Technical Package Cover Page

This file contains the following documents:

1. Summary of application (in plain language)
   - English
   - Alternative Language (Spanish)
2. First notice (NORI-Notice of Receipt of Application and Intent to Obtain a Permit)
   - English
   - Alternative Language (Spanish)
3. Second notice (NAPD-Notice of Preliminary Decision)
   - English
   - Alternative Language (Spanish)
4. Application materials *
5. Draft permit *
6. Technical summary or fact sheet *

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

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

COMBINED

NOTICE OF RECEIPT OF APPLICATION AND INTENT TO OBTAIN WATER QUALITY PERMIT (NORI)

AND

NOTICE OF APPLICATION AND PRELIMINARY DECISION FOR WATER QUALITY LAND APPLICATION PERMIT FOR MUNICIPAL WASTEWATER

NEW

PERMIT NO. WQ0016616001

APPLICATION AND PRELIMINARY DECISION. Arp Holdings, LP, 223 Hunters Village, New Braunfels, Texas 78132, has applied to the Texas Commission on Environmental Quality (TCEQ) for a new permit, TCEQ Permit No. WQ0016616001, to authorize the disposal of treated domestic wastewater at a daily average flow not to exceed 18,000 gallons per day **via public access subsurface area drip dispersal system with a minimum area of 4.67 acres**. This permit will not authorize a discharge of pollutants into waters in the State. TCEQ received this application on September 9, 2024.

This combined notice is being issued to correct the permit type as subsurface area drip dispersal system and the address of the facility location from what was stated in the NORI.

The wastewater treatment facility and disposal site will be located at **1313 McKnight Road, in Guadalupe County, Texas 78155.** The wastewater treatment facility and disposal site will be located in the drainage basin of Cordell Creek in Segment No. 1804 of the Guadalupe River Basin. 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 exact location, refer to application. https://gisweb.tceq.texas.gov/LocationMapper/?marker=-97.893333,29.508611&level=18

The TCEQ Executive Director has completed the technical review of the application and prepared a draft permit. The draft permit, if approved, would establish the conditions under which the facility must operate. The Executive Director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. The permit application, Executive Director's preliminary decision, and draft permit are available for viewing and copying at Arp Texas Courthouse, record room, 109 West Longview, Arp, Texas. 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.

PUBLIC COMMENT / PUBLIC MEETING. You may submit public comments or request a public meeting about this application.] The purpose of a public meeting is to provide the opportunity to submit comments or to ask questions about the application. TCEQ holds 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 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 a contested case hearing or reconsideration of the Executive Director's decision**. A contested case hearing is a legal proceeding similar to a civil trial in a 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.**

EXECUTIVE DIRECTOR ACTION. The Executive Director may issue final approval of the application unless a timely contested case hearing request or request for reconsideration is filed. If a timely hearing request or request for reconsideration is filed, the Executive Director will not issue final approval of the permit and will forward the application and request to the TCEQ Commissioners for their consideration at a scheduled Commission meeting.

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.

All written public comments and public meeting requests must be submitted to the Office of the Chief Clerk, MC 105, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, TX 78711-3087 or electronically at www.tceq.texas.gov/goto/comment **within 30 days from the date of newspaper publication of this notice.**

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. Public comments and requests must be submitted either electronically at www.tceq.texas.gov/goto/comment, 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. Any personal information you submit to the TCEQ will become part of the agency's record; this includes email addresses. 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: July 3, 2025

PERMIT NO. WQ0016616001

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O. Box 13087
Austin, Texas 78711-3087

PERMIT TO DISCHARGE WASTES
under provisions of Chapter 26
of the Texas Water Code

Arp Holdings, LP

whose mailing address is

223 Hunters Village
New Braunfels, Texas 78132

Nature of Business Producing Waste: Domestic wastewater treatment operation, SIC Code 4952.

General Description and Location of Waste Disposal System:

Description: The Garden of Cordell Oaks Wastewater Treatment Facility will consist of an integrated fixed film activated sludge process. Treatment units will include a lift station, a trash trap, a primary tank, a flow equalization tank, two aeration basins, two flow pumps, a clarifier, three effluent pump tanks, and a filter skid with ultra-violet disinfection system. The permittee is required to provide at least three days of temporary storage for times when the facility is out of service due to an emergency or for scheduled maintenance. The permittee is authorized to dispose of treated domestic wastewater effluent at a daily average flow not to exceed 0.018 million gallons per day (MGD) via public access subsurface area drip dispersal system (SADDS) with a minimum area of 4.67 acres. Application rates shall not exceed 0.1 gallons per square foot per day. The permittee will maintain the Bermuda grass with overlay of rye grass on the disposal site.

Location: The wastewater treatment facility and disposal site are located at 1313 McKnight Road, in Guadalupe County, Texas 78155. (See Attachment A.)

Drainage Area: The wastewater treatment facility and disposal site are located in the drainage basin of Cordell Creek in Segment No. 1804 of the Guadalupe River Basin. No discharge of pollutants into water in the State is authorized by this permit.

This permit and the authorization contained herein shall expire at midnight, **five years from the date of issuance**

ISSUED DATE:

For the Commission

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Conditions of the Permit: No discharge of pollutants into water in the State is authorized.

A. Effluent Limitations

Character: Treated Domestic Sewage Effluent

Volume: Daily Average Flow – 0.018 MGD from the treatment system

Quality: The following effluent limitations shall be required:

	Effluent Concentrations (Not to Exceed)			
Parameter	Daily Average mg/l	7-Day Average mg/l	Daily Maximum mg/	Single Grab mg/l
Biochemical Oxygen Demand (5-day)	20	30	45	65
Total Suspended Solids	20	30	45	65

The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units.

B. Monitoring Requirements:

Parameter	Monitoring Frequency	Sample Type
Flow	Continuous	Totalizing Meter
Biochemical Oxygen Demand (5-day)	One/week	Grab
pH	One/month	Grab

The monitoring shall be done after the final treatment unit and prior to storage of the treated effluent. If the effluent is land applied directly from the treatment system, monitoring shall be done after the final treatment unit and prior to land application. These records shall be maintained on a monthly basis and be available at the plant site for inspection by authorized representatives of the Commission for at least three years.

STANDARD PERMIT CONDITIONS

This permit is granted in accordance with the Texas Water Code and the rules and other Orders of the Commission and the laws of the State of Texas.

DEFINITIONS

All definitions in Section 26.001 of the Texas Water Code and 30 TAC Chapter 305 shall apply to this permit and are incorporated by reference. Some specific definitions of words or phrases used in this permit are as follows:

1. Flow Measurements

    a. Daily average flow - the arithmetic average of all determinations of the daily flow within a period of one calendar month. The daily average flow determination shall consist of determinations made on at least four separate days. If instantaneous measurements are used to determine the daily flow, the determination shall be the arithmetic average of all instantaneous measurements taken during that month. Daily average flow determination for intermittent discharges shall consist of a minimum of three flow determinations on days of discharge.

    b. Annual average flow - the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months. The annual average flow determination shall consist of daily flow volume determinations made by a totalizing meter, charted on a chart recorder and limited to major domestic wastewater discharge facilities with a 1 million gallons per day or greater permitted flow.

    c. Instantaneous flow - the measured flow during the minimum time required to interpret the flow measuring device.

2. Concentration Measurements

    a. Daily average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar month, consisting of at least four separate representative measurements.

        i. For domestic wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values in the previous four consecutive month period consisting of at least four measurements shall be utilized as the daily average concentration.

        ii. For all other wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values taken during the month shall be utilized as the daily average concentration.

    b. 7-day average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar week, Sunday through Saturday.

    c. Daily maximum concentration - the maximum concentration measured on a single day, by the sample type specified in the permit, within a period of one calendar month.

3. Sample Type

   a. Composite sample - For domestic wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC § 319.9 (a). For industrial wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC § 319.9 (b).

   b. Grab sample - an individual sample collected in less than 15 minutes.

4. Treatment Facility (facility) - wastewater facilities used in the conveyance, storage, treatment, recycling, reclamation and/or disposal of domestic sewage, industrial wastes, agricultural wastes, recreational wastes, or other wastes including sludge handling or disposal facilities under the jurisdiction of the Commission.

5. The term “sewage sludge” is defined as solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in 30 TAC Chapter 312. This includes the solids which have not been classified as hazardous waste separated from wastewater by unit processes.

6. The term “biosolids” is defined as sewage sludge that has been tested or processed to meet Class A, Class AB, or Class B pathogen standards in 30 TAC Chapter 312 for beneficial use.

7. Bypass - the intentional diversion of a waste stream from any portion of a treatment facility.

MONITORING REQUIREMENTS

1. Monitoring Requirements

   Monitoring results shall be collected at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling in accordance with 30 TAC §§ 319.4 - 319.12.

   As provided by state law, the permittee is subject to administrative, civil and criminal penalties, as applicable, for negligently or knowingly violating the Texas Water Code, Chapters 26, 27, and 28, and Texas Health and Safety Code, Chapter 361, including but not limited to knowingly making any false statement, representation, or certification on any report, record or other document submitted or required to be maintained under this permit, including monitoring reports, records or reports of compliance or noncompliance, or falsifying, tampering with or knowingly rendering inaccurate any monitoring device or method required by this permit or violating any other requirement imposed by state or federal regulations.

2. Test Procedures

   a. Unless otherwise specified in this permit, test procedures for the analysis of pollutants shall comply with procedures specified in 30 TAC §§ 319.11 - 319.12. Measurements, tests and calculations shall be accurately accomplished in a representative manner.

b. All laboratory tests submitted to demonstrate compliance with this permit must meet the requirements of 30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification.

3. Records of Results

a. Monitoring samples and measurements shall be taken at times and in a manner so as to be representative of the monitored activity.

b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge or biosolids use and disposal activities, which shall be retained for a period of at least five years, monitoring and reporting records, including strip charts and records of calibration and maintenance, copies of all records required by this permit, and records of all data used to complete the application for this permit shall be retained at the facility site, or shall be readily available for review by a TCEQ representative for a period of three years from the date of the record or sample, measurement, report, or application. This period shall be extended at the request of the Executive Director.

c. Records of monitoring activities shall include the following:

i. date, time and place of sample or measurement;
ii. identity of individual who collected the sample or made the measurement.
iii. date and time of analysis;
iv. identity of the individual and laboratory who performed the analysis;
v. the technique or method of analysis; and
vi. the results of the analysis or measurement and quality assurance/quality control records.

The period during which records are required to be kept shall be automatically extended to the date of the final disposition of any administrative or judicial enforcement action that may be instituted against the permittee.

4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit using approved analytical methods as specified above, all results of such monitoring shall be included in determining compliance with permit requirements.

5. Calibration of Instruments

All automatic flow measuring or recording devices and all totalizing meters for measuring flows shall be accurately calibrated by a trained person at plant start-up and as often thereafter as necessary to ensure accuracy, but not less often than annually unless authorized by the Executive Director for a longer period. Such person shall verify in writing that the device is operating properly and giving accurate results. Copies of the verification shall be retained at the facility site and/or shall be readily available for review by a TCEQ representative for a period of three years.

6. Compliance Schedule Reports

   Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date to the Regional Office and the Enforcement Division (MC 224).

7. Noncompliance Notification

   a. In accordance with 30 TAC § 305.125(9), any noncompliance which may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Except as allowed by 30 TAC § 305.132, report of such information shall be provided orally or by facsimile transmission (FAX) to the Regional Office within 24 hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the Regional Office and the Enforcement Division (MC 224) within five working days of becoming aware of the noncompliance. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.

   b. The following violations shall be reported under Monitoring and Reporting Requirement 7.a.:

      i. Unauthorized discharges as defined in Permit Condition 2(g).

      ii. Any unanticipated bypass which exceeds any effluent limitation in the permit.

   c. In addition to the above, any effluent violation which deviates from the permitted effluent limitation by more than 40% shall be reported by the permittee in writing to the Regional Office and the Enforcement Division (MC 224) within 5 working days of becoming aware of the noncompliance.

   d. Any noncompliance other than that specified in this section, or any required information not submitted or submitted incorrectly, shall be reported to the Enforcement Division (MC 224) as promptly as possible.

8. In accordance with the procedures described in 30 TAC §§ 35.301 - 35.303 (relating to Water Quality Emergency and Temporary Orders) if the permittee knows in advance of the need for a bypass, it shall submit prior notice by applying for such authorization.

9. Changes in Discharges of Toxic Substances

   All existing manufacturing, commercial, mining, and silvicultural permittees shall notify the Regional Office, orally or by facsimile transmission within 24 hours, and both the Regional Office and the Enforcement Division (MC 224) in writing within five (5) working days, after becoming aware of or having reason to believe:

   a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant listed at 40 CFR Part 122, Appendix D,

Tables II and III (excluding Total Phenols) which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

i. One hundred micrograms per liter (100 µg/L);
ii. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
iii. Five (5) times the maximum concentration value reported for that pollutant in the permit application; or
iv. The level established by the TCEQ.

b. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

i. Five hundred micrograms per liter (500 µg/L);
ii. One milligram per liter (1 mg/L) for antimony;
iii. Ten (10) times the maximum concentration value reported for that pollutant in the permit application; or
iv. The level established by the TCEQ.

10. Signatories to Reports

All reports and other information requested by the Executive Director shall be signed by the person and in the manner required by 30 TAC § 305.128 (relating to Signatories to Reports).

PERMIT CONDITIONS

1. General

a. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in an application or in any report to the Executive Director, it shall promptly submit such facts or information.

b. This permit is granted on the basis of the information supplied and representations made by the permittee during action on an application, and relying upon the accuracy and completeness of that information and those representations. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked, in whole or in part, in accordance with 30 TAC Chapter 305, Subchapter D, during its term for good cause including, but not limited to, the following:

i. Violation of any terms or conditions of this permit;
ii. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

c. The permittee shall furnish to the Executive Director, upon request and within a reasonable time, any information to determine whether cause exists for amending, revoking, suspending or terminating the permit. The permittee shall also furnish to the Executive Director, upon request, copies of records required to be kept by the permit.

2. Compliance

   a. Acceptance of the permit by the person to whom it is issued constitutes acknowledgment and agreement that such person will comply with all the terms and conditions embodied in the permit, and the rules and other orders of the Commission.

   b. The permittee has a duty to comply with all conditions of the permit. Failure to comply with any permit condition constitutes a violation of the permit and the Texas Water Code or the Texas Health and Safety Code, and is grounds for enforcement action, for permit amendment, revocation or suspension, or for denial of a permit renewal application or an application for a permit for another facility.

   c. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

   d. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal or other permit violation which has a reasonable likelihood of adversely affecting human health or the environment.

   e. Authorization from the Commission is required before beginning any change in the permitted facility or activity that may result in noncompliance with any permit requirements.

   f. A permit may be amended, suspended and reissued, or revoked for cause in accordance with 30 TAC §§ 305.62 and 305.66 and Texas Water Code Section 7.302. The filing of a request by the permittee for a permit amendment, suspension and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

   g. There shall be no unauthorized discharge of wastewater or any other waste. For the purpose of this permit, an unauthorized discharge is considered to be any discharge of wastewater into or adjacent to water in the state at any location not permitted as an outfall or otherwise defined in the Special Provisions section of this permit.

   h. The permittee is subject to administrative, civil, and criminal penalties, as applicable, under Texas Water Code §§ 7.051 - 7.075 (relating to Administrative Penalties), 7.101 - 7.111 (relating to Civil Penalties), and 7.141 - 7.202 (relating to Criminal Offenses and Penalties).

3. Inspections and Entry

   a. Inspection and entry shall be allowed as prescribed in the Texas Water Code Chapters 26, 27, and 28, and Texas Health and Safety Code Chapter 361.

   b. The members of the Commission and employees and agents of the Commission are entitled to enter any public or private property at any reasonable time for the purpose of inspecting and investigating conditions relating to the quality of water in the state or the compliance with any rule, regulation, permit or other order of the Commission. Members, employees, or agents of the Commission and Commission contractors are entitled to enter public or private property at any reasonable time to investigate or

monitor or, if the responsible party is not responsive or there is an immediate danger to public health or the environment, to remove or remediate a condition related to the quality of water in the state. Members, employees, Commission contractors, or agents acting under this authority who enter private property shall observe the establishment's rules and regulations concerning safety, internal security, and fire protection, and if the property has management in residence, shall notify management or the person then in charge of his presence and shall exhibit proper credentials. If any member, employee, Commission contractor, or agent is refused the right to enter in or on public or private property under this authority, the Executive Director may invoke the remedies authorized in Texas Water Code Section 7.002. The statement above, that Commission entry shall occur in accordance with an establishment's rules and regulations concerning safety, internal security, and fire protection, is not grounds for denial or restriction of entry to any part of the facility, but merely describes the Commission's duty to observe appropriate rules and regulations during an inspection.

4. Permit Amendment and/or Renewal

   a. The permittee shall give notice to the Executive Director as soon as possible of any planned physical alterations or additions to the permitted facility if such alterations or additions would require a permit amendment or result in a violation of permit requirements. Notice shall also be required under this paragraph when:

      i. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements in Monitoring and Reporting Requirements No. 9;

      ii. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

   b. Prior to any facility modifications, additions, or expansions that will increase the plant capacity beyond the permitted flow, the permittee must apply for and obtain proper authorization from the Commission before commencing construction.

   c. The permittee must apply for an amendment or renewal at least 180 days prior to expiration of the existing permit in order to continue a permitted activity after the expiration date of the permit. If an application is submitted prior to the expiration date of the permit, the existing permit shall remain in effect until the application is approved, denied, or returned. If the application is returned or denied, authorization to continue such activity shall terminate upon the effective date of the action. If an application is not submitted prior to the expiration date of the permit, the permit shall expire and authorization to continue such activity shall terminate.

   d. Prior to accepting or generating wastes which are not described in the permit application or which would result in a significant change in the quantity or quality of the existing discharge, the permittee must report the proposed changes to the Commission. The permittee must apply for a permit amendment reflecting any necessary changes in permit conditions, including effluent limitations for pollutants not identified and limited by this

permit.

e. In accordance with the Texas Water Code § 26.029(b), after a public hearing, notice of which shall be given to the permittee, the Commission may require the permittee, from time to time, for good cause, in accordance with applicable laws, to conform to new or additional conditions.

5. Permit Transfer

a. Prior to any transfer of this permit, Commission approval must be obtained. The Commission shall be notified in writing of any change in control or ownership of facilities authorized by this permit. Such notification should be sent to the Applications Review and Processing Team (MC 148) of the Water Quality Division.

b. A permit may be transferred only according to the provisions of 30 TAC § 305.64 (relating to Transfer of Permits) and 30 TAC § 50.133 (relating to Executive Director Action on Application or WQMP update).

6. Relationship to Hazardous Waste Activities

This permit does not authorize any activity of hazardous waste storage, processing, or disposal which requires a permit or other authorization pursuant to the Texas Health and Safety Code.

7. Property Rights

A permit does not convey any property rights of any sort, or any exclusive privilege.

8. Permit Enforceability

The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

9. Relationship to Permit Application

The application pursuant to which the permit has been issued is incorporated herein; provided, however, that in the event of a conflict between the provisions of this permit and the application, the provisions of the permit shall control.

10. Notice of Bankruptcy.

a. Each permittee shall notify the Executive Director, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any chapter of Title 11 (Bankruptcy) of the United States Code (11 USC) by or against:

i. the permittee;
ii. an entity (as that term is defined in 11 USC, § 101(14)) controlling the permittee or listing the permit or permittee as property of the estate; or
iii. an affiliate (as that term is defined in 11 USC, § 101(2)) of the permittee.

b. This notification must indicate:

i. the name of the permittee;
ii. the permit number(s);
iii. the bankruptcy court in which the petition for bankruptcy was filed; and
iv. the date of filing of the petition.

OPERATIONAL REQUIREMENTS

1. The permittee shall at all times ensure that the facility and all of its systems of collection, treatment, and disposal are properly operated and maintained. This includes, but is not limited to, the regular, periodic examination of wastewater solids within the treatment plant by the operator in order to maintain an appropriate quantity and quality of solids inventory as described in the various operator training manuals and according to accepted industry standards for process control. Process control, maintenance, and operations records shall be retained at the facility site, or shall be readily available for review by a TCEQ representative, for a period of three years.

2. Upon request by the Executive Director, the permittee shall take appropriate samples and provide proper analysis in order to demonstrate compliance with Commission rules. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall comply with all applicable provisions of 30 TAC Chapter 312 concerning sewage sludge or biosolids use and disposal and 30 TAC §§ 319.21 - 319.29 concerning the discharge of certain hazardous metals.

3. Domestic wastewater treatment facilities shall comply with the following provisions:

   a. The permittee shall notify the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, in writing, of any facility expansion at least 90 days prior to conducting such activity.

   b. The permittee shall submit a closure plan for review and approval to the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, for any closure activity at least 90 days prior to conducting such activity. Closure is the act of permanently taking a waste management unit or treatment facility out of service and includes the permanent removal from service of any pit, tank, pond, lagoon, surface impoundment and/or other treatment unit regulated by this permit.

4. The permittee is responsible for installing prior to plant start-up, and subsequently maintaining, adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failures by means of alternate power sources, standby generators, and/or retention of inadequately treated wastewater.

5. Unless otherwise specified, the permittee shall provide a readily accessible sampling point and, where applicable, an effluent flow measuring device or other acceptable means by which effluent flow may be determined.

6. The permittee shall remit an annual water quality fee to the Commission as required by 30 TAC Chapter 21. Failure to pay the fee may result in revocation of this permit under Texas Water Code § 7.302(b)(6).

7. Documentation

   For all written notifications to the Commission required of the permittee by this permit, the permittee shall keep and make available a copy of each such notification under the same conditions as self-monitoring data are required to be kept and made available. Except for information specified as not confidential in 30 TAC § 1.5(d), any information submitted pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted in the manner prescribed in the application form or by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, information may be made available to the public without further notice. If the Commission or Executive Director agrees with the designation of confidentiality, the TCEQ will not provide the information for public inspection unless required by the Texas Attorney General or a court pursuant to an open records request. If the Executive Director does not agree with the designation of confidentiality, the person submitting the information will be notified.

8. Facilities which generate domestic wastewater shall comply with the following provisions; domestic wastewater treatment facilities at permitted industrial sites are excluded.

   a. Whenever flow measurements for any domestic sewage treatment facility reach 75 percent of the permitted daily average or annual average flow for three consecutive months, the permittee must initiate engineering and financial planning for expansion and/or upgrading of the domestic wastewater treatment and/or collection facilities. Whenever the flow reaches 90 percent of the permitted daily average or annual average flow for three consecutive months, the permittee shall obtain necessary authorization from the Commission to commence construction of the necessary additional treatment and/or collection facilities. In the case of a domestic wastewater treatment facility which reaches 75 percent of the permitted daily average or annual average flow for three consecutive months, and the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee shall submit an engineering report supporting this claim to the Executive Director of the Commission.

      If in the judgement of the Executive Director the population to be served will not cause permit noncompliance, then the requirement of this section may be waived. To be effective, any waiver must be in writing and signed by the Director of the Enforcement Division (MC 219) of the Commission, and such waiver of these requirements will be reviewed upon expiration of the existing permit; however, any such waiver shall not be interpreted as condoning or excusing any violation of any permit parameter.

   b. The plans and specifications for domestic sewage collection and treatment works associated with any domestic permit must be approved by the Commission and failure to secure approval before commencing construction of such works or making a discharge is a violation of this permit and each day is an additional violation until approval has been secured.

   c. Permits for domestic wastewater treatment plants are granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment and disposal systems. The Commission reserves the right to amend any domestic wastewater permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or

discharged from said system, to such area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.

9. Domestic wastewater treatment plants shall be operated and maintained by sewage plant operators holding a valid certificate of competency at the required level as defined in 30 TAC Chapter 30.

10. Facilities which generate industrial solid waste as defined in 30 TAC § 335.1 shall comply with these provisions:

    a. Any solid waste, as defined in 30 TAC § 335.1 (including but not limited to such wastes as garbage, refuse, sludge from a waste treatment, water supply treatment plant or air pollution control facility, discarded materials, discarded materials to be recycled, whether the waste is solid, liquid, or semisolid), generated by the permittee during the management and treatment of wastewater, must be managed in accordance with all applicable provisions of 30 TAC Chapter 335, relating to Industrial Solid Waste Management.

    b. Industrial wastewater that is being collected, accumulated, stored, or processed before discharge through any final discharge outfall, specified by this permit, is considered to be industrial solid waste until the wastewater passes through the actual point source discharge and must be managed in accordance with all applicable provisions of 30 TAC Chapter 335.

    c. The permittee shall provide written notification, pursuant to the requirements of 30 TAC § 335.8(b)(1), to the Corrective Action Section (MC 127) of the Remediation Division informing the Commission of any closure activity involving an Industrial Solid Waste Management Unit, at least 90 days prior to conducting such an activity.

    d. Construction of any industrial solid waste management unit requires the prior written notification of the proposed activity to the Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division. No person shall dispose of industrial solid waste, including sludge or other solids from wastewater treatment processes, prior to fulfilling the deed recordation requirements of 30 TAC § 335.5.

    e. The term "industrial solid waste management unit" means a landfill, surface impoundment, waste-pile, industrial furnace, incinerator, cement kiln, injection well, container, drum, salt dome waste containment cavern, or any other structure vessel, appurtenance, or other improvement on land used to manage industrial solid waste.

    f. The permittee shall keep management records for all sludge (or other waste) removed from any wastewater treatment process. These records shall fulfill all applicable requirements of 30 TAC Chapter 335 and must include the following, as it pertains to wastewater treatment and discharge:

        i. Volume of waste and date(s) generated from treatment process;
        ii. Volume of waste disposed of on-site or shipped off-site;

iii. Date(s) of disposal;
iv. Identity of hauler or transporter;
v. Location of disposal site; and
vi. Method of final disposal.

The above records shall be maintained on a monthly basis. The records shall be retained at the facility site, or shall be readily available for review by authorized representatives of the TCEQ for at least five years.

11. For industrial facilities to which the requirements of 30 TAC Chapter 335 do not apply, sludge and solid wastes, including tank cleaning and contaminated solids for disposal, shall be disposed of in accordance with Chapter 361 of the Texas Health and Safety Code.

TCEQ Revision 06/2020

SLUDGE PROVISIONS

The permittee is authorized to dispose of sludge or biosolids only at a Texas Commission on Environmental Quality (TCEQ) authorized land application site, co-disposal landfill, wastewater treatment facility, or facility that further processes sludge. **The disposal of sludge or biosolids by land application on property owned, leased or under the direct control of the permittee is a violation of the permit unless the site is authorized with the TCEQ. This provision does not authorize Distribution and Marketing of Class A or Class AB Biosolids. This provision does not authorize the permittee to land apply biosolids on property owned, leased or under the direct control of the permittee.**

SECTION I. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE OR BIOSOLIDS LAND APPLICATION

A. General Requirements

1. The permittee shall handle and dispose of sewage sludge or biosolids in accordance with 30 TAC § 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge or biosolids.

2. In all cases, if the person (permit holder) who prepares the sewage sludge or biosolids supplies the sewage sludge or biosolids to another person for land application use or to the owner or lease holder of the land, the permit holder shall provide necessary information to the parties who receive the sludge or biosolids to assure compliance with these regulations.

3. The land application of processed or unprocessed chemical toilet waste, grease trap waste, grit trap waste, milk solids, or similar non-hazardous municipal or industrial solid wastes, or any of the wastes listed in this provision combined with biosolids, WTP residuals or domestic septage is prohibited unless the grease trap waste is added at a fats, oil and grease (FOG) receiving facility as part of an anaerobic digestion process.

B. Testing Requirements

1. Sewage sludge or biosolids shall be tested once during the term of this permit in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I [Toxicity Characteristic Leaching Procedure (TCLP)] or other method that receives the prior approval of the TCEQ for the contaminants listed in 40 CFR Part 261.24, Table 1. Sewage sludge or biosolids failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal. Following failure of any TCLP test, the management or disposal of sewage sludge or biosolids at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge or biosolids no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Registration Support Division and the Regional Director (MC Region 13) within seven (7) days after failing the TCLP Test.

The report shall contain test results, certification that unauthorized waste management has stopped, and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Permitting and Registration Support Division (MC 129), Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. The permittee shall submit the following information in an annual report to the TCEQ by September 30th of each year. The permittee must submit this annual report using the online electronic reporting system available through TCEQ's website. If the permittee requests and obtains an electronic reporting waiver, the annual report can be submitted in hard copy to the TCEQ Regional Office (MC Region 13) and the Enforcement Division (MC 224).

2. Biosolids shall not be applied to the land if the concentration of the pollutants exceeds the pollutant concentration criteria in Table 1. The frequency of testing for pollutants in Table 1 is found in Section I.C. of this permit.

TABLE 1

Pollutant	Ceiling Concentration (Milligrams per kilogram)*
Arsenic	75
Cadmium	85
Chromium	3000
Copper	4300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
PCBs	49
Selenium	100
Zinc	7500

* Dry weight basis

3. Pathogen Control

All sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site must be treated by one of the following methods to ensure that the sludge meets either the Class A, Class AB or Class B biosolids pathogen requirements.

a. For sewage sludge to be classified as Class A biosolids with respect to pathogens, the density of fecal coliform in the sewage sludge must be less than 1,000 most probable number (MPN) per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the sewage sludge must be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met:

Alternative 1 - The temperature of the sewage sludge that is used or disposed shall be maintained at or above a specific value for a period of time. See 30 TAC § 312.82(a)(2)(A) for specific information;

Alternative 5 (PFRP) - Sewage sludge that is used or disposed of must be treated in one of the Processes to Further Reduce Pathogens (PFRP) described in 40 CFR Part 503, Appendix B. PFRP include composting, heat drying, heat treatment, and thermophilic aerobic digestion; or

Alternative 6 (PFRP Equivalent) - Sewage sludge that is used or disposed of must be treated in a process that has been approved by the U. S. Environmental Protection Agency as being equivalent to those in Alternative 5.

b. For sewage sludge to be classified as Class AB biosolids with respect to pathogens, the density of fecal coliform in the sewage sludge must be less than 1,000 MPN per gram of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in the sewage sludge be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. In addition, one of the alternatives listed below must be met:

   Alternative 2 - The pH of the sewage sludge that is used or disposed shall be raised to above 12 std. units and shall remain above 12 std. units for 72 hours.

   The temperature of the sewage sludge shall be above 52° Celsius for 12 hours or longer during the period that the pH of the sewage sludge is above 12 std. units.

   At the end of the 72-hour period during which the pH of the sewage sludge is above 12 std. units, the sewage sludge shall be air dried to achieve a percent solids in the sewage sludge greater than 50%; or

   Alternative 3 - The sewage sludge shall be analyzed for enteric viruses prior to pathogen treatment. The limit for enteric viruses is less than one Plaque-forming Unit per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(i-iii) for specific information. The sewage sludge shall be analyzed for viable helminth ova prior to pathogen treatment. The limit for viable helminth ova is less than one per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(iv-vi) for specific information; or

   Alternative 4 - The density of enteric viruses in the sewage sludge shall be less than one Plaque-forming Unit per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. The density of viable helminth ova in the sewage sludge shall be less than one per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed.

c. Sewage sludge that meets the requirements of Class AB biosolids may be classified a Class A biosolids if a variance request is submitted in writing that is supported by substantial documentation demonstrating equivalent methods for reducing odors and written approval is granted by the executive director. The executive director may deny the variance request or revoke that approved variance if it is determined that the variance may potentially endanger human health or the environment, or create nuisance odor conditions.

d. Three alternatives are available to demonstrate compliance with Class B biosolids

criteria.
Alternative 1

i. A minimum of seven random samples of the sewage sludge shall be collected within 48 hours of the time the sewage sludge is used or disposed of during each monitoring episode for the sewage sludge.

ii. The geometric mean of the density of fecal coliform in the samples collected shall be less than either 2,000,000 MPN per gram of total solids (dry weight basis) or 2,000,000 Colony Forming Units per gram of total solids (dry weight basis).

Alternative 2 - Sewage sludge that is used or disposed of shall be treated in one of the Processes to Significantly Reduce Pathogens (PSRP) described in 40 CFR Part 503, Appendix B, so long as all of the following requirements are met by the generator of the sewage sludge.

i. Prior to use or disposal, all the sewage sludge must have been generated from a single location, except as provided in paragraph v. below;

ii. An independent Texas Licensed Professional Engineer must make a certification to the generator of a sewage sludge that the wastewater treatment facility generating the sewage sludge is designed to achieve one of the PSRP at the permitted design loading of the facility. The certification need only be repeated if the design loading of the facility is increased. The certification shall include a statement indicating the design meets all the applicable standards specified in Appendix B of 40 CFR Part 503;

iii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;

iv. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review; and

v. If the sewage sludge is generated from a mixture of sources, resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the PSRP, and shall meet the certification, operation, and record keeping requirements of this paragraph.

Alternative 3 - Sewage sludge shall be treated in an equivalent process that has been approved by the U.S. Environmental Protection Agency, so long as all of the following requirements are met by the generator of the sewage sludge.

i. Prior to use or disposal, all the sewage sludge must have been generated from a single location, except as provided in paragraph v. below;

ii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U.S. Environmental Protection Agency final guidance;

iii. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review;

iv. The Executive Director will accept from the U.S. Environmental Protection Agency a finding of equivalency to the defined PSRP; and

v. If the sewage sludge is generated from a mixture of sources resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the Processes to Significantly Reduce Pathogens, and shall meet the certification, operation, and record keeping requirements of this paragraph.

In addition to the Alternatives 1 – 3, the following site restrictions must be met if Class B biosolids are land applied:

i. Food crops with harvested parts that touch the biosolids/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of biosolids.

ii. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of biosolids when the biosolids remain on the land surface for 4 months or longer prior to incorporation into the soil.

iii. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of biosolids when the biosolids remain on the land surface for less than 4 months prior to incorporation into the soil.

iv. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of biosolids.

v. Domestic livestock shall not be allowed to graze on the land for 30 days after application of biosolids.

vi. Turf grown on land where biosolids are applied shall not be harvested for 1 year after application of the sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn.

vii. Public access to land with a high potential for public exposure shall be restricted for 1 year after application of biosolids.

viii. Public access to land with a low potential for public exposure shall be restricted for 30 days after application of biosolids.

ix. Land application of biosolids shall be in accordance with the buffer zone requirements found in 30 TAC § 312.44.

4. Vector Attraction Reduction Requirements

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site shall be treated by one of the following Alternatives 1 through 10 for vector attraction reduction.

Alternative 1 - The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38%.

Alternative 2 - If Alternative 1 cannot be met for an anaerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30° and 37° Celsius. Volatile solids must be reduced by less than 17% to demonstrate compliance.

Alternative 3 - If Alternative 1 cannot be met for an aerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge with percent solids of two percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20° Celsius. Volatile solids must be reduced by less than 15% to demonstrate compliance.

Alternative 4 - The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process shall be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20° Celsius.

Alternative 5 - Sewage sludge shall be treated in an aerobic process for 14 days or longer. During that time, the temperature of the sewage sludge shall be higher than 40° Celsius and the average temperature of the sewage sludge shall be higher than 45° Celsius.

Alternative 6 - The pH of sewage sludge shall be raised to 12 or higher by alkali addition and, without the addition of more alkali shall remain at 12 or higher for two hours and then remain at a pH of 11.5 or higher for an additional 22 hours at the time the sewage sludge is prepared for sale or given away in a bag or other container.

Alternative 7 - The percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 75% based on the moisture content and total solids prior to mixing with other materials. Unstabilized solids are defined as organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Alternative 8 - The percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90% based on the moisture content and total solids prior to mixing with other materials at the time the sludge is used. Unstabilized solids are defined as organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Alternative 9 - i. Biosolids shall be injected below the surface of the land.

ii. No significant amount of the biosolids shall be present on the land surface within one hour after biosolids are injected.

iii. When sewage sludge that is injected below the surface of the land is Class A or Class AB with respect to pathogens, the biosolids shall be injected below the land surface within eight hours after being discharged from the pathogen treatment process.

Alternative 10- i. Biosolids applied to the land surface or placed on a surface disposal site shall be incorporated into the soil within six hours after application to or placement on the land.

ii. When biosolids that are incorporated into the soil is Class A or Class AB with respect to pathogens, the biosolids shall be applied to or placed on the land within eight hours after being discharged from the pathogen treatment process.

C. Monitoring Requirements

Toxicity Characteristic Leaching Procedure (TCLP) Test	- once during the term of this permit
PCBs	- once during the term of this permit

All metal constituents and fecal coliform or *Salmonella* sp. bacteria shall be monitored at the appropriate frequency shown below, pursuant to 30 TAC § 312.46(a)(1):

Amount of biosolids (*) metric tons per 365-day period	Monitoring Frequency
0 to less than 290	Once/Year
290 to less than 1,500	Once/Quarter
1,500 to less than 15,000	Once/Two Months
15,000 or greater	Once/Month

(*) *The amount of bulk biosolids applied to the land (dry wt. basis).*

Representative samples of sewage sludge shall be collected and analyzed in accordance with the methods referenced in 30 TAC § 312.7

Identify each of the analytic methods used by the facility to analyze enteric viruses, fecal coliforms, helminth ova, *Salmonella* sp., and other regulated parameters.

Identify in the following categories (as applicable) the sewage sludge or biosolids treatment process or processes at the facility: preliminary operations (e.g., sludge or biosolids grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

Identify the nature of material generated by the facility (such as a biosolid for beneficial use or land-farming, or sewage sludge or biosolids for disposal at a monofill) and whether the material is ultimately conveyed off-site in bulk or in bags.

SECTION II. REQUIREMENTS SPECIFIC TO BULK SEWAGE SLUDGE FOR APPLICATION TO THE LAND MEETING CLASS A, CLASS AB or B BIOSOLIDS PATHOGEN REDUCTION AND THE CUMULATIVE LOADING RATES IN TABLE 2, OR CLASS B PATHOGEN REDUCTION AND THE POLLUTANT CONCENTRATIONS IN TABLE 3

For those permittees meeting Class A, Class AB or B pathogen reduction requirements and that meet the cumulative loading rates in Table 2 below, or the Class B pathogen reduction requirements and contain concentrations of pollutants below listed in Table 3, the following conditions apply:

A. Pollutant Limits

Table 2

Pollutant	Cumulative Pollutant Loading Rate (pounds per acre)*
Arsenic	36
Cadmium	35
Chromium	2677
Copper	1339
Lead	268
Mercury	15
Molybdenum	Report Only
Nickel	375
Selenium	89
Zinc	2500

Table 3

Pollutant	Monthly Average Concentration (milligrams per kilogram)*
Arsenic	41
Cadmium	39
Chromium	1200
Copper	1500
Lead	300
Mercury	17
Molybdenum	Report Only
Nickel	420
Selenium	36
Zinc	2800

*Dry weight basis

B. Pathogen Control

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, a reclamation site, shall be treated by either Class A, Class AB or Class B biosolids pathogen reduction requirements as defined above in Section I.B.3.

C. Management Practices

1. Bulk biosolids shall not be applied to agricultural land, forest, a public contact site, or a reclamation site that is flooded, frozen, or snow-covered so that the bulk sewage sludge enters a wetland or other waters in the State.

2. Bulk sewage sludge not meeting Class A biosolids requirements shall be land applied in a manner which complies with Applicability in accordance with 30 TAC §312.41 and the Management Requirements in accordance with 30 TAC § 312.44.

3. Bulk biosolids shall be applied at or below the agronomic rate of the cover crop.

4. An information sheet shall be provided to the person who receives bulk Class A or AB biosolids sold or given away. The information sheet shall contain the following information:

    a. The name and address of the person who prepared the Class A or AB biosolids that are sold or given away in a bag or other container for application to the land.

    b. A statement that application of the Class A or AB biosolids to the land is prohibited except in accordance with the instruction on the label or information sheet.

    c. The annual whole sludge application rate for the biosolids application rate for the biosolids that does not cause any of the cumulative pollutant loading rates in Table 2 above to be exceeded, unless the pollutant concentrations in Table 3 found in Section II above are met.

D. Notification Requirements

1. If bulk biosolids are applied to land in a State other than Texas, written notice shall be provided prior to the initial land application to the permitting authority for the State in which the bulk biosolids are proposed to be applied. The notice shall include:

    a. The location, by street address, and specific latitude and longitude, of each land application site.

    b. The approximate time period bulk biosolids will be applied to the site.

    c. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if appropriate) for the person who will apply the bulk biosolids.

2. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the biosolids disposal practice.

E. Record Keeping Requirements

The documents will be retained at the facility site and/or shall be readily available for review by a TCEQ representative. The person who prepares bulk sewage sludge or a biosolids material shall develop the following information and shall retain the information at the facility site and/or shall be readily available for review by a TCEQ representative for a period

of five years. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply.

1. The concentration (mg/kg) in the sludge of each pollutant listed in Table 3 above and the applicable pollutant concentration criteria (mg/kg), or the applicable cumulative pollutant loading rate and the applicable cumulative pollutant loading rate limit (lbs/ac) listed in Table 2 above.

2. A description of how the pathogen reduction requirements are met (including site restrictions for Class AB and Class B biosolids, if applicable).

3. A description of how the vector attraction reduction requirements are met.

4. A description of how the management practices listed above in Section II.C are being met.

5. The following certification statement:

   "I certify, under penalty of law, that the applicable pathogen requirements in 30 TAC § 312.82(a) or (b) and the vector attraction reduction requirements in 30 TAC § 312.83(b) have been met for each site on which bulk biosolids are applied. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the management practices have been met. I am aware that there are significant penalties for false certification including fine and imprisonment."

6. The recommended agronomic loading rate from the references listed in Section II.C.3. above, as well as the actual agronomic loading rate shall be retained. The person who applies bulk biosolids shall develop the following information and shall retain the information at the facility site and/or shall be readily available for review by a TCEQ representative indefinitely. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply:

   a. A certification statement that all applicable requirements (specifically listed) have been met, and that the permittee understands that there are significant penalties for false certification including fine and imprisonment. See 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii), as applicable, and to the permittee's specific sludge treatment activities.

   b. The location, by street address, and specific latitude and longitude, of each site on which sludge is applied.

   c. The number of acres in each site on which bulk sludge is applied.

   d. The date and time sludge is applied to each site.

e. The cumulative amount of each pollutant in pounds/acre listed in Table 2 applied to each site.

f. The total amount of sludge applied to each site in dry tons.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

F. Reporting Requirements

The permittee shall submit the following information in an annual report to the TCEQ by September 30th of each year. The permittee must submit this annual report using the online electronic reporting system available through TCEQ's website. If the permittee requests and obtains an electronic reporting waiver, the annual report can be submitted in hard copy to the TCEQ Regional Office (MC Region 13) and the Enforcement Division (MC 224).

1. Identify in the following categories (as applicable) the sewage sludge or biosolids treatment process or processes at the facility: preliminary operations (e.g., sludge or biosolids grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. Identify the nature of material generated by the facility (such as a biosolid for beneficial use or land-farming, or sewage sludge for disposal at a monofill) and whether the material is ultimately conveyed off-site in bulk or in bags.

3. Results of tests performed for pollutants found in either Table 2 or 3 as appropriate for the permittee's land application practices.

4. The frequency of monitoring listed in Section I.C. that applies to the permittee.

5. Toxicity Characteristic Leaching Procedure (TCLP) results.

6. PCB concentration in sludge or biosolids in mg/kg.

7. Identity of hauler(s) and TCEQ transporter number.

8. Date(s) of transport.

9. Texas Commission on Environmental Quality registration number, if applicable.

10. Amount of sludge or biosolids disposal dry weight (lbs/acre) at each disposal site.

11. The concentration (mg/kg) in the sludge or biosolids of each pollutant listed in Table 1 (defined as a monthly average) as well as the applicable pollutant concentration criteria (mg/kg) listed in Table 3 above, or the applicable pollutant loading rate limit (lbs/acre) listed in Table 2 above if it exceeds 90% of the limit.

12. Level of pathogen reduction achieved (Class A, Class AB or Class B).

13. Alternative used as listed in Section I.B.3.(a. or b.). Alternatives describe how the pathogen reduction requirements are met. If Class B biosolids, include information on how site restrictions were met.

14. Identify each of the analytic methods used by the facility to analyze enteric viruses, fecal coliforms, helminth ova, *Salmonella* sp., and other regulated parameters.

15. Vector attraction reduction alternative used as listed in Section I.B.4.

16. Amount of sludge or biosolids transported in dry tons/year.

17. The certification statement listed in either 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii) as applicable to the permittee's sludge or biosolids treatment activities, shall be attached to the annual reporting form.

18. When the amount of any pollutant applied to the land exceeds 90% of the cumulative pollutant loading rate for that pollutant, as described in Table 2, the permittee shall report the following information as an attachment to the annual reporting form.

    a. The location, by street address, and specific latitude and longitude.

    b. The number of acres in each site on which bulk biosolids are applied.

    c. The date and time bulk biosolids are applied to each site.

    d. The cumulative amount of each pollutant (i.e., pounds/acre) listed in Table 2 in the bulk biosolids applied to each site.

    e. The amount of biosolids (i.e., dry tons) applied to each site.

    The above records shall be maintained on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

SECTION III. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE OR BIOSOLIDS DISPOSED IN A MUNICIPAL SOLID WASTE LANDFILL

A. The permittee shall handle and dispose of sewage sludge or biosolids in accordance with 30 TAC § 330 and all other applicable state and federal regulations to protect public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present. The permittee shall ensure that the sewage sludge or biosolids meets the requirements in 30 TAC § 330 concerning the quality of the sludge disposed in a municipal solid waste landfill.

B. If the permittee generates sewage sludge or biosolids and supplies that sewage sludge or biosolids to the owner or operator of a municipal solid waste landfill (MSWLF) for disposal, the permittee shall provide to the owner or operator of the MSWLF appropriate information needed to be in compliance with the provisions of this permit.

C. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge or biosolids disposal practice.

D. Sewage sludge s or biosolids hall be tested once during the term of this permit in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I (Toxicity Characteristic Leaching Procedure) or other method, which receives the prior approval of the TCEQ for contaminants listed in Table 1 of 40 CFR § 261.24. Sewage sludge or biosolids failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal.

   Following failure of any TCLP test, the management or disposal of sewage sludge or biosolids at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge or biosolids no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Registration Support Division and the Regional Director (MC Region 13) of the appropriate TCEQ field office within 7 days after failing the TCLP Test.

   The report shall contain test results, certification that unauthorized waste management has stopped, and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Permitting and Registration Support Division (MC 129), Texas Commission on Environmental Quality, P. O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. This annual report shall be submitted to the TCEQ Regional Office (MC Region 13) and the Enforcement Division (MC 224), by September 30_{th} of each year.

E. Sewage sludge or biosolids shall be tested as needed, in accordance with the requirements of 30 TAC Chapter 330.

F. Record Keeping Requirements

   The permittee shall develop the following information and shall retain the information for five years.

1. The description (including procedures followed and the results) of all liquid Paint Filter Tests performed.

2. The description (including procedures followed and results) of all TCLP tests performed.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

G. Reporting Requirements

The permittee shall submit the following information in an annual report to the TCEQ by September 30th of each year. The permittee must submit this annual report using the online electronic reporting system available through TCEQ's website. If the permittee requests and obtains an electronic reporting waiver, the annual report can be submitted in hard copy to the TCEQ Regional Office (MC Region 13) and the Enforcement Division (MC 224).

1. Identify in the following categories (as applicable) the sewage sludge or biosolids treatment process or processes at the facility: preliminary operations (e.g., sludge or biosolids grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. Toxicity Characteristic Leaching Procedure (TCLP) results.

3. Annual sludge production in dry tons/year.

4. Amount of sludge or biosolids disposed in a municipal solid waste landfill in dry tons/year.

5. Amount of sludge or biosolids transported interstate in dry tons/year.

6. A certification that the sewage sludge or biosolids meets the requirements of 30 TAC § 330 concerning the quality of the sludge disposed in a municipal solid waste landfill.

7. Identity of hauler(s) and transporter registration number.

8. Owner of disposal site(s).

9. Location of disposal site(s).

10. Date(s) of disposal.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

SECTION IV. REQUIREMENTS APPLYING TO SLUDGE OR BIOSOLIDS TRANSPORTED TO ANOTHER FACILITY FOR FURTHER PROCESSING

These provisions apply to sludge or biosolids that is transported to another wastewater treatment facility or facility that further processes sludge or biosolids. These provisions are intended to allow transport of sludge or biosolids to facilities that have been authorized to accept sludge or biosolids. These provisions do not limit the ability of the receiving facility to determine whether to accept the sludge or biosolids, nor do they limit the ability of the receiving facility to request additional testing or documentation.

A. General Requirements

1. The permittee shall handle and dispose of sewage sludge or biosolids in accordance with 30 TAC Chapter 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge.

2. Sludge or biosolids may only be transported using a registered transporter or using an approved pipeline.

B. Record Keeping Requirements

1. For sludge transported by an approved pipeline, the permittee must maintain records of the following:

   a. the amount of sludge or biosolids transported;

   b. the date of transport;

   c. the name and TCEQ permit number of the receiving facility or facilities;

   d. the location of the receiving facility or facilities;

   e. the name and TCEQ permit number of the facility that generated the waste; and

   f. copy of the written agreement between the permittee and the receiving facility to accept sludge or biosolids.

2. For sludge or biosolids transported by a registered transporter, the permittee must maintain records of the completed trip tickets in accordance with 30 TAC § 312.145(a)(1)-(7) and amount of sludge or biosolids transported.

3. The above records shall be maintained on-site on a monthly basis and shall be made available to the TCEQ upon request. These records shall be retained for at least five years.

C. Reporting Requirements

The permittee shall submit the following information in an annual report to the TCEQ by September 30th of each year. The permittee must submit this annual report using the online electronic reporting system available through TCEQ's website. If the permittee requests and obtains an electronic reporting waiver, the annual report can be submitted in hard copy to the TCEQ Regional Office (MC Region 13) and the Enforcement Division (MC 224).

1. Identify in the following categories (as applicable) the sewage sludge or biosolids treatment process or processes at the facility: preliminary operations (e.g., sludge or biosolids grinding and degritting), thickening (concentration), stabilization, anaerobic digestion, aerobic digestion, composting, conditioning, disinfection (e.g., beta ray irradiation, gamma ray irradiation, pasteurization), dewatering (e.g., centrifugation, sludge drying beds, sludge lagoons), heat drying, thermal reduction, and methane or biogas capture and recovery.

2. the annual sludge or biosolids production;

3. the amount of sludge or biosolids transported;

4. the owner of each receiving facility;

5. the location of each receiving facility; and

6. the date(s) of disposal at each receiving facility.

SPECIAL PROVISIONS:

1. This permit is granted subject to the policy of the Commission to encourage the development of areawide waste collection, treatment and disposal systems. The Commission reserves the right to amend this permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an areawide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or discharged from said system, to such areawide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.

2. The permittee shall employ or contract with one or more licensed wastewater treatment facility operators or wastewater system operations companies holding a valid license or registration according to the requirements of 30 TAC Chapter 30, Occupational Licenses and Registrations, and in particular 30 TAC Chapter 30, Subchapter J, Wastewater Operators and Operations Companies.

   This Category C facility must be operated by a chief operator or an operator holding a Class C license or higher. The facility must be operated a minimum of five days per week by the licensed chief operator or an operator holding the required level of license or higher. The licensed chief operator or operator holding the required level of license or higher must be available by telephone or pager seven days per week. Where shift operation of the wastewater treatment facility is necessary, each shift which does not have the on-site supervision of the licensed chief operator must be supervised by an operator in charge who is licensed not less than one level below the category for the facility.

3. The permittee shall maintain and operate the treatment facility in order to achieve optimum efficiency of treatment capability. This shall include required monitoring of effluent flow and quality as well as appropriate grounds and building maintenance.

4. Prior to construction of the wastewater treatment facilities, the permittee shall submit to the TCEQ Wastewater Permitting Section (MC 148) of the Water Quality Division, a summary transmittal letter according to the requirements in 30 TAC § 217.6(d). If requested by the Wastewater Permitting Section, the permittee shall submit plans, specifications and a final engineering design report which comply with the requirements of 30 TAC Chapter 217, Design Criteria for Wastewater Treatment Systems. The permittee shall clearly show how the treatment system will meet the permitted effluent limitations required on Page 2 of the permit. A copy of the summary transmittal letter shall be available at the plant site for inspection by authorized representatives of the TCEQ.

5. Prior to construction of the subsurface area drip dispersal system, the permittee shall submit, to the TCEQ Wastewater Permitting Section (MC148) of the Water Quality Division, an engineering report, including plans and specifications, that meets the requirements in 30 TAC Chapter 222, Subsurface Drip Dispersal Systems, Subchapter D: Design Criteria.

6. Reporting requirements according to 30 TAC §§ 319.1-319.11 and any additional effluent reporting requirements contained in this permit are suspended from the effective date of the permit until plant startup or discharge, whichever occurs first, from the facility described by

this permit. The permittee shall provide written notice to the TCEQ Regional Office (MC Region 13) and the Applications Review and Processing Team (MC 148) of the Water Quality Division at least forty-five (45) days prior to plant startup or anticipated discharge, whichever occurs first, on Notification of Completion Form 20007.

7. The permittee shall comply with the requirements of 30 TAC § 309.13 (a) through (d). In addition, by ownership of the required buffer zone area, the permittee shall comply with the requirements of 30 TAC § 309.13(e).

8. According to the requirements of 30 TAC §222.81(a), the permittee shall locate the SADDS a minimum horizontal distance of 100 feet from surface waters in the state. The permittee shall locate the SADDS a minimum horizontal distance of 500 feet from public water wells, springs, or other similar sources of public drinking water and a minimum horizontal distance of 150 feet from private wells as described in 30 TAC §309.13(c)(1). The permittee shall not locate a SADDS within a floodway per 30 TAC §222.81(d).

9. The permittee shall develop a Springs/Seeps Monitoring Plan and submit the plan to the TCEQ Water Quality Assessment Team (MC-150) for review, possible modification, and approval within 30 days of permit issuance. At a minimum, the plan shall include:

   a) A procedure to conduct quarterly field checks at the drip irrigation fields and down-gradient of the fields to identify emerging springs or seeps.

   b) A procedure to sample springs or seeps in the event that springs/seeps develop after drip irrigation of effluent commences.

   c) Quarterly field checks and sampling (if applicable) of the springs/seeps shall occur after a minimum rainfall event of 0.5-inch, if possible.

   d) Analysis of springs/seeps water for nutrients, including, but not limited to, a complete nitrogen series [(Nitrate (as N), Nitrite (as N), Total Kjeldahl Nitrogen, ammonia as N], total phosphorus, ortho-phosphate, chlorides, fecal coliform, and specific conductivity.

   e) A record of the quarterly checks and sampling of the springs and seeps shall be maintained in a field log and kept onsite for TCEQ inspection.

   f) Monitoring of emerging and existing springs/seeps shall continue for the life of the system.

   g) The permittee shall submit the data, including laboratory reports, and a map showing the locations of any seeps/springs that were sampled per the Seeps/Springs Monitoring Plan to the Water Quality Assessment Team (MC-150) of the Water Quality Division, the TCEQ Region 13 (San Antonio) Office, and the Compliance Monitoring Section (MC-224) during the month of September of each year for review. If no seeps/springs were identified during a particular quarter, that information shall be included in the annual report.

   h) A procedure for the implementation of corrective measures to remedy the discharge if laboratory analysis indicates that wastewater is emerging as a seep or spring.

i) The permittee shall implement the plan upon approval by the Water Quality Assessment Team. The executive director may request modification of the approved plan if future information indicates that it would be necessary for the protection of the environment.

10. Any recharge features uncovered by construction of and operation of the SADDS fields and wastewater treatment facilities shall be addressed in an updated and certified Recharge Feature Plan. The Recharge Feature Plan will include the best management practices implemented that will prevent impact to recharge features from wastewater application and prevent groundwater contamination. The updated and certified Recharge Feature Plan shall be submitted to the TCEQ Water Quality Assessment Team (MC-150) and the TCEQ Region 13 (San Antonio) Office within 30 days of discovery of the feature. The Recharge Feature Plan must be certified by a Texas-licensed Professional Geoscientist or a Texas-licensed Professional Engineer.

11. The permittee shall comply with buffer zone requirements of 30 TAC Section §309.13(c). A wastewater treatment plant unit, defined by 30 TAC Section §309.11(9), must be located a minimum horizontal distance of 250 feet from a private well and a minimum horizontal distance of 500 feet from a public water well site, spring, or other similar sources of public drinking water, as provided by §290.41(c)(1) of this title.

12. The permittee shall construct berms or swales that will prevent, or divert, stormwater from entering all subsurface wastewater application areas.

13. Based on the requirements of 30 TAC § 222.151, the subsurface drip irrigation system shall be designed and managed so as to prevent seepage or percolation out of the root zone, other than leaching in the amount required to maintain the health of the vegetative cover. Surfacing and ponding is prohibited. Creating a condition at the treatment facility or the drip dispersal zones that contributes to vector attraction or odor is prohibited.

14. The subsurface drip irrigation system shall consist of a sufficient number of different dispersal zones. The minimum depth of soil above the drip irrigation lines shall be at least six inches, and the minimum depth of soil below the drip irrigation lines shall consist of at least twelve inches of usable soil. In the event of effluent surfacing due to damage to the drip irrigation lines, effluent application shall be shut-off to the drip irrigation zone and public access to the zone shall be restricted.

15. The permittee shall design and install temporary storage that equals at least three days of the design flow of the facility for times when the subsurface area drip dispersal system is out of service due to an emergency or scheduled maintenance. In addition, the permittee shall pump and haul wastewater from the facility to prevent the discharge of treated or untreated wastewater if complete shutdown of the wastewater treatment facility becomes necessary or if the storage capacity is exceeded.

16. Permanent transmission lines shall be installed from the treatment system to each drip irrigation zone of the subsurface drip irrigation system. According to 30 TAC § 222.153, the permittee shall flush the subsurface area drip dispersal system from the dispersal zone and return the flush water to a point preceding the treatment system at least once every two months.

17. The permittee shall maintain a long term contract with the owner(s) of the land application site which is authorized for use in this permit, or own the land authorized for land application of treated effluent.

