Sludge Monofill | ☐ Yes | ☐ No |
| Temporary storage in sludge lagoons | ☐ Yes | ☐ No |

**If yes** to any of the above sludge options and the applicant is requesting to continue this authorization, is the completed **Domestic Wastewater Permit Application: Sewage Sludge Technical Report (TCEQ Form No. 10056)** attached to this permit application?

☐ Yes ☐ No

## Section 11. Sewage Sludge Lagoons (Instructions Page 53)

Does this facility include sewage sludge lagoons?

☐ Yes ☒ No

If yes, complete the remainder of this section. If no, proceed to Section 12.

**A. Location information**

The following maps are required to be submitted as part of the application. For each map, provide the Attachment Number.

- Original General Highway (County) Map:

  **Attachment:** N/A
- USDA Natural Resources Conservation Service Soil Map:

  **Attachment:** N/A
- Federal Emergency Management Map:

  **Attachment:** N/A
- Site map:

  **Attachment:** N/A

Discuss in a description if any of the following exist within the lagoon area. Check all that apply.

☐ Overlap a designated 100-year frequency flood plain

☐ Soils with flooding classification

☐ Overlap an unstable area

☐ Wetlands

☐ Located less than 60 meters from a fault

☒ None of the above

**Attachment:** N/A

If a portion of the lagoon(s) is located within the 100-year frequency flood plain, provide the protective measures to be utilized including type and size of protective structures:

| |
|---|
| N/A |

**B. Temporary storage information**

Provide the results for the pollutant screening of sludge lagoons. These results are in addition to pollutant results in *Section 7 of Technical Report 1.0.*

Nitrate Nitrogen, mg/kg: Click to enter text.

Total Kjeldahl Nitrogen, mg/kg: Click to enter text.

Total Nitrogen (=nitrate nitrogen + TKN), mg/kg: Click to enter text.

Phosphorus, mg/kg: Click to enter text.

Potassium, mg/kg: Click to enter text.

pH, standard units: Click to enter text.

Ammonia Nitrogen mg/kg: Click to enter text.

Arsenic: Click to enter text.

Cadmium: Click to enter text.

Chromium: Click to enter text.

Copper: Click to enter text.

Lead: Click to enter text.

Mercury: Click to enter text.

Molybdenum: Click to enter text.

Nickel: Click to enter text.

Selenium: Click to enter text.

Zinc: Click to enter text.

Total PCBs: Click to enter text.

Provide the following information:

Volume and frequency of sludge to the lagoon(s): Click to enter text.

Total dry tons stored in the lagoons(s) per 365-day period: Click to enter text.

Total dry tons stored in the lagoons(s) over the life of the unit: Click to enter text.

**C. Liner information**

Does the active/proposed sludge lagoon(s) have a liner with a maximum hydraulic conductivity of $1x10^{-7}$ cm/sec?

☐ Yes ☒ N/A No

**If yes**, describe the liner below. Please note that a liner is required.

N/A

**D. Site development plan**

Provide a detailed description of the methods used to deposit sludge in the lagoon(s):

N/A

Attach the following documents to the application.

- Plan view and cross-section of the sludge lagoon(s)

  **Attachment**: Click to enter text.
- Copy of the closure plan

  **Attachment**: Click to enter text.
- Copy of deed recordation for the site

  **Attachment**: Click to enter text.
- Size of the sludge lagoon(s) in surface acres and capacity in cubic feet and gallons

  **Attachment**: Click to enter text.
- Description of the method of controlling infiltration of groundwater and surface water from entering the site

  **Attachment**: Click to enter text.
- Procedures to prevent the occurrence of nuisance conditions

  **Attachment**: Click to enter text.

**E. Groundwater monitoring**

Is groundwater monitoring currently conducted at this site, or are any wells available for groundwater monitoring, or are groundwater monitoring data otherwise available for the sludge lagoon(s)?

☐ Yes ☒ No

If groundwater monitoring data are available, provide a copy. Provide a profile of soil types encountered down to the groundwater table and the depth to the shallowest groundwater as a separate attachment.

**Attachment:** Click to enter text.

## Section 12. Authorizations/Compliance/Enforcement (Instructions Page 55)

### A. Additional authorizations

Does the permittee have additional authorizations for this facility, such as reuse authorization, sludge permit, etc?

☐ Yes ☒ No

**If yes**, provide the TCEQ authorization number and description of the authorization:

N/A

### B. Permittee enforcement status

Is the permittee currently under enforcement for this facility?

☐ Yes ☒ No

Is the permittee required to meet an implementation schedule for compliance or enforcement?

☐ Yes ☒ No

**If yes** to either question, provide a brief summary of the enforcement, the implementation schedule, and the current status:

N/A

## Section 13. RCRA/CERCLA Wastes (Instructions Page 55)

### A. RCRA hazardous wastes

Has the facility received in the past three years, does it currently receive, or will it receive RCRA hazardous waste?

☐ Yes ☒ No

**B. Remediation activity wastewater**

Has the facility received in the past three years, does it currently receive, or will it receive CERCLA wastewater, RCRA remediation/corrective action wastewater or other remediation activity wastewater?

☐ Yes ☒ No

**C. Details about wastes received**

**If yes** to either Subsection A or B above, provide detailed information concerning these wastes with the application.

**Attachment:** Click to enter text.

## Section 14. Laboratory Accreditation (Instructions Page 56)

All laboratory tests performed must meet the requirements of *30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification*, which includes the following general exemptions from National Environmental Laboratory Accreditation Program (NELAP) certification requirements:

- The laboratory is an in-house laboratory and is:
  - periodically inspected by the TCEQ; or
  - located in another state and is accredited or inspected by that state; or
  - performing work for another company with a unit located in the same site; or
  - performing pro bono work for a governmental agency or charitable organization.
- The laboratory is accredited under federal law.
- The data are needed for emergency-response activities, and a laboratory accredited under the Texas Laboratory Accreditation Program is not available.
- The laboratory supplies data for which the TCEQ does not offer accreditation.

The applicant should review 30 TAC Chapter 25 for specific requirements.

The following certification statement shall be signed and submitted with every application. See the Signature Page section in the Instructions, for a list of designated representatives who may sign the certification.

CERTIFICATION:

I certify that all laboratory tests submitted with this application meet the requirements of *30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification.*

Printed Name: Click to enter text.

Title: Click to enter text.

Signature: _____

Date: _____

# DOMESTIC WASTEWATER PERMIT APPLICATION TECHNICAL REPORT 1.1

The following information is required for new and amendment major applications.

## Section 1. Justification for Permit (Instructions Page 57)

### A. Justification of permit need

Provide a detailed discussion regarding the need for any phase(s) not currently permitted. Failure to provide sufficient justification may result in the Executive Director recommending denial of the proposed phase(s) or permit.

Preliminary plans for the The Garden of Cordell Oaks involve building a subdivision with approximately 115 lots. Flows will be greater thatn 5,000 GPD and therefore a TCEQ discharge permit is required.

### B. Regionalization of facilities

For additional guidance, please review TCEQ's Regionalization Policy for Wastewater Treatment[1].

Provide the following information concerning the potential for regionalization of domestic wastewater treatment facilities:

#### 1. *Municipally incorporated areas*

If the applicant is a city, then Item 1 is not applicable. Proceed to Item 2 Utility CCN areas.

Is any portion of the proposed service area located in an incorporated city?

☐ Yes ☐ No ☒ Not Applicable

**If yes**, within the city limits of: Click to enter text.

**If yes**, attach correspondence from the city.

**Attachment:** Click to enter text.

If consent to provide service is available from the city, attach a justification for the proposed facility and a cost analysis of expenditures that includes the cost of connecting to the city versus the cost of the proposed facility or expansion attached.

**Attachment:** Click to enter text.

#### 2. *Utility CCN areas*

Is any portion of the proposed service area located inside another utility's CCN area?

☐ Yes ☒ No

[1] https://www.tceq.texas.gov/permitting/wastewater/tceq-regionalization-for-wastewater

**If yes**, attach a justification for the proposed facility and a cost analysis of expenditures that includes the cost of connecting to the CCN facilities versus the cost of the proposed facility or expansion.

**Attachment**: N/A

3. ***Nearby WWTPs or collection systems***

Are there any domestic permitted wastewater treatment facilities or collection systems located within a three-mile radius of the proposed facility?

☐ Yes ☒ No

**If yes**, attach a list of these facilities and collection systems that includes each permittee's name and permit number, and an area map showing the location of these facilities and collection systems.

**Attachment**: N/A

**If yes**, attach proof of mailing a request for service to each facility and collection system, the letters requesting service, and correspondence from each facility and collection system.

**Attachment**: N/A

If the facility or collection system agrees to provide service, attach a justification for the proposed facility and a cost analysis of expenditures that includes the cost of connecting to the facility or collection system versus the cost of the proposed facility or expansion.

**Attachment:** N/A

## Section 2. Proposed Organic Loading (Instructions Page 59)

Is this facility in operation?

☐ Yes ☒ No

**If no**, proceed to Item B, Proposed Organic Loading.

**If yes**, provide organic loading information in Item A, Current Organic Loading

### A. Current organic loading

Facility Design Flow (flow being requested in application): Click to enter text.

Average Influent Organic Strength or $BOD_5$ Concentration in mg/l: Click to enter text.

Average Influent Loading (lbs/day = total average flow X average $BOD_5$ conc. X 8.34): Click to enter text.

Provide the source of the average organic strength or $BOD_5$ concentration.

Click to enter text.

### B. Proposed organic loading

This table must be completed if this application is for a facility that is not in operation or if this application is to request an increased flow that will impact organic loading.

**Table 1.1(1) – Design Organic Loading**

| Source | Total Average Flow (MGD) | Influent BOD5 Concentration (mg/l) |
|---|---|---|
| Municipality | | |
| Subdivision | 0.018 MGD | 250 mg/1 |
| Trailer park - transient | | |
| Mobile home park | | |
| School with cafeteria and showers | | |
| School with cafeteria, no showers | | |
| Recreational park, overnight use | | |
| Recreational park, day use | | |
| Office building or factory | | |
| Motel | | |
| Restaurant | | |
| Hospital | | |
| Nursing home | | |
| Other | | |
| TOTAL FLOW from all sources | 0.018 MGD | 250 mg/l |
| AVERAGE $BOD_5$ from all sources | | |

## Section 3. Proposed Effluent Quality and Disinfection (Instructions Page 59)

### A. Existing/Interim I Phase Design Effluent Quality

Biochemical Oxygen Demand (5-day), mg/l: 37.53 $BOD_5$

Total Suspended Solids, mg/l: 30 mg/1

Ammonia Nitrogen, mg/l: 100 mg/l

Total Phosphorus, mg/l: N/A

Dissolved Oxygen, mg/l: <2.00 mg/l

Other: Click to enter text.

Provide the source(s) used to determine 100-year frequency flood plain.

| |
|---|
| N/A |

For a new or expansion of a facility, will a wetland or part of a wetland be filled?

☐ Yes ☒ No

**If yes**, has the applicant applied for a US Corps of Engineers 404 Dredge and Fill Permit?

☐ Yes ☐ No

**If yes**, provide the permit number: Click to enter text.

**If no**, provide the approximate date you anticipate submitting your application to the Corps: Click to enter text.

**B. Wind rose**

Attach a wind rose: N/A

## Section 6. Permit Authorization for Sewage Sludge Disposal (Instructions Page 60)

**A. Beneficial use authorization**

Are you requesting to include authorization to land apply sewage sludge for beneficial use on property located adjacent to the wastewater treatment facility under the wastewater permit?

☐ Yes ☒ No

**If yes**, attach the completed **Application for Permit for Beneficial Land Use of Sewage Sludge (TCEQ Form No. 10451)**: Click to enter text.

**B. Sludge processing authorization**

Identify the sludge processing, storage or disposal options that will be conducted at the wastewater treatment facility:

☐ Sludge Composting

☐ Marketing and Distribution of sludge

☐ Sludge Surface Disposal or Sludge Monofill

**If any of the above**, sludge options are selected, attach the completed **Domestic Wastewater Permit Application: Sewage Sludge Technical Report (TCEQ Form No. 10056)**: N/A

## Section 7. Sewage Sludge Solids Management Plan (Instructions Page 61)

Attach a solids management plan to the application.

**Attachment:** N/A

The sewage sludge solids management plan must contain the following information:

- Treatment units and processes dimensions and capacities

- Solids generated at 100, 75, 50, and 25 percent of design flow
- Mixed liquor suspended solids operating range at design and projected actual flow
- Quantity of solids to be removed and a schedule for solids removal
- Identification and ownership of the ultimate sludge disposal site
- For facultative lagoons, design life calculations, monitoring well locations and depths, and the ultimate disposal method for the sludge from the facultative lagoon

An example of a sewage sludge solids management plan has been included as Example 5 of the instructions.

# DOMESTIC WASTEWATER PERMIT APPLICATION WORKSHEET 3.0: LAND DISPOSAL OF EFFLUENT

**The following is required for renewal, new, and amendment permit applications.**

## Section 1. Type of Disposal System (Instructions Page 68)

Identify the method of land disposal:

- ☐ Surface application
- ☐ Irrigation
- ☐ Drip irrigation system
- ☐ Evaporation
- ☐ Other (describe in detail): Click to enter text.
- ☐ Subsurface application
- ☐ Subsurface soils absorption
- ☒ Subsurface area drip dispersal system
- ☐ Evapotranspiration beds

NOTE: All applicants without authorization or proposing new/amended subsurface disposal MUST complete and submit Worksheet 7.0.

**For existing authorizations, provide Registration Number:** Click to enter text.

## Section 2. Land Application Site(s) (Instructions Page 68)

In table 3.0(1), provide the requested information for the land application sites. Include the agricultural or cover crop type (wheat, cotton, alfalfa, bermuda grass, native grasses, etc.), land use (golf course, hayland, pastureland, park, row crop, etc.), irrigation area, amount of effluent applied, and whether or not the public has access to the area. Specify the amount of land area and the amount of effluent that will be allotted to each agricultural or cover crop, if more than one crop will be used.

**Table 3.0(1) – Land Application Site Crops**

| Crop Type & Land Use | Irrigation Area (acres) | Effluent Application (GPD) | Public Access? Y/N |
|---|---|---|---|
| Burmuda with overlay of Winter Rye | | 20,000 GPD | N |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

## Section 3. Storage and Evaporation Lagoons/Ponds (Instructions Page 68)

**Table 3.0(2) – Storage and Evaporation Ponds**

| Pond Number | Surface Area (acres) | Storage Volume (acre-feet) | Dimensions | Liner Type |
|---|---|---|---|---|
| N/A | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Attach a copy of a liner certification that was prepared, signed, and sealed by a Texas licensed professional engineer for each pond.

**Attachment**: Click to enter text.

## Section 4. Flood and Runoff Protection (Instructions Page 68)

Is the land application site within the 100-year frequency flood level?

☐ Yes ☒ No

**If yes**, describe how the site will be protected from inundation.

N/A

Provide the source used to determine the 100-year frequency flood level:

Click to enter text.

Provide a description of tailwater controls and rainfall run-on controls used for the land application site.

The subsurface drip irrigation area will be constructed in areas with average grade of 3% or flatter, to avoid excessive run-off. Drip system will not be installed near creek banks or steeper slopes. Beams may be used to reduce runoff from some areas.

## Section 5. Annual Cropping Plan (Instructions Page 68)

Attach an Annual Cropping Plan which includes a discussion of each of the following items. If not applicable, provide a detailed explanation indicating why. **Attachment:** See attachment O

- Soils map with crops
- Cool and warm season plant species
- Crop yield goals
- Crop growing season
- Crop nutrient requirements
- Additional fertilizer requirements
- Minimum/maximum harvest height (for grass crops)
- Supplemental watering requirements
- Crop salt tolerances
- Harvesting method/number of harvests
- Justification for not removing existing vegetation to be irrigated

## Section 6. Well and Map Information (Instructions Page 69)

Attach a USGS map with the following information shown and labeled. If not applicable, provide a detailed explanation indicating why. **Attachment:** See attachment P

- The boundaries of the land application site(s)
- Waste disposal or treatment facility site(s)
- On-site buildings
- Buffer zones
- Effluent storage and tailwater control facilities
- All water wells within 1-mile radius of the disposal site or property boundaries
- All springs and seeps onsite and within 500 feet of the property boundaries
- All surface waters in the state onsite and within 500 feet of the property boundaries
- All faults and sinkholes onsite and within 500 feet of the property

List and cross reference all water wells located within a half-mile radius of the disposal site or property boundaries shown on the USGS map in the following table. Attach additional pages as necessary to include all of the wells.

**Table 3.0(3) – Water Well Data**

| Well ID | Well Use | Producing? Y/N | Open, cased, capped, or plugged? | Proposed Best Management Practice |
|---|---|---|---|---|
| N/A | | | Choose an item. | |
| | | | Choose an item. | |
| | | | Choose an item. | |
| | | | Choose an item. | |
| | | | Choose an item. | |

If water quality data or well log information is available please include the information in an attachment listed by Well ID.

**Attachment**: See attachment Q

## Section 7. Groundwater Quality (Instructions Page 69)

Attach a Groundwater Quality Technical Report which assesses the impact of the wastewater disposal system on groundwater. This report shall include an evaluation of the water wells (including the information in the well table provided in Item 6. above), the wastewater application rate, and pond liners. Indicate by a check mark that this report is provided.

**Attachment**: See attachment R

Are groundwater monitoring wells available onsite? ☐ Yes ☒ No

Do you plan to install ground water monitoring wells or lysimeters around the land application site? ☐ Yes ☒ No

**If yes**, provide the proposed location of the monitoring wells or lysimeters on a site map.

**Attachment**: N/A

## Section 8. Soil Map and Soil Analyses (Instructions Page 70)

### A. Soil map

Attach a USDA Soil Survey map that shows the area to be used for effluent disposal.

**Attachment**: See attachment S

### B. Soil analyses

Attach the laboratory results sheets from the soil analyses. **Note**: for renewal applications, the current annual soil analyses required by the permit are acceptable as long as the test date is less than one year prior to the submission of the application.

**Attachment**: See attachment S

List all USDA designated soil series on the proposed land application site. Attach additional pages as necessary.

**Table 3.0(4) – Soil Data**

| Soil Series | Depth from Surface | Permeability | Available Water Capacity | Curve Number |
|---|---|---|---|---|
| CsC3 - Crocket loam | 0-8" | Moderate to low | 0.00 to 0.03 in/hr | 2 to 5% |
| DmC - Robco-Tanglewood Complex | 0-11" | Moderate to high | 0.57 to 1.98 in/hr | 1 to 5% |
| WdC3 - Windthorst fine sandy loam | 0-8 | Moderately high | 0.20 to 0.57 on/hr | 1 to 5% |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

## Section 9. Effluent Monitoring Data (Instructions Page 71)

Is the facility in operation?

☐ Yes ☒ No

**If no**, this section is not applicable and the worksheet is complete.

**If yes**, provide the effluent monitoring data for the parameters regulated in the existing permit. If a parameter is not regulated in the existing permit, enter N/A.

**Table 3.0(5) – Effluent Monitoring Data**

| Date | 30 Day Avg Flow MGD | BOD5 mg/l | TSS mg/l | pH | Chlorine Residual mg/l | Acres irrigated |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Provide a discussion of all persistent excursions above the permitted limits and any corrective actions taken.

Click to enter text.

# DOMESTIC WASTEWATER PERMIT APPLICATION WORKSHEET 3.3: SUBSURFACE AREA DRIP DISPERSAL (SADDS) LAND DISPOSAL OF EFFLUENT

The following **is required** for **new and major amendment** subsurface area drip dispersal system permit applications. Renewal and minor amendments applicants may be asked for the worksheet on a case by case basis.

NOTE: All applicants proposing new/amended subsurface disposal MUST complete and submit Worksheet 7.0. This worksheet applies to any subsurface disposal system that **meets** the definition of a subsurface area drip dispersal system as defined in *30 TAC Chapter 222, Subsurface Area Drip Dispersal System.*

## Section 1. Administrative Information (Instructions Page 75)

**A.** Provide the legal name of all corporations or other business entities managed, owned, or otherwise closely related to the owner of the treatment facility:

**B.** Arp Holdings, LP Is the owner of the land where the treatment facility is located the same as the owner of the treatment facility?

☒ Yes ☐ No

If **no**, provide the legal name of all corporations or other business entities managed, owned, or otherwise closely related to the owner of the land where the treatment facility is located.

Click to enter text.

**C.** Owner of the subsurface area drip dispersal system: Arp Holdings, LP

**D.** Is the owner of the subsurface area drip dispersal system the same as the owner of the wastewater treatment facility or the site where the wastewater treatment facility is located?

☒ Yes ☐ No

If **no**, identify the names of all corporations or other business entities managed, owned, or otherwise closely related to the entity identified in Item 1.C.

Click to enter text.

**E.** Owner of the land where the subsurface area drip dispersal system is located: Arp Holdings, LP

**F.** Is the owner of the land where the subsurface area drip dispersal system is located the same as owner of the wastewater treatment facility, the site where the wastewater treatment facility is located, or the owner of the subsurface area drip dispersal system?

☒ Yes ☐ No

If **no**, identify the name of all corporations or other business entities managed, owned, or otherwise closely related to the entity identified in item 1.E.

Click to enter text.

## Section 2. Subsurface Area Drip Dispersal System (Instructions Page 75)

### A. Type of system

☒ Subsurface Drip Irrigation

☐ Surface Drip Irrigation

☐ Other, specify: Click to enter text.

### B. Irrigation operations

Application area, in acres: Click to enter text.

Infiltration Rate, in inches/hour: Click to enter text.

Average slope of the application area, percent (%): Click to enter text.

Maximum slope of the application area, percent (%): Click to enter text.

Storage volume, in gallons: Click to enter text.

Major soil series: Click to enter text.

Depth to groundwater, in feet: Click to enter text.

### C. Application rate

Is the facility located **west** of the boundary shown in *30 TAC § 222.83* **and** also using a vegetative cover of non-native grasses over seeded with cool season grasses during the winter months (October-March)?

☒ Yes ☐ No

**If yes**, then the facility may propose a hydraulic application rate not to exceed 0.1 gal/square foot/day.

Is the facility located **east** of the boundary shown in *30 TAC § 222.83* **or** in any part of the state when the vegetative cover is any crop other than non-native grasses?

☐ Yes ☒ No

If **yes**, the facility must use the formula in *30 TAC §222.83* to calculate the maximum hydraulic application rate.

Do you plan to submit an alternative method to calculate the hydraulic application rate for approval by the executive director?

☐ Yes ☒ No

Hydraulic application rate, in gal/square foot/day: Click to enter text.

Nitrogen application rate, in lbs/gal/day: Click to enter text.

### D. Dosing information

Number of doses per day: Click to enter text.

Dosing duration per area, in hours: Click to enter text.

Rest period between doses, in hours: Click to enter text.

Dosing amount per area, in inches/day: Click to enter text.

Number of zones: Click to enter text.

Does the proposed subsurface drip irrigation system use tree vegetative cover as a crop?

☐ Yes ☐ No

If **yes**, provide a vegetation survey by a certified arborist. Please call the Water Quality Assessment Team at (512) 239-4671 to schedule a pre-application meeting.

**Attachment:** Click to enter text.

## Section 3. Required Plans (Instructions Page 75)

**A. Recharge feature plan**

Attach a Recharge Feature Plan with all information required in *30 TAC §222.79.*

**Attachment:** See attachment T

**B. Soil evaluation**

Attach a Soil Evaluation with all information required in *30 TAC §222.73.*

**Attachment:** See attachment U

**C. Site preparation plan**

Attach a Site Preparation Plan with all information required in *30 TAC §222.75.*

**Attachment:** See attachment V

**D. Soil sampling/testing**

Attach soil sampling and testing that includes all information required in *30 TAC §222.157.*

**Attachment:** See attachment W

## Section 4. Floodway Designation (Instructions Page 76)

**A. Site location**

Is the existing/proposed land application site within a designated floodway?

☐ Yes ☒ No

**B. Flood map**

Attach either the FEMA flood map or alternate information used to determine the floodway.

**Attachment:** See attachment N

## Section 5. Surface Waters in the State (Instructions Page 76)

**A. Buffer Map**

Attach a map showing appropriate buffers on surface waters in the state, water wells, and springs/seeps.

**Attachment:** N/A

**B. Buffer variance request**

Do you plan to request a buffer variance from water wells or waters in the state?

☐ Yes ☒ No

**If yes**, then attach the additional information required in *30 TAC § 222.81(c).*

**Attachment:** Click to enter text.

## Section 6. Edwards Aquifer (Instructions Page 76)

**A.** Is the SADDS located over the Edwards Aquifer Recharge Zone as mapped by TCEQ?

☐ Yes ☒ No

**B.** Is the SADDS located over the Edwards Aquifer Transition Zone as mapped by TCEQ?

☐ Yes ☒ No

**If yes to either question**, then the SADDS may be prohibited by *30 TAC §213.8.* Please call the Municipal Permits Team at 512-239-4671 to schedule a pre-application meeting.

# WORKSHEET 7.0

## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

## CLASS V INJECTION WELL INVENTORY/AUTHORIZATION FORM

Submit the completed form to:

TCEQ
IUC Permits Team
Radioactive Materials Division
MC-233
PO Box 13087
Austin, Texas 78711-3087
512-239-6466

For TCEQ Use Only
Reg. No._____
Date Received_____
Date Authorized_____

## Section 1. General Information (Instructions Page 92)

1. **TCEQ Program Area**

   Program Area (PST, VCP, IHW, etc.): TLAP/SADDS

   Program ID: Click to enter text.

   Contact Name: Click to enter text.

   Phone Number: Click to enter text.

2. **Agent/Consultant Contact Information**

   Contact Name: Jim Prochaska

   Address: PO Box 5667

   City, State, and Zip Code: Bryan, Tx 77805-5667

   Phone Number: 979-779-6500

3. **Owner/Operator Contact Information**

   ☒ Owner ☐ Operator

   Owner/Operator Name: Click to enter text.

   Contact Name: Arp Holdings, LP

   Address: 223 Hunters Village

   City, State, and Zip Code: Bryan, Tx 73132

   Phone Number: 830-357-6116

4. **Facility Contact Information**

   Facility Name: Dustin Arp

   Address: 223 Hunters Village

   City, State, and Zip Code: Bryan, Tx 73132

   Location description (if no address is available): Click to enter text.

   Facility Contact Person: Dustin Arp

   Phone Number: 830-357-6116

5. **Latitude and Longitude, in degrees-minutes-seconds**

Latitude: 29.50853

Longitude: -97.89332

Method of determination (GPS, TOPO, etc.): Google Maps

Attach topographic quadrangle map as attachment A.

6. **Well Information**

Type of Well Construction, select one:

- ☐ Vertical Injection
- ☒ Subsurface Fluid Distribution System
- ☐ Infiltration Gallery
- ☐ Temporary Injection Points
- ☐ Other, Specify: Click to enter text.

Number of Injection Wells: Click to enter text.

7. **Purpose**

Detailed Description regarding purpose of Injection System:

| |
|---|
| Subsurface Area Drip Dispersal System (SADDS). Onsite wastewater dispersal of secondary treated effluent. |

Attach a Site Map as Attachment B (Attach the Approved Remediation Plan, if appropriate.)

8. **Water Well Driller/Installer**

Water Well Driller/Installer Name: TBD

City, State, and Zip Code: Click to enter text.

Phone Number: Click to enter text.

License Number: Click to enter text.

## Section 2. Proposed Down Hole Design

**Attach a diagram signed and sealed by a licensed engineer as Attachment C.**

**Table 7.0(1) – Down Hole Design Table**

| Name of String | Size | Setting Depth | Sacks Cement/Grout – Slurry Volume – Top of Cement | Hole Size | Weight (lbs/ft) PVC/Steel |
|---|---|---|---|---|---|
| Casing | N/A | | | | |
| Tubing | | | | | |
| Screen | | | | | |

## Section 3. Proposed Trench System, Subsurface Fluid Distribution System, or Infiltration Gallery

**Attach a diagram signed and sealed by a licensed engineer as Attachment D.**

System(s) Dimensions: See attachment Y

System(s) Construction: Click to enter text.

