

Mustang Springs Development
Drilling Permit Packet
November 8, 2023

Staff Report
Application for Drilling Permit
N3-23-010P & N3-23-011P



Applicant/Owner: Jaffe Interests LP (Mustang Springs Development)
 Mr. James Kerby
 PO Box 4449
 Horseshoe Bay, TX 78657 Phone: 512-422-6711

Location of Wells:
Location description: 1106-acre housing development located on the north side of FM-2843 approximately 6 miles west of the Village of Salado
Management Zone: Stillhouse Hollow Zone
Well #1: (N3-23-01P) Latitude 30.921147°/Longitude -97.625147°
Well #2: (N3-23-01P) Latitude 30.930094°/Longitude -97.635711°

Proposed Annual Withdrawal:	Proposed Beneficial Use	Source Aquifer:	Nearest Registered known Existing Wells:
<p><u>Well #1:</u> Initial Rate: 320-gpm Column Pipe: 4-inch Horsepower Rating: 150</p>	<p>Public Water Supply System for Mustang Springs House Development</p>	<p>Hosston Layer of the Trinity Aquifer (Lower)</p>	<p><u>Well #1</u> has 12 wells in ½ mile, 1-Upper Trinity 9- Middle Trinity 2- Edwards BFZ</p>
<p><u>Well #2:</u> Initial Rate: 320-gpm Column Pipe: 4-inch Horsepower Rating: 150</p>	<p>Three phases of development:</p>		<p><u>Well #2:</u> has 1 well in ½ mile, 1-Upper Trinity</p>
<p><u>Proposed Withdrawal:</u></p>	<p><i>Phase 1 & 2:</i> 322 connections</p>		
<p><u>Well #1</u> Proposed Production: 126.3 ac-ft/yr. or 41,154,981 gallons per year</p>	<p><i>Phase 3:</i> 315 connections</p>		
<p><u>Well #2</u> Proposed Production: 123.5 ac-ft/yr. or 40,242,599 gallons per year</p>	<p>1167 Living Unit Equivalents (LUE) 350 gallons per day per connection</p>		
<p><i>No Production can be authorized with these applications per District Rules 6.9.1 & 6.9.2 until completed, special conditions met and operating permits presented to the District at a later date and pursuant to the future prescribed public hearing.</i></p>			

General Information

Dr. Gretchen Miller, Ph.D., PE, PG, submitted two applications, on behalf of Mr. James Kerby, Jaffe Interests LP (Mustang Springs Development, the “Applicant”), to the Clearwater Underground Water Conservation District (CUWCD) on September 8, 2023, seeking two permits, each seeking authorization to drill a proposed new public water supply well (“Applications”).

These proposed drilling permits, if approved, will only authorize drilling and completion of two groundwater wells for public water supply withdrawal from the Lower Trinity (Hosston Layer).

The proposed wells are Well #1 (#N3-23-010P) and Well #2 (N3-23-011P) to be completed in the Stillhouse Management Zone described in District Rule 7.1.2. The proposed wells are to be completed in the Lower Trinity Aquifer (Hosston Layer),

- Well #1 is proposed to have a maximum 4-inch column pipe on a 2.74-acre tract located at Latitude 30.921147°/Longitude -97.625147°.
- Well #2 is proposed to have a maximum 4-inch column pipe on an 18.37-acre tract located at Latitude 30.930094°/Longitude -97.635711° on an 18.37-acre tract of land.

Both Well #1 and Well #2, and their respective tracts, lie within the City of Georgetown’s certificated service area (CCN No. 12369). The wells and tracts also lie within the corporate boundaries of the Village of Salado.

District Rule 6.9.2 requires applicants for drilling and operating permits for non-exempt wells, which seek a proposed use for public water supply, to include notice of any application to the Public Utility Commission of Texas (“PUC”) to obtain or modify a certificate of convenience and necessity (“CCN”).

The Applicant has submitted an exhibit to the Application (letter to City of Georgetown) demonstrating a request to decertify an area that includes both tracts and the service area to be served by the proposed wells, but has not provided any notice of an application to the PUC to obtain or modify a CCN.

In lieu of notice required by Rule 6.9.2 for the drilling permits, the Applicant *must agree* to the special permit conditions identified below.

Per Rules 6.9 and 6.10

In deciding whether or not to issue a permit, the Board must consider the following:

1. **Does the application contain all the information requested, is the application accurate? Does it meet spacing and production limitations identified by District Rules, and does it conformed to all application requirements which include public notification and accompanied by the prescribed fees? TWC 36.116(a)(1), TWC 36.113(d)(1), Rule 6.9.1(a)(b)(1)(2), Rule 6.9.2(a)-(f), Rule 6.10.24(a)(b), and Rule 9.5.1-2.**

The application has been deemed administratively complete and the requested information necessary to proceed is as follows.

- The Applications **do not conform** to the tract size requirements associated with district Rule 9.5.2 for wells completed to the Lower Trinity with 4-inch column pipe in the Stillhouse Zone, but the Applicant intends to obtain a certificate of convenience and necessity to meet the requirements of Rule 9.5.2. The Applicant has demonstrated that efforts to decertify the subdivision from the City of Georgetown is underway (*see attached letter Kerby to Solomon*). *Note if they attain their own CCN as a retail public water supply for the 1100 total acres then the requisite tract size can be met.*
- The total application fees for the two drilling permits of \$4,397.00 have been received.
- The applicant and their representative have all notification requirements in a proper manner per District Rules.

2) Is the proposed use of water dedicated to a beneficial use? (TWC 36.113(d)(3), District Rule 6.10.24 (d) and District Rule 9.5.2 authority to serve as a public water supply per PUC and TCEQ requirements.

The proposed production of groundwater is for public water supply and is deemed a “beneficial use” if the applicant can demonstrate they have authority to provide retail public water service to a designated CCN covering, at least, the 1100 acre-tract. A CCN must be attained prior to this Board granting any operating permits for the wells. The wells or the wells’ design must be approved by TCEQ for public water supply prior to this Board granting any operating permits for the wells.

3) Has the applicant agreed to avoid waste and achieve water conservation? (TWC 36.113(d)(6) and Rule 6.10.24(f))

The applicant should testify they understand per District Rule 6.10.24(f) that by signing the application form the applicant and their representative agrees to and states they will comply with the District’s Management Plan and District Rules in affect on November 8, 2023.

The applicant or his representative should testify to the importance of water conservation measures and that options for direct reuse will be in place for all outdoor landscape needs as described by their Environmental firm to staff. Direct Reuse for the Wastewater Treatment Plant effluent was described to the GM as an alternative to utilizing groundwater for landscape needs across the entire development.

The District hopes that the applicant states in testimony they do not intend to utilize the groundwater for extensive landscape purposes and agrees to describe their rainwater catchment system being encouraged as design for the homes and businesses and placed in the final covenants and dedications of the future community.

The applicant has received notice that groundwater wells existed in place on the property prior to subdividing the property by plat and have been identified by the General Manager for plugging due to location and abandonment. Plugging of wells

must occur prior to pursuing any operating permit for Wells #1 & #2. (*memo to the applicant after action report is attached*)

- 4) **Has the applicant agreed that reasonable diligence will be used to protect groundwater quality and that the applicant will follow well plugging guidelines at the time of well closure? (TWC 36.113(d)(7) and Rule 6.10.24(g)) and Rule 9.3.1 Special Standards of Completion for wells in TX Grid 58-03-06 related to Glen Rose Layer head pressure and injurious water concerns.**

The applicant (*by signing the application form*) should offer testimony that if the well deteriorates over time or becomes damaged in such a way that the well is inoperable that state law and district rules require such a well to be plugged before a replacement well can be drilled.

The applicant or their representatives should offer testimony that all efforts to properly complete or plug the wells will be taken to prevent commingling of injurious water with good water as defined by Rule 9.3.1.

- 5) **Will the proposed water well comply with spacing and production limitations identified in our rules? (TWC 36.116(a)(1-2), TWC 36.116(c)&(d) and Rule 6.10.24(b)), Rule 7.1 and Rule 9.5.2.**

The proposed wells are located in the *Stillhouse Hollow Management Zone* described in *District Rule 7.1*, thus will have a maximum column pipe size not to exceed 4-inches declared in the applications. If the future applications for operating permits are supported by sufficient aquifer conditions, the Applicant may pursue a maximum column pipe size not-to-exceed 6-inches.

Based on column pipe size, a minimum size tract of 30-acres is required, with a 1980-foot spacing requirement from other wells completed to the same layer of the Trinity Aquifer. The 75-foot setback requirement from adjacent property lines has been met for the proposed wells. Note the 1100 acre-tract has been formally subdivided into tracts smaller than the prescribed size for the zone.

Therefore, the applicant must (1) provide notice of any application to the Public Utility Commission of Texas (“PUC”) to obtain or modify a certificate of convenience and necessity (“CCN”) as required by Rule 6.9.2; and (2) must provide proof that it holds a CCN issued by the PUC granting the Applicant authority to provide retail public water service to the proposed service area contemplated by the Applications prior to being granted any operating permit for public water supply use to qualify for the exemption contemplated by Rule 9.5.2. The Applicant should testify to its intent to comply with Rule 6.9.2 and Rule 9.5.2.

The District’s rules require that we impose a production limit based on acre-ft/year and described gallons per year. These proposed amounts determined by the applicant for this review of the two drilling permits are proposed as follows: for Well #1 126.3 acre-ft/year or 41,154,981 gallons per year, and for Well #2 123.5 acre-ft/year or 40,242,599 gallons/year.

The applicant and/or their representative should understand that the district will deliberate on the future operating permits for groundwater production and those deliberations will be based on the elements of the Operating Permit Applications and the required Well Completion Report. District Rule 6.9.2(e)(2), (e)(3), and (f) require the following:

Operating Permit Applications:

- Requests to Operate a Non-exempt annual maximum permitted use of 5 Acre-feet or more; or
- Requests to modify to increase production or production capacity of a Public Water Supply, Municipal, Commercial, Industrial, Agricultural or Irrigation Well if such increase is 5 Acre-feet or more per year and/or the Board determines that such report is warranted based on Aquifer conditions, type of modification, status of adjacent Wells, local water use trends, and other Aquifer management considerations.

Well Completion Reports shall include:

- 1) A lithology log based on the cuttings collected during Drilling.
- 2) For a new well, chip trays containing samples of the formation cuttings collected during Drilling with depth interval for each sample clearly marked.
- 3) Geophysical log with the Well name, location, depth, and Drilling fluid properties recorded on the log header.
- 4) Well completion diagram identifying (as applicable) the open and cased intervals, casing and screen type and size, filter pack interval, cement interval, pump and motor (model number, pump bowls, horsepower, etc.), pump setting, column pipe type and size, pump head, and other pertinent information related to the Well construction.
- 5) Pump curve for the final or proposed pump.
- 6) Data and analysis from a minimum 24-hour pumping test.
- 7) Water quality analysis results from a NELAP certified laboratory; and
- 8) Predicted impacts of the proposed production from the Well,

If the proposed future operating permits cause an unacceptable level of decline in the water quality of the aquifer and/or artesian pressure, then the Board may require production at levels necessary to reduce said depletion or degradation of the aquifer.

In addition, the Board may reduce production necessary to prevent waste and achieve water conservation, minimize as far as practicable the drawdown of the water table or the reduction of artesian pressure, lessen interference between wells, or control and prevent subsidence.

More specifically these issues are considered in Items 6 & 7 below and with staff recommendations to address potential concerns of adjacent property owners and well owners within the potential radius of influence from future production.

- 6) Will the proposed use of water unreasonably affect existing groundwater and surface water resources or existing permit holders?**

Based upon available information, there are the following number of wells as defined for domestic & Livestock use and completed, and active from the Upper & Middle Trinity Aquifer and the Edwards BFZ Aquifer.

12 wells are within ½ mile of Well #1:

1 is completed in the Glens Rose Layer of the (Upper) Trinity Aquifer,
9 are in completed in the Hensell Layer of the (Middle) Trinity Aquifer,
2 are completed in the Hosston Layer of the Trinity Aquifer.

1 well is within ½ mile of Well #2:

1 is completed in the Upper Trinity

Mike Keester, RW Harden & Associates, has reviewed the application and has determined the anticipated drawdown, and has provided the attached MK report.

Keester states in his conclusions and recommendations the following:

*“Based on our current understanding of the local aquifer conditions, the proposed wells will not inhibit the ability of other users to access groundwater from the Lower Trinity. In addition, the proposed production associated with a future operating permit is less than the volume reported as available for permitting. Based on our current understanding of the system, the nearest Lower Trinity well in use is estimated to experience approximately nine feet of drawdown from the annual production after one year. Data provided in association with the **well completion reports (Rule 6.9.2(f))** will aid the Board’s consideration of the anticipated operating permit applications.”*

Additionally, the District, to the extent possible, must only issue permits up to the point the total volume of exempt and permitted groundwater production will achieve the applicable Desired Future Condition (DFC) per **TWC 36.1132(a)(b) and Rule 6.10.25(a)(b)(c)(d)(e)**.

7) Is the proposed use of groundwater consistent with the District’s Groundwater Water Management Plan related to the approved DFC and the defined available groundwater for permitting?

The District’s Management Plan reflects a groundwater availability figure in the Lower (Hosston Layer) Trinity Aquifer of **7900 ac-ft/year Modeled Available Groundwater** (then reserve 178 ac-ft/year for exempt well use) thus **7,722 ac-ft/year is the Managed Available Groundwater for permitting established by the district.**

The Board, per the District Management Plan, has evaluated groundwater available for permitting the Lower Trinity Aquifer and most recently evaluated the available groundwater for permitting (*consistent with the management plan as stated on pages 9-10*).

The requested permit amount relative to the modeled available groundwater MAG determined by the Texas Water Development Board (TWDB) based on the desired future conditions (DFCs) established by the District for the Lower Trinity Aquifer was set by CUWCD based on 330-ft of drawdown over 60-yrs. This was reviewed and

again approved by the board in January 2022. To achieve this DFC, the TWDB used a model that indicated the MAG was equal to 7,900 acre-feet per year from the Lower Trinity.

A summary of YTD 2023 permit production, HEUP & OP Permit Analysis, pending applications, and *Exempt Well Reservations for the Lower Trinity, per District Report illustrates current Lower Trinity Aquifer permits total 4992.31 ac-ft/year. Currently, the District has a pending permit of 23 ac-ft/year, thus available for permitting is only 2624.39 acre-feet/year. (*see attached Lower Trinity Aquifer Status Report, (October 11, 2023)*).

8) What are the Modeled Available Groundwater calculations determined by the Executive Administrator of the Texas Water Development Board?

Refer to #7 above. The modeled available groundwater will not be exceeded by granting this permit. (*see attached Lower Trinity Aquifer Status Report, October 11, 2023*).

9) What has the Executive Administrator of the Texas Water Development Board's estimate of the current and projected amount of groundwater produced under the exemptions in District Rule 6.3?

Refer to #7 above. Reservation of Modeled available groundwater for **exempt well** use will not be exceeded by granting this permit. 178 ac-ft/year vs 119 ac-ft estimated to be used annually from the *Lower Trinity*. (*see 2022 district exempt use report*)

10) What is the amount of groundwater authorized under permits previously issued by the District?

Refer to #7 above. Existing permits do not exceed the managed available groundwater (*modeled available groundwater – reserved exempt well use = Managed Available Groundwater*) for the Lower Trinity Aquifer which is 7,722 ac-ft per year.

11) What is the reasonable estimate of the amount of groundwater that is produced annually under existing non-exempt permits issued by the District?

The total permitted amounts for non-exempt wells in the Lower Trinity Aquifer in 2022 was **4,454.99 ac-feet/yr.** and the actual production in 2022 was **1842.71 ac-ft/yr. (41%)** of the permitted amount. (*Figures are based upon monthly production reports submitted to Clearwater by the permit holders in 2022*).

12) Yearly precipitation and production patterns.

Clearwater is currently in “Stage 1 Awareness” based on the PDI system (average running total annual rainfall) on October 1st 2023 over the Trinity Aquifer in the District, is currently at **26.99** inches of rain received in the last 365 days (as of 10/1/2023) thus **81.79%** of annual expected rainfall of 33 inches. The Trinity aquifer

permit holders in all of 2022 have used 33.3% of the total permitted amounts in the Aquifer. Permit holders did not exceed their total permitted amounts in 2020, 2021 and 2022.

The gravity of the current drought is reminiscent of the epic drought of 2011-2013, the significant drought in 2018, 2020 and again in 2022-23. The current drought trends do necessitate the need for all permit applications to be evaluated based on conservative needs and usage that are not contradicted by the current voluntary drought contingency plan stage.

The applicant should agree to take extreme conservation strategies to increase efficient and conservative groundwater use by the future homeowners. Testimony as to their planned Direct Reuse of wastewater for landscape needs for each home and no groundwater use for landscape would set a precedent of groundwater conservation preferred by the district.

Conclusions and Recommendations:

- 1) District General Manager recommends that the Board requires the Applicant to plug the current wells that remain in place in the subdivision necessary to meet the District rules for existing wells not meeting District property line setbacks and/or required for operating permits. (Information is documented in the After the Fact Memo to the developer preceding the preliminary plat approval by the Village of Salado. (*see attached Groundwater Assessment Report of Mustang Springs*).
- 2) District General Manager recommends that the Board approve the drilling permits for the wells for future public water supply, subject to the following special permit conditions:
 - a. The Applicant shall obtain a CCN from the PUC before any groundwater is produced from the wells contemplated by the drilling permits other than water necessary for the completion of the well and for the prescribed aquifer test (*Well Completion Report*).
 - a. The Applicant must seek and obtain approval from TCEQ of the well design for both public water supply wells contemplated by the Application prior to producing any groundwater from the wells contemplated by the drilling permits.
 - b. The Applicant shall notify the District before any drilling commences on either proposed site.
 - c. The Applicant shall conduct completion on both wells through the Edwards BFZ aquifer in a manner to avoid any karst feature or karst void that could potentially harm the flow path of groundwater in the Outcrop of the Edwards BFZ aquifer. Such completion may involve conductor or surface casing set in a manner to minimize plugging of subsurface karst features.
 - d. To assess actual changes in water levels due to pumping from the proposed wells and regional water level declines, the pump installer shall install a measuring tube alongside the column pipe (as shown on the Applicant's well design) to allow for monthly or continuous measurement system of the water level using an e-line or other direct measurement method as needed by District Staff.

- e. The pump installer shall install a metering device (as shown on the Applicant's well design) for future monthly online reporting of production to confirm the Applicant does not utilize the groundwater beyond the current needs for the aquifer testing per District Rule 6.9.2(f)(1-8) prior to submitting the well completion report with the prescribed operating permit application for an amount to be approved in the future.

Attachments are as follows:

<i>Keester PG Technical Memorandum</i>	<i>10/20/2023</i>
<i>Aaron Technical Memo Assessment of the Plat</i>	<i>05/12/2023</i>
<i>CUWCD Trinity Aquifer Status Report</i>	<i>10/11/2023</i>
<i>CUWCD 2022 Exempt Well Estimate of Use Report</i>	<i>12/31/2022</i>
<i>CUWCD Site Maps</i>	<i>See Attached</i>
<i>Applications, fees and Notification Affidavits</i>	<i>See Attached</i>

Keester PG, Technical Memo
RW Harden Assessment

TECHNICAL MEMORANDUM

To: Dirk Aaron, General Manager – Clearwater Underground Water Conservation District

From: Michael R. Keester, PG – R. W. Harden & Associates, Inc.

Date: October 20, 2023

Subject: Hydrogeologic Evaluation of the Mustang Springs (N3-23-010P and N3-23-011P) Drilling Permit Applications

Proposed Well IDs: *N3-23-010P (Well #1), N3-23-011P (Well #2)*

Well Owner Name: *Jaffe Interests LP*

Tract Size: *1,105 Acres*

Column Pipe Size: *Max 4 inches*

Aquifer: *Lower Trinity*

Management Zone: *Stillhouse Hollow*

Combined Proposed Annual Production: *249.8 Acre-Feet per Year*

Proposed Instantaneous Pumping Rate: *320 Gallons per Minute per well*

According to information provided by the applicant's consultants, the proposed well is intended to supply water for public supply use to a housing development located west of Salado. For the first 3 phases of the development, the applicant anticipates 637 connections using 350 gallons per day per connection. Projected annual water demand for the final buildout of the development is 81,432,488 gallons or approximately 249.9 acre-feet. To meet peak demand, the anticipated capacity of each well is 320 gallons per minute from the Lower Trinity Aquifer in the Stillhouse Hollow Management Zone.

According to the CUWCD geologic model, the top of the Lower Trinity is about 980 feet below ground level and about 110 feet thick at the proposed Well #1 location and about 110 feet shallower and 40 feet thick at the Well #2 site. Site specific conditions encountered while drilling will determine the final depth and completion interval of each well. To meet the requirements of District Rule 6.9.2(f), the applicant will need to collect lithology samples and conduct geophysical logging of the open borehole which will support delineation of the subsurface geologic units.

The groundwater availability model (Kelley and others, 2014) indicates the Lower Trinity Aquifer transmissivity is about 9,800 to 10,100 gallons per day per foot (gpd/ft) with a storage coefficient of 0.0002. Aquifer testing conducted in collaboration with the District has resulted in revision of the model transmissivity for the Lower Trinity Aquifer. According to the CUWCD updated model datasets, the transmissivity of the Lower Trinity Aquifer at the proposed well sites is 17,000 to 19,500 gpd/ft (Keester and Konetchy, 2016; Konetchy and Beach, 2020). However, recent updates to the create the local

Clearwater Groundwater Management Model suggest the transmissivity may be as low as 4,400 gpd/ft (report incomplete as of this evaluation).

Testing conducted following completion of the wells will provide site specific aquifer hydraulic conditions to reduce the local uncertainty. For our analysis of effects due to the proposed production, we used the lower transmissivity estimate and the storativity values from the Clearwater Groundwater Management Model to assess the potential drawdown at the proposed wells. The nearest existing Lower Trinity well in use is E-02-1948G which is more the 4.5 miles from Well #2 (N3-23-011P). Well N2-21-001P is closer but has not yet been completed. Figure 1 illustrates the area wells.

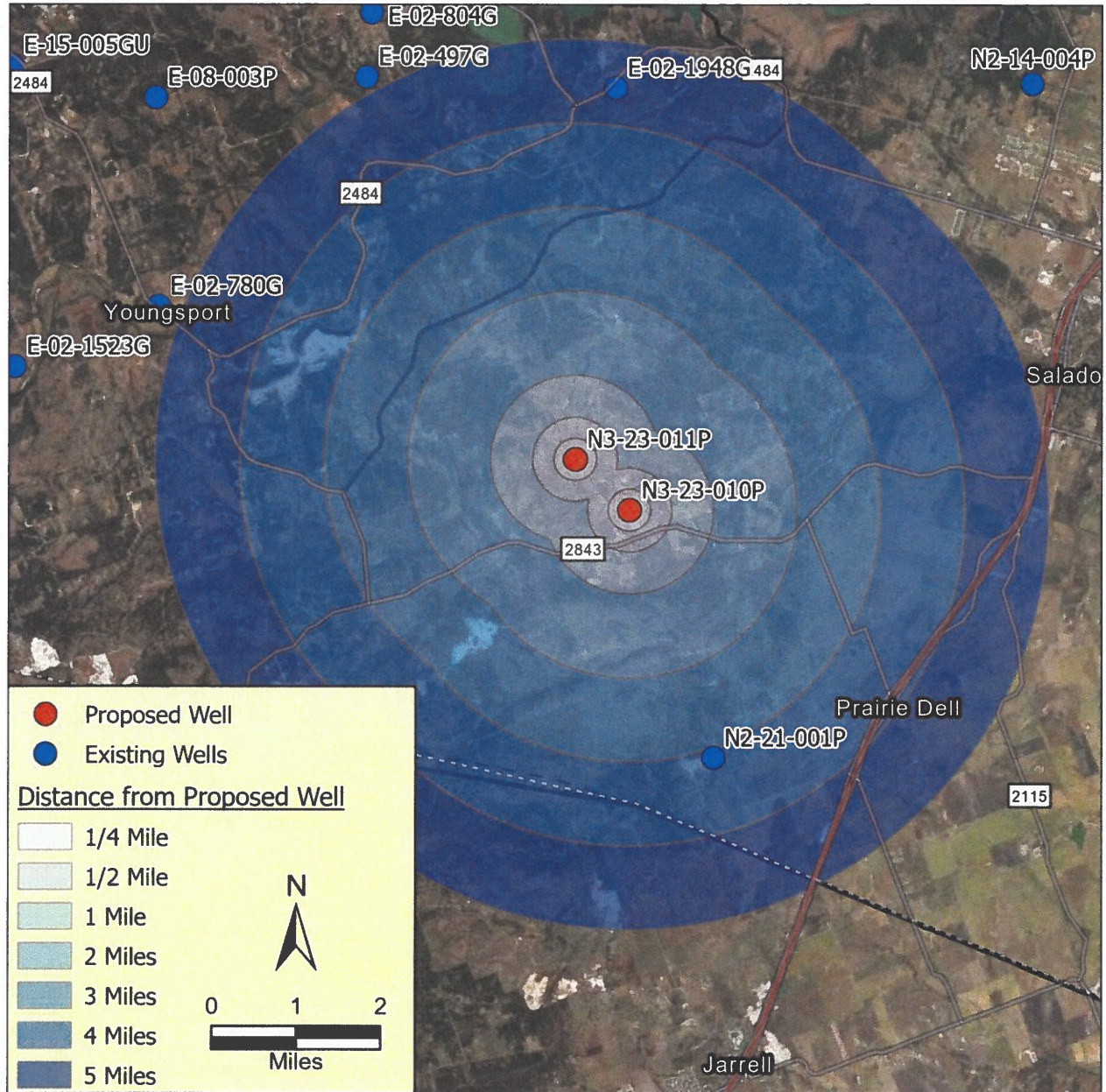


Figure 1. The proposed wells and existing CUWCD Lower Trinity wells. Detailed information for each well shown is available through the District’s website (<https://cuwcd.org/>).

