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Hydrogeologic Evaluation of Proposed Electro Purification, LLC Project in Hays County, Texas

prepared for
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Geoscientist's Seal

This report documents the work of the following licensed professional geoscientist's with LBG-Guyton Associates, a licensed professional geoscientist firm in the State of Texas (License No. 50111).

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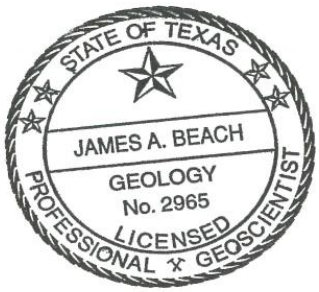

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3/13/15

Executive Summary

LBG-Guyton Associates reviewed available data and conducted a preliminary evaluation of the proposed Electro Purification, LLC (EP) project in Hays County, Texas. The project location is approximately five miles northeast of Wimberley near the intersection of Old Kyle Road (FM 3237) and Rolling Oaks Drive (CR 369), just south of the Rolling Oaks and Sierra West neighborhoods. EP is considering production of up to 5.3 million gallons per day (MGD) for the project from production wells completed in the Middle Zone of the Trinity Aquifer with the majority of production coming from the Cow Creek formation.

To date, EP has drilled and completed seven test wells in the Middle Zone of the Trinity Aquifer with three of the test wells completed about one year ago and the other four in early 2015. We created an approximately five-mile buffer zone around the test wells within which to evaluate the completion of reported existing wells and determine the potential effects of EP pumping on those wells. Within a five mile radius of the EP test wells we identified 176 wells from the Texas Water Development Board's Groundwater database and Submitted Driller's Report database. We identified 117 out of the 176 wells as being completed, at least partially, in the Middle Zone of the Trinity Aquifer based on the reported depth or open interval of the completed well. There are likely many more wells in the area as the Barton Springs/Edwards Aquifer Conservation District reports almost 1,600 groundwater supplied properties within two miles of the EP test well properties.

Recharge to the Middle Zone of the Trinity Aquifer typically occurs via karst features, faults and fractures along stream channels and via precipitation on the sandy facies of the Hensel and Cow Creek outcrops in Blanco River watershed and the Pedernales River channel located in Blanco and northern Hays Counties. Additionally, local recharge occurs to the Hensel and Cow Creek Formations in a losing section of the Blanco River located east of the Blanco-Hays County line along the western edge of the Balcones fault zone. Regional groundwater flow within the Trinity aquifers is primarily from west to east.

Aquifer properties calculated from the pumping tests conducted by EP indicate there will be a significant amount of drawdown associated with the proposed production. The estimated water level decline due to production of 1.5 MGD for 1 year is about 90 feet at 5 miles from the center of the EP wellfield and over 160 feet near the wellfield. The estimated water level decline due to production of 3 MGD for 1 year is about 170 feet at 5 miles from the center of the EP wellfield and over 350 feet near the wellfield. If EP produces 5.3 MGD for 1 year, the water level decline near the EP wellfield is over 500 feet, which would be below the top of the Cow Creek formation of the Middle Zone of the Trinity Aquifer. Based on the analysis and assumptions used herein, pumping between about 2 to 2.5 MGD will cause the water level in the Middle Zone of the Trinity Aquifer to decline to the top of the Cow Creek after 30 years. However, the assumptions and methods

employed herein have limitations and it will be critical to assess the validity of those assumptions and methods as more data is collected from the aquifer. Evaluation and monitoring of similar wellfields in the Middle Zone of the Trinity Aquifer indicates that it is especially important to understand how the aquifer responds to drought conditions, continuous and peak-demand pumping, and potential recharge events.

Impacts to other wells from EP production will vary based on the EP production rate, location of the well, aquifer properties, recharge rate to the aquifer, the effects of faulting, depth and construction of wells, the depth of the pump, pumping, and other factors. For these reasons, it is difficult to predict precisely how each well will respond over time. For wells that are screened in the Middle Zone of the Trinity Aquifer, artesian pressure in the wells will decline, and production capacity might be decreased. If the pump is not set far enough below the static artesian water level in the well, the water level decline from EP pumping might decrease the water level in the well to below the pump. In that case, the pump might need to be lowered to allow for continued production from the well. If the well is close to the EP wellfield and if EP is producing at high rates, pumps may need to be lowered to the lower portions of the Middle Zone of the Trinity Aquifer to continue producing. Even though the wells surrounding EP may produce less water than EP, pumping from each of these wells also reduces artesian pressure in the Middle Zone of the Trinity Aquifer and affects the water level conditions in the EP wellfield and on other surrounding wells.

If total production from the Middle Zone of the Trinity Aquifer (from EP and other pumpers) is high enough, water level in the Middle Zone of the Trinity Aquifer may be decrease to a level so that some wells completed to shallower depths may need to be drilled deeper because the pump has been lowered as far as it can. This might occur in wells close to the EP wellfield that are not completed to the bottom of the Middle Zone of the Trinity Aquifer but were completed at a shallower depth within the Middle Zone.

We recommend identification of surrounding wells to establish a network for which a comprehensive monitoring program can be established to measure water levels at least quarterly (and preferably continuously in several wells) in order to:

- establish current water level conditions in the Middle Zone of the Trinity Aquifer,
- to develop an understanding of the current impact of existing demands on the aquifer,
- gain insight into the existing seasonality of water levels in the aquifer, and to
- provide a basis for discerning the impact of any future pumping by EP.

We believe ten to twenty wells should be in the program, including two or three within the EP wellfield and the remainder of the wells ranging in distance and direction from a quarter mile up to five miles from the EP wellfield. Monitoring could be performed in coordination with groundwater conservation districts.

We also recommend the development of a mitigation plan that incorporates as much detail as possible. Elements of the mitigation plan might include:

1) a program for current well owners within a prescribed distance of the EP wellfield to verify and document:
    a) current location and status of well
    b) screened interval of the well
    c) current water level in the well
2) development of mitigation rules and methodology for determining impact from EP wells on surrounding wells and the impact of surrounding wells on EP wells. To the degree possible, the rules and methodology should address:
    a) what data and scientific approaches will be used to assess impact
    b) what level of impact is mitigatable
    c) how to determine who is responsibility for impacts
    d) how to apportion responsibility for impacts, and
    e) who will fund and administer the mitigation plan.