18. Application rates shall not exceed 0.1 gallons per square foot per day. The permittee is responsible for providing equipment to determine the application rate and for maintaining accurate records of the volume of effluent applied. According to the requirements of 30 TAC § 222.161(d), the permittee shall maintain records documenting all activities associated with maintaining the vegetative cover (the crops), like planting, over-seeding, mowing height, fertilizing, and harvesting. These records shall be maintained for a minimum of five years and be made available to TCEQ staff upon request.

19. The permittee shall use cultural practices to promote and maintain the health and propagation of the Bermuda grass and ryegrass crops and avoid plant lodging. The permittee shall harvest the crops (cut and remove it from the field) at least once during the year. Harvesting and mowing dates shall be recorded in a log book kept on site to be made available to TCEQ personnel upon request.

20. The physical condition of the land application fields shall be monitored on a weekly basis. Any area with problems such as surface runoff, surficial erosion, or stressed or damaged vegetation, etc., shall be recorded in a field log kept onsite. Corrective measures will be implemented within 24 hours of discovery.

21. Subsurface irrigation practices shall be designed and managed as to prevent ponding of effluent or contamination of ground and surface waters and to prevent the occurrence of nuisance conditions in the area. Bermuda grass (warm season) overseeded with ryegrass (cool season) shall be established and well maintained in the irrigation area throughout the year for effluent and nutrient uptake by the crop and to prevent pathways for effluent rising.

22. For any area where treated effluent is stored or where there exist hose bibs or faucets, the permittee shall erect adequate signs stating that the irrigation water is from a non-potable water supply. Signs shall consist of a red slash superimposed over the international symbol for drinking water accompanied by the message “DO NOT DRINK THE WATER” in both English and Spanish. All piping transporting the effluent shall be clearly marked with these same signs.

23. Based on the requirements of 30 TAC § 222.151, the subsurface area drip dispersal system shall be designed and managed so as to prevent seepage or percolation out of the root zone, other than leaching in the amount required to maintain the health of the vegetative cover. Surfacing and ponding is prohibited. Creating a condition at the treatment facility or the drip dispersal zones that contributes to vector attraction or odor is prohibited.

24. Effluent shall not be applied for irrigation when the ground is frozen or saturated.

25. The permittee shall remove large (greater than 12-inch) stones and flagstones from the irrigation area. Any large stones brought to the surface during any construction, maintenance activities, and/or any disturbing of the soil shall be removed.

26. Drip irrigation lines shall be installed on the contour and lateral slopes of the tubing shall not exceed 1 percent. The permittee can apply for a variance to this provision by providing justification in the detailed design criteria per Chapter 222 indicating how uneven application of effluent due to back draining will be avoided.

27. Emitters shall be installed a minimum of six (6) inches below the soil surface. A minimum of 12 inches of soil shall exist below the plane of the driplines.

28. Each zone shall have at least one soil moisture sensing devices placed at 12 inches below the depth of the drip lines that will automatically shut off irrigation to that zone when the soil becomes saturated. The devices shall be located on the downgradient side of each zone. The soil moisture monitoring devices, including a map of the monitoring device locations, shall be included with the dispersal zone design and submitted with the engineering report required by 222 TAC Subchapter D.

29. The permittee shall obtain representative soil samples from the root zones of the land application area receiving wastewater. Composite sampling techniques shall be used. Each composite sample shall represent no more than 4.67 acres with no less than one (1) cores per dosing bed (zone) representing each composite sample. Subsamples shall be composited by like sampling depth, type of crop and soil type for analysis and reporting. Soil types are soils that have like topsoil or plow layer textures. These soils shall be sampled individually from 0 to 12 inches and 12 to 24 inches below ground level. The permittee shall sample soils in December to February of each year. Soil samples shall be analyzed within 30 days of sample collection.

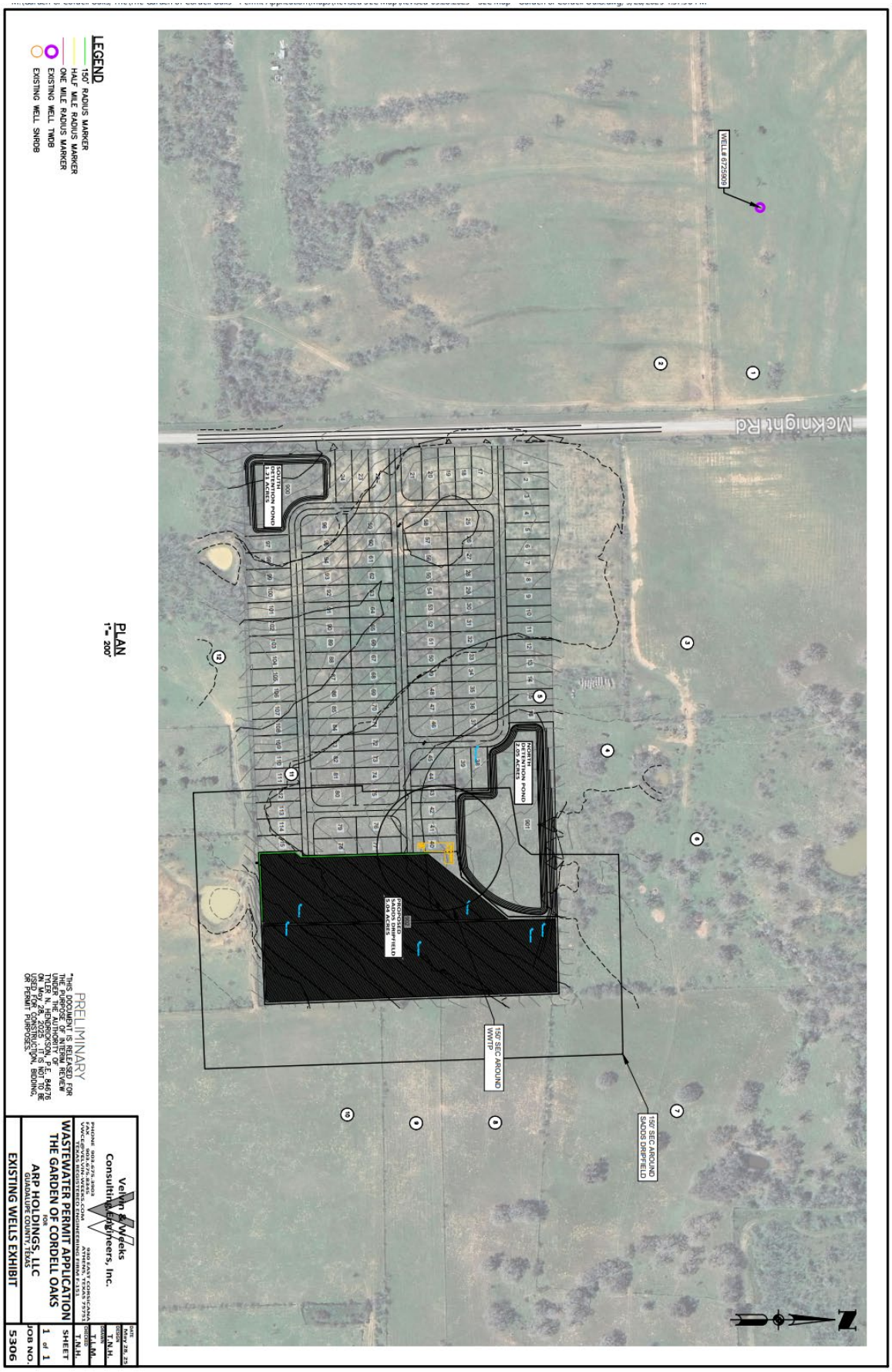
The permittee shall provide annual soil sample analyses of the land application area according to the following table:

Parameter	**Method**	**Minimum Analytical Level (MAL)**	**Reporting units**
pH	2:1 (v/v) water to soil mixture		Reported to 0.1 pH units after calibration of pH meter
Electrical Conductivity	Obtained from the SAR water saturated paste extract	0.01	dS/m (same as mmho/cm)
Nitrate-nitrogen	From a 1 N KCl soil extract	1	mg/kg (dry weight basis)
Total Kjeldahl Nitrogen (TKN)	For determination of Organic plus Ammonium Nitrogen. Procedures that use Mercury (Hg) are not acceptable.	20	mg/kg (dry weight basis)
Total Nitrogen	= TKN plus Nitrate-nitrogen		mg/kg (dry weight basis)
Plant-available: Phosphorus	Mehlich III with inductively coupled plasma	1 (P)	mg/kg (dry weight basis)
Plant-available: Potassium (K) Calcium (Ca)	May be determined in the same Mehlich III extract with	5 (K) 10 (Ca) 5 (Mg)	mg/kg (dry weight basis)

Magnesium (Mg) Sodium (Na) Sulfur (S)	inductively coupled plasma	10 (Na) 1 (S)	
Water-soluble: Sodium (Na) Calcium (Ca) Magnesium (Mg)	Obtained from the SAR water saturated paste extract	1 (Na) 1 (Ca) 1 (Mg)	Water soluble constituents are reported in mg/L
Sodium Adsorption Ratio (SAR)	$SAR = \frac{Na}{\sqrt{\frac{(Ca + Mg)}{2}}}$		Express concentrations of Na, Ca and Mg in the water saturated paste extract in milliequivalents/liter (meq/L) to calculate the SAR. The SAR value is unit less. If the SAR is greater than 10, amendments (e.g., gypsum) shall be added to the soil to adjust the SAR to less than 10.
Amendment addition, e.g., gypsum			Report in short tons/acre in the year effected

A copy of this soil testing plan shall be provided to the analytical laboratory prior to sample analysis. The permittee shall submit the results of the annual soil sample analyses with copies of the laboratory reports and a map depicting the areas that have received wastewater within the permanent land application fields to the TCEQ Regional Office (MC Region 13) and the Compliance Monitoring Team (MC 224), no later than September 1st of each sampling year. If wastewater is not applied in a particular year, the permittee shall notify the same TCEQ offices and indicate that wastewater has not been applied on the approved land irrigation site(s) during that year.

Attachment A – Site Map
Arp Holdings, LP
Permit No. WQ0016616001



TECHNICAL SUMMARY AND
EXECUTIVE DIRECTOR'S PRELIMINARY DECISION

DESCRIPTION OF APPLICATION

Applicant:	Arp Holdings, LP TCEQ Permit No. WQ0016616001
Regulated Activity:	Domestic Wastewater Permit
Type of Application:	New Permit
Request:	New Permit
Authority:	Texas Water Code (TWC) § 26.027; 30 Texas Administrative Code (TAC) Chapters 222, 305, 309, 312, 319, and 30; and Commission policies.

EXECUTIVE DIRECTOR RECOMMENDATION

The Executive Director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. The draft permit includes an expiration date of **five years from the date of issuance,** according to 30 TAC § 305.127(1)(C)(ii)(III), Conditions to be Determined for Individual Permits.

REASON FOR PROJECT PROPOSED

Arp Holdings, LP has applied to the Texas Commission on Environmental Quality (TCEQ) for a new permit, Permit No. 16616001 to authorize the disposal of treated domestic wastewater at a daily average flow not to exceed 0.018 million gallons per day (MGD) via public access subsurface area drip dispersal system with a minimum area of 4.67 acres. The proposed wastewater treatment facility will serve approximately 115 lots in The Garden of Cordell Oaks in Seguin, Guadalupe County, Texas.

PROJECT DESCRIPTION AND LOCATION

The Garden of Cordell Oaks Wastewater Treatment Facility will consist of an integrated fixed film activated sludge process. Treatment units will include a lift station, a trash trap, a primary tank, a flow equalization tank, two aeration basins, two flow pumps, a clarifier, three effluent pump tanks, and a filter skid with ultra-violet disinfection system. The facility has not been constructed.

The draft permit authorizes the disposal of sludge at a TCEQ-authorized land application site, co-disposal landfill, wastewater treatment facility, or facility that further processes sludge.

The wastewater treatment facility and disposal site are located at 1313 McKnight Road, in Guadalupe County, Texas 78155.

The wastewater treatment facility and disposal site are located in the drainage basin of Cordell Creek in Segment No. 1804 of the Guadalupe River Basin. No discharge of pollutants into water in the State is authorized by this permit.

SUMMARY OF EFFLUENT DATA

There is no effluent data since the facility has not been constructed.

DRAFT PERMIT CONDITIONS

The draft permit authorizes the disposal of treated domestic wastewater effluent at a daily average flow not to exceed 0.018 MGD via public access subsurface area drip dispersal system with a minimum area of 4.67 acres. The permittee is required to provide at least three days of temporary storage for times when the facility is out of service due to an emergency or for scheduled maintenance. Application rates shall not exceed 0.1 gallons per square foot per day. The permittee will maintain the Bermuda grass with overlay of rye grass on the disposal site.

The effluent limitations in the draft permit, based on a daily average, are 20 mg/l biochemical oxygen demand (BOD_5), 20 mg/l total suspended solids (TSS). The permittee shall utilize an ultraviolet light (UV) system for disinfection purposes.

The permittee shall comply with the requirements of 30 TAC § 309.13 (a) through (d). In addition, by ownership of the required buffer zone area, the permittee shall comply with the requirements of 30 TAC § 309.13(e).

The draft permit includes Sludge Provisions according to the requirements of 30 TAC Chapter 312, Sludge Use, Disposal and Transportation. The draft permit authorizes the disposal of sludge at a TCEQ-authorized land application site, co-disposal landfill, wastewater treatment facility, or facility that further processes sludge.

SUMMARY OF CHANGES FROM APPLICATION

The applicant requested effluent limitations of 30 mg/l BOD_5) and 30 TSS. However, the draft permit includes a daily average limitation of 20 mg/l BOD_5 and 20 mg/l TSS.

BASIS FOR DRAFT PERMIT

The following items were considered in developing the draft permit:

1. Application submitted with letter dated September 9, 2024 and additional information submitted with letter dated May 8, 2025.

2. Interoffice Memorandum from the Water Quality Assessment Team, Water Quality Assessment & Standards Section, Water Quality Division.

PROCEDURES FOR FINAL DECISION

When an application is declared administratively complete, the Chief Clerk sends a letter to the applicant advising the applicant to publish the Notice of Receipt of Application and Intent to Obtain Permit in the newspaper. In addition, the Chief Clerk instructs the applicant to place a copy of the application in a public place for review and copying in the county where the facility is or will be located. This application will be in a public place throughout the comment period. The

Chief Clerk also mails this notice to any interested persons and, if required, to landowners identified in the permit application. This notice informs the public about the application, and provides that an interested person may file comments on the application or request a contested case hearing or a public meeting.

Once a draft permit is completed, it is sent, along with the Executive Director's preliminary decision, as contained in the technical summary or fact sheet, to the Chief Clerk. At that time, Notice of Application and Preliminary Decision will be mailed to the same people and published in the same newspaper as the prior notice. This notice sets a deadline for making public comments. The applicant must place a copy of the Executive Director's preliminary decision and draft permit in the public place with the application.

Any interested person may request a public meeting on the application until the deadline for filing public comments. A public meeting is intended for the taking of public comment, and is not a contested case proceeding.

After the public comment deadline, the Executive Director prepares a response to all significant public comments on the application or the draft permit raised during the public comment period. The Chief Clerk then mails the Executive Director's Response to Comments and Final Decision to people who have filed comments, requested a contested case hearing, or requested to be on the mailing list. This notice provides that if a person is not satisfied with the Executive Director's response and decision, they can request a contested case hearing or file a request to reconsider the Executive Director's decision within 30 days after the notice is mailed.

The Executive Director will issue the permit unless a written hearing request or request for reconsideration is filed within 30 days after the Executive Director's Response to Comments and Final Decision is mailed. If a hearing request or request for reconsideration is filed, the Executive Director will not issue the permit and will forward the application and request to the TCEQ Commissioners for their consideration at a scheduled Commission meeting. If a contested case hearing is held, it will be a legal proceeding similar to a civil trial in state district court.

If the Executive Director calls a public meeting or the Commission grants a contested case hearing as described above, the Commission will give notice of the date, time, and place of the meeting or hearing. If a hearing request or request for reconsideration is made, the Commission will consider all public comments in making its decision and shall either adopt the Executive Director's response to public comments or prepare its own response.

For additional information about this application, contact Sujata Sinha at (512) 239-1963.

Sujata Sinha

Sujata Sinha
Municipal Permits Team
Wastewater Permitting Section (MC 148)

6/11/2025
Date

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

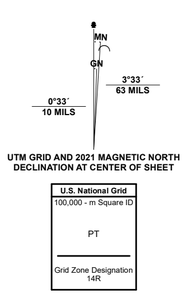


Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 14R

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

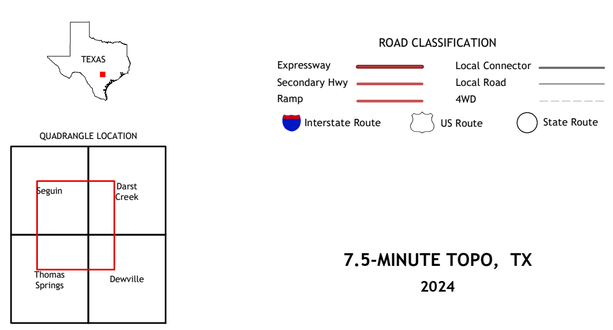


UTM GRID AND 2021 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

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.

RECEIVED
SEP 09 2024
Water Quality Applications Team

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	☒	☐			

RECEIVED
SEP 09 2024
Water Quality Applications Team

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

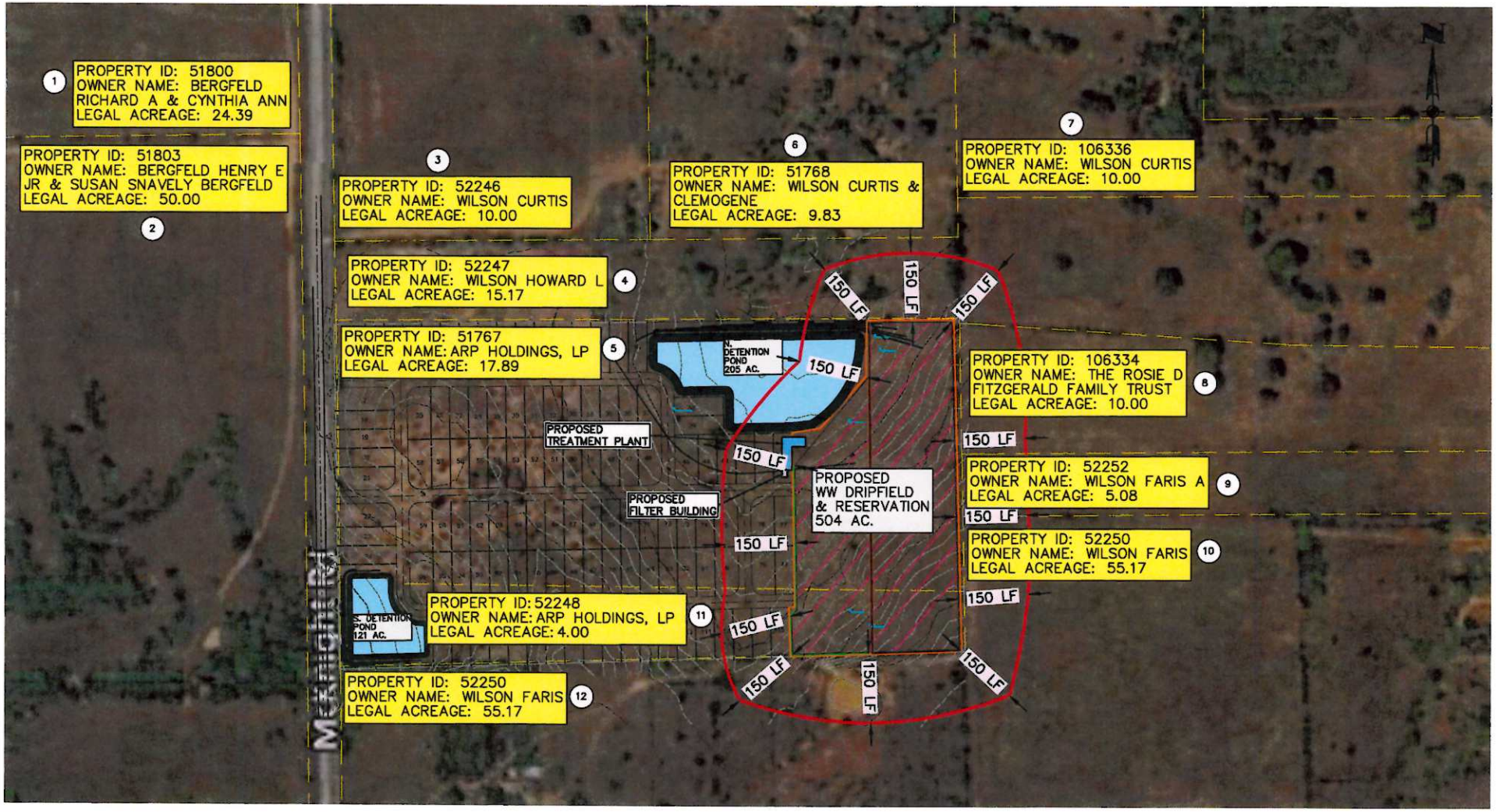
ADMINISTRATIVE REPORT 1.0 – SECTION 13

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

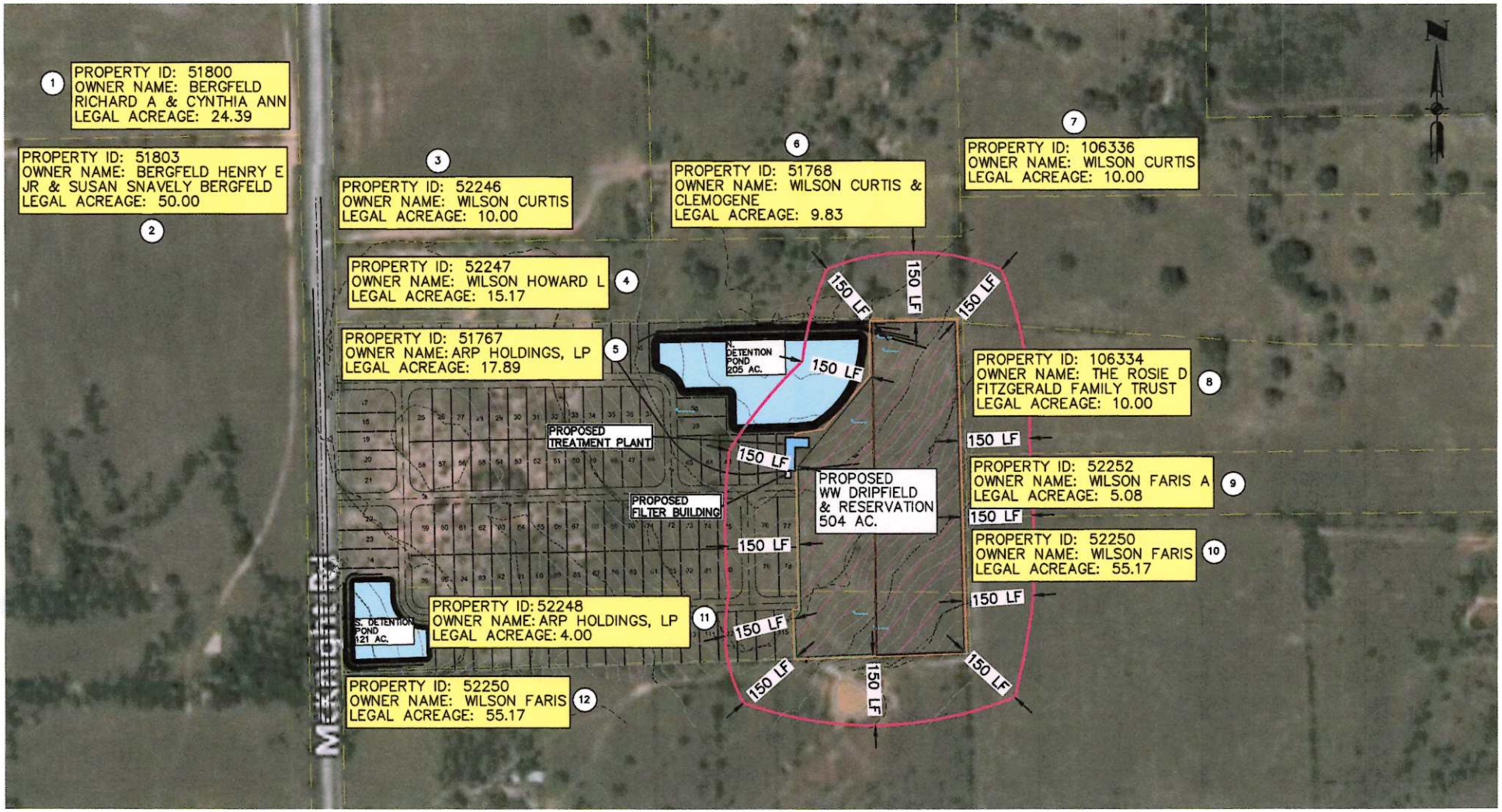


County Rd 100

ATTACHMENT H

ADMINISTRATIVE REPORT 1.0 – SECTION 3

BUFFER ZONE MAP



LEGEND
EXISTING PROPERTY LINE
150 LF DRIP FIELD BOUNDARY

PLAN
1"= 200'

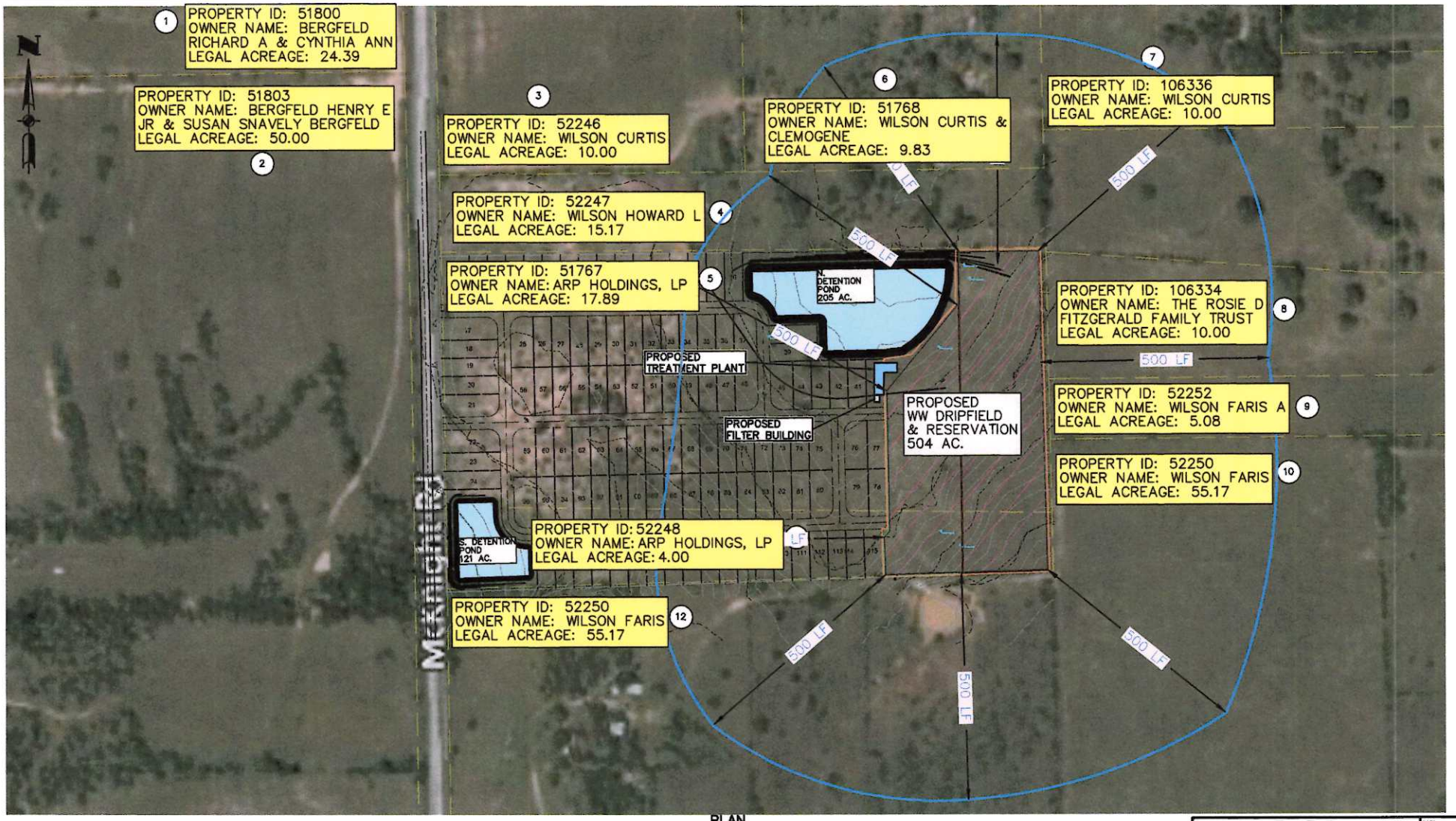
PRELIMINARY
"THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF TYLER N. HENDRICKSON, P.E. 84676 ON Sep 04, 2024 IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES."

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

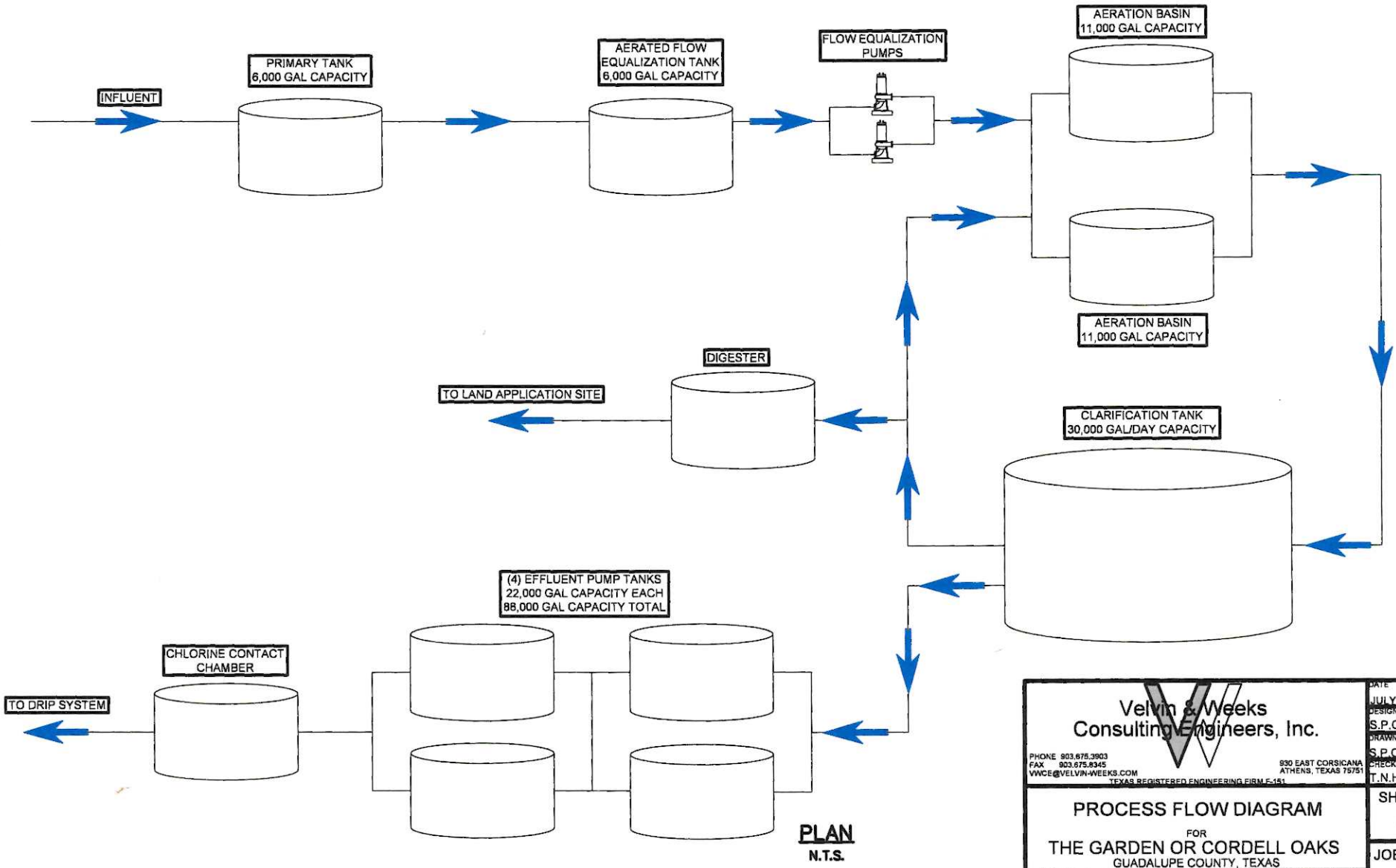
One compartment trash trap, flow equalization, aeration, clarification, effluent storage, inlet and outlet baffles in trash tank, duplex flow equalizations pumps, simplex flow equalization blower, duplex aeration blowers – 100 percent each, 8 foot sidewater clarifier depth, effluent storage tank, duplex 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.

CE11B77F-D47F-4E12-B5FC-476863C886B6 --- 2022/05/27 12:10:21 -8:00 --- Remote Notary

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."

CE11B77F-D47F-4E12-B5FC-476863C888B6 --- 2022/05/27 12:10:21 -8:00 --- Remote Notary

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

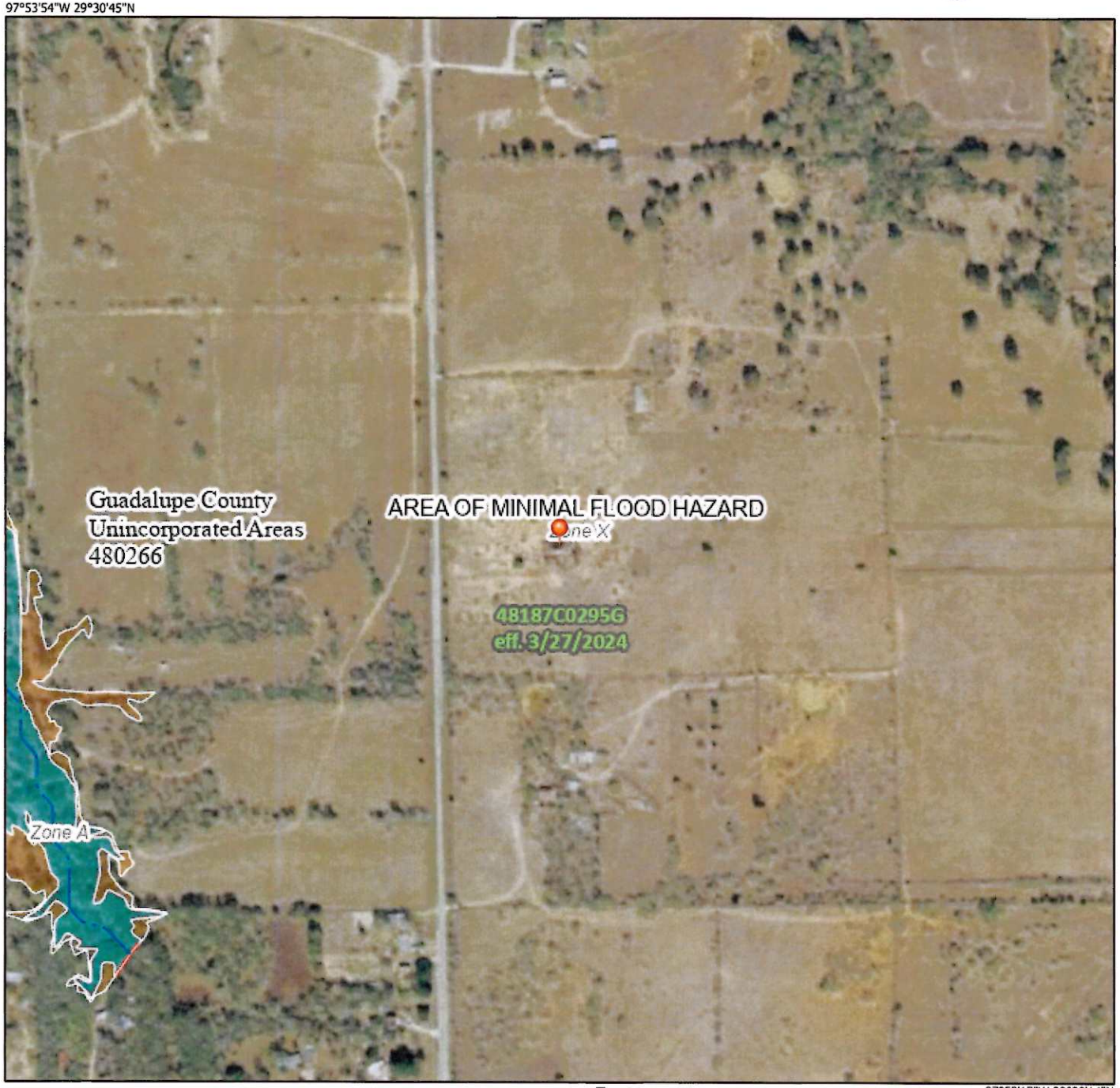
TECHNICAL REPORT 1.1 – SECTION 5

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.

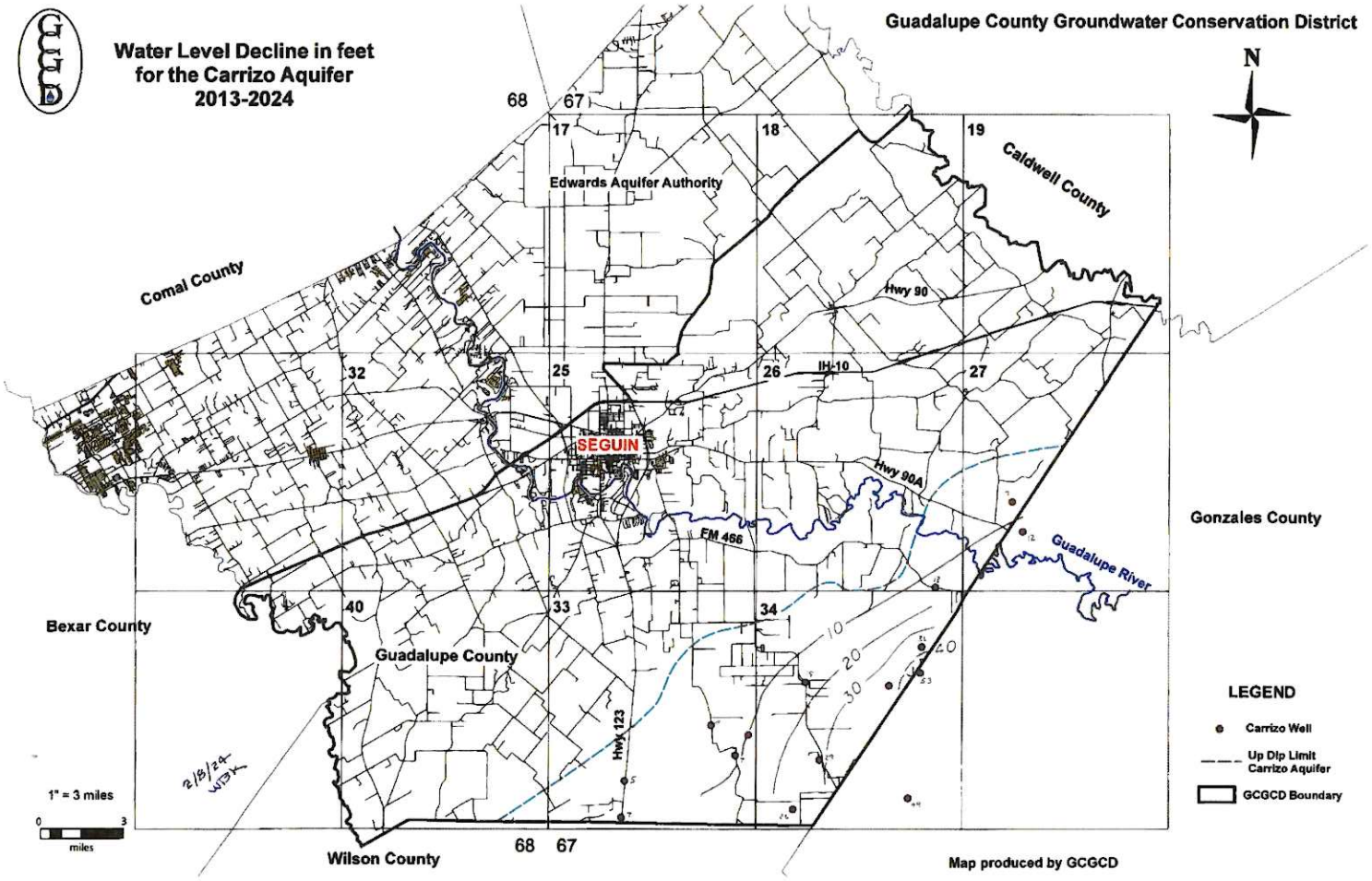
Hwy 123 MWCz-2	67-33-8(8a)	MP 3.6 ft >GL	LSD +628
Flying W	Lat/Long: 29.400309/-97.954371		Screen 180 - 220 ft
Estimated 2002 WL Elev. +494			TD 280 ft (+351)
1/20/13 WL 141 ft <GL		B/Cz @ TWCZ-1 (+406 Elev.)	
2/17/18			146.3
2/20/18			146.25 <GL Reported
1/15/19			148.87
147.93			
1/18/23			147.98
6/27/23			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

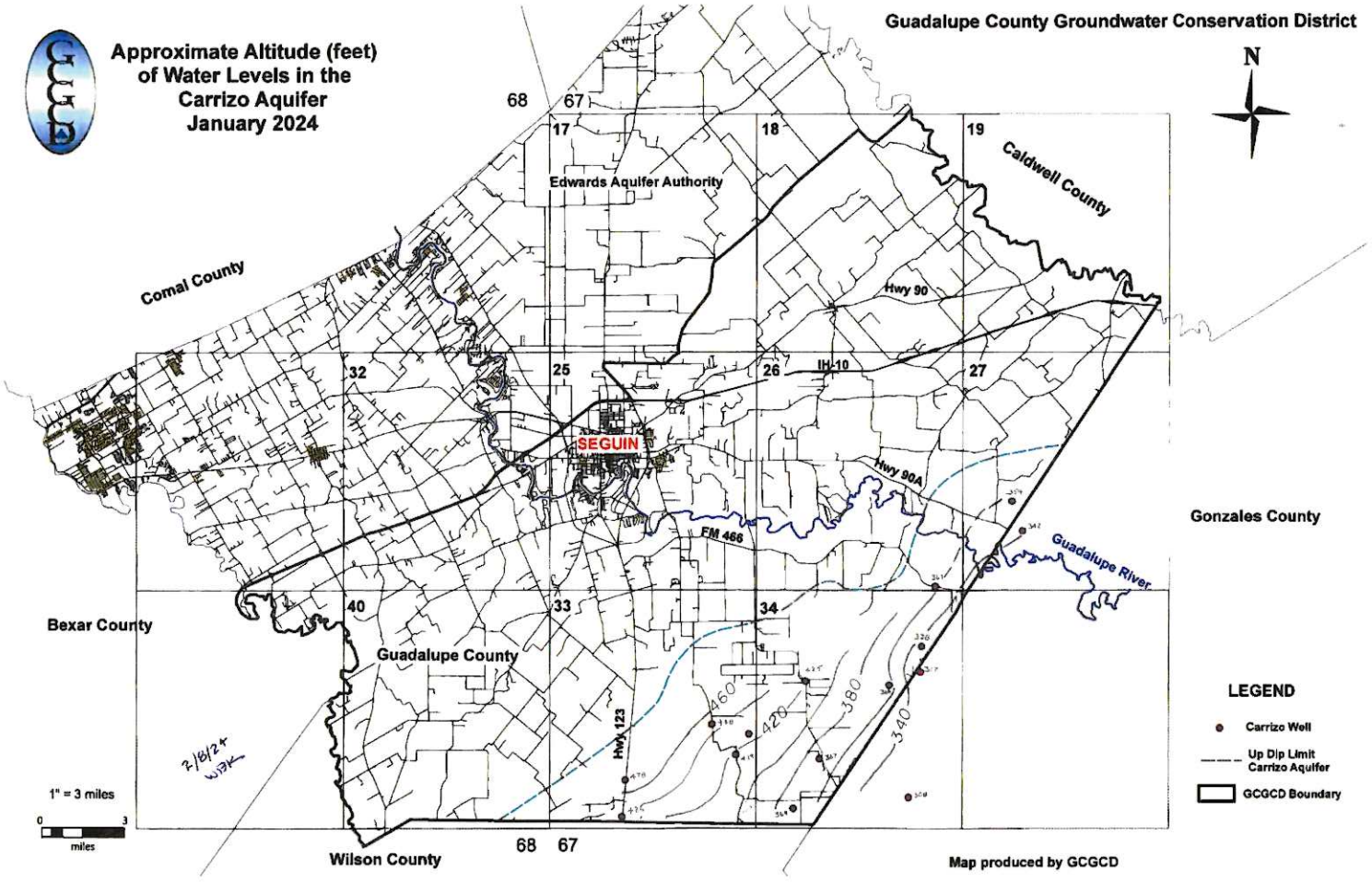
1/03/13			102.18
1/06/23			135.6
6/01/23			134.0
9/06/23			135.5
1/03/24			110.
CRWA (Wx)	67-34-5	MP 2.2 ft >GL	LSD +483
Deer stand #3	Lat/Long: 29.449793/-97.797889		Depth 1602 ft
09/07/16			092.1
10/14/18			149.9
01/02/19			178.2
06/10/22			136.5
06/01/23			175.0
01/10/24			223. From GL
Blumberg #1 (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

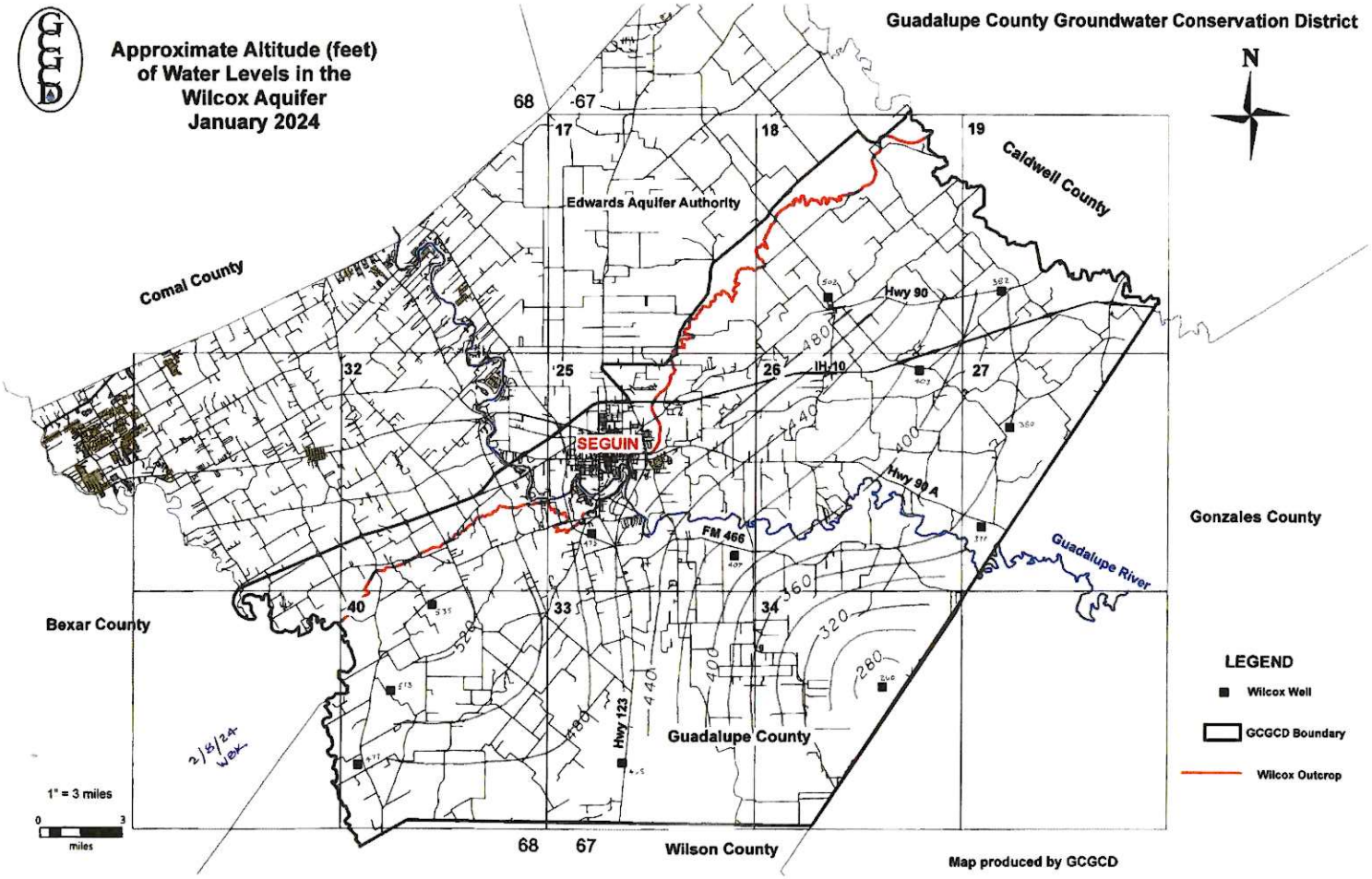
9/19/23			070.00	
1/22/24			064.85	

GCUWCD WATER LEVELS

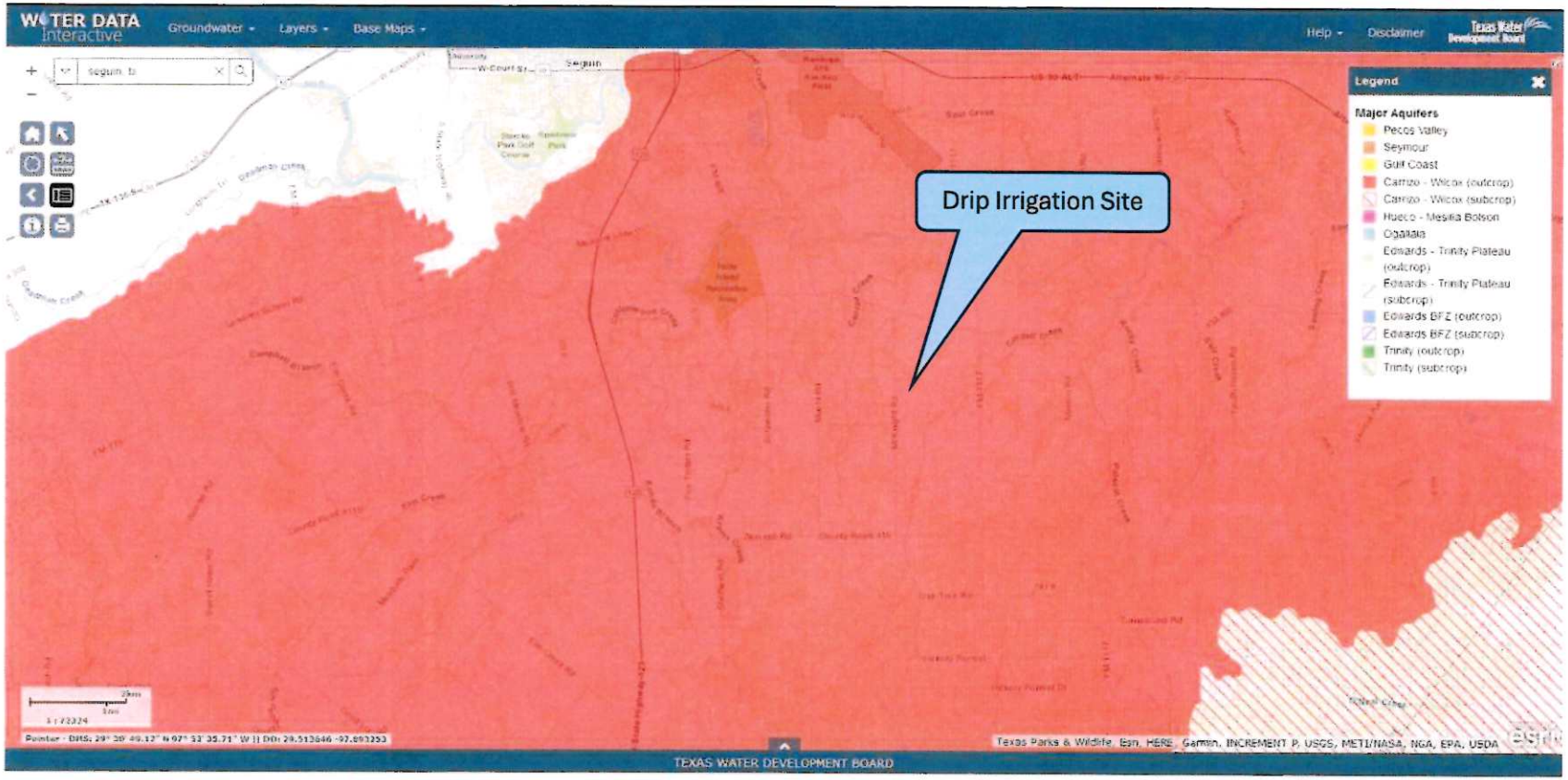
James Miller (Cz)	67-27-705	MP 0.5 ft >GL		LSD +391
	Lat/Long:29.530824/-97.71026			Depth (?)
8/20/02			030.07	
1/03/13			036.58	
1/09/23			048.70	
6/01/23			046.70	
9/08/23			049.02	
1/04/24			049.05	
Bexar Met #3	67-34-612	MP 2.2 ft >GL		LSD +465
Harden #1 Tommy's Well	Lat/Long: 29.457182/-97.775855			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	

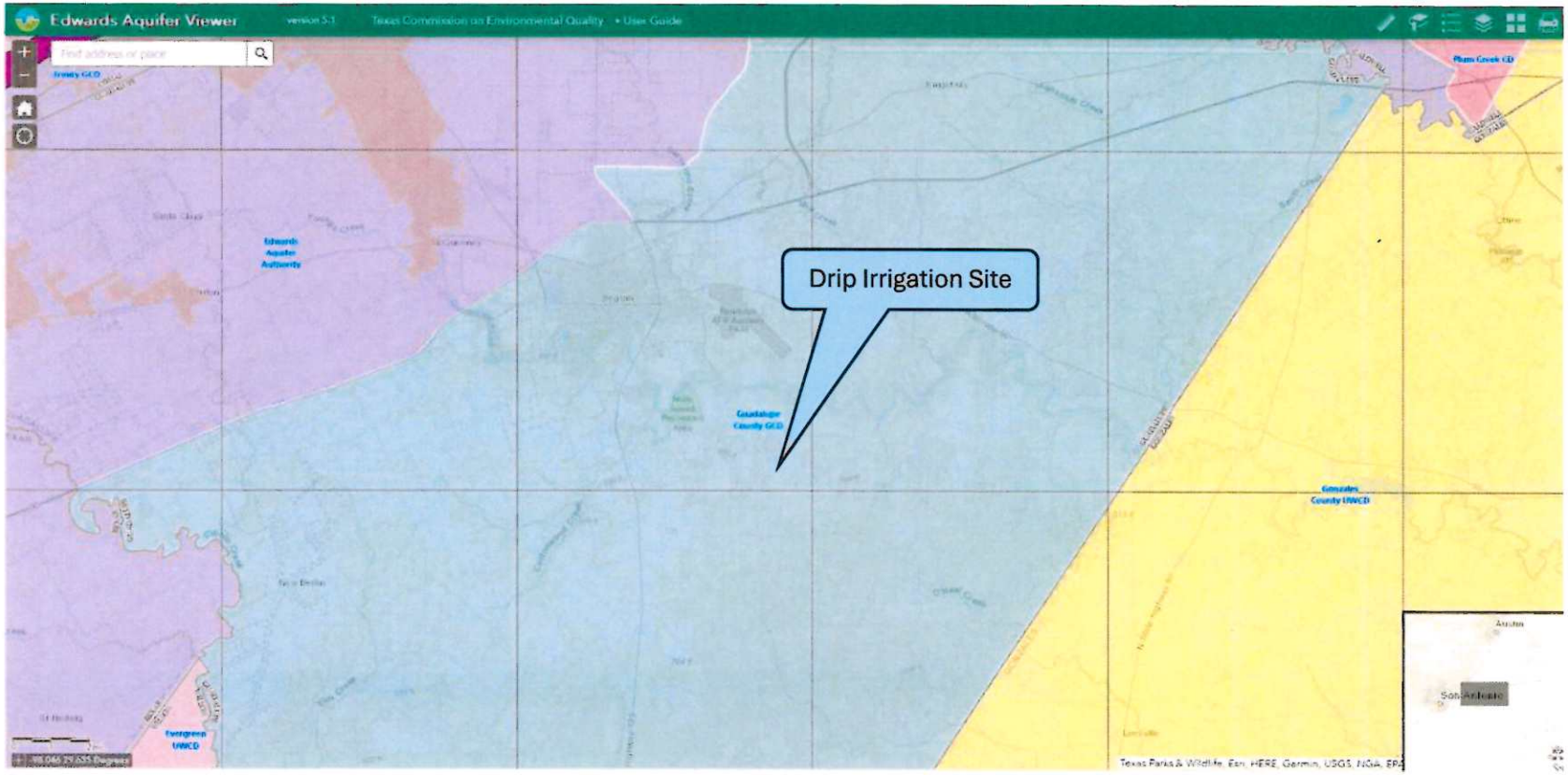

Guadalupe County Groundwater Conservation District
Water Level Decline in feet
for the Carrizo Aquifer
2013-2024
N
68
67
17
18
19
Edwards Aquifer Authority
Caldwell County
Comal County
Hwy 90
32
25
26
IH-10
27
SEGUIN
Hwy 90A
FM 466
Guadalupe River
Gonzales County
40
33
34
Bexar County
Guadalupe County
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

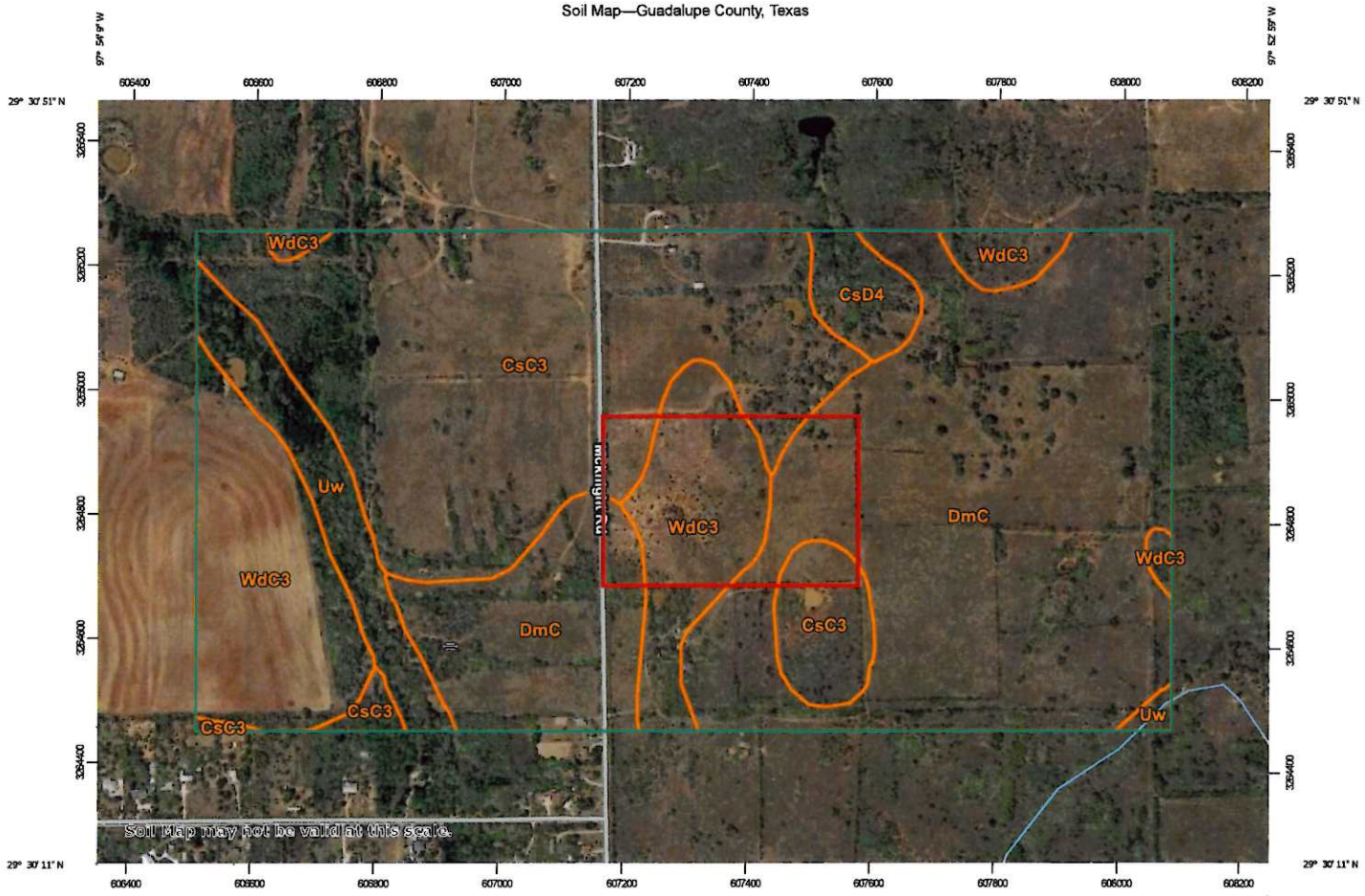

Edwards Aquifer Viewer
version 5.1
Texas Commission on Environmental Quality
• User Guide
Find address or place
Drip Irrigation Site
Edwards Aquifer Authority
Guadalupe County GCD
Gonzales County UWCD
Evergreen UWCD
Plum Creek CD
San Antonio
Austin
Texas Parks & Wildlife, Esri, HERE, Garmin, USGS, NGA, 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.