The potential effects of the proposed production on local water levels in the aquifer are calculated using the Theis equation (Theis, 1935), which relates water-level decline (that is, drawdown) to the pumping rate of a well and properties of the aquifer. While the equation does not account for aquifer conditions which may affect the calculation of long-term water level declines (for example: aquifer recharge, faulting, or changes in aquifer structure), it does provide a very good, reliable, and straightforward method for estimating relatively short-term drawdown in and near a well due to pumping. As the duration of pumping and distance from the well increase, the uncertainty in the calculated drawdown also increases.

Table 1 presents the range in calculated drawdown based on an annual production rate of 249.9 acre-feet per year. For *1-Day Drawdown*, we applied the proposed instantaneous pumping rate of 320 gpm from each well for a period of 24 hours. For *1-Month Drawdown*, we used the proposed annual production rate divided by 12 months then multiplied by 1.15 for assumed peak production (23.95 acre-feet). For the *1-Year Drawdown*, we used the total proposed annual production amount.

Table 1. Calculated drawdown at the proposed well and other wells within five miles completed in the Lower Trinity Aquifer based on annual production rate of 249.9 acre-feet. Values less than one foot are reported as Negligible.

CUWCD Well ID	Distance from Proposed Well (mile)	1-Day Drawdown (feet)	1-Month Drawdown (feet)	1-Year Drawdown (feet)
N3-23-010P (Well #1)	—	142	53	56
N3-23-011P (Well #2)	—	131	49	53
N2-21-001P (Incomplete)	3.1 to 3.9	Negligible	5	13
E-02-1948G	4.5 to 5.0	Negligible	2	9

The predicted drawdown amounts are based on our current understanding of the aquifer hydraulic properties and the estimated production from the proposed well. The predicted drawdown values presented do not include the effects from other wells pumping near the proposed well. Predicted drawdown of less than one foot is considered negligible for analysis purposes due to inherent uncertainty in the aquifer hydraulic characteristics.

As shown on Figure 1 and in Table 1, the nearest Lower Trinity well in use is E-02-1948G. However, the nearest well in the same management zone with recent water level data is N2-14-004P. Since 2015, the District has regularly obtained water level measurements from the well. Based on these measurements, water levels in the Lower Trinity are declining at a rate of about 4.5 feet per year in the area (Keester and Pedrazas, 2020). The most recent water level measurement reports the depth to water at 485.9 feet below ground level (September 30, 2023). With the top of the aquifer at 900 feet below ground level, groundwater rises more than 400 feet above the top of the aquifer.

Predicted drawdown after one year of production is about 9 feet at the only Lower Trinity well in use within five miles of the proposed wells. With water rising more than 400 feet above the top of the aquifer in the wells, the predicted drawdown and regional water level decline are not expected to inhibit the ability to produce groundwater from existing wells in the foreseeable future.

As part of the well drilling and completion process, the applicant proposed conducting a 36-hour pumping test and collecting water samples for lab analysis. Results of the pumping test and sampling will be

beneficial in the analysis of the potential effects of production associated with the anticipated future operating permit application. We also anticipate the results will be incorporated into the Clearwater Groundwater Management Model to aid in evaluation of the operating permit applications.

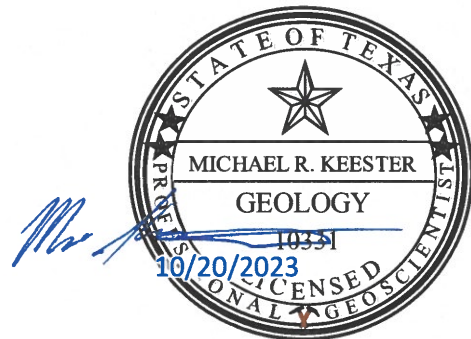
The District's adopted desired future condition (DFC) for the Lower Trinity Aquifer is 375 feet of average drawdown from 2010 through 2080. This adopted DFC results in a modeled available groundwater (MAG) value of 7,900 acre-feet per year (Shi and Harding, 2022). Based on monitoring data, the District is currently below the adopted DFC (Keester and Pedrazas, 2020) and District reporting indicates that there is more than 2,000 acre-feet available for permitting from the Lower Trinity Aquifer (CUWCD, 2023).

Conclusions and Recommendations

Based on our current understanding of the local aquifer conditions, the proposed wells will not inhibit the ability of other users to access groundwater from the Lower Trinity. In addition, the proposed production associated with a future operating permit is less than the volume reported as available for permitting. Based on our current understanding of the system, the nearest Lower Trinity well in use is estimated to experience approximately nine feet of drawdown from the annual production after one year. Data provided in association with the well completion reports (Rule 6.9.2(f)) will aid the Board's consideration of the anticipated operating permit applications.

Geoscientist Seal

The signature and seal appearing on this document was authorized by Michael R. Keester, P.G. on October 20, 2023. R.W. Harden & Associates Texas Board of Professional Geoscientist Firm Registration Number 50033.



References

- CUWCD, 2023, Aquifer Status & Production Reports, <https://cuwcd.org/wp-content/uploads/2023/08/Aquifer-Status-Production-Reports.pdf>, accessed October 2023.
- Keester, M. and Konetchy, B., 2016, February 5, Results of Northern Trinity / Woodbine Groundwater Availability Model Simulations using a Modified Lower Trinity Transmissivity Distribution: Technical Memorandum.
- Keester, M. and Pedrazas, M., 2020, User Guide for CUWCD DFC Compliance Assessment Tool: Technical Memorandum to Dirk Aaron, General Manager – Clearwater Underground Water Conservation District for Update and Revisions to the District DFC Compliance Assessment Tool, 11 p.
- Kelley, V.A., Ewing, J., Jones, T.L., Young, S.C., Deeds, N., and Hamlin, S., eds., 2014, Updated Groundwater Availability Model of the Northern Trinity and Woodbine Aquifers: Vol 1, Austin, Texas, Intera, 990 p.
- Konetchy, B. and Beach, J., 2020, Update of the Modified CUWCD NTWGAM: Draft Technical Memo to Dirk Aaron, General Manager of Clearwater UWCD dated May 7, 2020, 16 p.
- Shi, J. and Harding, J., 2022, GAM Run 21-013 MAG: Modeled Available Groundwater for the Aquifers in Groundwater Management Area 8: TWDB GAM Run, 92 p, http://www.twdb.texas.gov/groundwater/docs/GAMruns/GR21-013_MAG.pdf?d=13878.
- Theis, C.V., 1935, The Relation Between the Lowering of the Piezometric Surface and the Rate and Duration of Discharge of a Well Using Ground-Water Storage: American Geophysical Union Transactions, v. 16, p. 519-524.



Every drop counts!

Clearwater Underground Water Conservation District

P.O. Box 1989, Belton, Texas 76513
Phone: 254/933-0120 Fax: 254/933-8396
www.cuwcd.org

Leland Gersbach, President
Jody Williams, Vice President
C. Gary Young, Secretary
Scott A. Brooks
James Brown

Memo

To: Don Ferguson dferguson@saladotx.gov

Dirk Aaron

Digitally signed by Dirk
Aaron
Date: 2023.05.12
11:07:49 -05'00'

From: Dirk Aaron daaron@cuwcd.org
General Manager

CC: Corey Dawson cdawson@cuwcd.org
Ron Lusk ron@rlusk.com
Pete Sylvester PSylvester@pape-dawson.com
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Cole Ruiz cruiz@lglawfirm.com
Leland Gersbach lgersbach@cuwcd.org

Date: 5/12/2023

Re: Mustang Springs Subdivision, Phase I (Review after approved by the Village of Salado)

Clearwater UWCD (CUWCD) has completed an “*after the fact*” geodatabase investigation and records review for groundwater wells on a plat known as “*Mustang Springs*” approved by the Village of Salado on April 10, 2023.

Normally all platting authorities in Bell County (including but not limited to the County, Cities & Municipalities) afford CUWCD an opportunity for an in-depth formal review which is supported by a technical memo necessitating our signature on the final plat. In this case, CUWCD was not afforded an opportunity to complete a site visit and memo for the developer prior to plat approval, thus not affording the developer insight into the expectations of CUWCD for the retention of all existing groundwater production wells as an asset to the current and future property owners. This review has been historically afforded CUWCD when property owners and developers are subdividing one tract into two or more tracts. We only had one informal conversation as it relates to the approved plat yet had not reviewed the plat approved prior to May 10th. This is the date that staff was notified by public officials that the Phase I is recorded at the Bell County Clerks Office located at: https://government/county_clerk/docs/plats/MUSTANGSPRINGS PHI

This memo is a review of Bell CAD properties identified as PIDs #367112 (9.927 acres), #185721 (75.445 acres), and #42479 (1019.86 acres). This entire memo is based on the above Village of Salado approved subdivision known as the “*Mustang Springs*” Phase I. In addition, we have incorporated the other remnant

1 | Clearwater Underground Water Conservation District (CUWCD) is a political subdivision of the State of Texas and underground water conservation district created and operating under and by virtue of Article XVI, Section 59, of the Texas Constitution; Texas Water Code Chapter 36; the District's enabling act, Act of May 27, 1989, 71st Legislature, Regular Session, Chapter 524 (House Bill 3172), as amended by Act of April 25, 2001, 77th Legislature, Regular Session, Chapter 22 (Senate Bill 404), Act of May 7, 2009, 81st Legislature, Regular Session, Chapter 64 (Senate Bill 1755), and Act of May 27, 2015, 84th Legislature, Regular Session, Chapter 1196, Section 2 (Senate Bill 1336)(omnibus districts bill); and the applicable general laws of the State of Texas; and confirmed by voters of Bell County on August 21, 1999.

acreage known as Phase II, Phase III, Multi Family Mixed Use II, and Village Cluster Mixed Use. The remnant information was attained from a proposed full build out map provided to CUWCD.

Item 1: Database review and satellite imagery determined two wells exist on the subdivision known as the “Mustang Springs Subdivision, Phase I”.

- ✓ E-23-031GU, found in Block A Lot 19, Lat: 30.921925 / Long: -97.635811
- ✓ E-20-028G, found in Block D Lot 9, Lat: 30.923971 / Long: -97.628968

Please note, for these wells to remain in place normally the final plat allows for the required property line setbacks of 75-foot from existing wells. In addition, no may remain in a new utility easement and/or roadway thus per district rules both of these wells must be plugged. (see map 1 below).

Item 2: One additional well has been located geospatially on the remnant acreage set aside for Phases II and Phases III:

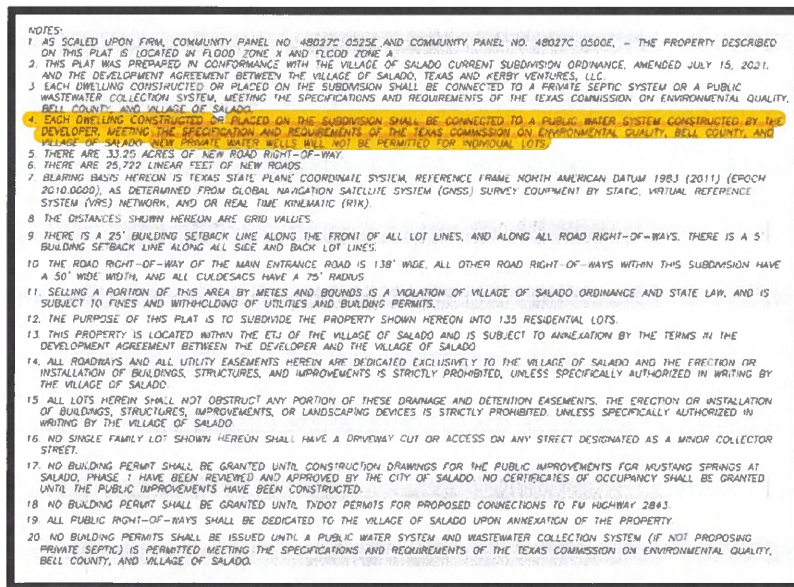
- ✓ E-20-029GU is located at Lat: 30.929259 / Long: -97.635092 placing it in Phase II and does not meet the 75-foot property line setback requirements of CUWCD thus must be plugged.

Item 3: Four existing wells are on the front part of the property near FM 2843 known as Mustang Springs Village Cluster/Mixed Use Phased II Commercial:

- ✓ E-23-004GU, is located at Lat: 30.92320 / Long: -97.62442
- ✓ E-23-005GU, is located at Lat: 30.91705 / Long: -97.62622
- ✓ E-07-038P, is located at Lat: 30.91614 / Long: -97.625686
- ✓ E-02-535G, is located at Lat: 30.91610 / Long -97.62562

Please note, all are in the parcel remnant for future development as commercial or mixed use (see map 2 below). For these wells to remain in place the current property owner must pursue operating permits from CUWCD as Non-Exempt wells. Any use of these wells prior to permitting could result in fines associated with improper use once the open space land use ends.

Item 4: It appears that the Village of Salado (in the note section) has disallowed future wells other than public water supply wells per the attached notes as seen below:



2 | Clearwater Underground Water Conservation District (CUWCD) is a political subdivision of the State of Texas and underground water conservation district created and operating under and by virtue of Article XVI, Section 59, of the Texas Constitution; Texas Water Code Chapter 36; the District's enabling act, Act of May 27, 1989, 71st Legislature, Regular Session, Chapter 524 (House Bill 3172), as amended by Act of April 25, 2001, 77th Legislature, Regular Session, Chapter 22 (Senate Bill 404), Act of May 7, 2009, 81st Legislature, Regular Session, Chapter 64 (Senate Bill 1755), and Act of May 27, 2015, 84th Legislature, Regular Session, Chapter 1196, Section 2 (Senate Bill 1336)(omnibus districts bill); and the applicable general laws of the State of Texas; and confirmed by voters of Bell County on August 21, 1999.

Item 5: The approved subdivision has no formal certification of public water supply. The approved subdivision is in the City of Georgetown’s CCN #12369, thus public water supply to the proposed subdivision is solely the authority of the City of Georgetown unless the developer receives the CCN from the City of Georgetown in a formal transfer per the Public Utilities Commission authority. We are not aware if the developer has requested decertification of Georgetown’s CCN boundary by agreement or by filing a petition to decertify the area of Mustang Springs. CUWCD has received formal inquiries from the Developer’s consultant, Collier Consulting, for one or more groundwater production well/s from the Hosston Layer of the Trinity Aquifer. That communication is ongoing, but at this time no formal application has been received by CUWCD.

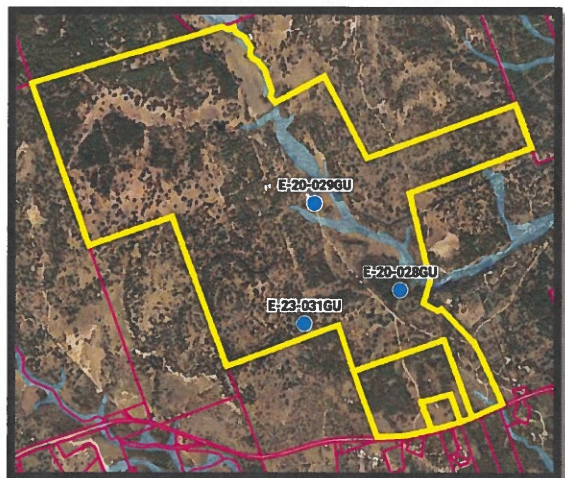
Item 6: The following is *language normally placed on the dedication/notes/certification under signature of CUWCD’s General Manager*, yet “*after the fact findings*” in this memo the district will not provide signature but compliance of plugging and/or permitting of the existing wells listed above is expected in accordance with District Rules.

**“Clearwater Underground Water Conservation District (CUWCD) District Rules based on Chapter 36 “Texas Groundwater Code” prevent the drilling of Exempt Wells for **domestic use on tracts of land platted to less than 10 acres after March 1st, 2004. Permitting of Wells on tracts less than 10-acres and greater than or equal to 2-acres is possible under district rules if the purpose of the well meets the definition of beneficial use. Per District Rules and Chapter 36, all drilling of wells on tracts of land platted to less than 2 acres after March 1st, 2004, is not possible”. All current and future wells must meet the 100-ft setback requirement of all on-site septic systems, unless the well is constructed with an approved sanitary seal allowing setback from the on-site septic to be reduce to a minimum 50 feet. Clearwater UWCD District Rules are at: <http://www.cuwcd.org>*

CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT (CUWCD) CERTIFICATE

CUWCD is the regulatory authority for groundwater wells in Bell County and hereby certifies that this proposed subdivision has been evaluated for on-site groundwater production wells. In its current condition, the proposed subdivision meets our expectations described by District Policy and affirmed by District Staff.

Name	Title	Date
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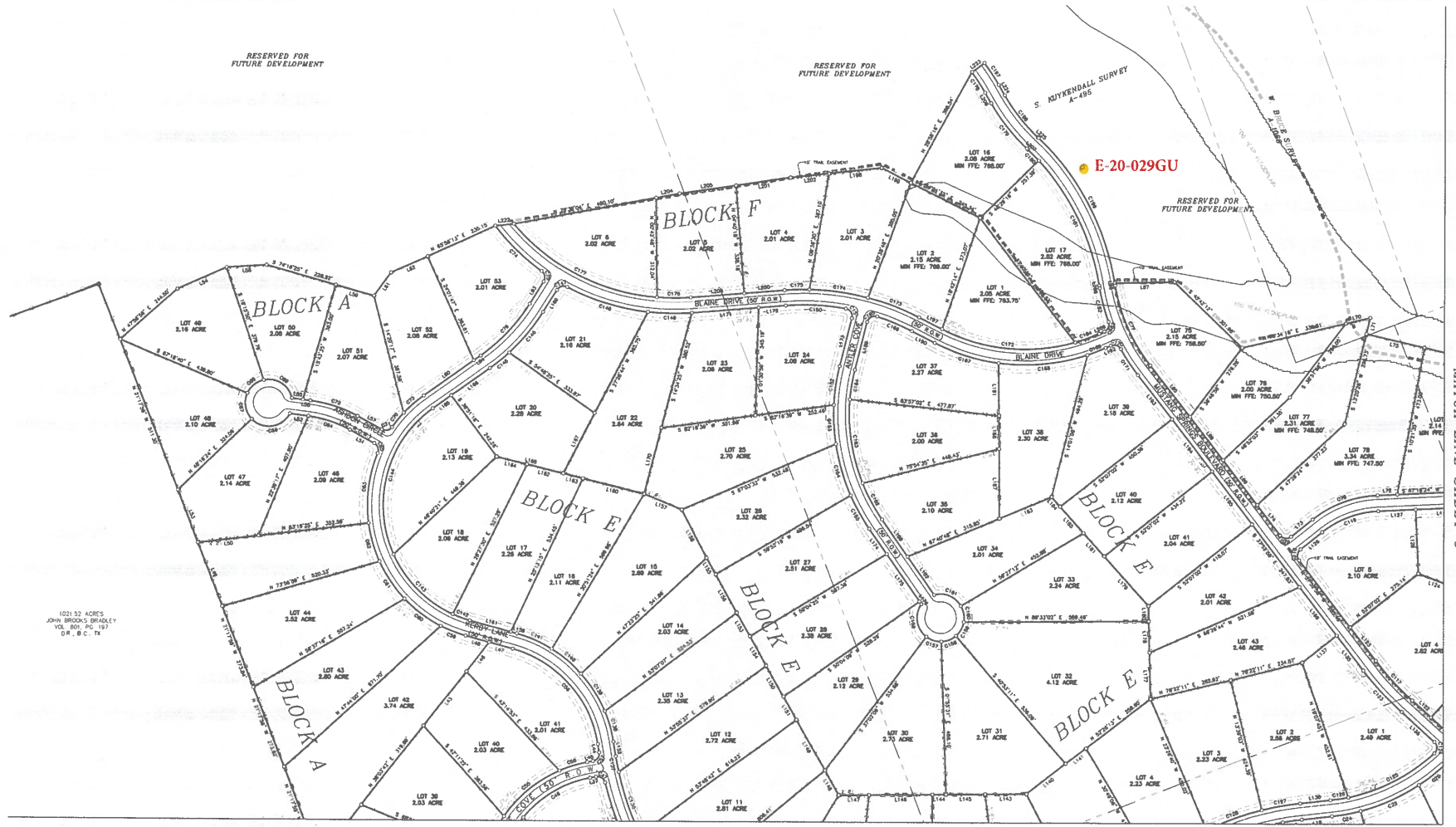
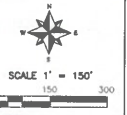
Map 1



Map 2

3 | Clearwater Underground Water Conservation District (CUWCD) is a political subdivision of the State of Texas and underground water conservation district created and operating under and by virtue of Article XVI, Section 59, of the Texas Constitution; Texas Water Code Chapter 36; the District’s enabling act, Act of May 27, 1989, 71st Legislature, Regular Session, Chapter 524 (House Bill 3172), as amended by Act of April 25, 2001, 77th Legislature, Regular Session, Chapter 22 (Senate Bill 404), Act of May 7, 2009, 81st Legislature, Regular Session, Chapter 64 (Senate Bill 1755), and Act of May 27, 2015, 84th Legislature, Regular Session, Chapter 1196, Section 2 (Senate Bill 1336)(omnibus districts bill); and the applicable general laws of the State of Texas; and confirmed by voters of Bell County on August 21, 1999.

CUWCD Notes Below



1021.52 ACRES
JOHN BRIDGES BRADLEY
VOL. 801, PG. 187
D.R. B.C. 12

MATCH LINE SHEET 3

SUBDIVISION PLAT
MUSTANG SPRINGS AT SALADO
PHASE ONE

- LEGEND
- 5/8" 3" IRON ROD CAPPED "TOP"
 - FOUND 8" IRON ROD
 - PIPE YARD POST
 - FOUND IRON ROD
 - MONUMENT CONCRETE MONUMENT
 - LOT PROPERTY BOUNDARY
 - ADJACENT PROPERTY LINE
 - BUILDING LINE/UTILITY EASEMENT
 - ADJUTANT'S/OWNER'S LINE
 - HIGH ELEVATION
 - FEMA 100-YEAR FLOODPLAIN
 - UTILITY OR DRAINAGE EASEMENT
 - B.L. BUILDING SETBACK LINE
 - HORIZONTAL FINISHED FLOOR ELEVATION
 - R.O.D. RIGHT-OF-WAY
 - D.R. DEED RECORDS
 - P.R. PLAT PROPERTY RECORDS
 - B.C. 13 BELL COUNTY TEXAS

BUILDING SETBACK LINES
FRONT = 25'
SIDE/BACK = 5'
UTILITY AND DRAINAGE EASEMENTS
FRONT = 15'

1021# 2023015444-D

Trinity Aquifer Status Report – October 2023

<u>DFC Analysis Over Time</u> (2000-Present) <i>Modeled Available Groundwater</i>			<u>HEUP and OP Permit Analysis</u> <i>Relative to the Modeled Available Groundwater</i>			<u>2023 YTD Total Prod.</u> <i>Jan - Sep</i> 1520.60 ac-ft 30.07%		<u>Pending Applications</u>		<u>Exempt Well Reservations</u>		
Trinity Aquifer (by layer)	DFC Adopted * Average Drawdown (by layer)	MAG ** Ac-ft	HEUP Ac-ft (by layer)	OP Ac-ft (by layer)	Total Permitted Ac-ft (by layer)	2022 YTD Prod. (by layer)	2023 YTD Prod. (by layer)	Available for Permitting Ac-ft (by layer)	Pending Applications Ac-ft (by layer)	Exempt Well Reserve Ac-ft (by layer)	2022 Exempt Well Use Estimate Ac-ft (by layer)	Available Exempt Use Ac-ft (by layer)
	Current											
Pawluxy	NA	0	0	0	0	0	0	0	0			0
Glen Rose (upper)	-1.38 ft/yr -83 ft/60 yrs	275	61.9	72.73	134.63	23.79	30.67	0	0	140.37	189	0
Hensell (middle)	-2.28 ft/yr -137 ft/60 yrs	1100	259.3	208.44	467.74	67.06	36.51	84.26	0	548	527	21
Hosston (lower)	-5.50 ft/yr -330 ft/60 yrs	7900	1181.4	3273.59	4454.99	1842.71	1453.42	3267.01	***604.20	178	59	119
Total		9275	1502.6	3554.76	5057.36	1933.56 (40.77%)	1520.60 (30.07%)	3351.27	604.20	866.37	793	140

*Desired Future Conditions (DFC) is the description of how the aquifer should look in the future (60 years).

**The Modeled Available Groundwater (MAG) is the estimated amount of water available for permitting assigned to Clearwater UWCD by the Executive Administrator of TWDB.