## Section 4. Site Hydrogeological and Injection Zone Data

1. Name of Contaminated Aquifer: Click to enter text.
2. Receiving Formation Name of Injection Zone: Click to enter text.
3. Well/Trench Total Depth: Click to enter text.
4. Surface Elevation: Click to enter text.
5. Depth to Ground Water: Click to enter text.
6. Injection Zone Depth: Click to enter text.
7. Injection Zone vertically isolated geologically? ☐ Yes ☐ No

   Impervious Strata between Injection Zone and nearest Underground Source of Drinking Water:

   Name: Click to enter text.

   Thickness: Click to enter text.
8. Provide a list of contaminants and the levels (ppm) in contaminated aquifer

   Attach as Attachment E.
9. Horizontal and Vertical extent of contamination and injection plume

   Attach as Attachment F.
10. Formation (Injection Zone) Water Chemistry (Background levels) TDS, etc.

    Attach as Attachment G.
11. Injection Fluid Chemistry in PPM at point of injection

    Attach as Attachment H.
12. Lowest Known Depth of Ground Water with < 10,000 PPM TDS: Click to enter text.
13. Maximum injection Rate/Volume/Pressure: Click to enter text.
14. Water wells within 1/4 mile radius (attach map as Attachment I): Click to enter text.
15. Injection wells within 1/4 mile radius (attach map as Attachment J): Click to enter text.
16. Monitor wells within 1/4 mile radius (attach drillers logs and map as Attachment K): Click to enter text.
17. Sampling frequency: Click to enter text.
18. Known hazardous components in injection fluid: Click to enter text.

## Section 5. Site History

1. Type of Facility: N /S
2. Contamination Dates: N/A
3. Original Contamination (VOCs, TPH, BTEX, etc.) and Concentrations (attach as Attachment L): N/A
4. Previous Remediation (attach results of any previous remediation as attachment M): N/A

**NOTE: Authorization Form should be completed in detail and authorization given by the TCEQ before construction, operation, and/or conversion can begin. Attach additional pages as necessary.**

### *Class V Injection Well Designations*

5A07 Heat Pump/AC return (IW used for groundwater to heat and/or cool buildings)
5A19 Industrial Cooling Water Return Flow (IW used to cool industrial process equipment)
5B22 Salt Water Intrusion Barrier (IW used to inject fluids to prevent the intrusion of salt water into an aquifer)
5D02 Storm Water Drainage (IW designed for the disposal of rain water)
5D04 Industrial Stormwater Drainage Wells (IW designed for the disposal of rain water associated with industrial facilities)
5F01 Agricultural Drainage (IW that receive agricultural runoff)
5R21 Aquifer Recharge (IW used to inject fluids to recharge an aquifer)
5S23 Subsidence Control Wells (IW used to control land subsidence caused by ground water withdrawal)
5W09 Untreated Sewage
5W10 Large Capacity Cesspools (Cesspools that are designed for 5,000 gpd or greater)
5W11 Large Capacity Septic systems (Septic systems designed for 5,000 gpd or greater)
5W12 WTTP disposal
5W20 Industrial Process Waste Disposal Wells
5W31 Septic System (Well Disposal method)
5W32 Septic System Drainfield Disposal
5X13 Mine Backfill (IW used to control subsidence, dispose of mining byproducts, and/or fill sections of a mine)
5X25 Experimental Wells (Pilot Test) (IW used to test new technologies or tracer dye studies)
5X26 Aquifer Remediation (IW used to clean up, treat, or prevent contamination of a USDW)
5X27 Other Wells
5X28 Motor Vehicle Waste Disposal Wells (IW used to dispose of waste from a motor vehicle site - These are currently banned)
5X29 Abandoned Drinking Water Wells (waste disposal)

**ATTACHMENT A**

**ADMINISTRATIVE REPORT 1. – SECTION 3 (C)**

**CORE DATA FORM**

TCEQ Use Only

# TCEQ Core Data Form

For detailed instructions on completing this form, please read the Core Data Form Instructions or call 512-239-5175.

## SECTION I: General Information

**1. Reason for Submission** *(If other is checked please describe in space provided.)*

☒ New Permit, Registration or Authorization *(Core Data Form should be submitted with the program application.)*

☐ Renewal *(Core Data Form should be submitted with the renewal form)* ☐ Other

| 2. Customer Reference Number *(if issued)* | Follow this link to search for CN or RN numbers in Central Registry** | 3. Regulated Entity Reference Number *(if issued)* |
|---|---|---|
| CN - CN606303071 | | RN -0 11204204 9 |

## SECTION II: Customer Information

**4. General Customer Information** | **5. Effective Date for Customer Information Updates** (mm/dd/yyyy)

☒ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

***The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).***

**6. Customer Legal Name** *(If an individual, print last name first: eg: Doe, John)* — *If new Customer, enter previous Customer below:*

Arp Holdings, LP

| 7. TX SOS/CPA Filing Number | 8. TX State Tax ID (11 digits) | 9. Federal Tax ID (9 digits) | 10. DUNS Number *(if applicable)* |
|---|---|---|---|
| 826399390002 | N/A | 86-2045175 | N/A |

**11. Type of Customer:** ☐ Corporation ☐ Individual Partnership: ☐ General ☒ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

**12. Number of Employees**
☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

**13. Independently Owned and Operated?**
☐ Yes ☐ No

**14. Customer Role** (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following*

☒ Owner ☐ Operator ☐ Owner & Operator ☐ Other:
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **15. Mailing Address:** | Arp Holdings, LP | | | | | | | |
| | 223 Hunters Village | | | | | | | |
| | **City** | New Braunfels | **State** | TX | **ZIP** | 73132 | **ZIP + 4** | |

| 16. Country Mailing Information *(if outside USA)* | 17. E-Mail Address *(if applicable)* |
|---|---|
| | |

| 18. Telephone Number | 19. Extension or Code | 20. Fax Number *(if applicable)* |
|---|---|---|
| ( 830 ) 357-6116 | | ( ) - |

## SECTION III: Regulated Entity Information

**21. General Regulated Entity Information** *(If 'New Regulated Entity" is selected, a new permit application is also required.)*

☒ New Regulated Entity ☐ Update to Regulated Entity Name ☐ Update to Regulated Entity Information

***The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).***

**22. Regulated Entity Name** *(Enter name of the site where the regulated action is taking place.)*

The Garden of Cordell Oaks

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **23. Street Address of the Regulated Entity:** *(No PO Boxes)* | 1313 McKight Rd. | | | | | | | |
| | **City** | Seguin | **State** | TX | **ZIP** | 78155 | **ZIP + 4** | |
| **24. County** | | | | | | | | |

**If no Street Address is provided, fields 25-28 are required.**

| | | | | | |
|---|---|---|---|---|---|
| **25. Description to Physical Location:** | | | | | |
| **26. Nearest City** | | | **State** | | **Nearest ZIP Code** |
| Seguin | | | Tx | | 78155 |

***Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).***

| | | | | | |
|---|---|---|---|---|---|
| **27. Latitude (N) In Decimal:** | 29.50853 | | **28. Longitude (W) In Decimal:** | -97-89332 | |
| Degrees | Minutes | Seconds | Degrees | Minutes | Seconds |
| 29 | 30 | 30.708 | 97 | 53 | 35.952 |

| 29. Primary SIC Code (4 digits) | 30. Secondary SIC Code (4 digits) | 31. Primary NAICS Code (5 or 6 digits) | 32. Secondary NAICS Code (5 or 6 digits) |
|---|---|---|---|
| | | | |

**33. What is the Primary Business of this entity?** *(Do not repeat the SIC or NAICS description.)*

Manufactured Homes Community

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **34. Mailing Address:** | Arp Holdings, LP | | | | | | | |
| | 223 Hunters Village | | | | | | | |
| | **City** | New Braunfels | **State** | TX | **ZIP** | 73132 | **ZIP + 4** | |
| **35. E-Mail Address:** | dustin.arp@sparkhomestexas.com | | | | | | | |

| 36. Telephone Number | 37. Extension or Code | 38. Fax Number *(if applicable)* |
|---|---|---|
| ( 830 ) 357-6116 | | ( ) - |

**39. TCEQ Programs and ID Numbers** Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

| | | | | |
|---|---|---|---|---|
| ☐ Dam Safety | ☐ Districts | ☐ Edwards Aquifer | ☐ Emissions Inventory Air | ☐ Industrial Hazardous Waste |
| | | | | |
| ☐ Municipal Solid Waste | ☐ New Source Review Air | ☐ OSSF | ☐ Petroleum Storage Tank | ☐ PWS |
| | | | | |
| ☐ Sludge | ☐ Storm Water | ☐ Title V Air | ☐ Tires | ☐ Used Oil |
| | | | | |
| ☐ Voluntary Cleanup | ☒ Wastewater | ☐ Wastewater Agriculture | ☐ Water Rights | ☐ Other: |
| | | | | |

## SECTION IV: Preparer Information

| **40. Name:** | Tracy Kyser | **41. Title:** | Permit Coordinator |
|---|---|---|---|
| **42. Telephone Number** | **43. Ext./Code** | **44. Fax Number** | **45. E-Mail Address** |
| ( 903 ) 675-3903 | | (  )  - | tracyk@velvin-weeks.com |

## SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

| **Company:** | Arp Holdings, Lp | **Job Title:** | Owner | |
|---|---|---|---|---|
| **Name** *(In Print):* | DUSTIN ARP, GENERAL PARTNER | | **Phone:** | ( 830 ) 357- 6116 |
| **Signature:** | | | **Date:** | 6/25/2024 |

**ATTACHMENT C**

**ADMINISTRATIVE REPORT 1.0– SECTION 8(G)**

**PUBLIC INVOLVEMENT PLAN FORM (PIF)**

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.

Arp Holdings, LP proposes to operate Cordell Oaks Manufactured Home Community, a subsurface area drip dispersal systems. The property is located at 1313 McKnight Rd. in Seguin, Tx, 78155 in Guadalepe County. Discharge from the facility is expected to contain a level adequate for SADDS minimum plus disinfection with UV prior to drip. This permit will not authorize a discharge of pollutants into water in the state.

## 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.**

(City)

Seguin

(County)

Guadalupe County

(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

24.2%

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

$87.030

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

White (Non-Hispanic) (48.1%), White (Hispanic) (17.5%), Two+ (Hispanic) (14.3%), Black or African American (Non-Hispanic) (7.54%), and Other (Hispanic) (5.74%).

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

35.1%

(e) Languages commonly spoken in area by percentage

English and Spanish

(f) Community and/or Stakeholder Groups

Office & Administrative Support (10,991 people), Sales & Related Occupations (8,040)

(g) Historic public interest or involvement

Economic development, ongoing labor force development, local economy (military, tourism, and regional commercial activity). transportation, and infrastructure.

## 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) Guadalupe County Courthouse

## 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 D

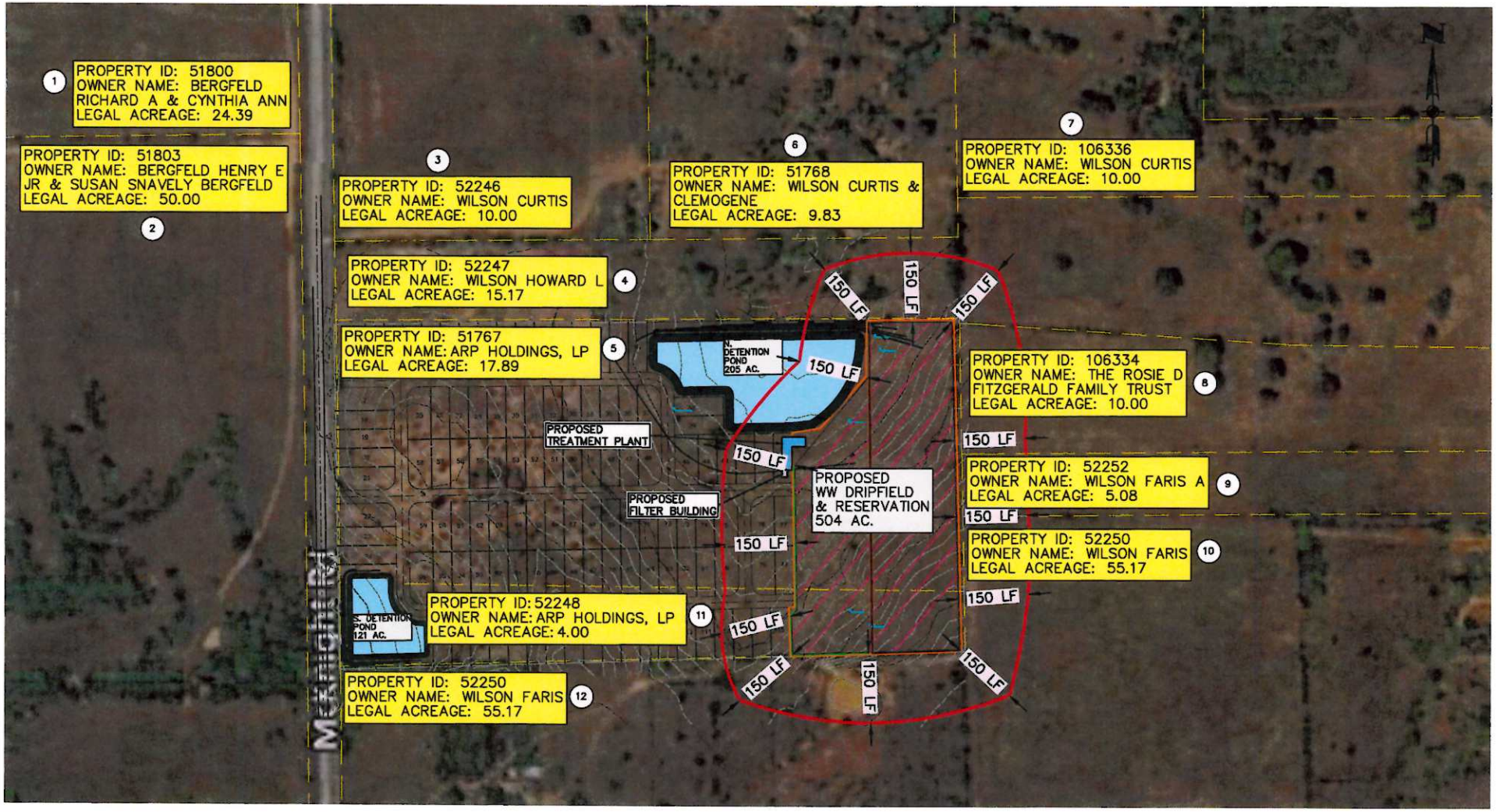
# ADMINISTRATIVE REPORT 1.0 – SECTION 13

# USGS MAP

**ATTACHMENT E**

**ADMINISTRATIVE REPORT 1.0 – SECTION 1(A)**

**AFFECTED LANDOWNERS MAP**




LEGEND
EXISTING PROPERTY LINE
150 LF DRIP FIELD BOUNDARY

PLAN
1"= 200'

PRELIMINARY
"THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF TYLER N. HENDRICKSON, P.E. 84676 ON Sep 04, 2024 . IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES."


Velvin & Weeks Consulting Engineers, Inc.
PHONE 903.675.3803
FAX 903.675.3345
VWCE@VELVIN-WEEKS.COM
930 EAST CORSICANA
ATHENS, TEXAS 75751
TEXAS REGISTERED ENGINEERING FIRM F-121


WASTEWATER PERMIT APPLICATION
THE GARDEN OF CORDELL OAKS
FOR
ARP HOLDINGS, LP
GUADALUPE COUNTY, TEXAS

MAP EXHIBIT FOR 150 LF BOUNDARY

| | |
|---|---|
| DATE | Sep 04, 24 |
| DESIGN | T.N.H. |
| DRAWN | T.L.M |
| CHECKED | T.N.H. |
| SHEET | 1 of 3 |
| JOB NO. | 5306 |

**ATTACHMENT F**

**ADMINISTRATIVE REPORT 1.0 – SECTION 1 (B) & (C)**

**LANDOWNERS LIST AND LABELS**

## Attachment F – Admin. Report 1.0 – Section 1(B) Landowners List

1. RICHARD A & CYNTHIA ANN BERGFELD
   2932 GLEN VIEW
   SEGUIN, TX 78155

1. HENRY E JR BERGFELD & SUSAN SNAVELY BERGFELD
   2610 GRAY WHALES
   CONVERSE, TX 78109

2. CURTIS WILSON
   3110 HOLLY COURT
   MISSOURI CITY, TX 77459

3. HOWARD L WILSON
   5017 CERVANTES AVE
   SAN DIEGO, CA 92113

4. ARP HOLDINGS LP
   228 HUNTERS VILLAGE
   NEW BRAUNFELS, TX 78132

5. CURTIS & CLEMOGENE WILSON
   3110 HOLLY COURT
   MISSOURI CITY, TX 77459

6. CURTIS WILSON
   3110 HOLLY COURT
   MISSOURI CITY, TX 77459

7. CAROL WILLIAMS TRUSTEE
   1068 RANGELAND ROAD
   SEGUIN, TX 78155

8. FARIS A WILSON
   151 CASTLE BREEZE DR
   SEGUIN, TX 78155

9. FARIS WILSON
   PO BOX 56
   SEGUIN, TX 78156-0056

10. ARP HOLDINGS LP
    228 HUNTERS VILLAGE
    NEW BRAUNFELS, TX 78132

11. FARIS WILSON
    PO BOX 56
    SEGUIN, TX 78156-0056

**ATTACHMENT G**

**ADMINISTRATIVE REPORT 1.0 – SECTION 2**

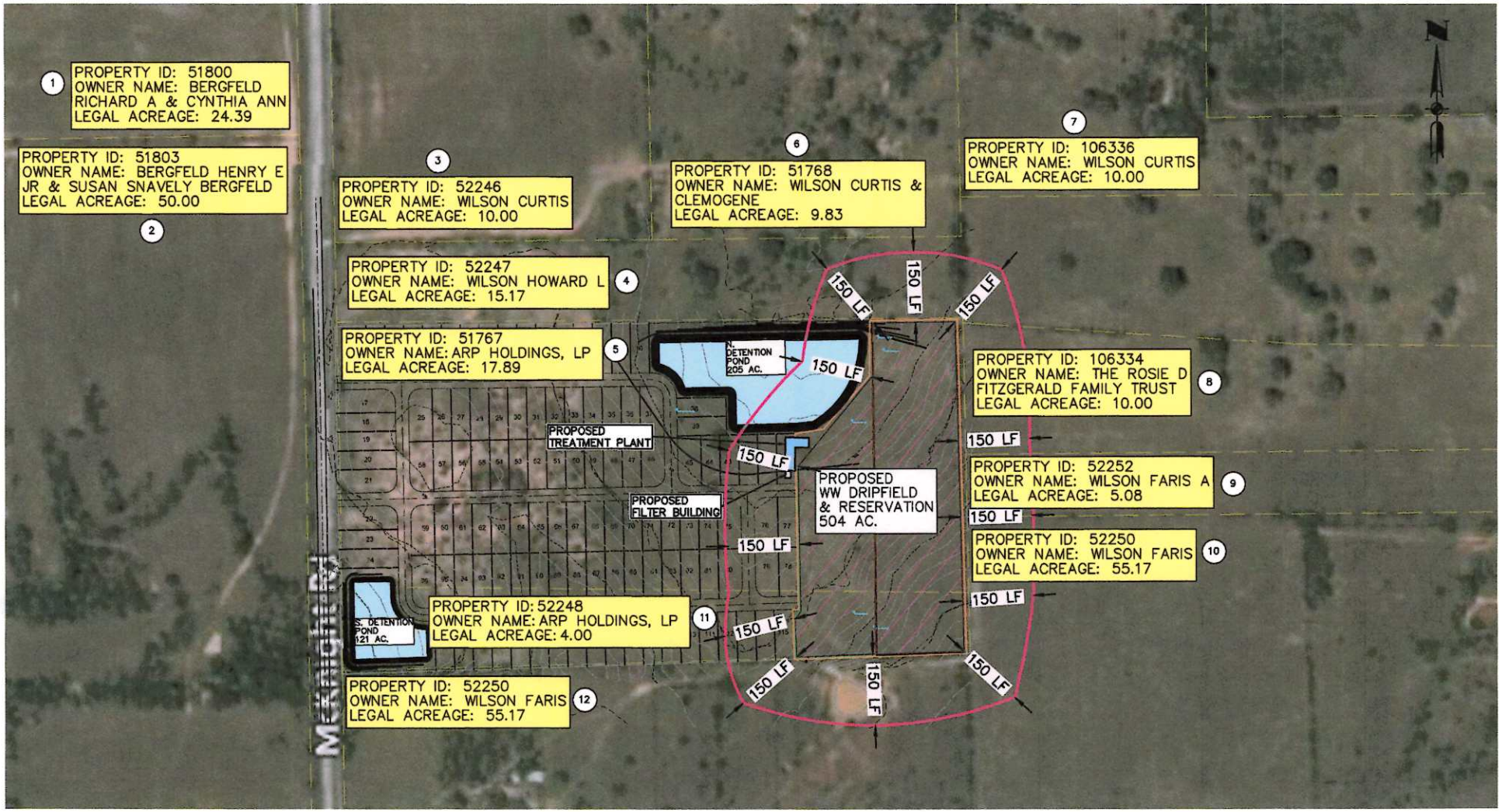
**ORIGINAL PHOTOS**


County Rd 49

# ATTACHMENT H

# ADMINISTRATIVE REPORT 1.0 – SECTION 3

# BUFFER ZONE MAP




**LEGEND**
EXISTING PROPERTY LINE
150 LF DRIP FIELD BOUNDARY

**PLAN**
1"= 200'

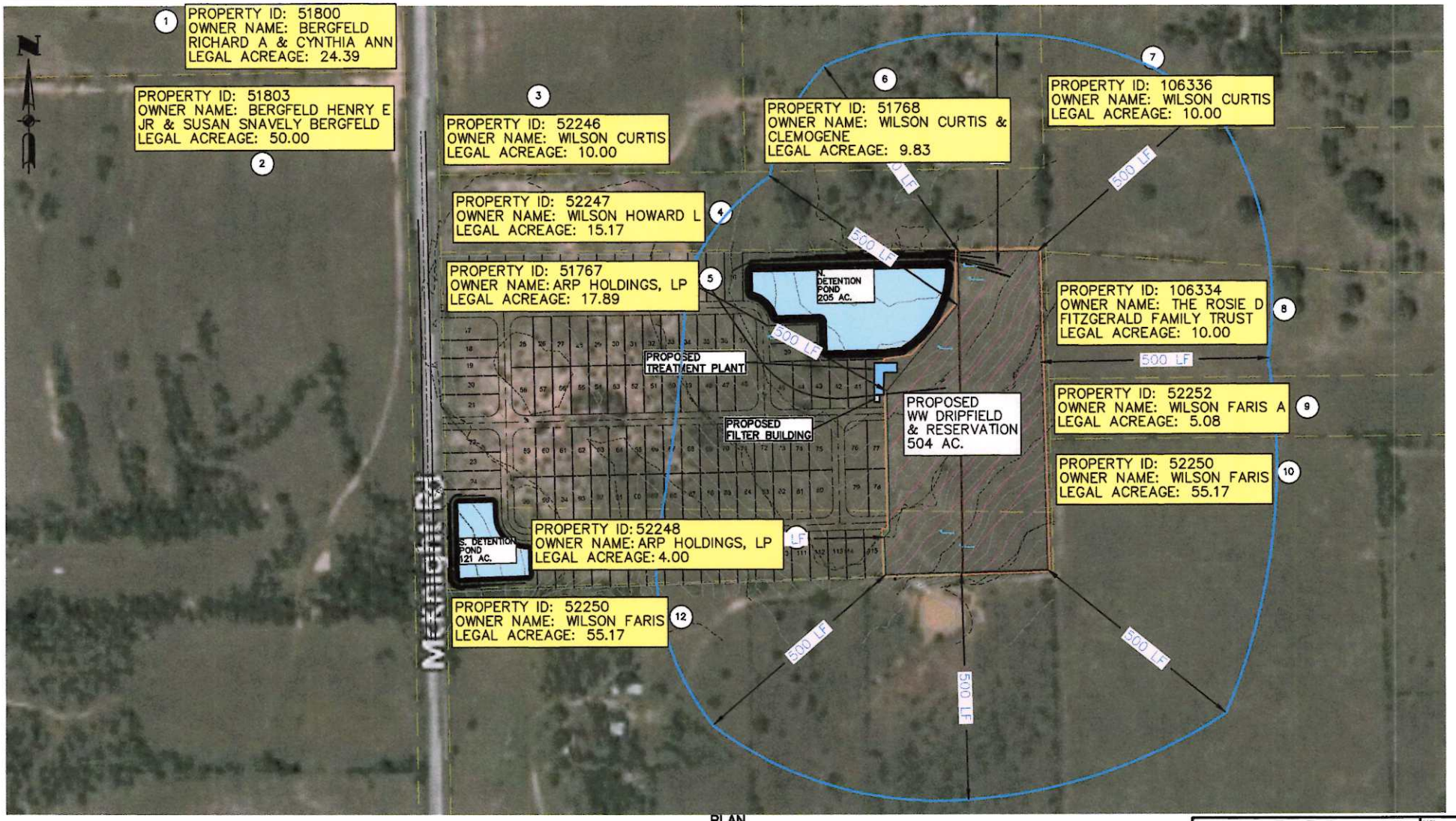
PRELIMINARY
"THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF TYLER N. HENDRICKSON, P.E. 84676 ON Sep 04, 2024 IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES."

Velvin & Weeks Consulting Engineers, Inc.
PHONE 903.675.3903
FAX 903.675.9345
VWCE@VELVIN-WEEKS.COM
930 EAST CORSICANA
ATHENS, TEXAS 75751
TEXAS REGISTERED ENGINEERING FIRM F-155

DATE: Sep 04, 24
DESIGN: T.N.H.
DRAWN: T.L.M
CHECKED: T.N.H.
SHEET: 1 of 3
JOB NO.: 5306

**WASTEWATER PERMIT APPLICATION**
**THE GARDEN OF CORDELL OAKS**
FOR
**ARP HOLDINGS, LP**
GUADALUPE COUNTY, TEXAS

**MAP EXHIBIT FOR 150 LF BOUNDARY**




PLAN
1"= 200'

**LEGEND**
EXISTING PROPERTY LINE
500 LF WELL BOUNDARY

PRELIMINARY
"THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF TYLER N. HENDRICKSON, P.E. 84676 ON Sep 04, 2024 . IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.


Velvin & Weeks Consulting Engineers, Inc.
PHONE 903.675.3903
FAX 903.675.8385
VWCE@VELVIN-WEEKS.COM
230 EAST CORSICANA
ATHENS, TEXAS 75751
TEXAS REGISTERED ENGINEERING FIRM F-151


DATE Sep 04, 24
DESIGN T.N.H.
DRAWN T.L.M
CHECKED T.N.H.
SHEET 2 of 3
JOB NO. 5306

**WASTEWATER PERMIT APPLICATION**
**THE GARDEN OF CORDELL OAKS**
FOR
**ARP HOLDINGS, LP**
GUADALUPE COUNTY, TEXAS

**MAP EXHIBIT FOR 500 LF BOUNDARY**

# ATTACHMENT I

# TECHNICAL REPORT 1.0 - SECTION 2

# TREATMENT PROCESS

## The Garden of Cordell Oaks - Wastewater Treatment Plant Component

### Primary Tank

A primary tank shall be used for primary separation of the influent sewage. The primary tank shall be properly baffled to prevent short-circuiting of the flow and to hold back settled and floating material so as to prevent its entry to the aeration chamber. Two inspection covers shall be installed on the lid of the trash trap. They shall be located above the inlet and the outlet of the tank to permit access and inspection. In addition, a clean-out opening shall be located in the center of the tank and risers (if needed) shall be installed to grade to permit tank pumping. Total holding capacity of the trash trap shall be 6,000 gallons.

### Aerated Flow Equalization Tank

An aerated flow equalization tank shall be installed to provide storage capability for anticipated surges in the daily wastewater flow. The facility shall be designed to protect the hydraulic reliability of the secondary wastewater treatment system when the peak to average diurnal flow ratio exceeds four to one or when a significant runoff period of less than eighteen hours per day is encountered. The aerated flow equalization facility shall be designed to precede a wastewater treatment plant of 8,000 gallons per day rated capacity. The total holding capacity of the flow equalization facility shall be 15,000 gallons. 2,000 gallons will be retained in the flow equalization tank to meet the 3 days of storage which is added to the 30,000 gallons in the effluent pump tanks for a total of 32,000 gallons.