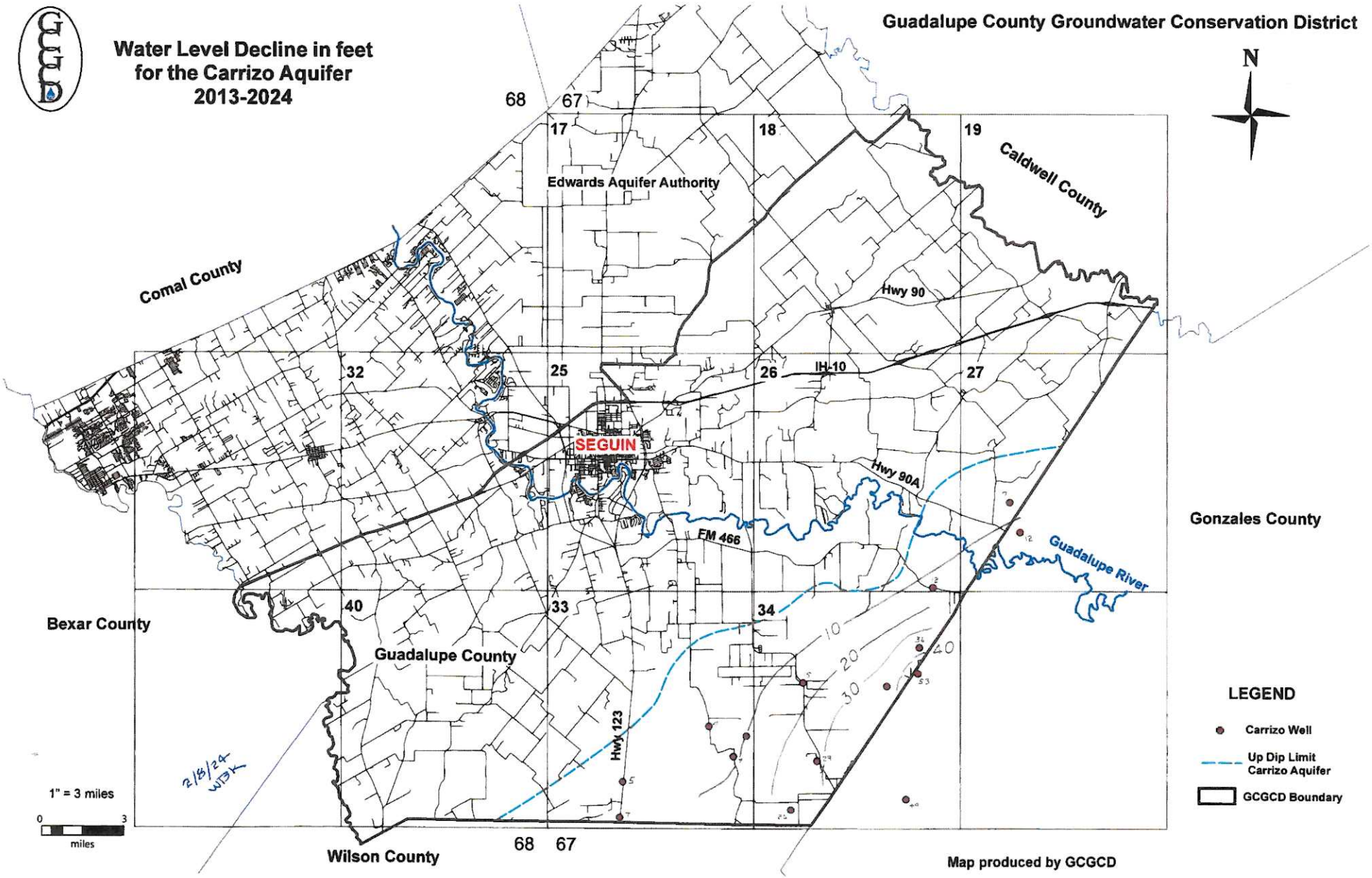
Hwy 123 MWCz-2	67-33-8(8a)	MP 3.6 ft >GL	LSD +628
Flying W	Lat/Long: 29.400309/-97.954371		Screen 180 - 220 ft
Estimated 2002 WL Elev. +494			TD 280 ft (+351)
1/20/13 WL 141 ft <GL		B/Cz @ TWCZ-1 (+406 Elev.)	
2/17/18		146.3	
2/20/18		146.25 <GL Reported	
1/15/19		148.87	
147.93			
1/18/23		147.98	
6/27/23		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	

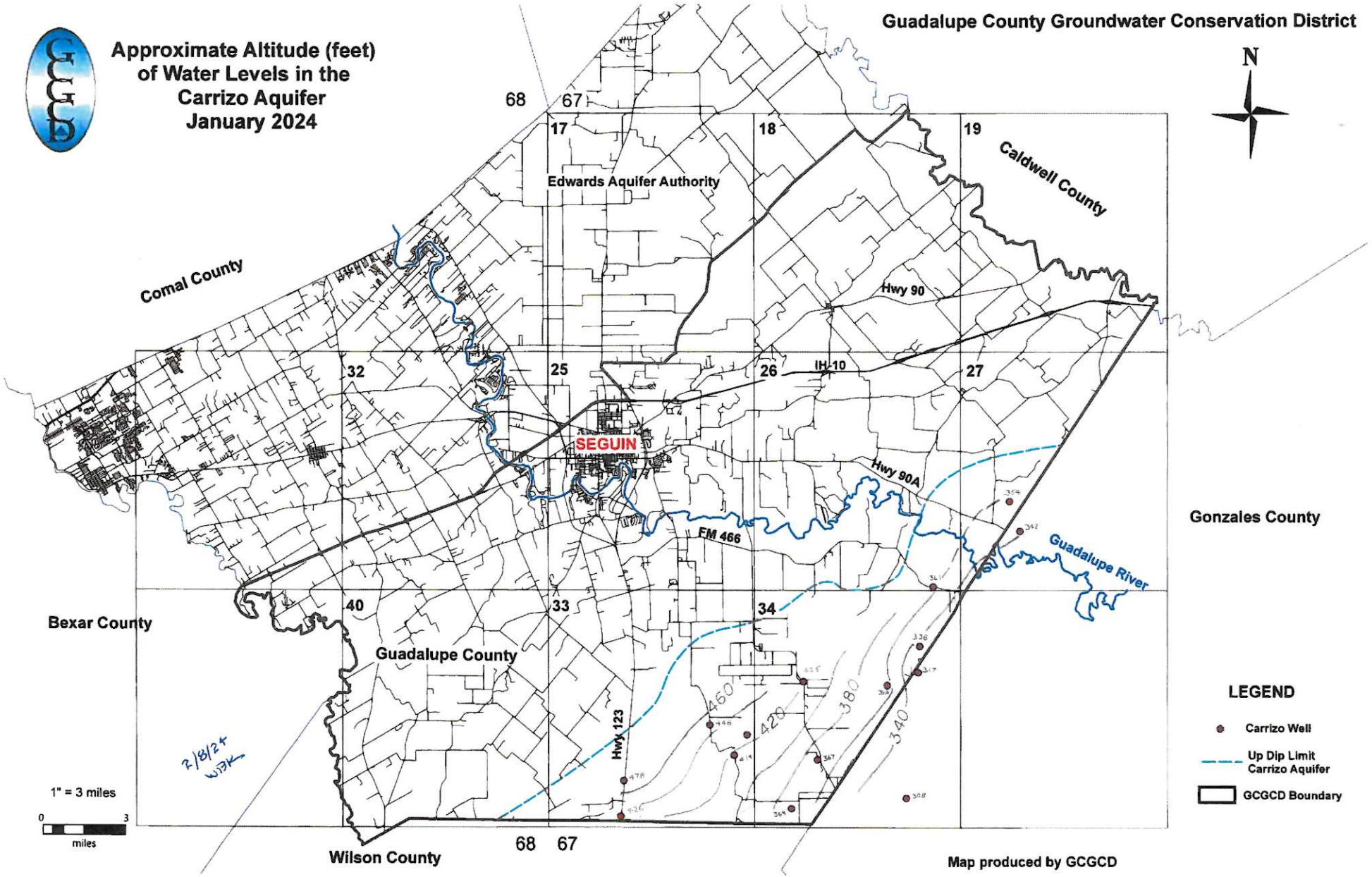
	1/03/13		102.18
	1/06/23		135.6
	6/01/23		134.0
	9/06/23		135.5
	1/03/24		110.
CRWA (Wx)	67-34-5	MP 2.2 ft >GL	LSD +483
Deer stand #3	Lat/Long: 29.449793/-97.797889		Depth 1602 ft
	09/07/16		092.1
	10/14/18		149.9
	01/02/19		178.2
	06/10/22		136.5
	06/01/23		175.0
	01/10/24		223. From GL
Blumberg #1 (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

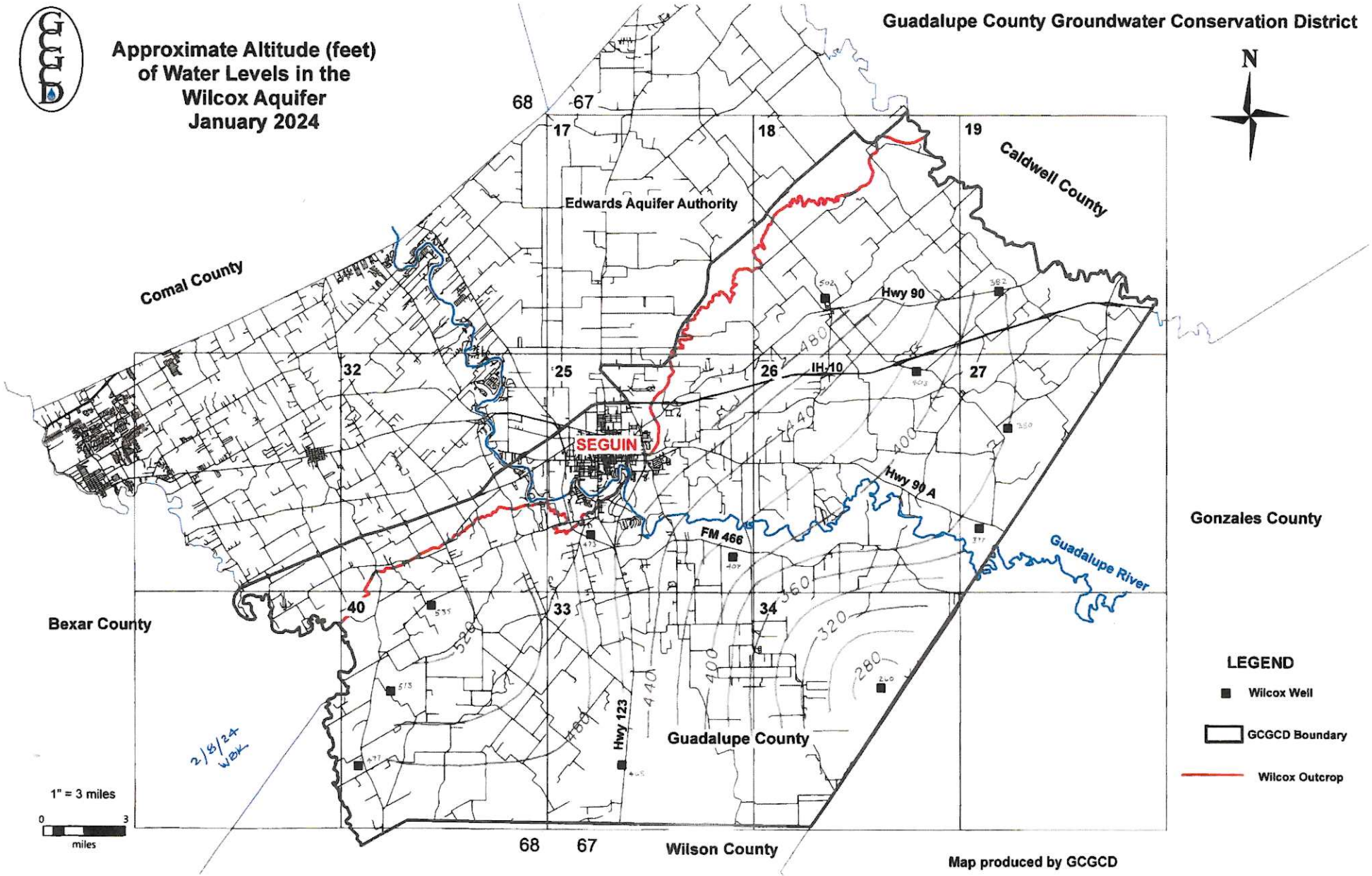
9/19/23		070.00
1/22/24		064.85

GCUWCD WATER LEVELS

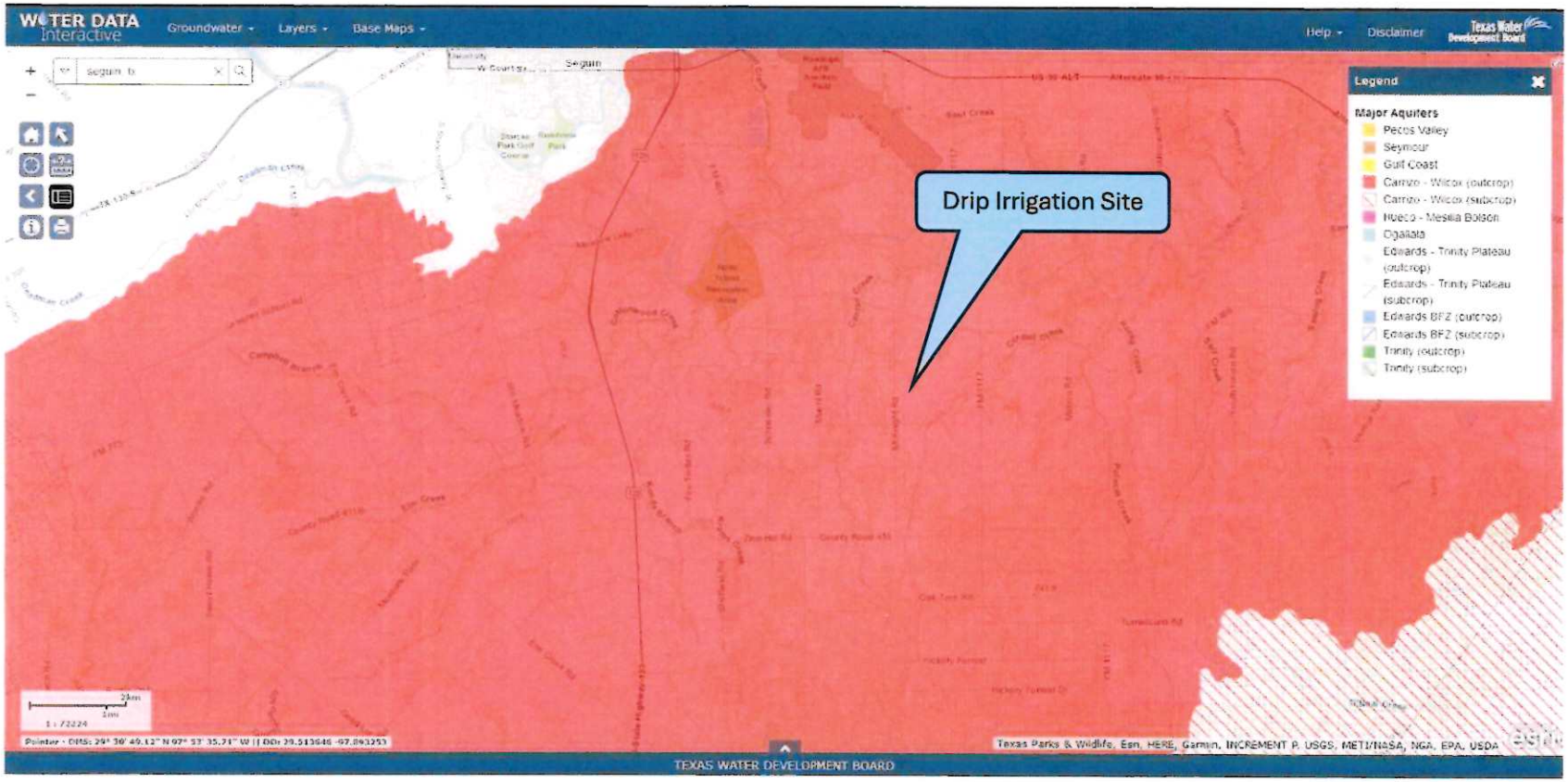
James Miller (Cz)	67-27-705	MP 0.5 ft >GL	LSD +391
	Lat/Long:29.530824/-97.71026		Depth (?)
8/20/02			030.07
1/03/13			036.58
1/09/23			048.70
6/01/23			046.70
9/08/23			049.02
1/04/24			049.05
Bexar Met #3	67-34-612	MP 2.2 ft >GL	LSD +465
Harden #1 Tommy's Well	Lat/Long: 29.457182/-97.775855		Depth 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

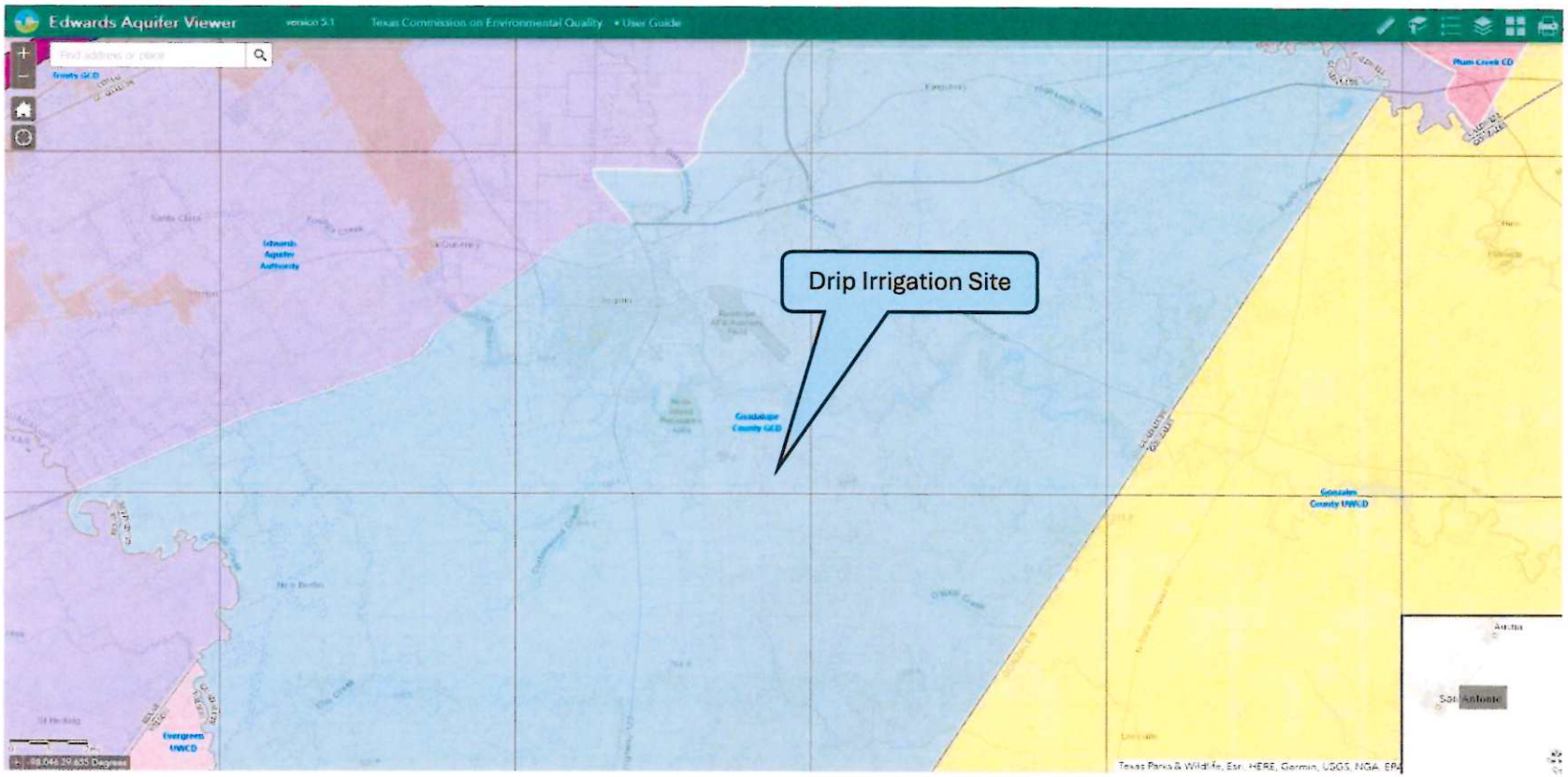

Guadalupe County Groundwater Conservation District
Approximate Altitude (feet) of Water Levels in the Carrizo Aquifer January 2024
N
68
67
17
18
19
Edwards Aquifer Authority
Caldwell County
Comal County
Hwy 90
32
25
26
IH-10
27
SEGUIN
Hwy 90A
FM 466
Gonzales County
Guadalupe River
40
33
34
Bexar County
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

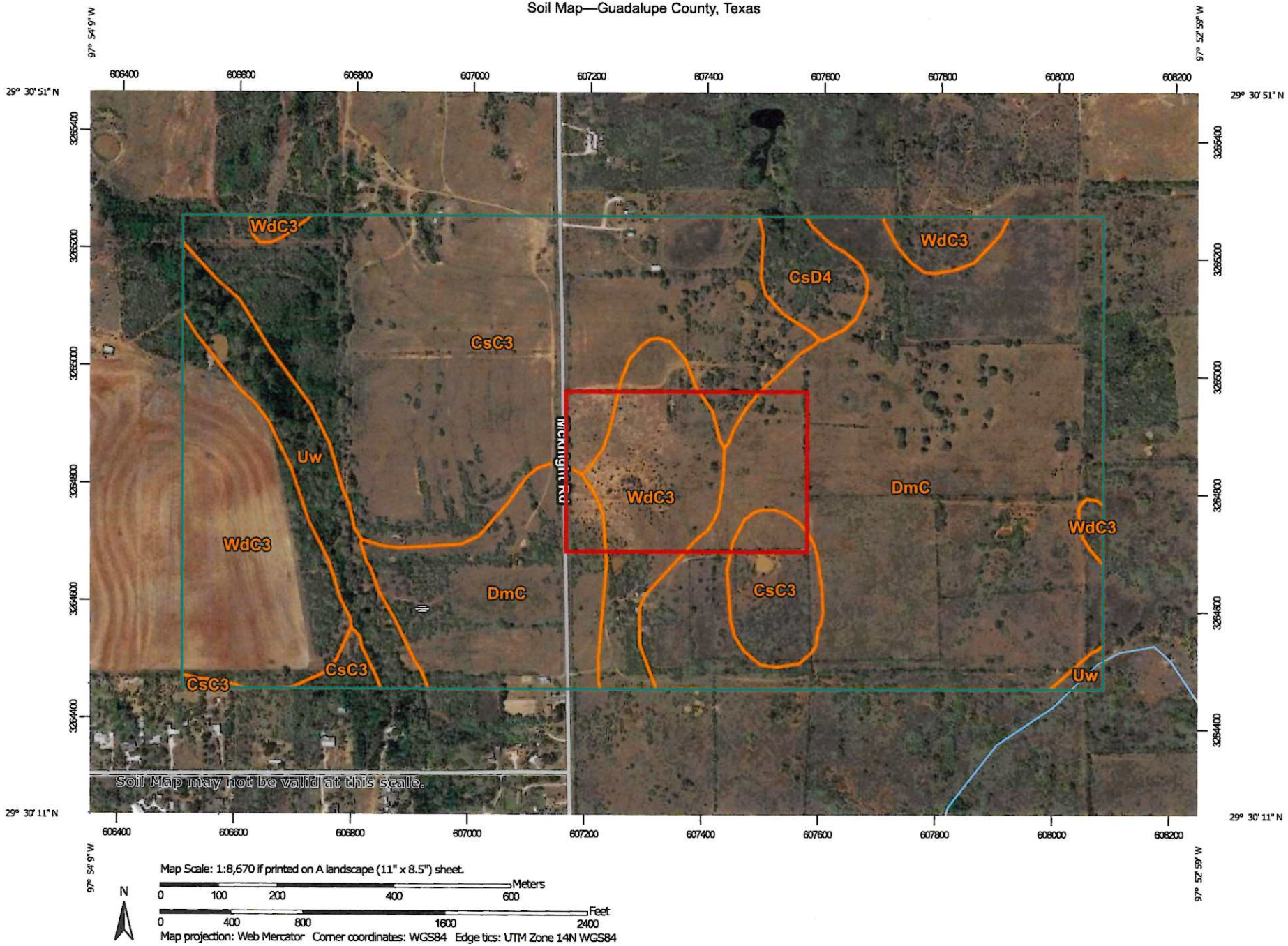

WATER DATA Interactive
Groundwater
Layers
Base Maps
Help
Disclaimer
Texas Water Development Board
Legend
Major Aquifers
Pecos Valley
Seymour
Gulf Coast
Carrizo - Wilcox (outcrop)
Carrizo - Wilcox (subcrop)
Hueco - Mesilla Bolson
Ogallala
Edwards - Trinity Plateau (outcrop)
Edwards - Trinity Plateau (subcrop)
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.

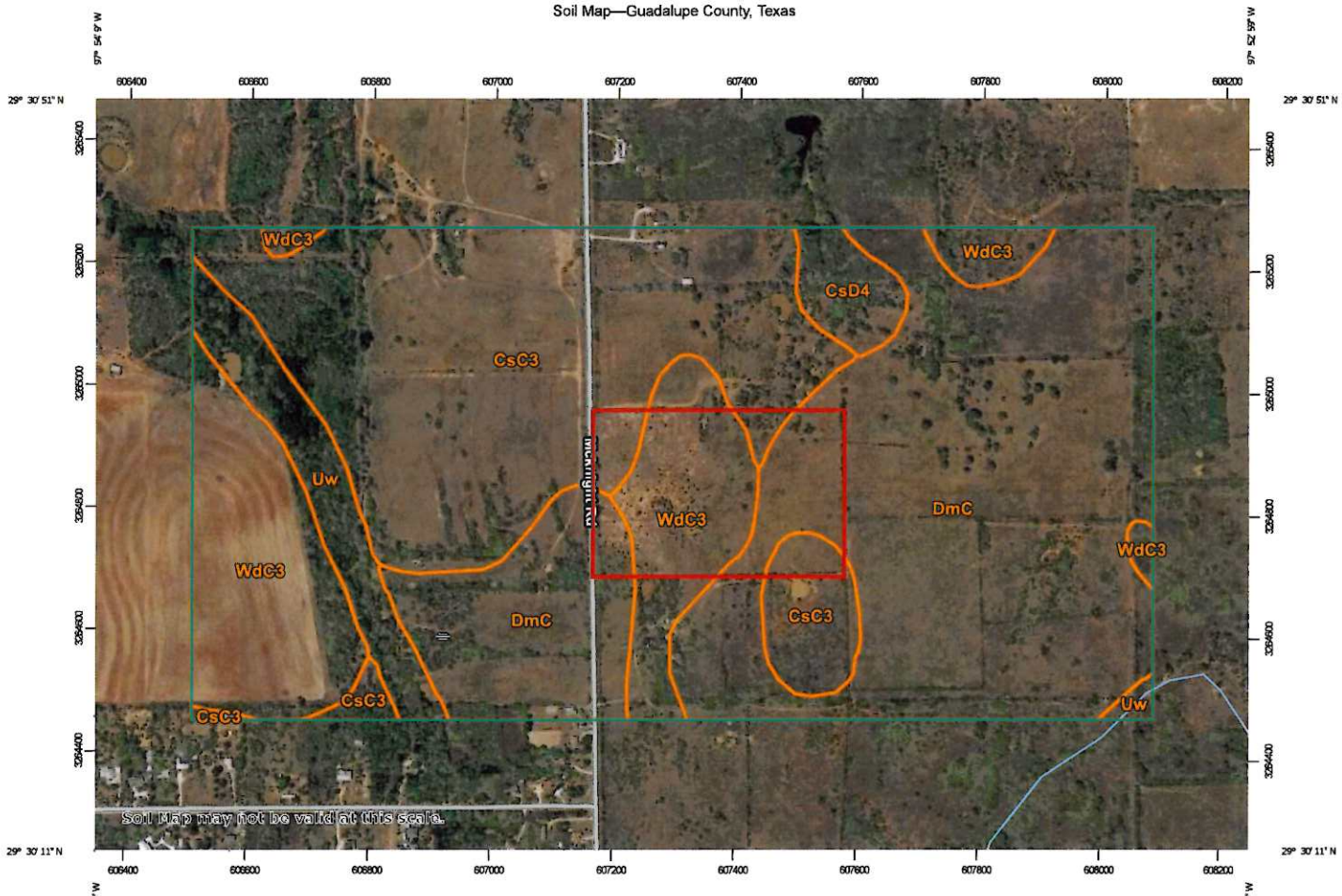
(7) There was no appearance of water, current or historical.
(8) There is no presence of water in the profile hole. See (7).

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

The TCEQ is committed to accessibility.
To request a more accessible version of this report, please contact the TCEQ Help Desk at (512) 239-4357.

Compliance History Report

Compliance History Report for CN606303071, RN112042049, Rating Year 2024 which includes Compliance History (CH) components from September 1, 2019, through August 31, 2024.

Customer, Respondent, or Owner/Operator: CN606303071, Arp Holdings, LP **Classification:** NOT APPLICABLE **Rating:** N/A

Regulated Entity: RN112042049, THE GARDEN OF CORDELL OAKS **Classification:** NOT APPLICABLE **Rating:** N/A

Complexity Points: N/A **Repeat Violator:** N/A

CH Group: 14 - Other

Location: 1313 MCKNIGHT RD SEGUIN, TX 78155, GUADALUPE COUNTY

TCEQ Region: REGION 13 - SAN ANTONIO

ID Number(s):
WASTEWATER PERMIT WQ0016616001

Compliance History Period: September 01, 2019 to August 31, 2024 **Rating Year:** 2024 **Rating Date:** 09/01/2024

Date Compliance History Report Prepared: October 28, 2024

Agency Decision Requiring Compliance History: Permit - Issuance, renewal, amendment, modification, denial, suspension, or revocation of a permit.

Component Period Selected: September 09, 2019 to October 28, 2024

TCEQ Staff Member to Contact for Additional Information Regarding This Compliance History.

Name: PT **Phone:** (512) 239-3581

Site and Owner/Operator History:

1) Has the site been in existence and/or operation for the full five year compliance period? NO
2) Has there been a (known) change in ownership/operator of the site during the compliance period? NO

Components (Multimedia) for the Site Are Listed in Sections A - J

A. Final Orders, court judgments, and consent decrees:
N/A

B. Criminal convictions:
N/A

C. Chronic excessive emissions events:
N/A

D. The approval dates of investigations (CCEDS Inv. Track. No.):
N/A

E. Written notices of violations (NOV) (CCEDS Inv. Track. No.):
A notice of violation represents a written allegation of a violation of a specific regulatory requirement from the commission to a regulated entity. A notice of violation is not a final enforcement action, nor proof that a violation has actually occurred.

N/A

F. Environmental audits:
N/A

G. Type of environmental management systems (EMSs):

Customer was not affiliated to Regulated Entity at time of Compliance History Rating.

N/A

H. Voluntary on-site compliance assessment dates:
N/A

I. Participation in a voluntary pollution reduction program:
N/A

J. Early compliance:
N/A

Sites Outside of Texas:
N/A

Senate Bill 709 (84th Legislative Session, 2015) amended the Texas Water Code by adding new Section 5.5553, which requires the Texas Commission on Environmental Quality (TCEQ) to provide written notice to you at least thirty (30) days prior to the TCEQ's issuance of draft permits for applications that are located in your district.

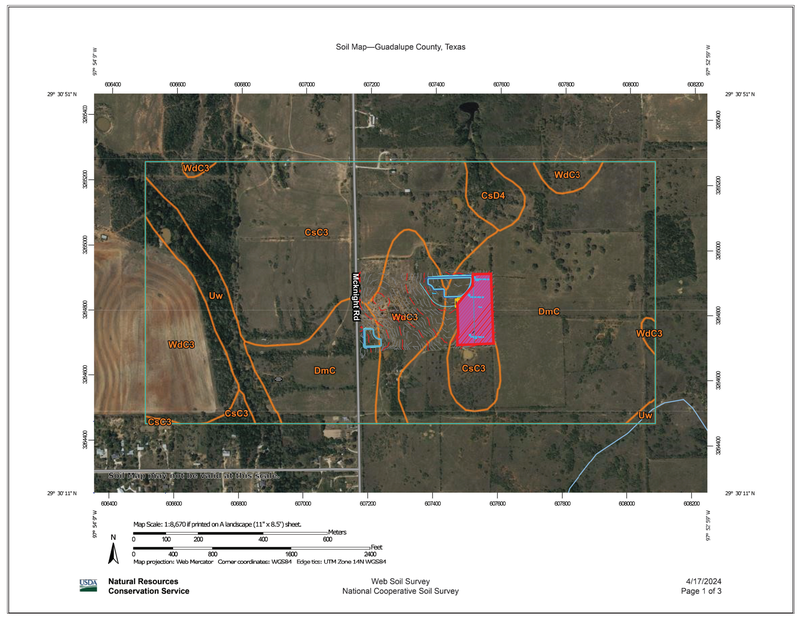
Arp Holdings, LP, 223 Hunters Village, New Braunfels, Texas 78132, has applied to the TCEQ for proposed Texas Land Application Permit No. WQ0016616001 to authorize the disposal of treated wastewater at a volume not to exceed a daily average flow of 18,000 gallons per day via subsurface area drip dispersal 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. 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 is 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

TCEQ is preparing the initial draft permit. At the time the draft permit is issued, the applicant will be required to publish notice in a newspaper of general circulation, and the TCEQ will provide a copy of the notice of draft permit to persons who have requested to be on a mailing list.

Questions regarding this application may be directed to Mr. Deba Dutta, P.E., by calling 512-239-4608.

Issuance Date: _____

PROPERTY ADDRESS: 1313 MCKNIGHT RD, SEGUIN, TX



DISPOSAL AREA OUTLINED IN RED



GPS COORDINATES:
PROFILE HOLE #1
29.5075, −97.8908
PROFILE HOLE #2
29.5086, −97.8908
PROFILE HOLE #3
29.5091, −97.8907

SCALE: 1" = 80 Ft
0 40 80 160

NO. | DESCRIPTION | INITIALS | DATE

LWRE
LIGHTHOUSE WATER RESOURCE ENGINEERING
PO BOX 5667
BRYAN, TEXAS 77807 (979) 779-6500
Registration # F-21045

THE GARDEN OF CORDELL OAKS
SUBSURFACE AREA DRIP DISPOSAL SYSTEM
NRCS MAP

DESIGNED:	JFP
DRAWN BY:	JEL
APPROVED:	JFP
FILE:	JOBS/Spark Homes
JOB NO.:	
DATE:	11/07/2024

1 OF 1

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.

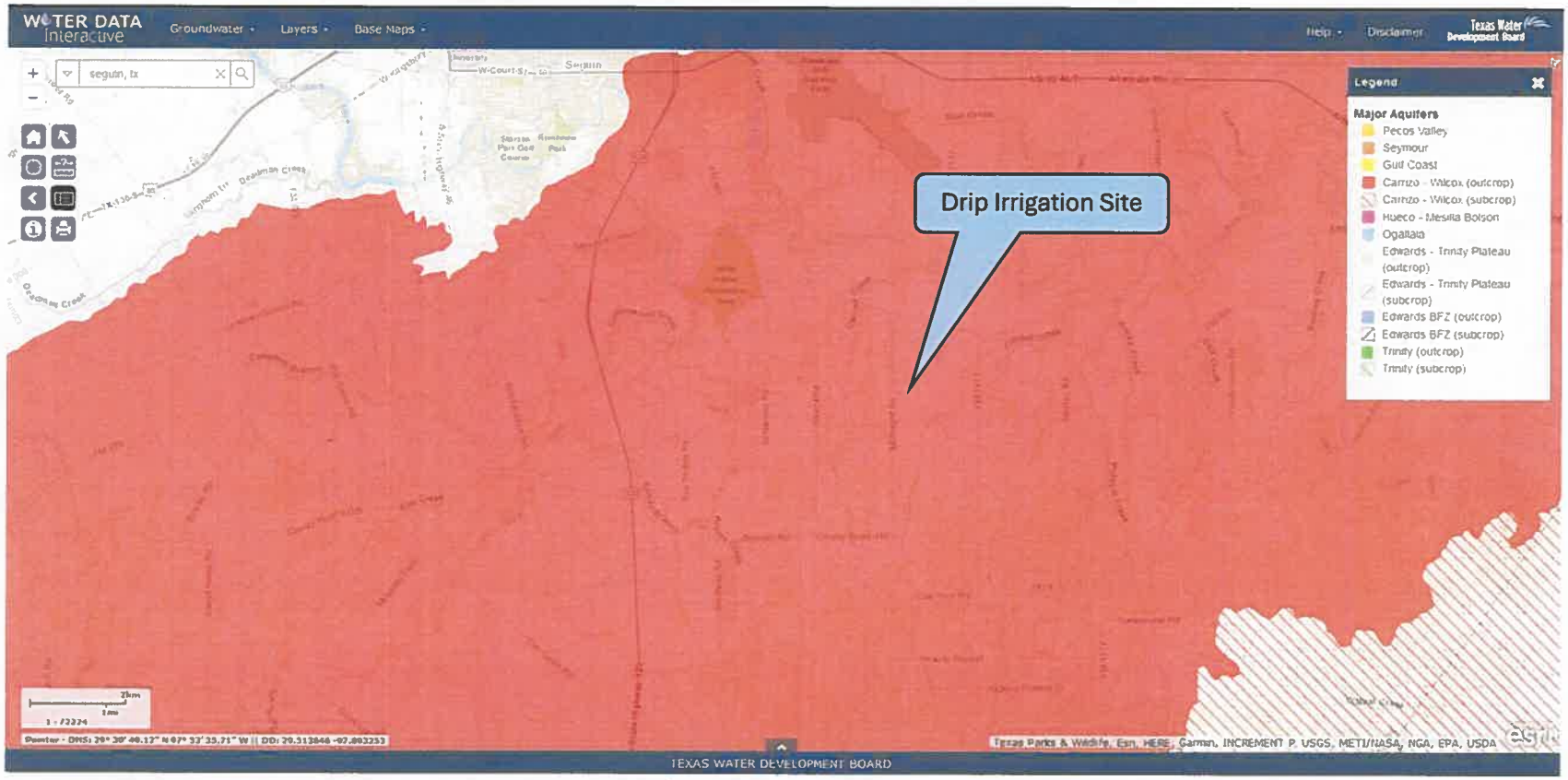
Recharge Plan and Site Inspection Completed by:

James F. Prochaska, MS-PE
TXPE License # 80504
TBPE Firm No. 21045

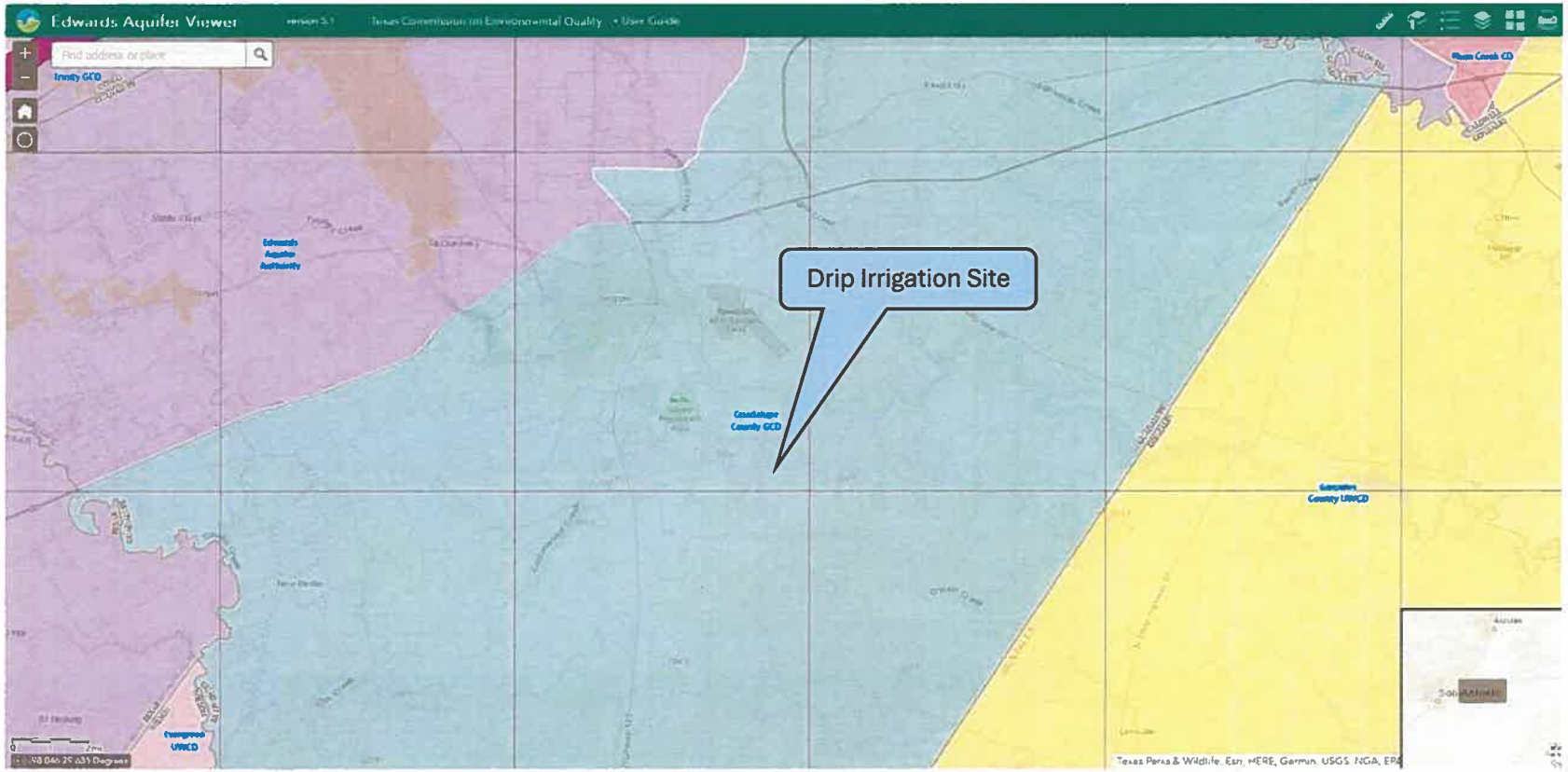


June 21, 2024

Recharge Feature Plan Exhibit 2 – Texas Water Development Board

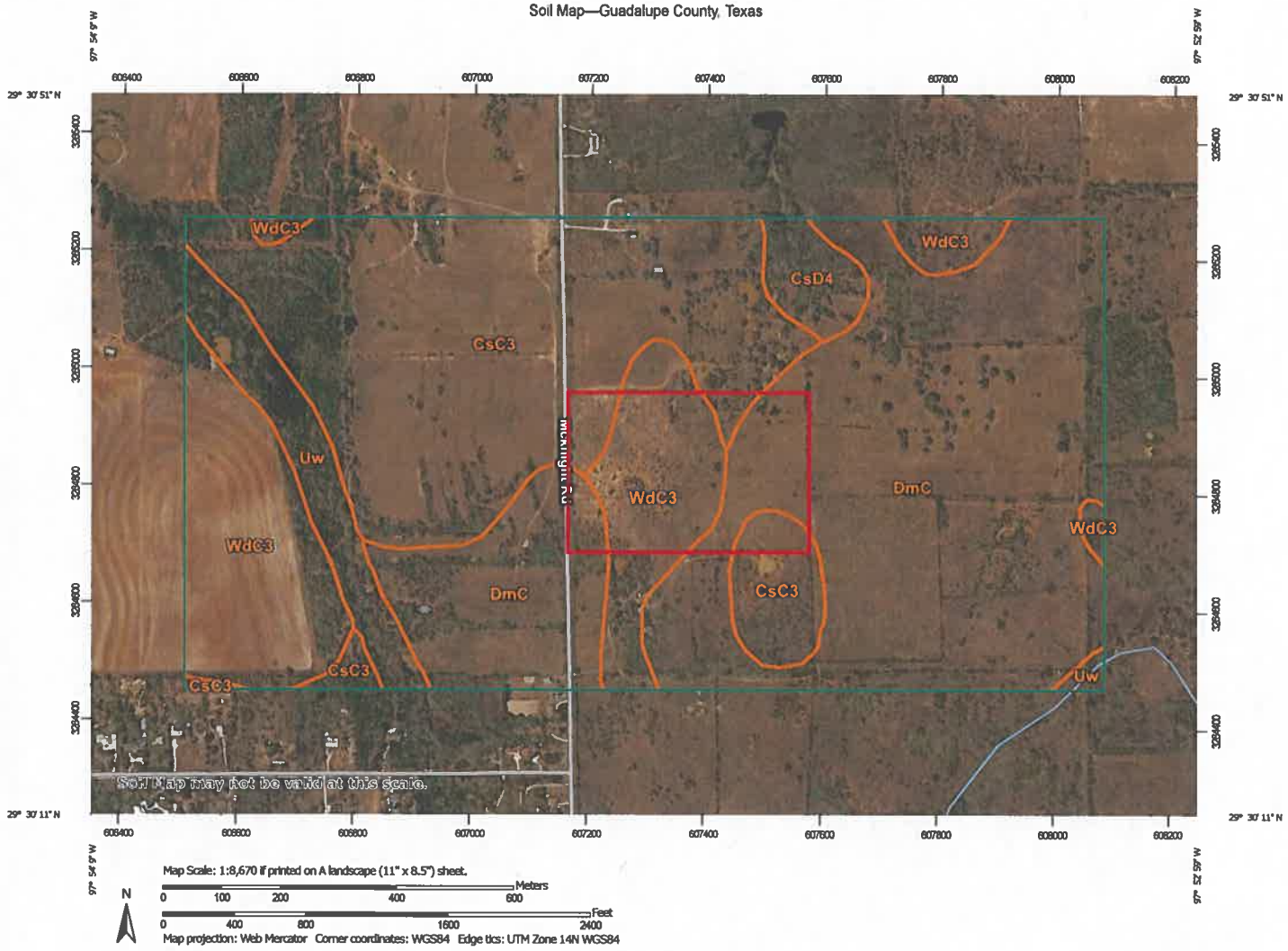

WATER DATA
Interactive
Groundwater
Layers
Base Maps
Help
Disclaimer
Texas Water Development Board
seguin, tx
Drip Irrigation Site
Legend
Major Aquifers
Pecos Valley
Seymour
Gulf Coast
Carrizo - Wilcox (outcrop)
Carrizo - Wilcox (subcrop)
Hueco - Mesilla Bolson
Ogallala
Edwards - Trinity Plateau (outcrop)
Edwards - Trinity Plateau (subcrop)
Edwards BFZ (outcrop)
Edwards BFZ (subcrop)
Trinity (outcrop)
Trinity (subcrop)
TEXAS WATER DEVELOPMENT BOARD

Recharge Feature Plan Exhibit 3 – TCEQ


Edwards Aquifer Viewer
Drip Irrigation Site

Recharge Feature Plan Exhibit 4 – Natural Resources Conservation Service

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

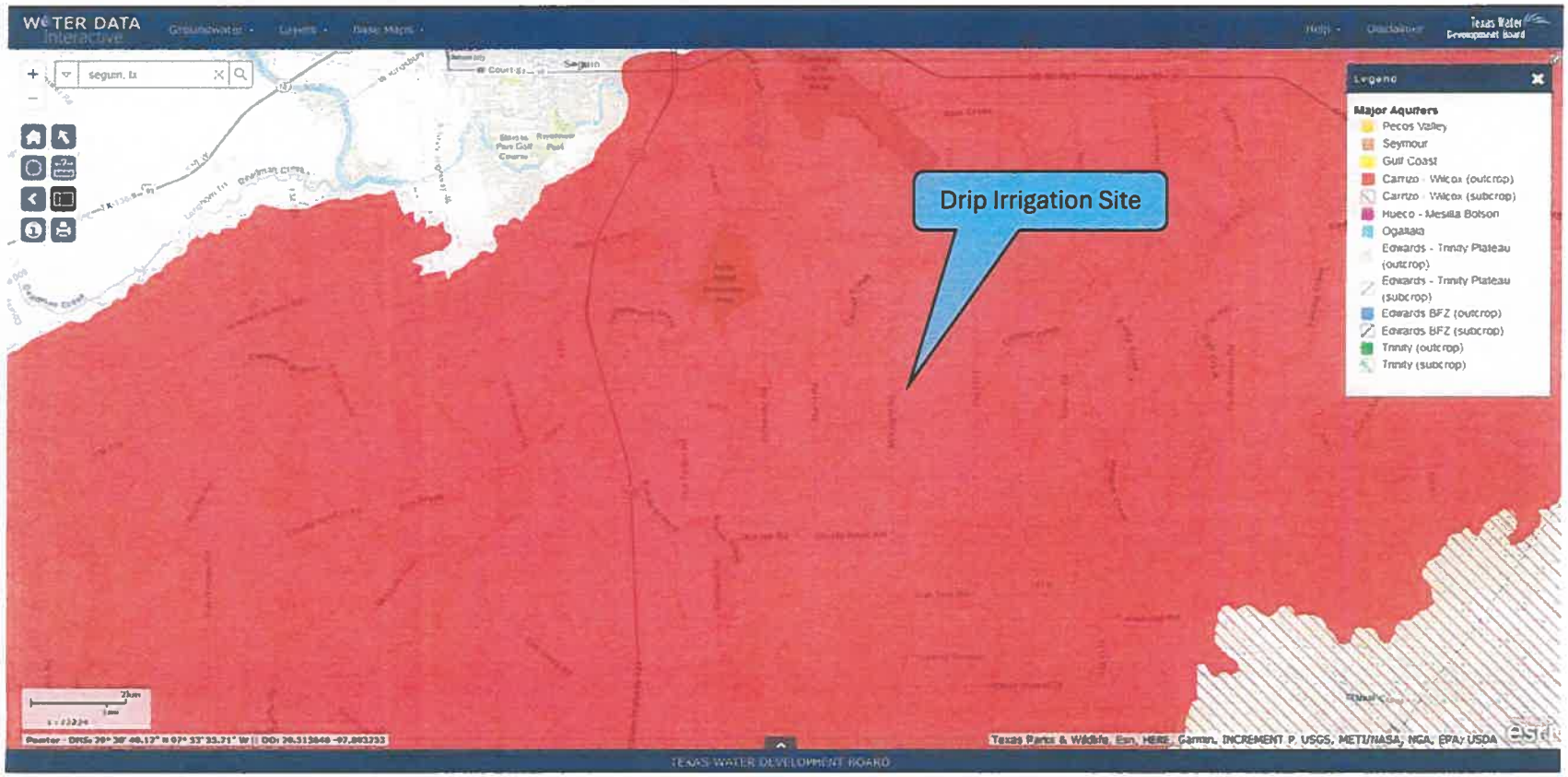
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R087AY005TX - Sandy Loam
Hydric soil rating: No

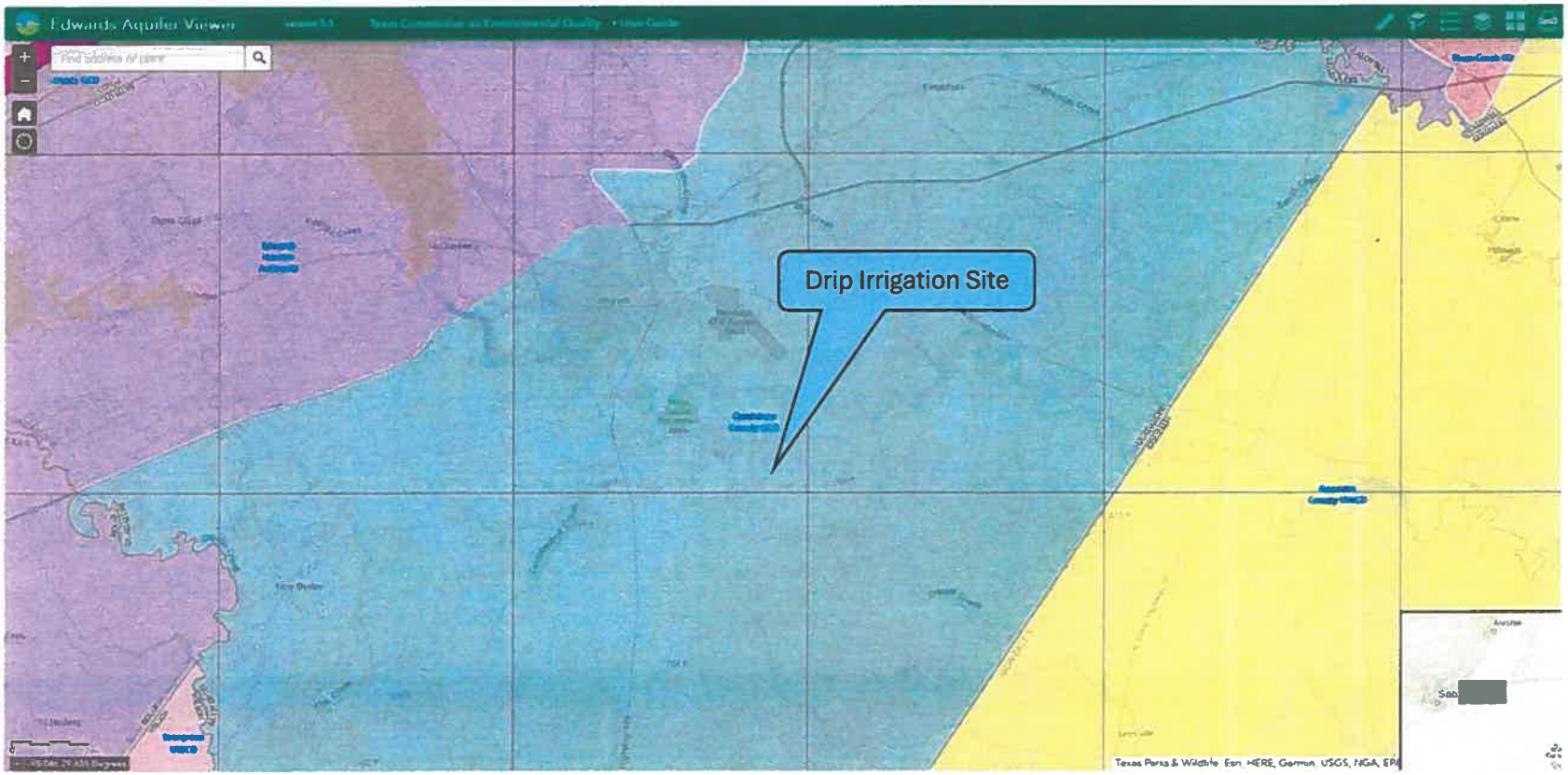
Minor Components

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


WATER DATA
Interactive
Groundwater
Layers
Base Maps
Help
Disclaimer
Texas Water Development Board
seguin, tx
Seguin
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
esri
TEXAS WATER DEVELOPMENT BOARD


Edwards Aquifer Viewer
Drip Irrigation Site

TCEQ Interoffice Memorandum

To: Deba Dutta, P.E., Leader, Municipal Permits Team

From: Andrew Gorton, P.G. Geologist, Water Quality Assessment Team

Date: January 13, 2025

Subject: **Geology Recommendations, Arp Holdings, LP - The Garden of Cordell Oaks WWTF, Application for New Permit, No. WQ0016616-001, Guadalupe County**

Based upon the review of the permit application and an evaluation of geology and groundwater information, the WQA Team reviewing geologist recommends the following as Special Provisions for the new permit (this document does not include Agronomy recommendations).