***Pending applications

City of Temple N3-23-004P (239 ac-ft/yr)

UMHB N3-23-005P (64 ac-ft/yr)

Moffat WSC N2-02-022G & N2-12-001P (51.4 ac-ft/yr)

Mustang Springs N3-23-010P & N3-23-011P (249.8 ac-ft/yr)

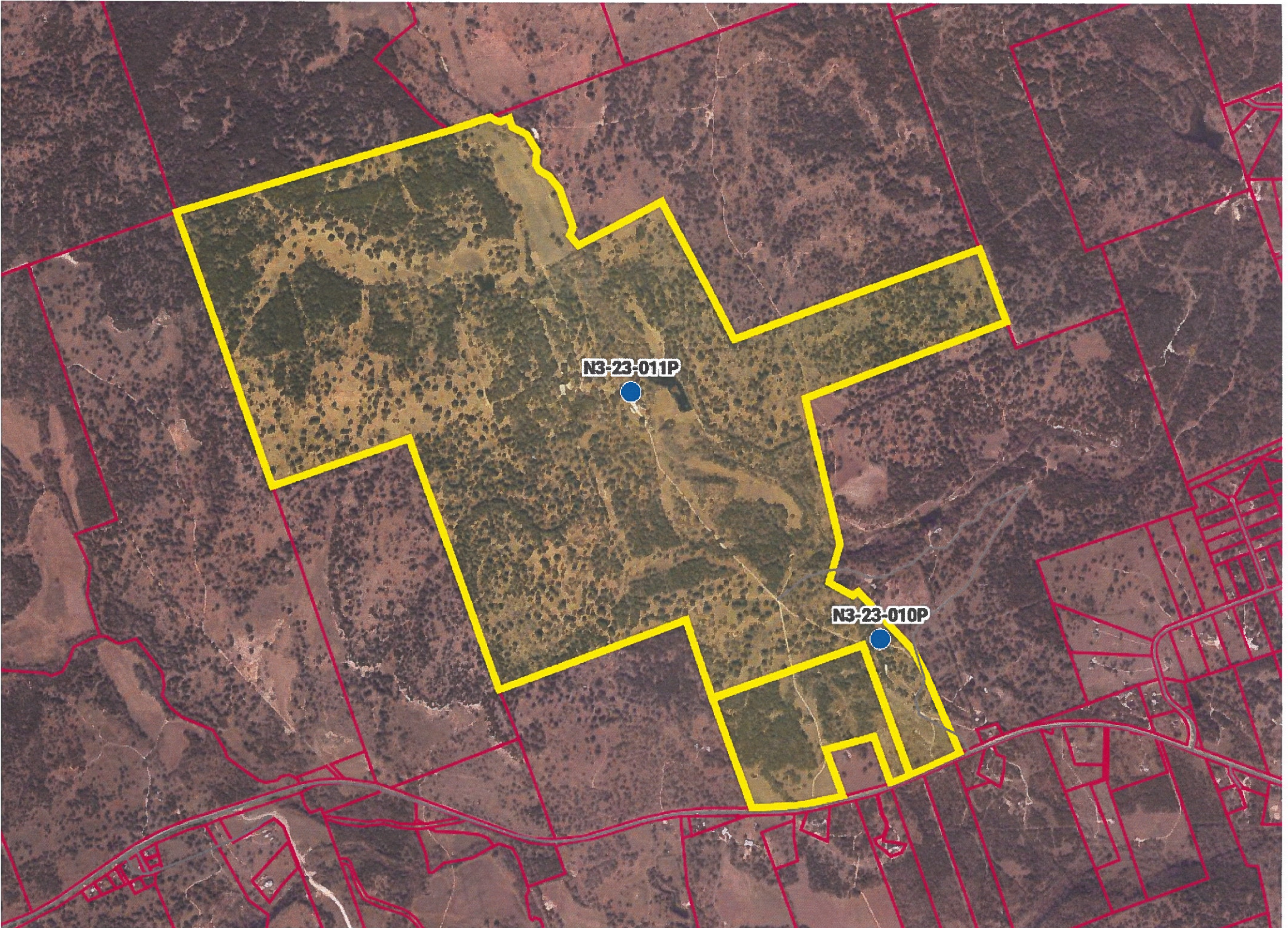


CUWCD Exempt Well Use Summary

As of: 10/24/2023

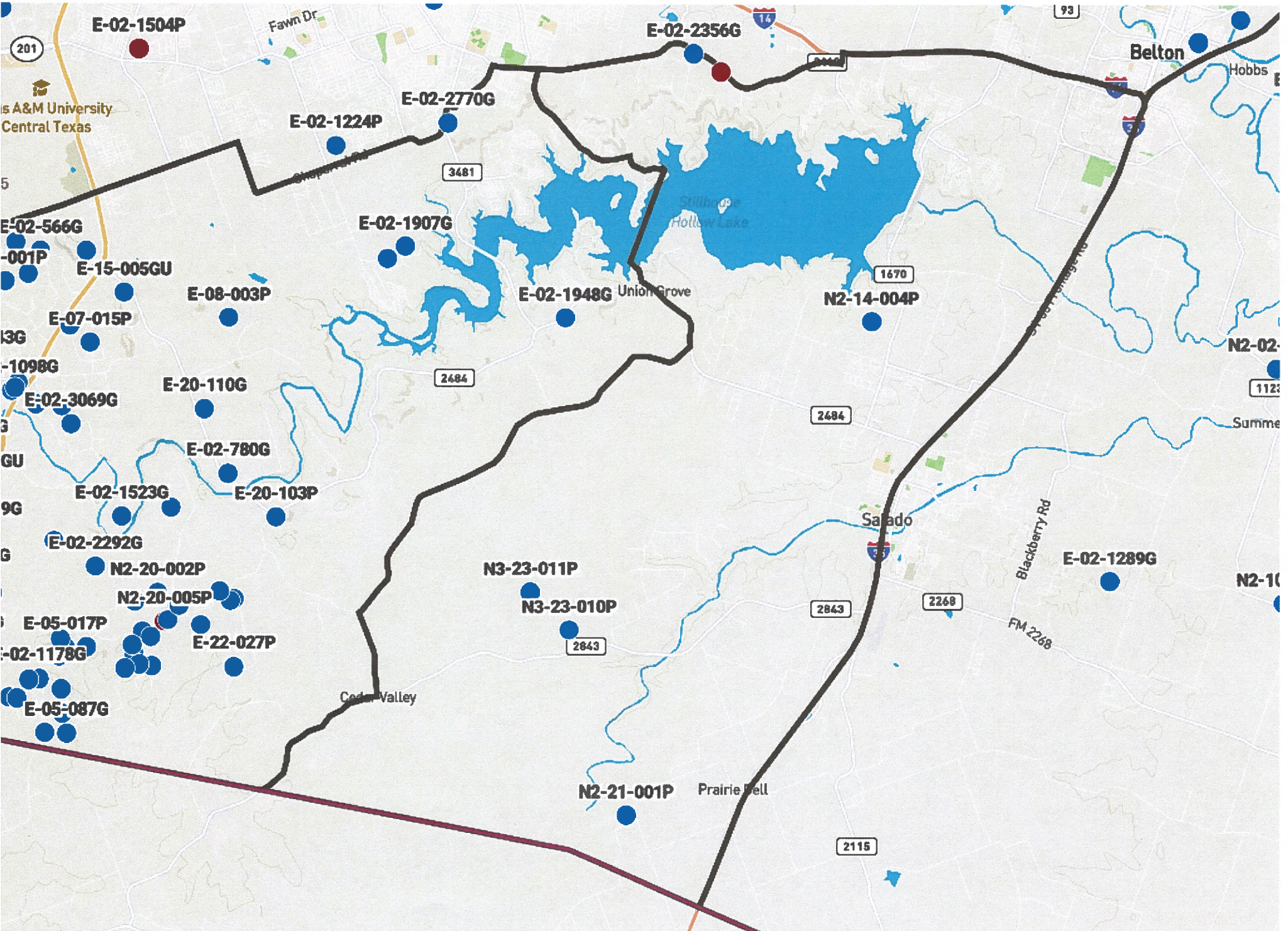
Aquifer	Total Active Registered Exempt Wells ³	Registered Domestic Wells	Estimated Domestic Use Gallons/Day ^{1,2}	Estimated Domestic Use Ac-ft/Year ^{1,2}	Registered Stock Wells	Estimated Stock Use Gallons/Day ⁴	Estimated Stock Use Ac-ft/Year ⁴	Total Estimated Use Gallons/Day ⁷	Total Estimated Exempt Well Use Ac-ft/Year ⁷	MAG Reserved Exempt Well Use
Glen Rose (Upper Trinity)	426	349	102,103	114	77	66,528	75	168,631	189	
Hensell (Middle Trinity)	972	911	417,446	468	61	52,704	59	470,150	527	
Hosston (Lower Trinity)	159	148	43,299	49	11	9,504	11	52,803	59	
Trinity (Total) ⁶	1,557	1,408	562,848	630	149	128,736	144	691,584	775	1,419
Edwards BFZ	846	715	209,180	234	131	113,184	127	322,364	361	825
Edwards Equivalent	485	386	112,928	126	99	85,536	96	198,464	222	
Buda	28	15	4,388	5	13	11,232	13	15,620	17	
Lake Waco	8	3	878	1	5	4,320	5	5,198	6	
Austin Chalk	226	141	41,251	46	85	73,440	82	114,691	128	
Ozan	161	114	33,352	37	47	40,608	45	73,960	83	
Pecan Gap	67	44	12,873	14	23	19,872	22	32,745	37	
Kemp	15	11	3,218	4	4	3,456	4	6,674	7	
Alluvium	584	377	110,295	124	207	178,848	200	289,143	324	
Other ⁵	1,574	1,091	319,183	358	483	417,312	467	736,495	825	
CUWCD Total Active	3,977	3,214	1,091,212	1,222	763	659,232	738	1,750,444	1,961	

- Domestic use estimate assumes 106 gallons/person per day (USGS estimate of domestic use outside of a municipal water system) and 2.76 persons/household (U.S. Census Bureau, Population Estimates Program (PEP) July 1, 2019)
- Benjamin G. Wherley, Ph.D. Associate Professor- Turfgrass Science & Ecology Dept. of Soil and Crop Sciences Texas A&M University estimate of 2,000ft² warm season turfgrass requires 38,855gal/yr/lawn or 106gal/day/lawn; "Ranchette" Avg. lawn size is 13,042ft², 6.5X larger; 6.5 X 106gal/day/lawn= 689gal/day/lawn; ~217 "Ranchette" Middle Trinity Wells; 689 X 217=an additional 150,924gal/day/lawn; **490ac-ft/yr or an 89% increase in Middle Trinity exempt well use from the 2018 estimate of 258ac-ft/yr.**
- Exempt well use estimate factors out all plugged, capped, monitor and inactive wells in the database.
- Source of stock water estimates is Texas Agrilife Extension @ 18 gallons water per day per cow. Livestock water use estimates are based on the 2017 Census of Agriculture, USDA National Agricultural Statistics Service. 36,868 cows / 771 stock wells= 48 cows/stock well; 48* 18gpd= 846 gal/day/stock well, **747ac-ft/yr or a 34% increase in annual stock use from the 2018 estimate of 556ac-ft/yr.**
- The "Other" designation is the total of minor aquifer and alluvium source designation of the exempt wells.
- Trinity Aquifer wells registered with unknown depth are assigned to the Middle Trinity per Board decision.
- All estimates of groundwater use by exempt well owners is based on assumptions and scientific data, but by no means are they to be interpreted as recommended practices by CUWCD.



N3-23-011P

N3-23-010P



Mustang Springs Development
James Kerby, Jaffe Interests LP
Drilling Permit Application, Fees, Notification
Collier Consulting Hydrogeologic Assessment
CCN Demonstration of Decertification

Application
Fees
Maps



1205 Sam Bass Rd. | Bldg. B, Ste. 300 | Round Rock, TX 78681
(512) 851-8740 | collierconsulting.com | F-8170

Mr. Dirk Aaron
General Manager

Clearwater Underground Water Conservation District
700 Kennedy Court
Belton, Texas 76513

September 8, 2023

Dear Mr. Aaron:

Please consider the attached request to drill two drinking water supply wells into the Lower Trinity Aquifer, submitted on behalf of Jaffe Interests LP. With support from Pape-Dawson Engineers and Collier Consulting, our client is creating Mustang Springs, a 1106-acre housing development located west of Salado, Bell County, Texas. The development is ultimately looking to use groundwater to supply a public water system (PWS).

At final buildout, we anticipate that the system will have 1167 living unit equivalents (LUE). These two proposed PWS wells would be intended to support the first three phases of development. PWS Well #1 would support 322 connections for Phases 1 and 2, and PWS Well #2 would support 315 connections for Phase 3. We project a water use rate of 350 gallons per day per connection. We also anticipate a population of 1911 persons based on these connection numbers.

PWS Well #1 will be placed at 30°55'16.13"N, 97°37'30.53"W on a 2.74-acre tract and has a desired production rate of 126.3 acre-ft/yr. PWS Well #2 will be placed at 30°55'48.34"N, 97°38'08.56"W on a 18.37 acre tract and has a desired production rate of 123.5 acre-ft/yr. Both wells will have a 4" column pipe size and a maximum pumping capacity of 320 gpm. Further details of the water supply requirements and well configurations are presented in our attached report "Hydrogeologic Assessment for Mustang Springs Development Wells in Bell County, Texas."

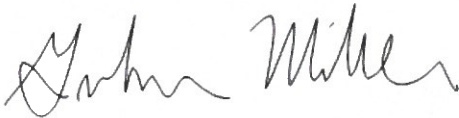
Initial hydrogeological investigations have revealed very little local data on this aquifer; few wells of this depth have been drilled. The "Doc Curb Well" owned by Central Texas WSC is a notable exception. It is located approximately 6 miles to the northeast of Mustang Springs. It has a high yield (~450 gpm) but poor water quality (TDS=2400 mg/L). Given the overall paucity of data, and the need to determine the feasibility of using groundwater for the development, we intend to initially drill a pilot hole for each well. Once drilled, we will collect geophysical logs, conduct a 36-hour single-well pump test, and sample water quality. We will transmit these data, and the driller's log, to the Clearwater Underground Water Conservation District (District) as soon as feasible after collected. We will then either plug the well, or we will complete it according to TCEQ's standards for PWS wells. We will then file for a final operating permit from the District and for permission from TCEQ to use the well in a PWS.

The development is currently in negotiation with the city of Georgetown to be released from its Certificate of Convenience and Necessity (CCN) and form its own Public Water Utility. A copy of Mustang Spring's request for decertification from the City's CCN is attached. It is our understanding that when Mustang Springs applies to the District for an Operating Permit, they will need to provide documentation that the city of Georgetown has consented to Mustang Springs service of the area and is no longer within the City's CCN.

The District should also be aware that Collier Consulting is in the process of submitting the design and engineering specifications for the two proposed PWS wells to the Texas Commission on Environmental Quality for their review and approval.

We are eager to work with you and the Board on this matter. Please let me know if you have any questions. I may be reached at gmillier@collierconsulting.com or at the phone number shown above.

Best regards,

A handwritten signature in black ink, appearing to read "Gretchen Miller". The signature is fluid and cursive, with the first name "Gretchen" written in a larger, more prominent script than the last name "Miller".

Gretchen Miller, Ph.D., P.E., P.G.

Sr. Groundwater Engineer

1010

88-1672 6
1119

MOR-MAUR MUSTANG LLC
1449 AIRPARK
HORSESHOE BAY, TX 78657

DATE 9/16/23

PAY TO THE ORDER OF
Clear water Underground \$4397.00
Four thousand three hundred ninety seven and no/100 DOLLARS

Heat Reactive Ink



SPECIALTY GRAY HIGH SECURITY

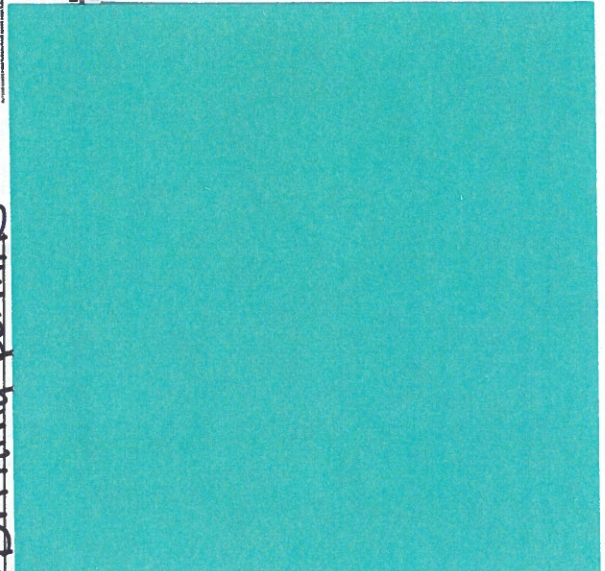


Telebank Toll Free 1-877-310-1034
710 1st St.
Marble Falls, TX 78654

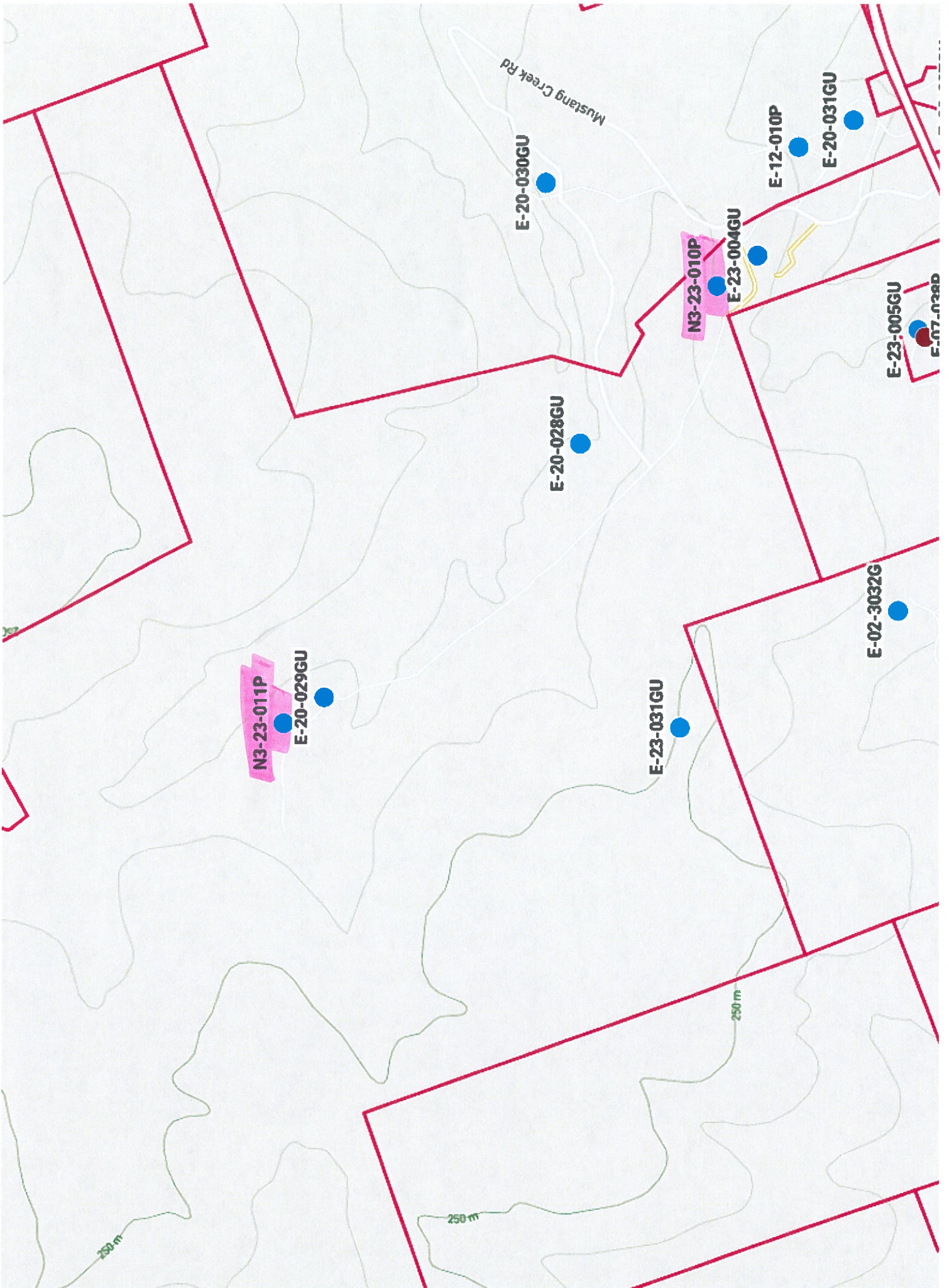
MEMO Drilling permits

[Handwritten Signature]

MP



HEAT-REACTIVE INK. DETAILS ON BACK.



Demonstration of Intent to De-certify CCN

August 8, 2023

Ms. Chelsea Solomon
Director of Water Utilities
City of Georgetown
5501 Williams Drive
Georgetown, TX 78633

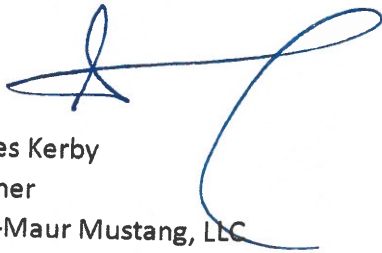
RE: Mustang Springs Request for De-certification from City of Georgetown's CCN

Director Solomon:

My name is James Kerby, Owner/Partner, of a 1,100 acre tract of land located approximately 5.40 miles west of I-35 on FM 2836 in southern Bell County (the "Property") that is within the water service area authorized to Georgetown by the Public Utility Commission of Texas under Certificate of Adjudication No. 12369 ("CCN"). Under Texas Water Code Section 13.254, I am entitled to an expedited release of my Property from the CCN service area. I hereby request Georgetown's consent to voluntary decertification of the Property as soon as possible. I enclose with this letter a deed of sale duly recorded in the property records of Bell County to evidence my ownership of the Property.

I sincerely appreciate your immediate attention. Please do not hesitate to contact me if I can provide additional information.

Kindest regards,

A handwritten signature in blue ink, appearing to be 'James Kerby', with a long horizontal flourish extending to the right.

James Kerby
Partner
Mor-Maur Mustang, LLC

N3-23-010P Application



N3-23-010P

Application for Non-Exempt Well Classification 3

Check one of the following: <input type="radio"/> COMBINATION PERMIT <input checked="" type="radio"/> DRILLING PERMIT <input type="radio"/> OPERATING PERMIT <input type="radio"/> PERMIT AMENDMENT	Answer the following: Is this for a New Well? <input checked="" type="radio"/> Yes <input type="radio"/> No Is this for a Replacement Well? <input type="radio"/> Yes <input checked="" type="radio"/> No Do you plan to Export Water Outside District? <input type="radio"/> Yes <input checked="" type="radio"/> No Are you modifying a Drilling Permit? <input type="radio"/> Yes <input checked="" type="radio"/> No Are you modifying an Operating Permit? <input type="radio"/> Yes <input checked="" type="radio"/> No
---	--

1. Owner Information

Well Owner: Jaffe Interests LP Email: _____ Telephone: _____
 Address (Street/P.O. Box, City, State, ZIP): P.O. Box 4449, Horseshoe Bay, Texas 78657
 Contact Person (if other than owner): James Kerby Telephone: 512-422-6711
 If ownership of Well has changed, name the previous owner: _____ State Well #: _____

2. Property Location & Proposed Well Location

Owner of Property (if different from Well Owner): Same
 The well is located in Management Zone: Stillhouse Hollow
 Acreage: 1105 Bell CAD Property ID #: 42479 Latitude: 30°55'16.13"N Longitude: 97°37'30.53W
30.921147 -97.625147

3. Well Description (Submit if State of Texas Well Report is Available)

a. Proposed use of well and estimated amount of water, **in acre-feet**, to be used for each purpose:
 _____ *Domestic; _____ Livestock/Poultry; _____ Agricultural/Irrigation;
126.3 af ** Public Supply; _____ Industrial _____ Other
 *Total number of houses to be serviced by the well _____.
 ** Applicant is required to give notice to TCEQ to obtain or modify a Certificate of Convenience and Necessity to provide water or wastewater service with water obtained pursuant to the requested permit.

b. Estimated distance, **in feet**, from the nearest:
175' N / S Property Line; 44', 87' w/road E / W Property Line; none noted Existing Septic Leach Field
635' River, Stream, or Lake; 1275' Existing Water Well; none noted Livestock Enclosure;
none noted Other Source of Contamination (cemetery, pesticide mixing/loading, petroleum storage tank, etc.)

c. **Estimated Rate of Withdrawal (GPM):** 320 gpm capacity

d. **Is the Property subject to flooding?** No

e. **Is there another well on the property?** Yes ; If YES, how many wells? see report

f. **Is the well part of a multi-well aggregate system?** Yes
 If YES, list the State or District Well Numbers: Second well application included in this package

REQUIRED BY LAW: Pump Installer / Well Driller Information

Name: TBD Street Address: _____
 TDLR Pump Installer License #: _____ City, State, ZIP: _____
 TDLR Well Driller License #: _____ Phone: _____ Fax: _____
 Email: _____

Name of Consultant preparing Application (if applicable): Gretchen Miller, P.E., P.G.
 Con. Phone: 512-851-8740 Con. Fax: _____ Con. Email: gmiller@collierconsulting.com

4. Completion Information

Provide the following information to the extent known and available at the time of application:

Proposed Total Depth of Well: 1100 ft;
Borehole Diameter (Dia): 14 inches (in) from 0 to 1100 ;
Dia (2) _____ in from _____ to _____ ;
Casing Material: Carbon steel ; Inside Diameter (ID): 10 in;
Screen Type: Wire-wrapped, SS ; Screen Dia. 10 in from 950 to 1100 ; # of Packers: _____
Pump Type: Submersible ; Power: Electric ; Horsepower Rating: 150 ;
Pump Depth: 1090 ; Column Pipe ID: 4 in.
Date Completed: n/a
Proposed Water Bearing Formation: Lower Trinity ; Management Zone: Stillhouse Hollow

5. Operating Permit

Number of contiguous acres owned or leased on which water is to be produced: 2.74 acres
Total annual production requested with this operating permit: 126.3 acre-feet
If exporting water, what is the annual volume requested for export out of the District: _____ Gallons
What is the annual volume requested for export as a % of total pumpage: _____ %
If modifying an operating permit, what is the current, permitted annual production: _____ ac-ft
What is the requested amount of annual production: _____ ac-ft

6. Attachments

Include a statement/documentation explaining your requested production.
If amending an existing permit, explain the requested amendment and the reason for the amendment in a signed and dated letter, attached to this application.
If requesting operating permits or permit renewals for multiple wells, please attach a separate sheet with the information requested in Section 5 for each well.
If applicant plans to export water outside the District, address the following in an attachment and provide documents relevant to these issues:

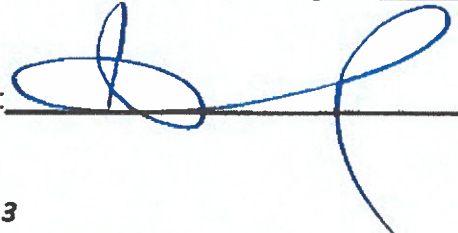
- The availability of water in the District and in the proposed receiving area during the period requested
- The projected effect of the proposed export on aquifer conditions, depletion, subsidence, or effects on existing permit holders or other groundwater users within the District
- How the proposed export is consistent with the approved regional water plan and certified District Management Plan

For more attachments that may be needed, please see the *Full Summary of the Permit Application Process* document.