### Aeration Equipment for Flow Equalization

Aerobic conditions shall be maintained within the flow equalization facility at all times. Aeration equipment shall include a simplex rotary blower package capable of providing 50 CFM of free air at the rated operating pressure of 5 PSI. The blower unit shall be provided with inlet air filter/silencer, discharge pressure relief valve and discharge flexible coupling connector to the air header assembly. Since more than one blower is provided, check valves shall be included in the discharge piping. Blower connection to the drive model motor(s) shall be with conventional v-belt power transmission drive assembly.

## Aeration

Air shall be injected into the tankage through diffusers containing a minimum of one air diffusion orifice for each five inches of equalization tank length. A drop pipe to each diffuser shall be connected to the common air header by means of a release coupling. One air adjustment valve shall be provided for each drop pipe upstream of the disconnect to enable a proper balance of air distribution to be obtained even when a diffuser has been removed for inspection.

## Flow Equalization Pumps

Duplex alternating 2" solids pumps for the flow equalization tank influent to the inlet aeration tankage. Each of the pumps shall be capable of delivering up to necessary flow to the aeration tank. The pumps will be run in a time dose configuration to ensure even flow to the treatment plant throughout the day.

## Electrical Controls

The flow equalization tank pumps shall be activated automatically by level control monitors. The level controls shall be designed to automatically alternate the pumps at each cycle to equalize wear. An override control shall activate the lag pump automatically if liquid level in the equalization tank rises six inches above the activating point of the lead pump. In addition, a flashing light high water alarm shall be activated if liquid level rises six inches above the activating point of the lag pump.

The discharge from the Equalization chamber into the aeration chambers shall occur evenly throughout the day as needed, determined by the operator based on true flows. The length of the dose shall be set to deliver the flow to the system evenly throughout these doses. An electronic timer and PLC shall control the on and off times of the flow equalization pumps

## Advanced Secondary Aeration Tanks

The aeration reactor tanks shall have a capacity to provide sufficient BLF (biological loading factor) based on treatment level requirements of the daily wastewater flow. The chamber shall be of sufficient size to provide for the correct ratio of biological activity to the incoming strength for the effluent requirement. The aeration/reactor chambers shall be designed to provide uniform tank roll and prevent deposition of solids. The overall design of the chamber shall be such that effective mixing shall be maintained to provide optimum treatment between the fixed and suspended growth bacterium. System shall have a total of 22,000 gallons of total aeration.

## Air distribution piping

PVC schedule 80 piping and fittings shall be used throughout the air distribution system. individual unions, dresser couplings and flexible couplings with stainless steel clamps shall be provided as necessary in the air distribution system. individual air control valves shall be installed in the air distribution piping as required to allow individual adjustment of each separate element within the system. primary air distribution shall be provided through a PVC air header. the air header shall have individual drop pipes connected to the header assembly for air supply to individual diffuser assemblies. Each drop pipe may be equipped with an air adjustment valve to control airflow individually to each diffuser assembly. in addition, a quick release coupling or union shall be provided for each drop pipe and diffusers assembly downstream from the air adjustment valve.

## Fine air diffusion system

Diffusers shall be constructed of polyvinyl chloride (PVC) plastic and shall be designed to insure uniform mixing within the aeration chamber. fine air bubble distribution effected by the diffusers shall be adequate to provide all oxygen necessary for the aerobic digestion process while maintaining an acceptable dissolved oxygen level in the final plant effluent. This is achieved with a snappy saddle membrane diffuser assembly or equivalent. All diffuser assembly must be installed along the length of the aeration chamber.

## Fixed media

Media modules are fabricated from PVC sheets and completely corrugated at an angle of 60 degrees from the horizontal to form a cross-corrugated pattern between adjacent sheets, creating a continuous and horizontal redistribution of air and wastewater. each structured PVC media module shall be 100% cross-flow and completely corrugated at an angle of 60 degrees for the horizontal to form a cross-corrugated each structured PVC media module shall be 100% cross-flow and completely corrugated at an angle of 60 degrees for the horizontal to form a cross-corrugated pattern between adjacent sheets, providing a minimum of 180 mixing or redistribution points per cu. ft. (6,356 per m3) of module. random, vertical or horizontal media are not acceptable. The flute height for each corrugation in the structured pvc media module shall be 1.20 in. There shall be a minimum of 10 sheets per each 12-in. wide module. each structured PVC media module must provide a minimum surface area of 31 sq.ft. /cu. ft. (101m/m3) with a minimum of 95% void-to-volume ratio.

**Welded aluminum equipment housing frame**

Frame shall be 2" x 2" ¼" aluminum. mounting plate shall be ¼" reinforced aluminum or stainless with rubber mounts, to absorb shock and noise. adjustment slide base for ease of motor alignment and belt tension adjustment shall be furnished. cabinet shall be reinforced and mounted to frame with heavy-duty aluminum piano hinge. (3" width – 1/8: with 3/8: pin). Blower packages that are to be installed inside an enclosed building shall be without enclosed cabinet complete with a belt guard.

**Main Control Panel**

Main Control Panel shall be mounted in a separate weatherproof cabinet (NEMA 4X). the cabinet shall be equipped with a locking device to restrict access to the controls to authorized persons. controls shall include motor starters, motor circuit breakers and thermal overload protection. The motor control center shall be factory-wired to the motor with a resilient power cable and tested under actual operating conditions prior to shipment to the jobsite.

**Pre-cast concrete tanks**

All tanks shall be pre-cast concrete and shall be watertight and suitable for direct burial installation with a specified amount of cover. Tanks and chambers shall be constructed of reinforced precast concrete with a 5000 PSI, 28day compression strength. Non-shrink grout is to be provided at all joints and penetrations as necessary. All penetrations shall be sealed by using "flex boot" fittings.

**Aeration Equipment**

Air required for the IFAS treatment process shall be provided by URAI Roots blowers. The blowers shall be of the rotary positive displacement type. The blower units shall be provided with inlet air filter/silencers discharge pressure relief valve and discharge flexible coupling connector to air header assembly. Since more than one blower is provided, check valves shall be included in the discharge piping. blower connection to the drive motors shall be with conventional v-belt power transmission drive assembly. Blowers must have at least 2 belts. Blowers shall be designed to deliver 90 CFM. Each blower shall be able to deliver 100 percent for alternation operation.

Two TEFC electric motor(s) shall be used to drive the blower(s). when operating at the rated horsepower the motor(s) shall reach a maximum speed that shall exceed ninety-seven percent of the reference synchronous speed. The motor(s) shall for the facility shall be designed and rated for continuous duty application.

## Clarification Tank

Final clarification tank shall be provided for secondary treatment of the daily flow. It shall have a total capacity of 30,000 gallons per day capacity. The effluent weir shall be of sufficient length to provide the necessary overflow rate gallons per lineal foot per day and surface area of the tank shall provide a setting rate of the necessary gallons per square foot per day.

An inlet baffle zone shall be provided at the flow inlet to the clarification chamber. All transfer turbulence shall be dissipated upstream of the inlet baffle and its performance shall be adequate to eliminate all turbulence downstream from the baffle. The area contained behind the baffle shall allow adequate capacity and retention for surfacing of all buoyant material entering the clarifier. The baffle shall extend above the surface and adequate distance to entrap all floating material and it shall extend below the transfer port a sufficient distance to eliminate passage of buoyant material or surface turbulence.

Flows shall be directed out of the inlet baffle zone into the hopper zone. All transfers shall be accomplished below the bottom of the inlet baffle into the upper one-third area of the hopper zone. In this zone sludge shall settle by gravity to the bottom of the hopper(s). Here settled sludge shall be returned to the aeration or pretreatment chamber by airlift pumping.

Clarified liquids shall be contained in the settling zone above the hopper area for gravity settling. From here they shall be hydraulically displaced to the outlet zone. The outlet zone shall consist of an adjustable weir trough and outlet. The outlet baffle shall extend into the surface of the liquid to a point not exceeding three inches and shall extend above the surface an equal distance. The baffle shall run the entire length of the outlet zone and shall totally separate the surface liquids of the settling and outlet zones. Centered in the outlet zone parallel to the outlet baffle shall be an effluent weir trough. The trough shall be capable of being adjusted from end to end to provide adequate fall to the plant outlet and shall each be capable of being leveled from side to side and end to end to the level of the liquid surface in the chamber.

## Airlift Sludge Return

A PVC schedule 80 airlift sludge return shall be provided for the hopper(s) in the clarification chamber. Air shall be supplied to the airlift(s) through a secondary air distribution system connected to a gravity box that drains to the front of the treatment plant. Individual air manifold piping shall be installed for each airlift and shall be equipped with a valve for fine adjustment or shut-off.

A removable cleanout plug shall be installed at the top of the vertical airlift pipe. Piping shall be arranged so that returned sludge is deposited in the aeration chamber at a point which prevents short-circuiting, and with positive visible return. The airlift pump(s) shall be designed and manufactured of adequate size pipe and with sufficient air supply to provide a pumping rate in excess of the total daily flow. Air required to achieve this shall be provided in excess of that necessary for aeration, mixing and treatment. The legs shall be used to position the inlet correctly at the base of the hopper. Inlets that are cantilevered or cut out to rest on the bottom of the hopper will restrict sludge flow and shall not be considered.

**Airlift Surface Skimmer**

An airlift surface skimming system shall be installed in the settling zone of the clarification chamber(s). The airlift skimmer(s) shall be constructed of schedule 80 PVC pipe and fittings.

The skimmer inlet(s) shall be equipped with an adjustable cone. The inlet cone(s) shall be provided with attached flexible connector for installation and adjustment of the cone(s) on the airlift assembly.

A removable cleanout plug shall be provided at the top of the skimmer airlift pipe where it joins the horizontal discharge line. The discharge line shall return back to the aeration or pretreatment chamber. The skimmer air supply shall be provided through a secondary air distribution system connected to the main air header of the treatment plant. Air adjustment/shut-off valve(s) will be installed in the skimmer air manifold supply line(s).

**Effluent Pump Tank**

An effluent pump tank shall be used for the collection of treated wastewater. The effluent pump tank will consist of duplex effluent turbine pumps. The effluent pumps shall be capable of pumping the treated wastewater to the drip disposal fields. Total holding capacity of the effluent pump tank shall be (4) 22,000-gallon tanks for a total of 88,000 gallons.

## Capacities

Trash Tank – 6,000 gallons
Flow Equalization – 6,000 gallons
Aeration - 22,000 gallons
Clarifier – 30,000 rated gallons per day
Effluent tank – 88,000 gallons total

Assuming 250 mg/l BOD5/TSS and 100 mg/l NH3

## Proposal Effluent Quality for Phase 1, 2 and Final

BOD5 – 30 mg/l
TSS - 30 mg/l
Ammonia – 100 mg/l
Phosphorus – N/A
Dissolved Oxygen - < 2.00 mg/l

## Disinfection Method

None – subsurface drip disposal

## Design Calculations / Features

**Total – 18,000 GPD**

**18,000 gals @250 mg/l BOD5 = 37.53 lbs BOD5**
**18,000 gals @100 mg/l NH3 = 15 lbs NH3**

**Total BOD5 = 37.53 lbs BOD5**

**37.53 lbs. X 500 gallons per 1 lb of BOD5 = 18,765 gallons of aeration capacity**

**Air requirements**

**2.2 lbs O2 X 37.53 lbs BOD5 = 82.56 # of O2**

**.2 WOTE (for 10 feet) X .23 (temp c) x .075 x 720 minutes = 2.484**

**82.56 / 2.484 = 33.2 CFM**

**33.2 CFM + 30 CFM for airlifts = 63.2 CFM total**

**Ammonia not considered in the air calculations.**

**Effluent Expectations before drip.**

**BOD5 – 30 mg/l**
**TSS - 30 mg/l**
**NH3 - 100 mg/l**

# Features

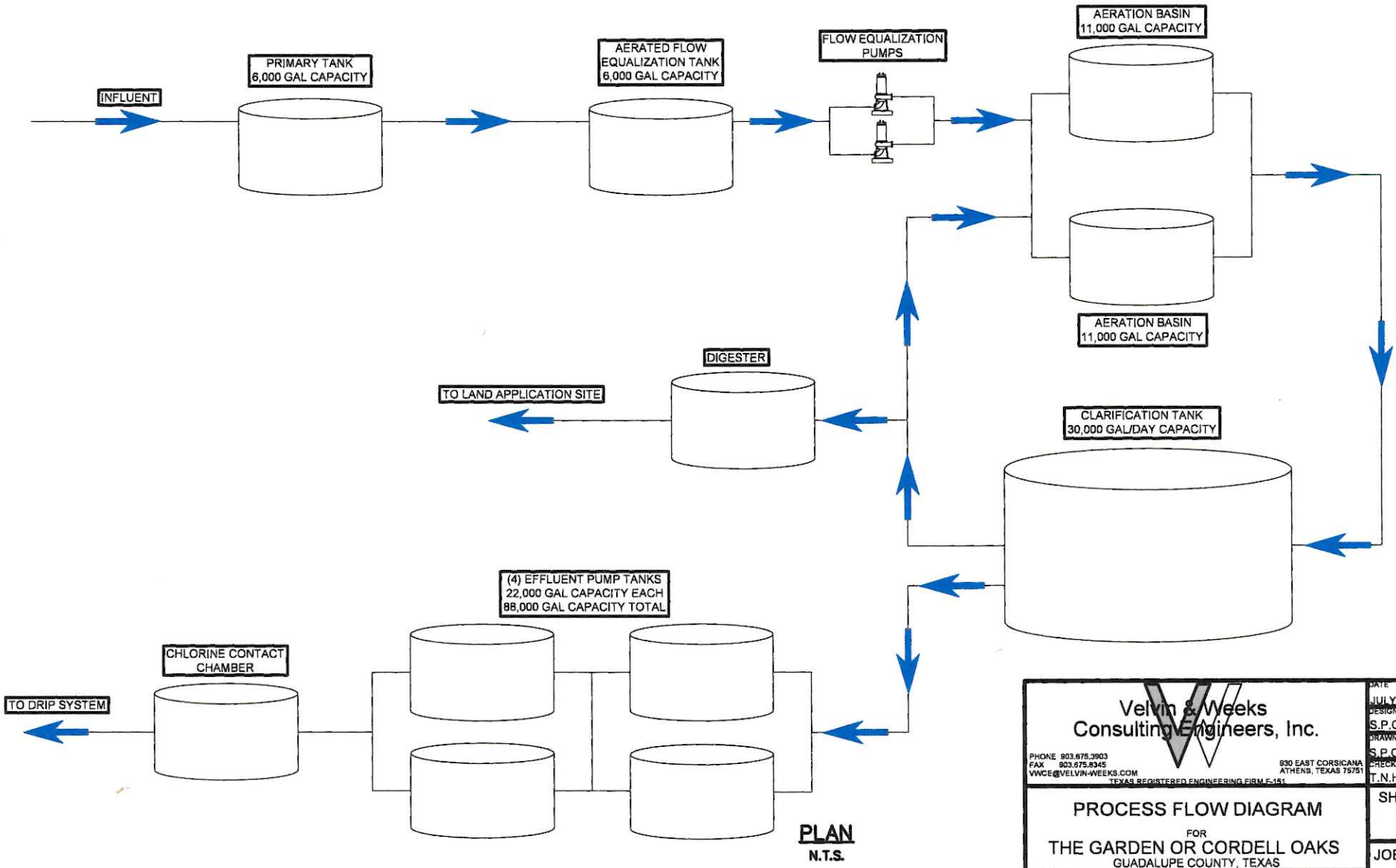
One compartment trash trap, flow equalization, aeration, clarification, effluent storage, inlet and outlet baffles in trash tank, duplex flow equalizations pumps, simplex flow equalization blower, duplex aeration blowers – 100 percent each, 8 foot sidewater clarifier depth, effluent storage tank, duplex drip disposal turbine pumps, high water alarm features, over temp blower controls, 24 hour run time timers for blowers, circuit breakers for all motors, high water water alarms for flow equalization and effluent dosing tanks, all concrete construction, tanks are at grade, aluminum access hatches, carbon vent lids, NEMA 4X electrical enclosures.

# ATTACHMENT J

# TECHNICAL REPORT 1.0 – SECTION 2(C)

# PROCESS FLOW DIAGRAM

# THE GARDEN OR CORDELL OAKS
# SYSTEM FLOW DIAGRAM




**PLAN**
**N.T.S.**


Velvin & Weeks
Consulting Engineers, Inc.
PHONE 903.675.3903
FAX 903.675.8345
VWCE@VELVIN-WEEKS.COM
930 EAST CORSICANA
ATHENS, TEXAS 75751
TEXAS REGISTERED ENGINEERING FIRM F-151


| | |
|---|---|
| DATE | JULY 1, 2024 |
| DESIGN | S.P.C. |
| DRAWN | S.P.C. |
| CHECKED | T.N.H. |

PROCESS FLOW DIAGRAM
FOR
THE GARDEN OR CORDELL OAKS
GUADALUPE COUNTY, TEXAS

PLATE 1

SHEET 1

JOB NO. XXXX

# ATTACHMENT K

# TECHNICAL REPORT 1.0 – SECTION 3

# SITE DRAWING


PLAN
1"= 100'

LEGEND
EXISTING PROPERTY LINE

PRELIMINARY
"THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF TYLER N. HENDRICKSON, P.E. 84676 ON Sep 04, 2024 . IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES."

Velvin & Weeks
Consulting Engineers, Inc.
PHONE 903.675.2903
FAX 903.675.8345
VWCE@VELVIN-WEEKS.COM
930 EAST CORSICANA
ATHENS, TEXAS 75751
TEXAS REGISTERED ENGINEERING FIRM F-151

WASTEWATER PERMIT APPLICATION
THE GARDEN OF CORDELL OAKS
FOR
ARP HOLDINGS, LP
GUADALUPE COUNTY, TEXAS

SITE MAP

| | |
|---|---|
| DATE | Sep 04, 24 |
| DESIGN | T.N.H. |
| DRAWN | T.L.M |
| CHECKED | T.N.H. |
| SHEET | 3 of 3 |
| JOB NO. | 5306 |

# ATTACHMENT L

# TECHNICAL REPORT – SECTION 6(B)

# Deed of Ownership

# GENERAL WARRANTY DEED
## (Vendor's Lien)

**NOTICE OF CONFIDENTIALITY RIGHTS: IF YOU ARE A NATURAL PERSON, YOU MAY REMOVE OR STRIKE ANY OR ALL OF THE FOLLOWING INFORMATION FROM ANY INSTRUMENT THAT TRANSFERS AN INTEREST IN REAL PROPERTY BEFORE IT IS FILED FOR RECORD IN THE PUBLIC RECORDS: YOUR SOCIAL SECURITY NUMBER OR YOUR DRIVER'S LICENSE NUMBER.**

GF# **SAT-44-4000442200305-LG**

Date: May 27, 2022

Grantor: **Brian Keith Bell, Devisee's of The Estate of Robert Alfred Bell, deceased and Brian Keith Bell, Independent Administrator of The Estate of Della D. Bell, deceased**

Grantee: **Arp Holdings, LP**

Grantee's Mailing Address: **228 Hunters Village, New Braunfels, Texas 78132**

**Consideration:** TEN AND NO/100----($10.00)-----DOLLARS CASH AND OTHER GOOD AND VALUABLE CONSIDERATION, THE RECEIPT OF WHICH IS HEREBY ACKNOWLEDGED AND CONFESSED

**AND THE FURTHER CONSIDERATION OF THE EXECUTION AND DELIVERY** of a Note of even date that is in the principal amount of **THREE HUNDRED THIRTY SIX THOUSAND NINE HUNDRED SEVENTY FIVE AND NO/100 DOLLARS (U.S. $336,975.00)** executed by Grantee, payable to the order of **First Commercial Bank, N.A.**. The Note is secured by a Vendor's Lien retained in favor of **First Commercial Bank, N.A.** in this Deed and by a Deed of Trust of even date from **Arp Holdings, LP** to **Mark A. Long**, TRUSTEE(S).

**Property (including any improvements):SEE ATTACHED EXHIBIT "A"**

**Reservations from Conveyance:** NONE

**Exceptions to Conveyance and Warranty:**

This conveyance, however, is made and accepted subject to any and all restrictions, encumbrances, easements, covenants, and conditions, if any, relating to the hereinabove described property as the same are filed for record in the County Clerk's Office of GUADALUPE County, Texas.

Grantor, for the Consideration and subject to the Reservations from Conveyance and the Exceptions to Conveyance and Warranty, grants, sells, and conveys to Grantee the Property, together with all and singular the rights and appurtenances thereto in any way belonging, to have and to hold it to Grantee and Grantee's heirs, successors, and assigns forever. Grantor binds Grantor and Grantor's heirs and successors to warrant and forever defend all and singular the Property to Grantee and Grantee's heirs, successors, and assigns against every person whomsoever lawfully claiming or to claim the same or any part thereof, except as to the Reservations from Conveyance and the Exceptions to Conveyance and Warranty.

Current ad valorem taxes on the property having been prorated, the payment thereof is assumed by Grantee.

The vendor's lien against and superior title to the property are retained until each note described is fully paid according to its terms, at which time this deed shall become absolute.

The said Vendor's Lien and Superior Title herein retained in the amount of **THREE HUNDRED THIRTY SIX THOUSAND NINE HUNDRED SEVENTY FIVE AND NO/100 DOLLARS (U.S. $336,975.00)** are hereby transferred, assigned, sold and conveyed to **First Commercial Bank, N.A.**, its successors and assigns, or heirs and assigns, as appropriate, the Payees named in said Note, without recourse on Grantor.

When the context requires, singular nouns and pronouns include the plural.

**The Estate of Robert Alfred Bell, deceased**

By: Brian Keith Bell
**Brian Keith Bell, Devisee**

**The Estate of Della D. Bell, deceased**

By: Brian Keith Bell
**Brian Keith Bell, Independent Administrator**

**(Acknowledgment)**

THE STATE OF NEVADA

COUNTY OF CLARK

This instrument was acknowledged before me on the 27 day of May, 2022, by **Brian Keith Bell, Devisee's of The Estate of Robert Alfred Bell, deceased and Brian Keith Bell, Independent Administrator of The Estate of Della D. Bell, deceased, on behalf of said estate.**

**MARIA ALEJANDRA KOONCE**
NOTARY PUBLIC
STATE OF NEVADA
**Commission # 21-6134-01**
My Appt. Expires July 14, 2025

Notary Public, State of Nevada
My Commission Expires: July 14th, 2025
Notary's printed Name: Maria Alejandra Koonce

**NOTICE:** This document affects your legal rights. Read it carefully before signing.

**AFTER RECORDING RETURN TO:**

**Arp Holdings, LP**

**228 Hunters Village, New Braunfels, Texas 78132**

"This document was signed and notarized online using two-way audio and video recording technology."

GF#: SAT-44-4000442200305

## EXHIBIT A

All that certain tract or parcel of land containing 21.90 acres in Guadalupe County, Texas, out of the Jesus Cantu Survey, Abstract 9, being comprised of a tract called 17.89 acre tract described in conveyance from Dorothy Wilson to Robert Alfred Bell and Della D. Bell, of record in Volume 778, Page 897, Official Records of Guadalupe County, Texas and a tract called 4.0 acre tract described in conveyance from Elvery Wilson to Robert Alfred Bell and Della Domoneck Bell, of record in Volume 1624, Page 732, Official Records of Guadalupe County, Texas.

BEGINNING: at a 2" iron pipe found on the East line of McKnight Road at the Northwest corner of Faris A. Wilson tract, being the remaining portion of a 69 ¾ acre tract, conveyed in Document # 201999029170, Official Records of Guadalupe County, Texas, at the Southwest corner of said 4.0 and a 735.2acre tract, for the Southwest corner of this tract;

THENCE: North 00 deg. 59 min. 55 sec. West, 735.20 feet along with the East line of McKnight Road to a 2" iron pipe found at the Southwest corner Howard L. Wilson, 5.17 acre tract, of record in Volume 817, Page 886, Official Records of Guadalupe County, Texas, for the Northwest corner of this tract;

THENCE: North 89 deg. 20 min. 22 sec. East, 1319.70 feet to a ½" iron pin found on the West line of Howard L. Wilson, 10.00 acre tract, of record in Volume 1693, Page 795, Official Records of Guadalupe County, Texas at the Southeast corner of said Wilson, 5.17 acre tract, for the Northeast corner of this tract;

THENCE: South 01 deg. 28 min. 54 sec. East, 707.21 feet to a 2" iron pipe found at an angle corner of said Faris A. Wilson tract, for the Southeast corner of this tract;

THENCE: South 88 deg. 07 min. 38 sec. West, 1325.79 feet to the POINT OF BEGINNING.

NOTE: The Company is prohibited from insuring the area or quantity of the land described herein. Any statement in the above legal description of the area or quantity of land is not a representation that such area or quantity is correct, but is made only for informational and/or identification purposes and does not override Item 2 of Schedule B hereof.