Recommendations:

The WQA Team geologist recommends the inclusion of current standard special provisions for municipal SADDS facilities. Related to geology and groundwater:

Include standard provisions for SADDS.

1. According to the requirements of 30 TAC §222.81(a), the permittee shall locate the SADDS a minimum horizontal distance of 100 feet from surface waters in the state. The permittee shall locate the SADDS a minimum horizontal distance of 500 feet from public water wells, springs, or other similar sources of public drinking water and a minimum horizontal distance of 150 feet from private wells as described in 30 TAC §309.13(c)(1). The permittee shall not locate a SADDS within a floodway per 30 TAC §222.81(d).

2. The permittee shall develop a Springs/Seeps Monitoring Plan and submit the plan to the TCEQ Water Quality Assessment Team (MC-150) for review, possible modification, and approval within 30 days of permit issuance. At a minimum, the plan shall include:

    a) A procedure to conduct quarterly field checks at the drip irrigation fields and down-gradient of the fields to identify emerging springs or seeps.

    b) A procedure to sample springs or seeps in the event that springs/seeps develop after drip irrigation of effluent commences.

    c) Quarterly field checks and sampling (if applicable) of the springs/seeps shall occur after a minimum rainfall event of 0.5-inch, if possible.

    d) Analysis of springs/seeps water for nutrients, including, but not limited to, a complete nitrogen series [(Nitrate (as N), Nitrite (as N), Total Kjeldahl Nitrogen, ammonia as N], total phosphorus, ortho-phosphate, chlorides, fecal coliform, and specific conductivity.

    e) A record of the quarterly checks and sampling of the springs and seeps shall be maintained in a field log and kept onsite for TCEQ inspection.

f) Monitoring of emerging and existing springs/seeps shall continue for the life of the system.

g) The permittee shall submit the data, including laboratory reports, and a map showing the locations of any seeps/springs that were sampled per the Seeps/Springs Monitoring Plan to the Water Quality Assessment Team (MC-150) of the Water Quality Division, the TCEQ Region 13 (San Antonio) Office, and the Compliance Monitoring Section (MC-224) during the month of September of each year for review. If no seeps/springs were identified during a particular quarter, that information shall be included in the annual report.

h) A procedure for the implementation of corrective measures to remedy the discharge if laboratory analysis indicates that wastewater is emerging as a seep or spring.

i) The permittee shall implement the plan upon approval by the Water Quality Assessment Team. The executive director may request modification of the approved plan if future information indicates that it would be necessary for the protection of the environment.

3. Any recharge features uncovered by construction of and operation of the SADDS fields and wastewater treatment facilities shall be addressed in an updated and certified Recharge Feature Plan. The Recharge Feature Plan will include the best management practices implemented that will prevent impact to recharge features from wastewater application and prevent groundwater contamination. The updated and certified Recharge Feature Plan shall be submitted to the TCEQ Water Quality Assessment Team (MC-150) and the TCEQ Region 13 (San Antonio) Office within 30 days of discovery of the feature. The Recharge Feature Plan must be certified by a Texas-licensed Professional Geoscientist or a Texas-licensed Professional Engineer.

4. The permittee shall comply with buffer zone requirements of 30 TAC Section §309.13(c). A wastewater treatment plant unit, defined by 30 TAC Section §309.11(9), must be located a minimum horizontal distance of 250 feet from a private well and a minimum horizontal distance of 500 feet from a public water well site, spring, or other similar sources of public drinking water, as provided by §290.41(c)(1) of this title.

5. The permittee shall construct berms or swales that will prevent, or divert, stormwater from entering all subsurface wastewater application areas.

ARP HOLDINGS, LP – THE GARDEN OF CORDELL OAKS
PERMIT APPLICATION NO. WQ0016616001
APPLICATION FOR A NEW PERMIT
Technical Completeness Review

Please address the following items:

GEOLOGY/GROUNDWATER ITEMS

1. Domestic Worksheet 3.0, Section 6. Well and Map Information: The application states that there are no water wells within one mile of the disposal site or property boundary. This reviewer identified 13 water wells within one mile of the property boundary (11 being within one-half mile of the effluent disposal area). Please confirm (or deny) this. If confirmed, please include these wells on the USGS topographic map. Complete Table 3.0(3) and provide the well logs for wells within one-half mile of the property or disposal area. These wells must also be shown in Attachment D (USGS Topographic Map), or other map(s) showing the locations of water wells, if the wells exist. See the Texas Water Development Board Water Data Interactive website for water well information: https://www3.twdb.texas.gov/apps/waterdatainteractive/groundwaterdataviewer#.

2. Several figures/maps in the application (e.g., Attachments E, H, K), and Section 11 of Administrative Report 1.0, appear to indicate the effluent application area being 504 acres in size. The actual effluent application area is closer to 5 or 6 acres in size. Please clarify this and submit revised pages as appropriate.

3. Domestic Worksheet 3.0, Section 7. Groundwater Quality (Attachment R): The Groundwater Quality Technical Report was not identified in the application. This Report must assess the impact of the wastewater disposal system on groundwater. This report shall include an evaluation of the water wells, the aquifer at the proposed facility, and use of groundwater in the area (e.g., irrigation public supply, domestic, etc.), the wastewater application rate, and any wastewater pond liners. An example Groundwater Quality Technical Report can be provided upon request.

4. Several figures/aerial photos in the application identify two proposed detention ponds at the facility. Please verify that these are stormwater ponds and not wastewater ponds.

SOILS/AGRONOMY ITEMS

1. Administrative Report 1.0, Section 11.A – Please provide an accurate description of the disposal site location.

2. Domestic Worksheet 3.0, Section 2. Land Application Site(s) – Please include the land use in Table 3.0(1). Please also include total acres to be utilized.

3. Domestic Worksheet 3.0, Section 2. Land Application Site(s) – There is a discrepancy in the flow between what is stated in Table 3.0(1) (20,000 GPD) and what is listed in Technical Report 1.0, Section 1 (18,000 GPD). Please reconcile and submit update worksheets.

4. Domestic Worksheet 3.0, Section 8.A – Please submit a USDA soil map depicting the actual application areas instead of the entire property.

5. Domestic Worksheet 3.0, Section 8.B – Please submit copies of the laboratory results sheets from the soil analyses.

6. Domestic Worksheet 3.3, Section 2 – Please complete the section at its entirety.

For geology/groundwater-related questions, please contact Andrew Gorton, P.G. via email at Andrew.Gorton@tceq.texas.gov (preferred) or at 512-239-4585 and for agronomy related questions, please contact Alan Barraza via email at Alan.Barraza@tceq.texas.gov (preferred) or at 512-239-4642.

Outlook

Re: WQ0016616001 NOD - Arp Holdings LP

From Tracy Kyser <tracyk@velvin-weeks.com>
Date Fri 1/24/2025 1:31 PM
To Andrew Gorton <Andrew.Gorton@Tceq.Texas.Gov>

1 attachment (340 KB)
Garden of Cordell Oaks - Groundwater Quality Report.pdf;

Hi Andrew,

I was reviewing the permit application and realized I never sent the Groundwater Tech Report. I apologize for this mishap. Please find attached report for the application and let me know if you have any questions.

Thank you,

Tracy Kyser
930 E. Corsicana St.
Athens, Tx 75751
903-675-3903
Velvin & Weeks Consulting Engineers, Inc.
tracyk@velvin-weeks.com

From: Andrew Gorton <Andrew.Gorton@Tceq.Texas.Gov>
Sent: Tuesday, November 19, 2024 9:53 AM
To: Alan Barraza <Alan.Barraza@tceq.texas.gov>; Tracy Kyser <tracyk@velvin-weeks.com>
Subject: Re: WQ0016616001 NOD - Arp Holdings LP

Good morning Tracy. I have attached three examples of a Groundwater Tech Report. The Groundwater Tech Report does not have to be more than a page long, just touch on the topics of applying effluent at agronomic rates, information on any wastewater pond liners, the aquifer the facility is located on, general depth to groundwater in the area, uses of groundwater (domestic, irrigation, industrial, public supply, etc.). The purpose to is show that the wastewater disposal operations will not impact groundwater.

Also, I am not sure I saw a response to my question about the 2 ponds on the proposed site: "Several figures/aerial photos in the application identify two proposed detention ponds at the facility. Please verify that these are stormwater ponds and not wastewater ponds."

Please provide the Groundwater Tech Report and the response about the 2 ponds by this Friday, otherwise we will have to start the process to return the application.

Please let me know if you have any questions or comments, or need additional information.

Thank you,

-Andy

Andrew Gorton, P.G.
Texas Commission on Environmental Quality
MC-150
PO Box 13087
Austin, TX 78711-3087
512.239.4585
Andrew.Gorton@tceq.texas.gov

From: Alan Barraza <Alan.Barraza@tceq.texas.gov>
Sent: Tuesday, November 19, 2024 9:39 AM
To: Tracy Kyser <tracyk@velvin-weeks.com>
Cc: Andrew Gorton <Andrew.Gorton@Tceq.Texas.Gov>
Subject: RE: WQ0016616001 NOD - Arp Holdings LP

Good morning Tracy,

All your submittals appear to be sufficient except we have not received a response for the following NOD as it was mislabeled in one of your emails. Please send me the updated worksheet as soon as possible. Thank you.

"Domestic Worksheet 3.0, Section 2. Land Application Site(s) – There is a discrepancy in the acreage between what is stated in Table 3.0(1) (6 acres) and what is listed in Worksheet 3.3, Section 2 (4.67 acres). Please reconcile and submit update worksheets."

Alan Barraza
Agronomist | Water Quality Assessment
TCEQ | Water Quality Division | MC 150
Direct: 512-239-4642
Fax: 512-239-4420

12100 Park 35 Circle
Austin, TX 78753

From: Tracy Kyser <tracyk@velvin-weeks.com>
Sent: Monday, November 18, 2024 4:07 PM
To: Alan Barraza <Alan.Barraza@tceq.texas.gov>
Subject: Re: WQ0016616001 NOD - Arp Holdings LP

Alan,

Here is the Groundwater Quality Report I submitted. Is this not sufficient?

Thank you,

Tracy Kyser
930 E. Corsicana St.
Athens, Tx 75751
903-675-3903
Velvin & Weeks Consulting Engineers, Inc.
tracyk@velvin-weeks.com

From: Tracy Kyser <tracyk@velvin-weeks.com>
Sent: Tuesday, November 12, 2024 4:46 PM
To: Alan Barraza <Alan.Barraza@tceq.texas.gov>
Subject: Re: WQ0016616001 NOD - Arp Holdings LP

Alan,

Please see attached for deficiencies for permit application. The two proposed detention ponds are for stormwater only. Also, I will be sending an updated Groundwater Quality Report this week to you. Let me know if you have any questions.

Thank you,

Tracy Kyser
930 E. Corsicana St.
Athens, Tx 75751
903-675-3903
Velvin & Weeks Consulting Engineers, Inc.
tracyk@velvin-weeks.com

From: Alan Barraza <Alan.Barraza@tceq.texas.gov>
Sent: Thursday, November 7, 2024 11:50 AM
To: Tracy Kyser <tracyk@velvin-weeks.com>
Subject: RE: WQ0016616001 NOD - Arp Holdings LP

Tracy,

Your admin reviewer for that newspaper issue is Rachel Ellis. Her number is 512-239-4658 and her email is Rachel.ellis@tceq.texas.gov

Alan Barraza
Agronomist | Water Quality Assessment
TCEQ | Water Quality Division | MC 150
Direct: 512-239-4642
Fax: 512-239-4420

12100 Park 35 Circle
Austin, TX 78753

From: Alan Barraza
Sent: Thursday, November 7, 2024 8:10 AM
To: Tracy Kyser <tracyk@velvin-weeks.com>
Cc: Andrew Gorton <Andrew.Gorton@Tceq.Texas.Gov>
Subject: RE: WQ0016616001 NOD - Arp Holdings LP

Good morning, Tracy. Do you have any updates on the pending NODs? A response is due today. Thank you

Alan Barraza
Agronomist | Water Quality Assessment
TCEQ | Water Quality Division | MC 150
Direct: 512-239-4642
Fax: 512-239-4420

12100 Park 35 Circle
Austin, TX 78753

From: Tracy Kyser <tracyk@velvin-weeks.com>
Sent: Thursday, October 24, 2024 2:50 PM
To: Alan Barraza <Alan.Barraza@tceq.texas.gov>
Subject: Re: WQ0016616001 NOD - Arp Holdings LP

Thank you. I will get these addressed

Thank you,

Tracy Kyser
930 E. Corsicana St.
Athens, Tx 75751
903-675-3903
Velvin & Weeks Consulting Engineers, Inc.
tracyk@velvin-weeks.com

From: Alan Barraza <Alan.Barraza@tceq.texas.gov>
Sent: Thursday, October 24, 2024 2:06 PM
To: Tracy Kyser <tracyk@velvin-weeks.com>
Cc: Jim@jnmtechnologies.com <Jim@jnmtechnologies.com>; Andrew Gorton <Andrew.Gorton@Tceq.Texas.Gov>
Subject: WQ0016616001 NOD - Arp Holdings LP

You don't often get email from alan.barraza@tceq.texas.gov. Learn why this is important

Tracy,

The Water Quality Assessment (WQA) Team of the Texas Commission on Environmental Quality has completed a review of the permit application information and identified deficiencies (attached) that must be addressed before the WQA Team can continue with the technical review. The deficient item(s) will require your response in a timely, complete, and accurate manner.

An accurate and complete revised permit application is essential for making recommendations to the commission regarding whether this permit should be issued. Based on the information provided in the application, the executive director does not have sufficient information to make a recommendation. Therefore, you must send updated technically complete and accurate information by **November 7th, 2024**.

Please let us know if you have any questions.

Alan Barraza
Agronomist | Water Quality Assessment
TCEQ | Water Quality Division | MC 150
Direct: 512-239-4642
Fax: 512-239-4420

12100 Park 35 Circle
Austin, TX 78753

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

January 24, 2025

The Garden of Cordell Oaks is located in a hot, semi-arid region in the southern part of Texas. Located southeast of Seguin, TX, this area is a humid subtropical climate with hot to scorching summers and warm to cool winters with minimal precipitation.

The water wells in the surrounding area within a mile of the proposed site, pull groundwater from the Carrizo-Wilcox Aquifer. The Carrizo-Wilcox Aquifer is a major aquifer extending from the Louisiana border to the border of Mexico in a wide band adjacent to and northwest of the Gulf Coast Aquifer. It consists of the Hooper, Simsboro, and Calvert Bluff formation of the Wilcox Group and the overlying Carrizo Formation of the Claiborne Group. The aquifer is primarily composed of sand locally interbedded with gravel, silt, clay, and lignite. Although the Carrizo-Wilcox Aquifer reaches 3,000 feet in thickness, the freshwater saturated thickness of the sands averages 670 feet.

Water quality in the Carrizo-Wilcox Aquifer shows isolated areas of slightly saline to moderately saline groundwater in the eastern and central portions of the aquifer and more widespread areas of slightly to moderately saline groundwater in the southwest. Groundwater in the unconfined area is hard and typically has total dissolved solids concentrations of less than 1,000 milligrams per liter. Groundwater in the confined area of the aquifer is generally softer and has total dissolved solids concentrations of less than 1,000 milligrams per liter except in the southern and western portions of the aquifer. Parts of the aquifer in the Winter Garden area and portions of Brazos County are slightly to moderately saline, with total dissolved solids ranging from 1,000 to 7,000 milligrams per liter.

Irrigation pumping accounts for slightly more than half the water pumped and pumping for municipal supply accounts for another 40 percent. Water levels have declined in the Winter Garden area because of irrigation pumping and in the northeastern part of the aquifer because of municipal pumping.

One of Texas' most important natural resources is its soil. Texas soil is complex because of the wide diversity of climate, vegetation, geology, and landscape. More than 1,300 different kinds of soil are recognized in Texas. Each has a specific set of properties that affect its use. The Garden of Cordell Oaks is in the Post Oak/Claypan area which comprises about 6.1 million acres in east-central Texas just east of the Blackland Prairie. The landscape is gently rolling, moderately dissected woodland also known as the Post Oak Belt or Post Oak Savannah. The surface drainage in this area is moderate. Upland soils commonly have a thin, light-colored, acid sandy loam surface layer over dense, mottled red, yellow, and gray claypan subsoils. Some deep, sandy soils with less clayey subsoils exist. Bottomlands are deep, highly fertile, reddish-brown to dark-gray loamy to clayey soils. Land use is mainly rangeland. Some areas are in improved pastures. Most cropland is in bottomlands that are protected from flooding. Major crops are cotton, grain sorghums, corn, hay, and forage crops, most of which are irrigated. Brush control on rangeland and irrigation water management on cropland are the major soil-management problems. Water erosion is a serious problem on the highly erosive claypan soils, especially where they are overgrazed.

The proposed location for the SAAD system shall be located in this area. Since the area below the site is mostly clay basin, any water leakage at this depth is unlikely to occur. Chances of contamination are very low due to the arid region and clays and loam soils below the WWTP and subsurface drip irrigation system. The application rate is 0.1 gallon per square foot per day. The water will be applied to the root zone of the grass cover and should not result in any movement out of that zone. Furthermore, there will be no wastewater ponds on the property, so liners will not be required. The two ponds shown on the plans are for stormwater detention only.

Thank you,

VELVIN & WEEKS CONSULTING ENGINEERS, INC.



Scott Campbell, E.I.T.
Civil Engineer

Texas Commission on Environmental Quality
Investigation Report

The TCEQ is committed to accessibility. If you need assistance in accessing this document, please contact oce@tceq.texas.gov

Customer: Arp Holdings, LP
Customer Number: CN606303071

Regulated Entity Name: THE GARDEN OF CORDELL OAKS
Regulated Entity Number: RN112042049

Investigation # 2029738
Investigator: CATERINA BEVERATI
Conducted: 12/10/2024 -- 12/10/2024
Program(s): WASTEWATER
Investigation Type: Site Assessment
Additional ID(s) WQ0016616001

Incident Numbers
Site Classification DOMESTIC LAND DISPOSAL
No Industry Code Assigned
Location:

Address: 1313 MCKNIGHT RD,
SEGUIN, TX , 78155

Local Unit: REGION 13 - SAN ANTONIO
Activity Type(s WWSTEASSMT - WW Site Assessment

Principal(s):

Role	Name
RESPONDENT	ARP HOLDINGS LP

Contact(s):

Role	Title	Name	Phone	
REGULATED ENTITY CONTACT	GENERAL MANAGER	MR DUSTIN ARP	Phone	(830) 357-6116
PARTICIPATED IN	GENERAL MANAGER	MR DUSTIN ARP	Phone	(830) 357-6116

Other Staff Member(s):

Role	Name
Investigator	JAVIER ANGUIANO
Supervisor	JAVIER ANGUIANO
QA Reviewer	ANNA MARIE REVENBERG

Associated Check List

Checklist Name	Unit Name
WQ DOMESTIC OR INDUSTRIAL WASTEWATER SITE ASSESSMENT REPORT	Garden of Cordell Oaks
WQ SUBSURFACE AREA DRIP DISPERSAL SITE ASSESSMENT	Garden of Cordell Oaks

Investigation Comments:

INTRODUCTION

The Garden of Cordell Oaks, Subsurface Application Drip Dispersal System (SADDS) site assessment for permit application No.: WQ0016616001 was performed on December 10, 2024. The site assessment was performed to verify the information provided in the Permittee's wastewater application. The site was evaluated by Texas Commission on Environmental Quality (TCEQ) San Antonio Region Office investigators Mr. Javier Anguiano, and Ms. Caterina Beverati.

GENERAL FACILITY AND PROCESS INFORMATION

The Garden of Cordell Oaks is located at 1313 McKnight Rd, Seguin, Guadalupe County, Texas. Arp Holdings, L.P. is the property owner listed on the Guadalupe County Appraisal District (CAD) Website for this property (CAD ID No.: 51767). Arp Holdings is also the applicant for the permit.

BACKGROUND

A copy of the permit application was obtained from the TCEQ Municipal Permits Teams, for review, prior to conducting the site assessment. The application is for a new permit, therefore there is no prior compliance history for this Regulated Entity (RN112042049).

ADDITIONAL INFORMATION

On December 10, 2024, the investigators met with Mr. Dustin Arp, general manager of Arp Holdings, L.P., at the proposed SADDS location. Mr. Arp escorted the investigators around the boundaries of the proposed irrigation sites.

The application field is located on the Southeast side of the proposed development and treatment plan, and it is listed as 504 acres of disposal area in the application. However, the total acreage of the property is 17.89 acres. The proposed drip field is 5.04 acres. The decimal point is missing in Section 11 A of TCEQ-10053 (01/09/2024) Domestic Wastewater Permit Application Administrative Report form and on the 'Map Exhibit for 150 lf boundary" engineer sheets. The decimal point is also missing for both pond sizes on the engineer sheets.

At the time of this site assessment, the application field was not visually marked or delineated. The boundaries of the application fields were approximated by using a Google Earth map overlay on Mr. Arp's GPS-enabled phone. The investigators walked the field boundaries during this site assessment. The site appeared undeveloped. The soil was mostly sandy and covered by native grasses and vegetation. The investigators also noticed a man-made pond on one of the neighboring properties, south of the disposal field. However, the pond is located uphill from the disposal field. The disposal site appeared to be free from obvious features and to be as described in the permit application.

No Violations Associated to this Investigation

Signed Caterina Beverati **Date** 12/12/2024

Environmental Investigator

Signed **Date** 1/3/2025

Supervisor

Attachments: (in order of final report submittal)

____Enforcement Action Request (EAR)

____Letter to Facility (specify type) : _____

Investigation Report

____Sample Analysis Results

____Manifests

____Notice of Registration

__✓__Maps, Plans, Sketches

___✓__Photographs

____Correspondence from the facility

___✓__Other (specify) :

_____

_____

TCEQ PHOTOGRAPHIC DOCUMENTATION

Investigation Date:	12/10/24	**Location:**	1313 McKnight Rd, Seguin, Guadalupe County		
Investigation No.:	2029738	**RN No.:**	RN112042049	**Photographer:**	Caterina Beverati



DESCRIPTION:

The Garden of Cordell Oaks proposed disposal site.

PHOTO #1 of 4



DESCRIPTION:

The Garden of Cordell Oaks proposed disposal site.

PHOTO #2 of 4



DESCRIPTION:

Man-made pond south of the Garden of Cordell Oaks proposed disposal site.

PHOTO #3 of 4



DESCRIPTION:

Man-made pond south of the Garden of Cordell Oaks proposed disposal site.

PHOTO #4 of 4

From: Caterina Beverati
To: dustin.arp@sparkhomestexas.com
Subject: SADDS Site inspection scheduled for 12/10/24 at 1pm
Date: Friday, December 6, 2024 11:05:00 AM
Attachments: image001.png

Mr. Arp,

To follow up on our phone conversation earlier, we are meeting on December 10, 2024, at 1 pm for the site inspection of the SSAD, ARP Holdings, L.P. (permit application WQ0016616001). The address I have on file is 1313 McKnight Rd, Seguin, TX 18155.

Please let me know if you have any questions.

Best,

Caterina Beverati
WQ Environmental Investigator
TCEQ San Antonio Region Office
Office: 210-490-3096 | Direct: 210-403-4040



How is our customer service? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

From: Caterina Beverati
To: Andrew Gorton
Subject: RE: Site inspection for SADDS, WQ0016616001, ARP Holdings, L.P.
Date: Thursday, December 12, 2024 11:39:00 AM
Attachments: 2029738_SADDS Checklist 2_WQ0016616001.pdf
image001.png

Good morning Andrew,

I realized we might have used the wrong checklist for the inspection. I filled out a more detailed one for the SSADS site assessment and it is attached to this email. I also noticed in the permit application there is a typo in the size of the disposal area. The application lists 504 acres, but it should be 5.04. The decimal is missing.

Let me know if you have any questions.

Best,

Caterina Beverati
WQ Environmental Investigator
TCEQ San Antonio Region Office
Office: 210-490-3096 | Direct: 210-403-4040

From: Andrew Gorton <Andrew.Gorton@Tceq.Texas.Gov>
Sent: Tuesday, December 10, 2024 3:37 PM
To: Caterina Beverati <Caterina.Beverati@tceq.texas.gov>
Subject: Re: Site inspection for SADDS, WQ0016616001, ARP Holdings, L.P.

Hi Caterina, thank you for providing this report. I can use it until you send me the copy reviewed by your management. If that happens after Dec 19, then so be it. I will let you know if I have any questions/comments.

Thank you,

-Andy

Andrew Gorton, P.G.

Texas Commission on Environmental Quality

MC-150

PO Box 13087

Austin, TX 78711-3087

512.239.4585

Andrew.Gorton@tceq.texas.gov

From: Caterina Beverati <Caterina.Beverati@tceq.texas.gov>
Sent: Tuesday, December 10, 2024 3:23 PM
To: Andrew Gorton <Andrew.Gorton@Tceq.Texas.Gov>
Subject: Site inspection for SADDS, WQ0016616001, ARP Holdings, L.P.

Hello Andrew,

I am the investigator assigned to the site inspection for the above-referenced permit application. I conduct the site assessment today, December 10, 2024. During the inspection, the site appeared undeveloped. The soil was mostly sandy and covered by native grasses and vegetation. There is a stack tank south of the disposal field, but it is upstream from the site. Overall, the disposal site appeared to be as described in the application.

I am attaching the checklist I used for the site inspection to this email. I am working on the report, but I can't guarantee that it will be QA reviewed and approved by management by December 19.

Don't hesitate to contact me if you have any questions or need additional information from me.

Thank you,

Caterina Beverati
WQ Environmental Investigator
TCEQ San Antonio Region Office
Office: 210-490-3096 | Direct: 210-403-4040



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

How is our customer service? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

The TCEQ is committed to accessibility.
To request a more accessible version of this report, please contact the TCEQ Help Desk at (512) 239-4357.

Texas Commission on Environmental Quality

CHECKLIST WORKSHEET

WQ DOMESTIC OR INDUSTRIAL WASTEWATER SITE ASSESSMENT REP

Reg Ent Name : APP HOLDINGS LP. **Date :** 12/10/2024

Add ID _____ **Investigator Name** CATERINA BEVERATI

Item No	Description	Answer	Citations	Notes
1	Nature or business of regulated entity producing wastewater/waste:	MANUFACTURED HOME COMMUNITY		
2	If an amendment application, indicate changes requested by the applicant:	NA		
3	Is the location of the waste treatment facilities as described in the application? If no, describe and indicate on an attached map.	YES		
4	Is the discharge route or disposal site as described in the application? If no, describe and indicate on an attached map.	YES		
5	Are any alternate discharge routes or disposal sites available? If yes, describe and indicate on an attached map.	NO		
6	Is the general character of the areas adjacent to the disposal area as shown on the application map? If no, describe.	YES		
7	Is there any residential property within 500 feet of the plant site? If yes, estimate distance.	NO		
8	Downstream land area is: (industrial, residential, commercial, undeveloped, agricultural, other (specify))	UNDEVELOPED/ AGRICULTURAL		
9	For discharge to a watercourse, is a domestic water supply intake located wtihin 500 feet downstream of the processed discharge? If yes, describe.	NA		
10	Are there regional wastewater systems and/or existing wastewater systems within the area? If yes, describe.	NO		
11	Land Application?	NO		
11a	Is the disposal area as described in the application? If no, describe.	NA		
11b	Is the disposal system as described in the application? If no, describe.	NA		
12	Existing facilities?	NO		
12a	Are treatment units as described in the application? If no, describe.	NA		
12b	Are sludge management and disposal practices as described in the application? If no, describe.	NA		
12c	Describe the present operation and condition of existing facilities:	NA		
13	Are you aware of any public opposition to the use of this site or route of discharge? Comments:	NO		
14	Additional comments:			

The TCEQ is committed to accessibility.
To request a more accessible version of this report, please contact the TCEQ Help Desk at (512) 239-4357.

Texas Commission on Environmental Quality

CHECKLIST WORKSHEET

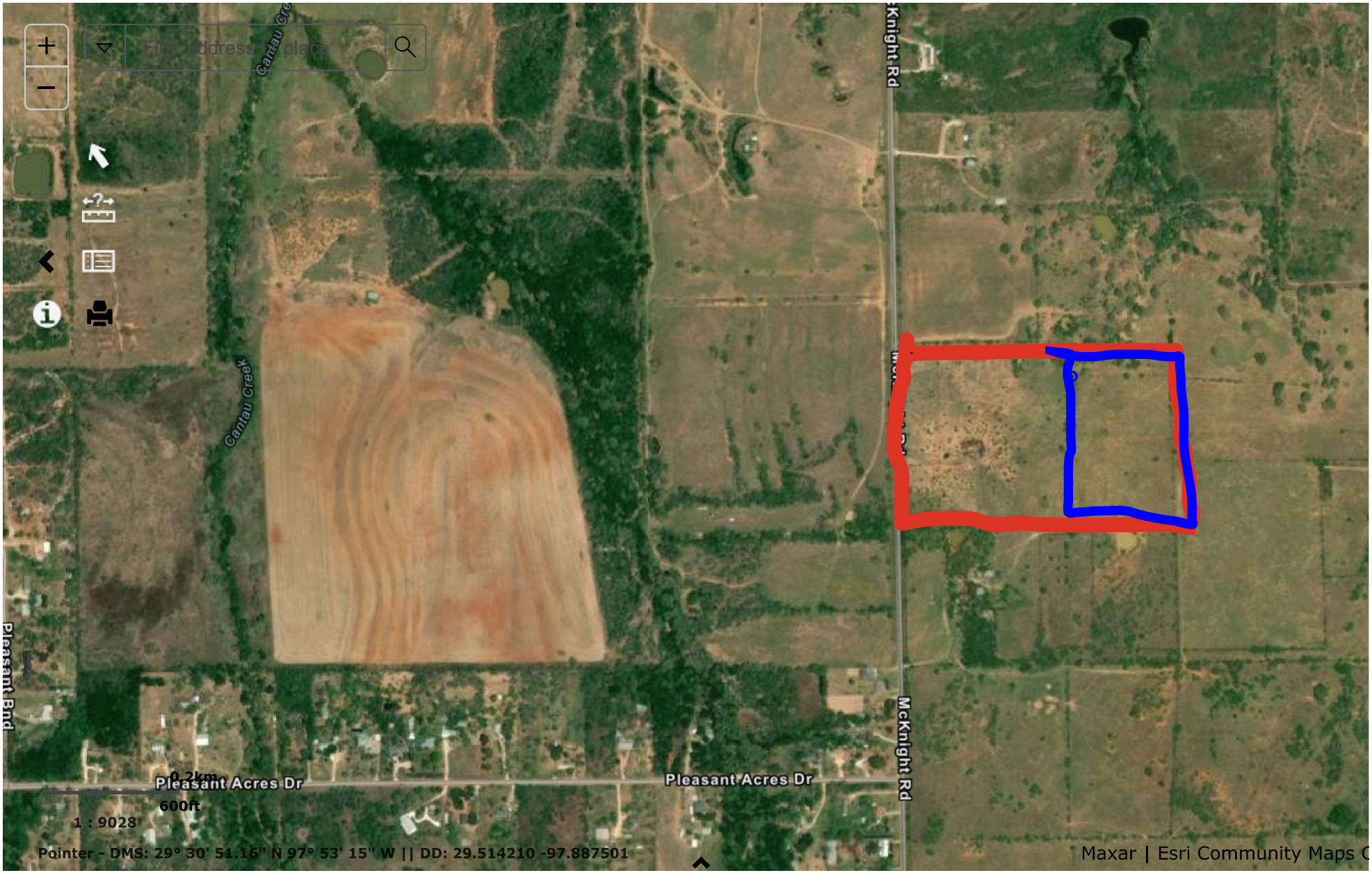
WQ SUBSURFACE AREA DRIP DISPERSAL SITE ASSESSMENT

Reg Ent Name : The Garden of Cordell Oaks (ARP Holdings LP) **Date :** 12/10/2024

Add ID WQ0016616001 **Investigator Name** Caterina Beverati

Item No	Description	Answer	Citations	Notes
1A	GENERAL			
2	If it has rained within the past 7days of the site visit what was the approximate rain total?	N/A		
3	Briefly describe the number and acreage of proposed land application fields visited.	5.04		
4	SOILS			
5	Do the soils appear to be rocky?	No		
6	Are there outcrops exposed or areas of thin soils?	No		
7	Describe the soil texture.	Sandy		
8	Describe any eroded areas.	N/A		
9	VEGETATION			
10	Is the land application site dominated by canopy (plants growing above the grasses) or by grasses (shrubs and trees)?	grasses		
11	Describe the existing vegetation in the land application site by growth habit; i.e., trees and grasses.	Native grasses		
11A	Of the trees located in the land application site, are there more hardwoods or more pines?	Hardwood		
12	What type of grasses cover most of the grassed areas (i.e., bunch-type grasses or bermuda- type grasses?	Bermuda		
13	RECHARGE FEATURES			
14	Are there any wells in the proposed land application fields?	No		
15	Are there any excavation or material pits in the proposed land application fields?	No		
16	Are there any caves, sinkholes, solution cavities, fractured rock outcrops, faults or vuggy rock?	No		
17	Describe any springs or seeps.	N/A		
18	Describe any areas of perched water or apparent shallow groundwater.	N/A		
19	TOPOGRAPHY			
20	Describe the topography (i.e., flat, steep, hilly, etc.)	flat		
21	Describe any creeks, streams, rivers, drainage patterns or roadside ditches crossing or within approximately 100 feet of the proposed land application fields?	N/a		
22	Describe any ponds, lakes or stock ponds in or within approximately 100 feet of the proposed land application fields?	Man-made pond uphill of the application field		on a south neighboring property.

Approximate SADDS field outlined in blue. Approximate property outlined in red.



TEXAS WATER DEVELOPMENT BOARD

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.

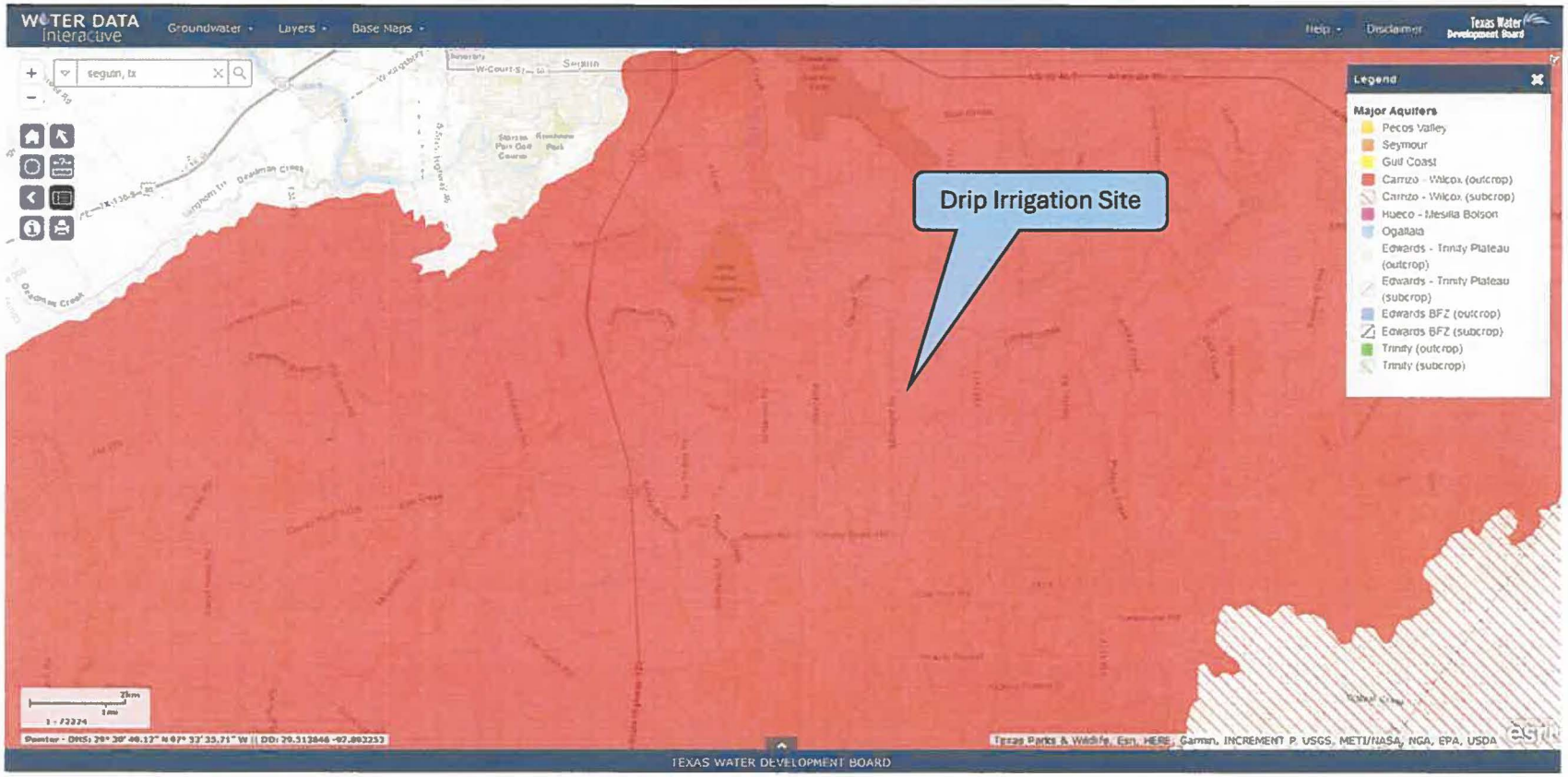
Recharge Plan and Site Inspection Completed by:

James F. Prochaska, MS-PE
TXPE License # 80504
TBPE Firm No. 21045

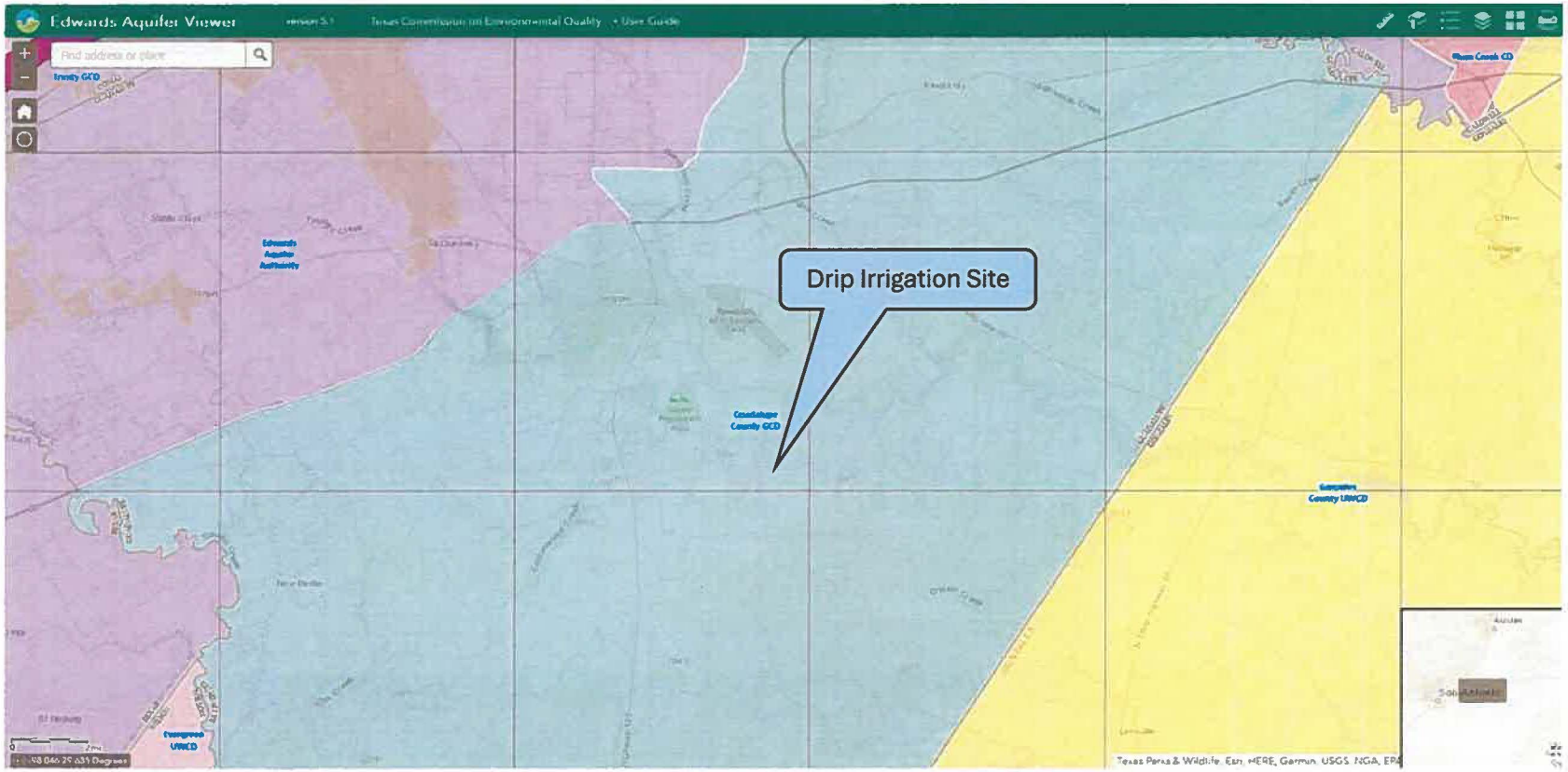


June 21, 2024

Recharge Feature Plan Exhibit 2 – Texas Water Development Board

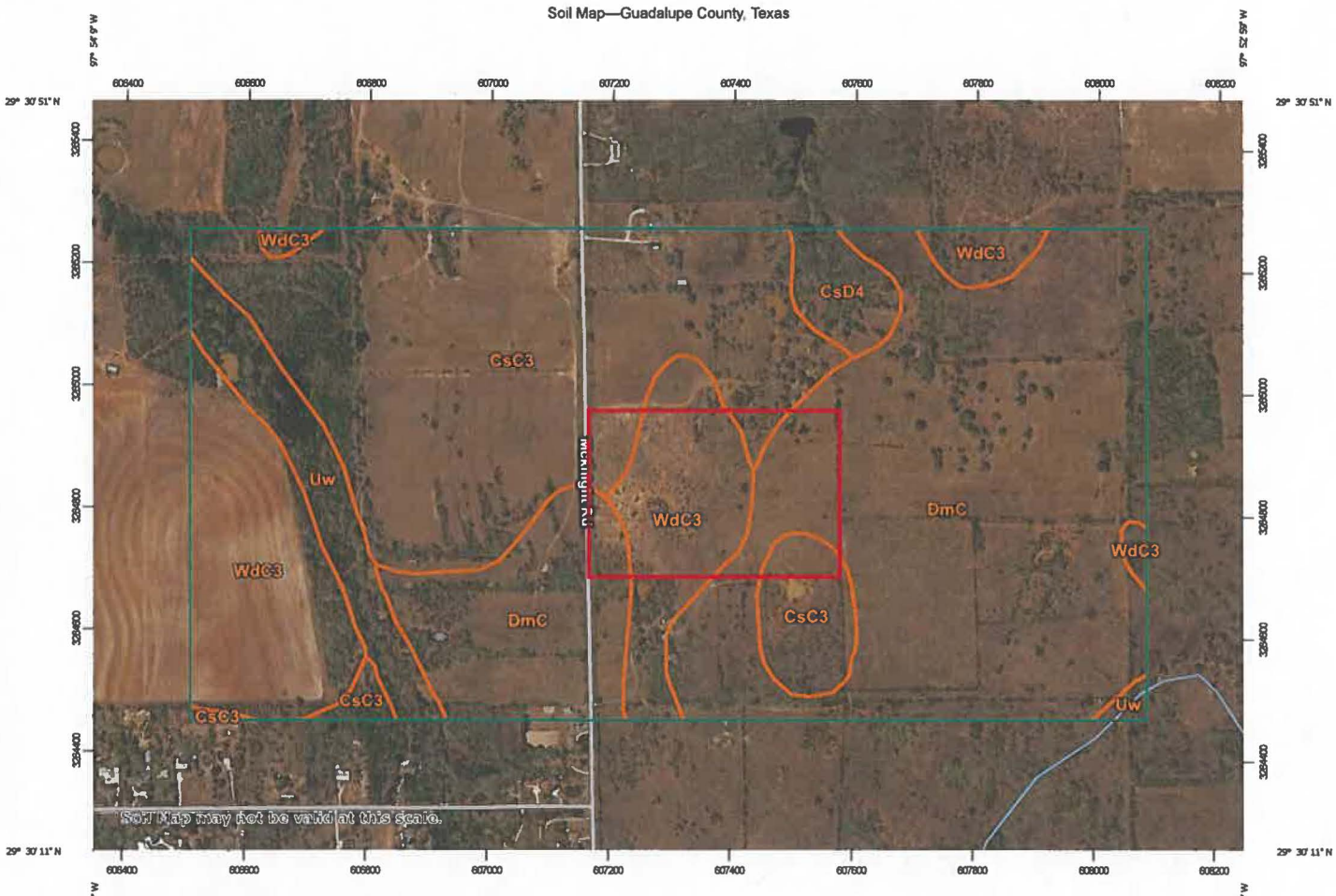

WATER DATA Interactive
Groundwater
Layers
Base Maps
Help
Disclaimer
Texas Water Development Board
Seguin, tx
Legend
Major Aquifers
Pecos Valley
Seymour
Gulf Coast
Carrizo - Wilcox (outcrop)
Carrizo - Wilcox (subcrop)
Hueco - Mesilla Bolson
Ogallala
Edwards - Trinity Plateau (outcrop)
Edwards - Trinity 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
Drip Irrigation Site

Recharge Feature Plan Exhibit 4 – Natural Resources Conservation Service

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

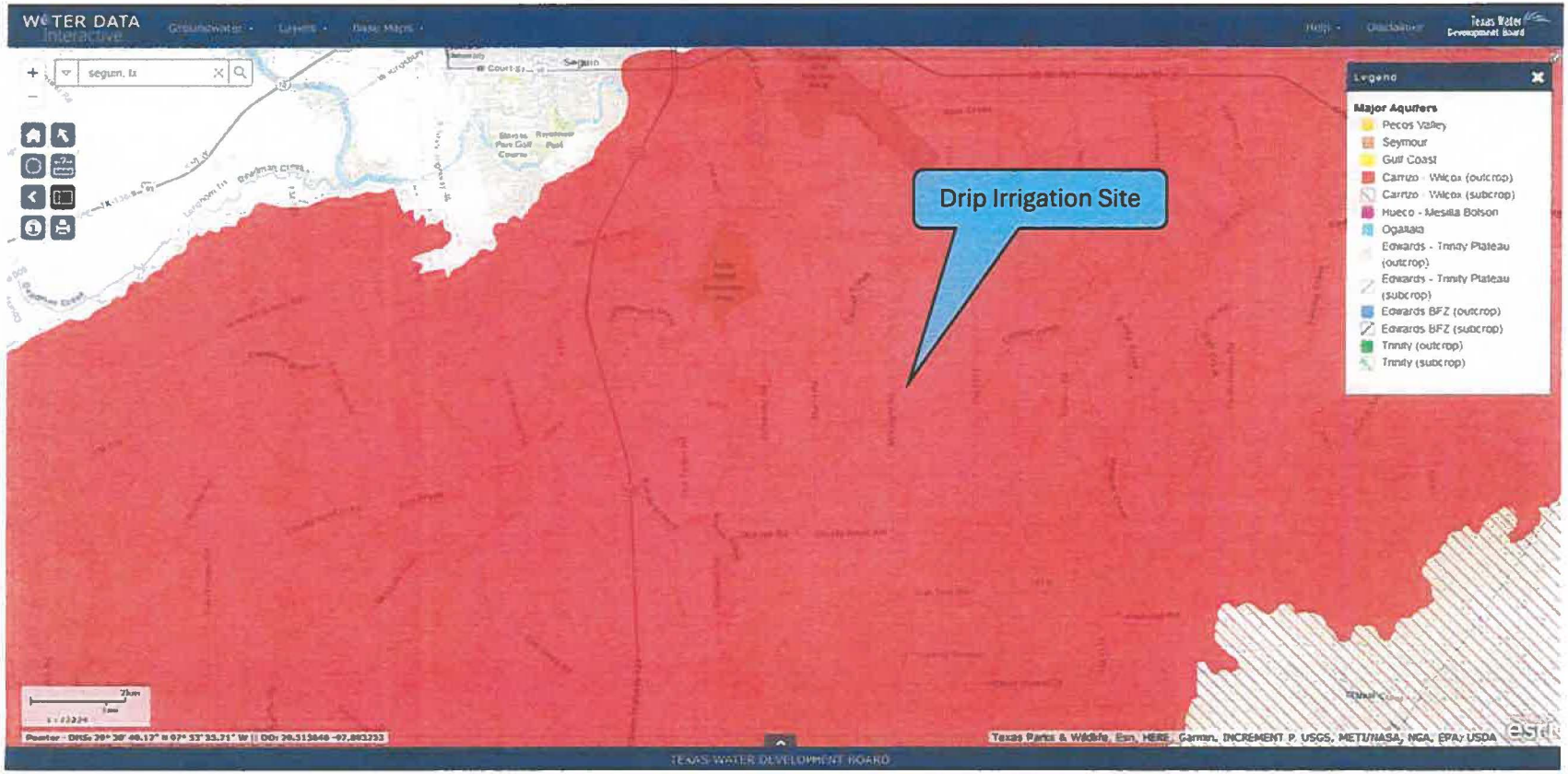
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R087AY005TX - Sandy Loam
Hydric soil rating: No

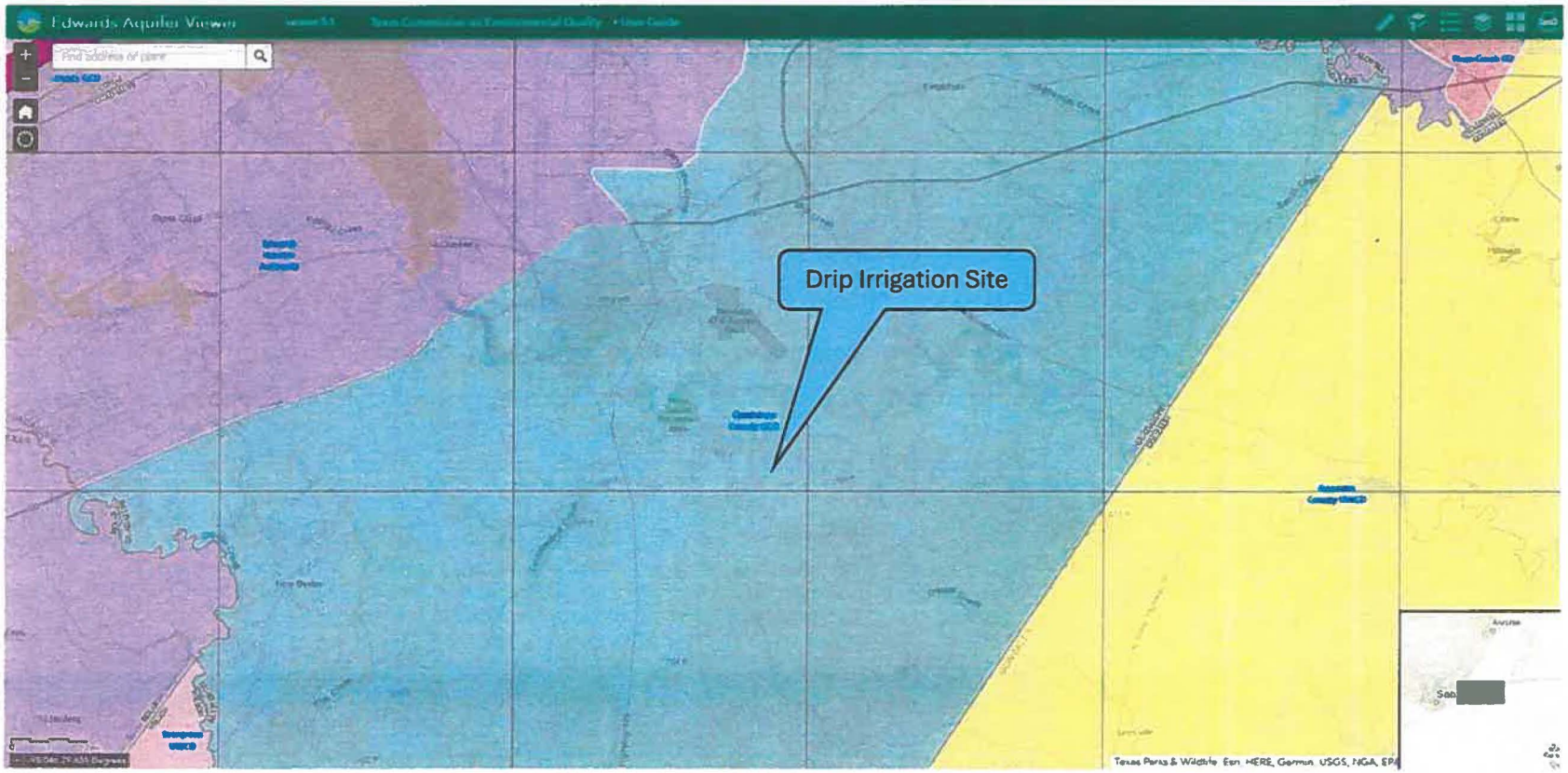
Minor Components

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


WATER DATA
Interactive
Groundwater
Layers
Base Maps
Help
Disclaimer
Texas Water Development Board
seguin, tx
Seguin
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
esri
TEXAS WATER DEVELOPMENT BOARD


Edwards Aquifer Viewer
Drip Irrigation Site

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.

RECEIVED
SEP 09 2024
Water Quality Applications Team

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			ement Plan	☐	☐
Worksheet 3.0			e	☐	☐
Worksheet 3.1					
Worksheet 3.2					
Worksheet 3.3					
Worksheet 4.0					
Worksheet 5.0					
Worksheet 6.0					
Worksheet 7.0					

original copy

RECEIVED
SEP 09 2024
Water Quality Applications Team

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 la ument and all attachments were prepared under my direction or supervision in ed to assure that qualified personnel properly gather ased on my inquiry of the person or persons who m y responsible for gathering the information, the infor owledge and belief, true, accurate, and complete. I r submitting false information, including th knowing violations.

Original copy w/ signature

I further certify that I an e Code § 305.44 to sign and submit this document, a such authorization upon request.

Signatory name (typed

Signatory title: GENA

Signature: _____ 01-11-24

(Use blue ink)

Subscribed and Sworn to before me by the said Dustin Arp

on this 11th day of January, 20 24.

My commission expires on the 17th day of October, 20 24.