7. Certification

I hereby certify that the information contained herein is true and correct to the best of my knowledge and belief. I certify to abide by the terms of the District Rules, the District Management Plan, and orders of the Board of Directors. I agree to comply with all District well plugging and capping guidelines as stated in the District Rules.

Typed Name of the Owner or Designee: James Kerby, Jaffe Interests, LP

Signature:  Date: 9/7/23

Permit Fee Schedule

Title	Annual Withdrawal (ac-ft)	Withdrawal Limit Condition	Drilling Permit Base Fee	Drilling Permit Progressive Fee	Progressive Fee Unit	Operating Permit Base Fee	Operating Permit Progressive Fee	Progressive Fee Unit
Level I*	0	Up to and including 1 ac-ft	\$ 150.00	\$ -	-	\$ -	\$ -	-
Level II*	1	Up to but not including 5 ac-ft	\$ 150.00	\$ 210.00	per ac-ft	\$ -	\$ -	-
Level III	5	Up to but not including 130 ac-ft	\$ 400.00	\$ 15.00	per ac-ft	\$ 600.00	\$ 20.00	per ac-ft
Level IV	130	Equal to or Greater than 130 ac-ft	\$ 2,200.00	\$ 7.50	per ac-ft	\$ 3,300.00	\$ 10.00	per ac-ft

* Level I and Level II use a Combination Permit, the Combination Permit fees are listed under Drilling Fees

Enter Your Proposed Withdrawal in ac-ft:

The above amount requires a **Two-Step Permit ****

*A Combination Permit covers both drilling and operating a well

**A Two-Step Permit requires 1 drilling permit and 1 operating permit

Combined Permit Cost: n/a

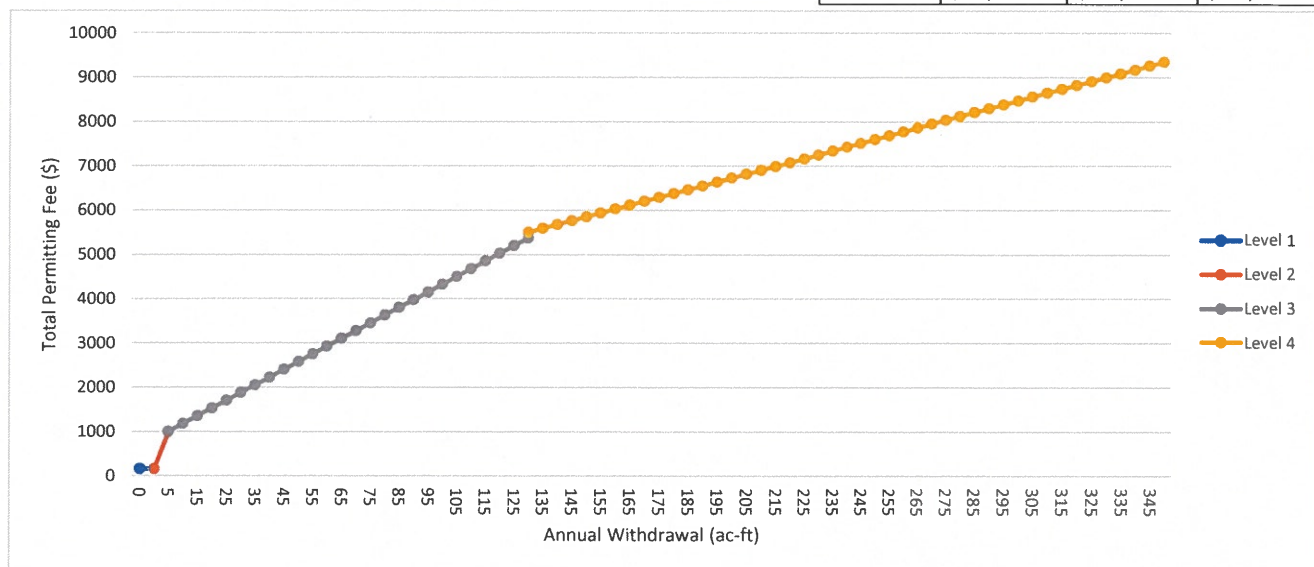
Two-Step Permit Cost:

		Maximum
Drilling Permit Cost:	\$ 2,219.50	\$ 7,500.00
Operating Permit Cost:	\$ 3,026.00	\$ 10,000.00
Total Cost to Permit:	\$ 5,245.50	\$ 17,500.00

Table of Fees			
ac-ft	Combined Fee	Drilling Fee	Operating Fee
0.5	\$ 150.00	-	-
1	\$ 150.00	-	-
2	\$ 360.00	-	-
3	\$ 570.00	-	-
4	\$ 780.00	-	-
5	\$ 1,000.00	\$ 400.00	\$ 600.00
30	\$ 1,875.00	\$ 750.00	\$ 1,125.00
55	\$ 2,750.00	\$ 1,100.00	\$ 1,650.00
80	\$ 3,625.00	\$ 1,450.00	\$ 2,175.00
105	\$ 4,500.00	\$ 1,800.00	\$ 2,700.00
130	\$ 5,500.00	\$ 2,200.00	\$ 3,300.00
155	\$ 5,937.50	\$ 2,375.00	\$ 3,562.50
180	\$ 6,375.00	\$ 2,550.00	\$ 3,825.00
205	\$ 6,812.50	\$ 2,725.00	\$ 4,087.50
230	\$ 7,250.00	\$ 2,900.00	\$ 4,350.00
Your Fee			
126.3	\$ 5,245.50	\$ 2,219.50	\$ 3,026.00

How do I use this tool?

1. Enter your proposed withdrawal amount (in ac-ft) in the blue rectangle cell above
2. The tool will tell you whether your withdrawal amount requires a **Combination Permit** or a **Two-Step Permit**
3. The cell(s) highlighted in green show how much a permit for your proposed withdrawal amount will cost **BEFORE** the cost maximum is applied.
4. The cells in the "Your Fee" section, under the Table of Fees, shows the same permit cost **AFTER** the cost maximum is applied
5. Below is a graphic representation of Clearwater's schedule of fees



N3-23-011P Application



N3-23-011P
Application for Non-Exempt Well Classification 3

Check one of the following: <input type="radio"/> COMBINATION PERMIT <input checked="" type="radio"/> DRILLING PERMIT <input type="radio"/> OPERATING PERMIT <input type="radio"/> PERMIT AMENDMENT	Answer the following: Is this for a New Well? <input checked="" type="radio"/> Yes <input type="radio"/> No Is this for a Replacement Well? <input type="radio"/> Yes <input checked="" type="radio"/> No Do you plan to Export Water Outside District? <input type="radio"/> Yes <input checked="" type="radio"/> No Are you modifying a Drilling Permit? <input type="radio"/> Yes <input checked="" type="radio"/> No Are you modifying an Operating Permit? <input type="radio"/> Yes <input checked="" type="radio"/> No
---	--

1. Owner Information
 Well Owner: Jaffe Interests LP Email: _____ Telephone: _____
 Address (Street/P.O. Box, City, State, ZIP): P.O. Box 4449, Horseshoe Bay, Texas 78657
 Contact Person (if other than owner): James Kerby Telephone: 512-422-6711
 If ownership of Well has changed, name the previous owner: _____ State Well #: _____

2. Property Location & Proposed Well Location
 Owner of Property (if different from Well Owner): Same
 The well is located in Management Zone: Stillhouse Hollow
 Acreage: 1105 Bell CAD Property ID #: 42479 Latitude: 30°55'48.34"N Longitude: 97°38'08.56"W
30.930094 -97.635711

3. Well Description (Submit if State of Texas Well Report is Available)

a. Proposed use of well and estimated amount of water, **in acre-feet**, to be used for each purpose:
 _____ *Domestic; _____ Livestock/Poultry; _____ Agricultural/Irrigation;
123.5 af ** Public Supply; _____ Industrial _____ Other
 *Total number of houses to be serviced by the well _____
 ** Applicant is required to give notice to TCEQ to obtain or modify a Certificate of Convenience and Necessity to provide water or wastewater service with water obtained pursuant to the requested permit.

b. Estimated distance, **in feet**, from the nearest:
85' N / S Property Line; 75' E / W Property Line; none noted Existing Septic Leach Field
380' River, Stream, or Lake; 3925' Existing Water Well; none noted Livestock Enclosure;
none noted Other Source of Contamination (cemetery, pesticide mixing/loading, petroleum storage tank, etc.)

c. **Estimated Rate of Withdrawal (GPM):** 320 gpm capacity

d. **Is the Property subject to flooding?** No

e. **Is there another well on the property?** Yes _____ ; If YES, how many wells? _____

f. **Is the well part of a multi-well aggregate system?** Yes
 If YES, list the State or District Well Numbers: First well application included in this package

REQUIRED BY LAW: Pump Installer / Well Driller Information

Name: TBD Street Address: _____
 TDLR Pump Installer License #: _____ City, State, ZIP: _____
 TDLR Well Driller License #: _____ Phone: _____ Fax: _____
 Email: _____

Name of Consultant preparing Application (if applicable): Gretchen Miller, P.E., P.G.
 Con. Phone: 512-851-8740 Con. Fax: _____ Con. Email: gmiller@collierconsulting.com

4. Completion Information

Provide the following information to the extent known and available at the time of application:

Proposed Total Depth of Well: 1100 ft;
Borehole Diameter (Dia): 14 inches (in) from 0 to 1100;
Dia (2) _____ in from _____ to _____;
Casing Material: Carbon steel; Inside Diameter (ID): 10 in;
Screen Type: Wire-wrapped, SS; Screen Dia. 10 in from 950 to 1100; # of Packers: _____
Pump Type: Submersible; Power: Electric; Horsepower Rating: 150;
Pump Depth: 1090; Column Pipe ID: 4 in.
Date Completed: n/a
Proposed Water Bearing Formation: Lower Trinity; Management Zone: Stillhouse Hollow

5. Operating Permit

Number of contiguous acres owned or leased on which water is to be produced: 18.37 acres
Total annual production requested with this operating permit: 123.5 acre-feet
If exporting water, what is the annual volume requested for export out of the District: _____ Gallons
What is the annual volume requested for export as a % of total pumpage: _____ %
If modifying an operating permit, what is the current, permitted annual production: _____ ac-ft
What is the requested amount of annual production: _____ ac-ft

6. Attachments

Include a statement/documentation explaining your requested production.
If amending an existing permit, explain the requested amendment and the reason for the amendment in a signed and dated letter, attached to this application.
If requesting operating permits or permit renewals for multiple wells, please attach a separate sheet with the information requested in Section 5 for each well.
If applicant plans to export water outside the District, address the following in an attachment and provide documents relevant to these issues:

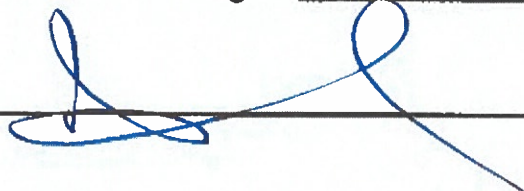
- The availability of water in the District and in the proposed receiving area during the period requested
- The projected effect of the proposed export on aquifer conditions, depletion, subsidence, or effects on existing permit holders or other groundwater users within the District
- How the proposed export is consistent with the approved regional water plan and certified District Management Plan

For more attachments that may be needed, please see the *Full Summary of the Permit Application Process* document.

7. Certification

I hereby certify that the information contained herein is true and correct to the best of my knowledge and belief. I certify to abide by the terms of the District Rules, the District Management Plan, and orders of the Board of Directors. I agree to comply with all District well plugging and capping guidelines as stated in the District Rules.

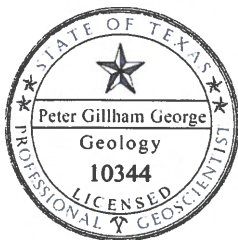
Typed Name of the Owner or Designee: James Kerby, Jaffe Interests, LP

Signature:  Date: 9/7/23

Initial Collier Consulting
Hydrogeologic Assessment

Prepared For:
Pape-Dawson Engineers, Inc.

Hydrogeologic Assessment for Mustang Springs Development Wells in Bell County, Texas



Peter George

Peter George, Ph.D., P.G.
August 30, 2023



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Round Rock, Tx 78681
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Introduction

The Mustang Springs development is located approximately 6 miles west of Salado and 9 miles south of Killeen, Texas (**Figure 1**). It includes some 1,106 acres. The Client, Kerby Ventures, wishes to drill two public water supply wells (PWS); one located near the Ranch Headquarters and the other in the south near the Development entrance along FM 2843 (**Figure 2**). The wells are to provide water for three phases of development. Phase 1 and 2 will produce 322 connections and Phase 3 will add 315 connections.

The Development is in southern Bell County where groundwater resources are managed by the Clearwater Underground Water Conservation District (CUWCD). It is also within the District's Stillhouse Hollow Management Zone. During initial discussions, the District suggested the development consider use of the lower Trinity Aquifer as the source of groundwater.

Well Data

The water wells displayed in the figures of this hydrogeologic assessment are from multiple databases (**Figure 2**). These databases provide the supporting basis of this report. The sources of the data include:

1. Texas Water Development Board (TWDB). The TWDB Groundwater Database (GWDB) includes information on water levels, water chemistry, and producing stratigraphic units.
2. TWDB and the Texas Department of Licensing and Regulation (TDLR). The Submitted Driller's Reports (SDRs) from TWDB and TDLR contain useful information such as rock types encountered while drilling, water levels, general water quality, production rates, and well design and construction. Unlike the TWDB groundwater database, SDRs do not identify the aquifer.
3. The TWDB BRACS (Brackish Resources Aquifer Characterization System) Database provided the geophysical logs displayed in the cross-sections for the study.
4. Well data from the CUWCD. The District provides a well data viewer that is accessible on their website. Much of their data is included in the TWDB Groundwater Database, but some additional information about producing zones water levels, and production amounts are not.

Hydrogeology

The Development is located in an area underlain by the Trinity and Edwards BFZ aquifers, defined by the TWDB as major aquifers (Figure 1). Due to the existing demands on the Edwards, Collier and the Client considered only the Trinity Aquifer as the source of groundwater for the two wells. The Trinity Aquifer in Bell County is composed of the Glen Rose Formation, and the Hensell, Pearsall, and Hosston Members of the Travis Peak Formation (Table 1). The Paluxy Formation only extends as far south as McLennan County.

Table 1. Stratigraphic units of the Trinity Aquifer (modified from Kelley and others, 2014).

Period	Group	North and West	Central		South	
		Formation	Formation	Member	Formation	Member
Cretaceous	Trinity	Antlers	Paluxy		Paluxy	
			Glen Rose		Glen Rose	
			Twin Mountains	Hensell	Travis Peak	Hensell
				Pearsall		Pearsall/ Hammett/ Cow Creek
				Hosston		Sycamore /Hosston/ Sligo
			Permian	Wichita		
Bowie						

In Bell County the Glen Rose Formation consists of alternating beds of thin to medium-bedded limestone and marl (Adkins and Arick, 1930). Marl is defined as a calcium carbonate sedimentary rock with clay and silt. The Glen Rose is considered a marine unit deposited on a shallow carbonate shelf. It produces small to moderate amounts of fresh to slightly saline water (Duffin and Musick, 1991). It is underlain by the Hensell Member of the Travis Peak Formation. The Hensell member is predominately a sandstone unit deposited in coastal plain and deltaic environments (Kelly and others, 2014). Like the Glen Rose, it is known to produce small to moderate amounts of fresh to slightly saline water. Beneath the Hensell Member are the Pearsall, Cow Creek, and

Hammett Shale Members. They consist mostly of limestone and shale deposited in a marine shelf environment. The Cow Creek Member (predominately limestone) and Hammett Member (predominately shale) occur more to the east. To the west limestones of the Cow Creek Member thin and gradually pinch out. The shales of the Cow Creek and Hammett Members coalesce to form the Pearsall Member (Klemt and others, 1975). The lowermost units of the Trinity Aquifer are the Hosston and Sligo Members. The Sligo Member is a fine-grained marine sediment that occurs west of the project area. In central Bell County the Hosston Member is a bedded sandstone with high sand percentages of greater than 60% (Kelly and others, 2014). The Hosston was deposited in a fluvial coastal plain environment. It is known to produce anywhere from small to large quantities of fresh to slightly saline water.

Figure 3 is a geologic map of the area showing the extent of the Edwards Limestone and rocks of the Trinity Aquifer to the west. The Development lies on rock of the Edwards Limestone and shallow wells in the area use it as a source of groundwater. Just to the south in Buttermilk Creek there are exposures of the Comanche Peak Limestones, which underlies the Edwards. To the west the Walnut Formation separates the Comanche Peak from the Glen Rose Formation. The Walnut Formation in Bell County is typically a blue or blackish clay, limey marl or shelly marl, with subordinate amounts of shell pieces, thin limestone seams, or beds of nodular chalky impure limestone in a clay or marl matrix (Adkins and Arick, 1930). It serves as a barrier between the Trinity and Edwards BFZ Aquifer in terms of groundwater flow.

The structure of the area is generally one of east dipping beds and normal faults of the Balcones Fault Zone. The normal faults presented in the Austin GAT sheet down drop younger beds of the Eagle Ford Group and the Austin Chalk relative to the Edwards BFZ Aquifer (Proctor et al., 1974). Recent work by RW Harden and Associates for the CUWCD indicates the possibility of many more faults in the area, including some on either side of the Development (see **Figure 3**).

Depths of Producing Units and their Basic Characteristics

Figure 4 shows the location of wells in the CUWCD database and the units they produce from. The majority of wells in the east near Salado produce from the Edwards BFZ Aquifer. To the west in the area of the Development most wells produce from the middle Trinity, which includes the Hensell Member of the Travis Peak Formation. Some scattered wells, shown in blue, produce from the upper Trinity defined by the CUWCD as Glen Rose wells. Lower Trinity wells located approximately four to five miles west of the Development produce from the Hosston Member.

Table 2 lists the characteristics of wells in the local area within about a mile of the development. The Edwards wells are low producing and water levels in the aquifer, like to the south in Austin, are highly sensitive to short term fluctuations in precipitation. They generally are less than 170 deep. There are also a large numbers of Edwards springs in the area, and several within the Development. The Glen Rose Formation does not appear to be a good target for drilling either. What little water quality data

exists from the formation indicates saline groundwater. The Glen Rose can have very high sulfate values, so much so that the district requires enhanced well construction standards to prevent commingling with the Hensell Member below (Dirk Aaron, personal comm.). Middle Trinity wells near the Development have depths from about 750 to 900 feet below ground surface (bgs).

There are very few good geophysical logs in the area. There is one log from a well located approximately 7 miles to the northeast that was drilled into the lower Trinity. That well, the Doc Curb Well No. 1 owned by the Central Texas Water Supply Corporation, was drilled to a depth of 1,358 feet in 2015 (**Figure 5**; Ferry, 2015). Given that the well's location is to the northeast along strike with Mustang Springs, similar depth wells for the lower Trinity should be expected near the Development.

Table 2. Local Well Characteristics

Aquifer/Geologic Unit	Depth range (ft)	Screen depths (ft)	Casing/screen diameters (in)	Production range (gpm)	TDS range (mg/l)	Notes
Edwards BFZ	50-172	30-172	8/4.5	12 to 50	321-355	multiple springs on property
Upper Trinity (Glen Rose)	342-438	230-402	8.75/6	up to 130	2,500-3,000	only three wells
Middle Trinity (Hensell Sand)	752-890	720-870	8/4.5	30 to 150	722-972	most new wells 100+ gpm
Lower Trinity Sands*	730-800	540-762	8/4.5	3 to 45	1135-1454	very few TDS values in Bell Cty, values are from northern Williamson Cty
Edwards Springs				0.5 to 80 gpm	286-428	most springs measured from 1978-1981

Table data based on both the SDRDB and the GWDB of the TWDB

*from wells 4-7 miles from development

Other lower Trinity wells are located 4 to 5 miles to the west. These wells have equivalent or shallower depths than the Middle Trinity wells near the Development since they are located miles updip. There are also Hosston, or lower Trinity wells, located to the southwest in northern Bell County and they have depths of approximately 730 to 750 feet bgs.

Screened Intervals

Table 2 shows screen interval depths, along with their respective diameters. The majority of wells have casing diameters of 8 inches with screens of 4.5 inches. Screen intervals for the middle Trinity range from 720 to 870 feet bgs. The screen depths for lower Trinity wells located west of the development are likely not applicable to the development, and a better example of local Hosston depths is the Doc Curb Well No. 1 to the northeast. This well was screened over some 86 feet from 1,157 ft bgs to 1,283 ft bgs and has 10.75 inch casing with a 6.625 inch wire-wrapped on pipe screen.

Production

Estimated yields from wells in the area are shown in **Figure 6**. The data comes from the SDR database of the TWDB. The database includes wells drilled over the past 20 years, and includes production data collected during drilling operations. This data may not be representative of true sustained production, so should be considered an approximation. The map includes wells with depths of 600 to 900 feet that produce from the middle Trinity Hensell Member. The majority of the wells have estimated yields of 60 to 100 gpm. To the west, some 4 to 5 miles, there are multiple wells that produce from the lower Trinity Hosston Member (**Figure 7**). Estimated yields for these wells, based on the SDR database, range from about 3 gpm to 45 gpm. They are domestic wells with relatively small screen diameters (8 inch casing with 4.5 inch screens). Figure 7 shows the well locations along with their respective production allocations in gallons per year, based on data from the CUWCD.

The Doc Curb Well No. 1 is an example of the type of well the Client hopes to drill at Mustang Springs (see Figure 9 for location). In April of 2015 the well was pumped at an average rate of 450 gpm for a 36 hour pump test, and experienced 131 feet of drawdown. An analysis of the data using the Cooper-Jacob straight-line method indicated an aquifer transmissivity of approximately 11,000 to 12,000 gpd/ft (Ferry, 2015). An analysis of the recovery indicated the aquifer transmissivity of approximately 8,000 gpd/ft. Using a transmissivity of 8,000 to 12,000 gpd/ft and a net sand thickness of about 80 feet, the hydraulic conductivity of the lower Trinity at the well site likely ranges from approximately 100 to 150 gallons per day per square foot (gpd/ft²), or 13 to 20 ft/d.

Water Quality

Measurements of TDS from the CUWCD website for middle Trinity wells near the Development range from 666 mg/l to 892 mg/l, with an average of 743 mg/l. They were collected between 2017 and 2023. This water is considered fresh with values less than 1,000 mg/l, but is on the high end. Groundwater with TDS values of 175 mg/l to 525 mg/l is considered “good,” and water <175 mg/l is “excellent” (Fipps, 2003). Lower Trinity wells west of the Development have TDS values that range from 870 mg/l to 1,714 mg/l with the majority over 1,000 mg/l (**Figure 8**). Values from, 1,000 to 3,000 mg/l are considered slightly saline and require treatment if the water is used as a public water supply. An analysis of the water from the Doc Curb Well No. 1 in 2015 shows a TDS value of 2,240 mg/l, which is on the high end of the “slightly saline” category. Its analysis for sulfate also exceeded the EPA MCL level of 300 mg/l at 327 mg/l.