202299017299
I certify this instrument was ELECTRONICALLY FILED
and RECORDED in the OFFICIAL PUBLIC RECORDS
of Guadalupe County, Texas on
06/01/2022 01:37:46 PM PAGES: 3 JEANNE
TERESA KIEL, COUNTY CLERK

COUNTY COURT
GUADALUPE COUNTY TEXAS

Teresa Kiel

# ATTACHEMENT M

# TECHNICAL REPORT 1.1 – SECTION 4

# DESIGN CALCULATIONS

## Capacities

Trash Tank – 6,000 gallons
Flow Equalization – 15,000 gallons
Aeration - 27,000 gallons
Clarifier – 15,000 rated gallons per day
Effluent tank – 15,000 gallons

## Proposal Effluent Quality for Phase 1, 2 and Final

BOD5 – 30 mg/l
TSS - 30 mg/l
Ammonia – N/A
Phosphorus – N/A
Dissolved Oxygen - < 2.00 mg/l

## Disinfection Method

None – subsurface drip disposal

## Design Calculations / Features

**Total – 8,000 GPD**

**8,000 gals @800 mg/l BOD5 = 54 lbs BOD5**

**Total BOD5 = 54 lbs BOD5**

**54 lbs. X 500 gallons per 1 lb of BOD5 = 27,000 gallons of aeration capacity**

**Air requirements**

**2.2 (800 mg/l BOD5) + 4.3(0) / 54 lbs = 118.8 /**
**.2 WOTE (for 10 feet) X .23 (temp c) x .075 x 720 minutes (run time) = 48 CFM**
**48 CFM + 30 CFM for airlifts = 78 CFM total**

# ATTACHMENT N

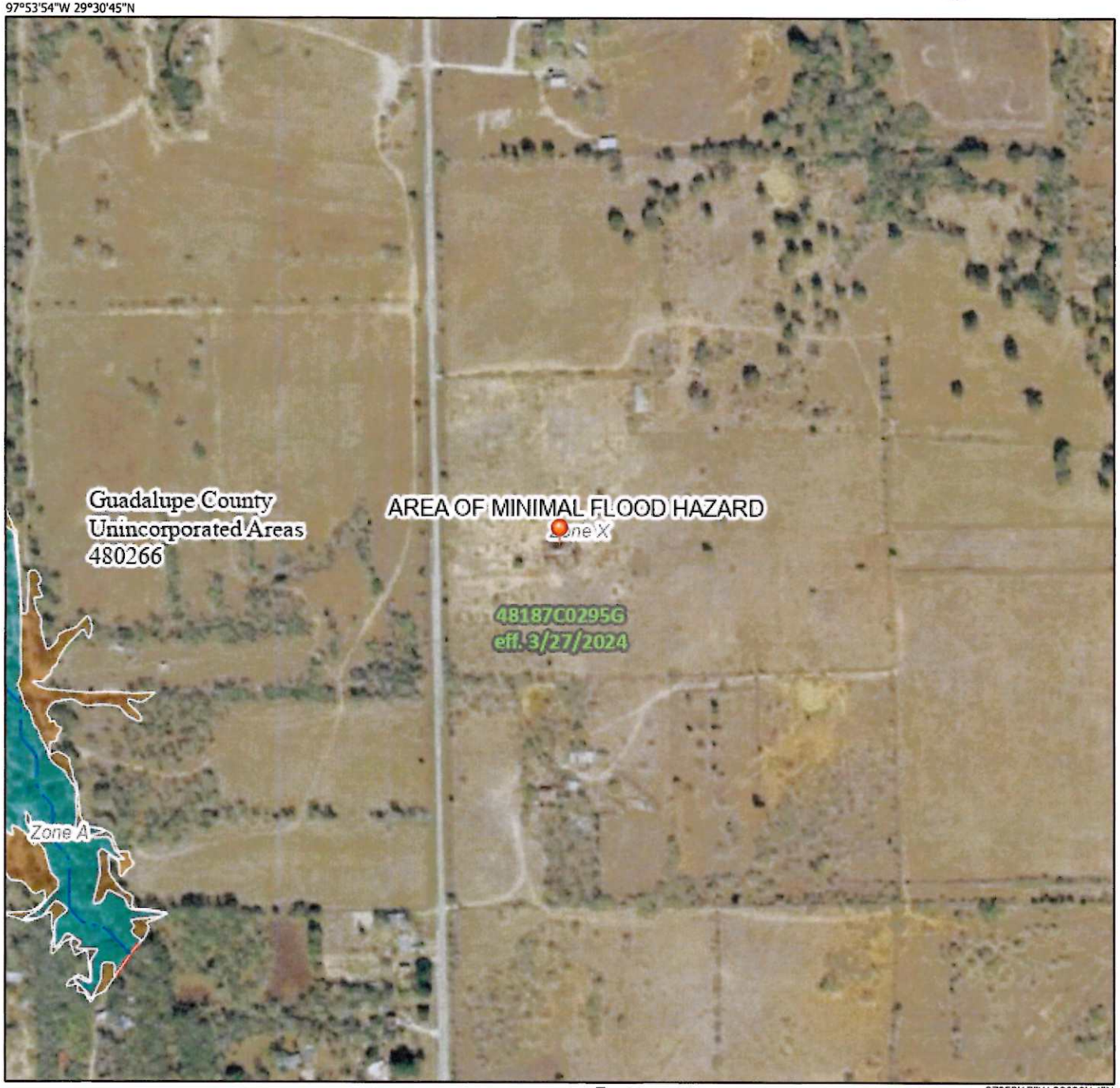
# TECHNICAL REPORT 1.1 – SECTION 5

# FLOOD MAP

# National Flood Hazard Layer FIRMette

FEMA

97°53'54"W 29°30'45"N




0 250 500 1,000 1,500 2,000 Feet

1:6,000

97°53'17"W 29°30'14"N

*Basemap Imagery Source: USGS National Map 2023*

## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

**SPECIAL FLOOD HAZARD AREAS**
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

**OTHER AREAS OF FLOOD HAZARD**
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

**OTHER AREAS**
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

**GENERAL STRUCTURES**
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

**OTHER FEATURES**
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

**MAP PANELS**
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/21/2024 at 10:48 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

# ATTACHMENT O

# TECHNICAL REPORT 3.0 – SECTION 5

# ANNUAL CROPPING PLAN

**CROPPING PLAN**
**Domestic Worksheet 3.0, Section 5**

The drip irrigation fields will be a dedicated area within The Garden of Cordell Oaks property as shown on the design plans. The drip field area is currently mostly cleared with some scrub brush that has come back.

Prior to installation of the drip irrigation system the drip field areas will be prepared for installation of piping, valves, and drip tubing. Debris and oversized rocks will be removed from the drip irrigation fields. The amount of natural soil removed will be minimized in accomplishing that action as needed. It is the goal to minimize importing of soils to supplement the existing native soils.

Field areas and other disturbed areas will be vegetated with approved vegetation. Applied vegetation will meet the intent of the landscaping plan, but at a minimum can hold the soil in place so that erosion does not occur and so that essential evapotranspiration can occur. The intent of this plan is to ensure a vegetative cover that promotes transpiration throughout the year. Failure to keep a good vegetative cover can result in system failure since the operation of this system depends to a certain degree upon vegetative transpiration. Erosion of soils within the drain field areas will be addressed and repaired immediately and reseeded to maintain a thick and healthy vegetative cover.

The drip irrigation areas will be maintained and mowed as necessary to keep the existing vegetation healthy and actively growing. The grass will be mowed on an as-needed basis to maintain optimum grass height between four and eight inches. Records of mowing frequency and dates will be recorded, and records maintained on site.

It is recommended that all mowing activities utilize equipment with mulching blades. This will allow all clippings to fall through the canopy and degrade on the soil surface.

Supplemental fertilization and watering will be provided as necessary to maintain healthy vegetation. The condition of the established grass cover will be evaluated at each mowing/harvesting period, and the need for supplemental watering or fertilizer will be considered and implemented only if necessary.

All vegetation utilized will be moderately tolerant to soil salinity, although it is not anticipated that the treated wastewater will warrant concerns. A hybrid Bermuda variety typical to central Texas will be planted or seeded. A winter overseeding of Rye grass will be done in the fall in anticipation of the normal dormancy of the Bermuda grass.

James F. Prochaska, MS-PE
LWRE, LLC
TBPE Firm No. 21045


08/14/2024

# ATTACHMENT P

## TECHNICAL REPORT 3.0 – SECTION 6

## WELL AND MAP INFORMATION

## TABLE 3.0(3) - NO WELLS WITHIN A 1-MILE RADIUS OF DISPOSAL SITE OR PROPERTY BOUNDARIES

# ATTACHMENT Q

# TECHNICAL REPORT 3.0 – SECTION

# GROUNDWATER WELL LOGS

# NO WELLS

# ATTACHMNENT R

# TECHNICAL REPORT – SECTION

# GROUNDWATER TECHNICAL REPORT

# GUADALUPE COUNTY
# GROUNDWATER CONSERVATION DISTRICT
# WATER LEVEL REPORT
# BY
# WILLIAM B. KLEMT, P.G.
# JANUARY 2024

**Measurement of Water Level Decline and Achievability of the Desired Future Conditions for the Carrizo-Wilcox Aquifer within Guadalupe County**

*William B. Klemt, P.G.*

WILLIAM B.KLEMT
CONSULTING GEOLOGIST

1200 Oak Shadow Circle
Austin, Texas 78758
(512) 837-2115

February 8, 2024

Kelley Cochran
Manager
Guadalupe County GCD
P.O. Box 1221
Seguin, Texas 78156

The District's water-level observation wells in Guadalupe County were measured in January 2024. Twelve (12) of the District's current wells are completed in the Carrizo aquifer and twelve (12) in the Wilcox aquifer. Most of the District's current observation wells were used to provide water level change or elevation information. Also used in this report were three Carrizo wells from Gonzales County.

Comparisons of water-level measurements and water-level decline calculations can be made using the tables. The attached maps show well locations and Carrizo - Wilcox water-level information.

**Carrizo Water Levels**

The total GCGCD Carrizo water level change (January 2023 - January 2024) was -45.04 feet for 11 wells. The average change per well, -4.1 feet. These wells are either located in the outcrop or close to the outcrop. Largest water-level change was reported in CRWA's PWS wells, 67-34-505 and 67-34-612 (Gonzales County) of + 25.6 and -15.1 feet, respectively. The above CRWA wells were not used in the above change calculations.

Carrizo water levels, from January 2023 to January 2024, changed an estimated -3 feet in the SSLGC Area (Well 67-34-706, and in the CRWA Area, the average water level changed about -8.8 feet (Wells 67-34-302 and 67-34-612).

The Carrizo long-term (2013 - January 2024) water-level declines in the SSLGC and CRWA areas of Guadalupe County are about 26 feet ( about -2.4 feet/year) and 44 feet ( about -4 feet/year), respectively.

**Wilcox Water Levels**

The January 2023 - January 2024 Wilcox water-level measurements indicate a total change of -0.49 feet for 8 wells ( average-0.06 feet /well). Not included in the water-level change calculation were the following wells:

1) Robert Carter, 67-19-708;
2) Flying W (Hwy 123), 67-33-8
3) Norvin Vogel, 68-40-204
3) CRWA, 67-34-5, average drawdown 9 feet/year (1/2019 - 1/2024)

**Carrizo Outcrop Monitor Wells**

The attached Desired Future Condition (DFC) Table for the Carrizo-Wilcox aquifer, in the outcrop, provides the data needed to track progress toward meeting the DFC.The data contained in the Table provides the following information:

1) Estimated 2013 water levels;
2) Estimated 2013 saturated thickness of the Carrizo and Wilcox aquifers;

3) Allowable water level drawdown in order to meet the District's DFC; and
4) January 2024water levels.

Analysis of the Table indicates the total change (2013 - 2024) for the 6 monitor is about -55 feet (0.83 feet/well/year. At this current rate of water-level decline, in the six Carrizo wells, the District should continue to meet DFC requirements until sometime before or after 2060. Water-level declines in the Wilcox are too small, at this time, to be a DFC problem.

However, it is anticipated Carruzo water-level declines will increase moderately within the District due to the addition of the proposed SSLGC Carrizo Well Field in the vicinity of Well 67-34-706. This will increase present-day water level declines in monitor wells MWCZ-1A, 1B, 2 and 8. However, the increased rate of decline will slowly decrease with time as water levels approach a new equilibrium.

**summary**

In Summary: 1) The average one-year (1/2023 - 1/2024) Carrizo water levels from 11 wells declined -4.1 feet/well; 2) At the present day level of Carrizo pumpage, small to moderate water- level declines, for the most part, are continuing within the District; 3) Additional proposed pumpage is expected to increase the rate of Carrizo water-level declines in the District to a more moderate level; 4) Wilcox water levels remain relatively stable; and 5) It is recommended, the District continue monitoring the chemical quality and field parameters in the District's observation wells in order to detect natural changes or contamination of the ground water.

Sincerely,

William B. Klemt, P.G.

2/8/24
WBK

DESIRED FUTURE CONDITION
MONITOR WELLS
(Water Level Measurements are from Land Surface)

Carrizo Monitor Wells

| Observation Well | 1/2013 Water Level (feet) | 1/2013 Sat/Thick (feet) | DFC Available Drawdown (feet) | DFC Water Level (feet) | 1/2224 Water Level (feet) |
|---|---|---|---|---|---|
| MWCZ-1A | 144 | 276 | 69 | 213 | 151 |
| MWCZ-1B | 163 | 153 | 39 | 202 | 172 |
| MWCZ-2 | 145 | 78 | 20 | 165 | 150 |
| MWCZ-3 | 91 | 79 | 20 | 111 | 98 |
| MWCZ-7 | 20 | 112 | 28 | 48 | 32 |
| MWCZ-8 | 170 | 195 | 49 | 219 | 185 |

Wilcox Monitor Wells

| | | | | | |
|---|---|---|---|---|---|
| MWWX-1 (Carter) | 33 | 316 | 79 | 112 | 35 |
| MWWX-2 (Ulrich) | 100 | 410 | 103 | 203 | 99 |
| MWWX-3 (Beltz) | 25 | 111 | 28 | 54 | 25 |

Note:

Available Drawdown is estimated by multiplying the January 2013 Saturated Thickness by 25 percent

The DFC Water Level is estimated by adding the Available Drawdown to the January 2013 water level

2/8/24
WBK

GCGCD CARRIZO (Cz)/WILCOX (Wx)
WATER-LEVEL PROGRAM

Measurements shown are from the measuring point (MP)

| Date | | WL below MP (ft) | |
|---|---|---|---|
| David Baker | 67-18-8(7c) MP 1.0 ft >GL | | LSD + 622 |
| WS | Lat/Long: 29.654272/97.831397 | | Depth 232 ft |
| 9/17/15 | | 120.66 | |
| 1/13/16 | | 119.99 | |
| 1/17/23 | | 120.60 | |
| 6/28/23 | | 122.65 | |
| 9/19/23 | | 121.72 | |
| 1/22/24 | | 121.43 | |
| Robert Carter(Wx) | 67-19-708(7b) MP 1.9 ft >GL | | LSD +416 |
| WS | Lat/Long:29.657673/97.726433 | | Depth 295 ft |
| 1/20/13, 33feet (+378) <GL | Sat/thick (2013) = 349 ft (Brac) -33 ft = 316 ft | | |
| 1/14/15 | | 036.67 | |
| 9/14/22 | | 037.82 | |
| 1/17/23 | | 035.45: oil spill, 100 ft west | |
| 6/28/23 | | 037 Estimated | |
| 9/18/23 | | 038.26 | |
| Fred Blumberg (Wx) | 67-25-709 MP 1.5 ft >GL | | LSD +525 |
| | Lat/Long:29.530255/97.973638 | | Depth 160 ft |
| 3/20/00 | | 053 | |
| 1/21/13 | | 053.20 | |
| 1/17/23 | | 052.13 | |
| 6/28/23 | | 053.94 | |
| 9/19/23 | | 057.11 | |
| 1/22/24 | | 053.45 | |
| Dickie Ullrich(Wx) | 67-25-910(9a) MP 0.5 ft >GL | | LSD +506 |
| Schaefer | Lat/Long:29.518904/97.887402 | | Depth (?) |
| 9/02/10 | | 094.60 <MP | |
| 1/21/13 | | 099.98 <GL | |
| 1/18/23 | | 103.11 | |
| 6/28/23 | | 123.14 | |
| 9/19/23 | | 105.75 | |
| 1/22/24 | | 099.31 | |
| Donald Brady(Wx) | 67-26-312(7a) Mp 2.0 ft >GL | | LSD +568 |
| WS | Lat/Long:29.616036/97.776164 | | Depth 410 |
| 12/1/99 | | 166 | |
| 1/21/13 | | 163.33 | |
| 1/17/23 | | 166.08 | |
| 6/28/23 | | 165 Estimated (186 ft pumping) | |
| 9/19/23 | | 176.24 | |
| 1/22/24 | | 166.75 | |
| SH 466 MWCz-7 | 67-26-9 (39) MP 0.4 ft <GL after 1/28/20 | | LSD +393 |
| | Lat/Long:29.502032/-97.76655 | Plugged back from 250 to 132 ft | |
| | | Screen 92 to 132 ft | |
| | | B/Cz 132 ft (+261) | |
| Estimated 2002 WL Elev. +376 | | | |
| 1/2013 WL Elev +373 (20 ft <LSD) | | Sat/thick (2013) = 132 - 20 = 112 ft | |
| 6/12/19 | | 23 | |
| 1/28/20 | | 26.28(WS), 24.75(e-line) | |
| 1/18/23 | | 29.74 | |

| | | | |
|---|---|---|---|
| 6/27/23 | | | 30.51 |
| 9/18/23 | | | 32.70 |
| 1/22/24 | | | 31.9 |
| Chris Ayotte | 67-27-110(2b) | MP 2.0 ft >GL | LSD +431 |
| WS | Lat/Long:29.58612/97.7211 | | Depth 360 ft |
| 2/23/12 | | | 063 |
| 1/21/13 | | | 059.12 |
| 1/17/23 | | | 052.58 |
| 6/28/23 | | | 051.87 |
| 9/19/23 | | | 053.00 |
| 1/22/24 | | | 052.56 |
| Sagebiel MWCz-3 | 67-27-4(2d) | MP 3.3 ft >GL | LSD +452 |
| Nash Creek WS | Lat/Long:29.546739/-97.720243 | | Plug back from 270 to 170 ft |
| | | | Screen 170 up to 130 ft |
| Estimated 2002 WL Elev. +373 | | | B/Cz 170 ft (+288) |
| 1/2013 WL 91 ft <LSD) | | | Sat/thick (2013) 79 ft |
| 2/08/19 | | | 091.5 < GL |
| 1/17/23 | | | 092.81 |
| 6/28/23 | | | 093.76 |
| 9/18/23 | | | 095.27 |
| 1/22/24 | | | 101.1 |
| Pete Kallies(Wx) | 67-27-706(2) | MP 1.0 >GL | LSD +433 |
| WS | Lat/Long:29.533748/-97.738436 | | Depth 520 ft |
| 9/24/03 | | | 053.24 |
| 1/21/13 | | | 055.70 |
| 1/17/23 | | | 055.89 |
| 6/28/23 | | | 053.40 |
| 9/19/23 | | | 056.64 |
| 1/22/24 | | | 057.4 |
| Edward Henk | 67-33-602(3b) | MP 1.55 ft >GL | LSD +541 |
| WS | Lat/Long:29.424211/-97.879389 | | Depth 225 ft |
| 8/17/08 | | | 108.17 |
| 1/21/13 | | | 111.62 |
| 1/17/23 | | | 124.04 |
| 6/28/23 | | | 124.56 |
| 9/19/23 | | | 124.90 |
| 1/22/24 | | | 125.82 |
| Blumberg MWCZ 1-B | 67-33-6 | MP 3.5 ft >GL | LSD +620 |
| | Lat/Long:29429658-97.901995 | | Depth 319 feet, plug back from 355 feet |
| | | | Screen 279 - 319 feet |
| Estimated 2002 WL Elev. +459 | | | B/CZ 316 feet |
| 1/2013 | | 163.06 | < GL, 2013 Sat Thick (316 - 163 = 153 ft) |
| 7/24/20 | | | 169.2 < GL after development |
| 1/18/23 | | | 167.95 |
| 6/27/23 | | | 170.78 |
| 9/18/23 | | | 171.67 |
| 1/22/24 | | | 175.15 |
| Sandy Oaks Tavern | 67-33-803(8) | MP 1.8 ft >GL | LSD +584 |
| (Pole Cat) WS | Lat/Long:29.381048/-97.956268 | | Depth (?) |
| 8/1964 | | | 125 ft < GL |
| 1/21/13 | | | 152.59 |
| 1/17/23 | | | 158.36 |
| 6/28/23 | | | 159.36 |
| 9/19/23 | | | 159.48 |
| 1/22/24 | | | 160. |

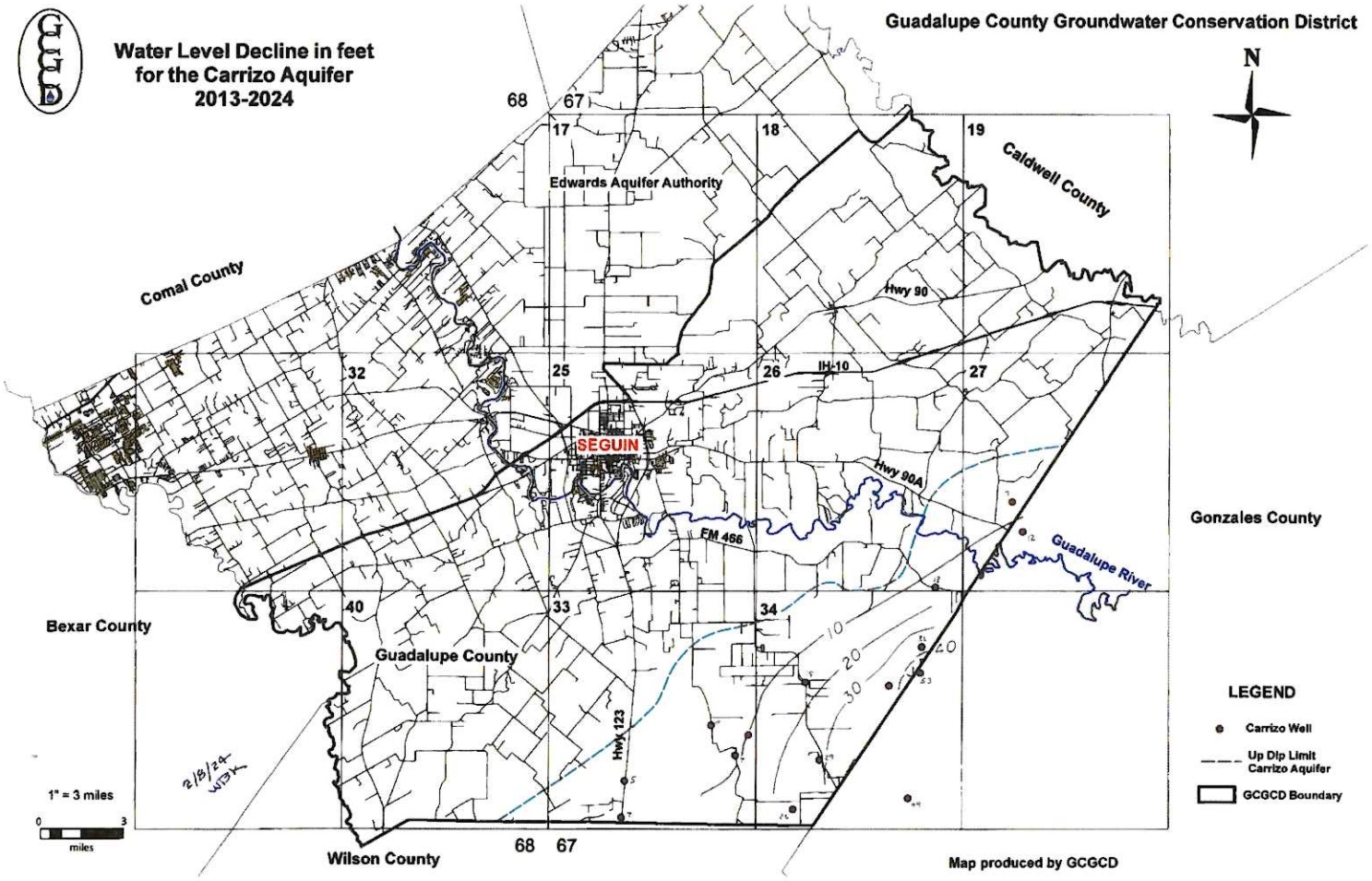
| | | | |
|---|---|---|---|
| Hwy 123 MWCz-2 | 67-33-8(8a) | MP 3.6 ft >GL | LSD +628 |
| Flying W | Lat/Long: 29.400309/-97.954371 | | Screen 180 - 220 ft |
| Estimated 2002 WL Elev. +494 | | | TD 280 ft (+351) |
| 1/20/13 WL 141 ft <GL | | B/Cz @ TWCZ-1 (+406 Elev.) | |
| 2/17/18 | | | 146.3 |
| 2/20/18 | | | 146.25 <GL Reported |
| 1/15/19 | | | 148.87 |
| 147.93 | | | |
| 1/18/23 | | | 147.98 |
| 6/27/23 | | | 144.98 |
| 9/18/23 | | | 146.48 |
| 1/22/24 | | | 153.36 |
| Hwy 123 (Wx) | 67-33-8 | MP 1.5 ft >GL | LSD +620 |
| Flying W | Lat/Long:29.409830/-97.954708 | | Depth 535 ft |
| 6/06/88 | | | 140 |
| 6/22/21 | | | 148,85 |
| 9/14/22 | | | 162.26 |
| 1/18/23 | | | 156.95 |
| 6/28/23 | | | 159.83 |
| 9/19/23 | | | 164.97 |
| Blumberg MWCz-1A | 67-33-9(6d) | MP 3.0 ft >GL | LSD +570 |
| | Lat/Long: 29.413811/-97.887355 | | Plug back from 477 ft to 420 ft |
| | | | Screen 360 - 420 & 180 -200 ft |
| Estimated 2002 WL Elev. +430 | | | B/Cz 420 ft (+150) |
| 1/20/13 WL 144ft <GL) | | Sat/thick (2013) 420 -144 = 276 ft | |
| 3/12/19 | | | 147.5 |
| 4/04/19 | | | 147.5 |
| 4/23/19 | | | 147.51 |
| 1/18/23 | | | 149.19 |
| 6/27/23 | | | 145.58 |
| 9/18/23 | | | 149.87 |
| 1/22/24 | | | 154.14 |
| Wells Ranch (Cz) | 67-34-302(3a) | MP 1.5 ft >GL | LSD +491 |
| WS | Lat/Long:29.4706/-97.7747 | | Depth 250 ft |
| 2002 | | | 106 Estimated |
| 4/29/08 | | | 110 |
| 1/03/13 | | | 118.70 |
| 1/09/23 | | | 152.06 |
| 6/01/23 | | | 152.11 |
| 9/8/23 | | | 153.33 |
| 1/04/24 | | | 154.49 |
| MWCz-8, FM 1117 | 67-34-4(4b) | MP 0.3 ft <GL | LSD +610 |
| | Lat/Long:29.452258/97.845193 | | Depth 415 ft |
| | | | Screen 325 - 365 ft |
| Estimated 2002 WL Elev. +443 | | B/Cz 365 ft (+245) | |
| 1/20/13 WL 170 ft <GL) | | Sat/Thick (2013) = 365 - 170 = 195 ft | |
| 7/25/19 | | | 179 |
| 8/09/19 | | | 178.2 |
| 1/17/23 | | | 180.45 |
| 6/27/23 | | | 180.84 |
| 9/18/23 | | | 181.00 |
| 1/22/24 | | | 184.95 |
| Bexar Met #2 (Cz) | 67-34-505(5) | MP 2.2 ft >GL | LSD +474 |
| Deer stand | Lat/Long:29.450425/-97.796486 | | Depth 460 ft |
| 8/20/02 | | | 084.09 |