Tera Jerulle

Notary Public

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

[SEAL]

Coma

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 BOD5

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
- ☐ 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		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

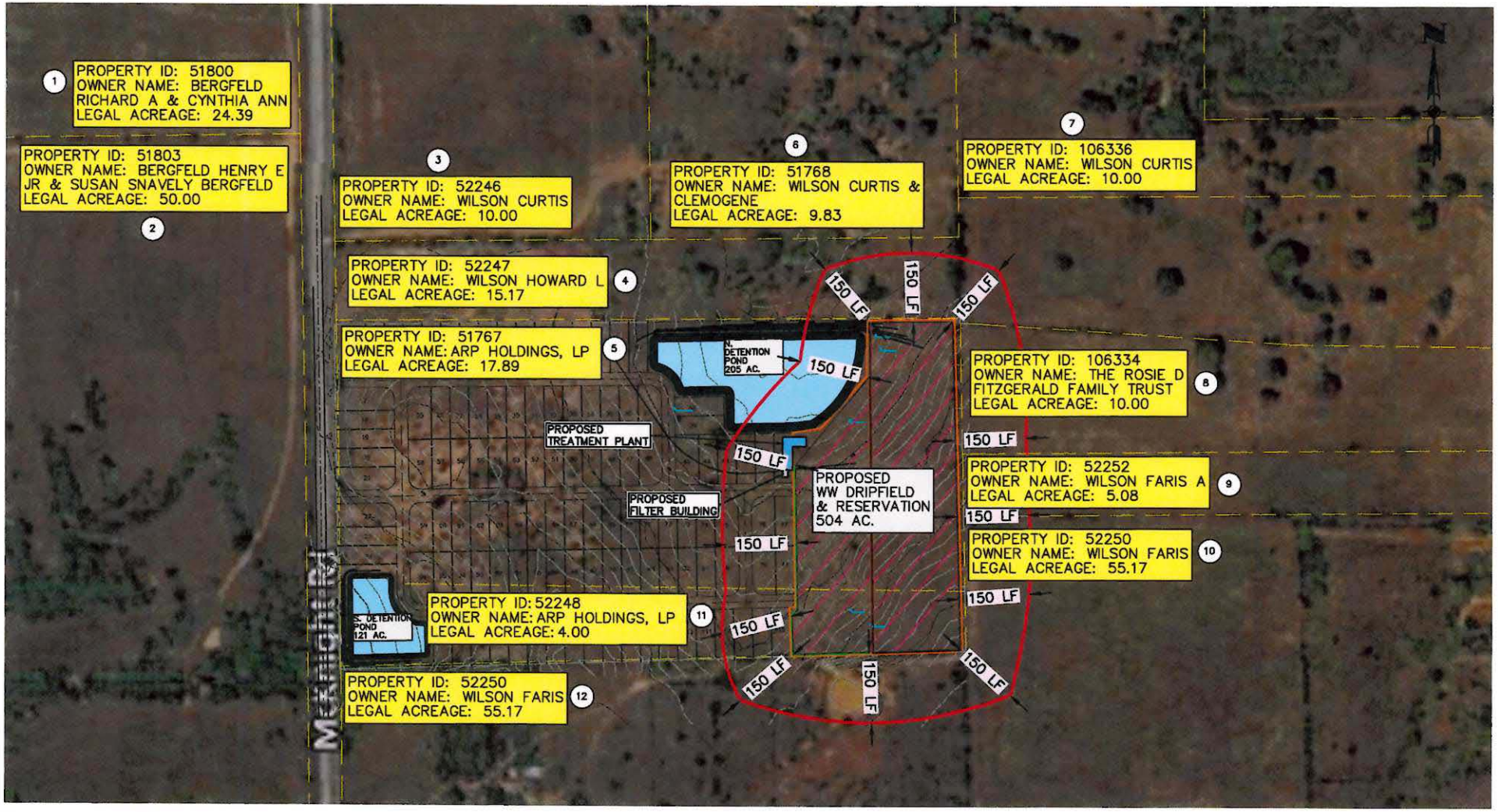
ADMINISTRATIVE REPORT 1.0 – SECTION 13

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 R. Weeks Consulting Engineers, Inc.
PHONE 903.675.2803
FAX 903.675.3345
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

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

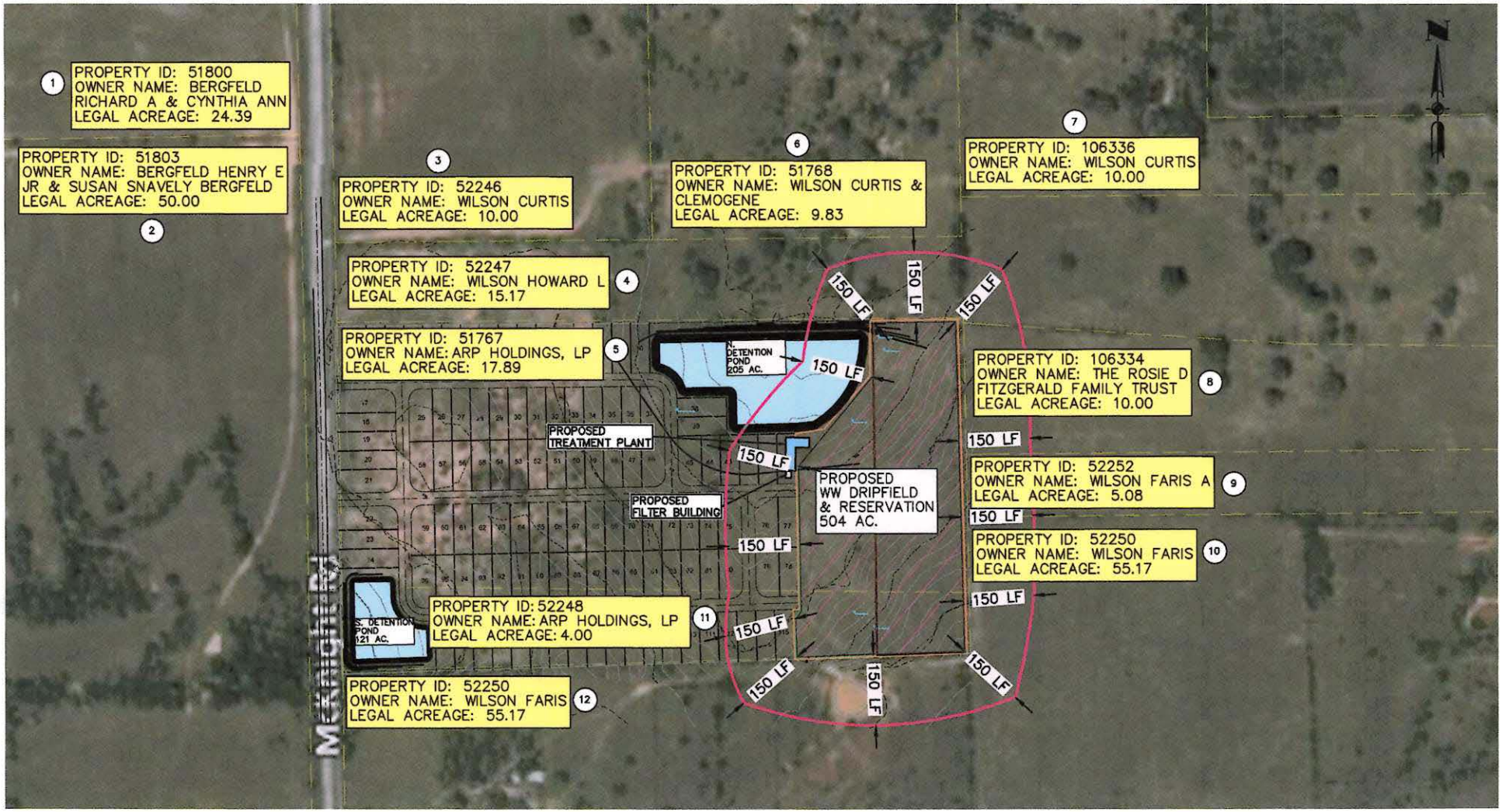


County Rd 130

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 903.675.8345
VWCE@VELVIN-WEEKS.COM
930 EAST CORSICANA
ATHENS, TEXAS 75751
TEXAS REGISTERED ENGINEERING FIRM F-153

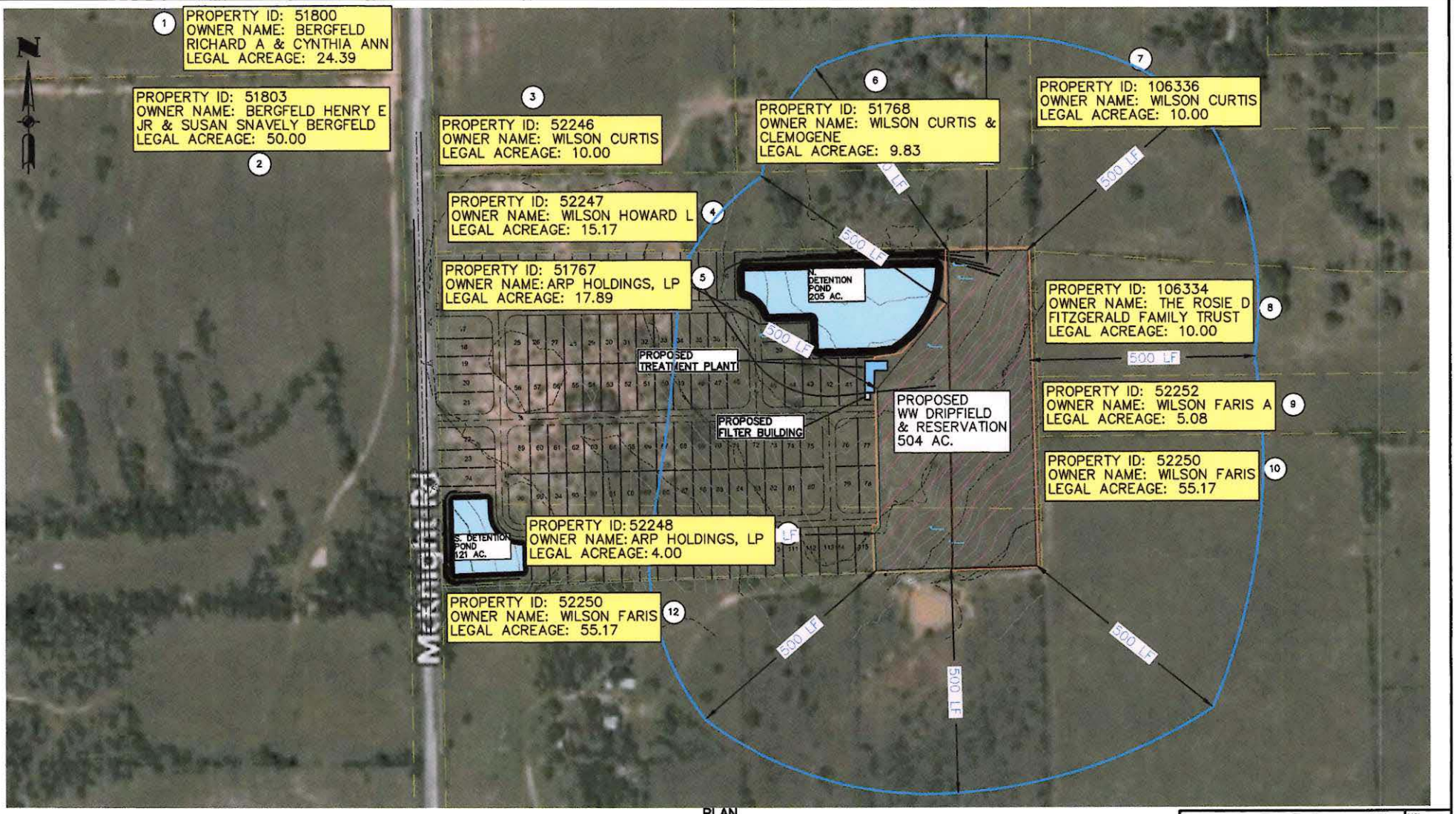
DATE Sep 04, 24
DESIGN T.N.H.
DRAWN T.L.M
CHECKED T.N.H.

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

SHEET 1 of 3

JOB NO. 5306

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 903.675.8345
VWCE@VELVIN-WEEKS.COM
330 EAST CORSICANA
ATHENS, TEXAS 75751
TEXAS REGISTERED ENGINEERING FIRM F-155

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

MAP EXHIBIT FOR 500 LF BOUNDARY

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

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

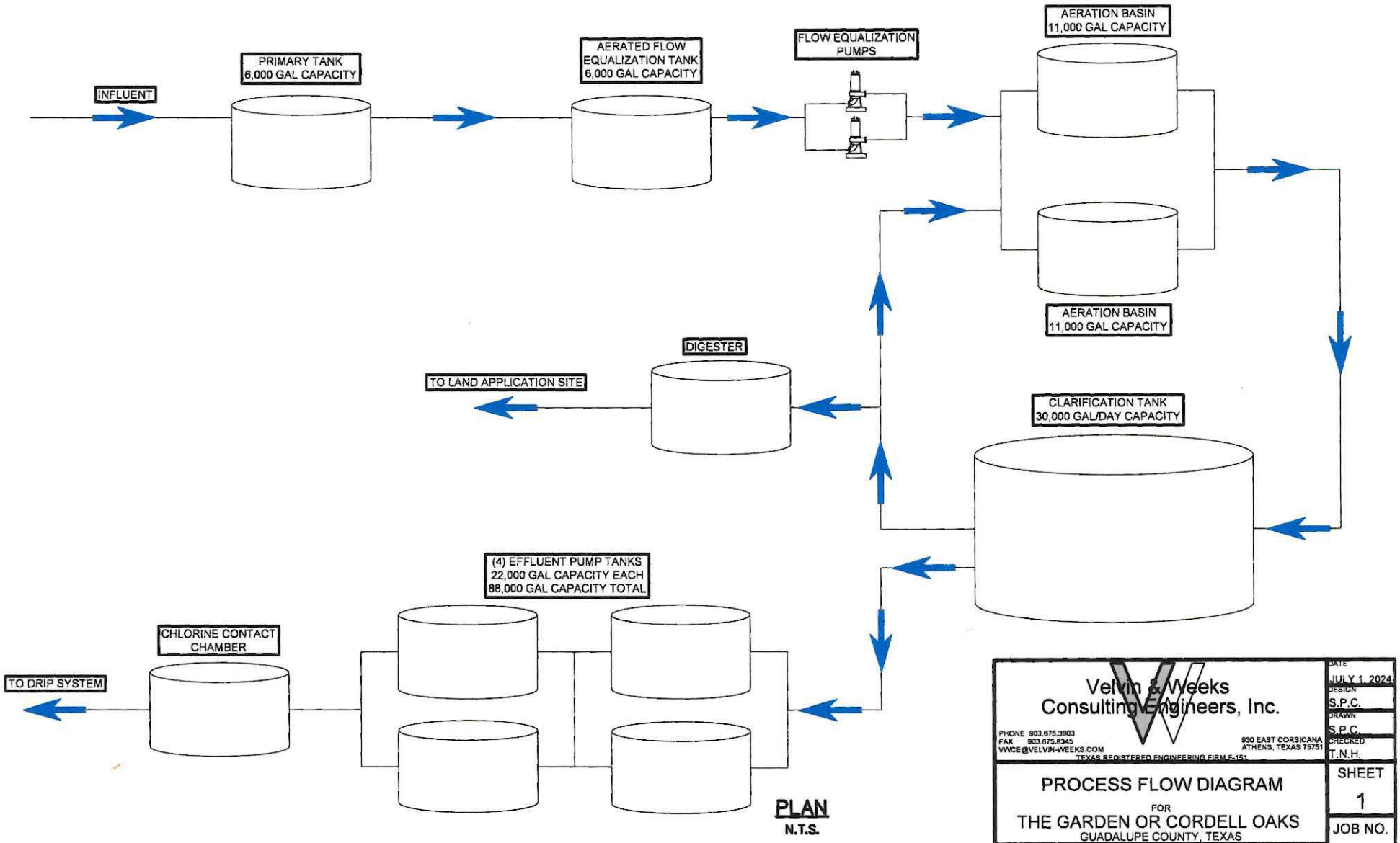
One compartment trash trap, flow equalization, aeration, clarification, effluent storage, inlet and outlet baffles in trash tank, duplex flow equalizations pumps, simplex flow equalization blower, duplex aeration blowers – 100 percent each, 8 foot sidewater clarifier depth, effluent storage tank, duplex 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

SHEET 1

JOB NO. XXXX

PLATE 1

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 903.675.2345
VWCE@VELVIN-WEEKS.COM
930 EAST CORSICANA
ATHENS, TEXAS 75752
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.

CE11B77F-D47F-4E12-B5FC-476863C886B6 --- 2022/05/27 12:10:21 -8:00 --- Remote Notary

DocVerify ID: CE11B77F-D47F-4E12-B5FC-476863C886B6
www.docverify.com
Page 1 of 7 | 1476863C886B6

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."

CE11B77F-D47F-4E12-B5FC-476863C888B6 --- 2022/05/27 12:10:21 -8:00 --- Remote Notary

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

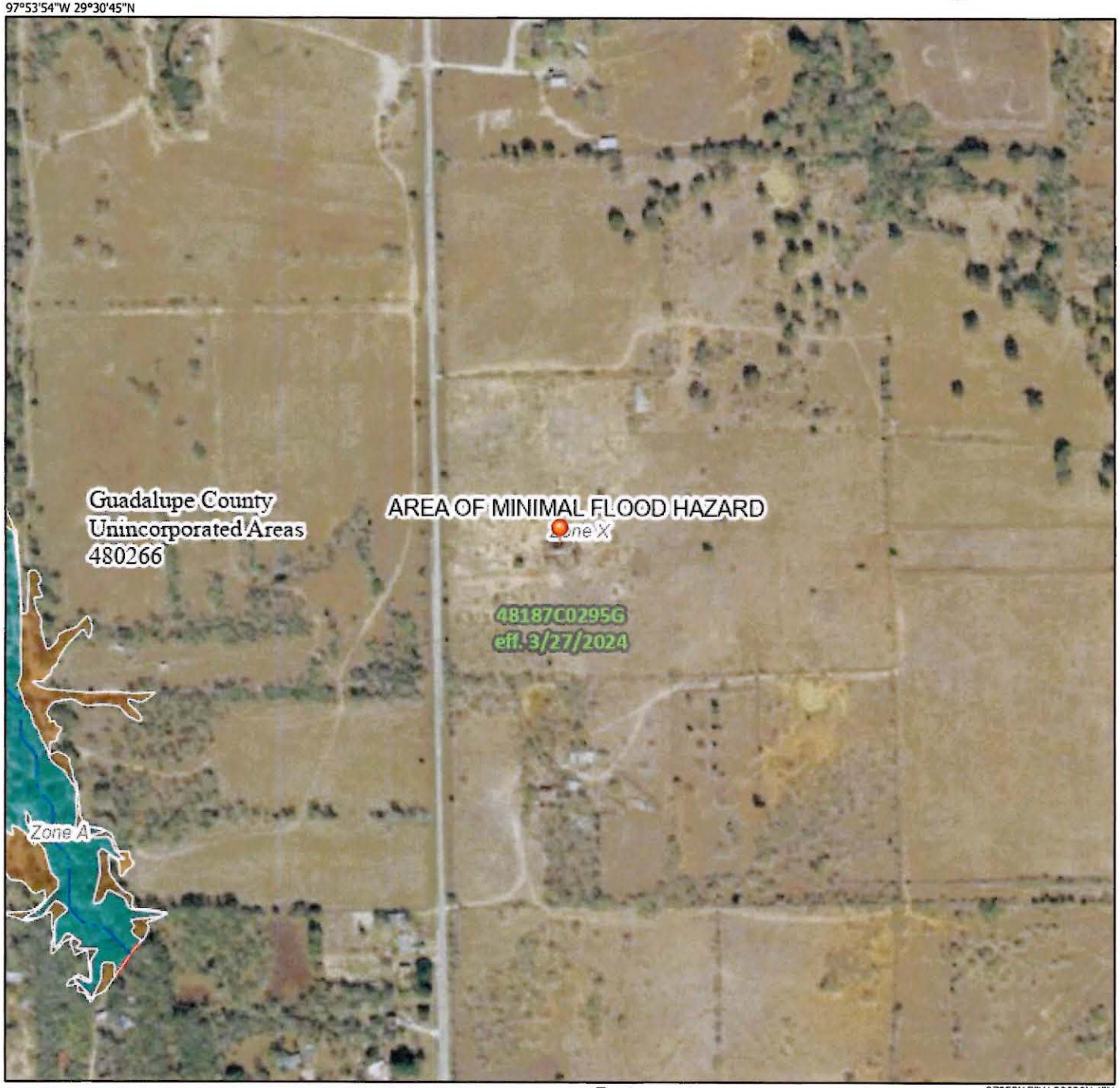
TECHNICAL REPORT 1.1 – SECTION 5

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.

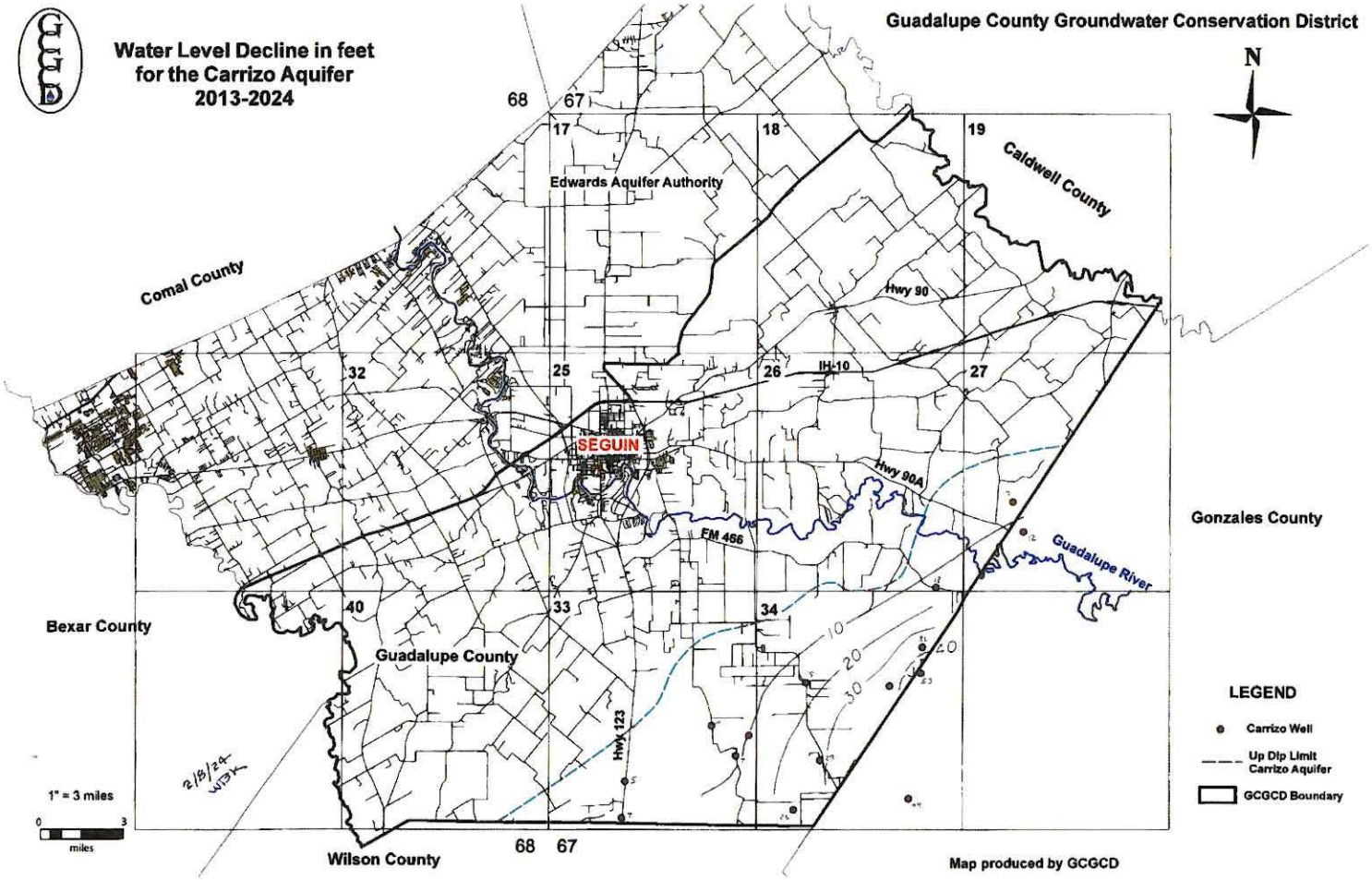
Hwy 123 MWCz-2	67-33-8(8a)	MP 3.6 ft >GL	LSD +628
Flying W	Lat/Long: 29.400309/-97.954371		Screen 180 - 220 ft
Estimated 2002 WL Elev. +494			TD 280 ft (+351)
1/20/13 WL 141 ft <GL		B/Cz @ TWCZ-1 (+406 Elev.)	
2/17/18			146.3
2/20/18			146.25 <GL Reported
1/15/19			148.87
147.93			
1/18/23			147.98
6/27/23			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

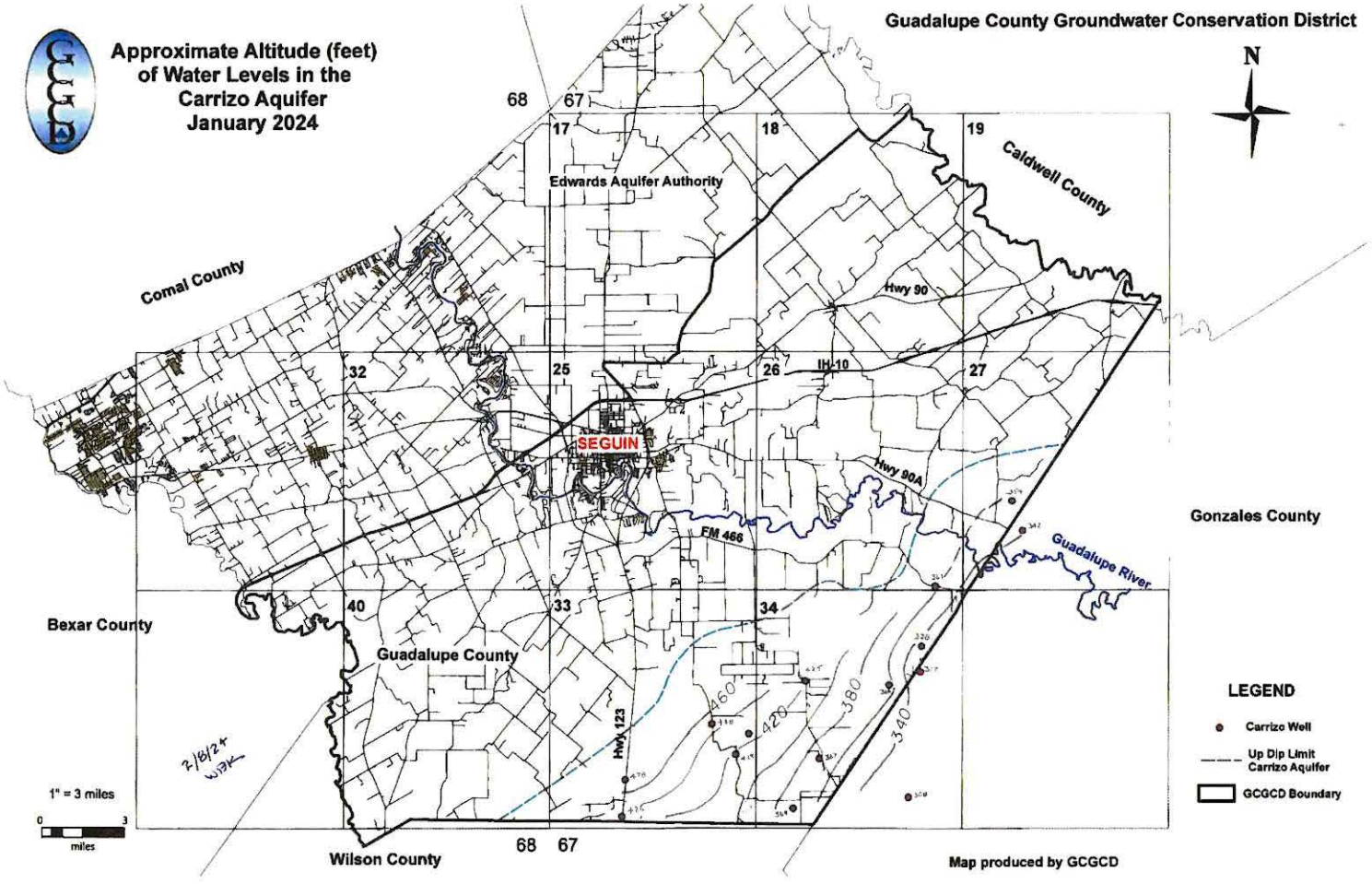
1/03/13		102.18
1/06/23		135.6
6/01/23		134.0
9/06/23		135.5
1/03/24		110.
CRWA (Wx)	67-34-5 MP 2.2 ft >GL	LSD +483
Deer stand #3	Lat/Long: 29.449793/-97.797889	Depth 1602 ft
09/07/16		092.1
10/14/18		149.9
01/02/19		178.2
06/10/22		136.5
06/01/23		175.0
01/10/24		223. From GL
Blumberg #1 (Cz)	67-34-706(6) 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

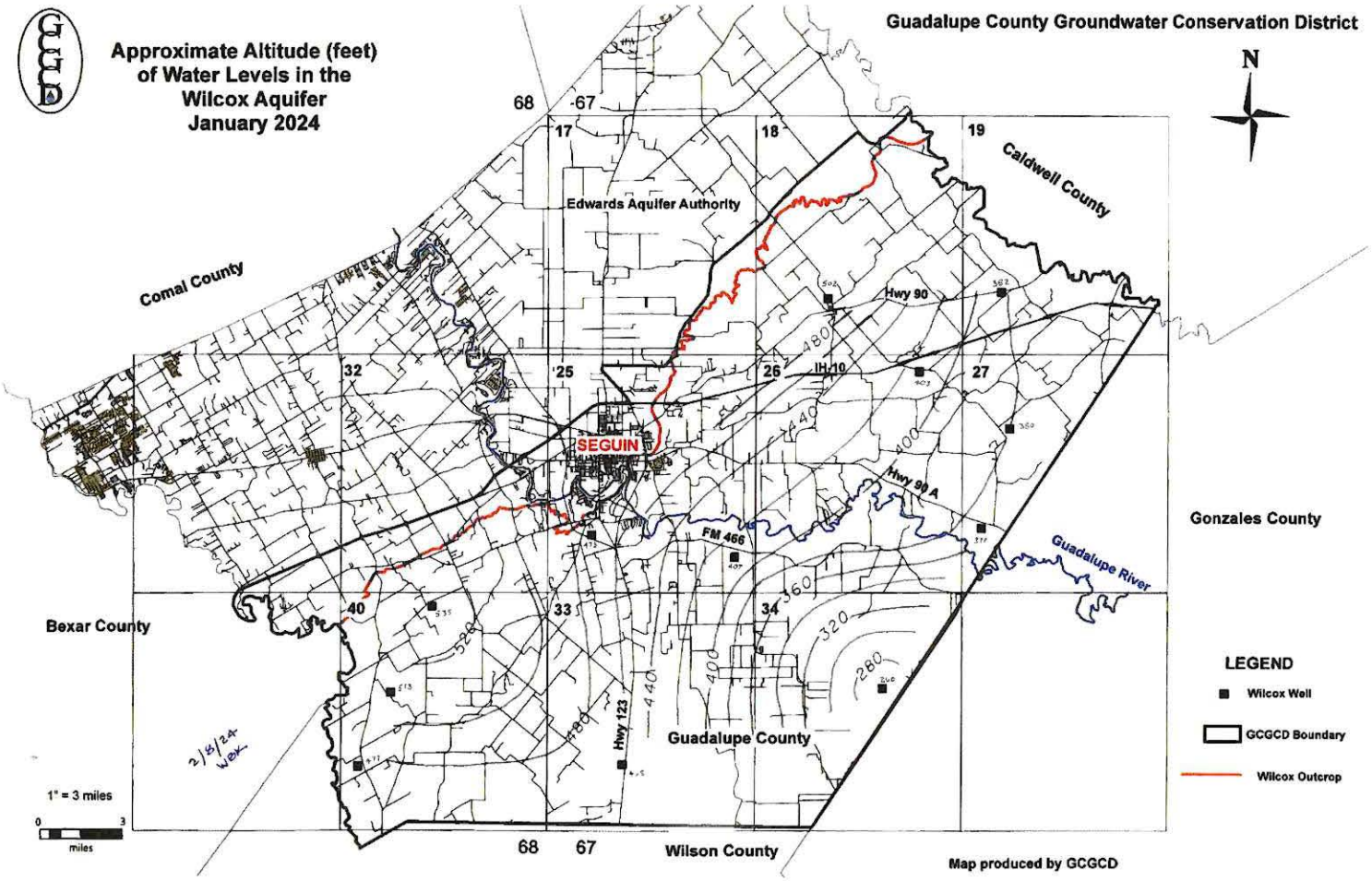
9/19/23			070.00	
1/22/24			064.85	

GCUWCD WATER LEVELS

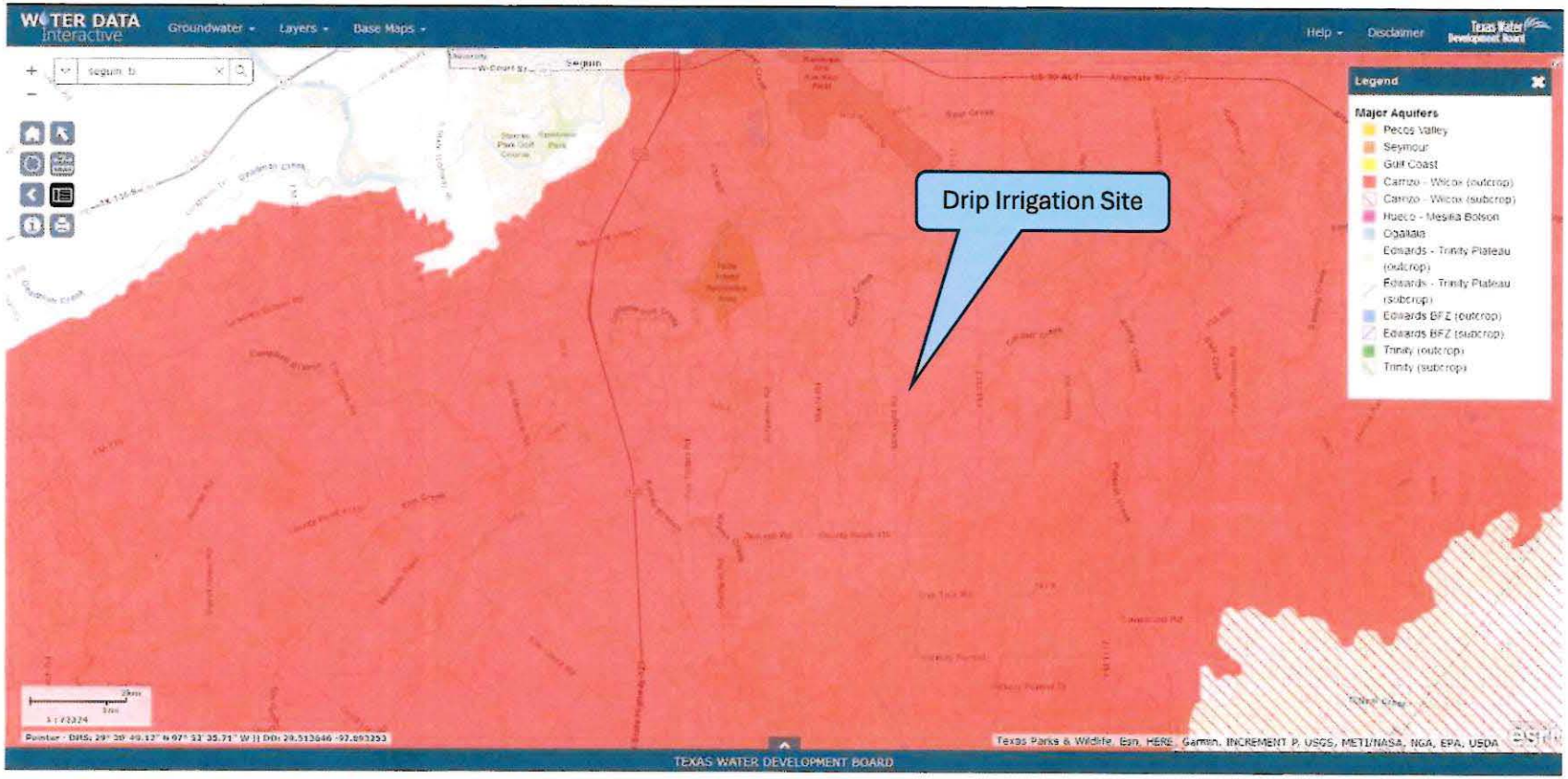
James Miller (Cz)	67-27-705	MP 0.5 ft >GL		LSD +391
	Lat/Long:29.530824/-97.71026			Depth (?)
8/20/02			030.07	
1/03/13			036.58	
1/09/23			048.70	
6/01/23			046.70	
9/08/23			049.02	
1/04/24			049.05	
Bexar Met #3	67-34-612	MP 2.2 ft >GL		LSD +465
Harden #1 Tommy's Well	Lat/Long: 29.457182/-97.775855			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	

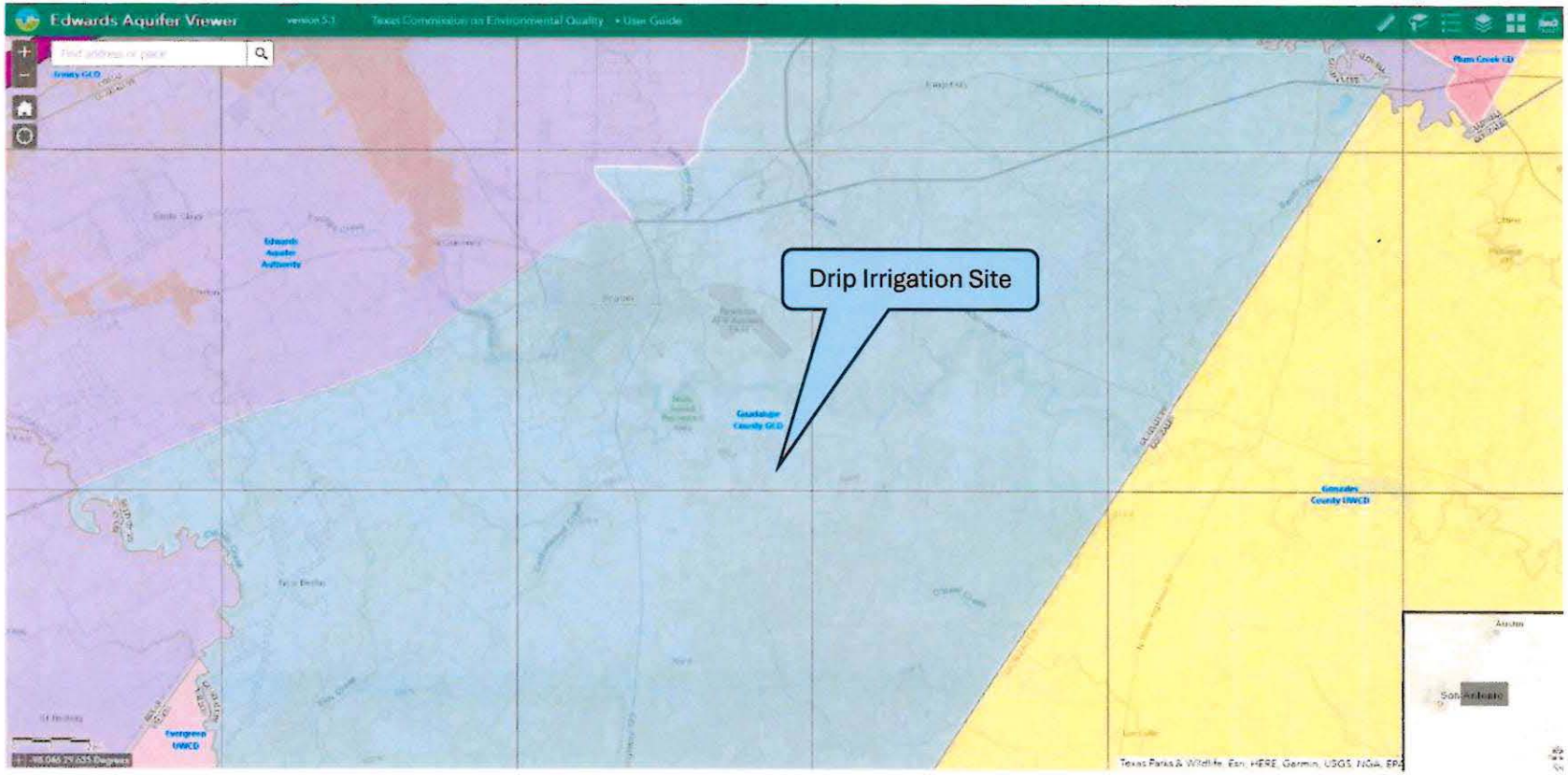

Water Level Decline in feet
for the Carrizo Aquifer
2013-2024
Guadalupe County Groundwater Conservation District
N
68
67
17
18
19
Edwards Aquifer Authority
Caldwell County
Comal County
Hwy 90
32
25
26
IH-10
27
SEGUIN
Hwy 90A
FM 466
Guadalupe River
Gonzales County
Bexar County
40
33
34
Guadalupe County
10
20
30
Hwy 123
2/18/24
1" = 3 miles
0
3
miles
LEGEND
Carrizo Well
Up Dip Limit
Carrizo Aquifer
GCGCD Boundary
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
Guadalupe River
Gonzales County
Bexar County
40
33
34
Guadalupe County
Hwy 123
460
420
380
340
2/8/24 WEK
1" = 3 miles
0
3
miles
Wilson County
68
67
Map produced by GCGCD
LEGEND
Carrizo Well
Up Dip Limit Carrizo Aquifer
GCGCD Boundary


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
2/8/24
WEX
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

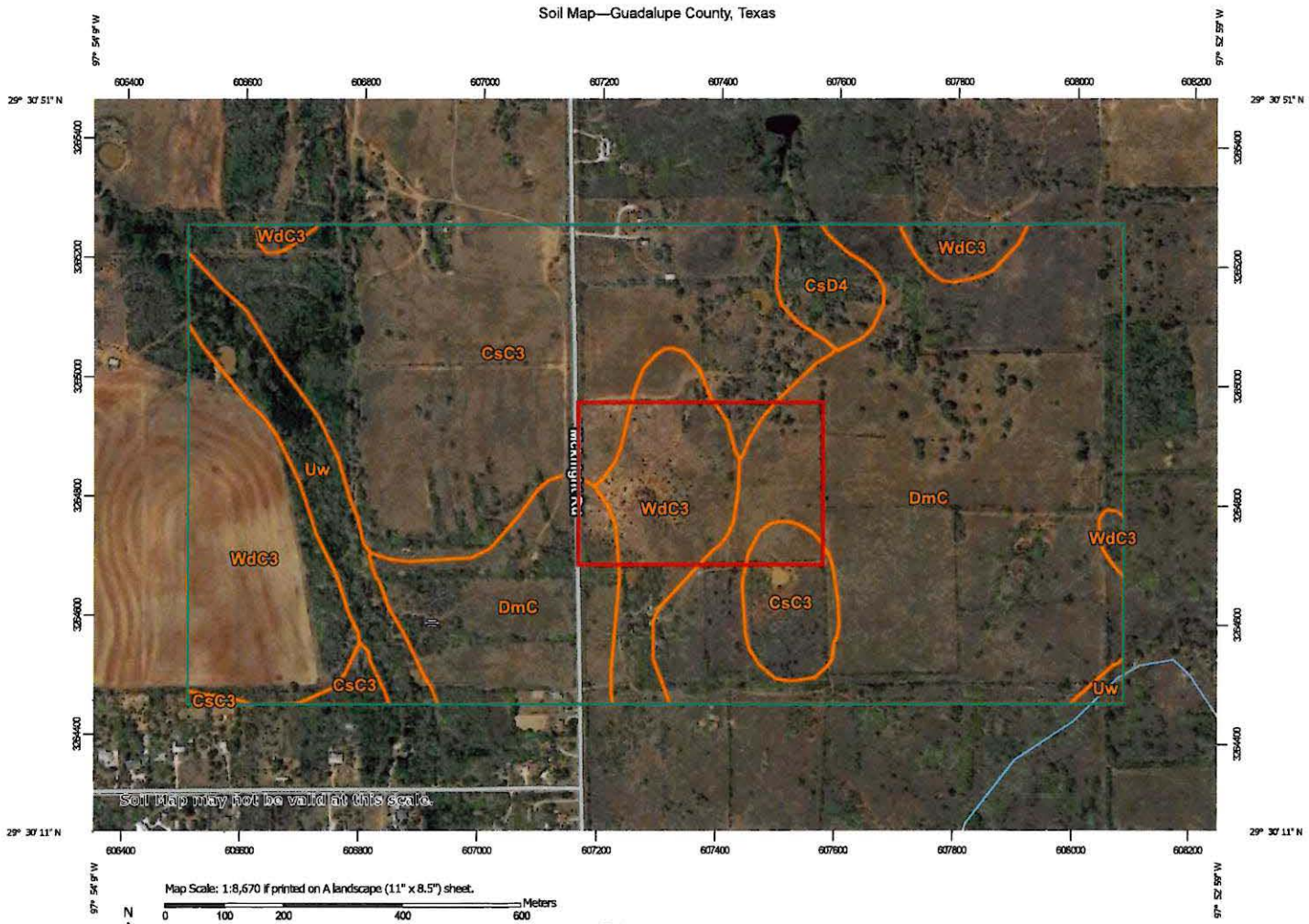

Edwards Aquifer Viewer
Drip Irrigation Site

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.

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 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.

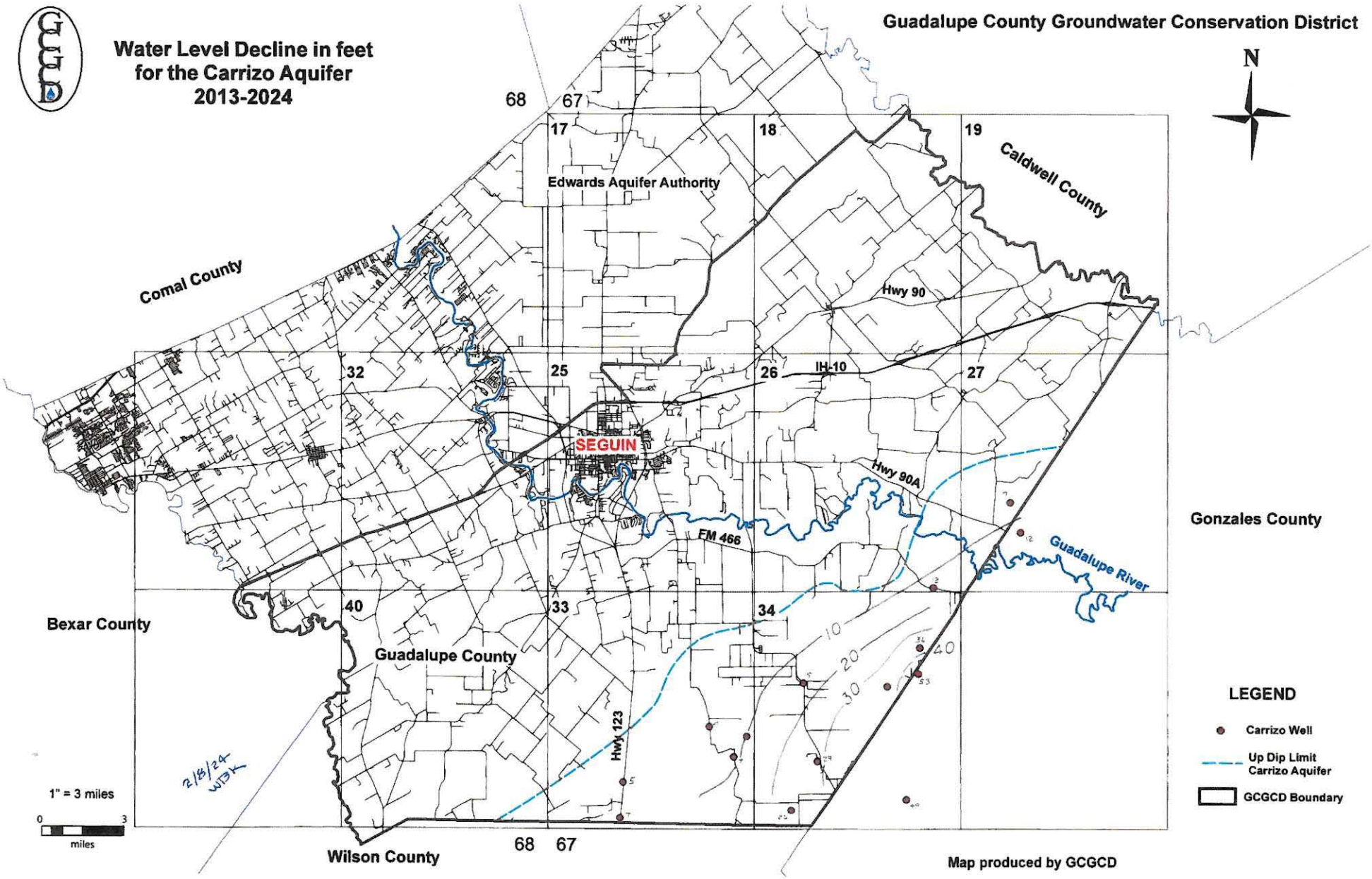
Hwy 123 MWCz-2	67-33-8(8a)	MP 3.6 ft >GL	LSD +628
Flying W	Lat/Long: 29.400309/-97.954371		Screen 180 - 220 ft
Estimated 2002 WL Elev. +494			TD 280 ft (+351)
1/20/13 WL 141 ft <GL		B/Cz @ TWCZ-1 (+406 Elev.)	
2/17/18			146.3
2/20/18			146.25 <GL Reported
1/15/19			148.87
147.93			
1/18/23			147.98
6/27/23			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

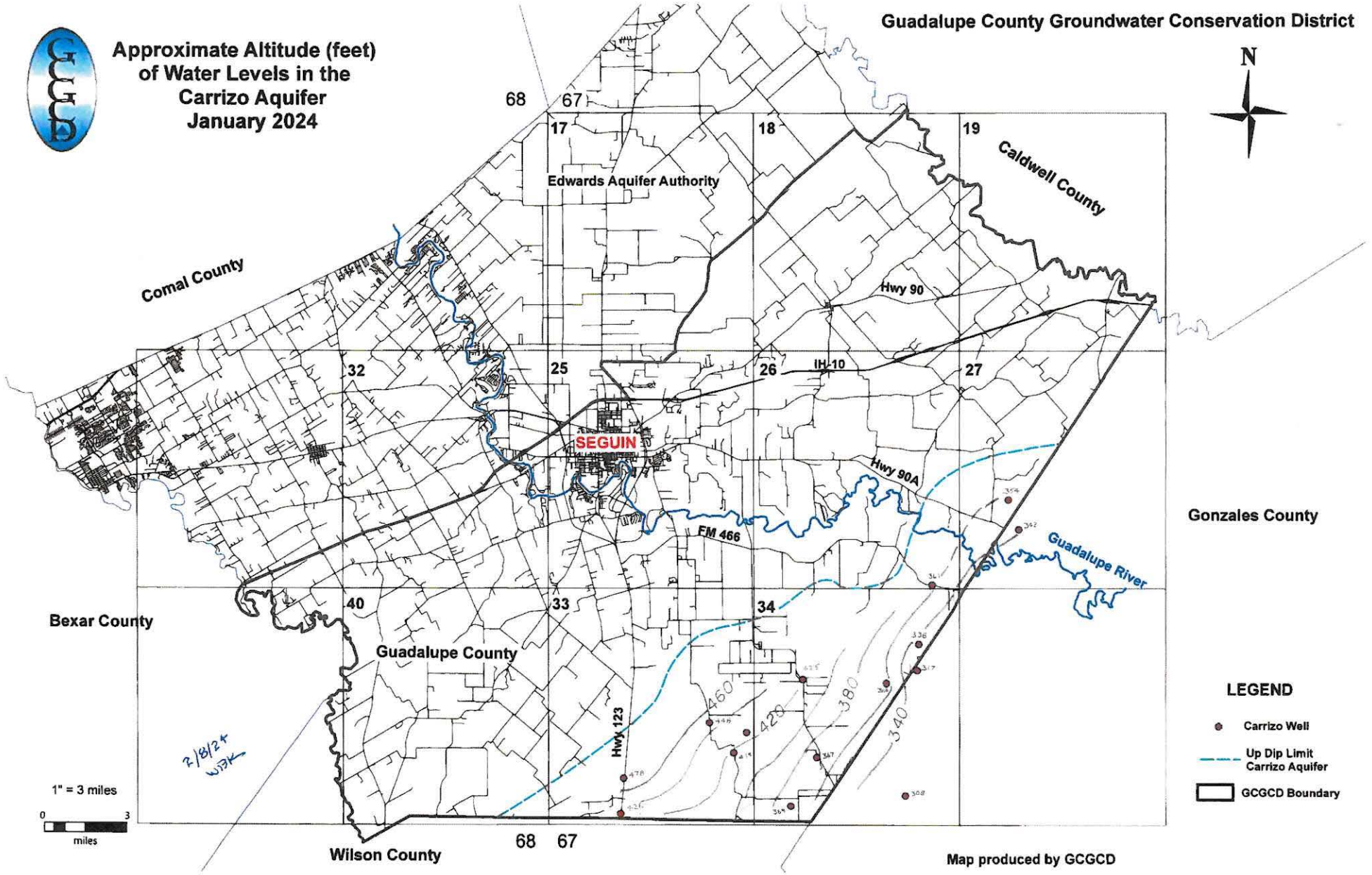
	1/03/13		102.18
	1/06/23		135.6
	6/01/23		134.0
	9/06/23		135.5
	1/03/24		110.
CRWA (Wx)		67-34-5 MP 2.2 ft >GL	LSD +483
	Deer stand #3	Lat/Long: 29.449793/-97.797889	Depth 1602 ft
	09/07/16		092.1
	10/14/18		149.9
	01/02/19		178.2
	06/10/22		136.5
	06/01/23		175.0
	01/10/24		223. From GL
Blumberg #1 (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

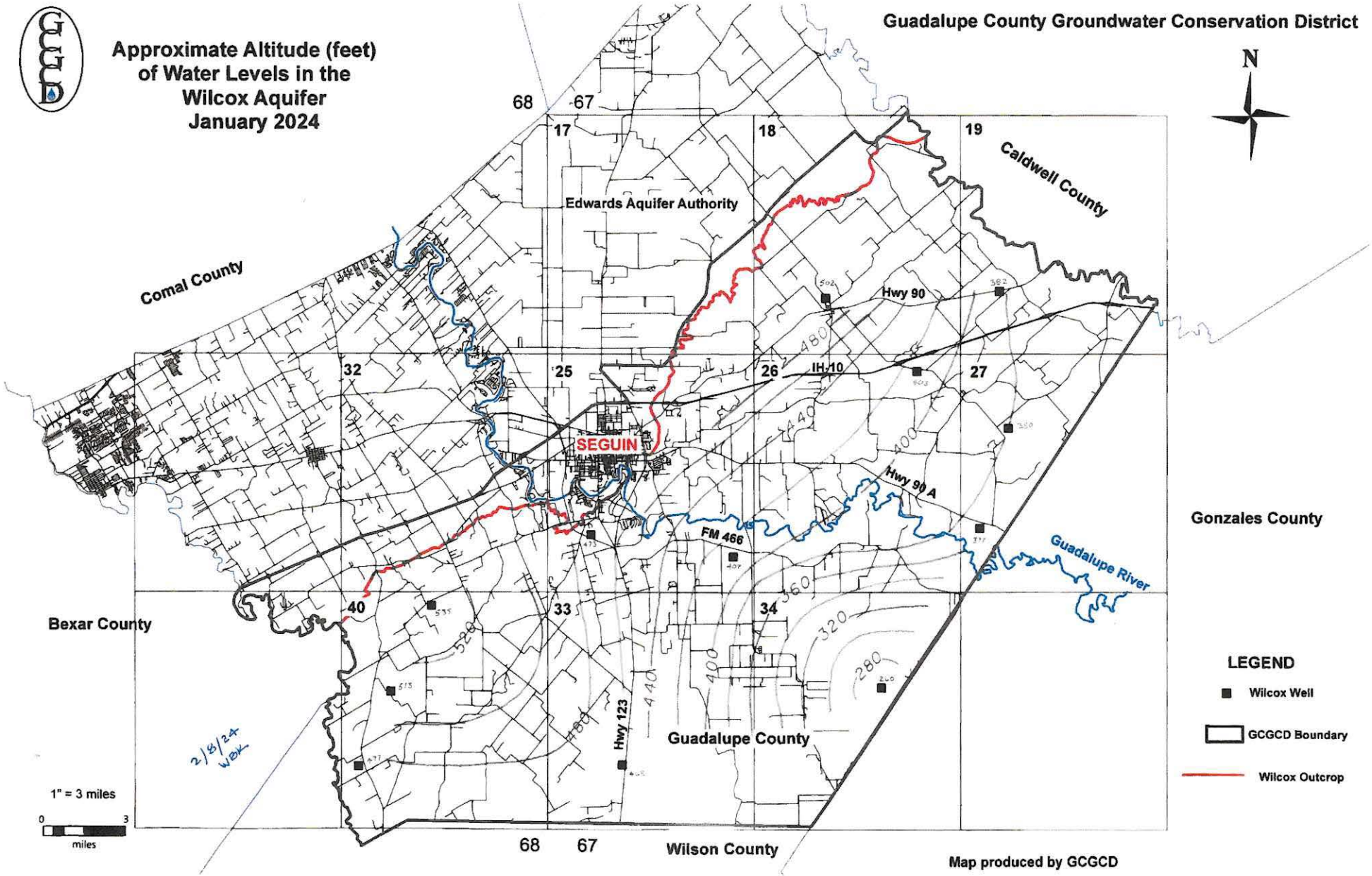
9/19/23		070.00
1/22/24		064.85

GCUWCD WATER LEVELS

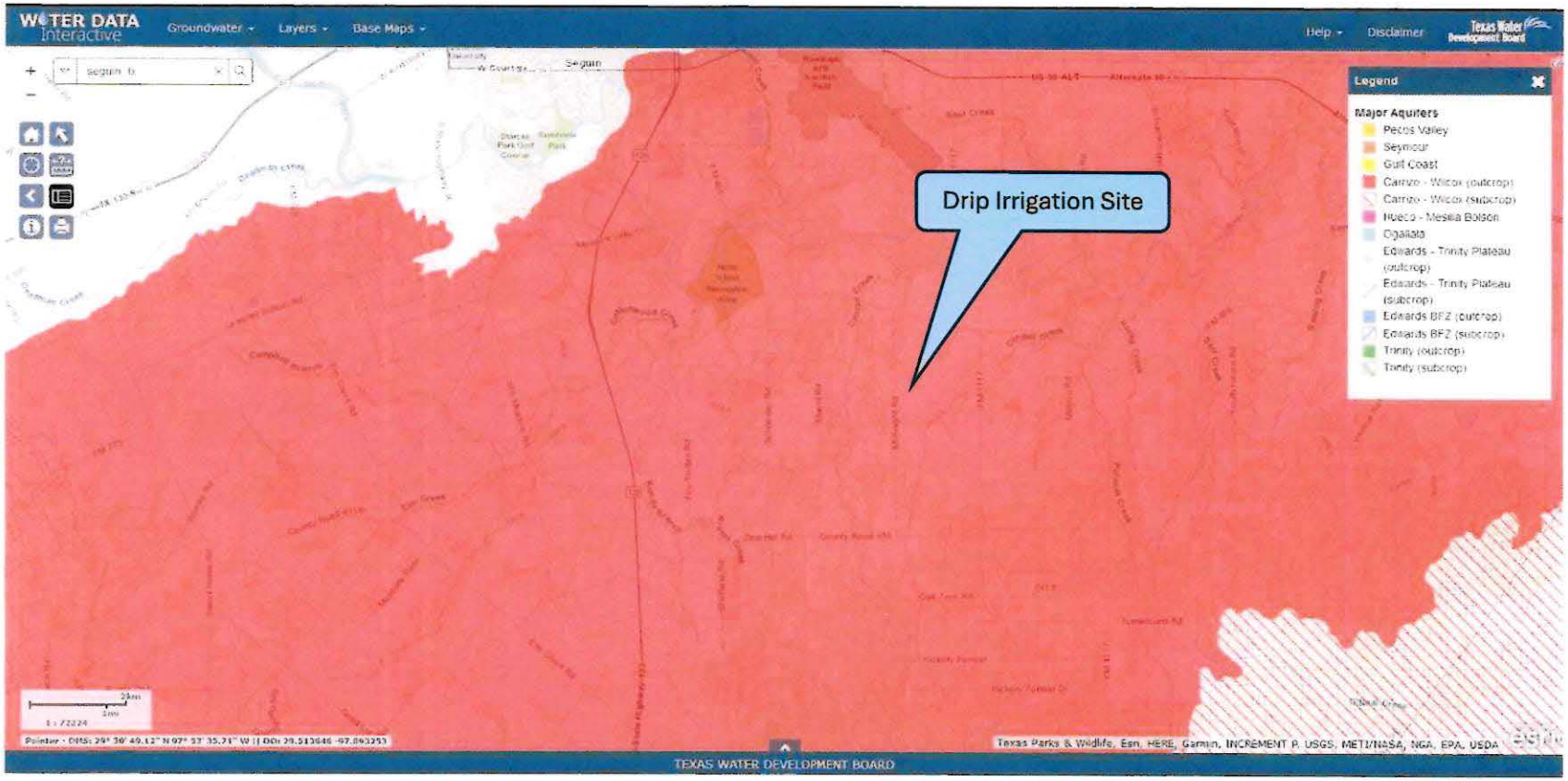
James Miller (Cz)	67-27-705	MP 0.5 ft >GL	LSD +391
	Lat/Long:29.530824/-97.71026		Depth (?)
8/20/02			030.07
1/03/13			036.58
1/09/23			048.70
6/01/23			046.70
9/08/23			049.02
1/04/24			049.05
Bexar Met #3	67-34-612	MP 2.2 ft >GL	LSD +465
Harden #1 Tommy's Well	Lat/Long: 29.457182/-97.775855		Depth 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