Water Levels

The historical and present day water levels are shown as hydrographs in **Figures 10 to 15**, and their locations are in the map in **Figure 9**. Four Edwards Aquifer wells near the development have relatively stable water levels, fluctuating seasonally but without any long-term declines (**Figure 10**). This is expected because of the aquifer's karstic lithology allowing for rapid recharge, and its shallow depths allowing for concentrated use. The middle Trinity wells, however, do display a steady long-term deepening of water levels over the past twenty years or so (**Figure 11**). Water levels have declined some 150 feet due to the heavy usage locally, along with low recharge due to the periods of drought that central Texas has experienced. Hydrographs of lower Trinity wells located west of the development also show signs of declining water levels (**Figure 12**). Over just 1.5 to 2 years wells have declined about 20 feet, which is an equivalent rate of decline to what the middle Trinity has experienced for approximately 20 years. Three lower Trinity wells located 7 to 17 miles away show declines in water levels, especially the well located near Temple that has dropped about 250 feet (**Figures 13 to 15**).

Needs Assessment

Two PWS wells will be used to supply water for the first three phases of development, which consist primarily of single family lots. Phase 1 and 2 will create 322 connections. TCEQ requires a well capacity of 0.6 gpm per connection (Chapter 290 - Public Drinking Water Rule Log No. 2002-049-290-WT). Collier recommends target a maximum well capacities of 1.0 gpm per connection to allow for any unforeseen problems with production. So a well producing 322 gpm should be more than adequate (the TCEQ 0.6 rule equates to a minimum capacity of 193 gpm). Assuming a value of 350 gpd/connection total use equals 112,700 gpd, or 126.3 acre-feet/year. For Phase 3 there will be 315 connections requiring a well that produces 315 gpm, or a 189 gpm minimum if you use the 0.6 TCEQ requirement. With 350 gpd/connection total use equals 110,250 gpd, or 123.5 acre-feet/year.

Two additional phases of development are currently in the scoping process and may be included in future permit requests. Phase 4 consists of multifamily, village/cluster, and mixed-use development with 420 living unit equivalents. Phase 5 consists of a school and commercial development, with 147 living unit equivalents. At final buildout, the development is projected to have 1,167 total living unit equivalents.

Configuration of Wells

An overview of the siting, design, and projected pumping rates from the new PWS wells is shown in **Table 3**, and their general construction is illustrated in **Figure 16**. Test borings will initially be drilled at the site in order to determine productivity, water quality, material settings (i.e., exact screened interval), and pump settings (i.e., depth). If initial testing indicates, the holes will be completed as PWS wells. Otherwise, they will be

plugged in accordance with Texas Department of Licensing and Regulation (TDLR) standards.

Table 3. Configuration of Proposed Wells

Proposed Well	Mustang Springs PWS #1	Mustang Springs PWS #2
Latitude	30°55'16.13"N	30°55'48.34"N
Longitude	97°37'30.53"W	97°38'08.56"W
Northing	10309086.26	10312258.93
Easting	3145662.66	3142272.40
Aquifer/Formation	Lower Trinity/Hosston	
Target Depth	1100 ft bgs	
Anticipated Screened Interval	1000 – 1100 ft bgs	
Estimated Depth to Water Level	300 ft bgs	
Maximum Design Capacity	320 gpm	
Pump	150 hp	
Casing Diameter (in)	10	
Column Pipe Diameter (in)	4	
GCD Spacing Requirements	1320 ft/20 acres	
Number of PWS Connections	322 (Phase 1 and 2)	315 (Phase 3)
Assumed Use Rate	350 gpd/connection	
Total Use Rate (gpd)	112700	110250
Annual Production (MG/yr)	40.27	41.16
Annual Production (acre-ft/yr)	126.3	123.5

Well Interference

As shown on the CUWCD well viewer, six lower Trinity wells are located within five miles of the proposed wells. These are shown d here in **Figure 17** and their general characteristics are listed in **Table 4**.

Table 4. Lower Trinity wells 4 to 5 miles from proposed well sites.

Well	Depth (ft)	Screen Depths (ft)	Distance to Nearest Proposed Well (ft)	Latitude	Longitude	Notes
587175	710	670-710	22,822	30.94794	-97.70548	20 gpm
5803411	786	700-760	25,764	30.92821	-97.717911	15-20 gpm CUWCD Obs. well
5803410	782	720-780	25,454	30.9287	-97.716853	15-20 gpm CUWCD Obs. well

E-22-103P	750	ND	25,837	30.93224	-97.71802	5-10 gpm
E-22-078P	760	ND	23,200	30.93382	-97.70945	
E-02-1948G	802	ND	23,496	30.99409	-97.626144	

The Theis equation was used to estimate predicted drawdown in the well nearest to the proposed PWS wells. The equation is given as (Theis, 1935):

$$H_0 - H = \frac{Q}{4\pi T} W(u)$$

where $H_0 - H$ is the drawdown induced in a nearby well at a distance r from a well pumping at a rate of Q . The transmissivity of the aquifer, T , is equal to its hydraulic conductivity, K , multiplied by its saturated thickness, b . The well function, $W(u)$, is an infinite series approximated by the equation:

$$W(u) = -0.57721566 - \ln(u) + u - \frac{u^2}{2 * 2!} + \frac{u^3}{3 * 3!} - \frac{u^4}{4 * 4!} + \dots$$

where:

$$u = \frac{r^2 S}{4Tt}$$

with S representing the storativity of the confined aquifer and t representing the time of interest. A publicly available Python code was used to calculate the value of the Theis equation at each relevant point in time and space (Miller, 2020).

Hydraulic conductivity, storativity, and saturated thickness for the Lower Trinity aquifer were estimated using data from the Northern Trinity Woodbine Aquifer Groundwater Availability Model (Kelley and others, 2014). Transmissivity was calculated as $T = Kb$.

A maximum production simulation was conducted. In this, drawdown ($H_0 - H$) was computed assuming continuous pumping at the maximum capacity (320 gpm). At this rate, the proposed allocation (41 million gallons per year) would be consumed after 82 days. This value represents the "worst-case" scenario for drawdown, as pumping is projected to be distributed across the calendar year, peaking during the summer.

Based on the above, the following values were used to determine the drawdown induced in the closest well (E-02-1948G):

- Storativity = 0.0001
- Saturated Thickness = 100 ft
- Hydraulic conductivity = 0.3 ft/d
- Transmissivity = 30 ft²/d
- $r = 22,218$ ft
- $Q = 320$ gpm
- $t = 82$ days

The maximum drawdown induced by one of the proposed PWS wells was predicted to be 3.5 inches at 82 days. Given drawdown from multiple wells is generally considered additive (by the principle of superposition), a total drawdown of approximately 7 inches would be anticipated in the nearest well.

Conclusions and Recommendations

Based on information from the TWDB and CUWCD it is clear that the best option for the Client is to withdraw water from the lower Trinity (i.e. Hosston Member of the Travis Peak Formation). Using the existing wells as a guide, Collier suggests drilling to depth of approximately 1,100 feet bgs to include lower Trinity sands. An approximately 100-foot interval of 10-inch screen should be able to produce 320 gpm from each well. Collier further recommends that the two wells be pump tested using one as a monitor well and the other as the primary well, and then repeating testing with the initial monitor well becoming the primary well.

Based on the Ferry (2015) report of the Doc Curb Well No. 1, groundwater from the lower Trinity at Mustang Springs will likely need to be treated to PWS standards. With a TDS value of 2,240 mg/l and a sulfate measurement of 327 mg/l, reverse osmosis systems will likely need to be constructed.

References

- Adkins, W.S., and Arick, M.B., 1930, The Geology of Bell County: The University of Texas Bulletin No. 3016, 95 p. <https://repositories.lib.utexas.edu/handle/2152/77680>
- Duffin, G., and Musick, S.P., 1991, Evaluation of water resources in Bell, Burnet, Travis, Williamson and parts of adjacent counties, Texas: Texas Water Development Report 326, 74p. https://www.twdb.texas.gov/publications/reports/numbered_reports/doc/R326/report326.asp
- Ferry, E., 2015, Hydrogeologic Report — Doc Curb Well No. 1 Lower Trinity Aquifer, Central Texas Water Supply Company, Bell County, Texas: Technical report by Thornhill Group, Inc. as required by the Clearwater Underground Water Conservation District, 109p.
- Fipps, G, 2003, Irrigation Water Quality Standards and Salinity Management: Texas A&M AgriLife Extension, 17p. <https://oaktrust.library.tamu.edu/handle/1969.1/87829>
- Kelley, V.A., Ewing, J., Jones, T.L., Young, S.C., Deeds, N., and Hamlin, S., 2014, Updated Groundwater Availability Model of the Northern Trinity and Woodbine Aquifers: Final Model Report to the Texas Water Development Board Report, 990 p.

http://www.twdb.texas.gov/groundwater/models/gam/trnt_n/Final_NTGAM_Vol%20I%20Aug%202014_Report.pdf?d=3238.8000000009924)

Klemt, W.R., Perkins, R.D., and Alvarez, H.J., 1975, Ground-water resources of part of central Texas with emphasis on the Antlers and Travis Peak formations, Volume 1: TWDB, Report 195, Austin, TX.

https://www.twdb.texas.gov/publications/reports/numbered_reports/doc/R195/Report195.asp

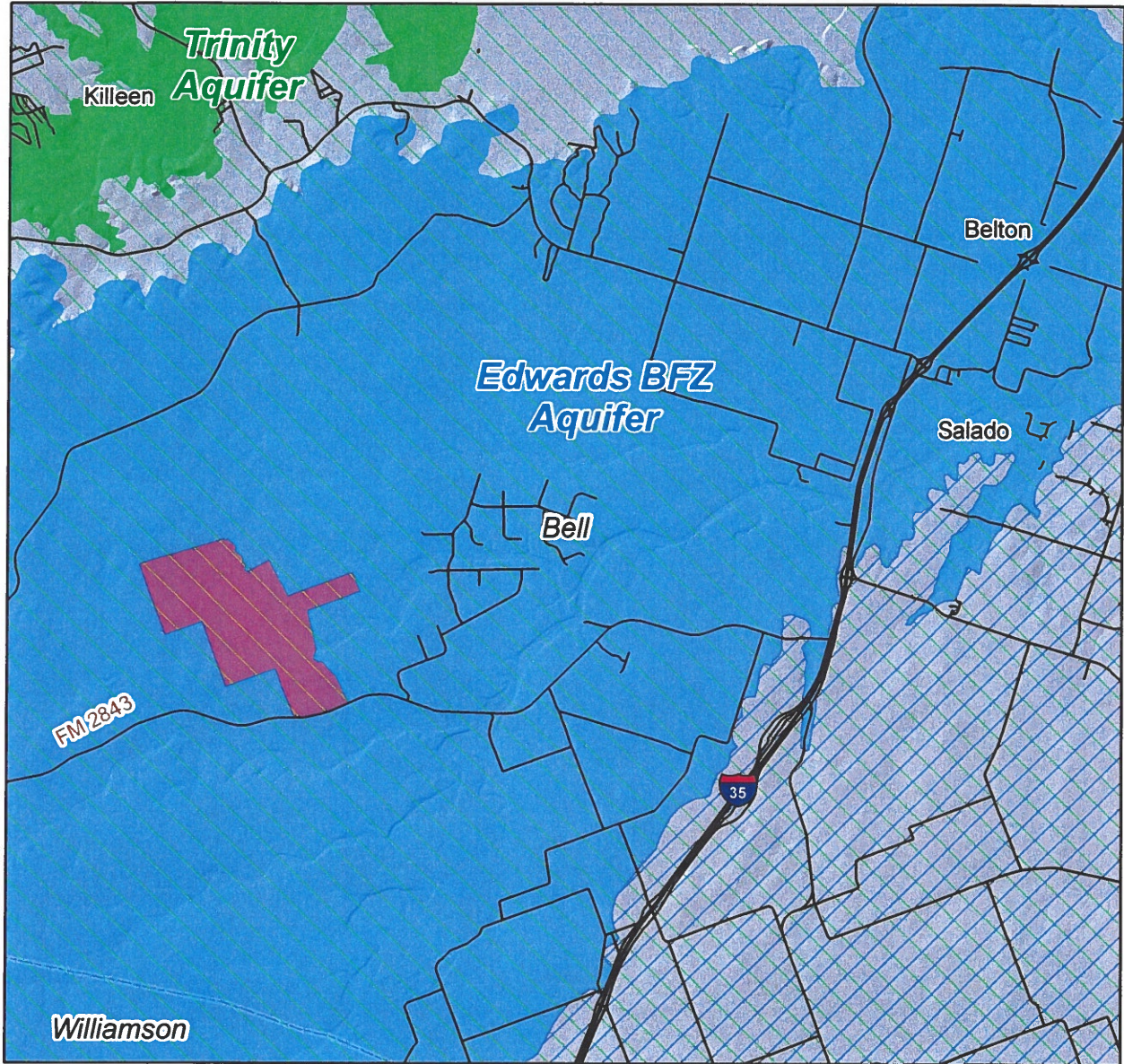
Miller, G. R. (2020). Jupyter Notebook for Computing the Well Function Using the Theis Equation, HydroShare,






<https://doi.org/10.4211/hs.df7f924575ab484986024f585b173e49>

Theis, C. V. (1935), The relation between the lowering of the Piezometric surface and the rate and duration of discharge of a well using ground-water storage, Eos Trans. AGU, 16(2), 519– 524, <https://doi.org/10.1029/TR016i002p00519>

Figures

Hydrogeologic Assessment for Mustang Springs



EXPLANATION	
	Edwards BFZ (outcrop)
	Edwards BFZ (subcrop)
	Trinity (outcrop)
	Trinity (subcrop)
	Mustang Springs

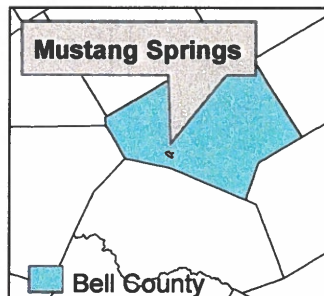

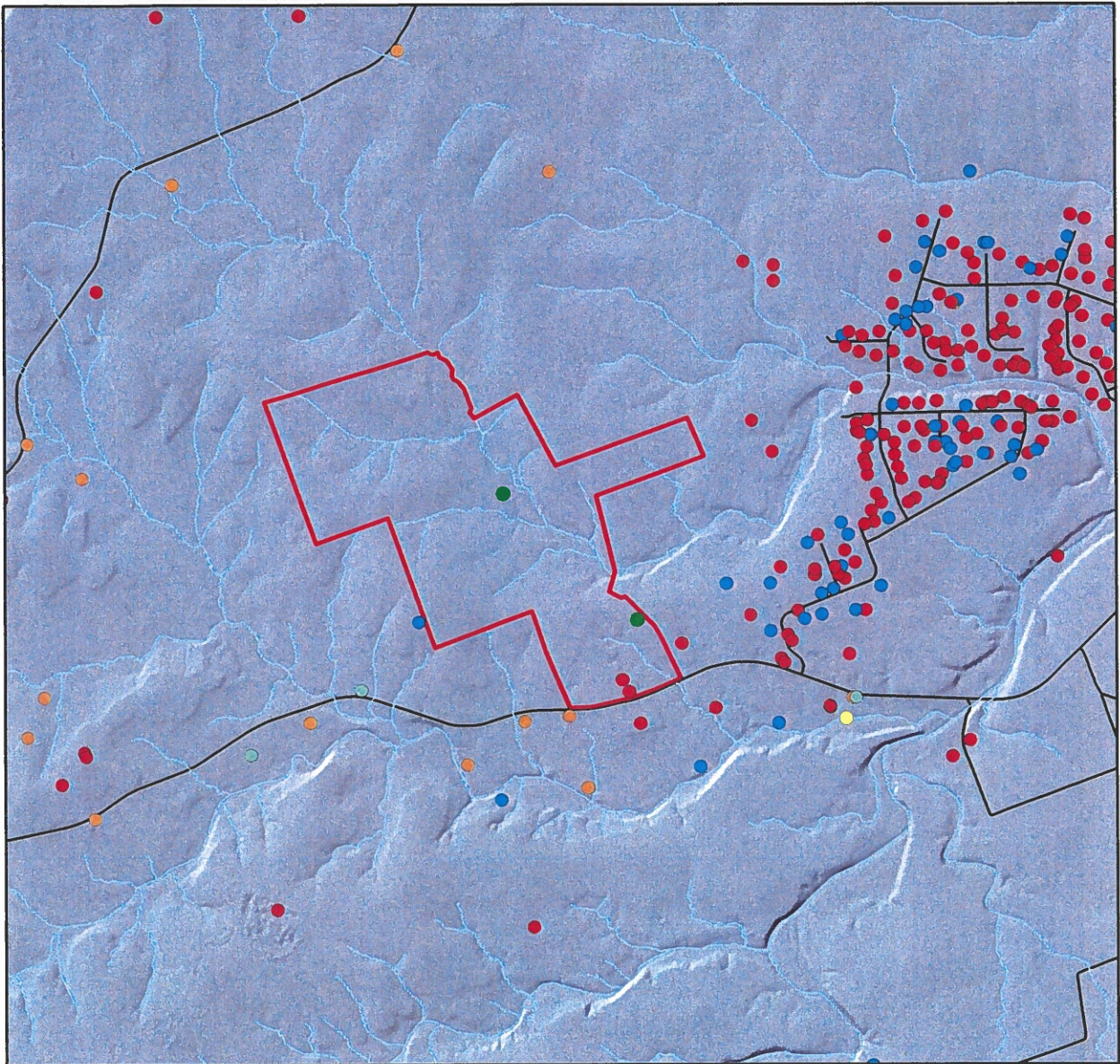


Figure 1 Development Location with Aquifers Pape-Dawson Bell County			 COLLIER CONSULTING 254-968-8741 www.collierconsulting.com
DESIGN: BG	CHECKED: BC	3/29/2023	
DRAWN: PG	SCALE: 1:100,000	REVISION: 1	

Hydrogeologic Assessment for Mustang Springs



Well Depth (feet below surface)	
●	50 - 200
●	200 - 400
●	400 - 600
●	600 - 800
●	800 - 930
●	Proposed Wells

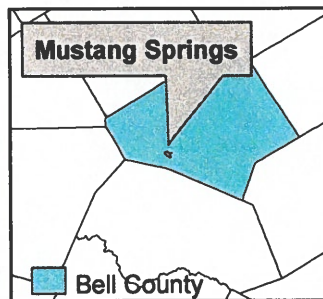

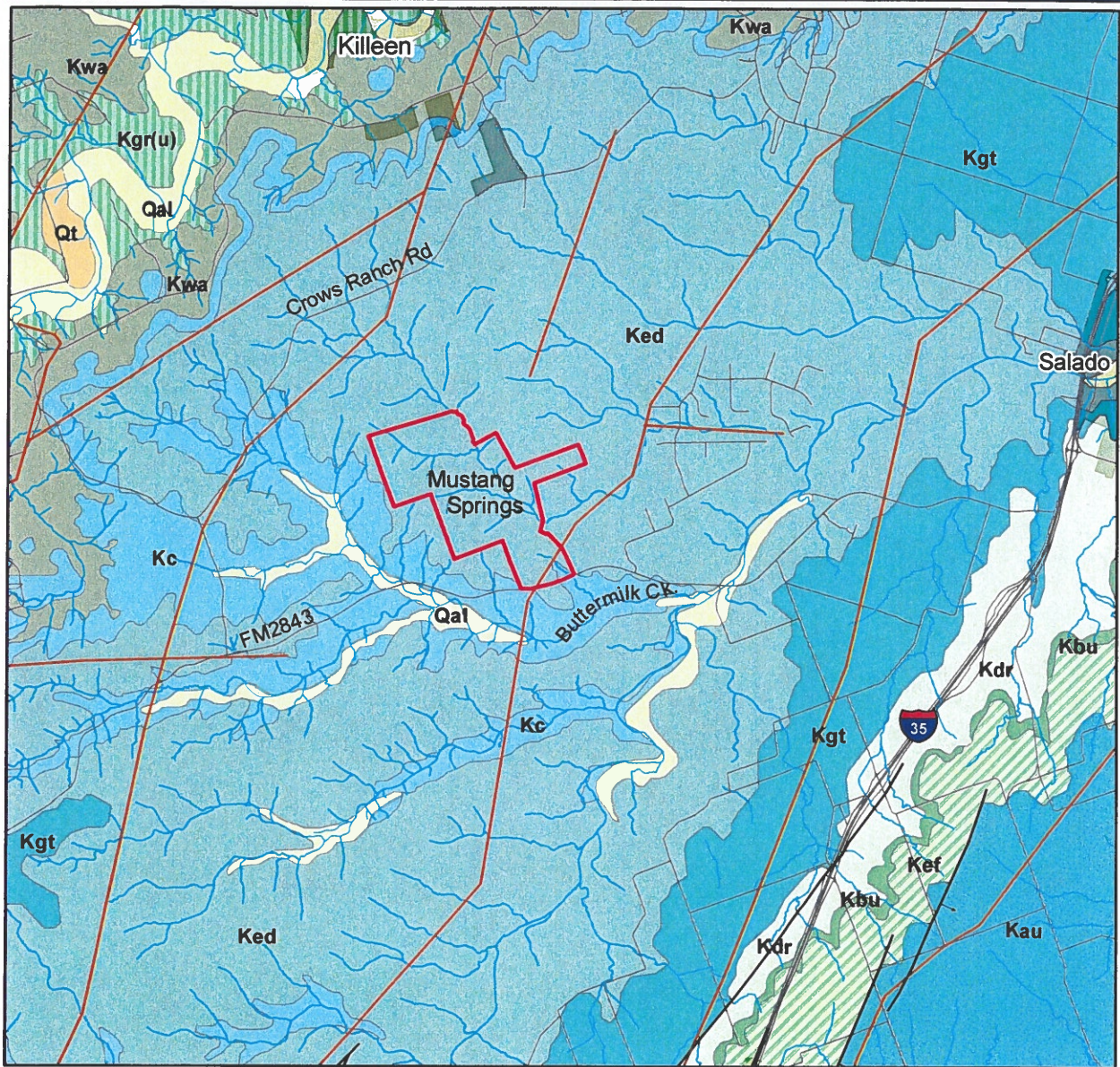















Figure 2 Wells with Borehole Depths (SDR and GWDB) Pape-Dawson Bell County			 COLLIER CONSULTING 254-968-8741 www.collierconsulting.com
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Hydrogeologic Assessment for Mustang Springs



Rock Units

	Qal, Alluvium		Kgt, Georgetown Fm
	Qt, terrace deposits		Ked, Edwards Limestone
	Kau, Austin Chalk		Kc, Comanche Peak Ls
	Kef, Eagle Ford Group		Kwa, Walnut Fm
	Kbu, Buda Limestone		Kgr(u), Upper Glen Rose
	Kdr, Del Rio Clay		GAT faults
			Faults (CUWCD)

0 2 Miles



Figure 3
Surface Geology
Pape-Dawson
Bell County

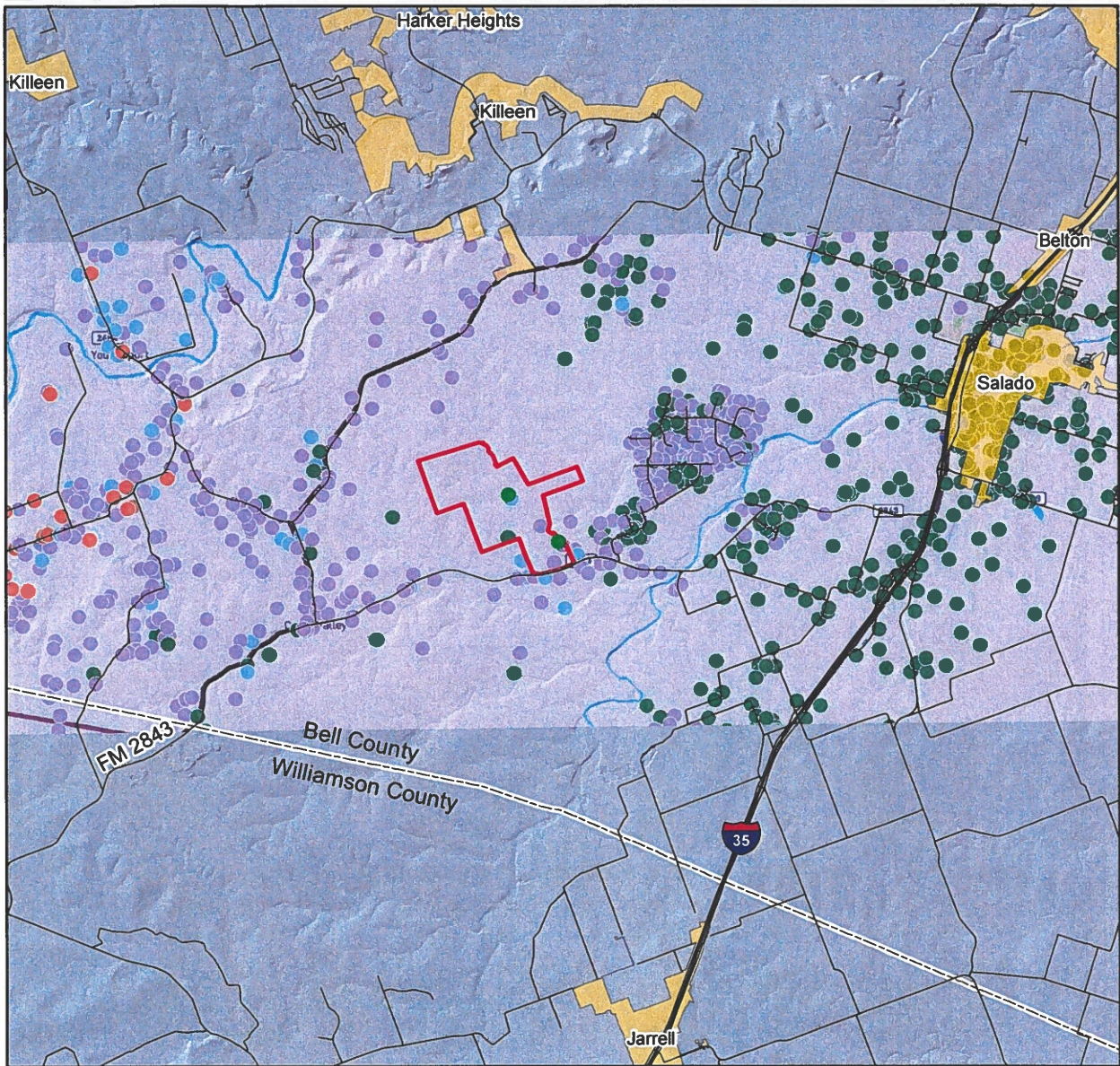


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DRAWN: PG	SCALE: 1:100,000	REVISION: 1