Introduction

As requested by Braun & Gresham, LBG-Guyton Associates reviewed available data and conducted a preliminary evaluation of the proposed Electro Purification, LLC (EP) project in Hays County, Texas. The project location is approximately five miles northeast of Wimberley near the intersection of Old Kyle Road (FM 3237) and Rolling Oaks Drive (CR 369), just south of the Rolling Oaks and Sierra West neighborhoods. The location is within the boundaries of the Edwards Aquifer Authority, east of the Hays Trinity Groundwater Conservation District (HTGCD), and west of the Barton Springs/Edwards Aquifer Conservation District (BSEACD). Figure 1 illustrates the location of the project.

We conducted our work using information available from several sources including documents regarding the project posted on the City of Buda website, the HTGCD, the BSEACD, the Texas Water Development Board (TWDB), the U.S. Geological Survey (USGS), and discussions with EP's hydrogeologist. We understand EP is considering production of up to 5.3 million gallons per day for the project. Also, it is our understanding that EP anticipates completing production wells in the Middle Zone of the Trinity aquifer with the majority of production coming from the Cow Creek formation.

Review of Available Data

Data obtained and confirmed by EP's hydrogeologist (Kaveh Khorzad) indicated EP drilled and completed seven test wells in the Middle Zone of the Trinity Aquifer; EP completed three of the test wells about one year ago and the other four in within the last month. Attachment 1 contains the submitted State Well Reports for the test wells, and indicates open hole completion; that is, the well reports indicate the test wells did not isolate a particular part of the aquifer for testing. EP obtained geophysical logs for the first three test wells, which aided in identifying specific geologic units at each test well site. The four wells that were completed recently (in 2015) installed surface casing to a depth ranging between 520 and 580 feet below ground level (bgl). LBG-Guyton assumes the intent may have been to seal off the gypsum beds located near the base of the Upper Glen Rose, which would contribute water of poor quality to an open-hole well completion. The first three test wells appeared to attempt to seal through the Edwards Group only.

EP conducted production testing at the first three test well sites by pumping the well at a relatively constant rate and measuring water levels in the production well. For two of the tests, the water levels in one or more other test wells were also recorded during the production testing. These tests allowed LBG-Guyton to perform a preliminary assessment of the hydraulic properties of the local aquifers. Charts illustrating our evaluation of the pumping tests are included in Attachment 2.

We plotted the test wells on a map using on the coordinates provided on the State Well Reports. Based on the where the wells plotted, it appeared the reported coordinates may be inaccurate; therefore, we contacted Mr. Khorzad and he provided the accurate coordinates for the drilled test well locations. Using the plotted locations, we created an approximately five-mile buffer zone around the test wells within which to plot the location of known wells, determine or verify the completion of wells, and determine the potential effects on those wells. We did not attempt to identify all the wells at this stage of our analysis, but rather those that were in publicly available databases and that could be located with reasonable accuracy. It is assumed that impacts on unreported wells will be comparable to the impacts estimated for the reported wells if they are screened in the Middle Zone of the Trinity Aquifer. To verify or assign the aquifer from which a well within the five-mile buffer zone is producing, we calculated the elevation of the top and bottom of the well's open interval then compared the elevations to the elevations of the tops of the formations as reported in the Hydrogeologic Atlas of the Hill Country Trinity Aquifer (Wierman and others, 2010).

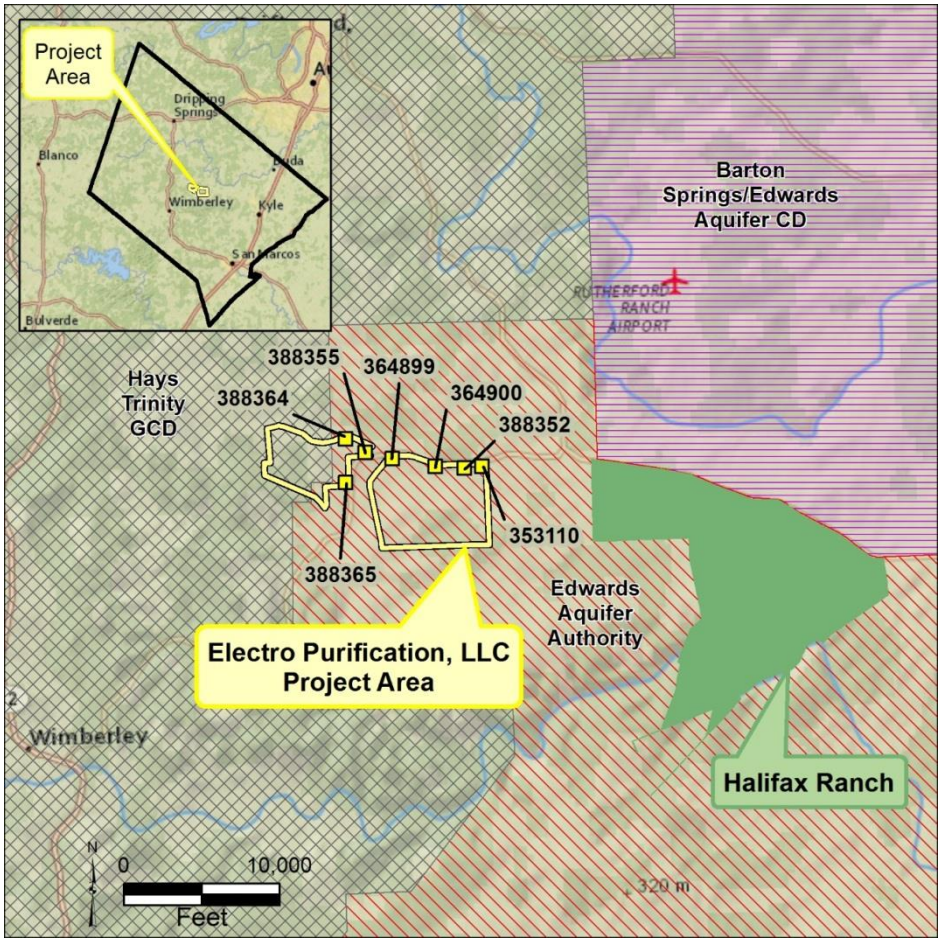

Figure 1. Location Map. Well locations are based on coordinates reported on the State Well Report for each EP well. Well Id is the Tracking Number on the State Well Report.