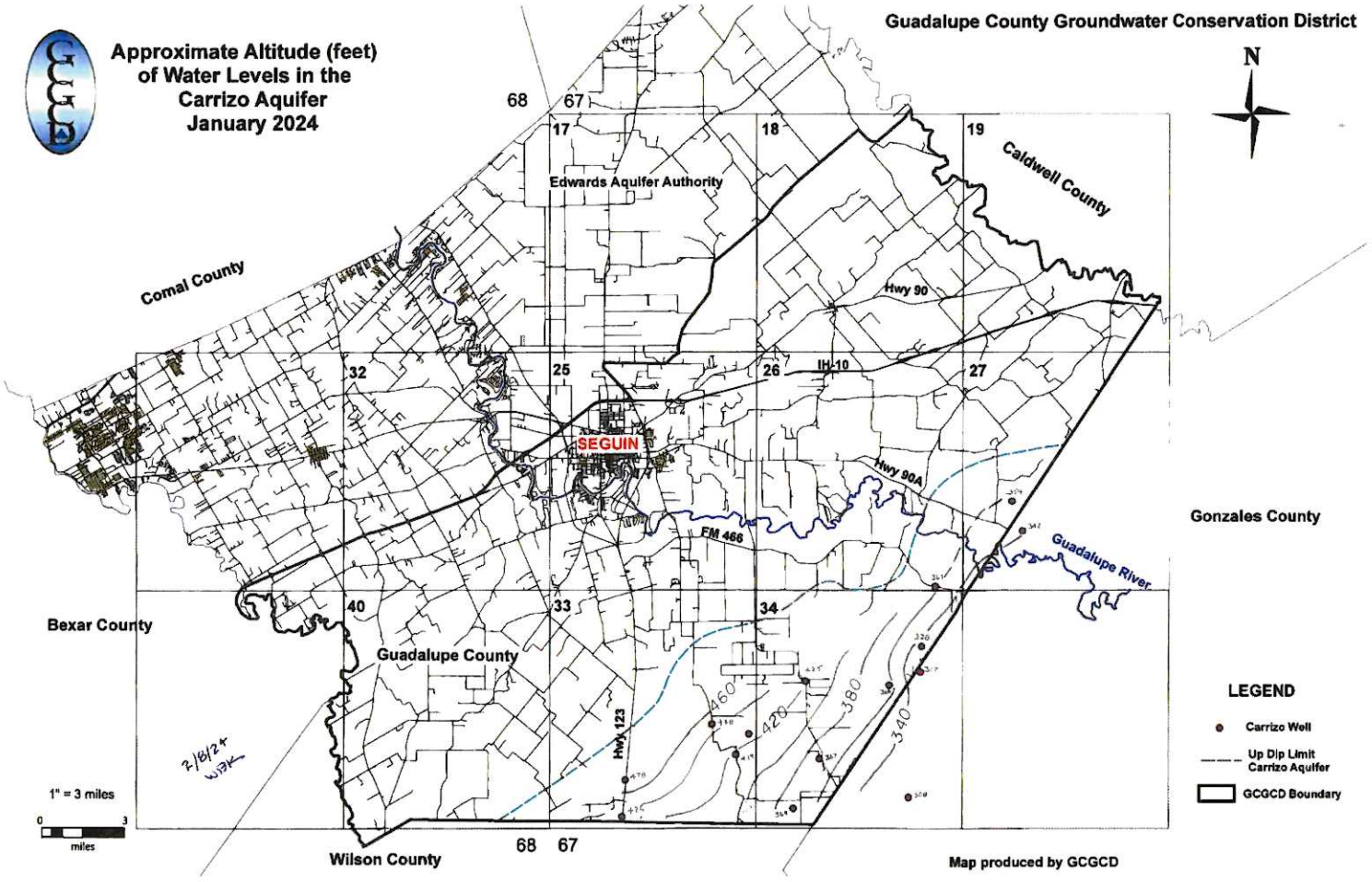
| | | | |
|---|---|---|---|
| 1/03/13 | | | 102.18 |
| 1/06/23 | | | 135.6 |
| 6/01/23 | | | 134.0 |
| 9/06/23 | | | 135.5 |
| 1/03/24 | | | 110. |
| CRWA (Wx) | 67-34-5 | MP 2.2 ft >GL | LSD +483 |
| Deer stand #3 | Lat/Long: 29.449793/-97.797889 | | Depth 1602 ft |
| 09/07/16 | | | 092.1 |
| 10/14/18 | | | 149.9 |
| 01/02/19 | | | 178.2 |
| 06/10/22 | | | 136.5 |
| 06/01/23 | | | 175.0 |
| 01/10/24 | | | 223. From GL |
| Blumberg #1 (Cz) | 67-34-706(6) | MP 2.0 ft >GL | LSD +514 |
| WS | Lat/Long:29.385406/-97.852584 | | Depth 770 ft, T/MCz 330 ft(+184) |
| | | | Screen 526 - 772 ft |
| 1/21/04 | | | 109.10 <GL |
| 1/21/13 | | | 121.28 |
| 1/17/23 | | | 144.45 |
| 6/28/23 | | | 147.38 |
| 9/18/23 | | | 150.51 |
| 1/22/24 | | | 147.5 |
| Baethge (Cz) | 67-34-710(6c) | MP 2.0 ft >GL | LSD +468 |
| (Lakey) WS | Lat/Long29.411429/-97.836769 | | Depth (?) |
| 8/17/08 | | | 069.84 |
| 1/21/13 | | | 074.23 |
| 1/17/23 | | | 100.24 |
| 6/28/23 | | | 099.73 |
| 9/19/23 | | | 104.20 |
| 1/22/24 | | | 103.2 |
| Mundt (Cz) | 67-34-7 | MP 1.5 ft >GL | LSD +520 |
| | Lat/Long:29.391694/-97.840694 | | Depth 444 ft |
| 1/19/22 | | | 142.68 |
| Norvin Vogel (Wx) | 68-40-204(10a) | MP 1.0 ft >GL | LSD +560 |
| WS | Lat/Long:29.4929/-98.0703 | | Depth 90 ft |
| 10/4/85 | | | 024 |
| 1/15/19 (2013) | | | 025.75 |
| 9/14/22 | | | 026.92 |
| 1/17/23 | | | 026.37 |
| 6/28/23 | | | 026.37 |
| 9/19/23 | | | 027.03 |
| Belz (Wx) | 68-40-401 | MP 1.0 ft>GL | LSD +537 |
| | Lat/Long:29.447778/-98.0950556 | | Depth 64 ft |
| 1/19/22 | | | 027.00 |
| 6/15/22 | | | 027.05 |
| 1/17/23 | | | 026.86 |
| 6/28/23 | | | 026.14 Pumping |
| 9/19/23 | | | 027.11 |
| 1/22/24 | | | 025.34 |
| Randy Schween | 68-40-7 | Mp 1.74>GL | LSD +540 |
| | Lat/Long29.40888/-98.114721 | | Depth 180 ft |
| 2/09/02 | | | 060 |
| 4/05/22 | | | 068.38 |
| 1/17/23 | | | 063.35 |
| 6/28/23 | | | 072.38 |

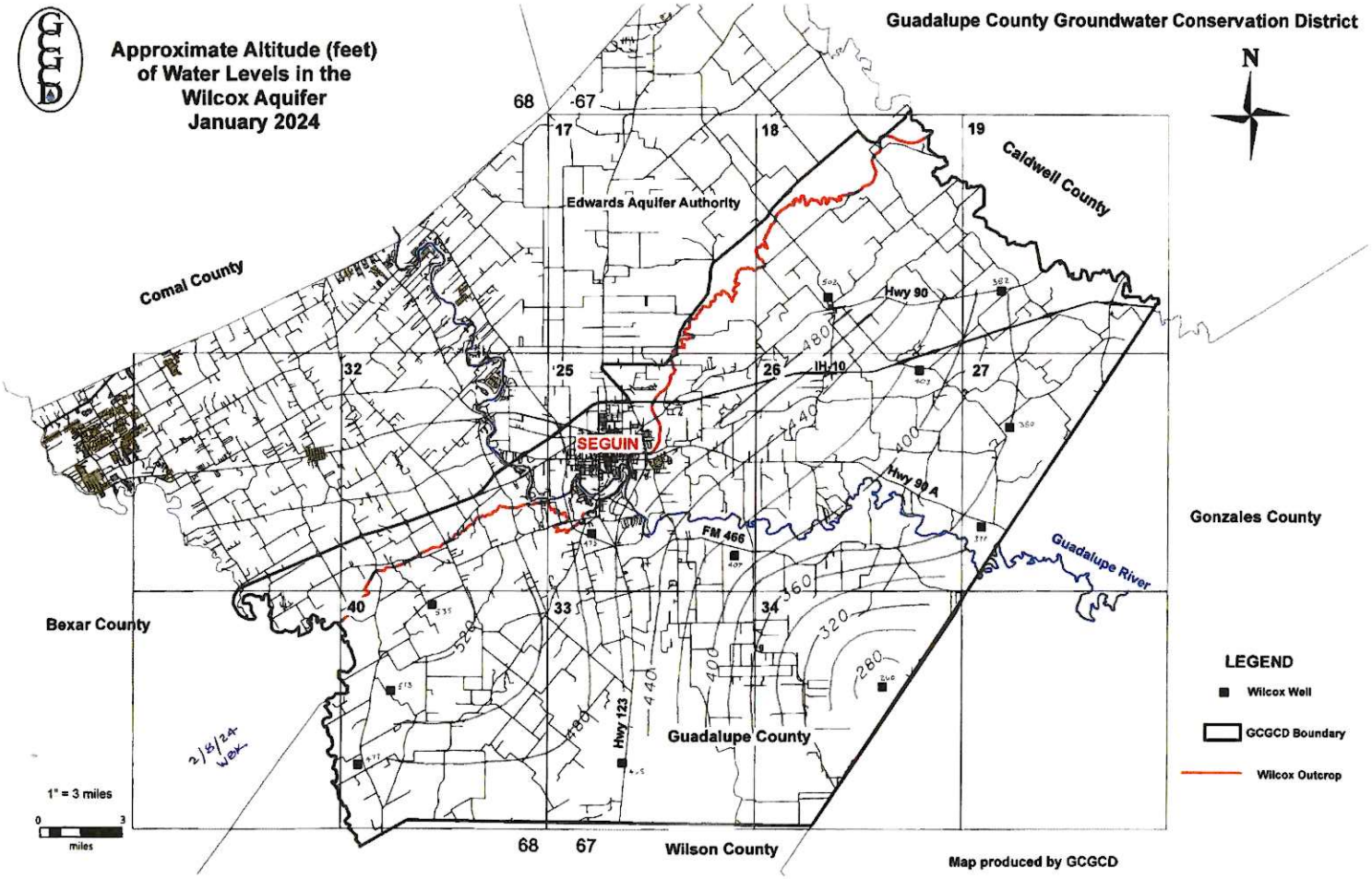
| | | | | |
|---|---|---|---|---|
| 9/19/23 | | | 070.00 | |
| 1/22/24 | | | 064.85 | |

## GCUWCD WATER LEVELS

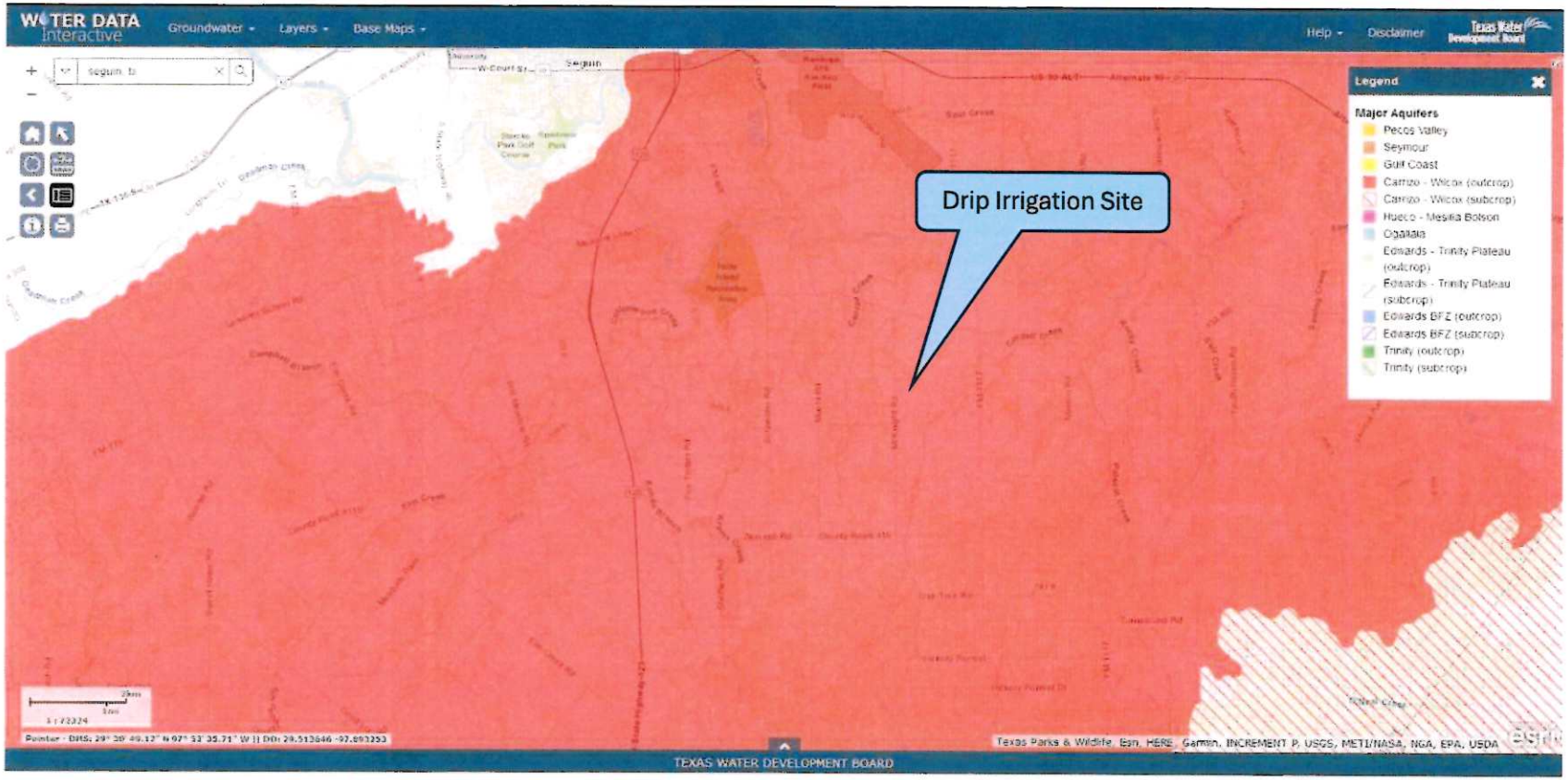
| | | | | |
|---|---|---|---|---|
| James Miller (Cz) | 67-27-705 | MP 0.5 ft >GL | | LSD +391 |
| | Lat/Long:29.530824/-97.71026 | | | Depth (?) |
| 8/20/02 | | | 030.07 | |
| 1/03/13 | | | 036.58 | |
| 1/09/23 | | | 048.70 | |
| 6/01/23 | | | 046.70 | |
| 9/08/23 | | | 049.02 | |
| 1/04/24 | | | 049.05 | |
| Bexar Met #3 | 67-34-612 | MP 2.2 ft >GL | | LSD +465 |
| Harden #1 Tommy's Well | Lat/Long: 29.457182/-97.775855 | | | Depth 680 ft |
| 8/20/02 | | | 075.13 | MP 1.5 ft>GL |
| 1/03/13 | | | 096.8 | |
| 1/06/23 | | | 134.9 | |
| 6/08/23 | | | 132.0 | |
| 9/06/23 | | | 107.2 | |
| 1/02/24 | | | 150. | |
| Thyra Harvey(Cz) | 67-34-904 | MP 1.2 ft >GL | | LSD +410 |
| | Lat/Long:29.39102/-97.782671 | | | Depth (?) |
| 10/25/00 | | | 032.17 | Barry Miller |
| 01/17/12 | | | 054.57 | |
| 1/09/23 | | | 098.02 | |
| 6/01/23 | | | 092.53 | |
| 9/26/23 | | | 096.07 | |
| 1/04/24 | | | 103.51 | |

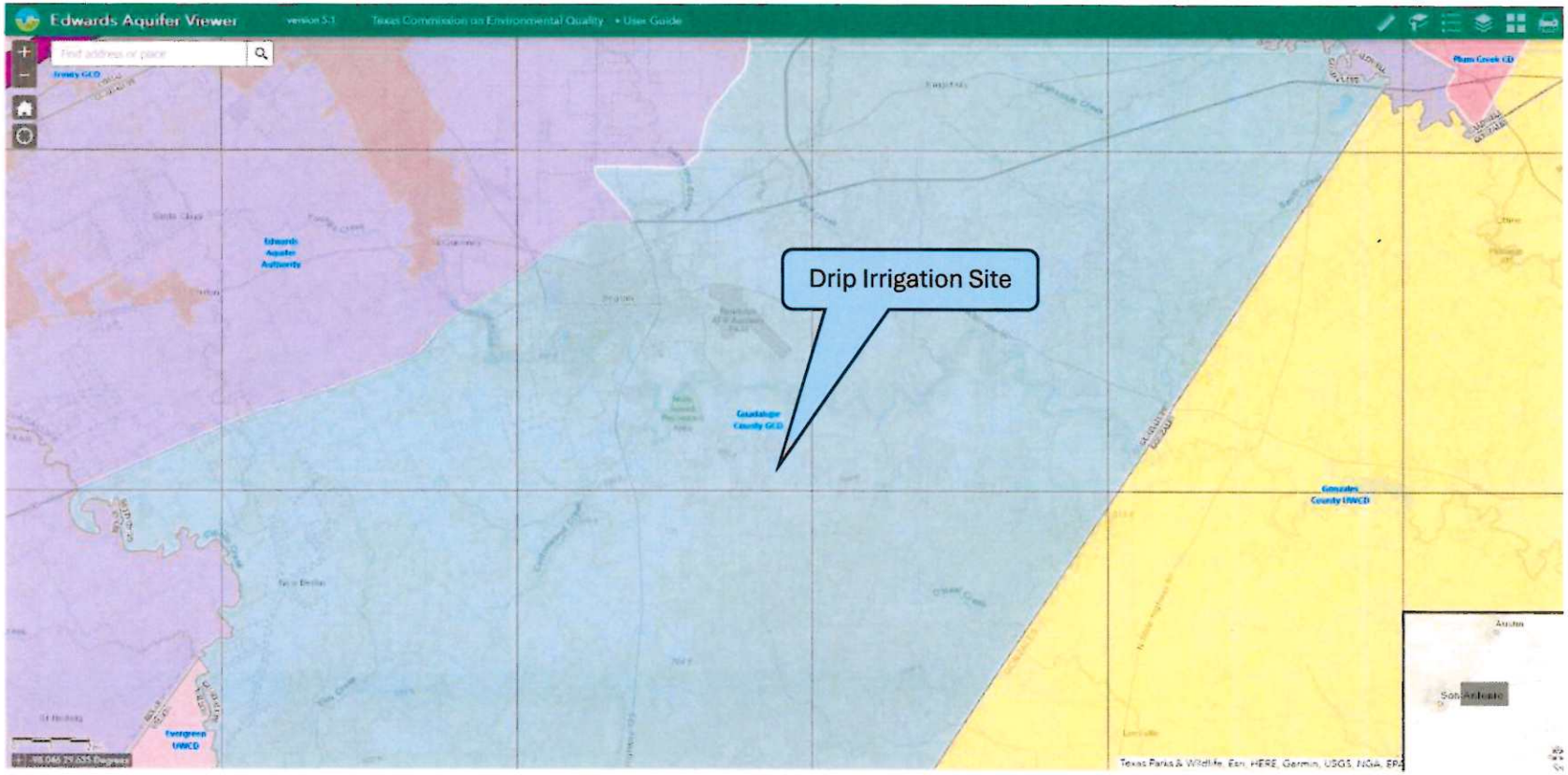

Guadalupe County Groundwater Conservation District
Water Level Decline in feet
for the Carrizo Aquifer
2013-2024
N
68
67
17
18
19
Edwards Aquifer Authority
Caldwell County
Comal County
Hwy 90
32
25
26
IH-10
27
SEGUIN
Hwy 90A
FM 466
Guadalupe River
Gonzales County
40
33
34
Bexar County
Guadalupe County
10
20
30
Hwy 123
LEGEND
Carrizo Well
Up Dip Limit
Carrizo Aquifer
GCGCD Boundary
1" = 3 miles
0
3
miles
Wilson County
68
67
Map produced by GCGCD


Guadalupe County Groundwater Conservation District
Approximate Altitude (feet) of Water Levels in the Carrizo Aquifer January 2024
N
68
67
17
18
19
Edwards Aquifer Authority
Caldwell County
Comal County
Hwy 90
32
25
26
IH-10
27
SEGUIN
Hwy 90A
FM 466
Gonzales County
Guadalupe River
Bexar County
40
33
34
Guadalupe County
Hwy 123
460
420
380
340
LEGEND
Carrizo Well
Up Dip Limit Carrizo Aquifer
GCGCD Boundary
1" = 3 miles
0
3
miles
Wilson County
68
67
Map produced by GCGCD


Approximate Altitude (feet)
of Water Levels in the
Wilcox Aquifer
January 2024
Guadalupe County Groundwater Conservation District
N
Edwards Aquifer Authority
Caldwell County
Comal County
Hwy 90
IH 10
SEGUIN
Hwy 90 A
FM 466
Guadalupe River
Gonzales County
Bexar County
Guadalupe County
Hwy 123
Wilson County
68
67
17
18
19
32
25
26
27
40
33
34
480
440
400
360
320
280
520
2/15/24
WEK
1" = 3 miles
0
3
miles
LEGEND
Wilcox Well
GCGCD Boundary
Wilcox Outcrop
Map produced by GCGCD

**Recharge Feature Plan Exhibit 2 – Texas Water Development Board**


WATER DATA Interactive
Groundwater
Layers
Base Maps
Help
Disclaimer
Texas Water Development Board
Legend
Major Aquifers
Pecos Valley
Seymour
Gulf Coast
Carrizo - Wilcox (outcrop)
Carrizo - Wilcox (subcrop)
Hueco - Mesilla Bolson
Ogallala
Edwards - Trinity Plateau (outcrop)
Edwards - Trinity Plateau (subcrop)
Edwards BFZ (outcrop)
Edwards BFZ (subcrop)
Trinity (outcrop)
Trinity (subcrop)
Drip Irrigation Site
Texas Parks & Wildlife, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, NGA, EPA, USDA
TEXAS WATER DEVELOPMENT BOARD

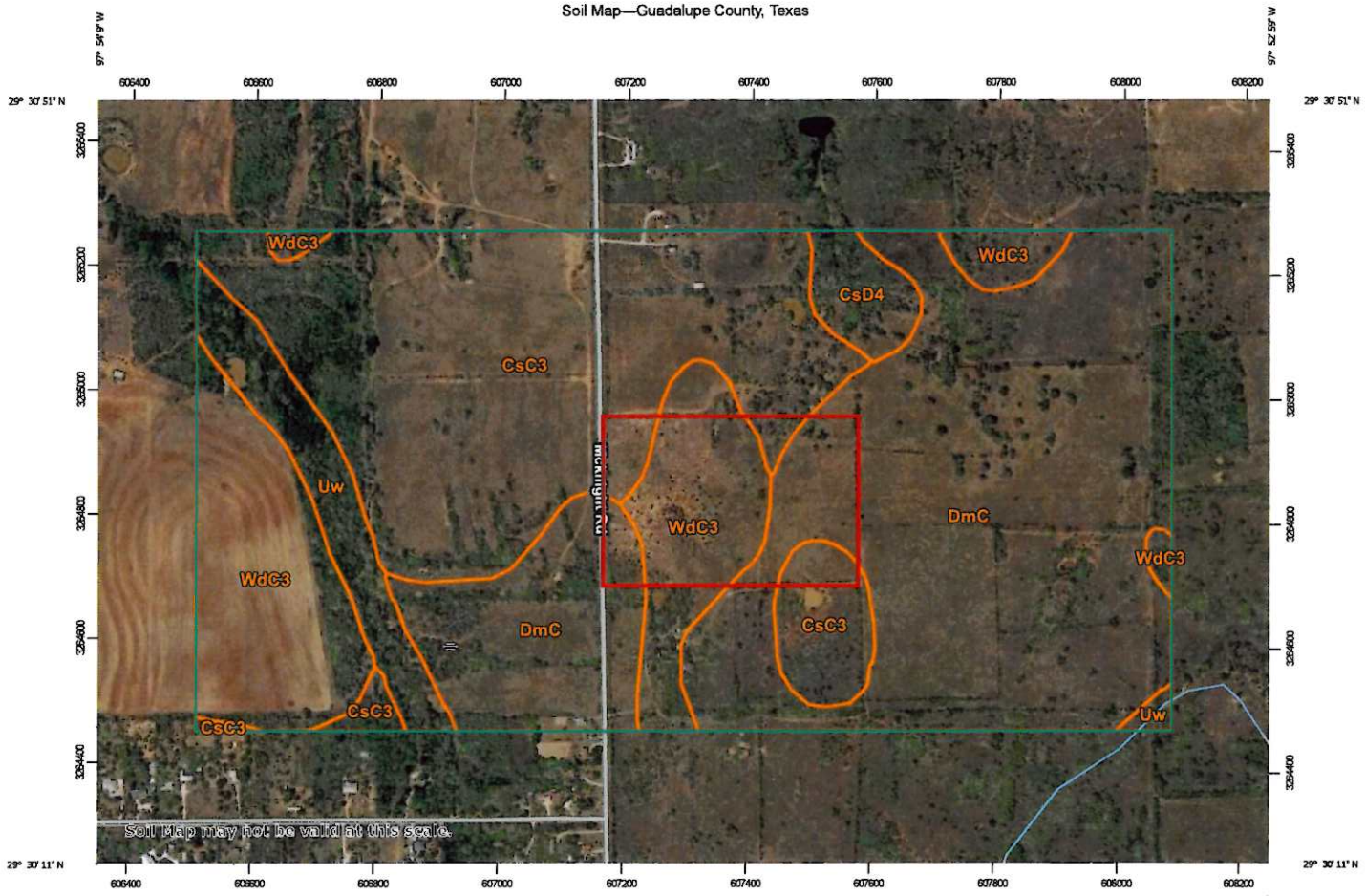

Edwards Aquifer Viewer
version 5.1
Texas Commission on Environmental Quality
• User Guide
Find address or place
Drip Irrigation Site
Edwards Aquifer Authority
Guadalupe County GCD
Gonzales County UWCD
Evergreen UWCD
Plum Creek CD
San Antonio
Austin
Texas Parks & Wildlife, Esri, HERE, Garmin, USGS, NGA, EPA

# ATTACHMENT S

# TECHNICAL REPORT 3.0 – SECTION 8(A)

# SOIL MAP AND SOIL ANALYSES

Soil Map—Guadalupe County, Texas




Map Scale: 1:8,670 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 400 800 1500 2400

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N 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 1:20,000.

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: Guadalupe County, Texas
Survey Area Data: Version 19, Sep 5, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 13, 2022—Apr 6, 2022

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 |
|---|---|---|---|
| CsC3 | Crockett loam, 2 to 5 percent slopes, eroded | 101.9 | 32.4% |
| CsD4 | Crockett loam, 3 to 8 percent slopes, severely eroded | 6.6 | 2.1% |
| DmC | Robco-Tanglewood complex, 1 to 5 percent slopes | 136.2 | 43.3% |
| Uw | Uhland soils frequently flooded | 15.9 | 5.1% |
| WdC3 | Windthorst fine sandy loam, 1 to 5 percent slopes, eroded | 54.0 | 17.2% |
| **Totals for Area of Interest** | | **314.6** | **100.0%** |

# Guadalupe County, Texas

## CsC3—Crockett loam, 2 to 5 percent slopes, eroded

### Map Unit Setting

*National map unit symbol:* 2ssh7
*Elevation:* 250 to 860 feet
*Mean annual precipitation:* 37 to 43 inches
*Mean annual air temperature:* 63 to 68 degrees F
*Frost-free period:* 234 to 258 days
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Crockett, eroded, and similar soils:* 85 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Crockett, Eroded

#### Setting

*Landform:* Ridges
*Landform position (two-dimensional):* Summit, shoulder
*Landform position (three-dimensional):* Interfluve
*Down-slope shape:* Linear
*Across-slope shape:* Convex
*Parent material:* Loamy residuum weathered from shale of cretaceous age

#### Typical profile

*A - 0 to 8 inches:* loam
*Btss - 8 to 25 inches:* clay
*Btkss - 25 to 45 inches:* clay
*BCk - 45 to 53 inches:* clay
*Cdk - 53 to 72 inches:* clay loam

#### Properties and qualities

*Slope:* 2 to 5 percent
*Depth to restrictive feature:* 43 to 60 inches to densic bedrock
*Drainage class:* Moderately well drained
*Runoff class:* Very high
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.03 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Calcium carbonate, maximum content:* 30 percent
*Gypsum, maximum content:* 2 percent
*Maximum salinity:* Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
*Sodium adsorption ratio, maximum:* 10.0

*Available water supply, 0 to 60 inches:* Moderate (about 8.6 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 4e
*Hydrologic Soil Group:* D
*Ecological site:* R086AY004TX - Southern Claypan Prairie
*Hydric soil rating:* No

**Minor Components**

**Normangee**

*Percent of map unit:* 10 percent
*Landform:* Ridges
*Landform position (two-dimensional):* Summit, shoulder
*Landform position (three-dimensional):* Interfluve
*Down-slope shape:* Linear
*Across-slope shape:* Convex
*Ecological site:* R086AY004TX - Southern Claypan Prairie
*Hydric soil rating:* No

**Wilson**

*Percent of map unit:* 5 percent
*Landform:* Stream terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Concave
*Ecological site:* R086AY004TX - Southern Claypan Prairie
*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Guadalupe County, Texas
Survey Area Data: Version 19, Sep 5, 2023

# Guadalupe County, Texas

## DmC—Robco-Tanglewood complex, 1 to 5 percent slopes

### Map Unit Setting

*National map unit symbol:* 2wg9h
*Elevation:* 220 to 610 feet
*Mean annual precipitation:* 35 to 45 inches
*Mean annual air temperature:* 67 to 69 degrees F
*Frost-free period:* 252 to 275 days
*Farmland classification:* Prime farmland if irrigated

### Map Unit Composition

*Robco and similar soils:* 46 percent
*Tanglewood and similar soils:* 25 percent
*Minor components:* 29 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Robco

#### Setting

*Landform:* Ridges
*Landform position (two-dimensional):* Footslope, toeslope
*Landform position (three-dimensional):* Base slope
*Down-slope shape:* Linear
*Across-slope shape:* Concave
*Parent material:* Sandy, clayey, and loamy residuum weathered from sandstone, claystone, and shale of eocene age

#### Typical profile

*A - 0 to 11 inches:* loamy fine sand
*E - 11 to 26 inches:* loamy fine sand
*Btg1 - 26 to 31 inches:* sandy clay loam
*Btg2 - 31 to 39 inches:* sandy clay loam
*Bt/C - 39 to 80 inches:* sandy clay loam

#### Properties and qualities

*Slope:* 1 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Runoff class:* Very low
*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:* About 18 to 42 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Gypsum, maximum content:* 1 percent
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* Moderate (about 8.3 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 3e
*Hydrologic Soil Group:* A
*Ecological site:* R087AY006TX - Sandy
*Hydric soil rating:* No