254-968-8741

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Hydrogeologic Assessment for Mustang Springs



0 2 Miles



EXPLANATION

- Edwards (BFZ)
- Upper Trinity
- Middle Trinity
- Lower Trinity
- Proposed Wells
- Mustang Springs

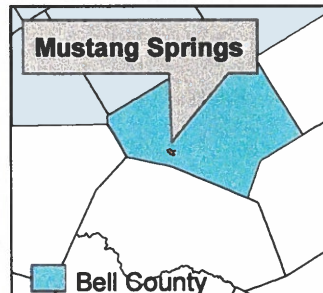


Figure 4
CUWCD Wells with
Aquifer Designations
Pape-Dawson
Bell County

DESIGN: BG	CHECKED: GM	8/25/2023
DRAWN: PG	SCALE: 1:135,000	REVISION: 1



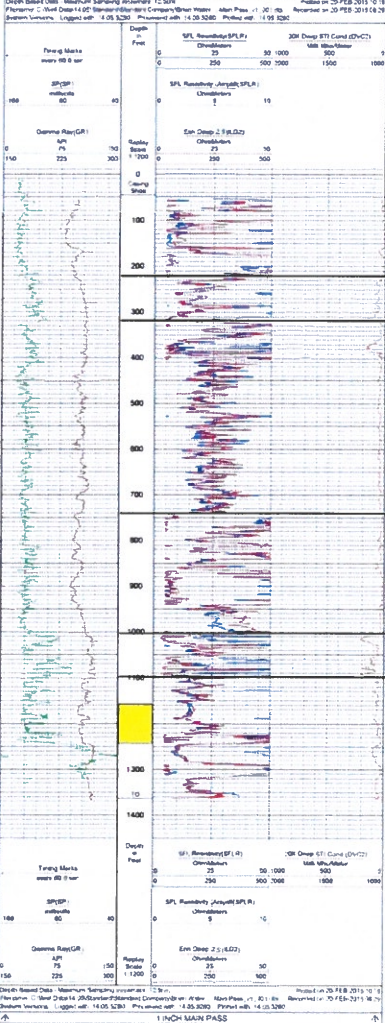
254-968-8741

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Weatherford		INDUCTION / SP	
OPERATOR: BERNHARTS WELLS FIELD: WILCOX LOCATION: TREAD WELLS - COMEN TRINITY #1 WELL: DOC CURB SITE LOG: 11/11/2014 LOG DATE: 11/11/2014 LOG TIME: 11:00 AM LOG BY: JERRY PAUL MOORE LOG CHECKED BY: JERRY PAUL MOORE LOG NUMBER: 11/11/2014		DATE: 20 FEB 2015 TIME: 11:00 AM BY: JERRY PAUL MOORE CHECKED BY: JERRY PAUL MOORE LOG NUMBER: 11/11/2014	

BOREHOLE RECORD			
Drill Bit	11.500	Depth	00.00
Case	11.500	Depth	100.00
Flow	11.500	Depth	100.00
Flow	11.500	Depth	100.00

1 INCH MAIN PASS			
-------------------------	--	--	--



Edwards and Comanche Peak Limestones

Walnut Formation

Glen Rose Formation

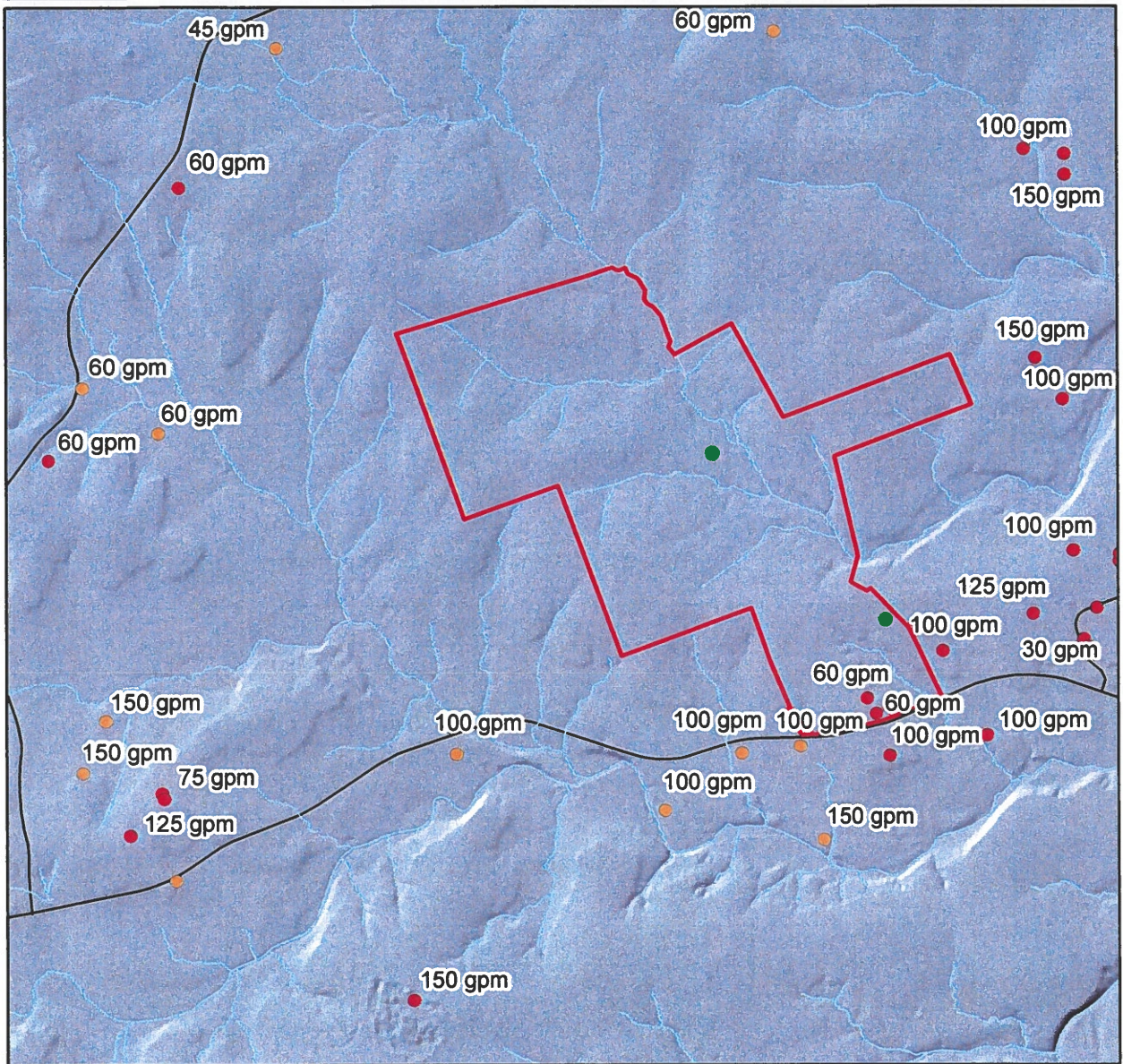
Hensell Member of the Travis Peak Formation

Pearsall Member of the Travis Peak Formation

Hosston Member of the Travis Peak Formation

Figure 5. Geophysical log of the Doc Curb Well No. 1. Screen set from 1,157 to 1,243 feet bgs (in yellow).

Hydrogeologic Assessment for Mustang Springs



Well Depth
(feet below surface)

- 600 - 800
- 800 - 930

150 gallons per minute

- Proposed Wells

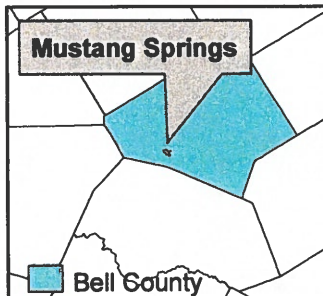


Figure 6
Estimated Yield
(from SDR database)

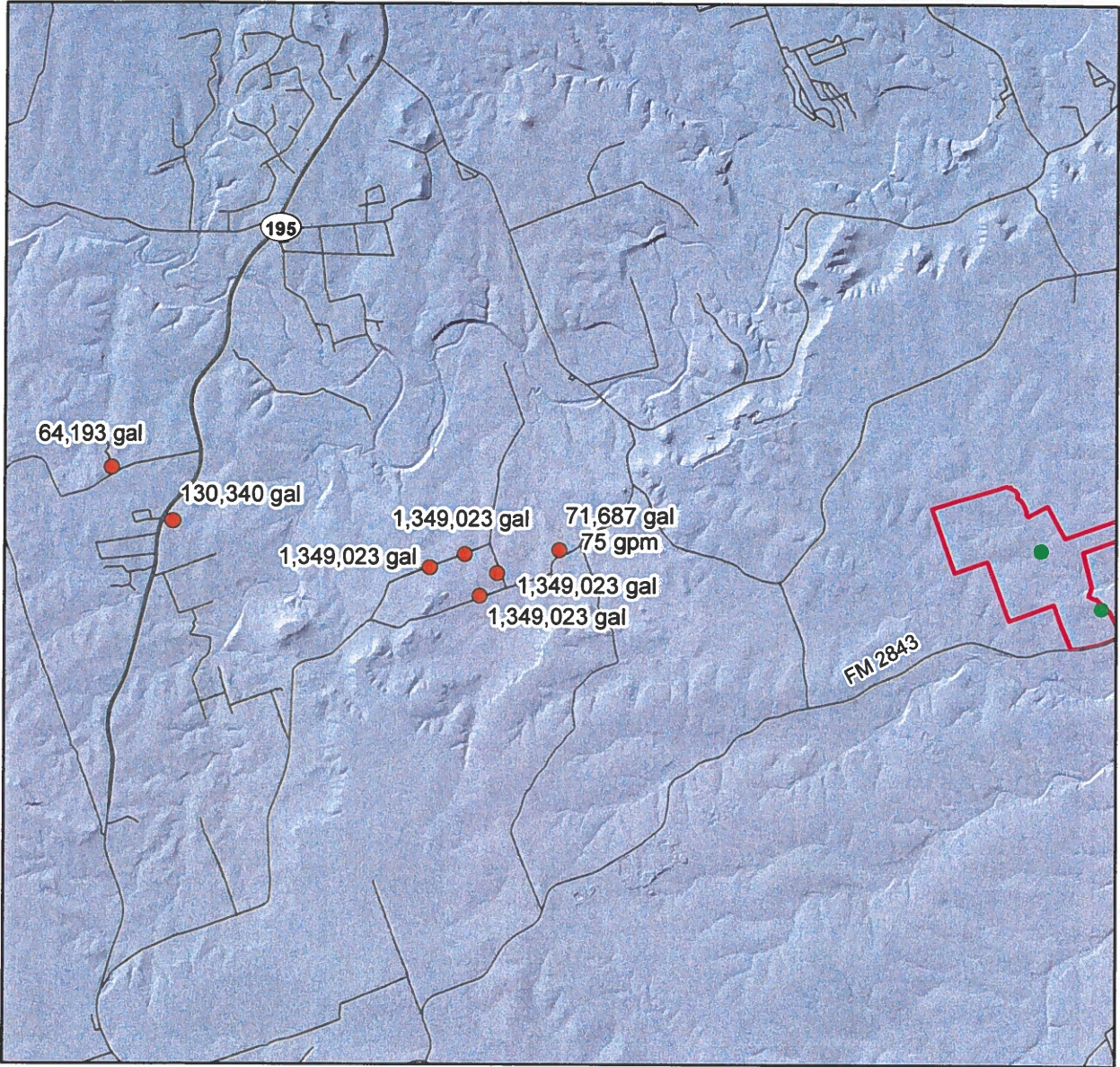
Pape-Dawson
Bell County

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CONSULTING

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Hydrogeologic Assessment for Mustang Springs



EXPLANATION	
●	Lower Trinity Wells
36,000	Annual allocation in gallons
●	Proposed Wells
	Mustang Springs

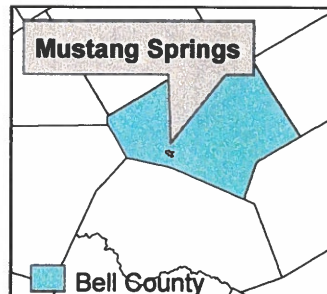

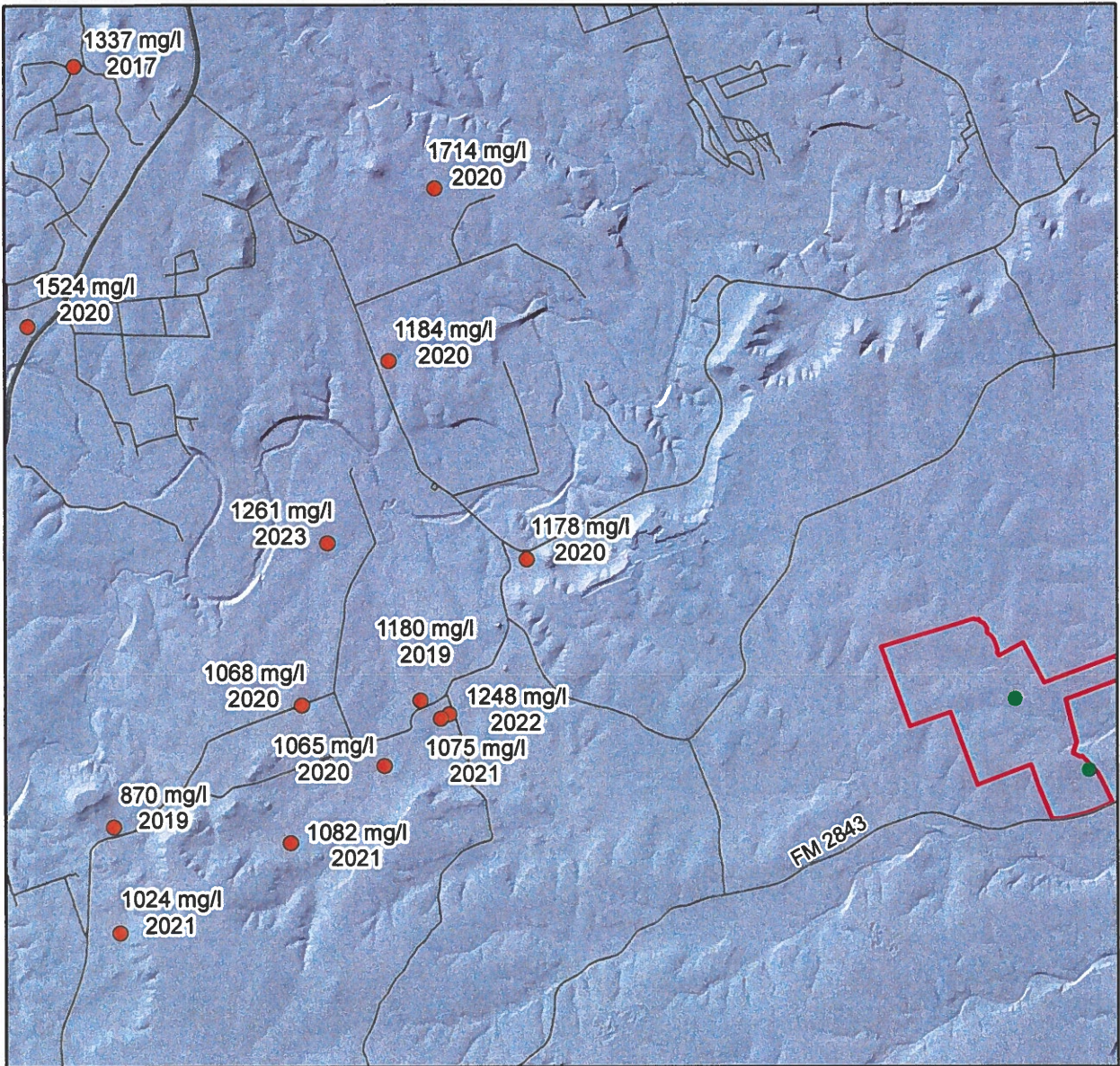


Figure 7 Lower Trinity Annual Allocation (2023) Pape-Dawson Bell County			 COLLIER CONSULTING
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DRAWN: PG	SCALE: 1:110,000	REVISION: 1	254-968-8741 www.collierconsulting.com

Hydrogeologic Assessment for Mustang Springs



EXPLANATION

- Lower Trinity Wells
1124 mg/l Total Dissolved Solids
2022 Measurement Year
- Proposed Wells
- Mustang Springs

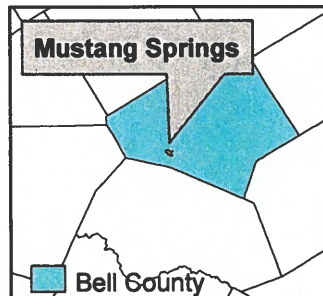


Figure 8
Lower Trinity
Water Quality
Pape-Dawson
Bell County

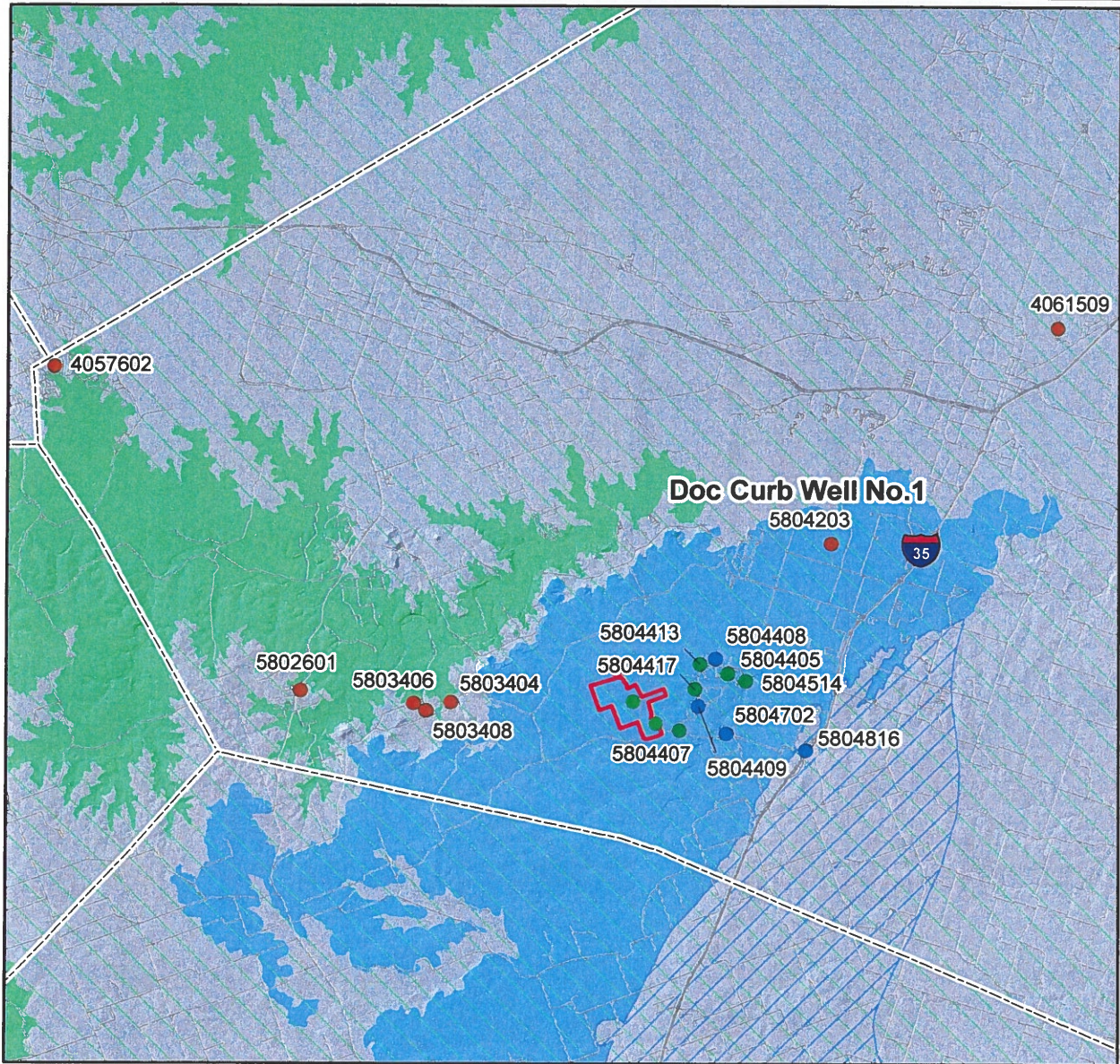
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254-968-8741

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Hydrologic Assessment for Mustang Springs



EXPLANATION	
●	Edwards Wells
●	Middle Trinity (Hensell) Wells
●	Lower Trinity (Hosston) Wells
●	Proposed Wells
4057602 State Well No.	

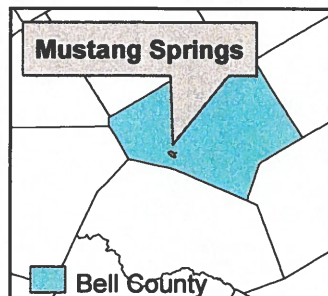



Figure 9			 COLLIER CONSULTING
Wells with Historical Water Records			
Pape-Dawson Bell County			254-968-8741 www.collierconsulting.com
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DRAWN: PG	SCALE: 1:288,000	REVISION: 1	

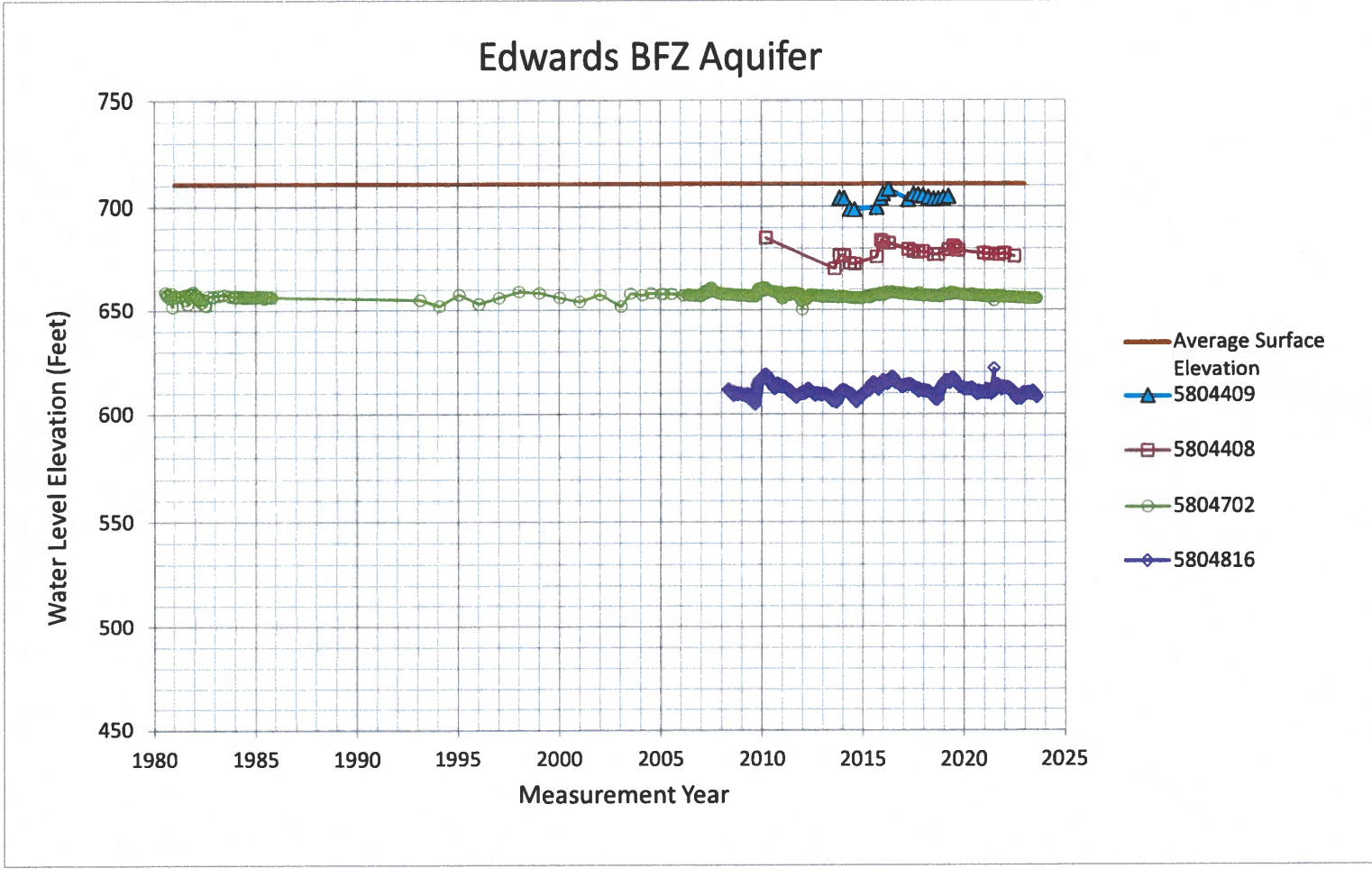


Figure 10. Hydrographs for Edwards Aquifer wells near the development. See Figure 9 for their locations.