Local Geology

The lowermost section of the Edwards Group (Dolomitic and Basal Nodular Members) and the Upper Glen Rose Member are the prevalent surficial geologic formations near the site (Figure 2). The Edwards crops out as topographic highs within numerous fault blocks (Figure 3).

The Trinity Group consists of two distinct formations, namely, the Glen Rose and the Travis Peak, which are Cretaceous formations. The Travis Peak Formation underlies the Glen Rose Formation and contains calcareous sands and silts, conglomerates, and limestones. The Travis Peak is subdivided, in descending order, into the Hensel, Cow Creek, Hammett, Sligo, and Hosston members. The Hosston is also called the Sycamore Sand (a basal conglomerate) where it crops out in northern Hays County at Pedernales Falls State Park. The Pedernales River Valley in the northern tip of Hays County exposes the entire sequence of Cretaceous formations below the Upper Glen Rose Limestone.

The individual members of the Travis Peak formation thicken towards the southeast, thus the individual formations can be more readily subdivided with increased distance from the outcrop. The full sequence of Cretaceous age formations is approximately 1,000 feet thick in the Wimberley area and is estimated to be approximately 1,200 to 1,300 feet thick near the study area.

According to the BSEACD, in the area surrounding the proposed well field the Hensel is a silty dolomite that also contains some thin shale and carbonate layers. The BSEACD has determined the lithologic characteristics of the local Hensel Formation via various investigative tools such as geophysical logs, cuttings, downhole cameras, and measured stratigraphic sections. The thickness of the Cow Creek is approximately 80 feet in the proposed well field (BSEACD personal communication, 2015).

We constructed a dip cross section through the proposed EP well field to develop a better understanding of the specific site geology (Figure 4). The fault locations and surface geology are based upon Geologic Atlas of Texas (GAT) mapping. The cross section and surface geology was initially constructed using USGS faults and surface geology (Blome, et. al. 2005). However, the USGS mapping has Upper Glen Rose outcropping at the well field, indicates an additional reverse fault located between well 388355 and well 364899, and maps an additional fault between 364899 and 364900. We believe the GAT representation of the local geology is more likely than other sources we considered based on the well data that was reviewed as part of our work. In order to construct a cross section in an area with significant faulting, accurate latitude, longitude, and elevation data are critical. Elevation data were from Shuttle Radar Topography Mission (SRTM) 1 Arc-Second Global, N30W99. There is some uncertainty as to the fault locations relative to the test wells; however, according to Alex Broun (personal communication, 2015) "the surface expression of

the Wimberley fault traverses roughly along 3237 and cuts between the Bridges 1 [364899] and Bridges 2 [364900] wells".