Water Level Decline in feet
for the Carrizo Aquifer
2013-2024
Guadalupe County Groundwater Conservation District
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
Bexar County
40
33
34
Guadalupe County
10
20
30
40
Hwy 123
2/8/24
WBK
1" = 3 miles
0
3
miles
Wilson County
68
67
LEGEND
Carrizo Well
Up Dip Limit
Carrizo Aquifer
GCGCD Boundary
Map produced by GCGCD

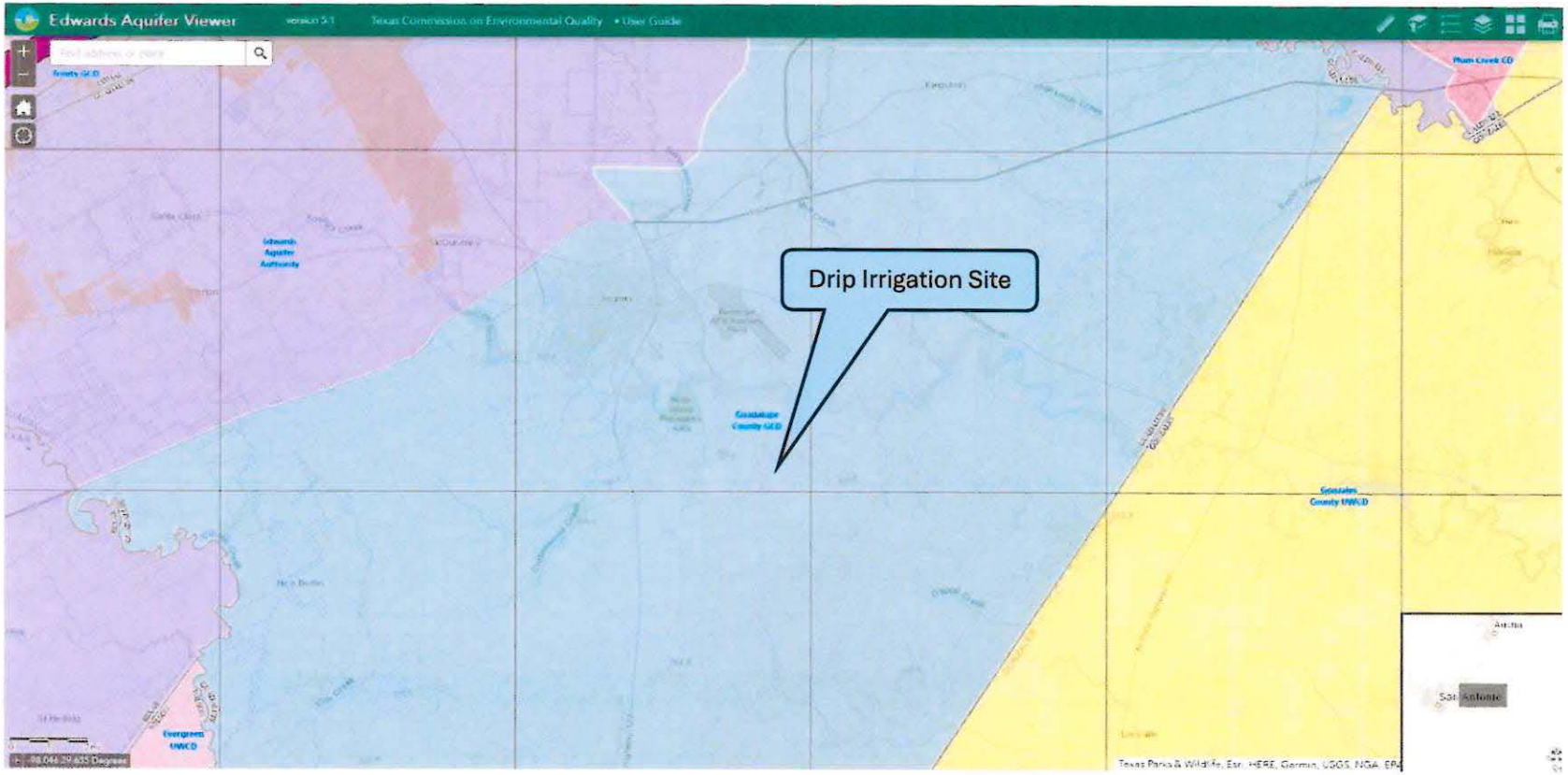

Guadalupe County Groundwater Conservation District
Approximate Altitude (feet) of Water Levels in the Carrizo Aquifer January 2024
N
68
67
17
18
19
Edwards Aquifer Authority
Caldwell County
Comal County
Hwy 90
32
25
26
IH-10
27
SEGUIN
Hwy 90A
FM 466
Guadalupe River
Gonzales County
40
33
34
Bexar County
Guadalupe County
Hwy 123
460
420
380
340
2/8/24
WJK
1" = 3 miles
0
3
miles
Wilson County
68
67
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 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
SEGUIN
440
400
Hwy 90 A
FM 466
Gonzales County
Guadalupe River
360
320
40
33
34
Bexar County
520
280
Hwy 123
Guadalupe County
2/8/24 WBL
1" = 3 miles
0
3
miles
68
67
Wilson County
Map produced by GCGCD
LEGEND
Wilcox Well
GCGCD Boundary
Wilcox Outcrop

Recharge Feature Plan Exhibit 2 – Texas Water Development Board

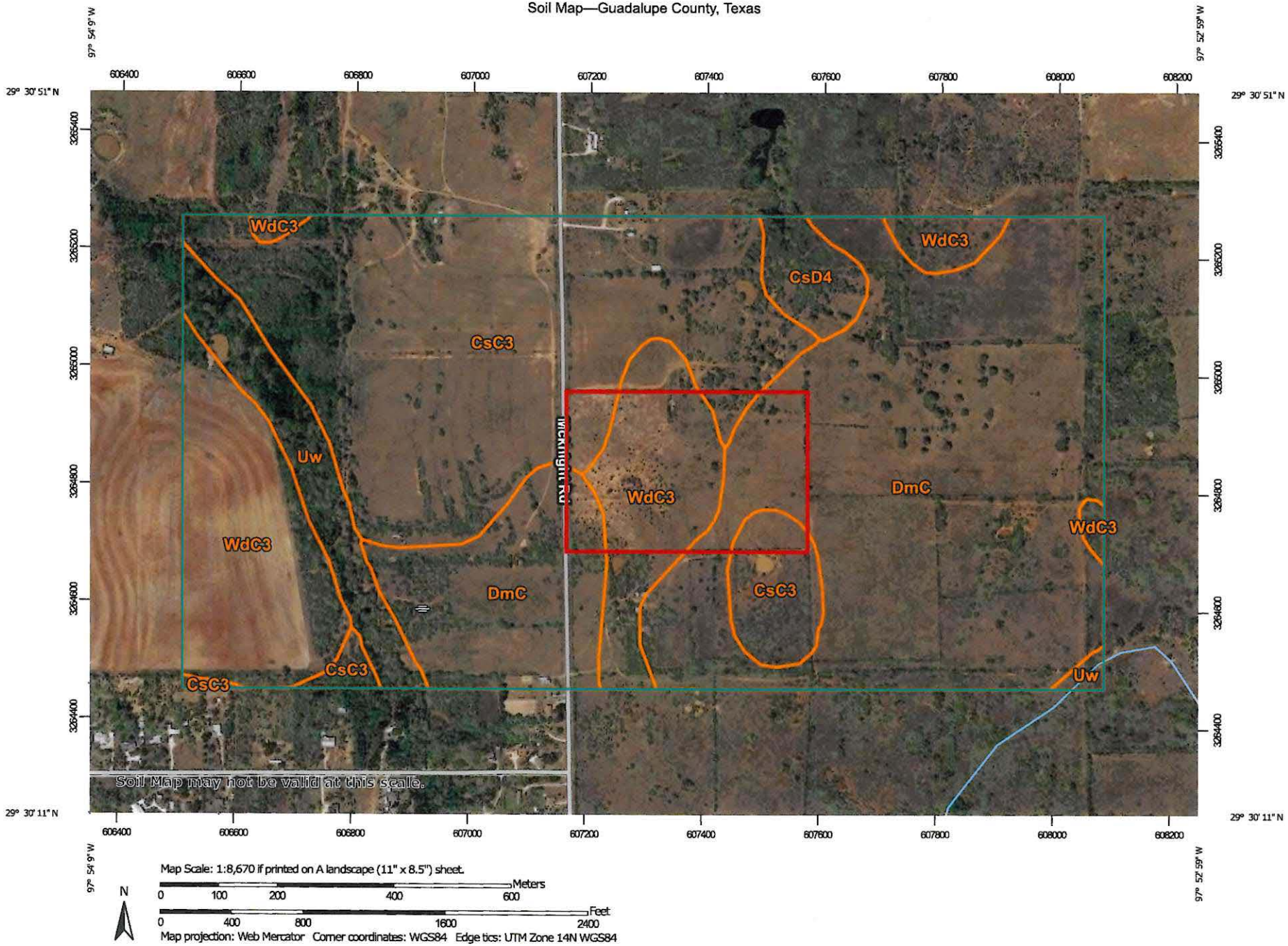

WATER DATA Interactive
Groundwater
Layers
Base Maps
Help
Disclaimer
Texas Water Development Board
Legend
Major Aquifers
Pecos Valley
Seymour
Gulf Coast
Carrizo - Wilcox (outcrop)
Carrizo - Wilcox (subcrop)
Hueco - Mesilla Bolson
Ogallala
Edwards - Trinity Plateau (outcrop)
Edwards - Trinity Plateau (subcrop)
Edwards BFZ (outcrop)
Edwards BFZ (subcrop)
Trinity (outcrop)
Trinity (subcrop)
Drip Irrigation Site
Seguin
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
Guadalupe County GCD
Plum Creek CD
Gonzales County UWCD
Evergreen 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.

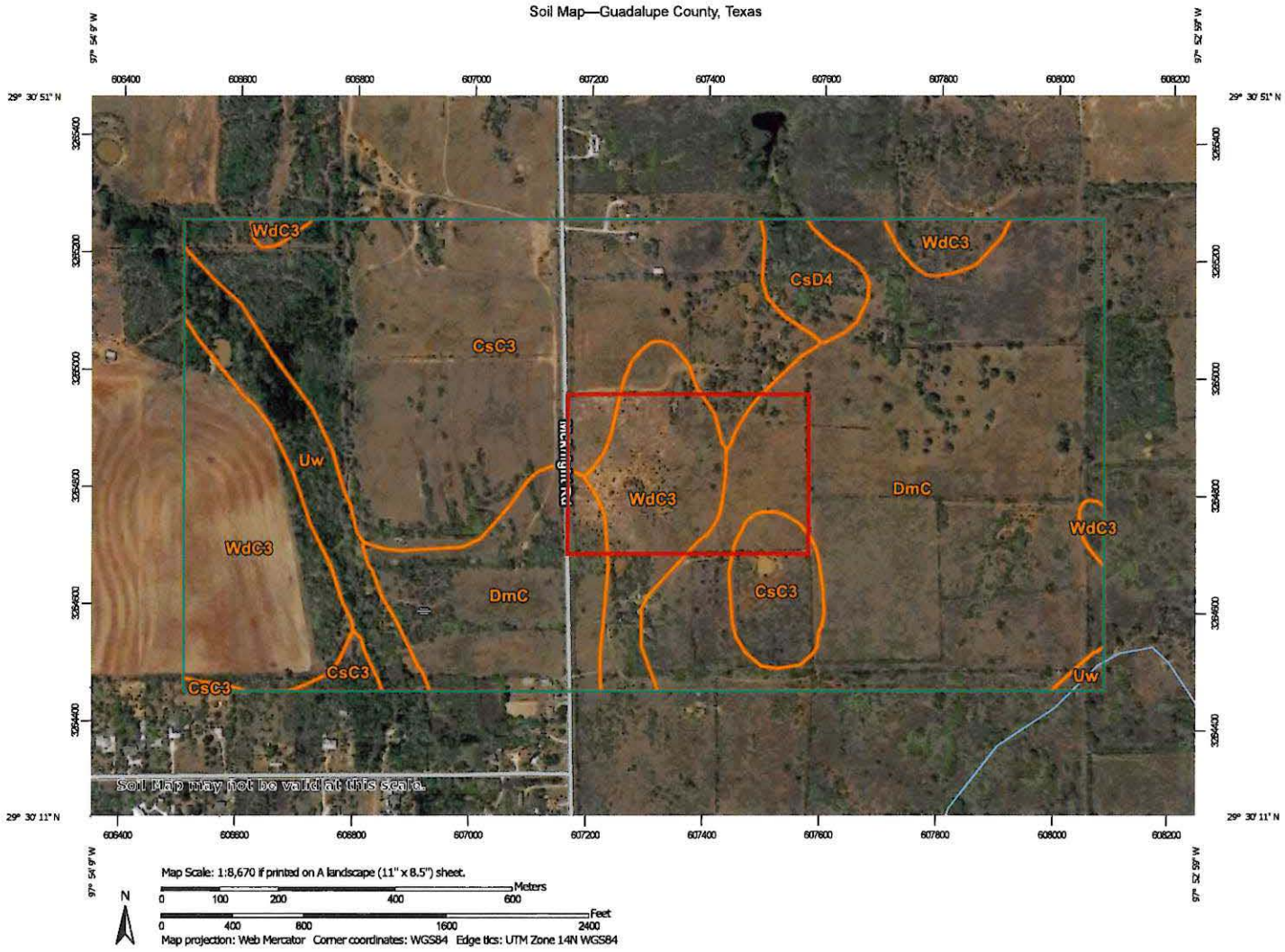
(7) There was no appearance of water, current or historical.
(8) There is no presence of water in the profile hole. See (7).

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 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

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.

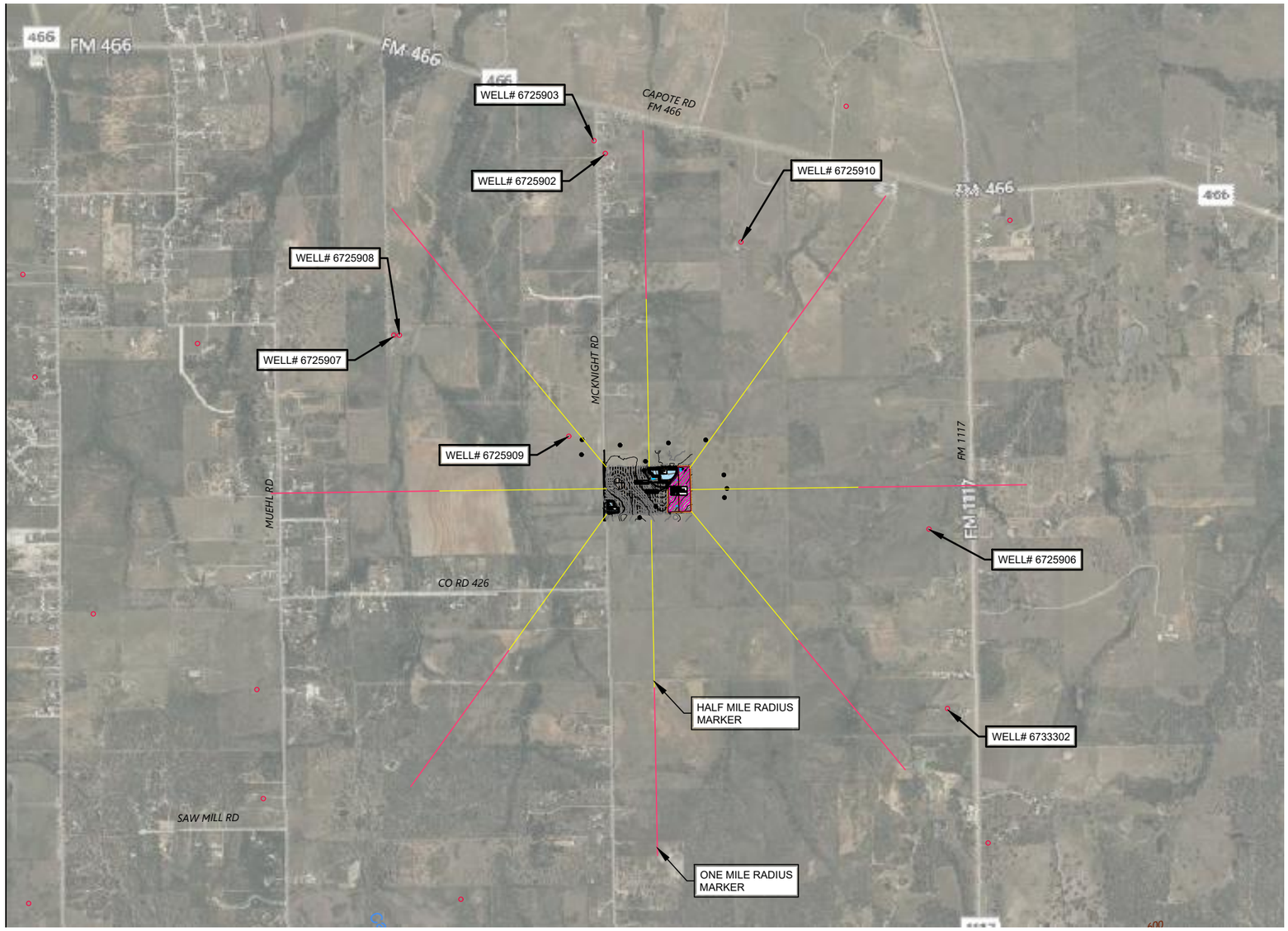
For existing authorizations, provide Registration Number: Click to enter text.

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	6 acres	18,000 GPD	N



PLAN
1"= 600 METERS

LEGEND

- HALF MILE RADIUS MARKER
- ONE MILE RADIUS MARKER
- EXISTING WELL FROM TWDB

PRELIMINARY

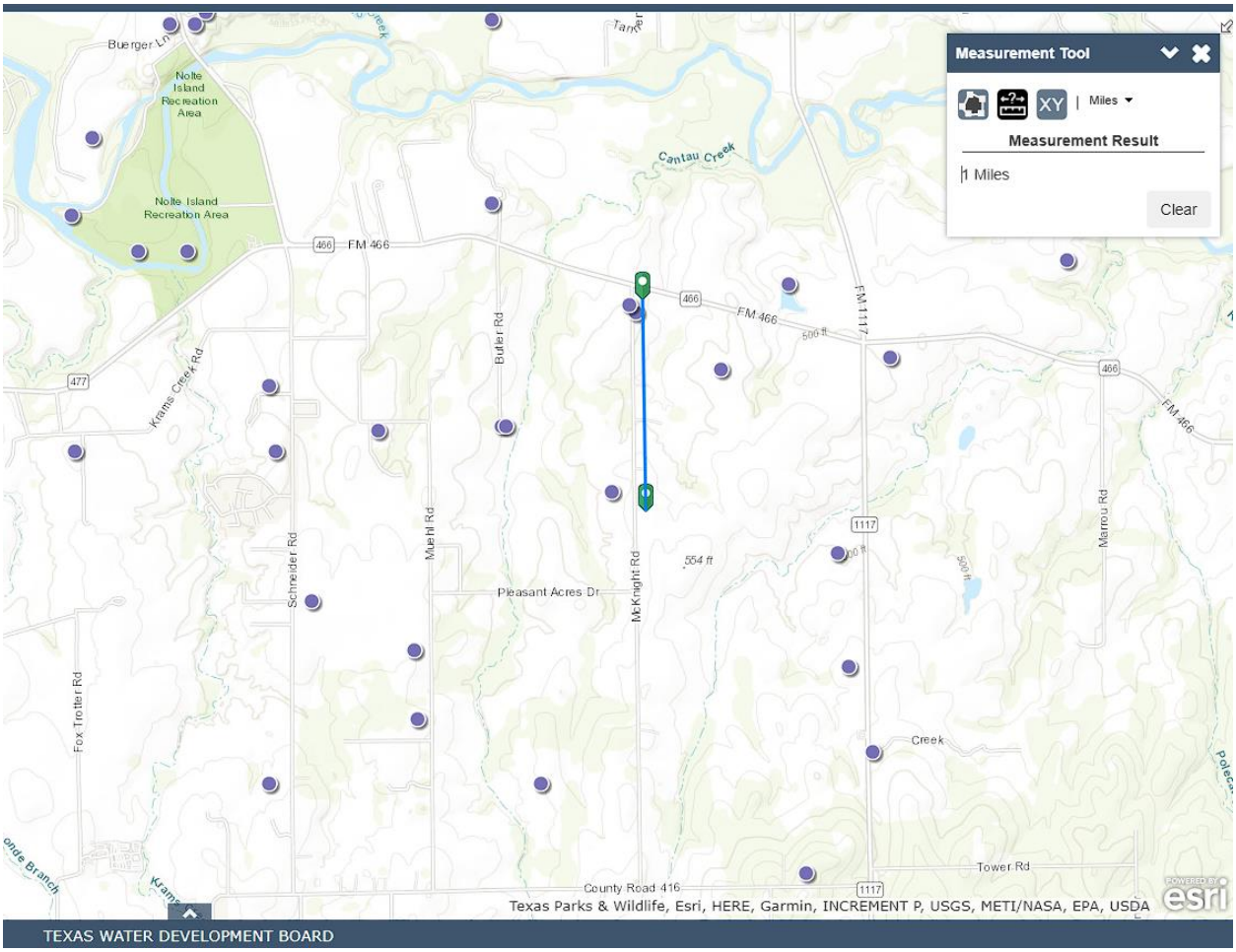
"THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF TYLER N. HENDRICKSON, P.E. 84676 ON Oct 03, 2024 . IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES."

Velvin & Weeks Consulting Engineers, Inc.
PHONE 903.675.3903
FAX 903.675.8345
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, LLC
GUADALUPE COUNTY, TEXAS

EXISTING WELLS EXHIBIT

DATE	Oct 03, 24
DESIGN	T.N.H.
DRAWN	WHO
CHECKED	T.N.H.
SHEET	1 of 1
JOB NO.	5306



<u>Garden of Cordell Oaks Well review (TWDB website)</u>

There are eight wells within a 1-mile radius of the property area as shown above from the website provided and printed on 10/03/2024.

Well Numbers, 6725910, 6725906, 6733302, 6725909, 6725907, 6725908, 6725902 and 6725903.

There is one well within a half-mile radius to the property based on TWDB website data as of 10/03/24.

Well Number 6725909.

Complete map provided with property, well and radial markers, along with the current shapefile from TWDB website on the "Existing Wells Exhibit" sheet.

Soil Map—Guadalupe County, Texas
(The Garden of Cordell Oaks - Drip Field Area)



Map Scale: 1:6,000 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 250 500 1000 1500

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 20, Aug 30, 2024

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	1.5	29.7%
DmC	Robco-Tanglewood complex, 1 to 5 percent slopes	3.5	70.3%
Totals for Area of Interest		**5.0**	**100.0%**

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.

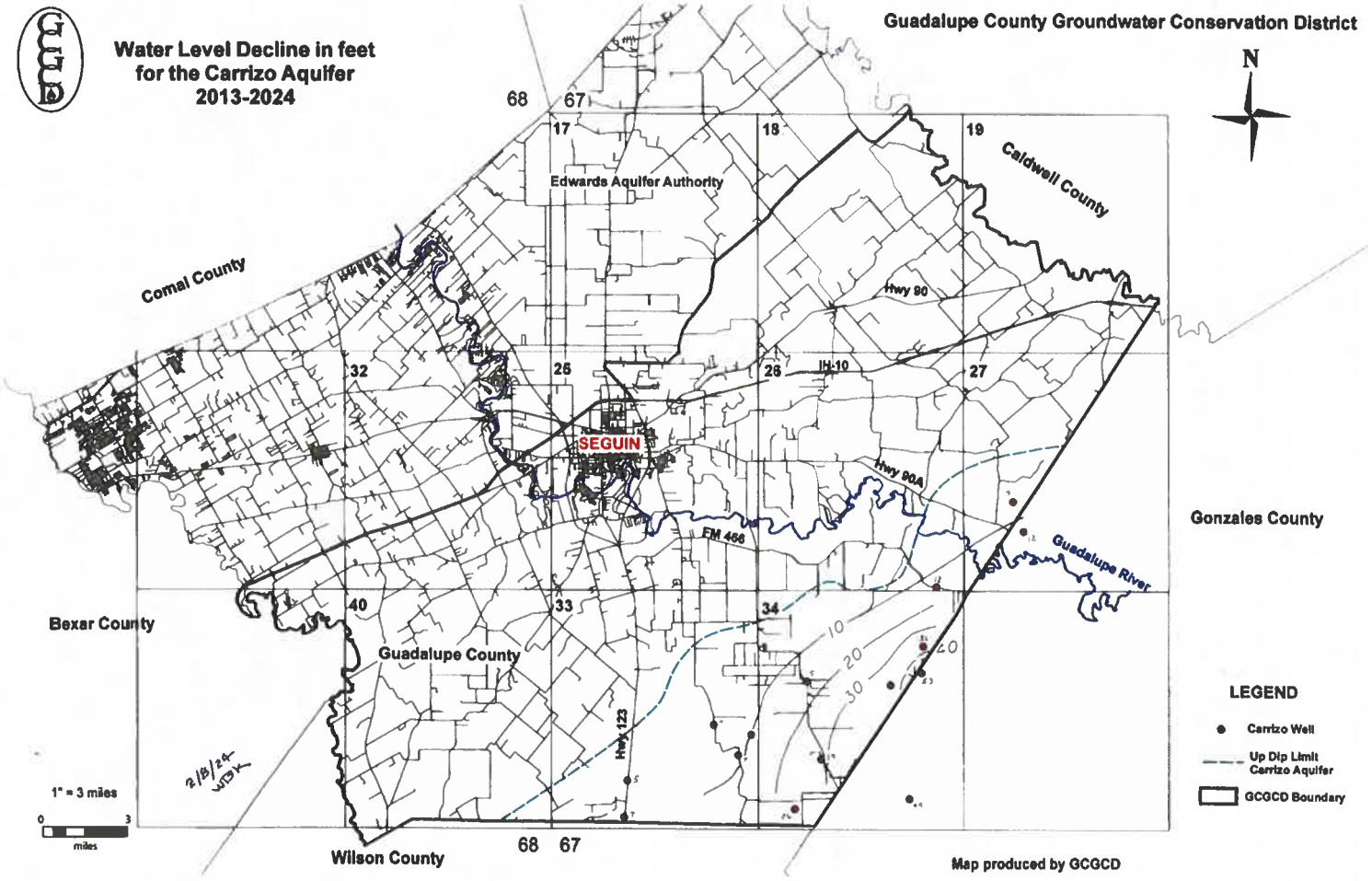
Hwy 123 MWCz-2	67-33-8(8a)	MP 3.6 ft >GL	LSD +628
Flying W	Lat/Long: 29.400309/-97.954371		Screen 180 - 220 ft
Estimated 2002 WL Elev. +494			TD 280 ft (+351)
1/20/13 WL 141 ft <GL			B/Cz @ TWCZ-1 (+406 Elev.)
2/17/18			146.3
2/20/18			146.25 <GL Reported
1/15/19			148.87
147.93			
1/18/23			147.98
6/27/23			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

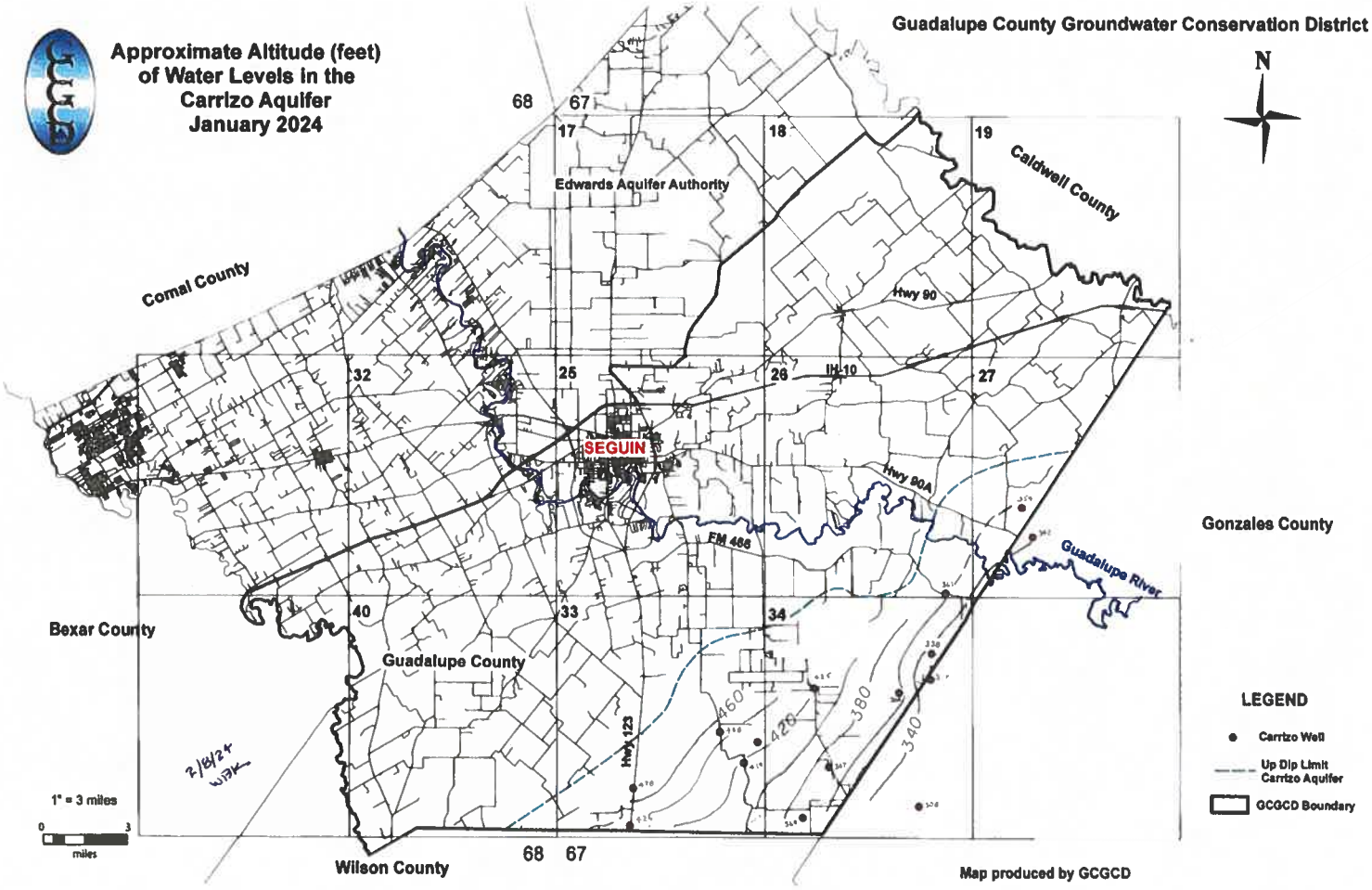
	1/03/13		102.18
	1/06/23		135.6
	6/01/23		134.0
	9/06/23		135.5
	1/03/24		110.
CRWA (Wx)		67-34-5 MP 2.2 ft >GL	LSD +483
	Deer stand #3	Lat/Long: 29.449793/-97.797889	Depth 1602 ft
	09/07/16		092.1
	10/14/18		149.9
	01/02/19		178.2
	06/10/22		136.5
	06/01/23		175.0
	01/10/24		223. From GL
Blumberg #1 (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

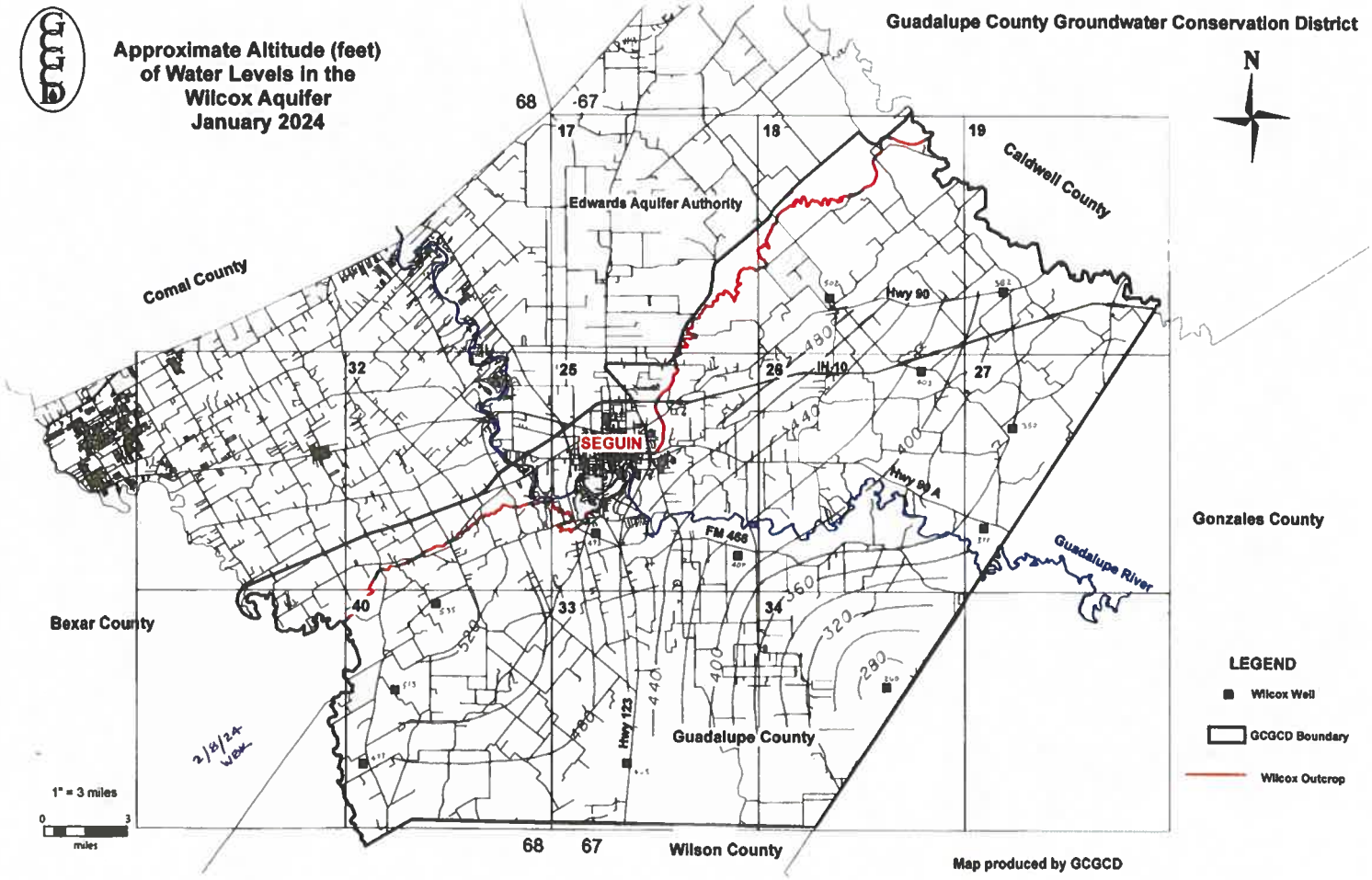
9/19/23			070.00	
1/22/24			064.85	

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	


Water Level Decline in feet
for the Carrizo Aquifer
2013-2024
Guadalupe County Groundwater Conservation District
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
20
Hwy 123
LEGEND
Carrizo Well
Up Dip Limit
Carrizo Aquifer
GCGCD Boundary
1" = 3 miles
0
3
miles
2/8/24
Wilson County
68
67
Map produced by GCGCD


Approximate Altitude (feet)
of Water Levels in the
Carrizo Aquifer
January 2024
Guadalupe County Groundwater Conservation District
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
460
420
380
340
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


Approximate Altitude (feet)
of Water Levels in the
Wilcox Aquifer
January 2024
Guadalupe County Groundwater Conservation District
N
68
67
17
18
19
Caldwell County
Edwards Aquifer Authority
Comal County
Hwy 90
IH 10
32
25
26
27
SEGUIN
Hwy 90 A
FM 468
Gonzales County
Guadalupe River
Bexar County
40
33
34
Hwy 123
Guadalupe County
Wilson County
68
67
1" = 3 miles
0
3
miles
2/8/24
LEGEND
Wilcox Well
GCGCD Boundary
Wilcox Outcrop
Map produced by GCGCD

Outlook

Re: Arp Holdings, LP – The Garden Of Cordell Oaks, Application for a New Permit, No. WQ0016616001

From Tracy Kyser <tracyk@velvin-weeks.com>
Date Thu 10/17/2024 2:31 PM
To Andrew Gorton <Andrew.Gorton@Tceq.Texas.Gov>

9 attachments (5 MB)

Well Snipit and Well Logs.pdf; Revised Well Section 6 - .pdf; 00. Well Snip 10.03.24 TWDB.pdf; 02. Boundaries_wWellImported_10.02.24-Wells Half and Mile Radius Markers.pdf; Groundwater Technical Report .pdf; 3.0 - Section 2 - Land Application .pdf; Soil SampleTesting Results .pdf; 05. USDA Soil Map of Drip Field 10.17.24.pdf; Proposed Trench System - Sealed by Jim P..pdf;

Andrew,

Please see attached revisions for deficiencies.

Thank you,

Tracy Kyser
930 E. Corsicana St.
Athens, Tx 75751
903-675-3903
Velvin & Weeks Consulting Engineers, Inc.
tracyk@velvin-weeks.com

From: Andrew Gorton <Andrew.Gorton@Tceq.Texas.Gov>
Sent: Thursday, September 26, 2024 1:06 PM
To: Jim@jnmtechnologies.com <Jim@jnmtechnologies.com>; Tracy Kyser <tracyk@velvin-weeks.com>
Cc: Alan Barraza <Alan.Barraza@tceq.texas.gov>
Subject: Arp Holdings, LP – The Garden Of Cordell Oaks, Application for a New Permit, No. WQ0016616001

Good afternoon Jim and Tracy,

The Water Quality Assessment (WQA) Team of the Texas Commission on Environmental Quality has completed a preliminary review of the permit application information and identified deficiencies (attached) that must be addressed before the WQA Team can continue with the technical review. The deficient item(s) will require your response in a timely, complete, and accurate manner.

An accurate and complete revised permit application is essential for making recommendations to the commission regarding whether this permit should be issued. Based on the information provided in the application, the executive director does not have sufficient information to make a recommendation.

Therefore, you must send updated technically complete and accurate information within **14 days** (October 10) of the date of this email.

Any revisions can be sent electronically to me (WQA Team Geologist) or Alan Barraza (WQA Team Agronomist). If you have any questions, please feel free to contact either me or Alan.

Thank you,

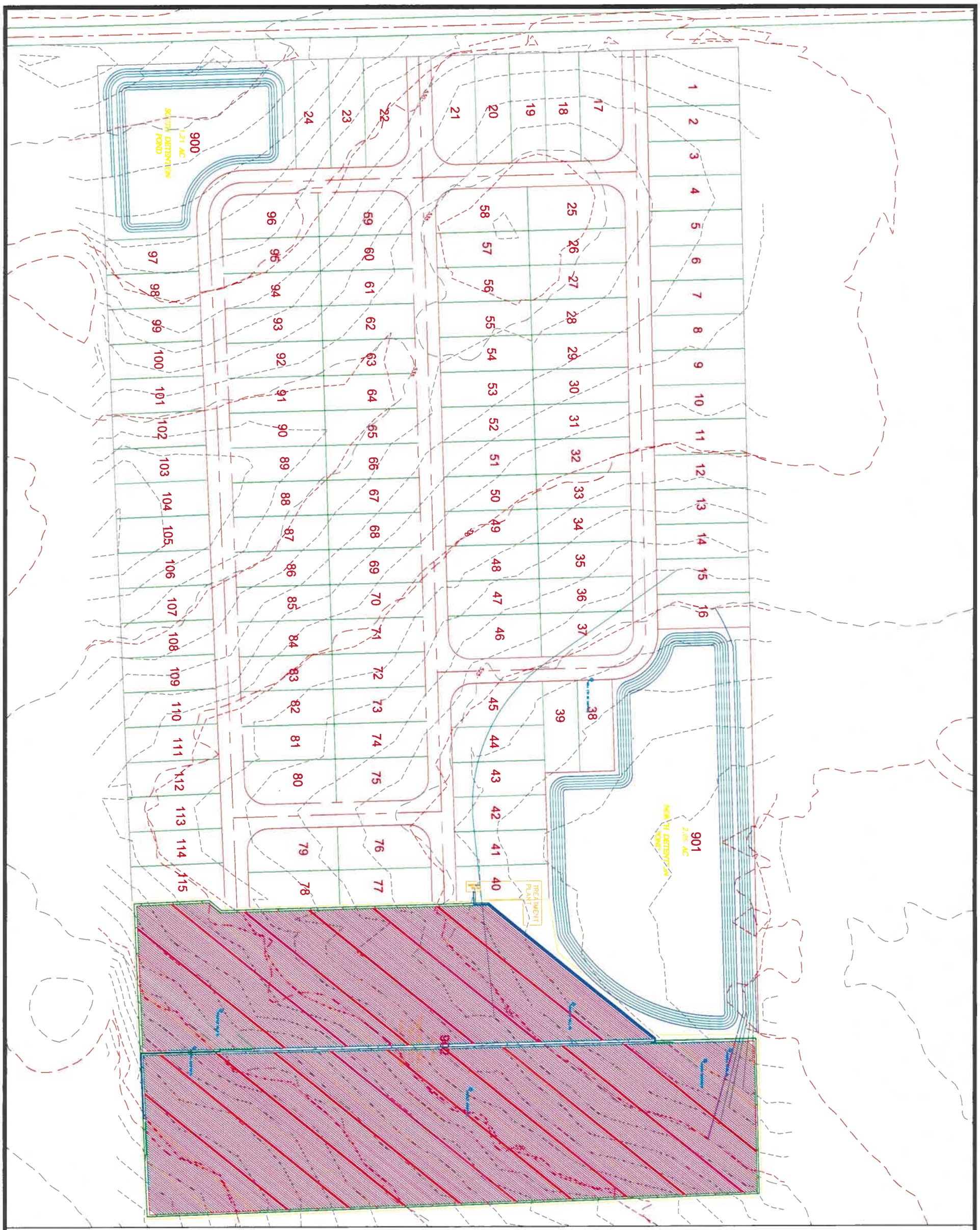
-Andy

Andrew Gorton, P.G.
Texas Commission on Environmental Quality
MC-150
PO Box 13087
Austin, TX 78711-3087
512.239.4585
Andrew.Gorton@tceq.texas.gov

ATTACHMENT Y

TECHNICAL REPORT 7.0 – Section 3

PROPOSED TRENCH SYSTEM - REQUIRED PLANS – SEALED



THE GARDEN OF CORDELL OAKS

SUBSURFACE AREA DRIP DISPOSAL SYSTEM
PROJECT OVERVIEW

LWRE
LIGHTHOUSE WATER RESOURCE ENGINEERING
PO BOX 5667
BRYAN, TEXAS 77807 (979) 779-6500
Registration # F-21045

JAMES F PROCHASKA 80504 LICENSED PROFESSIONAL ENGINEER
9/25/2024

NO.	DESCRIPTION	INITIALS	DATE

DESIGNED: JFP
DRAWN BY: JEL
APPROVED: JFP
FILE: J085/Spark Homes
JOB NO.:
DATE: 08/13/2024

SCALE: 1" = 40 Ft
0 20 40 80

SCALE: 1" = 10 Ft
0 5 10 20

901
5 AC
DETENTION
POND

TREATMENT PLANT

902

41 40

76 77

79 78

114 115

TREATMENT PLANT

FILTER BUILDING

41 40

NO.	DESCRIPTION	INITIALS	DATE

STATE OF TEXAS
JAMES F. PROCHASKA
80504
LICENSED PROFESSIONAL ENGINEER
9/25/2024

LWRE
LIGHTHOUSE WATER RESOURCE ENGINEERING
PO BOX 5667
BRYAN, TEXAS 77807 (979) 779-6500
Registration # F-21045

THE GARDEN OF CORDELL OAKS

SUBSURFACE AREA DRIP DISPOSAL SYSTEM
FIELD & TREATMENT OVERVIEW

DESIGNED:	JFP
DRAWN BY:	JEL
APPROVED:	JFP
FILE:	JOBS/Spark Homes
JOB NO.:	
DATE:	08/13/2024

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
6725902	Stock	Y	Plugged	
6725903	Domestic	Y	Cased	
6725906	Oil or Gas	Y	Unknown	
6725907	Unused	N	Plugged	
6725908	Domestic	Y	Unknown	

Well ID	Well Use	Producing? Y/N	Open, cased, capped, or plugged?	Proposed Best Management Practice
6725909	Domestic	Y	Cased	
6725910	Irrigation	Y	Cased	
6733302	Domestic	Y	Cased	

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%

ATTACHMENT W

TECHNICAL REPORT 3.3 – SECTION 3(D)

SOIL SAMPLING/TESTING

TEXAS A&M AGRILIFE EXTENSION

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478

Visit our website: http://soiltesting.tamu.edu

Report generated for:
James Prochaska
PO Box 5667
BRYAN, TX 77805

Sample received on: 5/24/2024
Printed on: 6/10/2024
Area Represented: 1.6 acres

Guadalupe County
Laboratory Number: 661347
Customer Sample ID: N Composite 0-12
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	
pH	6.0	(5.8)	-	Mod. Acid							
Conductivity	31	(-)	umho/cm	None				CL*			Fertilizer Recommended
Nitrate-N	10	(-)	ppm**								80 lbs N/acre
Phosphorus	6	(50)	ppm								105 lbs P2O5/acre
Potassium	73	(150)	ppm								125 lbs K20/acre
Calcium	348	(180)	ppm								0 lbs Ca/acre
Magnesium	40	(50)	ppm								5 lbs Mg/acre
Sulfur	4	(13)	ppm								15 lbs S/acre
Sodium	5	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement											0.00 tons 100ECCE/acre
TKN	403		ppm								

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre.

Sulfur: Available sulfur may be found deeper in soil profile, thus limiting any response to added sulfur.

Online fertilizer calculators to determine appropriate fertilizers and application rates.
http://soiltesting.tamu.edu

Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

TEXAS A&M AGRILIFE EXTENSION

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478

Visit our website: http://soiltesting.tamu.edu

Report generated for:
James Prochaska
PO Box 5667
BRYAN, TX 77805

Sample received on: 5/24/2024
Printed on: 6/10/2024
Area Represented: 1.6 acres

Guadalupe County
Laboratory Number: 661348
Customer Sample ID: N Composite 12-24
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess	Fertilizer Recommended
pH	6.0	(5.8)	-	Mod. Acid							
Conductivity	26	(-)	umho/cm	None			CL*				
Nitrate-N	3	(-)	ppm**								90 lbs N/acre
Phosphorus	2	(50)	ppm								115 lbs P2O5/acre
Potassium	68	(150)	ppm								135 lbs K20/acre
Calcium	400	(180)	ppm								0 lbs Ca/acre
Magnesium	64	(50)	ppm								0 lbs Mg/acre
Sulfur	4	(13)	ppm								15 lbs S/acre
Sodium	5	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement											0.00 tons 100ECCE/acre
TKN	382		ppm								

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre.

Sulfur: Available sulfur may be found deeper in soil profile, thus limiting any response to added sulfur.

Online fertilizer calculators to determine appropriate fertilizers and application rates.
http://soiltesting.tamu.edu

Methods: pH and conductivity 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

TEXAS A&M AGRILIFE EXTENSION

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478

Visit our website: http://soiltesting.tamu.edu

Report generated for:
James Prochaska
PO Box 5667
BRYAN, TX 77805

Sample received on: 5/24/2024
Printed on: 6/10/2024
Area Represented: 1.6 acres

Guadalupe County
Laboratory Number: 661349
Customer Sample ID: M Composite 0-12
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess	Fertilizer Recommended
pH	5.8	(5.8)	-	Mod. Acid							
Conductivity	51	(-)	umho/cm	None				CL*			
Nitrate-N	6	(-)	ppm**								85 lbs N/acre
Phosphorus	2	(50)	ppm								115 lbs P2O5/acre
Potassium	147	(150)	ppm								0 lbs K20/acre
Calcium	868	(180)	ppm								0 lbs Ca/acre
Magnesium	212	(50)	ppm								0 lbs Mg/acre
Sulfur	10	(13)	ppm								5 lbs S/acre
Sodium	8	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement											0.00 tons 100ECCE/acre
TKN	580		ppm								

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Sulfur: Available sulfur may be found deeper in soil profile, thus limiting any response to added sulfur.

Online fertilizer calculators to determine appropriate fertilizers and application rates.
http://soiltesting.tamu.edu

Methods: pH and conductivity/ 2:1, nitrate-N/Cd-red., P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP, Fe, Zn, Mn, and Cu/DTPA by ICP, and B/hot water by ICP.

TEXAS A&M AGRILIFE EXTENSION

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478

Visit our website: http://soiltesting.tamu.edu

Report generated for:
James Prochaska
PO Box 5667
BRYAN, TX 77805

Sample received on: 5/24/2024
Printed on: 6/10/2024
Area Represented: 1.6 acres

Guadalupe County
Laboratory Number: 661350
Customer Sample ID: M Composite 12-24
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow VLow Low Mod High VHigh Excess.	
pH	5.7	(5.8)	-	Mod. Acid	
Conductivity	56	(-)	umho/cm	None	Fertilizer Recommended
Nitrate-N	2	(-)	ppm**		95 lbs N/acre
Phosphorus	1	(50)	ppm		120 lbs P2O5/acre
Potassium	134	(150)	ppm		25 lbs K20/acre
Calcium	1,244	(180)	ppm		0 lbs Ca/acre
Magnesium	403	(50)	ppm		0 lbs Mg/acre
Sulfur	18	(13)	ppm		0 lbs S/acre
Sodium	23	(-)	ppm		
Iron					
Zinc					
Manganese					
Copper					
Boron					
Limestone Requirement					1.00 tons 100ECCE/acre
TKN	607		ppm		

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Limestone recommendations are based on 100 ECCE liming products. Limestone applications >3 tons/acre should be made >4 months prior to crop establishment to lessen micro-nutrient availability issues.

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Online fertilizer calculators to determine appropriate fertilizers and application rates.
http://soiltesting.tamu.edu

Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP, Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

TEXAS A&M AGRILIFE EXTENSION

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478

Visit our website: http://soiltesting.tamu.edu

Report generated for:
James Prochaska
PO Box 5667
BRYAN, TX 77805

Sample received on: 5/24/2024
Printed on: 6/10/2024
Area Represented: 1.6 acres

Guadalupe County
Laboratory Number: 661351
Customer Sample ID: S Composite 0-12
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess	Fertilizer Recommended
pH	6.1	(5.8)	-	Mod. Acid							
Conductivity	27	(-)	umho/cm	None							
Nitrate-N	5	(-)	ppm**								85 lbs N/acre
Phosphorus	4	(50)	ppm								110 lbs P2O5/acre
Potassium	102	(150)	ppm								75 lbs K20/acre
Calcium	430	(180)	ppm								0 lbs Ca/acre
Magnesium	51	(50)	ppm								0 lbs Mg/acre
Sulfur	4	(13)	ppm								15 lbs S/acre
Sodium	5	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement											0.00 tons 100ECCE/acre

TKN	444	ppm

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre.

Sulfur: Available sulfur may be found deeper in soil profile, thus limiting any response to added sulfur.

Online fertilizer calculators to determine appropriate fertilizers and application rates.
http://soiltesting.tamu.edu

Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP, and B/hot water by ICP.

TEXAS A&M AGRILIFE EXTENSION

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478

Visit our website: http://soiltesting.tamu.edu

Report generated for:
James Prochaska
PO Box 5667
BRYAN, TX 77805

Sample received on: 5/24/2024
Printed on: 6/10/2024
Area Represented: 1.6 acres

Guadalupe County
Laboratory Number: 661352
Customer Sample ID: S Composite 12-24
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess	Fertilizer Recommended
pH	6.1	(5.8)	-	Mod. Acid							
Conductivity	27	(-)	umho/cm	None			CL*				
Nitrate-N	6	(-)	ppm**								85 lbs N/acre
Phosphorus	2	(50)	ppm								115 lbs P2O5/acre
Potassium	75	(150)	ppm								125 lbs K20/acre
Calcium	374	(180)	ppm								0 lbs Ca/acre
Magnesium	44	(50)	ppm								5 lbs Mg/acre
Sulfur	3	(13)	ppm								15 lbs S/acre
Sodium	5	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement											0.00 tons 100ECCE/acre
TKN	400		ppm								

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

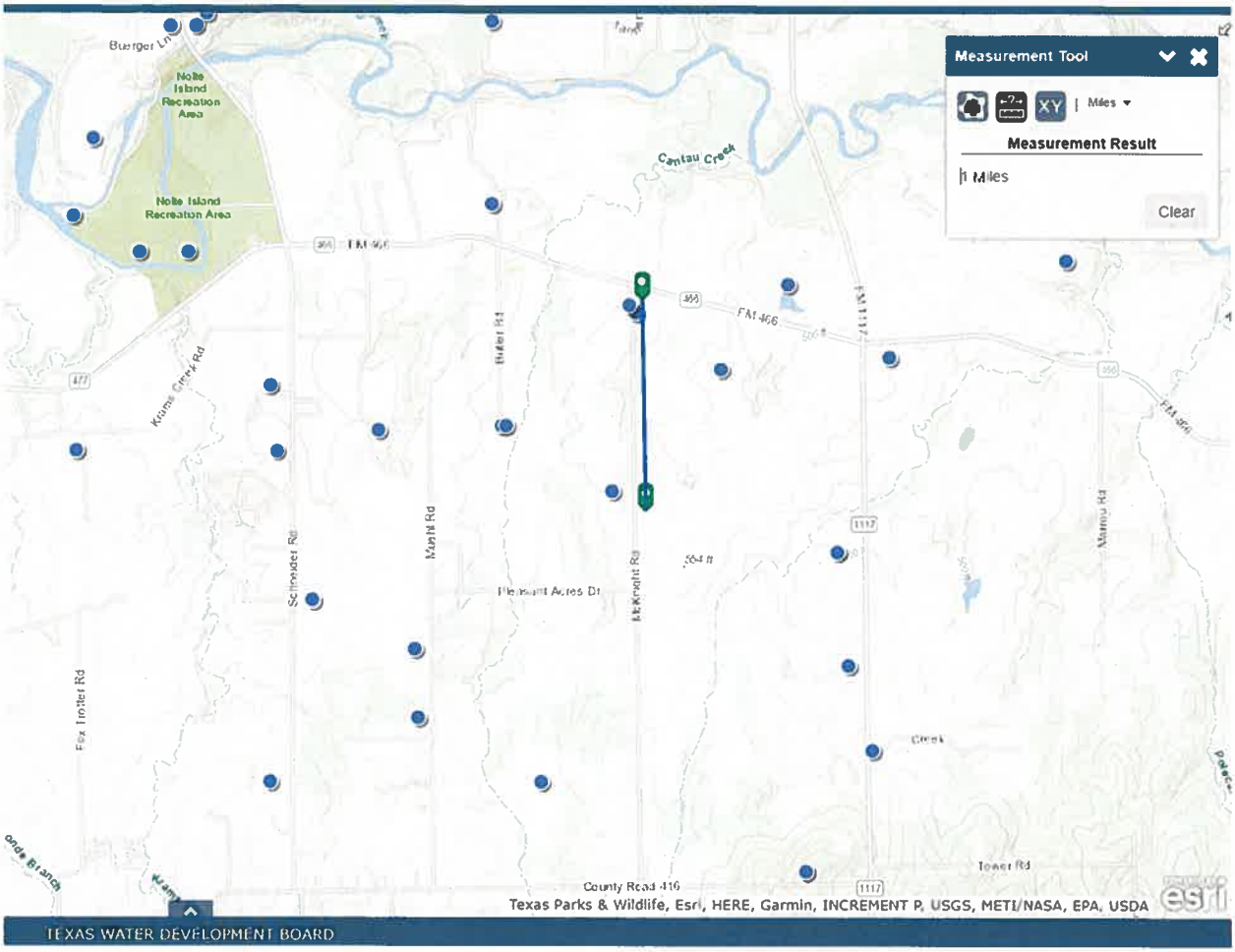
Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre.