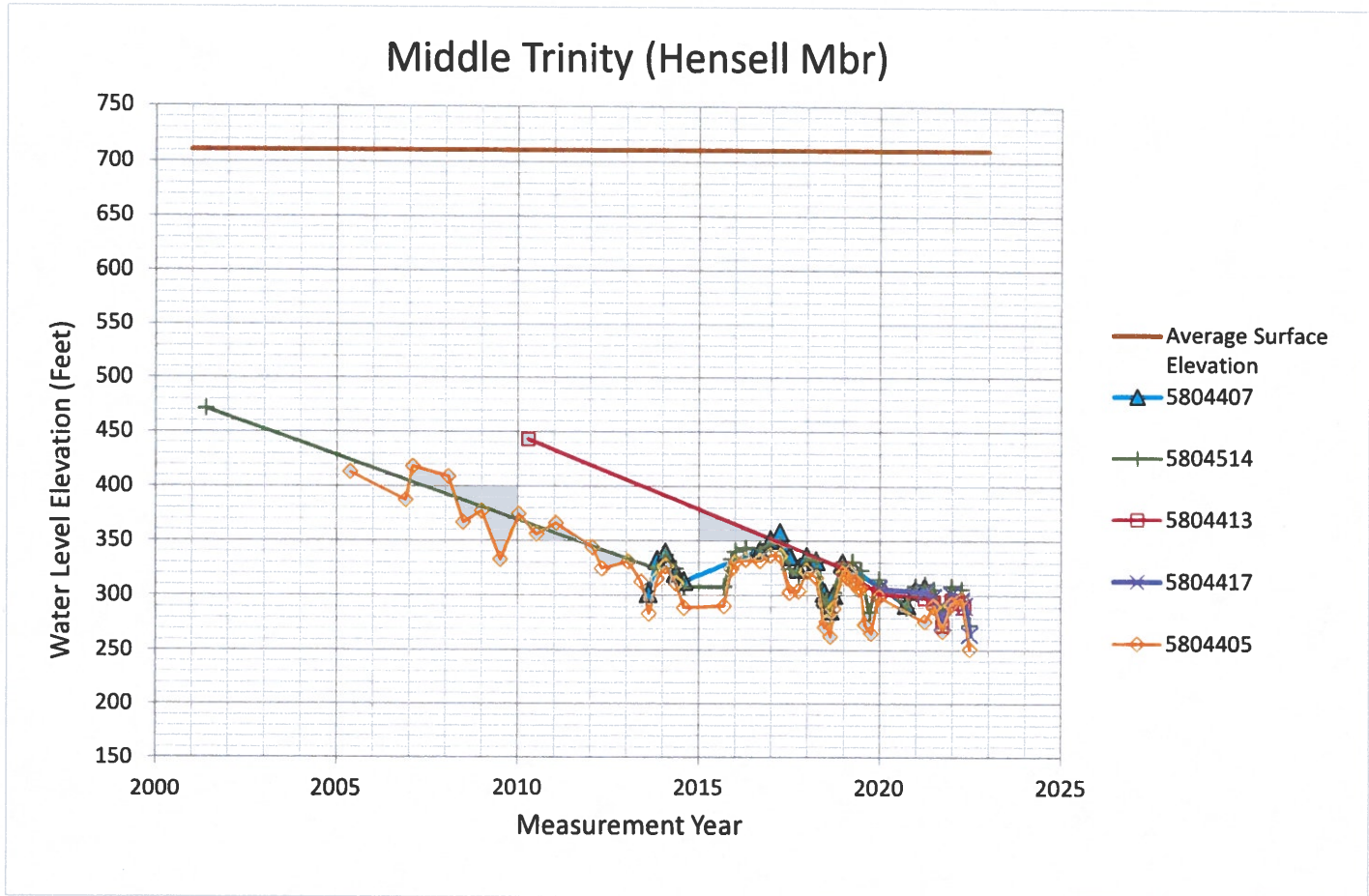


Figure 11. Hydrographs for Middle Trinity wells in the local Area. See Figure 9 for their locations.

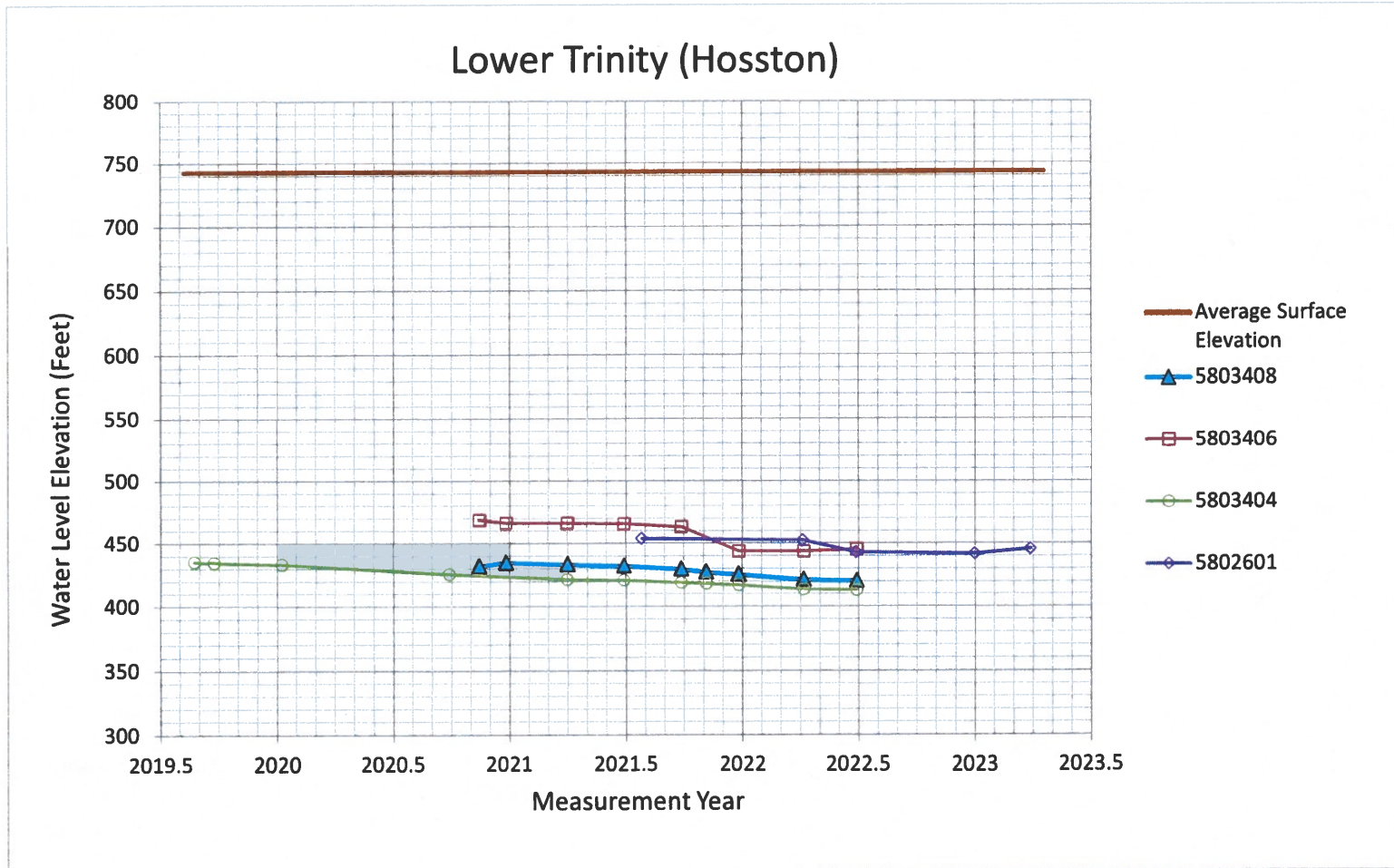


Figure 12. Hydrographs for Hosston wells located 4-7 miles to the west of the development. See Figure 9 for their locations.

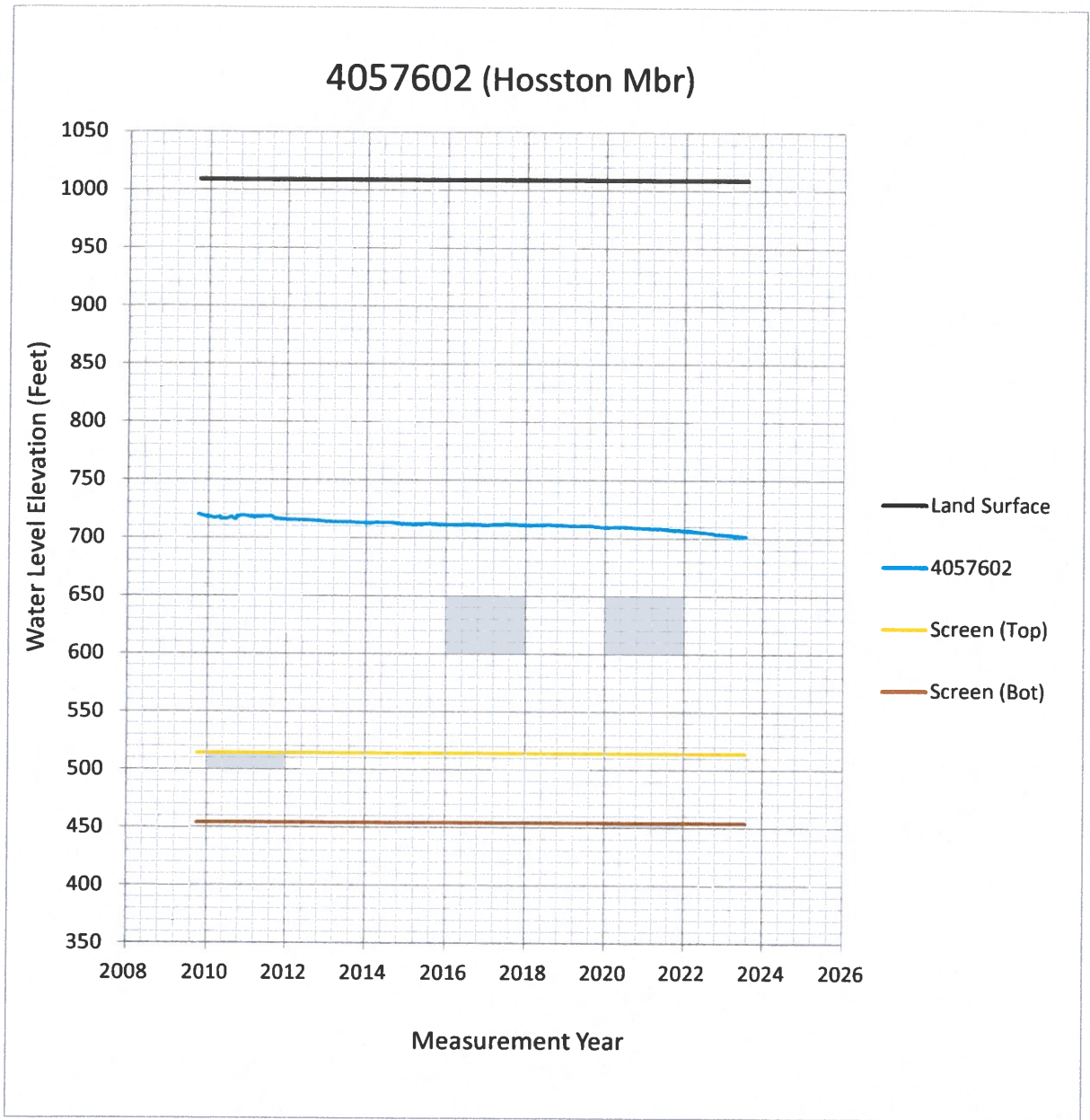


Figure 13 . Hydrographs for a Lower Trinity well northwest of the development. See Figure 9 for its location.

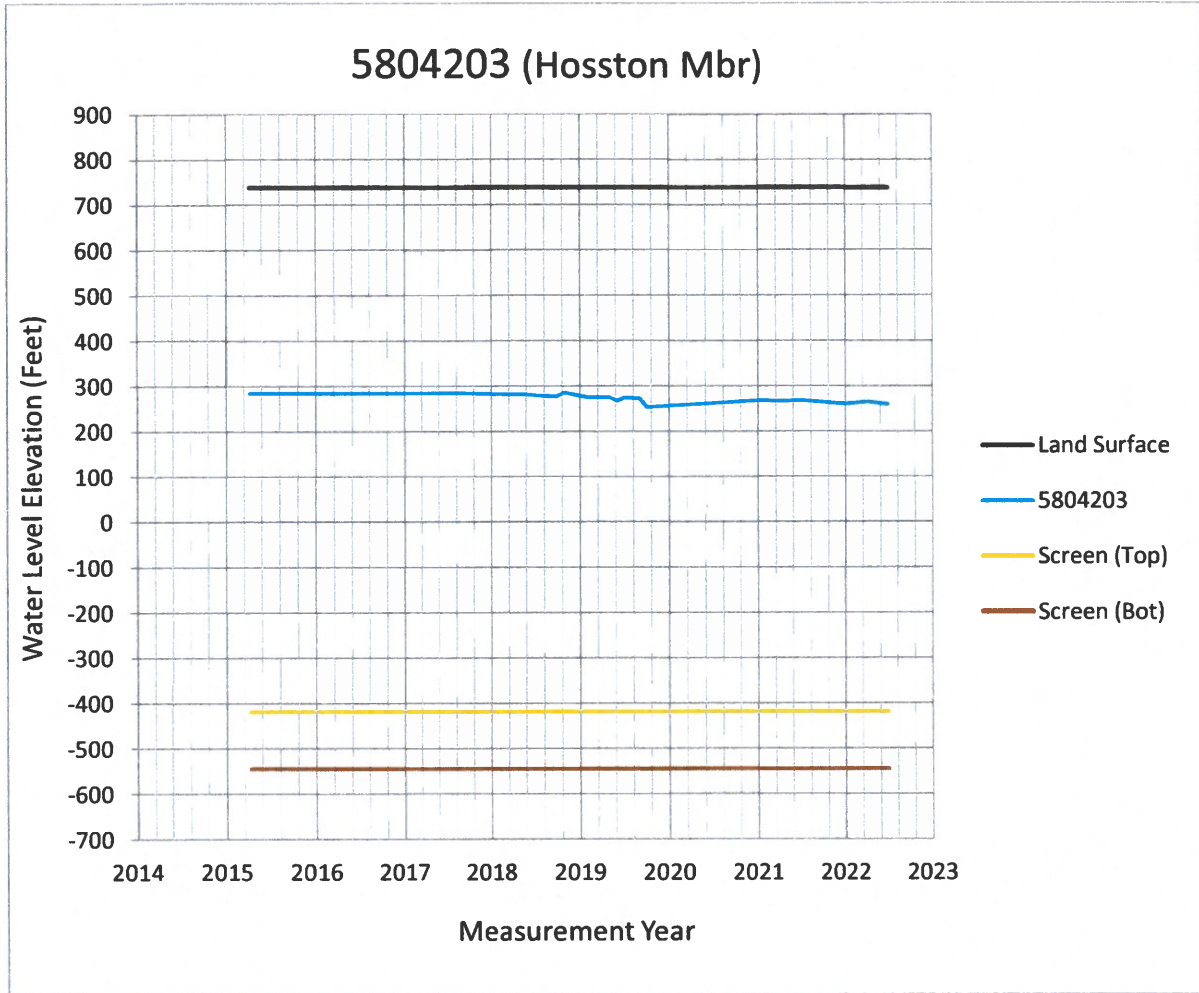


Figure 14. Hydrographs for the Doc Curb Well No.1 north of the development. See Figure 9 for its location.

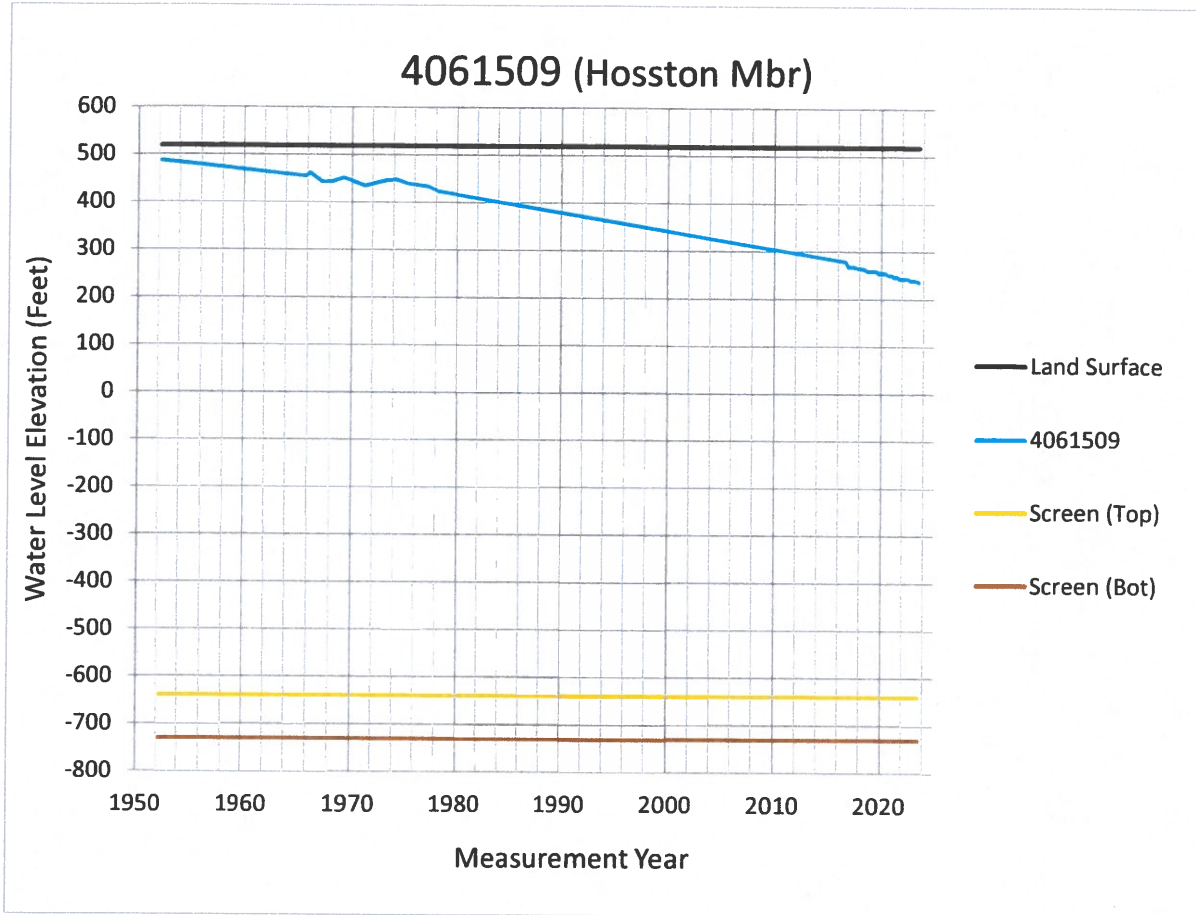
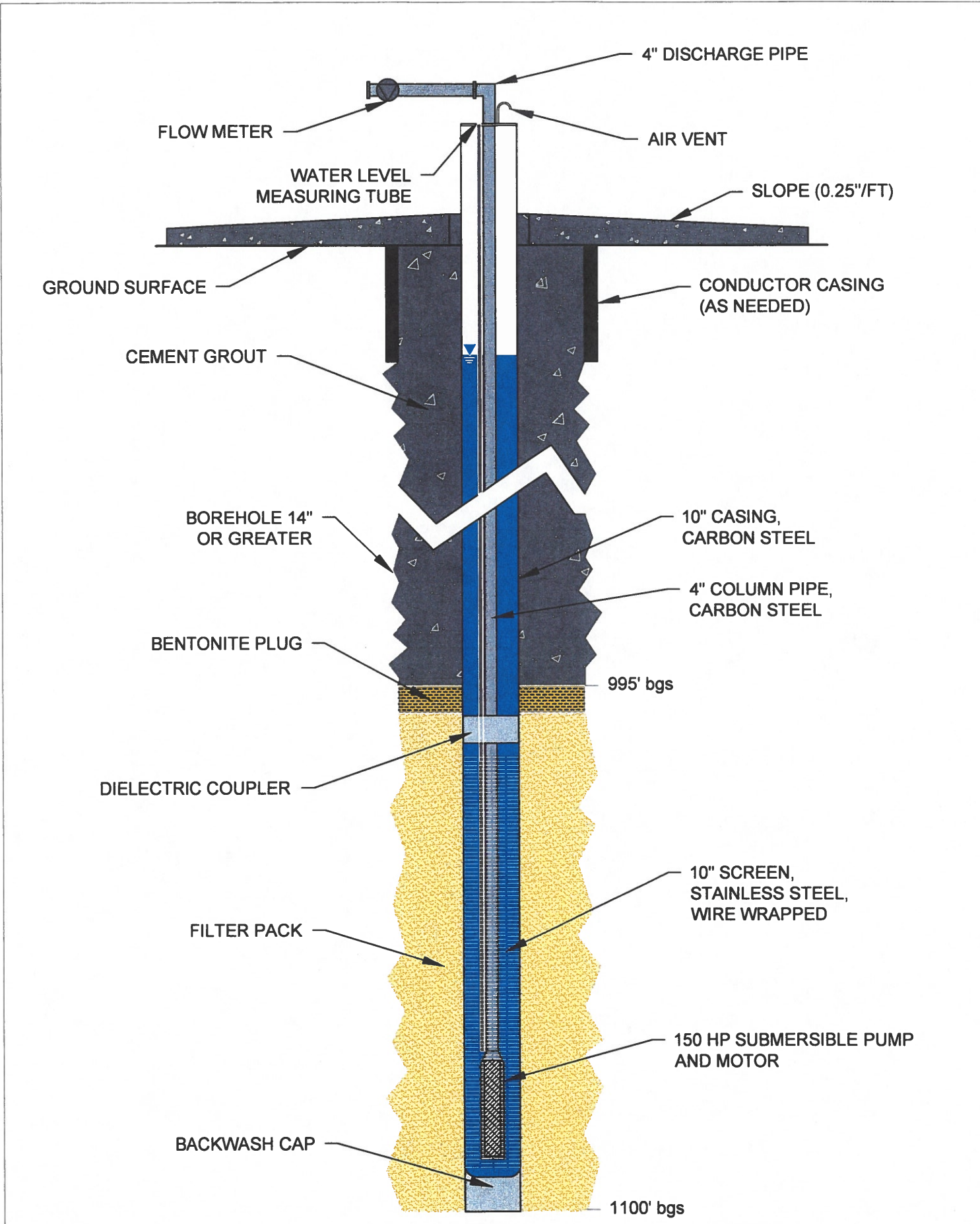
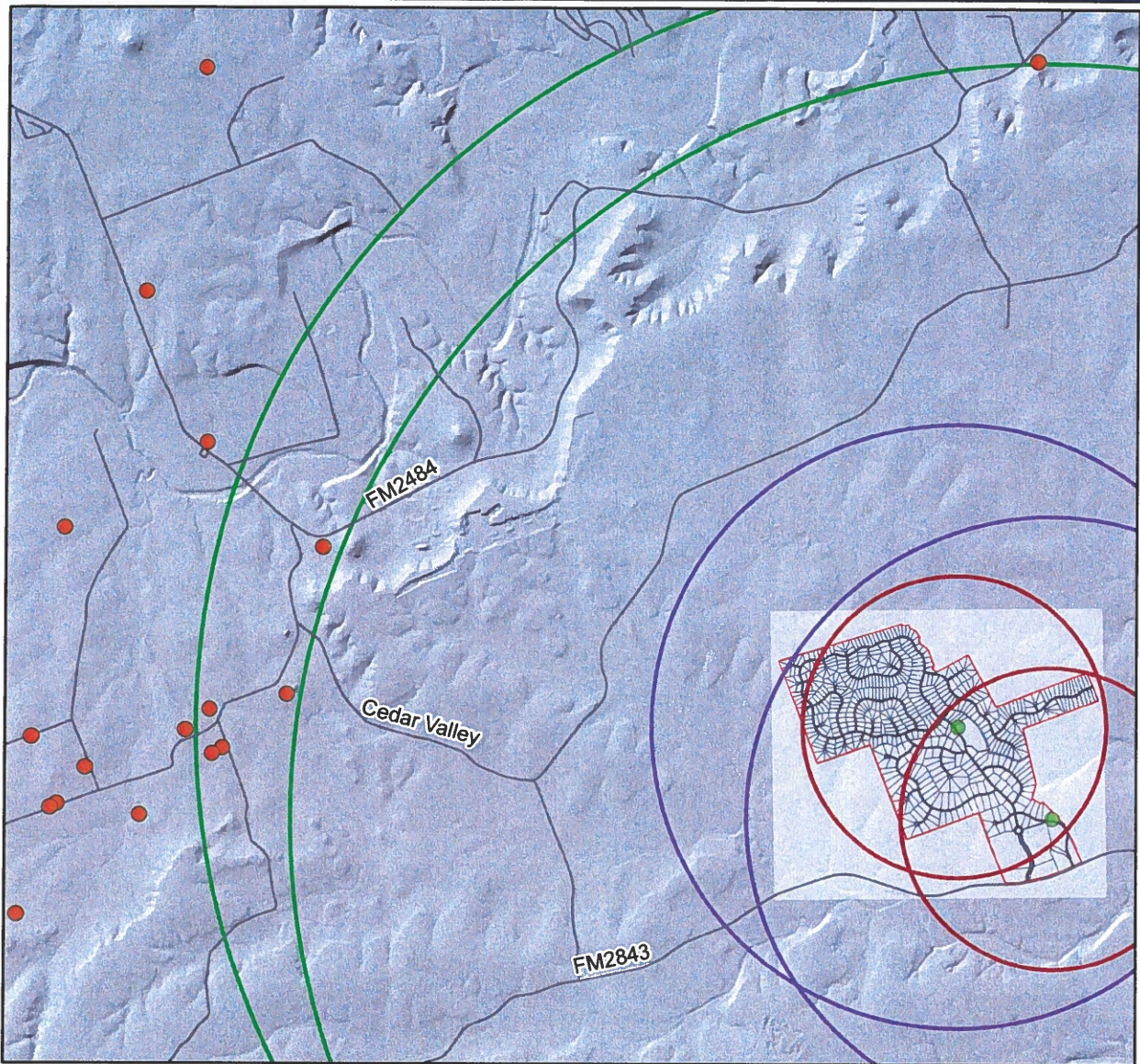


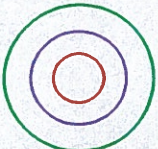
Figure 15. Hydrographs for a Lower Trinity well northwest of the development. See Figure 9 for its location.