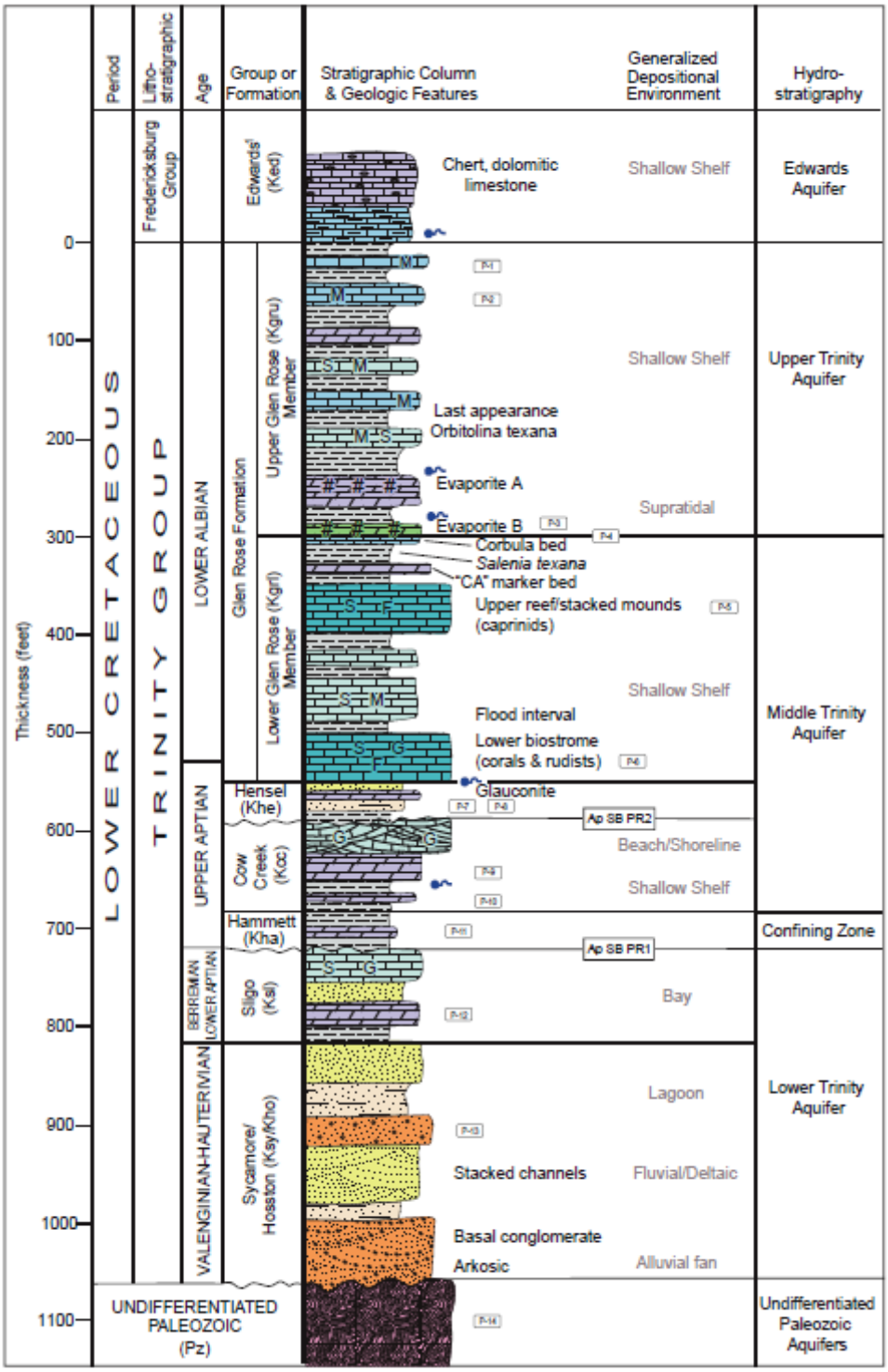

Figure 2. Stratigraphic column of the local geologic units and aquifers. Reprinted from Wierman, Broun and Hunt (2010).