## Description of Tanglewood

### Setting

*Landform:* Ridges
*Landform position (two-dimensional):* Footslope, toeslope
*Landform position (three-dimensional):* Base slope
*Down-slope shape:* Linear
*Across-slope shape:* Concave
*Parent material:* Sandy, clayey, and loamy residuum weathered from sandstone, claystone, and shale of eocene age

### Typical profile

*A - 0 to 5 inches:* loamy fine sand
*E - 5 to 23 inches:* loamy fine sand
*Btg1 - 23 to 33 inches:* sandy clay loam
*Btg2 - 33 to 68 inches:* clay
*Btg3 - 68 to 80 inches:* sandy clay loam

### Properties and qualities

*Slope:* 1 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Runoff class:* Medium
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)
*Depth to water table:* About 20 to 46 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Gypsum, maximum content:* 1 percent
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* Moderate (about 8.0 inches)

### Interpretive groups

*Land capability classification (irrigated):* 3s
*Land capability classification (nonirrigated):* 3e
*Hydrologic Soil Group:* C/D
*Ecological site:* R087AY006TX - Sandy
*Hydric soil rating:* No

## Minor Components

### Tabor

*Percent of map unit:* 5 percent
*Landform:* Ridges

*Landform position (two-dimensional):* Footslope, toeslope
*Landform position (three-dimensional):* Base slope
*Down-slope shape:* Linear
*Across-slope shape:* Concave
*Ecological site:* R087AY005TX - Sandy Loam
*Hydric soil rating:* No

**Edge**

*Percent of map unit:* 5 percent
*Landform:* Ridges, ridges
*Landform position (two-dimensional):* Backslope, summit, shoulder
*Landform position (three-dimensional):* Side slope, interfluve
*Down-slope shape:* Linear
*Across-slope shape:* Convex
*Ecological site:* R087AY003TX - Claypan Savannah
*Hydric soil rating:* No

**Rader**

*Percent of map unit:* 5 percent
*Landform:* Stream terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Convex
*Across-slope shape:* Convex
*Ecological site:* R087AY005TX - Sandy Loam
*Hydric soil rating:* No

**Straber**

*Percent of map unit:* 5 percent
*Landform:* Ridges
*Landform position (two-dimensional):* Summit, footslope
*Landform position (three-dimensional):* Interfluve
*Down-slope shape:* Linear
*Across-slope shape:* Convex
*Ecological site:* R087AY006TX - Sandy
*Hydric soil rating:* No

**Silstid**

*Percent of map unit:* 5 percent
*Landform:* Ridges
*Landform position (two-dimensional):* Shoulder
*Landform position (three-dimensional):* Interfluve
*Down-slope shape:* Linear
*Across-slope shape:* Convex
*Ecological site:* R087AY006TX - Sandy
*Hydric soil rating:* No

**Padina**

*Percent of map unit:* 2 percent
*Landform:* Ridges
*Landform position (two-dimensional):* Footslope, toeslope
*Landform position (three-dimensional):* Base slope
*Down-slope shape:* Linear
*Across-slope shape:* Concave
*Ecological site:* R087AY007TX - Deep Sand

*Hydric soil rating:* No

**Gasil**

*Percent of map unit:* 2 percent
*Landform:* Ridges
*Landform position (two-dimensional):* Summit, shoulder
*Landform position (three-dimensional):* Interfluve
*Down-slope shape:* Linear
*Across-slope shape:* Convex
*Ecological site:* R087AY005TX - Sandy Loam
*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Guadalupe County, Texas
Survey Area Data: Version 19, Sep 5, 2023

# Guadalupe County, Texas

## WdC3—Windthorst fine sandy loam, 1 to 5 percent slopes, eroded

### Map Unit Setting

*National map unit symbol:* d9rz
*Elevation:* 700 to 1,300 feet
*Mean annual precipitation:* 26 to 32 inches
*Mean annual air temperature:* 63 to 66 degrees F
*Frost-free period:* 220 to 240 days
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Windthorst, eroded, and similar soils:* 85 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Windthorst, Eroded

#### Setting

*Landform:* Ridges
*Landform position (two-dimensional):* Backslope
*Landform position (three-dimensional):* Side slope
*Down-slope shape:* Linear
*Across-slope shape:* Convex
*Parent material:* Residuum weathered from siltstone in the wilcox group of eocene age

#### Typical profile

*H1 - 0 to 8 inches:* fine sandy loam
*H2 - 8 to 36 inches:* clay
*H3 - 36 to 48 inches:* sandy clay
*H4 - 48 to 72 inches:* sandy clay loam

#### Properties and qualities

*Slope:* 1 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Runoff class:* Medium
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 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:* 10 percent
*Available water supply, 0 to 60 inches:* Moderate (about 8.7 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3e
*Hydrologic Soil Group:* C
*Ecological site:* R087AY005TX - Sandy Loam
*Hydric soil rating:* No

**Minor Components**

**Unnamed**
*Percent of map unit:* 15 percent
*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Guadalupe County, Texas
Survey Area Data: Version 19, Sep 5, 2023

# ATTACHMENT T

# TECHNICAL REPORT 3.3 – SECTION 3(A)

# RECHARGE FEATURE PLAN

# Domestic Worksheet 3.3
# Cordell Oaks Park SADDS

**Section 3. Required Plans**

**A. Recharge Feature Plan, 30 TAC Chapter 222.79**

An inspection of the site was conducted on April 18, 2024, to ascertain the existence of observable site features that could potentially contribute to the recharge of local aquifers.

1. There were no sites on or within the neighboring properties that would indicate that an aquifer recharge feature was in existence. The existing drainage features do not show signs of continuous flow and appeared to only carry surface and shallow subsurface stormwater flow from the area during storm events.

2. A review of available data found in several sources concluded that there were no current or historical sites that might be considered recharge feature. The geologic profile does not contain typical karst topographic elements that are prone to the ease of movement of surface waters to shallow and deep aquifers that might underly the site. The following sources were consulted:
    a. Railroad commission. No findings.
    b. TWDB Mapping. No findings.
    c. Groundwater conservation district. No findings.
    d. TCEQ. Edwards Aquifer Viewer. Outside of the Edwards Aquifer, no recharge features listed.
    e. NRCS. Soils maps for this site and neighboring sites indicated no recharge zones.
    f. No previous ownership info was available.
    g. An onsite inspection was conducted, and no recharge features were found.

3. Groundwater Narrative.
    a. The area is known for water production from the Carrizo-Wilcox formation.
    b. The depth to ground water is between 90' and 120' from the surface according to the literature and well logs for wells in that area. Irrigation and potable water wells are typically drilled to about 350'. The typical yield records show the yield to be in the 30-gpm range.
    c. The general direction of groundwater flow is generally from north-west to south-west.
    d. Groundwater use in this area is for private water supplies.

4. Measures to prevent impacts to groundwater from recharge features.
    a. No measures were taken to prevent impacts to recharge features since no recharge features were found.
    b. The loading rate of 0.1 gpd/sq-ft is minimal and unlikely to result in an accumulation of water below about 24" in the soil profile.

Recharge Plan and Site Inspection Completed by:

James F. Prochaska, MS-PE
TXPE License # 80504
TBPE Firm No. 21045


June 21, 2024

# GUADALUPE COUNTY
# GROUNDWATER CONSERVATION DISTRICT
# WATER LEVEL REPORT
# BY
# WILLIAM B. KLEMT, P.G.
# JANUARY 2024

**Measurement of Water Level Decline and Achievability of the Desired Future Conditions for the Carrizo-Wilcox Aquifer within Guadalupe County**

*William B. Klemt, P.G.*

WILLIAM B.KLEMT
CONSULTING GEOLOGIST

1200 Oak Shadow Circle
Austin, Texas 78758
(512) 837-2115

February 8, 2024

Kelley Cochran
Manager
Guadalupe County GCD
P.O. Box 1221
Seguin, Texas 78156

The District's water-level observation wells in Guadalupe County were measured in January 2024. Twelve (12) of the District's current wells are completed in the Carrizo aquifer and twelve (12) in the Wilcox aquifer. Most of the District's current observation wells were used to provide water level change or elevation information. Also used in this report were three Carrizo wells from Gonzales County.

Comparisons of water-level measurements and water-level decline calculations can be made using the tables. The attached maps show well locations and Carrizo - Wilcox water-level information.

**Carrizo Water Levels**

The total GCGCD Carrizo water level change (January 2023 - January 2024) was -45.04 feet for 11 wells. The average change per well, -4.1 feet. These wells are either located in the outcrop or close to the outcrop. Largest water-level change was reported in CRWA's PWS wells, 67-34-505 and 67-34-612 (Gonzales County) of + 25.6 and -15.1 feet, respectively. The above CRWA wells were not used in the above change calculations.

Carrizo water levels, from January 2023 to January 2024, changed an estimated -3 feet in the SSLGC Area (Well 67-34-706, and in the CRWA Area, the average water level changed about -8.8 feet (Wells 67-34-302 and 67-34-612).

The Carrizo long-term (2013 - January 2024) water-level declines in the SSLGC and CRWA areas of Guadalupe County are about 26 feet ( about -2.4 feet/year) and 44 feet ( about -4 feet/year), respectively.

**Wilcox Water Levels**

The January 2023 - January 2024 Wilcox water-level measurements indicate a total change of -0.49 feet for 8 wells ( average-0.06 feet /well). Not included in the water-level change calculation were the following wells:

1) Robert Carter, 67-19-708;
2) Flying W (Hwy 123), 67-33-8
3) Norvin Vogel, 68-40-204
3) CRWA, 67-34-5, average drawdown 9 feet/year (1/2019 - 1/2024)

**Carrizo Outcrop Monitor Wells**

The attached Desired Future Condition (DFC) Table for the Carrizo-Wilcox aquifer, in the outcrop, provides the data needed to track progress toward meeting the DFC.The data contained in the Table provides the following information:

1) Estimated 2013 water levels;
2) Estimated 2013 saturated thickness of the Carrizo and Wilcox aquifers;

3) Allowable water level drawdown in order to meet the District's DFC; and
4) January 2024water levels.

Analysis of the Table indicates the total change (2013 - 2024) for the 6 monitor is about -55 feet (0.83 feet/well/year. At this current rate of water-level decline, in the six Carrizo wells, the District should continue to meet DFC requirements until sometime before or after 2060. Water-level declines in the Wilcox are too small, at this time, to be a DFC problem.

However, it is anticipated Carruzo water-level declines will increase moderately within the District due to the addition of the proposed SSLGC Carrizo Well Field in the vicinity of Well 67-34-706. This will increase present-day water level declines in monitor wells MWCZ-1A, 1B, 2 and 8. However, the increased rate of decline will slowly decrease with time as water levels approach a new equilibrium.

**summary**

In Summary: 1) The average one-year (1/2023 - 1/2024) Carrizo water levels from 11 wells declined -4.1 feet/well; 2) At the present day level of Carrizo pumpage, small to moderate water- level declines, for the most part, are continuing within the District; 3) Additional proposed pumpage is expected to increase the rate of Carrizo water-level declines in the District to a more moderate level; 4) Wilcox water levels remain relatively stable; and 5) It is recommended, the District continue monitoring the chemical quality and field parameters in the District's observation wells in order to detect natural changes or contamination of the ground water.

Sincerely,

William B. Klemt, P.G.

2/8/24
WBK

**Recharge Feature Plan Exhibit 1 – Guadalupe County GCD**

DESIRED FUTURE CONDITION
MONITOR WELLS
(Water Level Measurements are from Land Surface)

Carrizo Monitor Wells

| Observation Well | 1/2013 Water Level (feet) | 1/2013 Sat/Thick (feet) | DFC Available Drawdown (feet) | DFC Water Level (feet) | 1/2224 Water Level (feet) |
|---|---|---|---|---|---|
| MWCZ-1A | 144 | 276 | 69 | 213 | 151 |
| MWCZ-1B | 163 | 153 | 39 | 202 | 172 |
| MWCZ-2 | 145 | 78 | 20 | 165 | 150 |
| MWCZ-3 | 91 | 79 | 20 | 111 | 98 |
| MWCZ-7 | 20 | 112 | 28 | 48 | 32 |
| MWCZ-8 | 170 | 195 | 49 | 219 | 185 |

Wilcox Monitor Wells

| | | | | | |
|---|---|---|---|---|---|
| MWWX-1 (Carter) | 33 | 316 | 79 | 112 | 35 |
| MWWX-2 (Ulrich) | 100 | 410 | 103 | 203 | 99 |
| MWWX-3 (Beltz) | 25 | 111 | 28 | 54 | 25 |

Note:

Available Drawdown is estimated by multiplying the January 2013 Saturated Thickness by 25 percent

The DFC Water Level is estimated by adding the Available Drawdown to the January 2013 water level

2/8/24
WBK

GCGCD CARRIZO (Cz)/WILCOX (Wx)
WATER-LEVEL PROGRAM

Measurements shown are from the measuring point (MP)

| Date | | WL below MP (ft) | |
|---|---|---|---|
| David Baker | 67-18-8(7c) MP 1.0 ft >GL | | LSD + 622 |
| WS | Lat/Long: 29.654272/97.831397 | | Depth 232 ft |
| 9/17/15 | | 120.66 | |
| 1/13/16 | | 119.99 | |
| 1/17/23 | | 120.60 | |
| 6/28/23 | | 122.65 | |
| 9/19/23 | | 121.72 | |
| 1/22/24 | | 121.43 | |
| Robert Carter(Wx) | 67-19-708(7b) MP 1.9 ft >GL | | LSD +416 |
| WS | Lat/Long:29.657673/97.726433 | | Depth 295 ft |
| 1/20/13, 33feet (+378) <GL | Sat/thick (2013) = 349 ft (Brac) -33 ft = 316 ft | | |
| 1/14/15 | | 036.67 | |
| 9/14/22 | | 037.82 | |
| 1/17/23 | | 035.45: oil spill, 100 ft west | |
| 6/28/23 | | 037 Estimated | |
| 9/18/23 | | 038.26 | |
| Fred Blumberg (Wx) | 67-25-709 MP 1.5 ft >GL | | LSD +525 |
| | Lat/Long:29.530255/97.973638 | | Depth 160 ft |
| 3/20/00 | | 053 | |
| 1/21/13 | | 053.20 | |
| 1/17/23 | | 052.13 | |
| 6/28/23 | | 053.94 | |
| 9/19/23 | | 057.11 | |
| 1/22/24 | | 053.45 | |
| Dickie Ullrich(Wx) | 67-25-910(9a) MP 0.5 ft >GL | | LSD +506 |
| Schaefer | Lat/Long:29.518904/97.887402 | | Depth (?) |
| 9/02/10 | | 094.60 <MP | |
| 1/21/13 | | 099.98 <GL | |
| 1/18/23 | | 103.11 | |
| 6/28/23 | | 123.14 | |
| 9/19/23 | | 105.75 | |
| 1/22/24 | | 099.31 | |
| Donald Brady(Wx) | 67-26-312(7a) Mp 2.0 ft >GL | | LSD +568 |
| WS | Lat/Long:29.616036/97.776164 | | Depth 410 |
| 12/1/99 | | 166 | |
| 1/21/13 | | 163.33 | |
| 1/17/23 | | 166.08 | |
| 6/28/23 | | 165 Estimated (186 ft pumping) | |
| 9/19/23 | | 176.24 | |
| 1/22/24 | | 166.75 | |
| SH 466 MWCz-7 | 67-26-9 (39) MP 0.4 ft <GL after 1/28/20 | | LSD +393 |
| | Lat/Long:29.502032/-97.76655 | Plugged back from 250 to 132 ft | |
| | | Screen 92 to 132 ft | |
| | | B/Cz 132 ft (+261) | |
| Estimated 2002 WL Elev. +376 | | | |
| 1/2013 WL Elev +373 (20 ft <LSD) | | Sat/thick (2013) = 132 - 20 = 112 ft | |
| 6/12/19 | | 23 | |
| 1/28/20 | | 26.28(WS), 24.75(e-line) | |
| 1/18/23 | | 29.74 | |

| | | | |
|---|---|---|---|
| 6/27/23 | | | 30.51 |
| 9/18/23 | | | 32.70 |
| 1/22/24 | | | 31.9 |
| Chris Ayotte | 67-27-110(2b) | MP 2.0 ft >GL | LSD +431 |
| WS | Lat/Long:29.58612/97.7211 | | Depth 360 ft |
| 2/23/12 | | | 063 |
| 1/21/13 | | | 059.12 |
| 1/17/23 | | | 052.58 |
| 6/28/23 | | | 051.87 |
| 9/19/23 | | | 053.00 |
| 1/22/24 | | | 052.56 |
| Sagebiel MWCz-3 | 67-27-4(2d) | MP 3.3 ft >GL | LSD +452 |
| Nash Creek WS | Lat/Long:29.546739/-97.720243 | | Plug back from 270 to 170 ft |
| | | | Screen 170 up to 130 ft |
| Estimated 2002 WL Elev. +373 | | | B/Cz 170 ft (+288) |
| 1/2013 WL 91 ft <LSD) | | | Sat/thick (2013) 79 ft |
| 2/08/19 | | | 091.5 < GL |
| 1/17/23 | | | 092.81 |
| 6/28/23 | | | 093.76 |
| 9/18/23 | | | 095.27 |
| 1/22/24 | | | 101.1 |
| Pete Kallies(Wx) | 67-27-706(2) | MP 1.0 >GL | LSD +433 |
| WS | Lat/Long:29.533748/-97.738436 | | Depth 520 ft |
| 9/24/03 | | | 053.24 |
| 1/21/13 | | | 055.70 |
| 1/17/23 | | | 055.89 |
| 6/28/23 | | | 053.40 |
| 9/19/23 | | | 056.64 |
| 1/22/24 | | | 057.4 |
| Edward Henk | 67-33-602(3b) | MP 1.55 ft >GL | LSD +541 |
| WS | Lat/Long:29.424211/-97.879389 | | Depth 225 ft |
| 8/17/08 | | | 108.17 |
| 1/21/13 | | | 111.62 |
| 1/17/23 | | | 124.04 |
| 6/28/23 | | | 124.56 |
| 9/19/23 | | | 124.90 |
| 1/22/24 | | | 125.82 |
| Blumberg MWCZ 1-B | 67-33-6 | MP 3.5 ft >GL | LSD +620 |
| | Lat/Long:29429658-97.901995 | | Depth 319 feet, plug back from 355 feet |
| | | | Screen 279 - 319 feet |
| Estimated 2002 WL Elev. +459 | | | B/CZ 316 feet |
| 1/2013 | | 163.06 | < GL, 2013 Sat Thick (316 - 163 = 153 ft) |
| 7/24/20 | | | 169.2 < GL after development |
| 1/18/23 | | | 167.95 |
| 6/27/23 | | | 170.78 |
| 9/18/23 | | | 171.67 |
| 1/22/24 | | | 175.15 |
| Sandy Oaks Tavern | 67-33-803(8) | MP 1.8 ft >GL | LSD +584 |
| (Pole Cat) WS | Lat/Long:29.381048/-97.956268 | | Depth (?) |
| 8/1964 | | | 125 ft < GL |
| 1/21/13 | | | 152.59 |
| 1/17/23 | | | 158.36 |
| 6/28/23 | | | 159.36 |
| 9/19/23 | | | 159.48 |
| 1/22/24 | | | 160. |

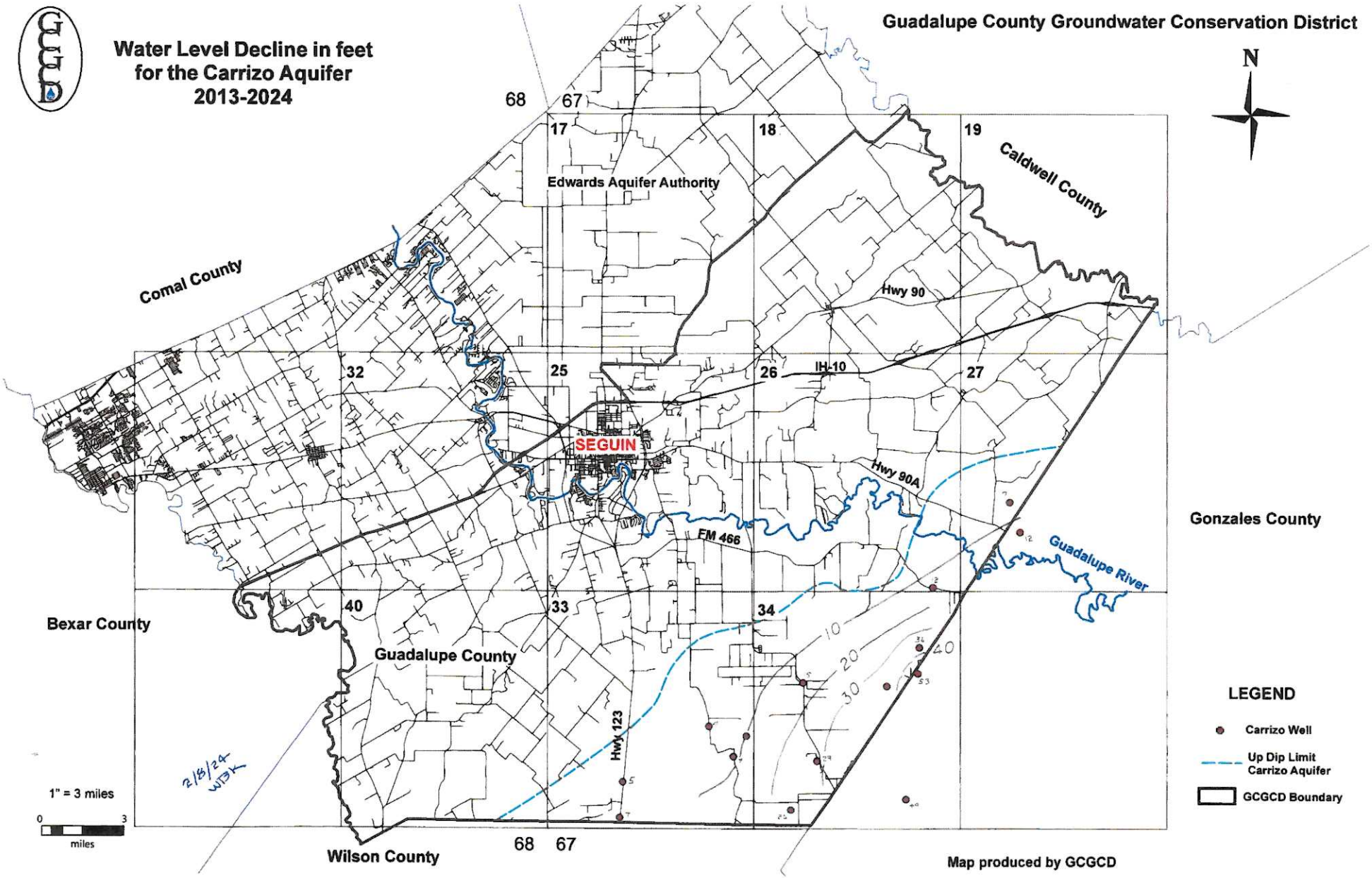
| | | | |
|---|---|---|---|
| Hwy 123 MWCz-2 | 67-33-8(8a) | MP 3.6 ft >GL | LSD +628 |
| Flying W | Lat/Long: 29.400309/-97.954371 | | Screen 180 - 220 ft |
| Estimated 2002 WL Elev. +494 | | | TD 280 ft (+351) |
| 1/20/13 WL 141 ft <GL | | B/Cz @ TWCZ-1 (+406 Elev.) | |
| 2/17/18 | | 146.3 | |
| 2/20/18 | | 146.25 <GL Reported | |
| 1/15/19 | | 148.87 | |
| 147.93 | | | |
| 1/18/23 | | 147.98 | |
| 6/27/23 | | 144.98 | |
| 9/18/23 | | 146.48 | |
| 1/22/24 | | 153.36 | |
| Hwy 123 (Wx) | 67-33-8 | MP 1.5 ft >GL | LSD +620 |
| Flying W | Lat/Long:29.409830/-97.954708 | | Depth 535 ft |
| 6/06/88 | | 140 | |
| 6/22/21 | | 148,85 | |
| 9/14/22 | | 162.26 | |
| 1/18/23 | | 156.95 | |
| 6/28/23 | | 159.83 | |
| 9/19/23 | | 164.97 | |
| Blumberg MWCz-1A | 67-33-9(6d) | MP 3.0 ft >GL | LSD +570 |
| | Lat/Long: 29.413811/-97.887355 | | Plug back from 477 ft to 420 ft |
| | | | Screen 360 - 420 & 180 -200 ft |
| Estimated 2002 WL Elev. +430 | | | B/Cz 420 ft (+150) |
| 1/20/13 WL 144ft <GL) | | Sat/thick (2013) 420 -144 = 276 ft | |
| 3/12/19 | | 147.5 | |
| 4/04/19 | | 147.5 | |
| 4/23/19 | | 147.51 | |
| 1/18/23 | | 149.19 | |
| 6/27/23 | | 145.58 | |
| 9/18/23 | | 149.87 | |
| 1/22/24 | | 154.14 | |
| Wells Ranch (Cz) | 67-34-302(3a) | MP 1.5 ft >GL | LSD +491 |
| WS | Lat/Long:29.4706/-97.7747 | | Depth 250 ft |
| 2002 | | 106 Estimated | |
| 4/29/08 | | 110 | |
| 1/03/13 | | 118.70 | |
| 1/09/23 | | 152.06 | |
| 6/01/23 | | 152.11 | |
| 9/8/23 | | 153.33 | |
| 1/04/24 | | 154.49 | |
| MWCz-8, FM 1117 | 67-34-4(4b) | MP 0.3 ft <GL | LSD +610 |
| | Lat/Long:29.452258/97.845193 | | Depth 415 ft |
| | | | Screen 325 - 365 ft |
| Estimated 2002 WL Elev. +443 | | B/Cz 365 ft (+245) | |
| 1/20/13 WL 170 ft <GL) | | Sat/Thick (2013) = 365 - 170 = 195 ft | |
| 7/25/19 | | 179 | |
| 8/09/19 | | 178.2 | |
| 1/17/23 | | 180.45 | |
| 6/27/23 | | 180.84 | |
| 9/18/23 | | 181.00 | |
| 1/22/24 | | 184.95 | |
| Bexar Met #2 (Cz) | 67-34-505(5) | MP 2.2 ft >GL | LSD +474 |
| Deer stand | Lat/Long:29.450425/-97.796486 | | Depth 460 ft |
| 8/20/02 | | 084.09 | |