Hydrogeologic Assessment for Mustang Springs



EXPLANATION

- Lower Trinity Wells
-  5, 4, and 2 Mile Radaii
- Proposed Wells
- Mustang Springs

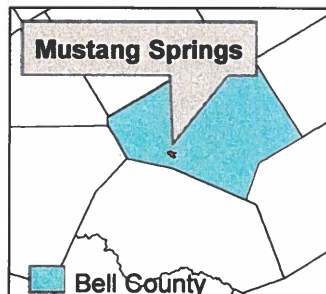



Figure 17			 COLLIER CONSULTING
Interference Radaii			
Pape-Dawson			254-968-8741 www.collierconsulting.com
Bell County			
DESIGN: BG	CHECKED: GM	8/25/2023	
DRAWN: PG		REVISION: 1	

Required Notification

**NOTICE OF APPLICATION FOR A DRILLING PERMIT FROM
CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT**

Dr. Gretchen Miller, Ph.D., PE, PG, has submitted an application, on behalf of Mr. James Kerby, Jaffe Interests LP (Mustang Springs Development), to the Clearwater Underground Water Conservation District (CUWCD) on September 8, 2023, for two permits to authorize drilling for two proposed new public water supply wells.

This permit, if approved, will authorize the drilling and completion of two wells (*Well #1: N3-23-010P & Well #2: N3-23-011P*) located in the Stillhouse Hollow Management Zone described in District Rule 7.1. The proposed wells are to be completed in the Lower Trinity Aquifer (Hosston Layer), with a maximum 4-inch column pipe on a 1106-acre housing development located on the north side of FM-2843 approximately 6 miles west of the Village of Salado. Well #1 is located at Latitude 30.921147°/Longitude -97.625147° on a 2.74-acre tract of land. Well #2 is located at Latitude 30.930094°/Longitude -97.635711° on an 18.37-acre tract of land. The applicant wishes to project future production of groundwater for public water supply at a proposed combined annual quantity not to exceed 249.8 acre-feet or 81,397,580 total gallons per year at a maximum pumping rate not to exceed 320 gallons per minute per well.

This application will be set for hearing before the CUWCD Board upon notice posted at the Bell County Clerk's Office and at the CUWCD Office. If you would like to support, protest, or provide comments on this application, you must appear at the hearing and comply with District Rule 6.10. For additional information about this application or the permitting process, please contact the CUWCD at 700 Kennedy Court, Belton, Texas 76513, 254-933-0120. The applicant's representative, Dr. Gretchen Miller, may be contacted at 1205 Sam Bass Rd., Bldg. B, Ste. 300, Round Rock TX 78681, or by phone at 512-851-8740.

October 2, 2023

NOTICE OF APPLICATION FOR DRILLING PERMIT

Name
Address
City, TX Zip

**VIA CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

RE: Application for two Drilling Permits

To Whom It May Concern:

I, Dr. Gretchen Miller, Ph.D., PE, PG, have submitted an application, on behalf of Mr. James Kerby, Jaffe Interests LP (Mustang Springs Development), to the Clearwater Underground Water Conservation District (CUWCD) on September 8, 2023, for two permits to authorize drilling for two proposed new public water supply wells.

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Sincerely,

Gretchen Miller, Ph.D., PE, PG
Senior Groundwater Engineer
Collier Consulting

N3-23-011P Contact List

Wells 1/2 Mile

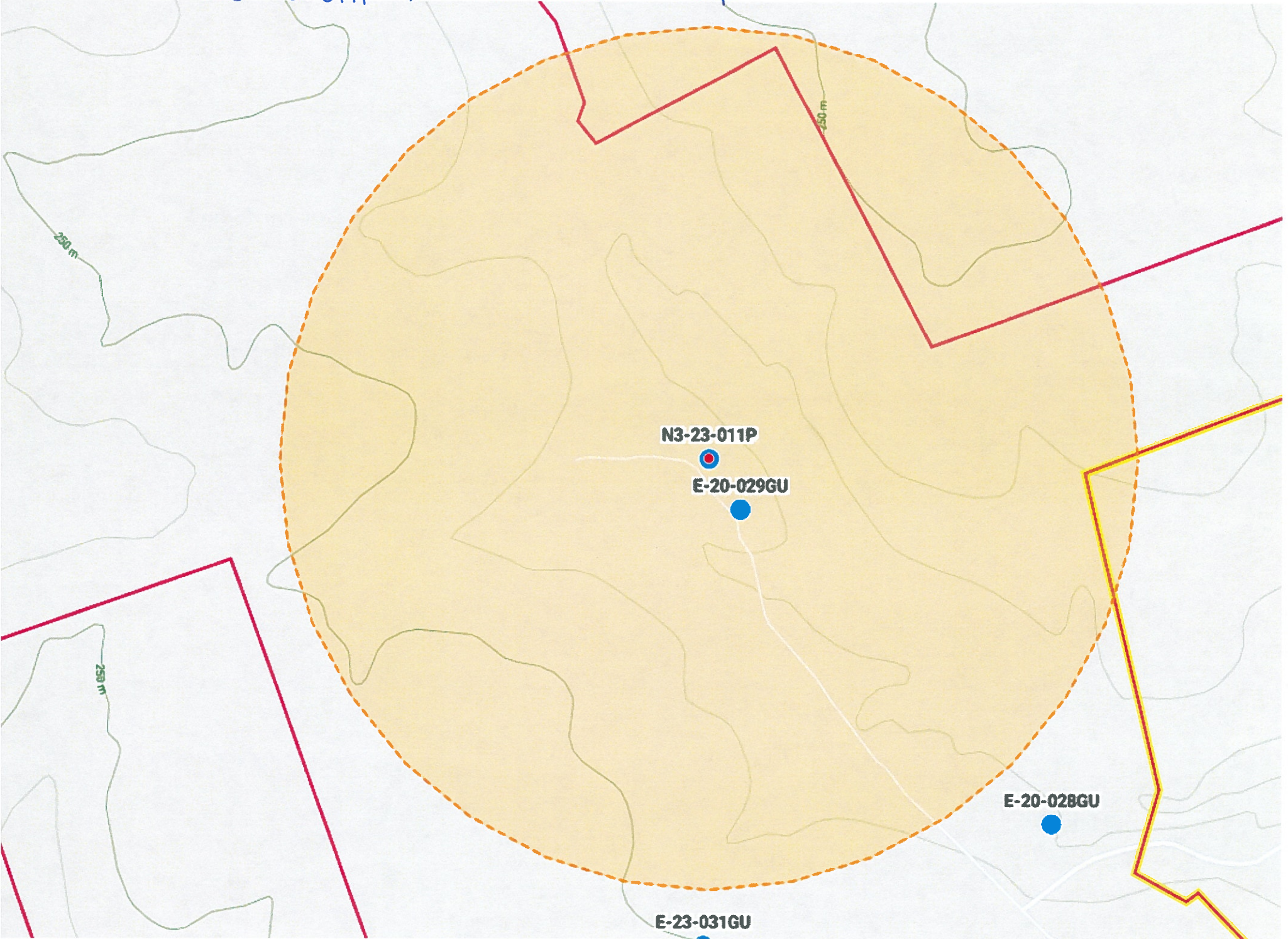
<u>Prop ID</u>	<u>Name</u>	<u>Address</u>	<u>City</u>	<u>State</u>	<u>Zip</u>	<u>Well #</u>	<u>Status</u>	<u>Depth</u>	<u>Aquifer</u>	<u>Use</u>	<u>Distance</u>
42479	JAFFE Interests LP	PO Box 4449	Horseshoe Bay	TX	78657	E-20-029GU	Active	212	Upper Trinity	Domestic	375 ft

Adjacent Property

136143	Grace Ranches c/o Tere Grace	PO Box 1038	Salado	TX	76571
447389	One Cow Ranch LP	PO Box 672	Salado	TX	76571
433074	Janet Kennedy	9001 FM 2843	Salado	TX	76571
433075	Paul & Ginger Schoenrock	PO Box 1198	Salado	TX	76571
185721	JAFFE Interests LP	PO Box 4449	Horseshoe Bay	TX	78657
26801	Noel Curb	9830 FM 2843	Salado	TX	76571
12485	J Brooks Bradley	3008 Macao Court	Plano	TX	75075
12484	J Brooks Bradley	3008 Macao Court	Plano	TX	75075
12487	J Brooks Bradley	3008 Macao Court	Plano	TX	75075
107705	Helen Gracy Smith Family Limited Partnership	14971 Crows Ranch Rd	Salado	TX	76571
107703	Helen Gracy Smith Family Limited Partnership	14971 Crows Ranch Rd	Salado	TX	76571
440470	Lampasas River Holdings LP	3904 Smith Dairy Lane	Belton	TX	76513
75457	Eagle Nest Holdings LTD c/o Monteith Ranch	6363 Woodway Drive Ste 1050	Houston	TX	77057

Name	Address	City	State	Zip
Grace Ranches c/o Tere Grace	PO Box 1038	Salado	TX	76571
Walter & Lisa Lesley	706 Clover Lane	Temple	TX	76502
Robert & Glenda Cousins	8741 FM 2843	Salado	TX	76571
Paul & Ginger Schoenrock	PO Box 1198	Salado	TX	76571
JAFFE Interests LP	PO Box 4449	Horseshoe Bay	TX	78657
One Cow Ranch LP	PO Box 672	Salado	TX	76571
Janet Kennedy	9001 FM 2843	Salado	TX	76571
Noel Curb	9830 FM 2843	Salado	TX	76571
J Brooks Bradley	3008 Macao Court	Plano	TX	75075
Helen Gracy Smith Family Limited Partnership	14971 Crows Ranch Rd	Salado	TX	76571
Lampasas River Holdings LP	3904 Smith Dairy Lane	Belton	TX	76513
Eagle Nest Holdings LTD c/o Monteith Ranch	6363 Woodway Drive Ste 1050	Houston	TX	77057

N3-23-011P 1/2 mile Radius Map



N3-23-010P Contact List

Wells 1/2 Mile

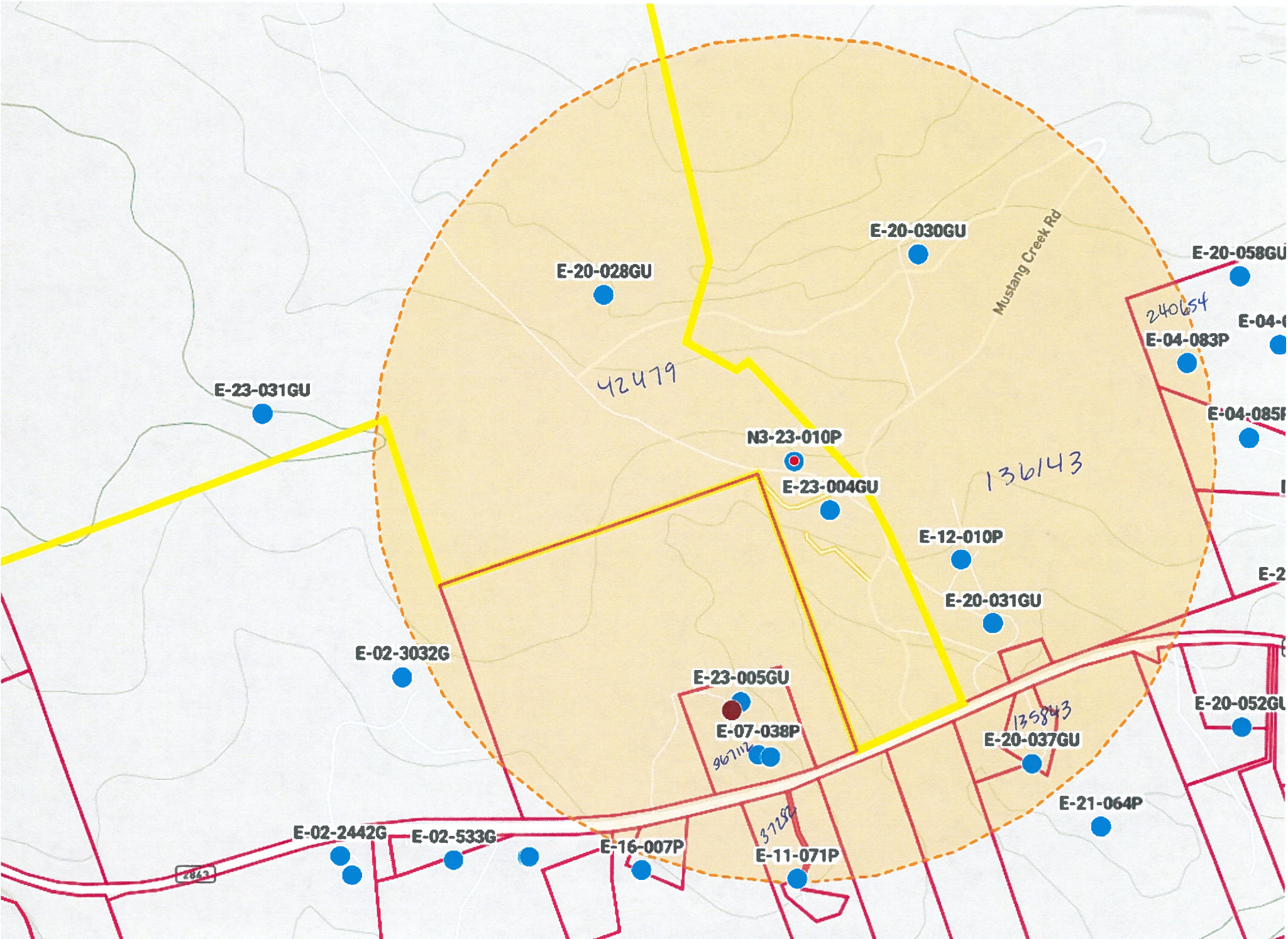
<u>Prop ID</u>	<u>Name</u>	<u>Address</u>	<u>City</u>	<u>State</u>	<u>Zip</u>	<u>Well #</u>	<u>Status</u>	<u>Depth</u>	<u>Aquifer</u>	<u>Use</u>	<u>Distance</u>
136143	Grace Ranches c/o Tere Grace	PO Box 1038	Salado	TX	76571	E-20-030GU	Active	855	Middle Trinity	Domestic	1,497 ft
136143	Grace Ranches c/o Tere Grace	PO Box 1038	Salado	TX	76571	E-12-010P	Active	850	Middle Trinity	Domestic	1,212 ft
136143	Grace Ranches c/o Tere Grace	PO Box 1038	Salado	TX	76571	E-20-031GU	Active	452	Upper Trinity	Domestic	1,606 ft
240654	Walter & Lisa Lesley	706 Clover Lane	Temple	TX	76502	E-04-083P	Active	90	Edwards BFZ	Domestic	2,549 ft
135843	Robert & Glenda Cousins	8741 FM 2843	Salado	TX	76571	E-20-037GU	Active	795	Middle Trinity	Domestic	2,400 ft
37282	Paul & Ginger Schoenrock	PO Box 1198	Salado	TX	76571	E-11-071P	Active	835	Middle Trinity	Domestic	2,598 ft
367112	JAFFE Interests LP	PO Box 4449	Horseshoe Bay	TX	78657	E-23-005GU	Inactive	828	Middle Trinity	Domestic	1,551 ft
367112	JAFFE Interests LP	PO Box 4449	Horseshoe Bay	TX	78657	E-23-006GU	Plugged	825	Middle Trinity	Domestic	1,603 ft
367112	JAFFE Interests LP	PO Box 4449	Horseshoe Bay	TX	78657	E-07-038P	Inactive	825	Middle Trinity	Domestic	1,837 ft
367112	JAFFE Interests LP	PO Box 4449	Horseshoe Bay	TX	78657	E-02-535G	Inactive	120	Edwards BFZ	Domestic	1,854 ft
42479	JAFFE Interests LP	PO Box 4449	Horseshoe Bay	TX	78657	E-20-028GU	Active	840	Middle Trinity	Domestic	1,590 ft
42479	JAFFE Interests LP	PO Box 4449	Horseshoe Bay	TX	78657	E-23-004GU	Active	860	Middle Trinity	Domestic	382 ft

Adjacent Property

136143	Grace Ranches c/o Tere Grace	PO Box 1038	Salado	TX	76571
447389	One Cow Ranch LP	PO Box 672	Salado	TX	76571
433074	Janet Kennedy	9001 FM 2843	Salado	TX	76571
433075	Paul & Ginger Schoenrock	PO Box 1198	Salado	TX	76571
185721	JAFFE Interests LP	PO Box 4449	Horseshoe Bay	TX	78657
26801	Noel Curb	9830 FM 2843	Salado	TX	76571
12485	J Brooks Bradley	3008 Macao Court	Plano	TX	75075
12484	J Brooks Bradley	3008 Macao Court	Plano	TX	75075
12487	J Brooks Bradley	3008 Macao Court	Plano	TX	75075
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Noel Curb	9830 FM 2843	Salado	TX	76571
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Lampasas River Holdings LP	3904 Smith Dairy Lane	Belton	TX	76513
Eagle Nest Holdings LTD c/o Monteith Ranch	6363 Woodway Drive Ste 1050	Houston	TX	77057

N5-20-010P 1/2 mile Radius



Mustang Springs

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Domestic Mail Only

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Salado, TX 76571

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

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Street and Apt. No. or PO Box No.: 14941 Crows Ranch Rd.
City, State, ZIP+4: Salado TX 76571

Certified Mail Fee \$4.35
Extra Services & Fees (check box, and fee \$ per copy)
 Return Receipt (hardcopy) \$0.00
 Return Receipt (electronic) \$0.00
 Certified Mail Restricted Delivery \$0.00
 Adult Signature Required \$0.00
 Adult Signature Restricted Delivery \$0.00
 Postage \$0.66
 Total Postage and Fees \$8.56

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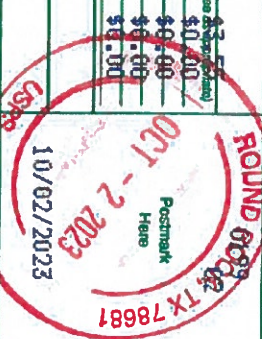
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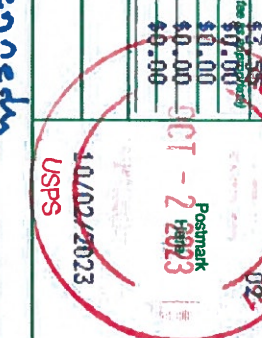
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5010007 1X / 6513

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\$7.55

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Mustang Springs

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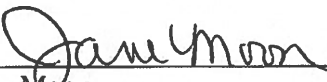
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Before Me, The Undersigned Authority, this day personally appeared Jane Moon after being by me duly sworn, says that she is the Classified Manager Inside Sales of the Temple Daily Telegram, a newspaper published in Bell County, Texas and that the stated advertisement was published in said newspaper on the following date(s):

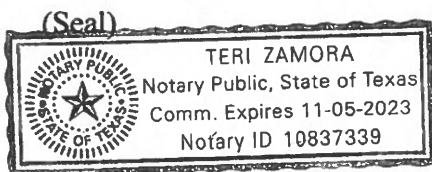
October 5, 2023

For: Collier Consulting
Dr. Gretchen Miller
Ad #: 16687889
Cost: \$165.00
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Jane Moon
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Subscribed and sworn to before me,
this day: October 5, 2023


Notary Public in and for
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**NOTICE OF APPLICATION
FOR A DRILLING PERMIT FROM
CLEARWATER UNDERGROUND
WATER CONSERVATION DISTRICT**

Dr. Gretchen Miller, Ph.D., PE, PG, has submitted an application, on behalf of Mr. James Kerby, Jaffe Interests LP (Mustang Springs Development), to the Clearwater Underground Water Conservation District (CUWCD) on September 8, 2023, for two permits to authorize drilling for two proposed new public water supply wells.

This permit, if approved, will authorize the drilling and completion of two wells (Well #1: N3-23-010P & Well #2: N3-23-011P) located in the Stillhouse Hollow Management Zone described in District Rule 7.1. The proposed wells are to be completed in the Lower Trinity Aquifer (Hosston Layer), with a maximum 4-inch column pipe on a 1106-acre housing development located on the north side of FM-2843 approximately 6 miles west of the Village of Salado. Well #1 is located at Latitude 30.921147°/Longitude -97.625147° on a 2.74-acre tract of land. Well #2 is located at Latitude 30.930094°/Longitude -97.635711° on an 18.37-acre tract of land. The applicant wishes to project future production of groundwater for public water supply at a proposed combined annual quantity not to exceed 249.8 acre-feet or 81,397,580 total gallons per year at a maximum pumping rate not to exceed 320 gallons per minute per well.

This application will be set for hearing before the CUWCD Board upon notice posted at the Bell County Clerk's Office and at the CUWCD Office. If you would like to support, protest, or provide comments on this application, you must appear at the hearing and comply with District Rule 6.10. For additional information about this application or the permitting process, please contact the CUWCD at 700 Kennedy Court, Belton, Texas 76513, 254-933-0120. The applicant's representative, Dr. Gretchen Miller, may be contacted at 1205 Sam Bass Rd., Bldg. B, Ste. 300, Round Rock TX 78681, or by phone at 512-851-9740.

CROSSWORD

By THOMAS JOSEPH

ACROSS DOWN

- 1 Wine barrels
6 Form
11 Little hooter
12 West Point student
13 Plow pioneer
14 LIV
15 Make possible
17 Music booster
19 Fuming resort
23 Fresh face, say
25 Action star
26 Tiring vine
28 Vagabond type
29 Fall back
30 Neither follower
31 Tomcat
32 Spot to jot
33 Like some arguments
35 Writer P.D.
36 Take as one's own
41 Up in the air
42 Chad neighbor
43 Prison problems
44 Irritable

Crossword grid with letters and numbers. Includes 'Yesterday's answer' and 'Today's answer'.

Small crossword puzzle grid with numbers.

- 17 Williams of 'Happy aid'
18 Paris subway
20 Border collies, need e.g.
21 Bamboo eater
22 Paid for a hand
23 Golden Slate
24 Warriors fans
27 Navigating of 'Happy aid'
31 Suit pieces
33 Influence
34 Falco of 'The Sopranos'
35 Mayo bay
36 Cattle, later
37 Cattle call
39 Puppy or parrot
40 Take a stab at

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NOTICE OF APPLICATION FOR A DRILLING PERMIT FROM CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT

NOTICE OF APPLICATION FOR A DRILLING PERMIT FROM CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT

NOTICE OF APPLICATION FOR AMENDMENT TO OPERATING PERMIT FROM CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT

NOTICE OF APPLICATION FOR AMENDMENT TO OPERATING PERMIT FROM CLEARWATER UNDERGROUND WATER CONSERVATION DISTRICT

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4 7 9 3 5 2
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7 4 1 9 8
4 9 3 1
6 9 3 2
5 7 4
7 5 3 2
1 4 7 3

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