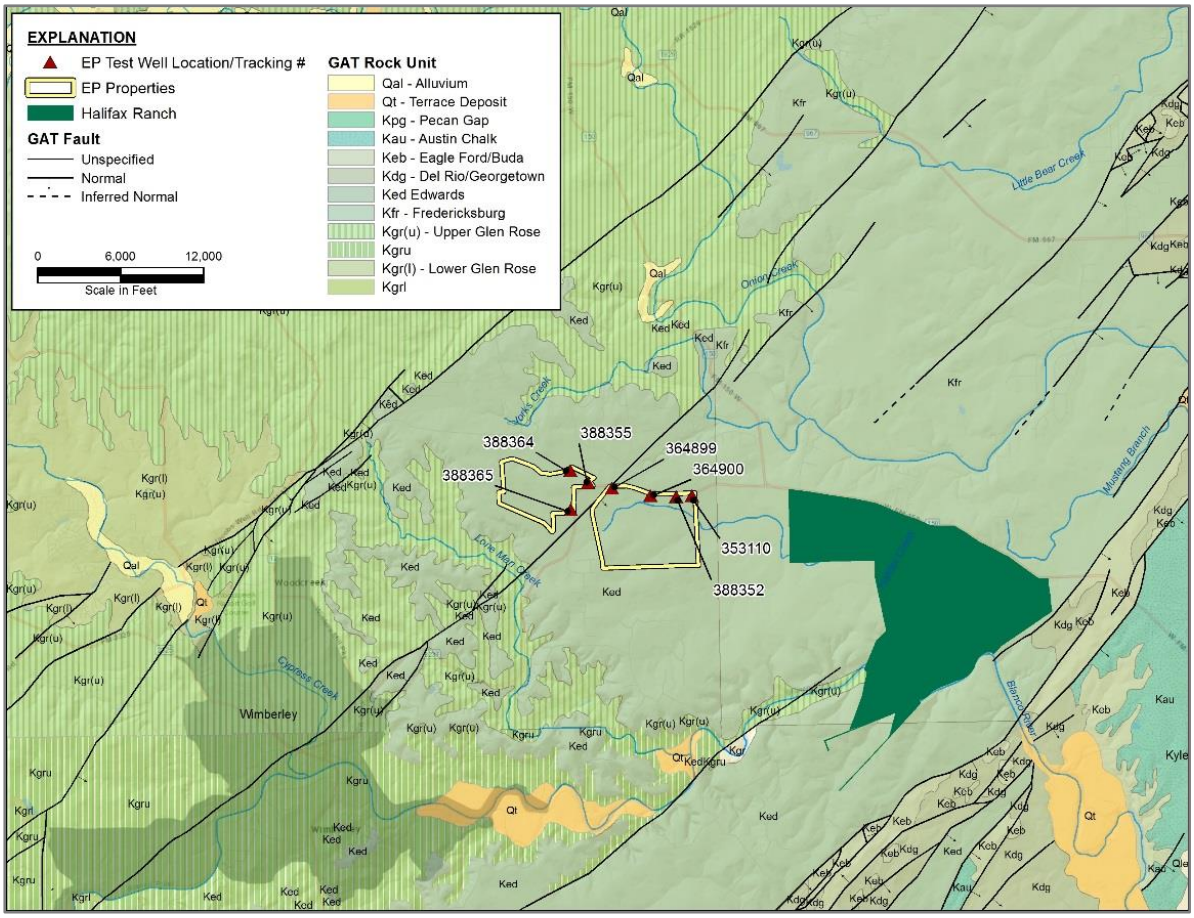

Figure 3. Surface Geology

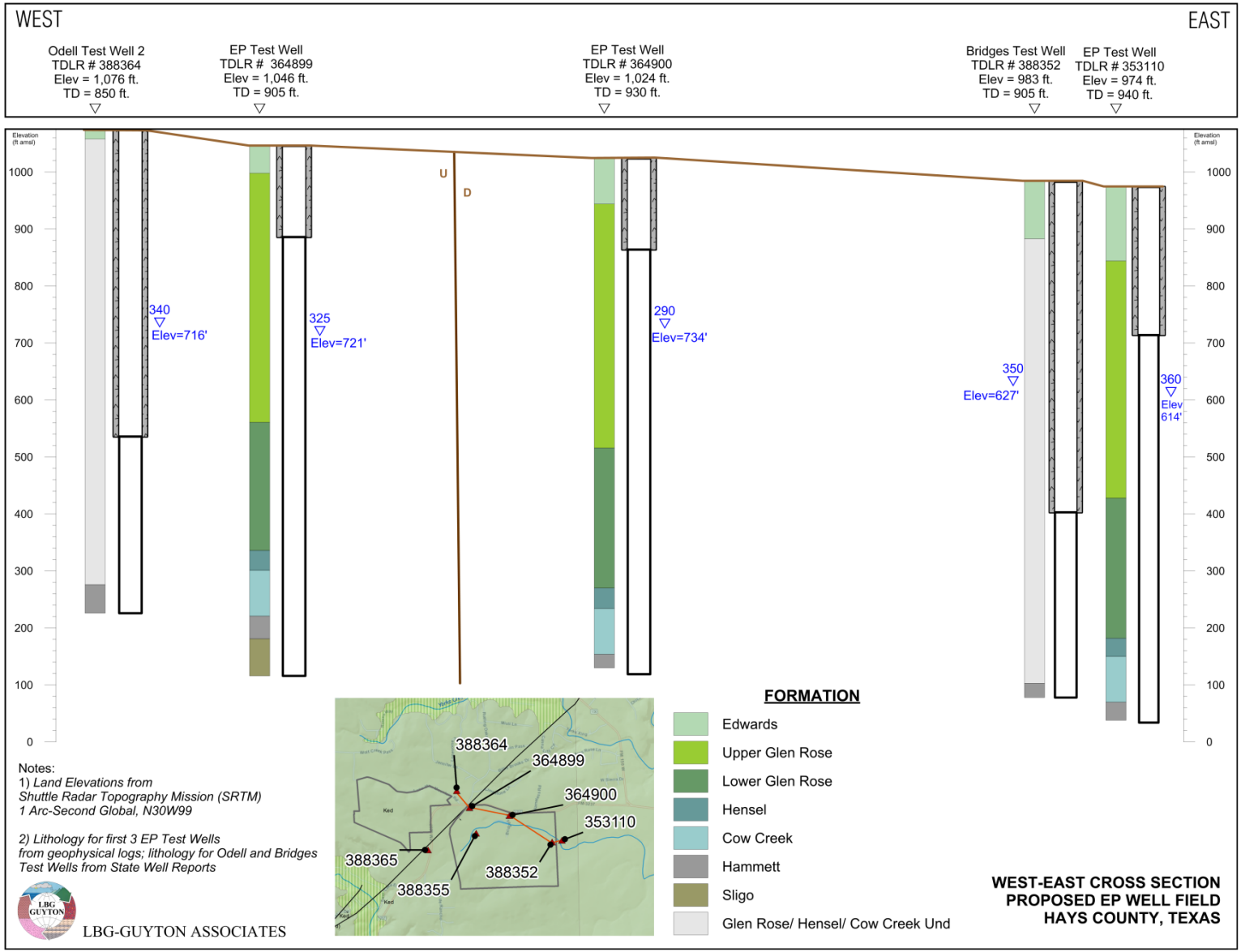

Figure 4. West-East Cross Section

Hydrogeologic Characteristics

The Trinity Aquifer is the primary source of groundwater in the area and consists of early Cretaceous age formations of the Trinity Group. The Trinity aquifer consists of three productive zones: the Upper, Middle, and Lower Trinity intervals. The Upper Trinity Zone is comprised of the Upper Glen Rose Member. The Middle Trinity contains the Lower Glen Rose, the Hensel, and the Cow Creek. The Lower Trinity contains the Sligo, Hosston, and basal Sycamore Formations. The Corbula bed (a 'hardground' located just below the second gypsum bed in the Upper Glen Rose) separates the Upper Zone and Middle Trinity Zones. The Hammett Shale separates the Middle and Lower Trinity Zones.

Within a five-mile radius of the EP test wells we identified 176 wells from the TWDB Groundwater Database and Submitted Driller's Report database. Of these 176 wells, 133 were completed in the Trinity aquifer (Upper, Middle, or Lower) and the remaining 43 were completed in the overlying Edwards aquifer. We identified 117 out of the 133 Trinity wells as being completed, at least partially, in the Middle Trinity based on the reported depth or open interval of the completed well. For the 117 Middle Trinity wells, 63 are completed in the Glen Rose or Lower Glen Rose, 14 in the Hensel, 19 in the Hensel and Cow Creek, 10 in the Cow Creek, and 11 across multiple layers of the Middle Trinity. Table 1 summarizes the number of wells identified in each aquifer within the five mile radius of the test wells. Figure 5 illustrates the locations of the identified wells. There are likely many more wells in the area as there are reportedly almost 1,600 groundwater supplied properties within two miles of the EP test well properties (Barton Springs/Edwards Aquifer Conservation District, 2015).

Table 1. Identified Number of Wells Completed in Aquifers within Five Miles of EP Test Wells.

Aquifer			Wells
Edwards/Alluvium			43
Trinity	Upper	Upper Glen Rose	9
	Middle	Glen Rose, Undiff.	9
		Lower Glen Rose	54
		Hensel	14
		Hensel/Cow Creek	19
		Cow Creek	10
		Middle Trinity, Undiff.	11
	Lower	Sligo	7
Total			**176**