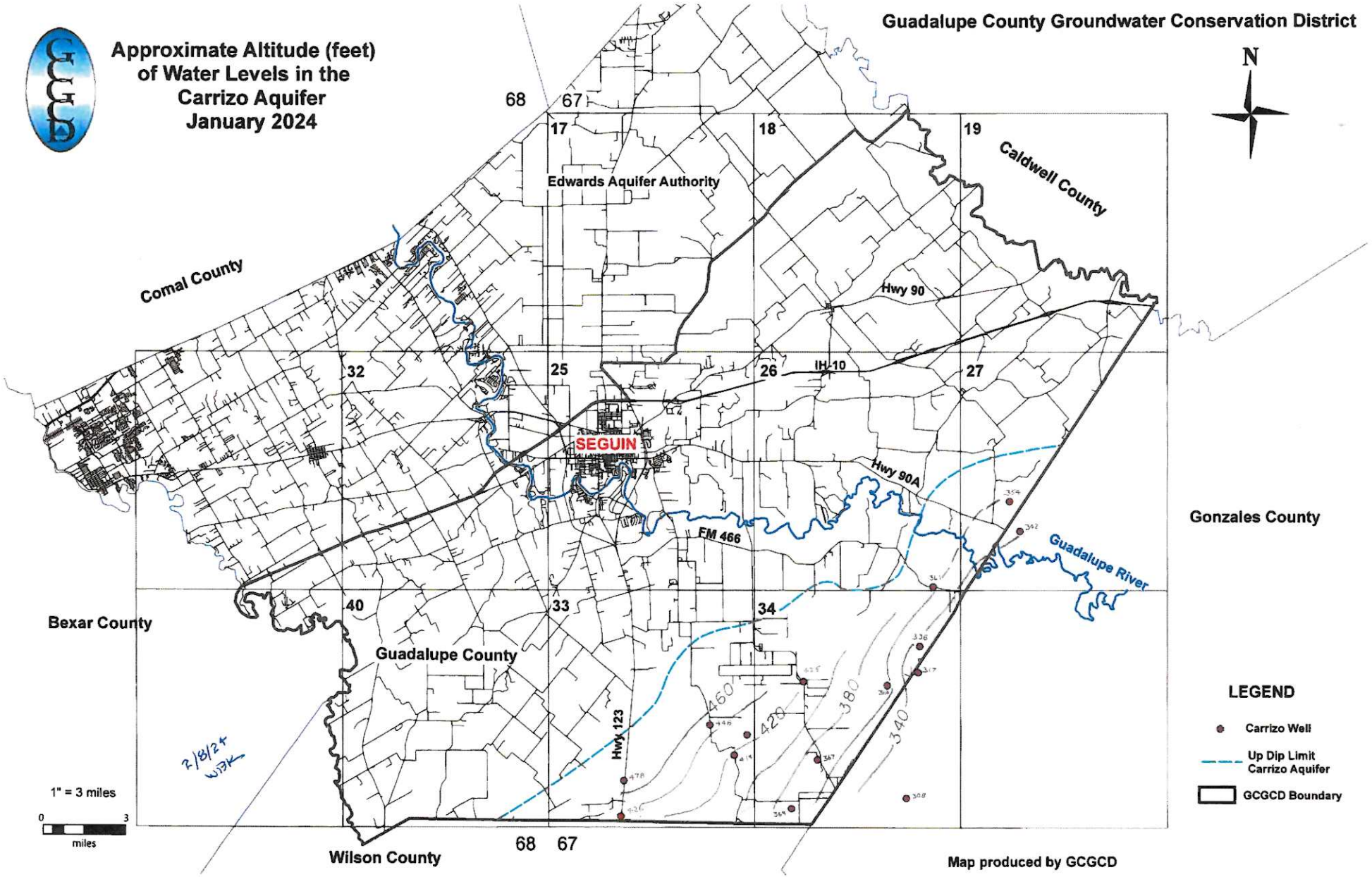
| | | | |
|---|---|---|---|
| | 1/03/13 | | 102.18 |
| | 1/06/23 | | 135.6 |
| | 6/01/23 | | 134.0 |
| | 9/06/23 | | 135.5 |
| | 1/03/24 | | 110. |
| CRWA (Wx) | 67-34-5 | MP 2.2 ft >GL | LSD +483 |
| Deer stand #3 | Lat/Long: 29.449793/-97.797889 | | Depth 1602 ft |
| | 09/07/16 | | 092.1 |
| | 10/14/18 | | 149.9 |
| | 01/02/19 | | 178.2 |
| | 06/10/22 | | 136.5 |
| | 06/01/23 | | 175.0 |
| | 01/10/24 | | 223. From GL |
| Blumberg #1 (Cz) | 67-34-706(6) | MP 2.0 ft >GL | LSD +514 |
| WS | Lat/Long:29.385406/-97.852584 | | Depth 770 ft, T/MCz 330 ft(+184) |
| | | | Screen 526 - 772 ft |
| | 1/21/04 | | 109.10 <GL |
| | 1/21/13 | | 121.28 |
| | 1/17/23 | | 144.45 |
| | 6/28/23 | | 147.38 |
| | 9/18/23 | | 150.51 |
| | 1/22/24 | | 147.5 |
| Baethge (Cz) | 67-34-710(6c) | MP 2.0 ft >GL | LSD +468 |
| (Lakey) WS | Lat/Long29.411429/-97.836769 | | Depth (?) |
| | 8/17/08 | | 069.84 |
| | 1/21/13 | | 074.23 |
| | 1/17/23 | | 100.24 |
| | 6/28/23 | | 099.73 |
| | 9/19/23 | | 104.20 |
| | 1/22/24 | | 103.2 |
| Mundt (Cz) | 67-34-7 | MP 1.5 ft >GL | LSD +520 |
| | Lat/Long:29.391694/-97.840694 | | Depth 444 ft |
| | 1/19/22 | | 142.68 |
| Norvin Vogel (Wx) | 68-40-204(10a) | MP 1.0 ft >GL | LSD +560 |
| WS | Lat/Long:29.4929/-98.0703 | | Depth 90 ft |
| | 10/4/85 | | 024 |
| | 1/15/19 (2013) | | 025.75 |
| | 9/14/22 | | 026.92 |
| | 1/17/23 | | 026.37 |
| | 6/28/23 | | 026.37 |
| | 9/19/23 | | 027.03 |
| Belz (Wx) | 68-40-401 | MP 1.0 ft>GL | LSD +537 |
| | Lat/Long:29.447778/-98.0950556 | | Depth 64 ft |
| | 1/19/22 | | 027.00 |
| | 6/15/22 | | 027.05 |
| | 1/17/23 | | 026.86 |
| | 6/28/23 | | 026.14 Pumping |
| | 9/19/23 | | 027.11 |
| | 1/22/24 | | 025.34 |
| Randy Schween | 68-40-7 | Mp 1.74>GL | LSD +540 |
| | Lat/Long29.40888/-98.114721 | | Depth 180 ft |
| | 2/09/02 | | 060 |
| | 4/05/22 | | 068.38 |
| | 1/17/23 | | 063.35 |
| | 6/28/23 | | 072.38 |

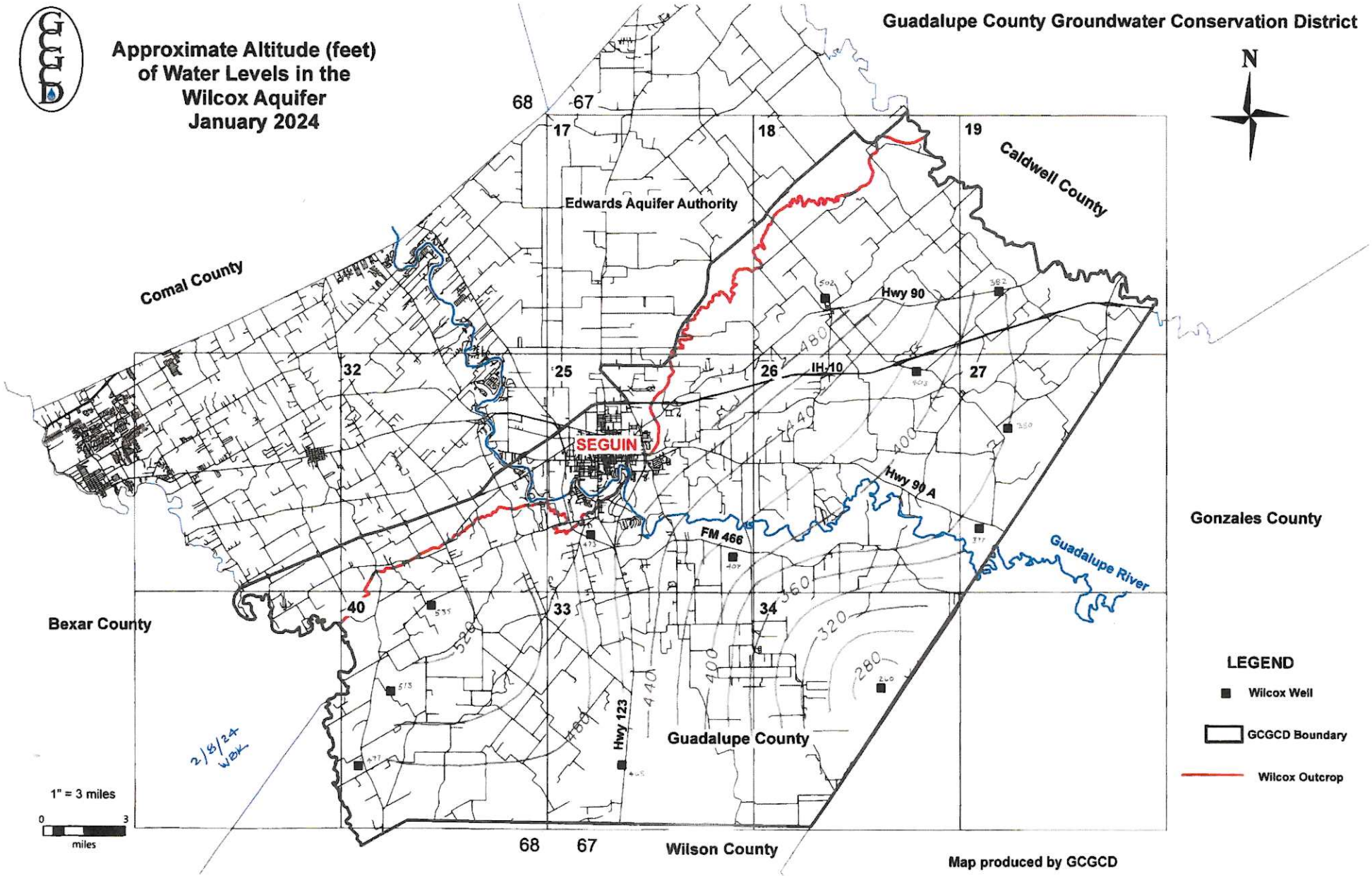
| | | |
|---|---|---|
| 9/19/23 | | 070.00 |
| 1/22/24 | | 064.85 |

GCUWCD WATER LEVELS

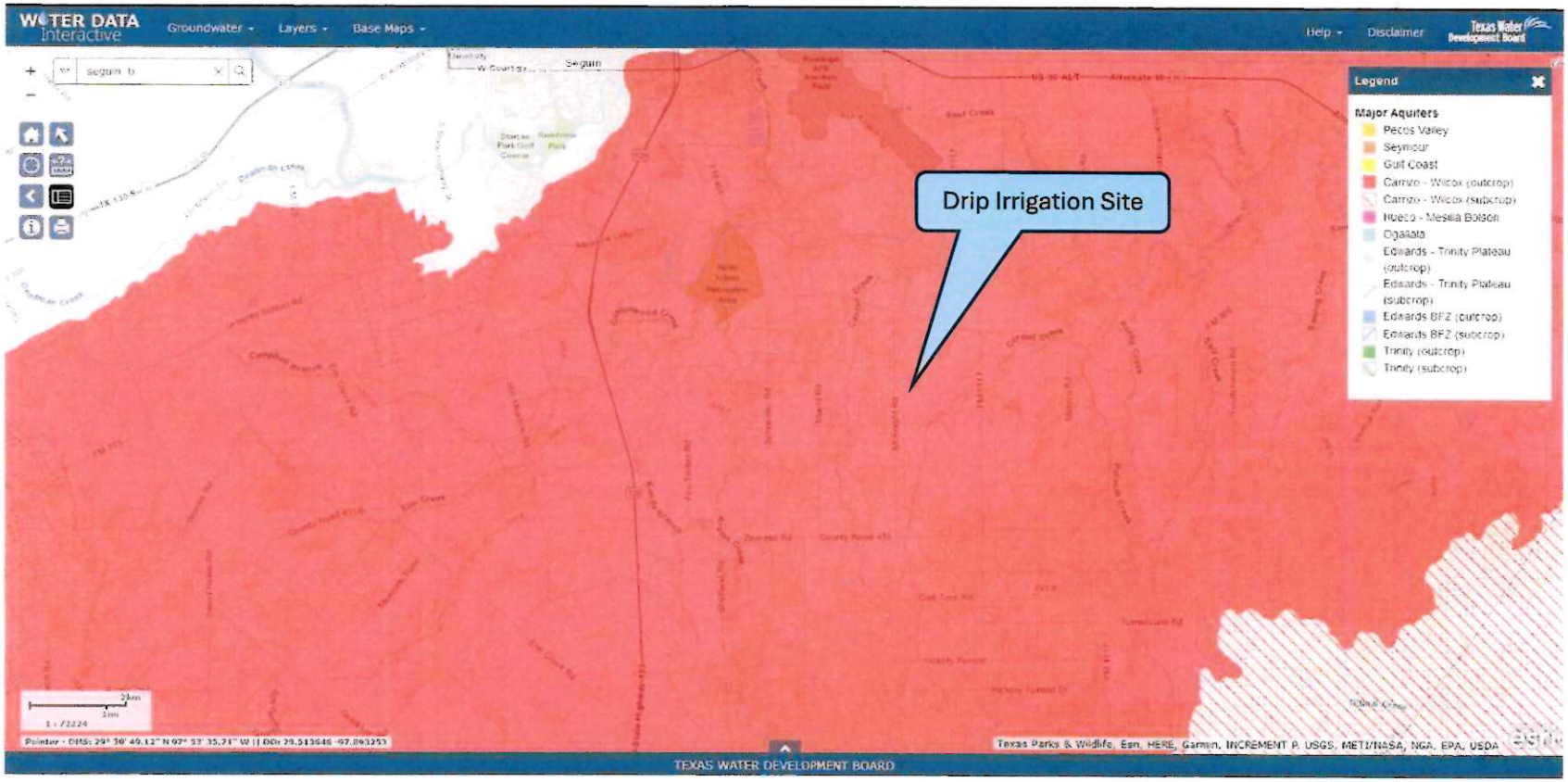
| | | | |
|---|---|---|---|
| James Miller (Cz) | 67-27-705 | MP 0.5 ft >GL | LSD +391 |
| | Lat/Long:29.530824/-97.71026 | | Depth (?) |
| 8/20/02 | | | 030.07 |
| 1/03/13 | | | 036.58 |
| 1/09/23 | | | 048.70 |
| 6/01/23 | | | 046.70 |
| 9/08/23 | | | 049.02 |
| 1/04/24 | | | 049.05 |
| Bexar Met #3 | 67-34-612 | MP 2.2 ft >GL | LSD +465 |
| Harden #1 Tommy's Well | Lat/Long: 29.457182/-97.775855 | | Depth 680 ft |
| 8/20/02 | | | 075.13 MP 1.5 ft>GL |
| 1/03/13 | | | 096.8 |
| 1/06/23 | | | 134.9 |
| 6/08/23 | | | 132.0 |
| 9/06/23 | | | 107.2 |
| 1/02/24 | | | 150. |
| Thyra Harvey(Cz) | 67-34-904 | MP 1.2 ft >GL | LSD +410 |
| | Lat/Long:29.39102/-97.782671 | | Depth (?) |
| 10/25/00 | | | 032.17 Barry Miller |
| 01/17/12 | | | 054.57 |
| 1/09/23 | | | 098.02 |
| 6/01/23 | | | 092.53 |
| 9/26/23 | | | 096.07 |
| 1/04/24 | | | 103.51 |


Guadalupe County Groundwater Conservation District
Water Level Decline in feet
for the Carrizo Aquifer
2013-2024
N
68
67
17
18
19
Edwards Aquifer Authority
Caldwell County
Comal County
Hwy 90
32
25
26
IH-10
27
SEGUIN
Hwy 90A
FM 466
Guadalupe River
Gonzales County
40
33
34
Bexar County
Guadalupe County
10
20
30
40
Hwy 123
2/8/24
WBK
1" = 3 miles
0
3
miles
68
67
Wilson County
Map produced by GCGCD
LEGEND
Carrizo Well
Up Dip Limit
Carrizo Aquifer
GCGCD Boundary

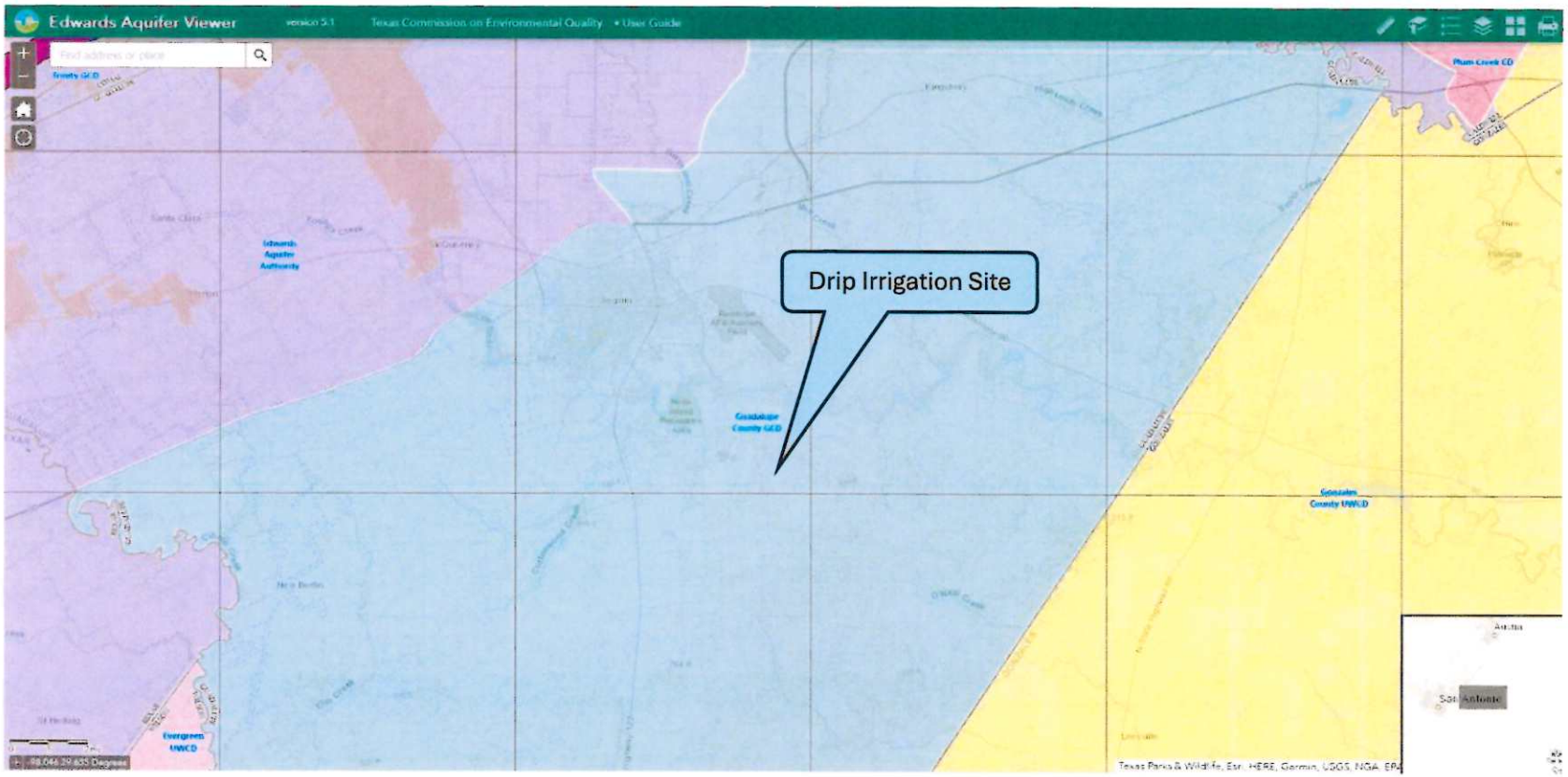

Guadalupe County Groundwater Conservation District
Approximate Altitude (feet) of Water Levels in the Carrizo Aquifer January 2024
N
68
67
17
18
19
Edwards Aquifer Authority
Caldwell County
Comal County
Hwy 90
32
25
26
IH-10
27
SEGUIN
Hwy 90A
FM 466
Gonzales County
Guadalupe River
40
33
34
Bexar County
Guadalupe County
Hwy 123
460
420
380
340
LEGEND
Carrizo Well
Up Dip Limit Carrizo Aquifer
GCGCD Boundary
1" = 3 miles
0
3
miles
2/8/24 WJK
68
67
Wilson County
Map produced by GCGCD


Guadalupe County Groundwater Conservation District
Approximate Altitude (feet) of Water Levels in the Wilcox Aquifer January 2024
N
68
67
17
18
19
Caldwell County
Edwards Aquifer Authority
Comal County
Hwy 90
480
32
25
26
IH-10
27
440
SEGUIN
400
Hwy 90 A
FM 466
Gonzales County
Guadalupe River
360
320
40
33
34
Bexar County
520
280
240
Hwy 123
440
400
480
Guadalupe County
2/8/24 WBL
1" = 3 miles
0
3
miles
68
67
Wilson County
LEGEND
Wilcox Well
GCGCD Boundary
Wilcox Outcrop
Map produced by GCGCD

**Recharge Feature Plan Exhibit 2 – Texas Water Development Board**

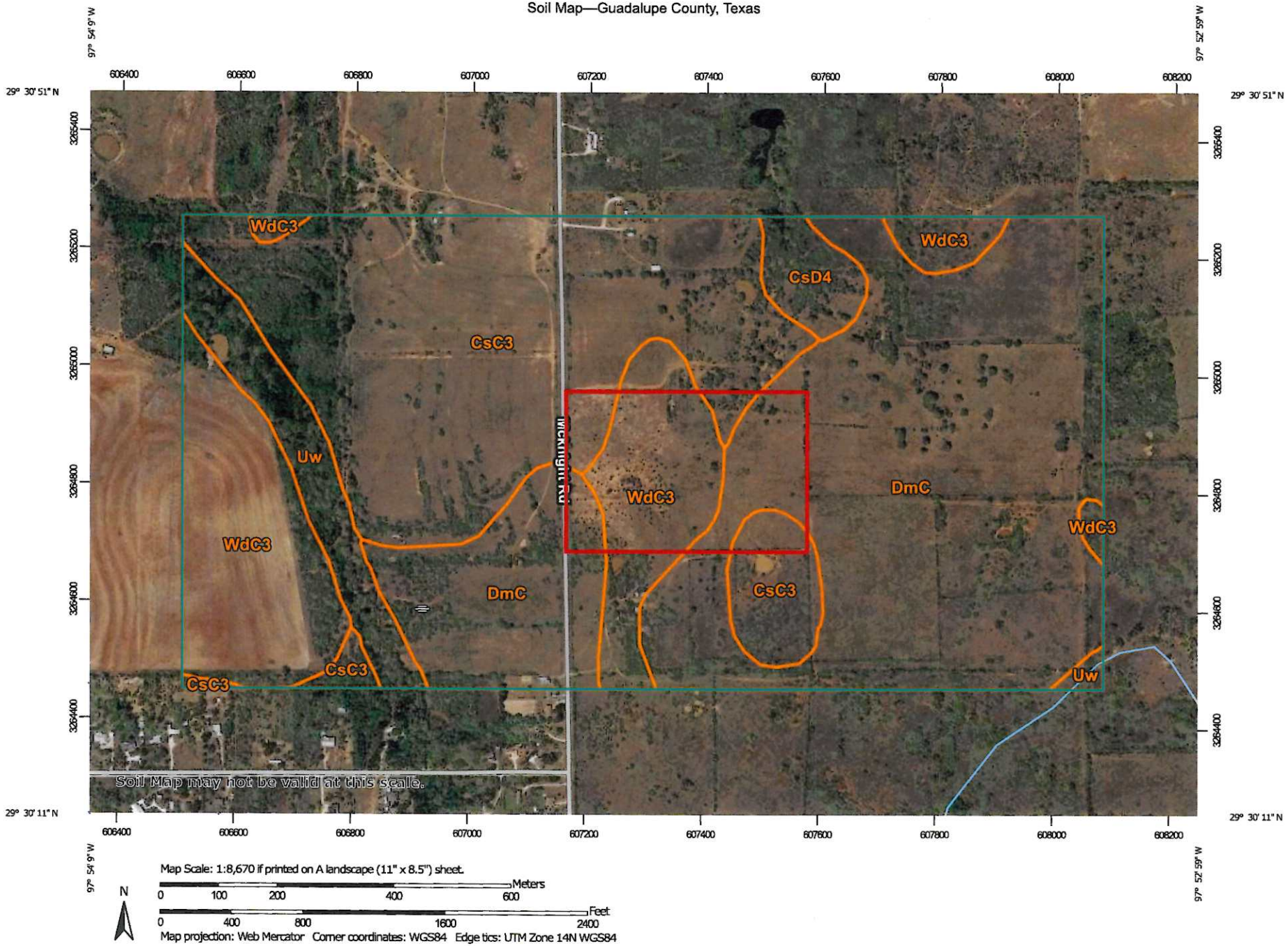

WATER DATA Interactive
Groundwater
Layers
Base Maps
Help
Disclaimer
Texas Water Development Board
Legend
Major Aquifers
Pecos Valley
Seymour
Gulf Coast
Carrizo - Wilcox (outcrop)
Carrizo - Wilcox (subcrop)
Hueco - Mesilla Bolson
Ogallala
Edwards - Trinity Plateau (outcrop)
Edwards - Trinity Plateau (subcrop)
Edwards BFZ (outcrop)
Edwards BFZ (subcrop)
Trinity (outcrop)
Trinity (subcrop)
Drip Irrigation Site
Texas Parks & Wildlife, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, NGA, EPA, USDA
TEXAS WATER DEVELOPMENT BOARD

**Recharge Feature Plan Exhibit 3 – TCEQ**


Edwards Aquifer Viewer
Texas Commission on Environmental Quality
Drip Irrigation Site
Edwards Aquifer Authority
Evergreen UWCD
Plum Creek CD
Gonzales County UWCD
San Antonio

**Recharge Feature Plan Exhibit 4 – Natural Resources Conservation Service**

# Soil Map—Guadalupe County, Texas



## 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 1:20,000.

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: Guadalupe County, Texas
Survey Area Data: Version 19, Sep 5, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 13, 2022—Apr 6, 2022

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 |
|---|---|---|---|
| CsC3 | Crockett loam, 2 to 5 percent slopes, eroded | 101.9 | 32.4% |
| CsD4 | Crockett loam, 3 to 8 percent slopes, severely eroded | 6.6 | 2.1% |
| DmC | Robco-Tanglewood complex, 1 to 5 percent slopes | 136.2 | 43.3% |
| Uw | Uhland soils frequently flooded | 15.9 | 5.1% |
| WdC3 | Windthorst fine sandy loam, 1 to 5 percent slopes, eroded | 54.0 | 17.2% |
| **Totals for Area of Interest** | | **314.6** | **100.0%** |

# Guadalupe County, Texas

## CsC3—Crockett loam, 2 to 5 percent slopes, eroded

### Map Unit Setting

*National map unit symbol:* 2ssh7
*Elevation:* 250 to 860 feet
*Mean annual precipitation:* 37 to 43 inches
*Mean annual air temperature:* 63 to 68 degrees F
*Frost-free period:* 234 to 258 days
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Crockett, eroded, and similar soils:* 85 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Crockett, Eroded

#### Setting

*Landform:* Ridges
*Landform position (two-dimensional):* Summit, shoulder
*Landform position (three-dimensional):* Interfluve
*Down-slope shape:* Linear
*Across-slope shape:* Convex
*Parent material:* Loamy residuum weathered from shale of cretaceous age

#### Typical profile

*A - 0 to 8 inches:* loam
*Btss - 8 to 25 inches:* clay
*Btkss - 25 to 45 inches:* clay
*BCk - 45 to 53 inches:* clay
*Cdk - 53 to 72 inches:* clay loam

#### Properties and qualities

*Slope:* 2 to 5 percent
*Depth to restrictive feature:* 43 to 60 inches to densic bedrock
*Drainage class:* Moderately well drained
*Runoff class:* Very high
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.03 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Calcium carbonate, maximum content:* 30 percent
*Gypsum, maximum content:* 2 percent
*Maximum salinity:* Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
*Sodium adsorption ratio, maximum:* 10.0

*Available water supply, 0 to 60 inches:* Moderate (about 8.6 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 4e
*Hydrologic Soil Group:* D
*Ecological site:* R086AY004TX - Southern Claypan Prairie
*Hydric soil rating:* No

**Minor Components**

**Normangee**

*Percent of map unit:* 10 percent
*Landform:* Ridges
*Landform position (two-dimensional):* Summit, shoulder
*Landform position (three-dimensional):* Interfluve
*Down-slope shape:* Linear
*Across-slope shape:* Convex
*Ecological site:* R086AY004TX - Southern Claypan Prairie
*Hydric soil rating:* No

**Wilson**

*Percent of map unit:* 5 percent
*Landform:* Stream terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Concave
*Ecological site:* R086AY004TX - Southern Claypan Prairie
*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Guadalupe County, Texas
Survey Area Data: Version 19, Sep 5, 2023