Sulfur: Available sulfur may be found deeper in soil profile, thus limiting any response to added sulfur.

Online fertilizer calculators to determine appropriate fertilizers and application rates.
http://soiltesting.tamu.edu

Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red ; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP



Garden of Cordell Oaks Well review (TWDB website)

There are eight wells within a 1-mile radius of the property area as shown above from the website provided and printed on 10/03/2024.

Well Numbers, 6725910, 6725906, 6733302, 6725909, 6725907, 6725908, 6725902 and 6725903.

There is one well within a half-mile radius to the property based on TWDB website data as of 10/03/24.

Well Number 6725909.

Complete map provided with property, well and radial markers, along with the current shapefile from TWDB website on the "Existing Wells Exhibit" sheet.

Texas Water Development Board

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 67-25-902

groundwater

GWDB Reports and Downloads | **Well Basic Details** | Scanned Documents

State Well Number	6725902
County	Guadalupe
River Basin	Guadalupe
Groundwater Management Area	13
Regional Water Planning Area	L - South Central Texas
Groundwater Conservation District	Guadalupe County GCD
Latitude (decimal degrees)	29.522778
Latitude (degrees minutes seconds)	29° 31' 22" N
Longitude (decimal degrees)	-97.894167
Longitude (degrees minutes seconds)	097° 53' 39" W
Coordinate Source	+/- 5 Seconds
Aquifer Code	124WLCX - Wilcox Group
Aquifer	Carrizo-Wilcox
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	488
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	120
Well Depth Source	Owner
Drilling Start Date	
Drilling End Date	0/0/1916
Drilling Method	
Borehole Completion	

Well Type	Withdrawal of Water
Well Use	Stock
Water Level Observation	None
Water Quality Available	Yes
Pump	Piston
Pump Depth (feet below land surface)	
Power Type	Electric Motor
Annular Seal Method	
Surface Completion	
Owner	Bernard Nitsch
Driller	Fritz Meyer
Other Data Available	
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	U.S. Geological Survey
Created Date	1/9/1997
Last Update Date	1/9/1997

Remarks Estimated discharge 5 gpm. Unfit for drinking purposes.

Casing - No Data

Well Tests

Test Date	Test Type	Yield (gallons per minute)	Drawdown (ft.)	Test Hours
	Unknown	5		

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements

No Data Available

Water Quality Analysis

Sample Date: 5/4/1962 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** U.S. Geological Survey

Sampled Aquifer: Wilcox Group

Analyzed Lab: U.S. Geological Survey Lab **Reliability:** Collected from pumped well, but not filtered or preserved

Collection Remarks: No Data

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CACO3)		221.31	mg/L as CACO 3	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		270.07	mg/L	
00910	CALCIUM (MG/L)		475	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		545	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.3	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		1468	mg/L as CACO 3	
01046	IRON, DISSOLVED (UG/L AS FE)	<	10	ug/L	
01045	IRON, TOTAL (UG/L AS FE)		15000	ug/L	
00920	MAGNESIUM (MG/L)		69	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		1	mg/L as NO3	
00400	PH (STANDARD UNITS), FIELD		6.3	SU	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
00955	SILICA, DISSOLVED (MG/L AS SI02)		46	mg/L as SIO2	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		2.46		
00932	SODIUM, CALCULATED, PERCENT		24	PCT	
00929	SODIUM, TOTAL (MG/L AS NA)	calculated	217	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		3340	MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)		912	mg/L as SO4	
00010	TEMPERATURE, WATER (CELSIUS)		23	C	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		2398	mg/L	

** Value may not display all significant digits for parameter in results, check Scanned Documents for laboratory paperwork..*

GWDB DISCLAIMER: Except where noted, all of the information provided in the Texas Water Development Board (TWDB) Groundwater Database (https://www.twdb.texas.gov/groundwater/data/gwdbrpt.asp) is believed to be accurate and reliable; however, the TWDB assumes no responsibility for any errors appearing in rules or otherwise. Further, TWDB assumes no responsibility for the use of the information provided. PLEASE NOTE that users of these data are responsible for checking the accuracy, completeness, currency and/or suitability of all information themselves. TWDB makes no guarantees or warranties as to the accuracy, completeness, currency, or suitability of the information provided via the Groundwater Database (GWDB). TWDB specifically disclaims any and all liability for any claims or damages that may result from providing GWDB data or the information it contains. For additional information or answers to questions concerning the TWDB GWDB, contact the Groundwater Data Team at GroundwaterData@twdb.texas.gov.

9-185—July 1935
Revised

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES BRANCH

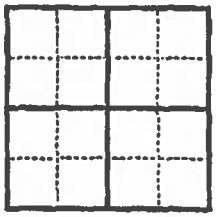
WELL SCHEDULE KX-67-25-902-

Date ....., 19..... Field No. .....

Record by ..... Office No. .....

Source of data KX-6725902

1. *Location:* State ..... County .....
   Map ..... Sec. ..... T ..... N/S R ..... E/W
   ..... ¼ ..... ¼ sec. .....
2. *Owner:* ..... Address .....
   Tenant ..... Address .....
   Driller ..... Address .....
3. *Topography* .....
4. *Elevation* ..... ft. above/below .....
5. *Type:* Dug, drilled, driven, bored, jetted ..... 19..
6. *Depth:* Rept. ..... ft. Meas. ..... ft.
7. *Casing:* Diam. ..... in., to ..... in., Type .....
   Depth ..... ft., Finish .....
8. *Chief Aquifer* ..... From ..... ft. to ..... ft.
   Others .....
9. *Water level* ..... ft. rept./meas. ..... 19..... above/below .....
   ..... which is ..... ft. above/below surface
10. *Pump:* Type ..... Capacity ..... G. M. .....
    Power: Kind ..... Horsepower .....
11. *Yield:* Flow ..... G. M., Pump ..... G. M., Meas., Rept., Est. .....
    Drawdown ..... ft. after ..... hours pumping ..... G. M.
12. *Use:* Dom., Stock, PS., RR., Ind., Irr., Obs. .....
    Adequacy, permanence .....
13. *Quality* ..... Temp ..... °F.
    Taste, odor, color ..... Sample Yes/No .....
    Unfit for .....
14. *Remarks:* (Log, Analyses, etc.) .....



U. S. GOVERNMENT PRINTING OFFICE 0—7675

USGS-WRD
Form GW

ANALYTICAL STATEMENT

COUNTY GUADALUPE
LAB NO. 76215

Well No. KX-67-25-902

Location 5 mi SE of Seguin

Source (type of well) drld well
Owner Bernard Nitsch, Rt. 2, Box 261, Seguin, Texas
Date drld 1916 Depth 120 ft
WBP Wilcox Sand
Producing interval 60-120
Water level 81 60 blw lsd
Sampled after pumping 10 min.
Yield 5 GPM pmp est
Pt of coll at pump
Appearance clear
Temp (°F) 74 Use stock
Collector W. H. Alexander, Jr.
Chemist MWF
Date completed May 23, 1962
Checked by DED
Date transmitted JUN 7 1962

Date of collection May 4, 1962

Ignition Loss

Dissolved Solids:
Calculated (sum) 2,400
Residue at 180°C

Tons per acre foot 3.26

Hardness as $CaCO_3$ 1,470
N.C. hardness 1,250
% Na 24 SAR 2.5 RSC

Specific conductance (micromhos at 25°C) 3,340

pH 6.3 Color

well at house, used for stock only, Copy to owner

KEY PUNCHED

	epm	ppm
SiO_2		46
Fe		.00
Fe (total)		15
Ca	23.70	475
Mg	5.68	69
Na		
K		
	29.38	
Na + K	9.45	217
HCO_3	4.43	270
CO_3	.00	0
SO_4	18.99	912
Cl	15.37	545
F	.02	.3
NO_3	.02	1.0
	38.83	

KEY PUNCHED

Texas Water Development Board

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 67-25-903

groundwater division

GWDB Reports and Downloads | **Well Basic Details** | Scanned Documents

State Well Number	6725903
County	Guadalupe
River Basin	Guadalupe
Groundwater Management Area	13
Regional Water Planning Area	L - South Central Texas
Groundwater Conservation District	Guadalupe County GCD
Latitude (decimal degrees)	29.523333
Latitude (degrees minutes seconds)	29° 31' 24" N
Longitude (decimal degrees)	-97.894722
Longitude (degrees minutes seconds)	097° 53' 41" W
Coordinate Source	+/- 5 Seconds
Aquifer Code	124WLCX - Wilcox Group
Aquifer	Carrizo-Wilcox
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	492
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	265
Well Depth Source	Owner
Drilling Start Date	
Drilling End Date	12/0/1961
Drilling Method	
Borehole Completion	

Well Type	Withdrawal of Water
Well Use	Domestic
Water Level Observation	Miscellaneous Measurements
Water Quality Available	Yes
Pump	Submersible
Pump Depth (feet below land surface)	
Power Type	Electric Motor
Annular Seal Method	
Surface Completion	
Owner	Bernard Nitsch
Driller	Schubert Water Well Drilling
Other Data Available	
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	U.S. Geological Survey
Created Date	1/9/1997
Last Update Date	1/9/1997

Remarks Reported discharge 10 gpm.

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
5	Screen				225	265

Well Tests

Test Date	Test Type	Yield (gallons per minute)	Drawdown (ft.)	Test Hours
	Unknown	10		

Lithology - No Data

Annular Seal Range - No Data

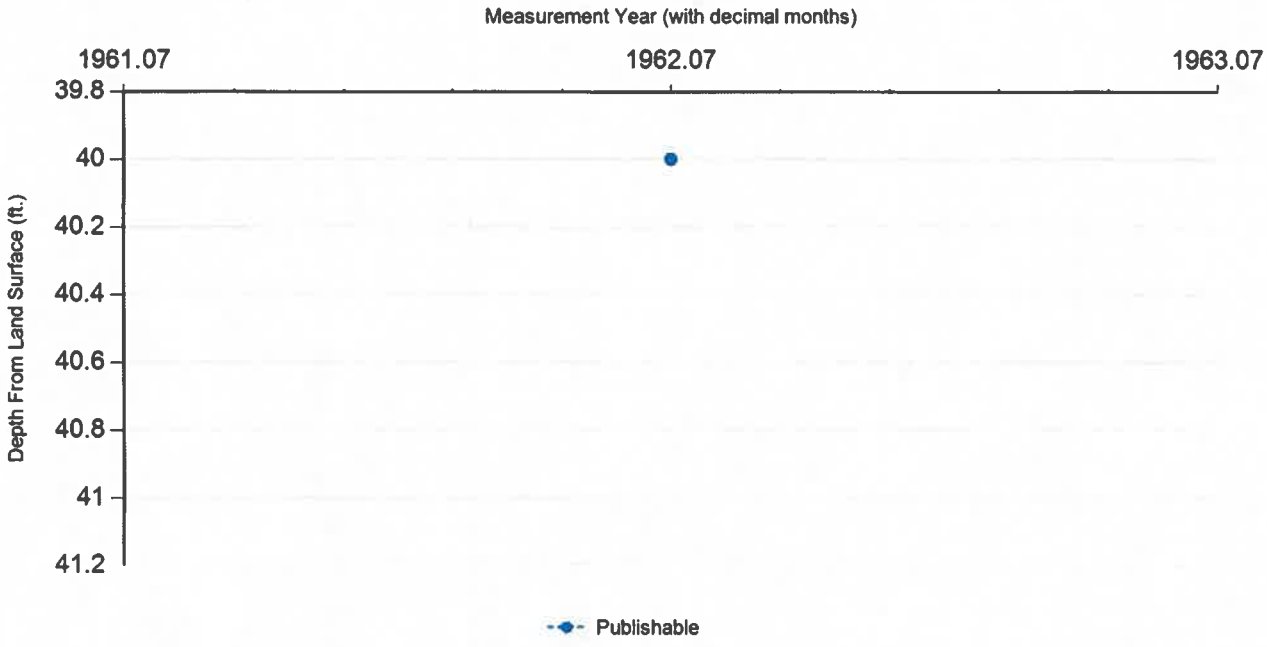
Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements



Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	12/0/1961		40		452	1	Registered Water Well Driller	Unknown		

Code Descriptions

Status Code	Status Description
P	Publishable

Water Quality Analysis

Sample Date: 5/4/1962 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** U.S. Geological Survey

Sampled Aquifer: Wilcox Group

Analyzed Lab: U.S. Geological Survey Lab **Reliability:** Reliability unknown or not available

Collection Remarks: pressure system

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CACO3)		288.52	mg/L as CACO3	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		352.09	mg/L	
00910	CALCIUM (MG/L)		46	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		69	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.2	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		213	mg/L as CACO3	
01046	IRON, DISSOLVED (UG/L AS FE)	<	10	ug/L	
01045	IRON, TOTAL (UG/L AS FE)		280	ug/L	
00920	MAGNESIUM (MG/L)		24	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		1	mg/L as NO3	
00400	PH (STANDARD UNITS), FIELD		7	SU	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		1.5		
00955	SILICA, DISSOLVED (MG/L AS SI02)		24	mg/L as SIO2	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		3.22		
00932	SODIUM, CALCULATED, PERCENT		52	PCT	
00929	SODIUM, TOTAL (MG/L AS NA)	calculated	108	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		842	MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)		59	mg/L as SO4	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		504	mg/L	

** Value may not display all significant digits for parameter in results, check Scanned Documents for laboratory paperwork..*

GWDB DISCLAIMER: Except where noted, all of the information provided in the Texas Water Development Board (TWDB) Groundwater Database (https://www.twdb.texas.gov/groundwater/data/gwdbrpt.asp) is believed to be accurate and reliable; however, the TWDB assumes no responsibility for any errors appearing in rules or otherwise. Further, TWDB assumes no responsibility for the use of the information provided. PLEASE NOTE that users of these data are responsible for checking the accuracy, completeness, currency and/or suitability of all information themselves. TWDB makes no guarantees or warranties as to the accuracy, completeness, currency, or suitability of the information provided via the Groundwater Database (GWDB). TWDB specifically disclaims any and all liability for any claims or damages that may result from providing GWDB data or the information it contains. For additional information or answers to questions concerning the TWDB GWDB, contact the Groundwater Data Team at GroundwaterData@twdb.texas.gov.

9-185—July 1935
Revised

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES BRANCH

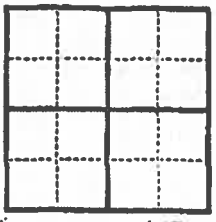
WELL SCHEDULE KX- [illegible]

Date ....., 19..... Field No. .....

Record by ..... Office No. .....

Source of data KX-6725903

1. *Location:* State ..... County .....
   Map .....
   ..... ¼ ..... ¼ sec. ..... T ..... N/S R ..... E/W
2. *Owner:* ..... Address .....
   Tenant ..... Address .....
   Driller ..... Address .....
3. *Topography* .....
4. *Elevation* ..... ft. above/below .....
5. *Type:* Dug, drilled, driven, bored, jetted ..... 19.....
6. *Depth:* Rept. ..... ft. Meas. ..... ft.
7. *Casing:* Diam. ..... in., to ..... in., Type .....
   Depth ..... ft., Finish .....
8. *Chief Aquifer* ..... From ..... ft. to ..... ft.
   Others .....
9. *Water level* ..... ft. rept./meas. ..... 19..... above/below .....
   ..... which is ..... ft. above/below surface
10. *Pump:* Type ..... Capacity ..... G. M. .....
    Power: Kind ..... Horsepower .....
11. *Yield:* Flow ..... G. M., Pump ..... G. M., Meas., Rept. Est. .....
    Drawdown ..... ft. after ..... hours pumping ..... G. M.
12. *Use:* Dom., Stock, PS., RR., Ind., Irr., Obs. .....
    Adequacy, permanence .....
13. *Quality* ..... Temp ..... °F.
    Taste, odor, color ..... Sample (Yes/No) .....
    Unfit for .....
14. *Remarks:* (Log, Analyses, etc.) .....



U. S. GOVERNMENT PRINTING OFFICE 0—7478

USGS-WRD
Form CM

ANALYTICAL STATEMENT

COUNTY GUADALUPE

Well No. KX-67-25-903

LAB NO. 76214

Location 5 mi SE Seguin

Date of collection May 4, 1962

Source (type of well) drld well

Owner Bernard Nitsch, Rt. 2, Box 261, Seguin, Texas

Date drld 1961 Depth 265 ft

Wat. Wilcox sand

Producing intervals 225-265

Water level at 40 blw lsd

Sampled after pumping Auto pres system

Yield 10 GPM pmp est

Pt of coll at well

Appearance clear

Temp (°F) 79(3) dom. stock

Collector W. H. Alexander, Jr.

Chemist MWE

Date completed May 23, 1962

Checked by DHD

Date transmitted JUN 27 1962

Ignition Loss

Dissolved Solids:

Calculated (sum) 504

Residue at 180°C 502

Tons per acre foot 69

Hardness as $CaCO_3$ 214

N.C. hardness 0

% Na 52 SAR 3.2 RSC

Specific conductance (micromhos at 25°C) 842

pH 7.0 Color

Copy to owner. Supplies dairy farm & House, (well north of dairy barn

KEY PUNCHED

	epm	ppm
SiO_2		24
Fe		.00
Fe (total)		.28
Ca	2.30	46
Mg	1.97	24
Na		
K		
Na+K	4.27 4.71	108
HCO_3	5.77	352
CO_3	.00	0
SO_4	1.23	59
Cl	1.95	69
F	.01	.2
NO_3	.02	1.0
	8.98	

KEY PUNCHED

Texas Water Development Board

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 67-25-906

groundwater division

GWDB Reports and Downloads | **Well Basic Details** | Scanned Documents

State Well Number	6725906
County	Guadalupe
River Basin	Guadalupe
Groundwater Management Area	13
Regional Water Planning Area	L - South Central Texas
Groundwater Conservation District	Guadalupe County GCD
Latitude (decimal degrees)	29.506389
Latitude (degrees minutes seconds)	29° 30' 23" N
Longitude (decimal degrees)	-97.878333
Longitude (degrees minutes seconds)	097° 52' 42" W
Coordinate Source	+/- 1 Minute
Aquifer Code	NOT-APPL - Aquifer Code Is Not Applicable to this Well
Aquifer	Unassigned
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	490
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	2983
Well Depth Source	Geophysical Log
Drilling Start Date	
Drilling End Date	0/0/1952
Drilling Method	
Borehole Completion	

Well Type	Oil or Gas
Well Use	
Water Level Observation	None
Water Quality Available	No
Pump	
Pump Depth (feet below land surface)	
Power Type	
Annular Seal Method	
Surface Completion	
Owner	Virgil Halm No.1
Driller	Hughes and Hebert
Other Data Available	Electric Log
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	U.S. Geological Survey
Created Date	1/9/1997
Last Update Date	1/9/1997

Remarks	Oil test.

Casing - No Data

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements

No Data Available

Water Quality Analysis - No Data Available

GWDB DISCLAIMER: Except where noted, all of the information provided in the Texas Water Development Board (TWDB) Groundwater Database (https://www.twdb.texas.gov/groundwater/data/gwdbrpt.asp) is believed to be accurate and reliable; however, the TWDB assumes no responsibility for any errors appearing in rules or otherwise. Further, TWDB assumes no responsibility for the use of the information provided. PLEASE NOTE that users of these data are responsible for checking the accuracy, completeness, currency and/or suitability of all information themselves. TWDB makes no guarantees or warranties as to the accuracy, completeness, currency, or suitability of the information provided via the Groundwater Database (GWDB). TWDB specifically disclaims any and all liability for any claims or damages that may result from providing GWDB data or the information it contains. For additional information or answers to questions concerning the TWDB GWDB, contact the Groundwater Data Team at GroundwaterData@twdb.texas.gov.

CROSS REFERENCE SHEET

Name or Subject: CR-GWTD
GUADALUPE Located Well Data
KK 67-25-906

Date

Regarding: Electric Log

SEE

Name or Subject: GW-SC
ELECTRIC LOG FILE Q-60

B-152(62-1)

Texas Water Development Board

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 67-25-907

groundwater division

GWDB Reports and Downloads | **Well Basic Details** | Scanned Documents

State Well Number	6725907
County	Guadalupe
River Basin	Guadalupe
Groundwater Management Area	13
Regional Water Planning Area	L - South Central Texas
Groundwater Conservation District	Guadalupe County GCD
Latitude (decimal degrees)	29.515001
Latitude (degrees minutes seconds)	29° 30' 54" N
Longitude (decimal degrees)	-97.904723
Longitude (degrees minutes seconds)	097° 54' 17" W
Coordinate Source	+/- 1 Second
Aquifer Code	124WLCX - Wilcox Group
Aquifer	Carrizo-Wilcox
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	480
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	350
Well Depth Source	Owner
Drilling Start Date	
Drilling End Date	0/0/1961
Drilling Method	
Borehole Completion	

Well Type	Withdrawal of Water
Well Use	Unused
Water Level Observation	Miscellaneous Measurements
Water Quality Available	No
Pump	None
Pump Depth (feet below land surface)	
Power Type	
Annular Seal Method	
Surface Completion	
Owner	Sam B. Butler
Driller	Roland K. Blumberg
Other Data Available	
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	U.S. Geological Survey
Created Date	1/9/1997
Last Update Date	1/9/1997

Remarks Test well. Will be completed as water well in future.

Casing - No Data

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

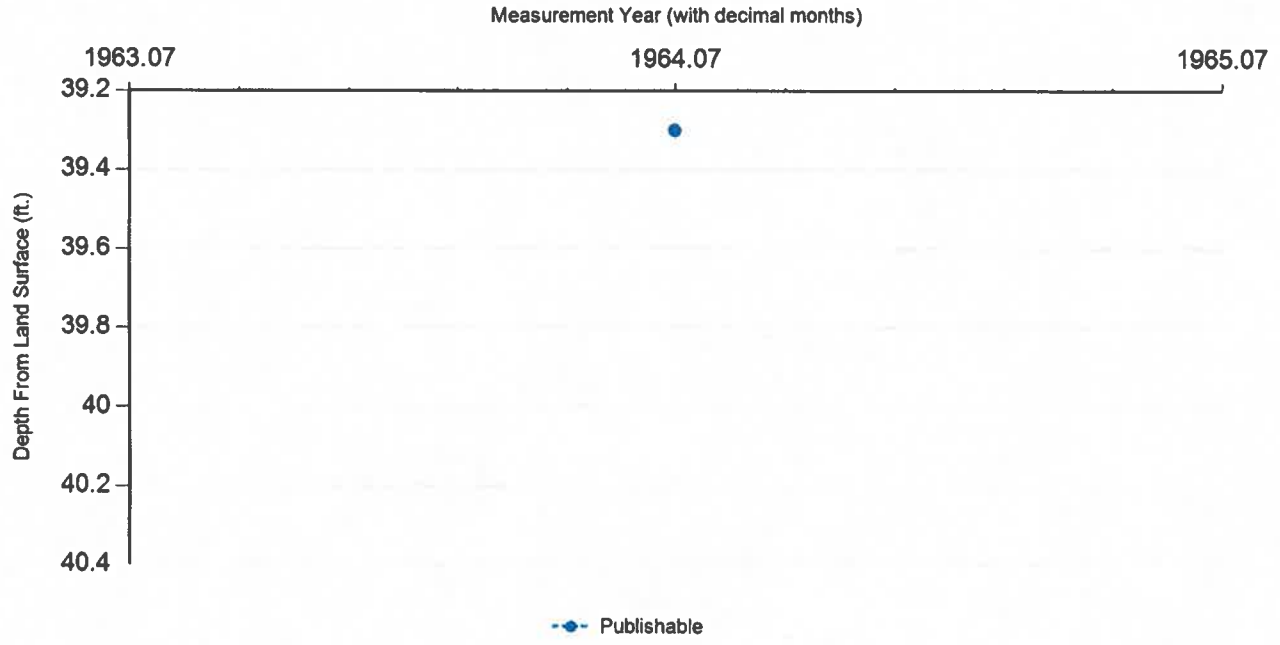
Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements



Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	1/27/1964		39.3		440.7	1	U.S. Geological Survey	Steel Tape		

Code Descriptions

Status Code	Status Description
P	Publishable

Water Quality Analysis - No Data Available

GWDB DISCLAIMER: Except where noted, all of the information provided in the Texas Water Development Board (TWDB) Groundwater Database (https://www.twdb.texas.gov/groundwater/data/gwdbrpt.asp) is believed to be accurate and reliable; however, the TWDB assumes no responsibility for any errors appearing in rules or otherwise. Further, TWDB assumes no responsibility for the use of the information provided. PLEASE NOTE that users of these data are responsible for checking the accuracy, completeness, currency and/or suitability of all information themselves. TWDB makes no guarantees or warranties as to the accuracy, completeness, currency, or suitability of the information provided via the Groundwater Database (GWDB). TWDB specifically disclaims any and all liability for any claims or damages that may result from providing GWDB data or the information it contains. For additional information or answers to questions concerning the TWDB GWDB, contact the Groundwater Data Team at GroundwaterData@twdb.texas.gov.

9-185—July 19
Revised

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES BRANCH

WELL SCHEDULE

Date 1-27-, 19 61 Field No. _____

Record by G.H.G. Office No. _____

Source of data [illegible] KX-6725-907

1. *Location:* State Texas County Guadalupe

Map _____

_____ ¼ _____ ¼ sec. _____ T _____ N S R _____ E W

2. *Owner:* Sam B. Butler Address R[illegible] Seguin 1

Tenant _____ Address _____

Driller Roland K. Blumberg Address Seguin, Texas

3. *Topography* _____

4. *Elevation* _____ ft. above below SL

5. *Type:* Dug, drilled, driven, bored, jetted 19 61

6. *Depth:* Rept. 350 ft. Meas. _____ ft.

7. *Casing:* Diam. 2 in., to _____ in., Type _____

Depth ? ft., Finish open

8. *Chief Aquifer* Wilcox [illegible] From _____ ft. to _____ ft.

Others _____

9. *Water level* 40.28 ft. rept. meas. 1-27- 19 [illegible] above below top of casing which is 1.0 ft. above below surface

10. *Pump:* Type N/ Capacity _____ G. M. _____

Power: Kind N Horsepower _____

11. *Yield:* Flow _____ G. M., Pump _____ G. M., Meas., Rept. Est. _____

Drawdown _____ ft. after _____ hours pumping _____ G.M.

12. *Uses:* Dom., Stock, PS., RR., Ind., Irr., Obs. No use.

Adequacy, permanence _____

13. *Quality* _____ Temp _____ °F.

Taste, odor, color Good Sample Yes No _____

Unfit for _____

14. *Remarks:* (Log, Analyses, etc.) No analysis taken 5/4/62

No water reported.

No pump 1-27-61.

Owner is going to redrill hole and complete as water well in future.

Texas Water Development Board

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 67-25-908

groundwater division

GWDB Reports and Downloads

Well Basic Details

Scanned Documents

State Well Number	6725908
County	Guadalupe
River Basin	Guadalupe
Groundwater Management Area	13
Regional Water Planning Area	L - South Central Texas
Groundwater Conservation District	Guadalupe County GCD
Latitude (decimal degrees)	29.515001
Latitude (degrees minutes seconds)	29° 30' 54" N
Longitude (decimal degrees)	-97.904445
Longitude (degrees minutes seconds)	097° 54' 16" W
Coordinate Source	+/- 1 Second
Aquifer Code	124WLCX - Wilcox Group
Aquifer	Carrizo-Wilcox
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	477
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	105
Well Depth Source	Owner
Drilling Start Date	
Drilling End Date	0/0/1949
Drilling Method	
Borehole Completion	

Well Type	Withdrawal of Water
Well Use	Domestic
Water Level Observation	None
Water Quality Available	Yes
Pump	Jet
Pump Depth (feet below land surface)	
Power Type	Electric Motor
Annular Seal Method	
Surface Completion	
Owner	Sam B. Butler
Driller	Henry Herbold
Other Data Available	
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	U.S. Geological Survey
Created Date	1/9/1997
Last Update Date	1/9/1997

Remarks

Casing - No Data

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements

No Data Available

Water Quality Analysis

Sample Date: 1/28/1964 **Sample Time:** 0000 **Sample Number:** 1 **Collection Entity:** U.S. Geological Survey

Sampled Aquifer: Wilcox Group

Analyzed Lab: U.S. Geological Survey Lab **Reliability:** Collected from pumped well, but not filtered or preserved

Collection Remarks: No Data

Parameter Code	Parameter Description	Flag	Value*	Units	Plus/Minus
00415	ALKALINITY, PHENOLPHTHALEIN (MG/L)		0	mg/L	
00410	ALKALINITY, TOTAL (MG/L AS CACO3)		340.98	mg/L as CACO 3	
00440	BICARBONATE ION, CALCULATED (MG/L AS HCO3)		416.11	mg/L	
00910	CALCIUM (MG/L)		160	mg/L	
00445	CARBONATE ION, CALCULATED (MG/L AS CO3)		0	mg/L	
00940	CHLORIDE, TOTAL (MG/L AS CL)		130	mg/L	
00950	FLUORIDE, DISSOLVED (MG/L AS F)		0.7	mg/L	
00900	HARDNESS, TOTAL, CALCULATED (MG/L AS CACO3)		559	mg/L as CACO 3	
01046	IRON, DISSOLVED (UG/L AS FE)		10	ug/L	
01045	IRON, TOTAL (UG/L AS FE)		3400	ug/L	
00920	MAGNESIUM (MG/L)		39	mg/L	
71851	NITRATE NITROGEN, DISSOLVED, CALCULATED (MG/L AS NO3)		0	mg/L as NO3	
00400	PH (STANDARD UNITS), FIELD		7.2	SU	
71860	RESIDUAL SODIUM CARBONATE, CALCULATED		0		
00955	SILICA, DISSOLVED (MG/L AS SI02)		27	mg/L as SIO2	
00931	SODIUM ADSORPTION RATIO, CALCULATED (SAR)		1.62		
00932	SODIUM, CALCULATED, PERCENT		25	PCT	
00929	SODIUM, TOTAL (MG/L AS NA)	calculate d	88	mg/L	
00094	SPECIFIC CONDUCTANCE, FIELD (UMHOS/CM AT 25C)		1370	MICR	
00945	SULFATE, TOTAL (MG/L AS SO4)		216	mg/L as SO4	
70301	TOTAL DISSOLVED SOLIDS , SUM OF CONSTITUENTS (MG/L)		865	mg/L	

** Value may not display all significant digits for parameter in results, check Scanned Documents for laboratory paperwork..*

GWDB DISCLAIMER: Except where noted, all of the information provided in the Texas Water Development Board (TWDB) Groundwater Database (https://www.twdb.texas.gov/groundwater/data/gwdbrpt.asp) is believed to be accurate and reliable; however, the TWDB assumes no responsibility for any errors appearing in rules or otherwise. Further, TWDB assumes no responsibility for the use of the information provided. PLEASE NOTE that users of these data are responsible for checking the accuracy, completeness, currency and/or suitability of all information themselves. TWDB makes no guarantees or warranties as to the accuracy, completeness, currency, or suitability of the information provided via the Groundwater Database (GWDB). TWDB specifically disclaims any and all liability for any claims or damages that may result from providing GWDB data or the information it contains. For additional information or answers to questions concerning the TWDB GWDB, contact the Groundwater Data Team at GroundwaterData@twdb.texas.gov.

9-185—July 193
Revised

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES BRANCH

WELL SCHEDULE

Date 1-28- , 1964 Field No.

Record by G.H.S. Office No.

Source of data Owner KX-62-25-905

1. *Location:* State Texas County Guadalupe

Map

____ ¼ ____ ¼ sec. ____ T ____ N/S R ____ E/W

2. *Owner:* Sam B. Butler Address Rt. 2, Seguin

Tenant do Address do

Driller Henry Herbold Address Dead.

3. *Topography* —

4. *Elevation* 477 ft. above/below —

5. *Type:* Dug, (drilled), driven, bored, jetted 19 49

6. *Depth:* Rept. 105 ft. Meas. ____ ft.

7. *Casing:* Diam. 6 in., to ____ in., Type ____

Depth ____ ft., Finish ____

8. *Chief Aquifer* Wilcox Group From ____ ft. to ____ ft

Others

9. *Water level* ____ ft. rept./meas. ____ 19____ above/below ____

____ which is ____ ft. above/below surface

10. *Pump:* Type Jet Capacity ____ G.M.

Power: Kind E Horsepower 3/4

11. *Yield:* Flow ____ G.M., Pump ____ G.M., Meas., Rept. Est.

Drawdown ____ ft. after ____ hours pumping ____ G.M.

12. *Use:* (Dom.), Stock, PS., RR., Ind., Irr., Obs.

Adequacy, permanence

13. *Quality* ____ Temp ____ °F.

Taste, odor, color ____ Sample (Yes)/No 1-28-64

Unfit for ____

14. *Remarks:* (Log, Analyses, etc.)

USGS-WRD
Form GW

ANALYTICAL STATEMENT

Well No. KX-6725908

COUNTY GUADALUPE

LAB NO. 85707

Location

Source (type of well) drld

Owner Sam B. Butler

Rt. 2, Seguin, Texas

Date drld 1949 Depth 105 ft

WBU Wilcox

Producing Intervals

Water level ft

Sampled after pumping

Yield GPM

Pc of coll disch at well

Appearance clear

Temp (°F) Use dom, stock

Collector G. H. Shafer

Chemist A. J. Dupuy

Date completed Feb. 10, 1964

Checked by LR

Date transmitted FEB 19 1964

Date of collection Jan. 28, 1964

Ignition Loss

Dissolved Solids:

Calculated (com) 866

Residue at 180°C

Tons per acre foot 1.18

Hardness as $CaCO_3$ 560

N.C. hardness 218

% Na 26 SAR 1.6 ASC 0.00

Specific conductance (micromhos at 25°C) 1,370

pH 7.2 Color

Copy to owner.

Fe ppt--------3.4

KEY PUNCHED

	epm	ppm
SiO_2		27
Fe		0.01
Fe (total)		3.4
Ca	7.98	160
Mg	3.21	39
Na		
K		
	11.19	
Na+K	3.84	88
HCO_3	6.82	416
CO_3	.00	0
SO_4	4.50	216
Cl	3.67	130
F	.04	0.7
NO_3	.00	0.0
	15.03	

KEY PUNCHED

Texas Water Development Board

Texas Water Development Board (TWDB) Groundwater Database (GWDB) Well Information Report for State Well Number 67-25-909

groundwater division

GWDB Reports and Downloads | **Well Basic Details** | Scanned Documents

State Well Number	6725909
County	Guadalupe
River Basin	Guadalupe
Groundwater Management Area	13
Regional Water Planning Area	L - South Central Texas
Groundwater Conservation District	Guadalupe County GCD
Latitude (decimal degrees)	29.510556
Latitude (degrees minutes seconds)	29° 30' 38" N
Longitude (decimal degrees)	-97.896111
Longitude (degrees minutes seconds)	097° 53' 46" W
Coordinate Source	+/- 1 Second
Aquifer Code	124WLCX - Wilcox Group
Aquifer	Carrizo-Wilcox
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	520
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	335
Well Depth Source	Driller's Log
Drilling Start Date	
Drilling End Date	4/28/1971
Drilling Method	Mud (Hydraulic) Rotary
Borehole Completion	Perforated or Slotted

Well Type	Withdrawal of Water
Well Use	Domestic
Water Level Observation	None
Water Quality Available	No
Pump	Submersible
Pump Depth (feet below land surface)	
Power Type	Electric Motor
Annular Seal Method	
Surface Completion	
Owner	Henry E. Bergfeld
Driller	Charles L. Behrens Drilling
Other Data Available	Drillers Log
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	Texas Water Development Board
Created Date	10/10/1976
Last Update Date	1/9/1997

Remarks

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
4	Screen	Plastic (PVC)			300	320

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements

No Data Available

Texas Water Development Board

Texas Water Development Board (TWDB) Groundwater Database (GWDB) Well Information Report for State Well Number 67-25-909

groundwater

Water Quality Analysis - No Data Available

GWDB DISCLAIMER: Except where noted, all of the information provided in the Texas Water Development Board (TWDB) Groundwater Database (https://www.twdb.texas.gov/groundwater/data/gwdbrpt.asp) is believed to be accurate and reliable; however, the TWDB assumes no responsibility for any errors appearing in rules or otherwise. Further, TWDB assumes no responsibility for the use of the information provided. PLEASE NOTE that users of these data are responsible for checking the accuracy, completeness, currency and/or suitability of all information themselves. TWDB makes no guarantees or warranties as to the accuracy, completeness, currency, or suitability of the information provided via the Groundwater Database (GWDB). TWDB specifically disclaims any and all liability for any claims or damages that may result from providing GWDB data or the information it contains. For additional information or answers to questions concerning the TWDB GWDB, contact the Groundwater Data Team at GroundwaterData@twdb.texas.gov.

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Wx Field No. State Well No. 67-25-909

Owner's Well No. County Guadalupe

1. Location: 1/4 1/4 Sec. , Block Survey Jesus Canto Survey ABSTRACT # 9 SO. J. E.L.Z. NE PART OF SECTION
8 mi So Seguin

2. Owner: Henry E. Bergfeld Address: 3406 Kay Corpus Christi Tx
Tenant: Address:
Driller: Chas J Behrens Address: Rt 2 Box 242F Seguin 78155

3. Elevation of LSD is 520 ft. above msl, determined by SEGUIN TX QUAD

4. Drilled: 4-28 19 71; Dug, Cable Tool, Rotary

5. Depth: Rept. 335 ft. Meas. ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed other

7. Pump: Mfgr. Type SvBM
No. Stages , Bowls Diam. in., Setting 160 ft.
Column Diam. in., Length Tailpipe ft.

8. Motor: Fuel Elect Make & Model HP. 1

9. Yield: Flow gpm, Pump gpm, Meas., Rept., Est.

10. Performance Test: Date Length of Test Made by
Static Level 95 ft. Pumping Level ft. Drawdown ft.
Production gpm Specific Capacity gpm/ft.

CASING & BLANK PIPE — Cemented From 0 ft. to 3 ft.

Diam. (in.)	Type	Setting, ft. From	to	
4	new steel	0	320	.200 gage

11. Water Level: ft. rept. meas. 19 above below which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.

* 12. Use: (Dom.) Stock, Public Supply, Ind., Irr. Waterflooding, Observation, Not Used,

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. °F, Date sampled for analysis Laboratory
Temp. °F, Date sampled for analysis Laboratory
Temp. °F, Date sampled for analysis Laboratory

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

15. Record by: Bill OPFel Date 10 1976
Source of Data

16. Remarks:

* Stock
will need New Pump - Struck By Lightning
Not used Nothing Any More (Oct 1976)

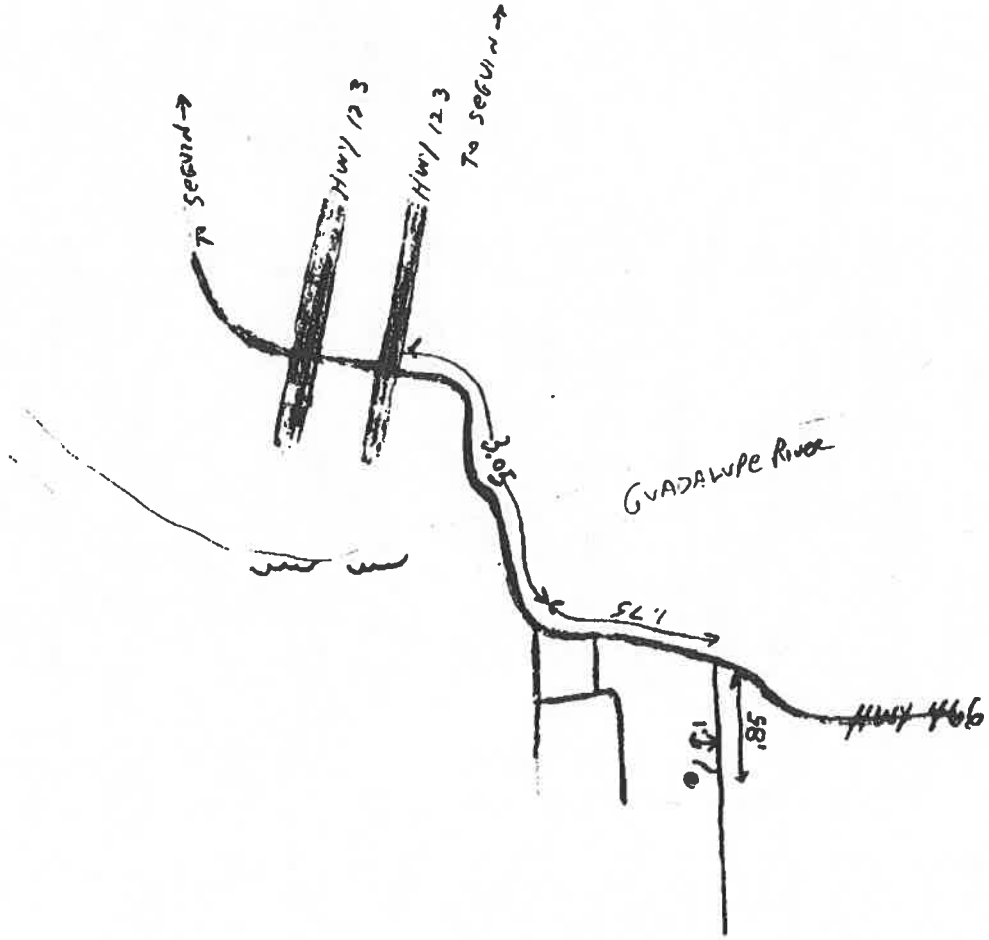
WELL SCREEN — Screen Openings slotted

Diam. (in.)	Type	Setting, ft. From	to	
4		300	320	Slot size .1/6x4

TWDBS-WD-2 (Sketch)

KZ 67-25-909

From (Ft.)	To (Ft.)	Description and color of formation material
0	55	Brown Sandy Clay
55	95	Blue Clay
95	100	Blue Sand
100	125	Blue Clay + Rocks
125	130	Blue Sand
130	140	Blue Clay
140	244	Blue Clay + Sandy Stks
244	292	Blue Clay
292	300	Blue Shale + clay stks
300	334	Blue Sand
334	335	Blue Clay



d original copy by
tified mail to the
as Water Development Board
. Box 12386
in, Texas 78711

State of Texas

WATER WELL REPORT

For TWDB use only
Well No. 67-25-9B
Located on map yes
Received: 71
also

OWNER:
Person having well drilled Henry E. Bergfeld (Name) Address 3406 Kay (Street or RFD) Corpus Christi (City), Tex (State)

Landowner " (Name) Address " (Street or RFD) (City) (State)

LOCATION OF WELL:
County Guadalupe, 8 miles in S (N.E., S.W., etc.) direction from Seguin (Town)

Locate by sketch map showing landmarks, roads, creeks, hiway number, etc.*

North

(Use reverse side if necessary)

or Give legal location with distances and directions from adjacent sections or survey lines.

Labor _____ League _____

Block _____ Survey Texas Central

Abstract No. 9

(NW¼ NE¼ SW¼ SE¼) of Section NE

TYPE OF WORK (Check): New Well ✓ Deepening / Reconditioning Plugging

4) PROPOSED USE (Check): Domestic ✓ Industrial Municipal / Irrigation ✓ Test Well Other

5) TYPE OF WELL (Check): Rotary ✓ Driven Dug / Cable Jetted Bored

WELL LOG:
Diameter of hole 6 3/4 in. Depth drilled 335 ft. Depth of completed well 320 ft. Date drilled 4-28-71

All measurements made from 0 ft. above ground level.

From (ft.)	To (ft.)	Description and color of formation material
0	55	Brown Sandy Clay
55	95	Blue Clay
95	100	Blue Sand
100	125	Blue Clay + Rocks
125	130	Blue Sand
130	140	Blue Clay
140	244	Blue Clay + Sandy Stks
244	292	Blue Clay
292	300	Blue Shale + clay stks
300	334	Blue Sand
334	335	Blue Clay

(Use reverse side if necessary)

9) Casing:
Type: Old / New ✓ Steel Plastic ✓ Other

Cemented from 0 ft. to 3 ft.

Diameter (inches)	Setting From (ft.)	To (ft.)	Gage
4	0	320	.200

10) SCREEN:
Type _____

Perforated / Slotted ✓

Diameter (inches)	Setting From (ft.)	To (ft.)	Slot Size
4	300	320	40 X 4

COMPLETION (Check):
Straight wall / Gravel packed / Other ✓
Under reamed / Open Hole

WATER LEVEL:
Static level 95 ft. below land surface Date _____
Artesian pressure _____ lbs. per square inch Date _____
Depth to pump bowls, cylinder, jet, etc., 160 ft. below land surface. 7571-12BC Sub.

11) WELL TESTS:
Was a pump test made? Yes / No ✓ If yes, by whom?
Yield: _____ gpm with _____ ft. drawdown after _____ hrs.
Bailer test _____ gpm with _____ ft. drawdown after _____ hrs.
Artesian flow _____ gpm
Temperature of water _____

12) WATER QUALITY:
Was a chemical analysis made? Yes / No
Did any strata contain undesirable water? Yes / No ✓
Type of water? _____ depth of strata _____

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME Chas. L. Behrens (Type or Print) Water Well Drillers Registration No. 496

ADDRESS Rt. 2 Box 242F (Street or RFD) Seguin (City), Texas (State)

(Signed) Chas. L. Behrens (Water Well Driller) " (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available. TX 67-25-909

Additional instructions on reverse side.

WDBE-GW-53

Chas. L. Behrens
Rt. 2 Box 242F
Seguin, Texas 78155

14

Texas Water Development Board

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 67-25-910

groundwater division

GWDB Reports and Downloads | **Well Basic Details** | Scanned Documents

State Well Number	6725910
County	Guadalupe
River Basin	Guadalupe
Groundwater Management Area	13
Regional Water Planning Area	L - South Central Texas
Groundwater Conservation District	Guadalupe County GCD
Latitude (decimal degrees)	29.5188889
Latitude (degrees minutes seconds)	29° 31' 08" N
Longitude (decimal degrees)	-97.8875
Longitude (degrees minutes seconds)	097° 53' 15" W
Coordinate Source	Global Positioning System - GPS
Aquifer Code	
Aquifer	Carrizo-Wilcox
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	510
Land Surface Elevation Method	Digital Elevation Model -DEM
Well Depth (feet below land surface)	409
Well Depth Source	Driller's Log
Drilling Start Date	
Drilling End Date	4/1/1974
Drilling Method	Mud (Hydraulic) Rotary
Borehole Completion	Gravel Pack w/Perforations

Well Type	Withdrawal of Water
Well Use	Irrigation
Water Level Observation	GCD Current Site Visit
Water Quality Available	No
Pump	Submersible
Pump Depth (feet below land surface)	
Power Type	Electric Motor
Annular Seal Method	
Surface Completion	
Owner	Dickie Ulrich
Driller	Chas L. Behrens
Other Data Available	Drillers Log
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	9A
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	Groundwater Conservation District
Created Date	10/17/2014
Last Update Date	12/3/2019

Remarks

Casing

Diameter (in.)	Casing Type	Casing Material	Schedule	Gauge	Top Depth (ft.)	Bottom Depth (ft.)
6	Blank	Plastic (PVC)			0	370
6	Screen	Plastic (PVC)			370	400

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

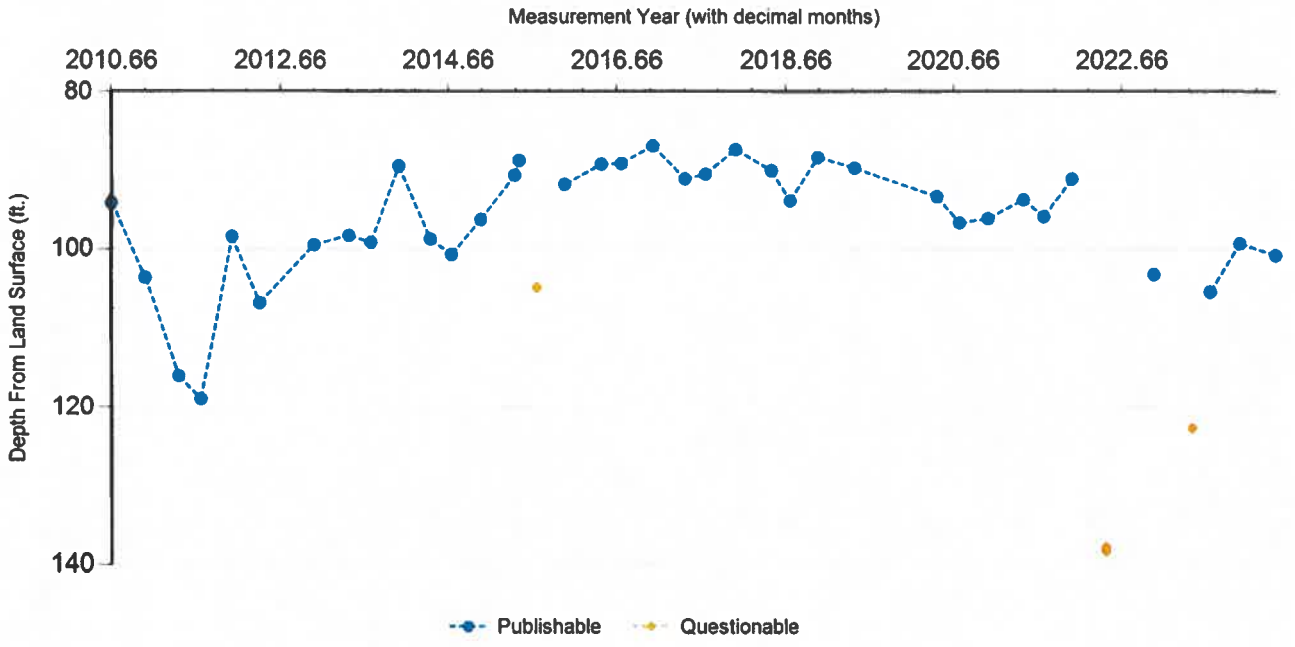
Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements



Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	9/2/2010		94.1		415.9	1	Groundwater Conservation District	Electric Line		Water level updated 1/6/2020 based on info from GCD
P	1/21/2011		103.61	9.51	406.39	1	Groundwater Conservation District	Electric Line		
P	6/16/2011		115.98	12.37	394.02	1	Groundwater Conservation District	Electric Line		Water level updated 1/6/2020 based on info from GCD
P	9/21/2011		118.9	2.92	391.1	1	Groundwater Conservation District	Electric Line		Water level updated 1/6/2020 based on info from GCD
P	2/1/2012		98.46	(20.44)	411.54	1	Groundwater Conservation District	Electric Line		Water level updated 1/6/2020 based on info from GCD

Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	5/31/2012		106.83	8.37	403.17	1	Groundwater Conservation District	Electric Line		Water level updated 1/6/2020 based on info from GCD
P	1/21/2013		99.48	(7.35)	410.52	1	Groundwater Conservation District	Electric Line		Water level updated 1/6/2020 based on info from GCD
P	6/19/2013		98.32	(1.16)	411.68	1	Groundwater Conservation District	Electric Line		Water level updated 1/6/2020 based on info from GCD
P	9/25/2013		99.19	0.87	410.81	1	Groundwater Conservation District	Electric Line		Water level updated 1/6/2020 based on info from GCD
P	1/22/2014		89.56	(9.63)	420.44	1	Groundwater Conservation District	Electric Line		Water level updated 1/6/2020 based on info from GCD
P	6/9/2014		98.76	9.20	411.24	1	Groundwater Conservation District	Electric Line		Water level updated 1/6/2020 based on info from GCD
P	9/11/2014		100.75	1.99	409.25	1	Groundwater Conservation District	Electric Line		Water level updated 1/6/2020 based on info from GCD
P	1/14/2015		96.32	(4.43)	413.68	1	Groundwater Conservation District	Electric Line		Water level updated 12/5/2019 based on info from GCD
P	6/12/2015		90.73	(5.59)	419.27	1	Groundwater Conservation District	Steel Tape		Water level updated 12/5/2019 based on info from GCD
P	7/1/2015		88.9	(1.83)	421.1	1	Groundwater Conservation District	Sonic/Laser Device		Water level updated 12/5/2019 based on info from GCD

Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
Q	9/18/2015		104.97	16.07	405.03	1	Groundwater Conservation District	Electric Line	2	Pump running; Water level updated 12/5/2019 based on info from GCD
P	1/13/2016		91.86	(13.11)	418.14	1	Groundwater Conservation District	Electric Line		Water level updated 12/5/2019 based on info from GCD
P	6/22/2016		89.34	(2.52)	420.66	1	Groundwater Conservation District	Electric Line		Water level updated 12/5/2019 based on info from GCD
P	9/20/2016		89.26	(0.08)	420.74	1	Groundwater Conservation District	Electric Line		Water level updated 12/5/2019 based on info from GCD
P	1/31/2017		87.03	(2.23)	422.97	1	Groundwater Conservation District	Electric Line		Water level updated 12/5/2019 based on info from GCD
P	6/19/2017		91.15	4.12	418.85	1	Groundwater Conservation District	Sonic/Laser Device		Water level updated 12/5/2019 based on info from GCD
P	9/18/2017		90.57	(0.58)	419.43	1	Groundwater Conservation District	Sonic/Laser Device		Water level updated 12/5/2019 based on info from GCD
P	1/22/2018		87.51	(3.06)	422.49	1	Groundwater Conservation District	Sonic/Laser Device		Water level updated 12/5/2019 based on info from GCD
P	6/27/2018		90.15	2.64	419.85	1	Groundwater Conservation District	Sonic/Laser Device		Water level updated 12/5/2019 based on info from GCD
P	9/19/2018		93.94	3.79	416.06	1	Groundwater Conservation District	Sonic/Laser Device		Water level updated 12/5/2019 based on info from GCD

Texas Water Development Board

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 67-25-910

groundwater division

Status Code	Date	Time	Water Level (ft. below land surface)	Change value in ( ) indicates rise in level	Water Elevation (ft. above sea level)	Meas #	Measuring Agency	Method	Remark ID	Comments
P	1/15/2019		88.5	(5.44)	421.5	1	Groundwater Conservation District	Sonic/Laser Device		
P	6/25/2019		89.82	1.32	420.18	1	Groundwater Conservation District	Sonic/Laser Device		
P	6/16/2020		93.38	3.56	416.62	1	Groundwater Conservation District	Sonic/Laser Device		
P	9/24/2020		96.68	3.30	413.32	1	Groundwater Conservation District	Sonic/Laser Device		
P	1/20/2021		96.14	(0.54)	413.86	1	Groundwater Conservation District	Transducer		
P	6/22/2021		93.74	(2.40)	416.26	1	Groundwater Conservation District	Transducer		
P	9/21/2021		95.9	2.16	414.1	1	Groundwater Conservation District	Sonic/Laser Device		
P	1/19/2022		91.13	(4.77)	418.87	1	Groundwater Conservation District	Transducer		
Q	6/15/2022		137.75	46.62	372.25	1	Groundwater Conservation District	Sonic/Laser Device	12	
Q	6/17/2022		138.25	0.50	371.75	1	Groundwater Conservation District	Electric Line	12	
P	1/18/2023		103.11	(35.14)	406.89	1	Groundwater Conservation District	Sonic/Laser Device		
Q	6/28/2023		122.64	19.53	387.36	1	Groundwater Conservation District	Sonic/Laser Device	12	
P	9/19/2023		105.25	(17.39)	404.75	1	Groundwater Conservation District	Sonic/Laser Device		
P	1/22/2024		99.31	(5.94)	410.69	1	Groundwater Conservation District	Sonic/Laser Device		
P	6/27/2024		100.79	1.48	409.21	1	Groundwater Conservation District	Sonic/Laser Device		formerly known as Ulrich, same well

Code Descriptions

Status Code	Status Description
P	Publishable
Q	Questionable

Remark ID	Remark Description
2	Pumping-level measurement
12	Uncertain of reason for questionable measurement

Water Quality Analysis - No Data Available

GWDB DISCLAIMER: Except where noted, all of the information provided in the Texas Water Development Board (TWDB) Groundwater Database (https://www.twdb.texas.gov/groundwater/data/gwdbrpt.asp) is believed to be accurate and reliable; however, the TWDB assumes no responsibility for any errors appearing in rules or otherwise. Further, TWDB assumes no responsibility for the use of the information provided. PLEASE NOTE that users of these data are responsible for checking the accuracy, completeness, currency and/or suitability of all information themselves. TWDB makes no guarantees or warranties as to the accuracy, completeness, currency, or suitability of the information provided via the Groundwater Database (GWDB). TWDB specifically disclaims any and all liability for any claims or damages that may result from providing GWDB data or the information it contains. For additional information or answers to questions concerning the TWDB GWDB, contact the Groundwater Data Team at GroundwaterData@twdb.texas.gov.

GCGCD Monitor Wells

9A Dickie Ulrich 67-25-9 MP 0.5 ft. >GL, top of casing LSD +495



Wilcox Aquifer

Depth = 409 ft.
Irrigation Well
Drillers Log (attached)

29.51893 -97.88739

Dickie Ulrich
5620 FM 466
Seguin, TX 78155

Date	Measurement (ft)
9/02/10	94.60
6/19/13	98.82
9/25/13	99.69
1/22/14	90.06
6/09/14	99.26
9/11/14	101.25

9A Dickie Ulrich

Send original copy by certified mail to the Texas Water Development Board P. O. Box 13087 Austin, Texas 78711

State of Texas

WATER WELL REPORT

For TWDB use only
Well No. 67-25-9N
Located on map yes
Received 2-4

1) OWNER:
Person having well drilled Jarrell Ulrich (Name) Address Rt. 2 Seguin, Texas (Street or RFD) (City) (State)

Landowner (Name) Address (Street or RFD) (City) (State)

2) LOCATION OF WELL:
County Guadalupe 6 miles in SE direction from Seguin (Name) (City)

Locate by sketch map showing landmarks, roads, creeks, hiway number, etc.* (Use reverse side if necessary) North

or Give legal location with distances and directions from adjacent sections or survey lines.
Labor League
Block Survey Isaac Bartlett
Abstract No. 9
(NW¼ NE¼ SW¼ SE¼) of Section NE

3) TYPE OF WORK (Check): New Well ✓ Deepening; Reconditioning; Plugging

4) PROPOSED USE (Check): Domestic; Industrial; Municipal; Irrigation ✓; Test Well; Other

5) TYPE OF WELL (Check): Rotary ✓; Driven; Dug; Cable; Jetted; Bored

6) WELL LOG:
Diameter of hole 9 in. Depth drilled 409 ft. Depth of completed well 400 ft. Date drilled 4-1-99
All measurements made from 0 ft. above ground level.