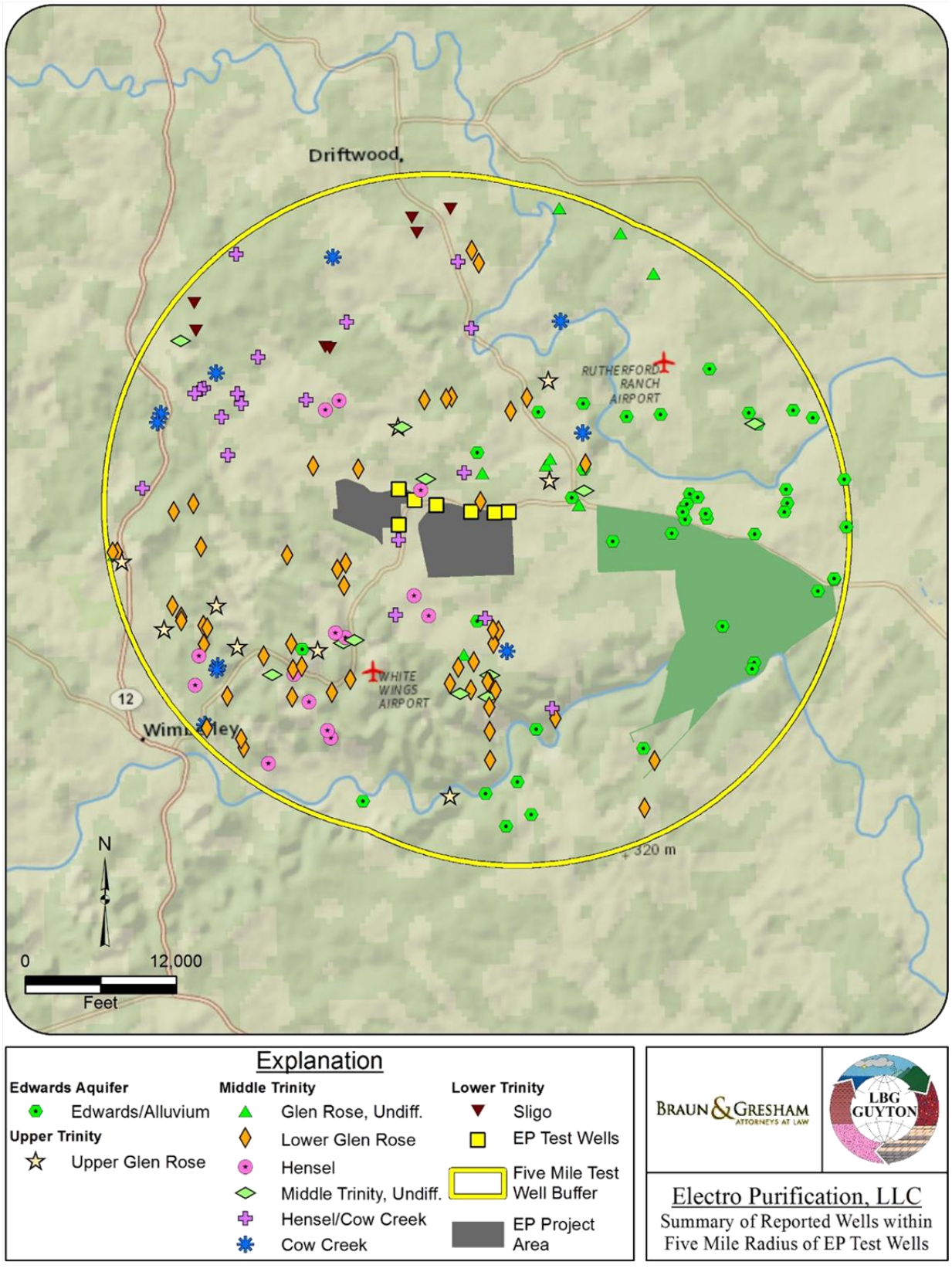

Figure 5. Identified Wells Completed in Aquifers within Five Miles of EP Test Wells.

Recharge and Flow

Recharge to the Upper Trinity Aquifer Zone occurs via precipitation on the outcrop and via losing stream channels. The Upper Glen Rose is characteristically a thick, layered sequence of limestone alternating with clayey layers. Generally, groundwater tends to perch on top of the clayey layers and will discharge via springs and seeps where the saturated zone intersects a topographic low. Thus there are both vertical and horizontal components to flow and recharge within the Glen Rose Formation. Wells completed in the Upper Trinity typically produce small volumes of groundwater suitable for livestock, and/or domestic supply.

Recharge to the Middle Trinity aquifer typically occurs via karst features, faults and fractures along stream channels and via precipitation on the sandy facies of the Hensel and Cow Creek outcrops in Blanco River watershed and the Pedernales River channel located in Blanco and northern Hays Counties. Additionally, local recharge occurs to the Hensel and Cow Creek Formations in a losing section of the Blanco River located east of the Blanco-Hays County line along the western edge of the Balcones fault zone. The Hensel Formation transitions from a sandy facies to a shaley facies near the study area, thus it is not a productive unit of the Middle Trinity aquifer in the area near the proposed well field; however, approximately four miles east of the study area, the Hensel is relatively productive and contains relatively good quality water. If it is primarily a shaley facies, it essentially acts as a semi-confining unit for the Cow Creek Formation, but in some areas it may be hydraulically connected to the Lower Glen Rose. Downward leakage from the sandy Hensel also recharges the Cow Creek Formation. Additional data and research are required to better understand the dynamics of recharge and its effect on the aquifers and wells in the area.

The Lower Trinity is primarily recharged to the north and west via leakage from surrounding units where the Hammett Shale and Cow Creek are not present (the Pearsall Formation) although minimal recharge does occur in the Pedernales River basin in eastern Blanco and northern Hays Counties. Recent studies conducted by the BSEACD suggests that recharge to the Lower Glen Rose Member that occurs within the Blanco River watershed is more significant than that portion of recharge that occurs within the Pedernales River basin, especially near the proposed well field.

Regional groundwater flow within the Trinity aquifers is primarily from west to east. Locally, the "en echelon" faults associated with the Balcones Fault Zone can either function as primary and/or secondary groundwater flow paths between adjacent faulted formations or in some cases, they may function as hydrogeological barriers to flow.

There are numerous occurrences of relay ramps within the Balcones Fault Zone (Figure 6). Relay ramps are areas that occur between the endpoints (or tips) of en echelon or parallel faults as a result of tensional forces. It is not uncommon for cross-cutting faults to transect the relay ramp as a result of the same tensional forces. (Clark and Journey, 2006). The tips of the faults are typically the areas

with the greatest faulting, fracture density and deformation as a result of torsion or twisting that occurs around these fault tips, therefore, these areas can provide excellent hydrogeological communication between adjacent and seemingly disconnected en echelon faults. (Ferrill and others, 2003). Conceptually, the direction of flow follows the "Z" pattern of the relay ramp, both laterally and vertically. Relay ramps occur on both regional and local scales (Hovorka and others, 1995).