# Guadalupe County, Texas

## DmC—Robco-Tanglewood complex, 1 to 5 percent slopes

### Map Unit Setting

*National map unit symbol:* 2wg9h
*Elevation:* 220 to 610 feet
*Mean annual precipitation:* 35 to 45 inches
*Mean annual air temperature:* 67 to 69 degrees F
*Frost-free period:* 252 to 275 days
*Farmland classification:* Prime farmland if irrigated

### Map Unit Composition

*Robco and similar soils:* 46 percent
*Tanglewood and similar soils:* 25 percent
*Minor components:* 29 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Robco

#### Setting

*Landform:* Ridges
*Landform position (two-dimensional):* Footslope, toeslope
*Landform position (three-dimensional):* Base slope
*Down-slope shape:* Linear
*Across-slope shape:* Concave
*Parent material:* Sandy, clayey, and loamy residuum weathered from sandstone, claystone, and shale of eocene age

#### Typical profile

*A - 0 to 11 inches:* loamy fine sand
*E - 11 to 26 inches:* loamy fine sand
*Btg1 - 26 to 31 inches:* sandy clay loam
*Btg2 - 31 to 39 inches:* sandy clay loam
*Bt/C - 39 to 80 inches:* sandy clay loam

#### Properties and qualities

*Slope:* 1 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Runoff class:* Very low
*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:* About 18 to 42 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Gypsum, maximum content:* 1 percent
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* Moderate (about 8.3 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 3e
*Hydrologic Soil Group:* A
*Ecological site:* R087AY006TX - Sandy
*Hydric soil rating:* No

## Description of Tanglewood

### Setting

*Landform:* Ridges
*Landform position (two-dimensional):* Footslope, toeslope
*Landform position (three-dimensional):* Base slope
*Down-slope shape:* Linear
*Across-slope shape:* Concave
*Parent material:* Sandy, clayey, and loamy residuum weathered from sandstone, claystone, and shale of eocene age

### Typical profile

*A - 0 to 5 inches:* loamy fine sand
*E - 5 to 23 inches:* loamy fine sand
*Btg1 - 23 to 33 inches:* sandy clay loam
*Btg2 - 33 to 68 inches:* clay
*Btg3 - 68 to 80 inches:* sandy clay loam

### Properties and qualities

*Slope:* 1 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Runoff class:* Medium
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)
*Depth to water table:* About 20 to 46 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Gypsum, maximum content:* 1 percent
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* Moderate (about 8.0 inches)

### Interpretive groups

*Land capability classification (irrigated):* 3s
*Land capability classification (nonirrigated):* 3e
*Hydrologic Soil Group:* C/D
*Ecological site:* R087AY006TX - Sandy
*Hydric soil rating:* No

## Minor Components

### Tabor

*Percent of map unit:* 5 percent
*Landform:* Ridges

*Landform position (two-dimensional):* Footslope, toeslope
*Landform position (three-dimensional):* Base slope
*Down-slope shape:* Linear
*Across-slope shape:* Concave
*Ecological site:* R087AY005TX - Sandy Loam
*Hydric soil rating:* No

**Edge**

*Percent of map unit:* 5 percent
*Landform:* Ridges, ridges
*Landform position (two-dimensional):* Backslope, summit, shoulder
*Landform position (three-dimensional):* Side slope, interfluve
*Down-slope shape:* Linear
*Across-slope shape:* Convex
*Ecological site:* R087AY003TX - Claypan Savannah
*Hydric soil rating:* No

**Rader**

*Percent of map unit:* 5 percent
*Landform:* Stream terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Convex
*Across-slope shape:* Convex
*Ecological site:* R087AY005TX - Sandy Loam
*Hydric soil rating:* No

**Straber**

*Percent of map unit:* 5 percent
*Landform:* Ridges
*Landform position (two-dimensional):* Summit, footslope
*Landform position (three-dimensional):* Interfluve
*Down-slope shape:* Linear
*Across-slope shape:* Convex
*Ecological site:* R087AY006TX - Sandy
*Hydric soil rating:* No

**Silstid**

*Percent of map unit:* 5 percent
*Landform:* Ridges
*Landform position (two-dimensional):* Shoulder
*Landform position (three-dimensional):* Interfluve
*Down-slope shape:* Linear
*Across-slope shape:* Convex
*Ecological site:* R087AY006TX - Sandy
*Hydric soil rating:* No

**Padina**

*Percent of map unit:* 2 percent
*Landform:* Ridges
*Landform position (two-dimensional):* Footslope, toeslope
*Landform position (three-dimensional):* Base slope
*Down-slope shape:* Linear
*Across-slope shape:* Concave
*Ecological site:* R087AY007TX - Deep Sand

*Hydric soil rating:* No

**Gasil**

*Percent of map unit:* 2 percent
*Landform:* Ridges
*Landform position (two-dimensional):* Summit, shoulder
*Landform position (three-dimensional):* Interfluve
*Down-slope shape:* Linear
*Across-slope shape:* Convex
*Ecological site:* R087AY005TX - Sandy Loam
*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Guadalupe County, Texas
Survey Area Data: Version 19, Sep 5, 2023

# Guadalupe County, Texas

## WdC3—Windthorst fine sandy loam, 1 to 5 percent slopes, eroded

### Map Unit Setting

*National map unit symbol:* d9rz
*Elevation:* 700 to 1,300 feet
*Mean annual precipitation:* 26 to 32 inches
*Mean annual air temperature:* 63 to 66 degrees F
*Frost-free period:* 220 to 240 days
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Windthorst, eroded, and similar soils:* 85 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Windthorst, Eroded

#### Setting

*Landform:* Ridges
*Landform position (two-dimensional):* Backslope
*Landform position (three-dimensional):* Side slope
*Down-slope shape:* Linear
*Across-slope shape:* Convex
*Parent material:* Residuum weathered from siltstone in the wilcox group of eocene age

#### Typical profile

*H1 - 0 to 8 inches:* fine sandy loam
*H2 - 8 to 36 inches:* clay
*H3 - 36 to 48 inches:* sandy clay
*H4 - 48 to 72 inches:* sandy clay loam

#### Properties and qualities

*Slope:* 1 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Runoff class:* Medium
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 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:* 10 percent
*Available water supply, 0 to 60 inches:* Moderate (about 8.7 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3e
*Hydrologic Soil Group:* C
*Ecological site:* R087AY005TX - Sandy Loam
*Hydric soil rating:* No

**Minor Components**

**Unnamed**
*Percent of map unit:* 15 percent
*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Guadalupe County, Texas
Survey Area Data: Version 19, Sep 5, 2023

# ATTACHMENT U

# TECHNICAL REPORT 3.3 – SECTION (B)

# SOIL EVALUATION

# Domestic Worksheet 3.3
# Cordell Oaks Park SADDS

**Section 3. Required Plans**

**B. Soil Evaluation 30 TAC Chapter 222.73**

The soil profile evaluation was conducted on April 18, 2024. Three profile holes were dug at three project locations. They are listed as Profile Hole 1-3 and are illustrated on the attached NRCS soil's location map. In addition, three additional sites in the proposed zone locations were sampled at 12" and 24". Composite samples from 0" to 12" and 12" to 24" were sent to a lab and analyzed for the requirements of Chapter 222.157. The lab results are submitted as part of this permit application.

A review of the NRCS soils map for this area indicates that two primary soil types make up most of the soils found on this site. It is a Robco-Tanglewood complex. The second most prominent soil, Crockett loam, is like the Robco-Tanglewood complex but there is a potential presence of a confining rock layer in the first 43-60 inches.

Much of the drip dispersal area has shallow terraces. Some of these will have to be reshaped to accommodate the drip zone installations.

**PROFILE HOLE 1**

(1) Total Depth of the Profile Hole: 46 inches
(2) Primary Rooting Depth: 0" to 28"
(3) Secondary Rooting Depth: Roots were seen to about 36".
(4) Horizon Description:
    i. The first horizon was approximately 30" in depth.
    ii. The second horizon was approximately 16"+ in depth.
    iii. The lower horizon began at a depth near 40" in depth

b. Soil Texture.
    i. Soil texture of the first horizon is a fine sand to sandy loam, Class II in upper 30".
    ii. Soil Texture of the second horizon was a Class III, sandy clay loam.
    iii. Soil Texture of the third horizon was a Class IV, sandy clay to sandy clay loam.

c. Soil Structure:
    i. Soil Structure of the first horizon is that of a fine sand that transitions to a sandy loam with little or no structure.
    ii. Soil structure of the second horizon is more compact but is more friable in the areas where the red to dark brown soils are found. Under more favorable conditions it is believed that soil would show blocky to granular structural characteristics because of fine sand with a clay content of 20% to 30%.

iii. The third horizon still contained significant fine sand with a higher clay content that general appears as massive.

d. Soil Color:
   i. The upper horizon was a light brown color.
   ii. The color of the second horizon was an orange-brown.
   iii. The lower horizon has a red-brown color.

e. Mottling:
   i. There was no mottling present in the first horizon starting at 28".
   ii. There was color deposits but not definitively mottling present in the second horizon.
   iii. Again there were strong, red colors present in the soil but as bands and not as nodules.

f. Coarse Fragments: There were no coarse fragments in any of the horizons.

(5) Boundary Descriptions:
   i. The transition between the first horizon and second horizon is shown as a change in structure and color.

(6) Restrictive Horizons: 40", heavy clay.

(7) There was no appearance of water current or historical.

(8) There is no presence of water in the profile hole. See (7).

**PROFILE HOLE 2**

(1) Total Depth of the Profile Hole: 48 inches

(2) Primary Rooting Depth: 0" to 24"

(3) Secondary Rooting Depth: Roots were seen to about 33".

(4) Horizon Description:
   i. The first horizon was approximately 24" in depth.
   ii. The second horizon was approximately 14" in depth.
   iii. The third horizon was approximately 10"+ in depth.

b. Soil Texture.
   i. Soil texture of the first horizon is a fine sand to sandy loam, Class II in upper 24".
   ii. Soil Texture of the second horizon was Class III, sandy clay loam.
   iii. Soil Texture of the third horizon was a Class IV, silty clay.

c. Soil Structure:
   i. Soil Structure of the first horizon is that of a sand that transitions to a sandy loam with little or no structure.
   ii. Soil structure of the second horizon is blocky and granular.
   iii. Soil structure is blocky where the water content is lower. It is high in clay and a red subsoil that helps to keep it from being massive.

d. Soil Color:
   i. The upper horizon had a reddish-brown color.
   ii. The color of the second horizon was orange-brown.
   iii. The color of the third horizon was a red-brown.

e. Mottling:
   i. There was no mottling present in the first horizon.
   ii. There was mottling (color transition) present in the second horizon. It is not necessarily a result of a seasonal high-water table.

iii. There was no mottling present in the third horizon. There is significant color of red over brown that I believe is a result of natural soil deposits at that depth.

f. Coarse Fragments: There were no coarse fragments in any of the three horizons.

(5) Boundary Descriptions:

i. The transition between the first horizon and second horizon is shown as a change in structure and color.

ii. The transition between the second horizon and third horizon is shown as a change in color and texture.

(6) Restrictive Horizons: The high clay content of the third horizon will act as a restrictive horizon to normal soil wetting from seasonal rainfall.

(7) There was no appearance of water, current or historical.

(8) There is no presence of water in the profile hole. See (7).

**PROFILE HOLE 3**

(1) Total Depth of the Profile Hole: 47 inches

(2) Primary Rooting Depth: 0" to 28"

(3) Secondary Rooting Depth: Roots were seen to about 35".

(4) Horizon Description:

i. The first horizon was approximately 28" in depth.

ii. The second horizon was approximately 12" in depth.

iii. The third horizon was approximately 7"+ in depth.

b. Soil Texture.

i. Soil texture of the first horizon is a silty sandy, Class II in upper 30".

ii. Soil Texture of the second horizon was a Class II, loam.

iii. Soil Texture of the third horizon was a Class IV.

c. Soil Structure:

i. Soil Structure of the first horizon is that of a sandy A horizon that transitions to a sandy loam.

ii. Soil structure of the second horizon is more compact but is more friable in the areas where the red to dark brown soils are found.

iii. Soil structure is blocky where the water content is lower. It is high in clay and a red subsoil that helps to keep it from being massive.

d. Soil Color:

i. The upper horizon was a light brown to orange-brown color.

ii. The color of the second horizon was reddish-brown,

iii. The color of the third horizon was a dark rusty brown.

e. Mottling:

i. There was no mottling present in the first horizon.

ii. There was mottling (color transition) present in the second horizon. It is not necessarily a result of a seasonal high-water table.

iii. There was no mottling present in the third horizon.

f. Coarse Fragments: There were no coarse fragments in any of the three horizons.

(5) Boundary Descriptions:

i. The transition between the first horizon and second horizon is shown as a change in structure.

ii. The transition between the second horizon and third horizon is seen as a change in color and texture.

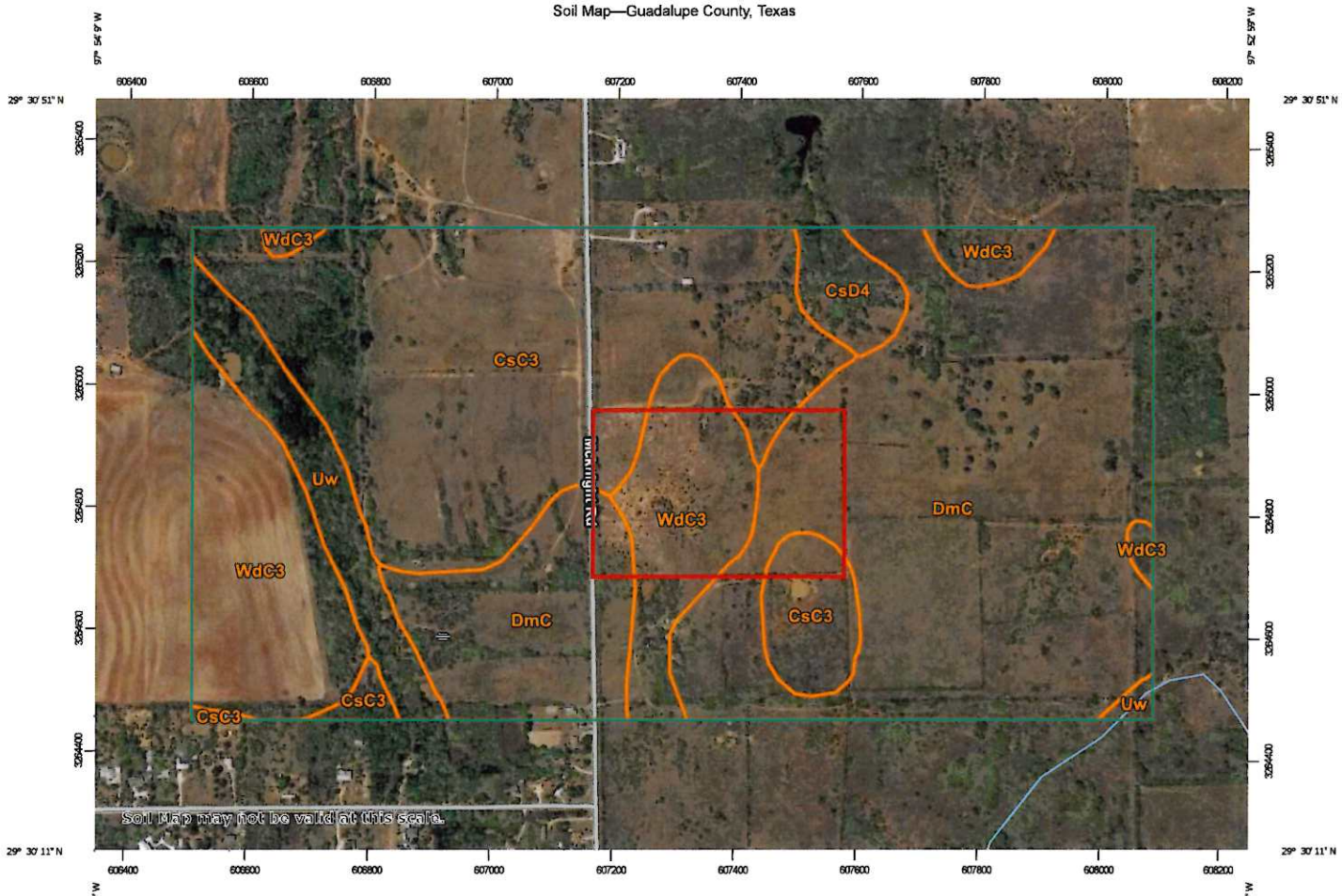
(6) Restrictive Horizons: The high clay content of the third horizon will act as a restrictive horizon to normal soil wetting from seasonal rainfall.

(7) There was no appearance of water, current or historical.
(8) There is no presence of water in the profile hole. See (7).

Site and Soils Evaluation Done by:
James F. Prochaska, MS-PE
TXPE License # 80504
TBPE Firm No. 21045


08/14/2024

Soil Map—Guadalupe County, Texas




Map Scale: 1:8,670 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 400 800 1600 2400

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N 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 1:20,000.

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: Guadalupe County, Texas
Survey Area Data: Version 19, Sep 5, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 13, 2022—Apr 6, 2022

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 |
|---|---|---|---|
| CsC3 | Crockett loam, 2 to 5 percent slopes, eroded | 101.9 | 32.4% |
| CsD4 | Crockett loam, 3 to 8 percent slopes, severely eroded | 6.6 | 2.1% |
| DmC | Robco-Tanglewood complex, 1 to 5 percent slopes | 136.2 | 43.3% |
| Uw | Uhland soils frequently flooded | 15.9 | 5.1% |
| WdC3 | Windthorst fine sandy loam, 1 to 5 percent slopes, eroded | 54.0 | 17.2% |
| **Totals for Area of Interest** | | **314.6** | **100.0%** |

# Guadalupe County, Texas

## CsC3—Crockett loam, 2 to 5 percent slopes, eroded

### Map Unit Setting

*National map unit symbol:* 2ssh7
*Elevation:* 250 to 860 feet
*Mean annual precipitation:* 37 to 43 inches
*Mean annual air temperature:* 63 to 68 degrees F
*Frost-free period:* 234 to 258 days
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Crockett, eroded, and similar soils:* 85 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Crockett, Eroded

#### Setting

*Landform:* Ridges
*Landform position (two-dimensional):* Summit, shoulder
*Landform position (three-dimensional):* Interfluve
*Down-slope shape:* Linear
*Across-slope shape:* Convex
*Parent material:* Loamy residuum weathered from shale of cretaceous age

#### Typical profile

*A - 0 to 8 inches:* loam
*Btss - 8 to 25 inches:* clay
*Btkss - 25 to 45 inches:* clay
*BCk - 45 to 53 inches:* clay
*Cdk - 53 to 72 inches:* clay loam

#### Properties and qualities

*Slope:* 2 to 5 percent
*Depth to restrictive feature:* 43 to 60 inches to densic bedrock
*Drainage class:* Moderately well drained
*Runoff class:* Very high
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.03 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Calcium carbonate, maximum content:* 30 percent
*Gypsum, maximum content:* 2 percent
*Maximum salinity:* Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
*Sodium adsorption ratio, maximum:* 10.0

*Available water supply, 0 to 60 inches:* Moderate (about 8.6 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 4e
*Hydrologic Soil Group:* D
*Ecological site:* R086AY004TX - Southern Claypan Prairie
*Hydric soil rating:* No

**Minor Components**

**Normangee**

*Percent of map unit:* 10 percent
*Landform:* Ridges
*Landform position (two-dimensional):* Summit, shoulder
*Landform position (three-dimensional):* Interfluve
*Down-slope shape:* Linear
*Across-slope shape:* Convex
*Ecological site:* R086AY004TX - Southern Claypan Prairie
*Hydric soil rating:* No

**Wilson**

*Percent of map unit:* 5 percent
*Landform:* Stream terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Concave
*Ecological site:* R086AY004TX - Southern Claypan Prairie
*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Guadalupe County, Texas
Survey Area Data: Version 19, Sep 5, 2023

# Guadalupe County, Texas

## DmC—Robco-Tanglewood complex, 1 to 5 percent slopes

### Map Unit Setting

*National map unit symbol:* 2wg9h
*Elevation:* 220 to 610 feet
*Mean annual precipitation:* 35 to 45 inches
*Mean annual air temperature:* 67 to 69 degrees F
*Frost-free period:* 252 to 275 days
*Farmland classification:* Prime farmland if irrigated

### Map Unit Composition

*Robco and similar soils:* 46 percent
*Tanglewood and similar soils:* 25 percent
*Minor components:* 29 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Robco

#### Setting

*Landform:* Ridges
*Landform position (two-dimensional):* Footslope, toeslope
*Landform position (three-dimensional):* Base slope
*Down-slope shape:* Linear
*Across-slope shape:* Concave
*Parent material:* Sandy, clayey, and loamy residuum weathered from sandstone, claystone, and shale of eocene age

#### Typical profile

*A - 0 to 11 inches:* loamy fine sand
*E - 11 to 26 inches:* loamy fine sand
*Btg1 - 26 to 31 inches:* sandy clay loam
*Btg2 - 31 to 39 inches:* sandy clay loam
*Bt/C - 39 to 80 inches:* sandy clay loam

#### Properties and qualities

*Slope:* 1 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Runoff class:* Very low
*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:* About 18 to 42 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Gypsum, maximum content:* 1 percent
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* Moderate (about 8.3 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 3e
*Hydrologic Soil Group:* A
*Ecological site:* R087AY006TX - Sandy
*Hydric soil rating:* No

## Description of Tanglewood

**Setting**

*Landform:* Ridges
*Landform position (two-dimensional):* Footslope, toeslope
*Landform position (three-dimensional):* Base slope
*Down-slope shape:* Linear
*Across-slope shape:* Concave
*Parent material:* Sandy, clayey, and loamy residuum weathered from sandstone, claystone, and shale of eocene age

**Typical profile**

*A - 0 to 5 inches:* loamy fine sand
*E - 5 to 23 inches:* loamy fine sand
*Btg1 - 23 to 33 inches:* sandy clay loam
*Btg2 - 33 to 68 inches:* clay
*Btg3 - 68 to 80 inches:* sandy clay loam

**Properties and qualities**

*Slope:* 1 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Runoff class:* Medium
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)
*Depth to water table:* About 20 to 46 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Gypsum, maximum content:* 1 percent
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* Moderate (about 8.0 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 3s
*Land capability classification (nonirrigated):* 3e
*Hydrologic Soil Group:* C/D
*Ecological site:* R087AY006TX - Sandy
*Hydric soil rating:* No

## Minor Components

**Tabor**

*Percent of map unit:* 5 percent
*Landform:* Ridges

*Landform position (two-dimensional):* Footslope, toeslope
*Landform position (three-dimensional):* Base slope
*Down-slope shape:* Linear
*Across-slope shape:* Concave
*Ecological site:* R087AY005TX - Sandy Loam
*Hydric soil rating:* No

**Edge**

*Percent of map unit:* 5 percent
*Landform:* Ridges, ridges
*Landform position (two-dimensional):* Backslope, summit, shoulder
*Landform position (three-dimensional):* Side slope, interfluve
*Down-slope shape:* Linear
*Across-slope shape:* Convex
*Ecological site:* R087AY003TX - Claypan Savannah
*Hydric soil rating:* No

**Rader**

*Percent of map unit:* 5 percent
*Landform:* Stream terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Convex
*Across-slope shape:* Convex
*Ecological site:* R087AY005TX - Sandy Loam
*Hydric soil rating:* No

**Straber**

*Percent of map unit:* 5 percent
*Landform:* Ridges
*Landform position (two-dimensional):* Summit, footslope
*Landform position (three-dimensional):* Interfluve
*Down-slope shape:* Linear
*Across-slope shape:* Convex
*Ecological site:* R087AY006TX - Sandy
*Hydric soil rating:* No

**Silstid**

*Percent of map unit:* 5 percent
*Landform:* Ridges
*Landform position (two-dimensional):* Shoulder
*Landform position (three-dimensional):* Interfluve
*Down-slope shape:* Linear
*Across-slope shape:* Convex
*Ecological site:* R087AY006TX - Sandy
*Hydric soil rating:* No

**Padina**

*Percent of map unit:* 2 percent
*Landform:* Ridges
*Landform position (two-dimensional):* Footslope, toeslope
*Landform position (three-dimensional):* Base slope
*Down-slope shape:* Linear
*Across-slope shape:* Concave
*Ecological site:* R087AY007TX - Deep Sand

*Hydric soil rating:* No

**Gasil**

*Percent of map unit:* 2 percent
*Landform:* Ridges
*Landform position (two-dimensional):* Summit, shoulder
*Landform position (three-dimensional):* Interfluve
*Down-slope shape:* Linear
*Across-slope shape:* Convex
*Ecological site:* R087AY005TX - Sandy Loam
*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Guadalupe County, Texas
Survey Area Data: Version 19, Sep 5, 2023

# Guadalupe County, Texas

## WdC3—Windthorst fine sandy loam, 1 to 5 percent slopes, eroded

### Map Unit Setting

*National map unit symbol:* d9rz
*Elevation:* 700 to 1,300 feet
*Mean annual precipitation:* 26 to 32 inches
*Mean annual air temperature:* 63 to 66 degrees F
*Frost-free period:* 220 to 240 days
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Windthorst, eroded, and similar soils:* 85 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Windthorst, Eroded

#### Setting

*Landform:* Ridges
*Landform position (two-dimensional):* Backslope
*Landform position (three-dimensional):* Side slope
*Down-slope shape:* Linear
*Across-slope shape:* Convex
*Parent material:* Residuum weathered from siltstone in the wilcox group of eocene age

#### Typical profile

*H1 - 0 to 8 inches:* fine sandy loam
*H2 - 8 to 36 inches:* clay
*H3 - 36 to 48 inches:* sandy clay
*H4 - 48 to 72 inches:* sandy clay loam

#### Properties and qualities

*Slope:* 1 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Runoff class:* Medium
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 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:* 10 percent
*Available water supply, 0 to 60 inches:* Moderate (about 8.7 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3e
*Hydrologic Soil Group:* C
*Ecological site:* R087AY005TX - Sandy Loam
*Hydric soil rating:* No

**Minor Components**

**Unnamed**
*Percent of map unit:* 15 percent
*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Guadalupe County, Texas
Survey Area Data: Version 19, Sep 5, 2023

# ATTACHMENT V

# TECHNICAL REPORT 3.3 – SECTION 3(C)

# SITE PREPERATION PLAN

# Domestic Worksheet 3.3
# The Garden of Cordell Oaks SADDS

**Section 3. Required Plans**

**C. Site Preparation Plan, 30 TAC Chapter 222.75**

1. Rainwater will be prevented from running onto the dispersal sites from other developed areas using berms and diversion swales to detention ponds as needed. Run-on from eastern property is prevented by the ground sloping away and to the east. The general slope across the drip dispersal field is from south to north and east to west. Water moving across the south property line will be diverted via a shallow swale from east to west along the property line and then north across the property. The drip fields are adequately sloped such that rainfall will run off and not stand on the fields.

2. Most of the drip dispersal sites have deep sandy soil. The restrictive horizon beneath the sandy soils is a sand clay to clay soil with very lower permeability. In areas where the distance to the restrictive horizon is not sufficient, soil will be imported or moved in a manner that mixes the native and imported soils such that no additional boundary conditions are created that prevent movement of water from occurring.
    a. The nature of the soil is loamy fine sand in the areas of the drip dispersal system and fine sandy loam in the areas of construction. It is anticipated that some of sandy soil in the construction areas will need to be moved and replaced. This soil should be added in the limited areas where erosion and terrace construction reduced the depth of the loamy fine sand above the restrictive clay horizon.

3. It is anticipated that any soil that is needed for soil augmentation will **NOT** be imported from off-site. Soil augmentation will be done using the loamy fine sand and fine sandy loam that exist on the property, in areas where it will need to be removed.

4. The existing vegetation is primarily native pasture grass. It will be removed in the areas where soil augmentation is needed and close-cut where the tubing can be plowed in. The final drip fields will be seeded with Bermuda grass and overseeded with winter rye to ensure year-round dispersal site usability.

Site Preparation Plan Completed by:
James F. Prochaska, MS-PE
TXPE License # 80504
TBPE Firm No. 21045


08/14/2024