From (ft.)	To (ft.)	Description and color of formation material
0	50	Brown Sandy clay
50	69	Blue clay
69	180	Blue Sand & clay
180	210	Blue clay
210	227	Blue Sand & Rock
227	244	Blue clay
244	255	Blue Sand
255	275	Blue clay
275	295	Blue Sand
295	300	Blue clay
300	305	Blue Shale
305	330	Blue clay
330	357	Blue Sand & Rock
357	377	Blue clay
377	405	Blue Sand
405	408	Blue Clay

(Use reverse side if necessary)

9) Casing: Type: Old; New ✓; Steel; Plastic ✓; Other
Cemented from 0 ft. to 3 ft.

Diameter (inches)	Setting From (ft.)	To (ft.)	Gage
6"	0	400	.316

10) SCREEN: Type P.V.C.
Perforated; Slotted ✓

Diameter (inches)	Setting From (ft.)	To (ft.)	Slot Size
6"	380	400	1/8 X 6 mm

7) COMPLETION (Check): Straight wall; Gravel packed ✓; Other; Under reamed; Open hole

8) WATER LEVEL:
Static level ft. below land surface Date 4-1-99
Artesian pressure lbs. per square inch Date
Depth to pump bowls, cylinder, jet, etc. 273 ft. below land surface.

11) WELL TESTS:
Was a pump test made? Yes; No ✓ If yes, by whom?
Yield 90 gpm with 160' ft. drawdown after — hrs.
Bailer test gpm with ft. drawdown after hrs.
Artesian flow gpm
Temperature of water

12) WATER QUALITY:
Was a chemical analysis made? Yes; No ✓
Did any strata contain undesirable water? Yes; No ✓
Type of water? depth of strata 392-400

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME Charles L. Behrens (Type or Print) Water Well Drillers Registration No. 496
ADDRESS Rt. 2 Box 242F (Street or RFD) Seguin, Texas 78155 (City) (State)
(Signed) Charles L. Behrens (Water Well Driller) (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available.

*Additional instructions on reverse side.

67-25-910

Texas Water Development Board

Texas Water Development Board (TWDB)
Groundwater Database (GWDB)
Well Information Report for State Well Number 67-33-302

groundwater division

GWDB Reports and Downloads | **Well Basic Details** | Scanned Documents

State Well Number	6733302
County	Guadalupe
River Basin	Guadalupe
Groundwater Management Area	13
Regional Water Planning Area	L - South Central Texas
Groundwater Conservation District	Guadalupe County GCD
Latitude (decimal degrees)	29.498611
Latitude (degrees minutes seconds)	29° 29' 55" N
Longitude (decimal degrees)	-97.8775
Longitude (degrees minutes seconds)	097° 52' 39" W
Coordinate Source	+/- 5 Seconds
Aquifer Code	124WLCX - Wilcox Group
Aquifer	Carrizo-Wilcox
Aquifer Pick Method	
Land Surface Elevation (feet above sea level)	550
Land Surface Elevation Method	Interpolated From Topo Map
Well Depth (feet below land surface)	
Well Depth Source	
Drilling Start Date	
Drilling End Date	0/0/1963
Drilling Method	
Borehole Completion	

Well Type	Withdrawal of Water
Well Use	Domestic
Water Level Observation	None
Water Quality Available	No
Pump	Submersible
Pump Depth (feet below land surface)	
Power Type	Electric Motor
Annular Seal Method	
Surface Completion	
Owner	Walter Grimm
Driller	Roland K. Blumberg
Other Data Available	
Well Report Tracking Number	
Plugging Report Tracking Number	
U.S. Geological Survey Site Number	
Texas Commission on Environmental Quality Source Id	
Groundwater Conservation District Well Number	
Owner Well Number	
Other Well Number	
Previous State Well Number	
Reporting Agency	U.S. Geological Survey
Created Date	1/10/1997
Last Update Date	1/10/1997

Remarks	Drilled as test well, completed as water well.

Casing - No Data

Well Tests - No Data

Lithology - No Data

Annular Seal Range - No Data

Borehole - No Data

Plugged Back - No Data

Filter Pack - No Data

Packers - No Data

Water Level Measurements

No Data Available

Water Quality Analysis - No Data Available

GWDB DISCLAIMER: Except where noted, all of the information provided in the Texas Water Development Board (TWDB) Groundwater Database (https://www.twdb.texas.gov/groundwater/data/gwdbrpt.asp) is believed to be accurate and reliable; however, the TWDB assumes no responsibility for any errors appearing in rules or otherwise. Further, TWDB assumes no responsibility for the use of the information provided. PLEASE NOTE that users of these data are responsible for checking the accuracy, completeness, currency and/or suitability of all information themselves. TWDB makes no guarantees or warranties as to the accuracy, completeness, currency, or suitability of the information provided via the Groundwater Database (GWDB). TWDB specifically disclaims any and all liability for any claims or damages that may result from providing GWDB data or the information it contains. For additional information or answers to questions concerning the TWDB GWDB, contact the Groundwater Data Team at GroundwaterData@twdb.texas.gov.

9-185—July 193
Revised

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES BRANCH

WELL SCHEDULE

Date 12-6-, 19 6[illegible] Field No. _____

Record by [illegible] Office No. _____

Source of data Mrs. Grimm, obs. KY-6733302

1. *Location:* State Texas County Guadalupe

Map _____

_____ ¼ _____ ¼ sec. _____ T _____ N/S R _____ E/W

2. *Owner:* Walter Grimm Address Rt 2 [illegible]

Tenant _____ Address _____

Driller [illegible] Address _____

3. *Topography* _____

4. *Elevation* _____ ft. above/below _____

5. *Type:* Dug, drilled, driven, bored, jetted _____ 19[illegible]

6. *Depth:* Rept. _____ ft. Meas. _____ ft.

7. *Casing:* Diam. 4 in., to _____ in., Type _____

Depth _____ ft., Finish _____

8. *Chief Aquifer* Wilcox Group From _____ ft. to _____ ft.

Others _____

9. *Water level* [illegible] ft. rept./meas. _____ 19___ above/below _____

_____ which is _____ ft. above/below surface

10. *Pump:* Type Subm[illegible] Capacity _____ G. M. _____

Power: Kind E Horsepower —

11. *Yield:* Flow — G. M., Pump — G. M., Meas., Rept. Est. _____

Drawdown — ft. after — hours pumping — G. M.

12. *Use:* Dom, Stock, PS., RR., Ind., Irr., Obs. _____

Adequacy, permanence [illegible]

13. *Quality* _____ Temp _____ °F.

Taste, odor, color _____ Sample Yes/No _____

Unfit for _____

14. *Remarks:* (Log, Analyses, etc.) [illegible]

Test hole [illegible]

and made into [illegible]

[illegible]

Outlook

Re: Arp Holdings, LP – The Garden Of Cordell Oaks, Application for a New Permit, No. WQ0016616001

From Tracy Kyser <tracyk@velvin-weeks.com>
Date Fri 10/18/2024 9:31 AM
To Andrew Gorton <Andrew.Gorton@Tceq.Texas.Gov>

2 attachments (292 KB)
Worksheet 3.3 Subsurface Area Drip Dispersal .pdf; Worksheet 3.0 -Land Disposal of Effluent .pdf;

Andrew,

Please see attached Technical Worksheet 3.3 - Subsurface Area Drip Dispersal. I also have a revision to my prior submission for the acreage of the disposal site. It is 4.67 acres of land disposal. Please let me know if you have any questions.

Thank you,

Tracy Kyser
930 E. Corsicana St.
Athens, Tx 75751
903-675-3903
Velvin & Weeks Consulting Engineers, Inc.
tracyk@velvin-weeks.com

From: Andrew Gorton <Andrew.Gorton@Tceq.Texas.Gov>
Sent: Thursday, October 17, 2024 3:30 PM
To: Tracy Kyser <tracyk@velvin-weeks.com>; Jim@jnmtechnologies.com <Jim@jnmtechnologies.com>
Cc: Alan Barraza <Alan.Barraza@tceq.texas.gov>
Subject: Re: Arp Holdings, LP – The Garden Of Cordell Oaks, Application for a New Permit, No. WQ0016616001

You don't often get email from andrew.gorton@tceq.texas.gov. Learn why this is important

Thank you Tracy, we will review what you sent and let you know if we have comments or need addition information.

-Andy

Andrew Gorton, P.G.
Texas Commission on Environmental Quality
MC-150
PO Box 13087
Austin, TX 78711-3087

512.239.4585
Andrew.Gorton@tceq.texas.gov

From: Tracy Kyser <tracyk@velvin-weeks.com>
Sent: Thursday, October 17, 2024 2:24 PM
To: Andrew Gorton <Andrew.Gorton@Tceq.Texas.Gov>
Subject: Re: Arp Holdings, LP – The Garden Of Cordell Oaks, Application for a New Permit, No. WQ0016616001

Andrew,

Please see attached revisions for deficiencies.

Thank you,

Tracy Kyser
930 E. Corsicana St.
Athens, Tx 75751
903-675-3903
Velvin & Weeks Consulting Engineers, Inc.
tracyk@velvin-weeks.com

From: Andrew Gorton <Andrew.Gorton@Tceq.Texas.Gov>
Sent: Thursday, September 26, 2024 1:06 PM
To: Jim@jnmtechnologies.com <Jim@jnmtechnologies.com>; Tracy Kyser <tracyk@velvin-weeks.com>
Cc: Alan Barraza <Alan.Barraza@tceq.texas.gov>
Subject: Arp Holdings, LP – The Garden Of Cordell Oaks, Application for a New Permit, No. WQ0016616001

Good afternoon Jim and Tracy,

The Water Quality Assessment (WQA) Team of the Texas Commission on Environmental Quality has completed a preliminary review of the permit application information and identified deficiencies (attached) that must be addressed before the WQA Team can continue with the technical review. The deficient item(s) will require your response in a timely, complete, and accurate manner.

An accurate and complete revised permit application is essential for making recommendations to the commission regarding whether this permit should be issued. Based on the information provided in the application, the executive director does not have sufficient information to make a recommendation. Therefore, you must send updated technically complete and accurate information within **14 days** (October 10) of the date of this email.

Any revisions can be sent electronically to me (WQA Team Geologist) or Alan Barraza (WQA Team Agronomist). If you have any questions, please feel free to contact either me or Alan.

Thank you,

-Andy

Andrew Gorton, P.G.
Texas Commission on Environmental Quality
MC-150

PO Box 13087
Austin, TX 78711-3087
512.239.4585
Andrew.Gorton@tceq.texas.gov

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

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: 4.67

Infiltration Rate, in inches/hour: 0.24 in/hour (0.61 gph emitter on 4 ft2

Average slope of the application area, percent (%): 3%

Maximum slope of the application area, percent (%): 3%

Storage volume, in gallons: **4.99 gallons (The total holding capacity of the flow equalization facility shall be 15,000 gal. – 2,000 gallons will be retained in the flow equalization tank to meet 3 day storage requirements.**

Major soil series: CsC3, DmC, WdC3

Depth to groundwater, in feet: 120 ft

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: 0.1 gpds/ft2

Nitrogen application rate, in lbs/gal/day: 0.00055 lbs/gal/day

D. Dosing information

Number of doses per day: 3 (per zone)

Dosing duration per area, in hours: 0.65 hr per day (13 minute doses)

Rest period between doses, in hours: 7.78 hours

Dosing amount per area, in inches/day: 0.64 in/day

Number of zones: 18

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.

TCEQ Interoffice Memorandum

To: Duba Dutta, Team Leader
Municipal Permits Team
From: Alan Barraza
Water Quality Assessment Team
Date: November 19, 2024
Subject: Agronomy Recommendation, Arp Holdings, LP, The Garden of Cordell Oaks, New Permit WQ0016616001, Guadalupe County

Based upon review of the permit application and an evaluation of soils and agronomy information, the WQA Team reviewing agronomist recommends the following:

1. Application rates shall not exceed 0.1 gallons per square foot per day. The permittee is responsible for providing equipment to determine the application rate and for maintaining accurate records of the volume of effluent applied. According to the requirements of 30 TAC § 222.161(d), the permittee shall maintain records documenting all activities associated with maintaining the vegetative cover (the crops), like planting, over-seeding, mowing height, fertilizing, and harvesting. These records shall be maintained for a minimum of five years and be made available to TCEQ staff upon request.

2. The permittee shall use cultural practices to promote and maintain the health and propagation of the Bermuda grass and ryegrass crops and avoid plant lodging. The permittee shall harvest the crops (cut and remove it from the field) at least once during the year. Harvesting and mowing dates shall be recorded in a log book kept on site to be made available to TCEQ personnel upon request.

3. The physical condition of the land application fields shall be monitored on a weekly basis. Any area with problems such as surface runoff, surficial erosion, or stressed or damaged vegetation, etc., shall be recorded in a field log kept onsite. Corrective measures will be implemented within 24 hours of discovery.

4. Subsurface irrigation practices shall be designed and managed as to prevent ponding of effluent or contamination of ground and surface waters and to prevent the occurrence of nuisance conditions in the area. Bermuda grass (warm season) overseeded with ryegrass (cool season) shall be established and well maintained in the irrigation area throughout the year for effluent and nutrient uptake by the crop and to prevent pathways for effluent rising.

5. For any area where treated effluent is stored or where there exist hose bibs or faucets, the permittee shall erect adequate signs stating that the irrigation water is from a non-potable water supply. Signs shall consist of a red slash superimposed over the international symbol for drinking water accompanied by the message “DO NOT DRINK THE WATER” in both English and Spanish. All piping transporting the effluent shall be clearly marked with these same signs.

6. Based on the requirements of 30 TAC § 222.151, the subsurface area drip dispersal system shall be designed and managed so as to prevent seepage or percolation out of the root zone, other than leaching in the amount required to maintain the health of the vegetative cover. Surfacing and ponding is prohibited. Creating a condition at the treatment facility or the drip dispersal zones that contributes to vector attraction or odor is prohibited.

7. Effluent shall not be applied for irrigation when the ground is frozen or saturated.

8. The permittee shall remove large (greater than 12-inch) stones and flagstones from the irrigation area. Any large stones brought to the surface during any construction, maintenance activities, and/or any disturbing of the soil shall be removed.

9. Drip irrigation lines shall be installed on the contour and lateral slopes of the tubing shall not exceed 1 percent. The permittee can apply for a variance to this provision by providing justification in the detailed design criteria per Chapter 222 indicating how uneven application of effluent due to back draining will be avoided.

10. Emitters shall be installed a minimum of six (6) inches below the soil surface. A minimum of 12 inches of soil shall exist below the plane of the driplines.

11. Each zone shall have at least one soil moisture sensing devices placed at 12 inches below the depth of the drip lines that will automatically shut off irrigation to that zone when the soil becomes saturated. The devices shall be located on the downgradient side of each zone. The soil moisture monitoring devices, including a map of the monitoring device locations, shall be included with the dispersal zone design and submitted with the engineering report required by 222 TAC Subchapter D.

12. Soil Testing Plan

    The permittee shall obtain representative soil samples from the root zones of the land application area receiving wastewater. Composite sampling techniques shall be used. Each composite sample shall represent no more than 4.67 acres with no less than one (1) cores per dosing bed (zone) representing each composite sample. Subsamples shall be composited by like sampling depth, type of crop and soil type for analysis and reporting. Soil types are soils that have like topsoil or plow layer textures. These soils shall be sampled individually from 0 to 12 inches and 12 to 24 inches below ground level. The permittee shall sample soils in December to February of each year. Soil samples shall be analyzed within 30 days of sample collection.

    The permittee shall provide annual soil sample analyses of the land application area according to the following table:

Parameter	**Method**	**Minimum Analytical Level (MAL)**	**Reporting units**
pH	2:1 (v/v) water to soil mixture		Reported to 0.1 pH units after calibration of pH meter
Electrical Conductivity	Obtained from the SAR water saturated paste extract	0.01	dS/m (same as mmho/cm)

Nitrate-nitrogen	From a 1 N KCl soil extract	1	mg/kg (dry weight basis)
Total Kjeldahl Nitrogen (TKN)	For determination of Organic plus Ammonium Nitrogen. Procedures that use Mercury (Hg) are not acceptable.	20	mg/kg (dry weight basis)
Total Nitrogen	= TKN plus Nitrate-nitrogen		mg/kg (dry weight basis)
Plant-available: Phosphorus	Mehlich III with inductively coupled plasma	1 (P)	mg/kg (dry weight basis)
Plant-available: Potassium (K) Calcium (Ca) Magnesium (Mg) Sodium (Na) Sulfur (S)	May be determined in the same Mehlich III extract with inductively coupled plasma	5 (K) 10 (Ca) 5 (Mg) 10 (Na) 1 (S)	mg/kg (dry weight basis)
Water-soluble: Sodium (Na) Calcium (Ca) Magnesium (Mg)	Obtained from the SAR water saturated paste extract	1 (Na) 1 (Ca) 1 (Mg)	Water soluble constituents are reported in mg/L
Sodium Adsorption Ratio (SAR)	$SAR = \frac{Na}{\sqrt{\frac{(Ca + Mg)}{2}}}$		Express concentrations of Na, Ca and Mg in the water saturated paste extract in milliequivalents/liter (meq/L) to calculate the SAR. The SAR value is unit less. If the SAR is greater than 10, amendments (e.g., gypsum) shall be added to the soil to adjust the SAR to less than 10.
Amendment addition, e.g., gypsum			Report in short tons/acre in the year effected

A copy of this soil testing plan shall be provided to the analytical laboratory prior to

sample analysis. The permittee shall submit the results of the annual soil sample analyses with copies of the laboratory reports and a map depicting the areas that have received wastewater within the permanent land application fields to the TCEQ Regional Office (MC Region 13) and the Compliance Monitoring Team (MC 224), no later than September 1st of each sampling year. If wastewater is not applied in a particular year, the permittee shall notify the same TCEQ offices and indicate that wastewater has not been applied on the approved land irrigation site(s) during that year.

From: Tracy Kyser
To: Alan Barraza
Subject: Re: WQ0016616001 NOD - Arp Holdings LP
Date: Tuesday, November 19, 2024 9:35:23 AM
Attachments: image001.gif
Tech. Worksheet 3.0 Land Disposal of Effluent .pdf

Thanks Alan! Here is the updated worksheet 3.0 with the correct acreage.

Thank you,

Tracy Kyser
930 E. Corsicana St.
Athens, Tx 75751
903-675-3903
Velvin & Weeks Consulting Engineers, Inc.
tracyk@velvin-weeks.com

From: Alan Barraza <Alan.Barraza@tceq.texas.gov>
Sent: Tuesday, November 19, 2024 9:39 AM
To: Tracy Kyser <tracyk@velvin-weeks.com>
Cc: Andrew Gorton <Andrew.Gorton@Tceq.Texas.Gov>
Subject: RE: WQ0016616001 NOD - Arp Holdings LP

Good morning Tracy,

All your submittals appear to be sufficient except we have not received a response for the following NOD as it was mislabeled in one of your emails. Please send me the updated worksheet as soon as possible. Thank you.

“Domestic Worksheet 3.0, Section 2. Land Application Site(s) – There is a discrepancy in the acreage between what is stated in Table 3.0(1) (6 acres) and what is listed in Worksheet 3.3, Section 2 (4.67 acres). Please reconcile and submit update worksheets.”

Alan Barraza
Agronomist | Water Quality Assessment
TCEQ | Water Quality Division | MC 150
Direct: 512-239-4642
Fax: 512-239-4420

12100 Park 35 Circle
Austin, TX 78753

From: Tracy Kyser <tracyk@velvin-weeks.com>
Sent: Monday, November 18, 2024 4:07 PM
To: Alan Barraza <Alan.Barraza@tceq.texas.gov>
Subject: Re: WQ0016616001 NOD - Arp Holdings LP

Alan,

Here is the Groundwater Quality Report I submitted. Is this not sufficient?

Thank you,

Tracy Kyser
930 E. Corsicana St.
Athens, Tx 75751
903-675-3903
Velvin & Weeks Consulting Engineers, Inc.
tracyk@velvin-weeks.com

From: Tracy Kyser <tracyk@velvin-weeks.com>
Sent: Tuesday, November 12, 2024 4:46 PM
To: Alan Barraza <Alan.Barraza@tceq.texas.gov>
Subject: Re: WQ0016616001 NOD - Arp Holdings LP

Alan,

Please see attached for deficiencies for permit application. The two proposed detention ponds are for stormwater only. Also, I will be sending an updated Groundwater Quality Report this week to you. Let me know if you have any questions.

Thank you,

Tracy Kyser
930 E. Corsicana St.
Athens, Tx 75751
903-675-3903
Velvin & Weeks Consulting Engineers, Inc.
tracyk@velvin-weeks.com

From: Alan Barraza <Alan.Barraza@tceq.texas.gov>
Sent: Thursday, November 7, 2024 11:50 AM
To: Tracy Kyser <tracyk@velvin-weeks.com>
Subject: RE: WQ0016616001 NOD - Arp Holdings LP

Tracy,

Your admin reviewer for that newspaper issue is Rachel Ellis. Her number is 512-239-4658 and her email is Rachel.ellis@tceq.texas.gov

Alan Barraza
Agronomist | Water Quality Assessment
TCEQ | Water Quality Division | MC 150
Direct: 512-239-4642
Fax: 512-239-4420

12100 Park 35 Circle
Austin, TX 78753

From: Alan Barraza
Sent: Thursday, November 7, 2024 8:10 AM
To: Tracy Kyser <tracyk@velvin-weeks.com>
Cc: Andrew Gorton <Andrew.Gorton@Tceq.Texas.Gov>
Subject: RE: WQ0016616001 NOD - Arp Holdings LP

Good morning, Tracy. Do you have any updates on the pending NODs? A response is due today. Thank you

Alan Barraza
Agronomist | Water Quality Assessment
TCEQ | Water Quality Division | MC 150
Direct: 512-239-4642
Fax: 512-239-4420

12100 Park 35 Circle
Austin, TX 78753

From: Tracy Kyser <tracyk@velvin-weeks.com>
Sent: Thursday, October 24, 2024 2:50 PM
To: Alan Barraza <Alan.Barraza@tceq.texas.gov>

Subject: Re: WQ0016616001 NOD - Arp Holdings LP

Thank you. I will get these addressed

Thank you,

Tracy Kyser
930 E. Corsicana St.
Athens, Tx 75751
903-675-3903
Velvin & Weeks Consulting Engineers, Inc.
tracyk@velvin-weeks.com

From: Alan Barraza <Alan.Barraza@tceq.texas.gov>
Sent: Thursday, October 24, 2024 2:06 PM
To: Tracy Kyser <tracyk@velvin-weeks.com>
Cc: Jim@jnmtechnologies.com <Jim@jnmtechnologies.com>; Andrew Gorton <Andrew.Gorton@Tceq.Texas.Gov>
Subject: WQ0016616001 NOD - Arp Holdings LP

You don't often get email from alan.barraza@tceq.texas.gov. Learn why this is important

Tracy,

The Water Quality Assessment (WQA) Team of the Texas Commission on Environmental Quality has completed a review of the permit application information and identified deficiencies (attached) that must be addressed before the WQA Team can continue with the technical review. The deficient item(s) will require your response in a timely, complete, and accurate manner.

An accurate and complete revised permit application is essential for making recommendations to the commission regarding whether this permit should be issued. Based on the information provided in the application, the executive director does not have sufficient information to make a recommendation. Therefore, you must send updated technically complete and accurate information by **November 7th, 2024**.

Please let us know if you have any questions.

Alan Barraza
Agronomist | Water Quality Assessment
TCEQ | Water Quality Division | MC 150
Direct: 512-239-4642
Fax: 512-239-4420

12100 Park 35 Circle
Austin, TX 78753

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 South of the proposed development and treatment plant. The profile Hole Coordinates are as follows (shown on attached map): Hole #1 – 29.5075, -97.8908. Hole #2 29.5086, -97.8908. Hole #3 – 29*.5091, -97.8907

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.

TEXAS A&M AGRILIFE EXTENSION

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478

Visit our website: http://soiltesting.tamu.edu

Report generated for:
James Prochaska
PO Box 5667
BRYAN, TX 77805

Sample received on: 5/24/2024
Printed on: 6/10/2024
Area Represented: 1.6 acres

Guadalupe County
Laboratory Number: 661347
Customer Sample ID: N Composite 0-12
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	
pH	6.0	(5.8)	-	Mod. Acid							
Conductivity	31	(-)	umho/cm	None			CL*				Fertilizer Recommended
Nitrate-N	10	(-)	ppm**								80 lbs N/acre
Phosphorus	6	(50)	ppm								105 lbs P2O5/acre
Potassium	73	(150)	ppm								125 lbs K20/acre
Calcium	348	(180)	ppm								0 lbs Ca/acre
Magnesium	40	(50)	ppm								5 lbs Mg/acre
Sulfur	4	(13)	ppm								15 lbs S/acre
Sodium	5	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement											0.00 tons 100ECCE/acre
TKN	403		ppm								

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre.

Sulfur: Available sulfur may be found deeper in soil profile, thus limiting any response to added sulfur.

Online fertilizer calculators to determine appropriate fertilizers and application rates.
http://soiltesting.tamu.edu

Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP, and B/hot water by ICP.

TEXAS A&M AGRILIFE EXTENSION

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478

Visit our website: http://soiltesting.tamu.edu

Report generated for:
James Prochaska
PO Box 5667
BRYAN, TX 77805

Sample received on: 5/24/2024
Printed on: 6/10/2024
Area Represented: 1.6 acres

Guadalupe County
Laboratory Number: 661348
Customer Sample ID: N Composite 12-24
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	Fertilizer Recommended
pH	6.0	(5.8)	-	Mod. Acid							
Conductivity	26	(-)	umho/cm	None			CL*				
Nitrate-N	3	(-)	ppm**								90 lbs N/acre
Phosphorus	2	(50)	ppm								115 lbs P2O5/acre
Potassium	68	(150)	ppm								135 lbs K20/acre
Calcium	400	(180)	ppm								0 lbs Ca/acre
Magnesium	64	(50)	ppm								0 lbs Mg/acre
Sulfur	4	(13)	ppm								15 lbs S/acre
Sodium	5	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement											0.00 tons 100ECCE/acre
TKN	382		ppm								

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre.

Sulfur: Available sulfur may be found deeper in soil profile, thus limiting any response to added sulfur.

Online fertilizer calculators to determine appropriate fertilizers and application rates.
http://soiltesting.tamu.edu

Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

TEXAS A&M AGRILIFE EXTENSION

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478

Visit our website: http://soiltesting.tamu.edu

Report generated for:
James Prochaska
PO Box 5667
BRYAN, TX 77805

Sample received on: 5/24/2024
Printed on: 6/10/2024
Area Represented: 1.6 acres

Guadalupe County
Laboratory Number: 661349
Customer Sample ID: M Composite 0-12
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	
pH	5.8	(5.8)	-	Mod. Acid							
Conductivity	51	(-)	umho/cm	None			CL*				Fertilizer Recommended
Nitrate-N	6	(-)	ppm**								85 lbs N/acre
Phosphorus	2	(50)	ppm								115 lbs P2O5/acre
Potassium	147	(150)	ppm								0 lbs K20/acre
Calcium	868	(180)	ppm								0 lbs Ca/acre
Magnesium	212	(50)	ppm								0 lbs Mg/acre
Sulfur	10	(13)	ppm								5 lbs S/acre
Sodium	8	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement											0.00 tons 100ECCE/acre
TKN	580		ppm								

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Sulfur: Available sulfur may be found deeper in soil profile, thus limiting any response to added sulfur.

Online fertilizer calculators to determine appropriate fertilizers and application rates.
http://soiltesting.tamu.edu

Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

TEXAS A&M AGRILIFE EXTENSION

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478

Visit our website: http://soiltesting.tamu.edu

Report generated for:
James Prochaska
PO Box 5667
BRYAN, TX 77805

Sample received on: 5/24/2024
Printed on: 6/10/2024
Area Represented: 1.6 acres

Guadalupe County
Laboratory Number: 661350
Customer Sample ID: M Composite 12-24
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess	Fertilizer Recommended
pH	5.7	(5.8)	-	Mod. Acid							
Conductivity	56	(-)	umho/cm	None				CL*			Fertilizer Recommended
Nitrate-N	2	(-)	ppm**								95 lbs N/acre
Phosphorus	1	(50)	ppm								120 lbs P2O5/acre
Potassium	134	(150)	ppm								25 lbs K20/acre
Calcium	1,244	(180)	ppm								0 lbs Ca/acre
Magnesium	403	(50)	ppm								0 lbs Mg/acre
Sulfur	18	(13)	ppm								0 lbs S/acre
Sodium	23	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement											1.00 tons 100ECCE/acre
TKN	607		ppm								

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Limestone recommendations are based on 100 ECCE liming products. Limestone applications >3 tons/acre should be made >4 months prior to crop establishment to lessen micro-nutrient availability issues.

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Online fertilizer calculators to determine appropriate fertilizers and application rates.
http://soiltesting.tamu.edu

Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

TEXAS A&M AGRILIFE EXTENSION

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478

Visit our website: http://soiltesting.tamu.edu

Report generated for:
James Prochaska
PO Box 5667
BRYAN, TX 77805

Sample received on: 5/24/2024
Printed on: 6/10/2024
Area Represented: 1.6 acres

Guadalupe County
Laboratory Number: 661351
Customer Sample ID: S Composite 0-12
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess	
pH	6.1	(5.8)	-	Mod. Acid							
Conductivity	27	(-)	umho/cm	None			CL*				Fertilizer Recommended
Nitrate-N	5	(-)	ppm**								85 lbs N/acre
Phosphorus	4	(50)	ppm								110 lbs P2O5/acre
Potassium	102	(150)	ppm								75 lbs K20/acre
Calcium	430	(180)	ppm								0 lbs Ca/acre
Magnesium	51	(50)	ppm								0 lbs Mg/acre
Sulfur	4	(13)	ppm								15 lbs S/acre
Sodium	5	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement											0.00 tons 100ECCE/acre
TKN	444		ppm								

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre.

Sulfur: Available sulfur may be found deeper in soil profile, thus limiting any response to added sulfur.

Online fertilizer calculators to determine appropriate fertilizers and application rates.
http://soiltesting.tamu.edu

Methods: pH and conductivity/ 2:1, nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

TEXAS A&M AGRILIFE EXTENSION

Soil Analysis Report

Soil, Water and Forage Testing Laboratory
Department of Soil and Crop Sciences
2478 TAMU
College Station, TX 77843-2478

Visit our website: http://soiltesting.tamu.edu

Report generated for:
James Prochaska
PO Box 5667
BRYAN, TX 77805

Sample received on: 5/24/2024
Printed on: 6/10/2024
Area Represented: 1.6 acres

Guadalupe County
Laboratory Number: 661352
Customer Sample ID: S Composite 12-24
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS (3 HAY CUTTINGS-2 TONS/A AVG.)

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess	Fertilizer Recommended
pH	6.1	(5.8)	-	Mod. Acid							
Conductivity	27	(-)	umho/cm	None			CL*				
Nitrate-N	6	(-)	ppm**								85 lbs N/acre
Phosphorus	2	(50)	ppm								115 lbs P2O5/acre
Potassium	75	(150)	ppm								125 lbs K20/acre
Calcium	374	(180)	ppm								0 lbs Ca/acre
Magnesium	44	(50)	ppm								5 lbs Mg/acre
Sulfur	3	(13)	ppm								15 lbs S/acre
Sodium	5	(-)	ppm								
Iron											
Zinc											
Manganese											
Copper											
Boron											
Limestone Requirement											0.00 tons 100ECCE/acre
TKN	400		ppm								

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Nitrogen: Apply an additional 100 lbs/A of nitrogen for each subsequent hay cuttings.

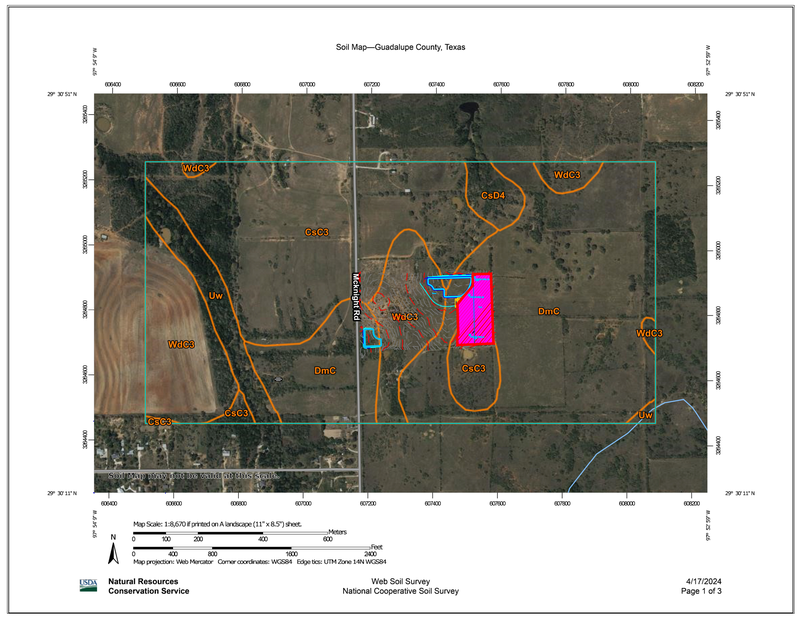
Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre.

Sulfur: Available sulfur may be found deeper in soil profile, thus limiting any response to added sulfur.

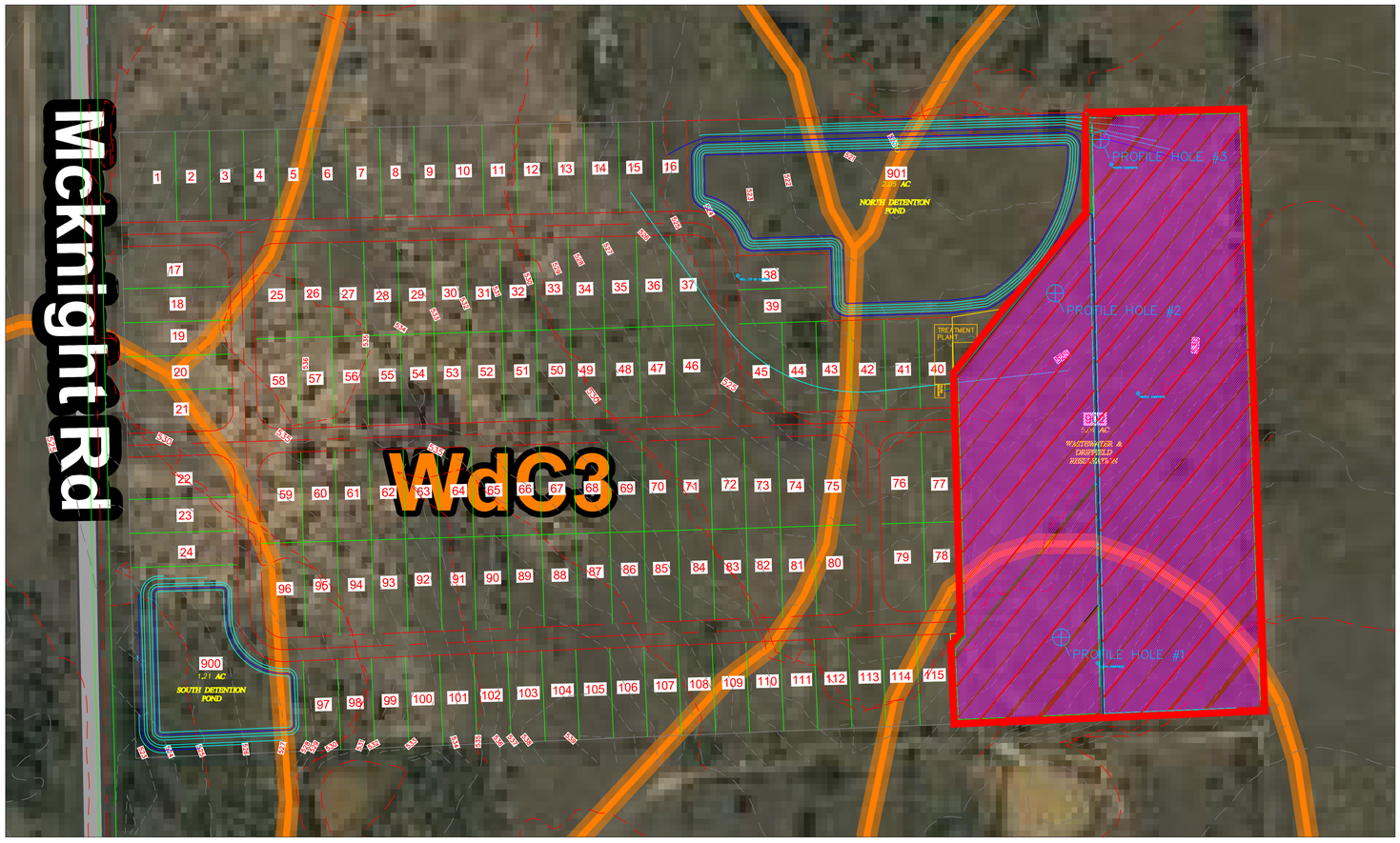
Online fertilizer calculators to determine appropriate fertilizers and application rates.
http://soiltesting.tamu.edu

Methods: pH and conductivity/ 2:1; nitrate-N/Cd-red.; P, K, Ca, Mg, Na, and S/Mehlich 3 by ICP; Fe, Zn, Mn, and Cu/DTPA by ICP; and B/hot water by ICP.

PROPERTY ADDRESS: 1313 MCKNIGHT RD, SEGUIN, TX



DISPOSAL AREA OUTLINED IN RED



GPS COORDINATES:
PROFILE HOLE #1
29.5075, −97.8908
PROFILE HOLE #2
29.5086, −97.8908
PROFILE HOLE #3
29.5091, −97.8907

SCALE: 1" = 80 Ft
0 40 80 160

NO. | DESCRIPTION | INITIALS | DATE

LWRE
LIGHTHOUSE WATER RESOURCE ENGINEERING
PO BOX 5667
BRYAN, TEXAS 77807 (979) 779-6500
Registration # F-21045

THE GARDEN OF CORDELL OAKS
SUBSURFACE AREA DRIP DISPOSAL SYSTEM
NRCS MAP

DESIGNED:	JFP
DRAWN BY:	JEL
APPROVED:	JFP
FILE:	JOBS/Spark Homes
JOB NO.:	
DATE:	11/07/2024

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	4.67 acres	18,000 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
6725902	Stock	Y	Plugged	
6725903	Domestic	Y	Cased	
6725906	Oil or Gas	Y	Unknown	
6725907	Unused	N	Plugged	
6725908	Domestic	Y	Unknown	

Well ID	Well Use	Producing? Y/N	Open, cased, capped, or plugged?	Proposed Best Management Practice
6725909	Domestic	Y	Cased	
6725910	Irrigation	Y	Cased	
6733302	Domestic	Y	Cased	
676677	Domestic	Y	Cased	
23574	Domestic	Y	Cased	
334556	Irrigation	Y	Plugged	
197530	Domestic	Y	Cased	
554692	Stock	Y	Unknown	
664193	Stock	Y	Cased	

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

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.

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
6725902	Stock	Y	Plugged	
6725903	Domestic	Y	Cased	
6725906	Oil or Gas	Y	Unknown	
6725907	Unused	N	Plugged	
6725908	Domestic	Y	Unknown	

Well ID	Well Use	Producing? Y/N	Open, cased, capped, or plugged?	Proposed Best Management Practice
6725909	Domestic	Y	Cased	
6725910	Irrigation	Y	Cased	
6733302	Domestic	Y	Cased	
676677	Domestic	Y	Cased	
23574	Domestic	Y	Cased	
334556	Irrigation	Y	Plugged	
197530	Domestic	Y	Cased	
554692	Stock	Y	Unknown	
664193	Stock	Y	Cased	

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.

STATE OF TEXAS WELL REPORT for Tracking #676677

Owner:	**Antonio Poblano**	Owner Well #:	**No Data**
Address:	**6150 FM 466 Seguin, TX 78155**	Grid #:	**67-25-9**
		Latitude:	**29° 31' 09" N**
Well Location:	**6150 FM 466 Seguin, TX 78155**	Longitude:	**097° 52' 43" W**
Well County:	**Guadalupe**	Elevation:	**510 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **8/15/2024** Drilling End Date: **8/16/2024**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8.75	**0**	**336**
7.875	**0**	**340**

Drilling Method: **Mud (Hydraulic) Rotary**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
270	**334**	**Gravel**	**3/16**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**2**	**Cement 1 Bags/Sacks**
2	**10**	**Quik Grout 4 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Derek Deharde**

Variance Number: **No**

Distance to Property Line (ft.): **53**

Distance to Septic Field or other concentrated contamination (ft.): **None**

Distance to Septic Tank (ft.): **None**

Method of Verification: **Wheel**

Surface Completion: **Surface Sleeve Installed** **Surface Completion NOT by Driller**

Water Level: **157 ft.** below land surface on **2024-08-16** Measurement Method: **Sonic/Radar**

Packers: **Hole Plug 230' - 270'**

Type of Pump: **Submersible** Pump Depth (ft.): **240**

Well Tests: **Jetted** **Yield: 50 GPM**

Water Quality:	Strata Depth (ft.)	Water Type
	280 - 333	Wilcox

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Deharde Water Well Service**
1075 Schuenemann Rd
Seguin, TX 78155

Driller Name: **Larry Deharde** License Number: **2328**

Apprentice Name: **Derek Deharde** Apprentice Number: **61086**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	3	Sand
3	32	Yellow Clay
32	48	Sand, Sandy Clay
48	85	Black Clay
85	98	Sandy Clay
98	120	Blue Clay & Rocks
120	144	Sand
144	153	Blue Clay
153	170	Lignite & Rock
170	185	Sand, Clay & rocks
185	192	Sand
192	240	Clay & Rocks
240	270	Sand, Sandy Clay
270	280	Clay
280	317	Sand, Sandy Clay
317	319	Rock
319	335	Sand

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	Blank	New Plastic (PVC)	SDR-17	-2	294
4.5	Screen	New Plastic (PVC)	SDR-17 0.2	294	314
4.5	Screen	New Plastic (PVC)	SDR-17 0.32	314	334

335	336	Blue Clay

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #23574

Owner:	**ALBERT WILSON**	Owner Well #:	**No Data**
Address:	**5626 F.M. 1117** **SEGUIN, TX 78155**	Grid #:	**67-25-9**
Well Location:	**No Data**	Latitude:	**29° 30' 13" N**
		Longitude:	**097° 52' 38" W**
Well County:	**Guadalupe**	Elevation:	**516 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **5/27/2003** Drilling End Date: **5/28/2003**

	Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
Borehole:	**8**	**0**	**310**

Drilling Method: **Mud (Hydraulic) Rotary**

Borehole Completion: **Filter Packed**

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
Filter Pack Intervals:	**100**	**310**	**Gravel**	

	Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
Annular Seal Data:	**0**	**10**	**3**

Seal Method: **SELF MIX**

Sealed By: **HERBOLD BROS.**

Distance to Property Line (ft.): **No Data**

Distance to Septic Field or other concentrated contamination (ft.): **No Data**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **NO SEPTIC**

Surface Completion: **Alternative Procedure Used**

Water Level: **80 ft.** below land surface on **2003-05-29** Measurement Method: **Unknown**

Packers: **No Data**

Type of Pump: **Submersible** Pump Depth (ft.): **240**

Well Tests: **No Test Data Specified**

Water Quality:

Strata Depth (ft.)	Water Type
No Data	No Data

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **HERBOLD BROTHERS**

6395 F.M. 467
SEGUIN, TX 78155

Driller Name: **GENE HERBOLD**

License Number: **4070**

Apprentice Number: **4070-IW**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	3	TOP SOIL
3	55	RED CLAY
55	65	SHALE
65	66	ROCK
66	140	SAND
140	150	SHALE
150	180	SAND
180	190	SHALE
190	199	SAND
199	205	SHALE
205	240	SAND
240	258	SHALE
258	260	ROCK
260	280	SHALE
280	310	SAND

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
4	NEW	PVC	0-310
PVC SCREEN 290-310 20TH			

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #334556

Owner:	**Kenneth Ball**	Owner Well #:	**1**
Address:	**2012 McKnight Rd. Seguin, TX 78155**	Grid #:	**67-33-3**
Well Location:	**2012 McKnight Rd Seguin, TX 78155**	Latitude:	**29° 29' 52" N**
		Longitude:	**097° 53' 40" W**
Well County:	**Guadalupe**	Elevation:	**566 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Irrigation**

Drilling Start Date: **8/5/2013** Drilling End Date: **8/6/2013**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
7.875	**0**	**340**
6.75	**0**	**340**

Drilling Method: **Mud (Hydraulic) Rotary**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
280	**340**	**Gravel**	**3/16**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**10**	**1 - Cement**

Seal Method: **Wheelbarrow**

Sealed By: **Derek Deharde**

Distance to Property Line (ft.): **150**

Distance to Septic Field or other concentrated contamination (ft.): **200**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **Estimated**

Surface Completion: **Surface Sleeve Installed**

Water Level: **155 ft.** below land surface on **2013-08-06** Measurement Method: **Unknown**

Packers: **Hole Plug 265' - 280'**

Type of Pump: **Submersible** Pump Depth (ft.): **220**

Well Tests: **Jetted** **Yield: 30 GPM**

Water Quality:	Strata Depth (ft.)	Water Type
	309 - 338	Wilcox

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Deharde Water Well Service**

1075 Schuenemann Rd
Seguin, TX 78155

Driller Name: **Larry Deharde** License Number: **2328**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	5	sandy clay
5	90	sand & sandy clay
90	125	black clay
125	155	sand & sandy clay
155	185	clay
185	190	sand
190	246	clay & rocks
246	295	sandy clay & clay
295	305	clay
305	308	hard clay
308	309	rock
309	328	Sand
328	333	clay
333	338	Sand
338	340	clay

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
4	New	Plastic	0 - 300 Sch.40
4	New	Mfg. Screen .012	300 - 340 Sch.40

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #197530

Owner:	**Sanchez, Bernardo**	Owner Well #:	**No Data**
Address:	**2116 Carter St. Houston, TX 77008**	Grid #:	**67-25-9**
		Latitude:	**29° 30' 54" N**
Well Location:	**Muehl Rd. Seguin, TX 78155**	Longitude:	**097° 54' 29" W**
Well County:	**Guadalupe**	Elevation:	**No Data**
Type of Work:	**New Well**	Proposed Use:	**Domestic**

Drilling Start Date: **1/12/2009** Drilling End Date: **1/12/2009**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
7.875	**0**	**240**
6.75	**0**	**240**

Drilling Method: **Mud (Hydraulic) Rotary**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
180	**240**	**Gravel**	**3/16**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**10**	**1 Cement**

Seal Method: **Wheel Barrow**

Sealed By: **L. Deharde**

Distance to Property Line (ft.): **80**

Distance to Septic Field or other concentrated contamination (ft.): **None**

Distance to Septic Tank (ft.): **No Data**

Method of Verification: **Estimated**

Surface Completion: **Surface Sleeve Installed**

Water Level: **66 ft.** below land surface on **2009-01-12** Measurement Method: **Unknown**

Packers: **Hole Plug 170'-180'**

Type of Pump: **Submersible** Pump Depth (ft.): **120**

Well Tests: **Jetted** **Yield: 50 GPM with 165 ft. drawdown after unspecified hours**

Water Quality:

Strata Depth (ft.)	Water Type
211-240	Wilcox

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Deharde Water Well Service**

1075 Schuenemann Rd.
Seguin, TX 78155

Driller Name: **Larry Deharde** License Number: **2328**

Comments: **^EO**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	10	sandy clay
10	50	yellow clay
50	70	blue clay
70	80	sandy clay
80	97	clay
97	98	rock
98	127	clay
127	170	sand & sandy clay
170	174	rock
174	185	sand
185	193	clay
193	210	sand & sandy clay
210	211	rock
211	234	sand
234	235	rock
235	240	clay

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Type	Setting From/To (ft.)
4"	N	Plastic	0'-240' Sch-40
4"	N	Screen Mfg. .016	200'-240' Sch-40

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #554692

Owner:	**Wayne Allison**	Owner Well #:	**2**
Address:	**FM 466 Seguin, TX 78155**	Grid #:	**67-25-9**
Well Location:	**FM 466 Seguin, TX 78155**	Latitude:	**29° 30' 53.9" N**
		Longitude:	**097° 54' 02.9" W**
Well County:	**Guadalupe**	Elevation:	**482 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Stock**

Drilling Start Date: **8/10/2020** Drilling End Date: **8/11/2020**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8.875	**0**	**366**
6.75	**0**	**370**

Drilling Method: **Mud (Hydraulic) Rotary**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
300	**364**	**Gravel**	**3/16**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**2**	**Cement 1 Bags/Sacks**
2	**10**	**Benseal 3 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Derek Deharde**

Distance to Property Line (ft.): **600**

Distance to Septic Field or other concentrated contamination (ft.): **None**

Distance to Septic Tank (ft.): **None**

Method of Verification: **Estimated**

Surface Completion: **Surface Sleeve Installed** **Surface Completion NOT by Driller**

Water Level: **115 ft.** below land surface on **2020-08-11** Measurement Method: **Sonic/Radar**

Packers: **Holeplug 250' - 300'**

Type of Pump: **Submersible**

Well Tests: **Jetted** **Yield: 30 GPM**

Water Quality:	Strata Depth (ft.)	Water Type
	325 - 370	Wilcox

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Deharde Water Well Service**

1075 Schuenemann Rd
Seguin, TX 78155

Driller Name: **Larry Deharde** License Number: **2328**

Apprentice Name: **Derek Deharde**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	3	Sand
3	26	Yellow Clay
26	36	Black Clay
36	80	Blue Clay
80	116	Sand & Rocks
116	120	Lignite
120	215	Clay & Rocks
215	230	Sand
230	325	Blue Clay
325	333	Sand
333	370	Sand, Sandy Clay & Rocks
370	378	Blue Clay

Casing:
BLANK PIPE & WELL SCREEN DATA

Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	Blank	New Plastic (PVC)	SDR-17	-2	305
4.5	Screen	New Plastic (PVC)	SDR-17 0.2	305	360
4.5	Blank	New Plastic (PVC)	SDR-17	360	365

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #664193

Owner:	**Richard Bergfeld**	Owner Well #:	**No Data**
Address:	**2932 Glen View Seguin, TX 78155**	Grid #:	**67-25-9**
		Latitude:	**29° 30' 44" N**
Well Location:	**900 McKnight Rd Seguin, TX 78155**	Longitude:	**097° 53' 44" W**
Well County:	**Guadalupe**	Elevation:	**520 ft. above sea level**
Type of Work:	**New Well**	Proposed Use:	**Stock**

Drilling Start Date: **3/26/2024** Drilling End Date: **3/27/2024**

Borehole:

Diameter (in.)	*Top Depth (ft.)*	*Bottom Depth (ft.)*
8.75	**0**	**348**
7.875	**0**	**348**

Drilling Method: **Mud (Hydraulic) Rotary**

Borehole Completion: **Filter Packed**

Filter Pack Intervals:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Filter Material*	*Size*
290	**343**	**Gravel**	**3/16**

Annular Seal Data:

Top Depth (ft.)	*Bottom Depth (ft.)*	*Description (number of sacks & material)*
0	**2**	**Cement 1 Bags/Sacks**
2	**10**	**Benseal 4 Bags/Sacks**

Seal Method: **Hand Mixed**

Sealed By: **Derek Deharde**

Variance Number: **No**

Distance to Property Line (ft.): **400**

Distance to Septic Field or other concentrated contamination (ft.): **None**

Distance to Septic Tank (ft.): **None**

Method of Verification: **Estimated**

Surface Completion: **Surface Sleeve Installed** **Surface Completion NOT by Driller**

Water Level: **117 ft.** below land surface on **2024-03-27** Measurement Method: **Sonic/Radar**

Packers: **Holelug 250' - 290'**

Type of Pump: **Submersible** Pump Depth (ft.): **220**

Well Tests: **Jetted** **Yield: 70 GPM**

Water Quality:	Strata Depth (ft.)	Water Type
	298 - 348	Wilcox

Chemical Analysis Made: **No**

Did the driller knowingly penetrate any strata which contained injurious constituents?: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the report(s) being returned for completion and resubmittal.

Company Information: **Deharde Water Well Service**

1075 Schuenemann Rd
Seguin, TX 78155

Driller Name: **Larry Deharde** License Number: **2328**

Apprentice Name: **Derek Deharde** Apprentice Number: **61086**

Comments: **No Data**

Lithology:
DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	2	Sand
2	60	Yelow Clay
60	65	Blue Clay
65	75	Lignite
75	94	Blue Clay
94	145	Blue Sand
145	150	Lignite
150	165	Sand, Sandy Clay
165	205	Clay & Rocks
205	210	Sand
210	290	Clay & Rock
290	298	Sand, Sandy Clay
298	348	Sand
348	349	Clay

Casing:
BLANK PIPE & WELL SCREEN DATA

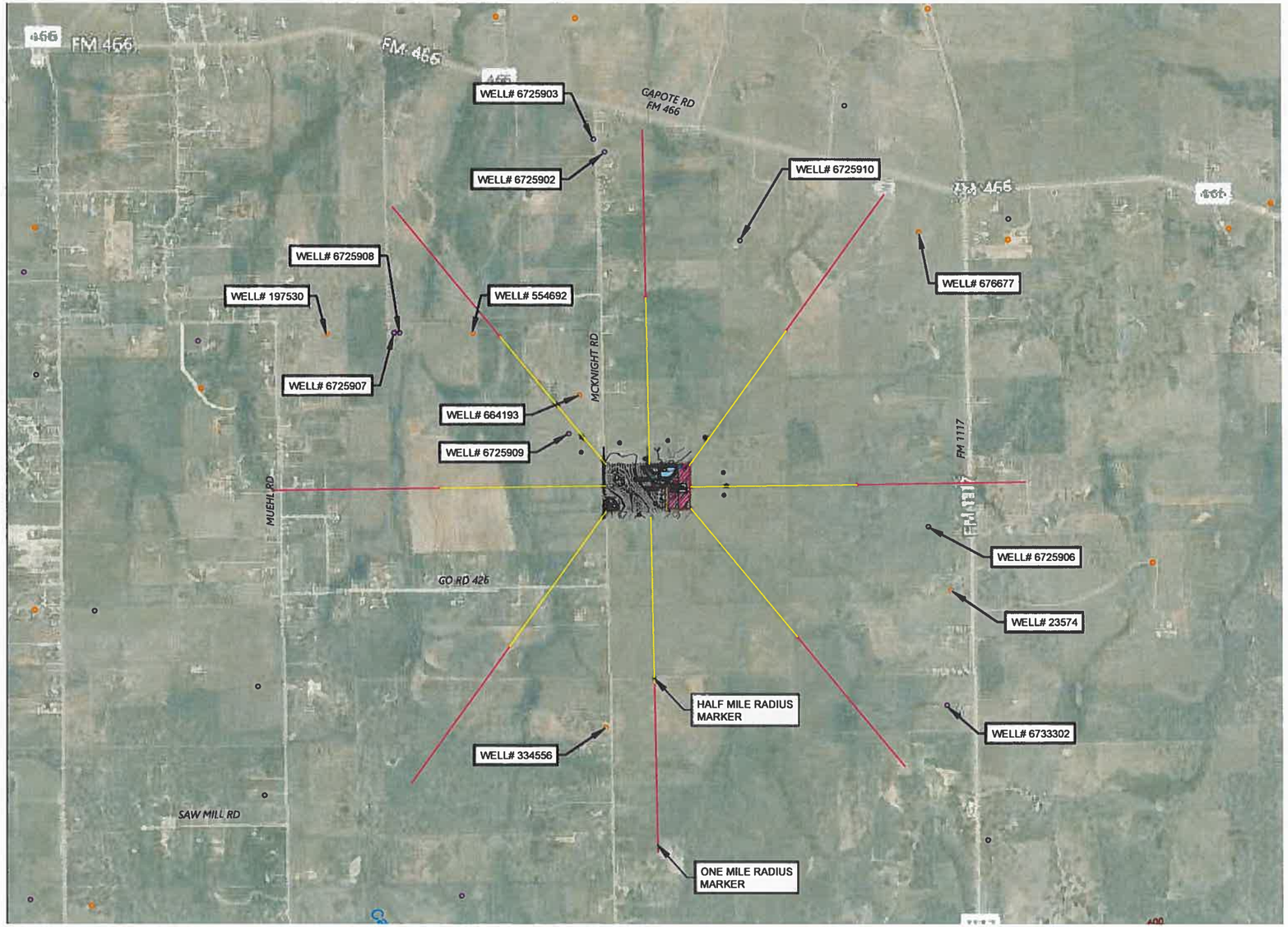
Dia (in.)	Type	Material	Sch./Gage	Top (ft.)	Bottom (ft.)
4.5	Blank	New Plastic (PVC)	SDR-17	-2	300
4.5	Screen	New Plastic (PVC)	SDR-17 0.2	300	340
4.5	Blank	New Plastic (PVC)	SDR-17	340	345

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation
P.O. Box 12157
Austin, TX 78711
(512) 334-5540



PLAN
1"= 600 METERS

LEGEND

- HALF MILE RADIUS MARKER
- ONE MILE RADIUS MARKER
- EXISTING WELL TWDB
- EXISTING WELL SNRDB

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

Velvin & Weeks
Consulting Engineers, Inc.
PHONE 903.675.3903
FAX 903.675.8345
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, LLC
GUADALUPE COUNTY, TEXAS

EXISTING WELLS EXHIBIT

DATE	Nov 04, 24
DESIGN	T.N.H.
DRAWN	WHO
CHECKED	T.N.H.
SHEET	1 of 1
JOB NO.	5306