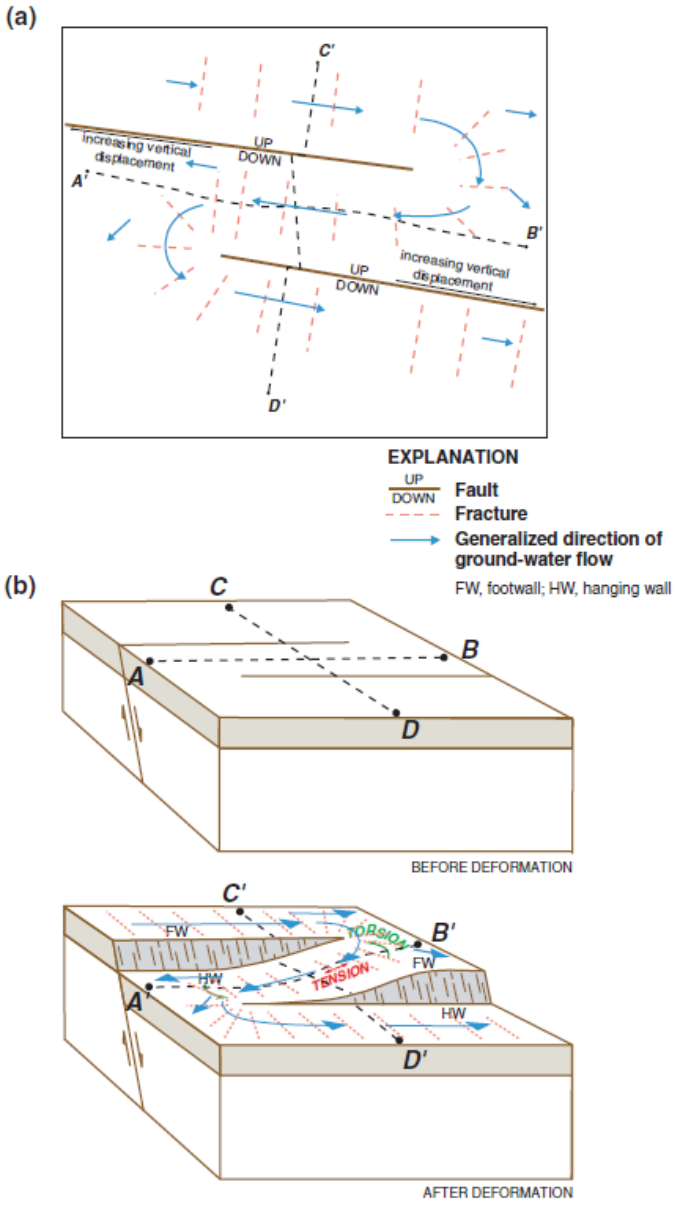

Figure 6. Relay Ramp. (Source: Clark and Journey, 2006).

Hydraulic Properties

The hydraulic conductivity of an aquifer is a value that indicates how rapidly water moves through the rock. Transmissivity is a measure of the overall productivity of the aquifer and is equal the hydraulic conductivity multiplied by the saturated thickness of the aquifer. Transmissivity is a value that is estimated from pumping tests and is commonly expressed in units of gallons per day per foot (gpd/ft). Upon review of the pumping tests conducted by EP and considering potential errors associated with the measurements and calculations, we estimated a reasonable transmissivity value range for the local Middle Trinity Zone is 2,000 to 6,000 gpd/ft. This transmissivity range is similar to the values presented in *Compilation of Pumping Tests in Travis and Hays Counties, Central Texas* (Hunt, et al., 2010).

Another important hydraulic property that relates to how water is stored and released from an aquifer is the storage coefficient. The storage coefficient is typically estimated from a pumping test by measuring water level decline caused by the pumping well in at least one nearby non-pumping well. In the project area, the Middle Trinity Zone is confined (that is, water levels rise above the top of the aquifer in wells completed in the aquifer) and our experience indicates the storage coefficient is typically between 0.00001 and 0.0001. The storage coefficient describes the quantity of water that is released from an aquifer as the water level is reduced. All other factors being equal, higher values of storage indicate that an aquifer will yield more groundwater when pumping reduces water levels. From the available observation well measurements for this study, we estimated a storage coefficient for the aquifer of about 0.00003. Table 2 summarizes the values we determined from our preliminary review of the pumping test data.

Table 2. Estimated Hydraulic Properties from Preliminary Review of Pumping Test Data.

Tested Well	Transmissivity	Storage Coefficient
1	2,000 to 4,500 gpd/ft	N/A
2	1,500 to 3,500 gpd/ft	0.00003
3	1,000 gpd/ft	N/A

When water levels fall below the top of the aquifer, the aquifer becomes unconfined and, as discussed later, the specific yield strongly influences how rapidly water levels decline. The specific yield is a value that determines an unconfined aquifer's ability to store and release water. This value represents the volume of water that will drain under atmospheric conditions from a unit volume of a rock and in a sand aquifer is typically between 0.1 and 0.3. However, the Cow Creek Limestone is a calcareous sequence aquifer that is incapable of storing and releasing the same volume of water as a comparable volume of sand aquifer and may be 10 times less than the specific yield for a sand aquifer.

As a zone of permeable limestone, the Cow Creek can locally exhibit comparatively high values of hydraulic conductivity and storativity. The potential presence of higher-than-expected values is due to the karstic nature of the aquifer which refers to the fractures and solution openings in the limestone through which groundwater flows most readily. However, if present in the EP area, the extent of the higher-than-expected hydraulic properties should be investigated through longer-term aquifer testing and water level monitoring.

Evaluation of Potential Drawdown Due to Production

To evaluate how much drawdown may occur due to production from the EP well field we conducted several simulations using the Theis Non-Equilibrium Equation (1935). The solution to the Theis equation assumes an infinitely extensive, homogeneous, isotropic aquifer and does not consider vertical leakage or hydraulic boundaries (e.g., barrier faults). In the real world, these assumptions are never satisfied. Because of the many uncertainties associated with flow through the Middle Trinity aquifer and the assumptions associated with the Theis model, the drawdown calculations should be considered 'ballpark' estimates of the water level decline due to the proposed production. For example, if the faults in the area inhibit groundwater flow toward the wells, then the drawdown may be greater than calculated. On the other hand, if the area-wide water level declines (that is, the cone of depression) extend out and intercept a source of recharge, then the water level declines may be less than calculated, as would be the case if significant vertical recharge occurs. The anisotropy (differences in the ability for water to move through the aquifer in various directions) of the aquifer is not included in the calculation and existing anisotropy could result in different magnitudes of drawdown depending on the direction a well is located from the EP well field.

An additional limitation of the method used to estimate the drawdown is that it is not appropriate for calculating the drawdown once water levels fall below the top of the aquifer. Therefore, we limited our reporting of results to scenarios where the calculated drawdown 0.5 miles from the well field was less than 500 feet. While there are many limitations to consider, the drawdown calculation provides a great deal of insight into the potential effects of production from the proposed well field. This method allows for rapid calculation of the potential drawdown due to pumping from a well and is a well-established method for conducting these types of assessments. For the evaluation we considered three different pumping scenarios:

1. Pumping 1.5 million gallons per day (MGD)
    a. 0.5 MGD to meet the first year of EP's contract with Goforth SUD
    b. 1.0 MGD for the City of Buda
2. Pumping 3.0 MGD to meet the full potential amount for Goforth SUD
3. Pumping 5.3 MGD
    a. 3.0 MGD to Goforth SUD
    b. 1.0 MGD to the City of Buda
    c. 1.3 MGD to Anthem

For each of these pumping scenarios we conducted calculations for 1 year and 30 years with the pumping divided evenly between the seven reported test well locations.

For the initial calculations, we assumed an aquifer transmissivity of 4,000 gpd/ft (near the maximum from the pumping tests) and a storage coefficient of 0.00003. For the final pumping scenario, we also performed the calculations assuming the storage coefficient of the aquifer was slightly higher

than the tests suggested. For these calculations we also evaluated a range of transmissivity values from 2,000 to 6,000 gpd/ft, as discussed previously as a reasonable range for the Middle Zone of the local Trinity Aquifer. Table 3 summarizes the parameters for each scenario.

Table 3. Scenarios for Calculated Potential Drawdown.

Scenario	Pumping Rate (MGD)	Pumping Time (Years)	Transmissivity (gpd/ft)	Storage Coefficient (dim)
1	1.5	1	4,000	0.00003
2	1.5	30	4,000	0.00003
3	3.0	1	4,000	0.00003
4	3.0	30	4,000	0.00003
5	5.3	1	4,000	0.00003
6	5.3	30	4,000	0.00003
7	5.3	1	2,000	0.0001
8	5.3	30	2,000	0.0001
9	5.3	1	4,000	0.0001
10	5.3	30	4,000	0.0001
11	5.3	1	6,000	0.0001
12	5.3	30	6,000	0.0001

Attachment 3 contains maps illustrating the simulated drawdown under the first three scenarios. Table 4 summarizes the drawdown away from the well field for each scenario.

Table 4. Summary of Calculated Drawdown (feet of water level decline).

	Distance from Well Field (miles)						
Scenario	**0.5**	**1.5**	**2.5**	**3.5**	**4.5**	**5.5**	**6.5**
1	170	150	130	110	100	90	80
2	280	250	230	210	200	190	180
3	350	300	260	220	200	170	160
4	**Simulation Exceeds 500 feet of Drawdown**						
5	**Simulation Exceeds 500 feet of Drawdown**						
6	**Simulation Exceeds 500 feet of Drawdown**						
7	**Simulation Exceeds 500 feet of Drawdown**						
8	**Simulation Exceeds 500 feet of Drawdown**						
9	490	400	330	270	220	190	160
10	**Simulation Exceeds 500 feet of Drawdown**						

	Distance from Well Field (miles)						
Scenario	**0.5**	**1.5**	**2.5**	**3.5**	**4.5**	**5.5**	**6.5**
11	350	290	250	210	180	150	130
12	**Simulation Exceeds 500 feet of Drawdown**						

In Table 4, for Scenario 5, which is pumping 5.3 MGD for 1 year, the calculated drawdown near the well field is greater than 500 feet. However, it is possible that the proposed EP wells could still operate under unconfined conditions. If the storage coefficient and transmissivity are actually greater than the current pumping tests suggest, Scenario 11 indicates the pumping would not cause as much drawdown and the effects would be about 350 feet of decline near the well field. This difference in simulated effect illustrates the importance of a reasonably accurate determination of the aquifer storage coefficient for assessing the potential water level drawdown in nearby wells. The only difference in Scenario 9 from Scenario 5 is an increase in the storage coefficient value, yet the calculated drawdown for Scenario 9 is much less.

As mentioned, there is a much higher degree of uncertainty associated with the calculated drawdown after 30 years of production. As Table 4 shows, only Scenario 2 results in less than 500 feet of drawdown near the well field after 30 years. EP measured water levels in the test wells at about 300 to 350 feet below ground level, but the top of the Cow Creek is only about 700 to 800 feet below ground level. To maintain water levels above the top of the formation, only about 450 feet of drawdown could occur and the EP wells would be essentially 'dry' if water levels drop by much more than 500 feet. Figure 7 schematically illustrates the location of the current potentiometric surface (the upper blue line) and the location of the potentiometric surface (lower blue line) if the water level declines 500 feet.

As mentioned previously, the specific yield of the aquifer will strongly influence how water levels continue to decline if they fall below the top of the aquifer. Most of the scenarios presented above indicate that near the proposed well field the water level would fall below the top of the aquifer relatively soon after production began. After the water level in the aquifer declined to below the top of the aquifer, the rate of decline would slow three to four miles away from the well field. However, water level declines near the well field would continue.

Under all of the scenarios, well owners with wells completed in the Middle Zone of the Trinity Aquifer near the proposed well field would need to lower pumps in their wells. Under some of the scenarios, the owners may need to lower the pump to near the bottom of the well to maintain production for domestic use.

Importantly, these estimates of drawdown apply only to the Middle Zone of the Trinity aquifer. The three test wells used for production testing were left open to all of the Middle Trinity, but if EP completes future production wells in the Cow Creek only, then the drawdown values presented would only apply to wells tapping the Cow Creek formation though some drawdown may be experienced in shallower wells. The geologic properties of the Trinity aquifers are such that we would anticipate a limited amount of vertical flow, except potentially along faults, and a corresponding limited effect on wells completed in the Upper or Lower Trinity.

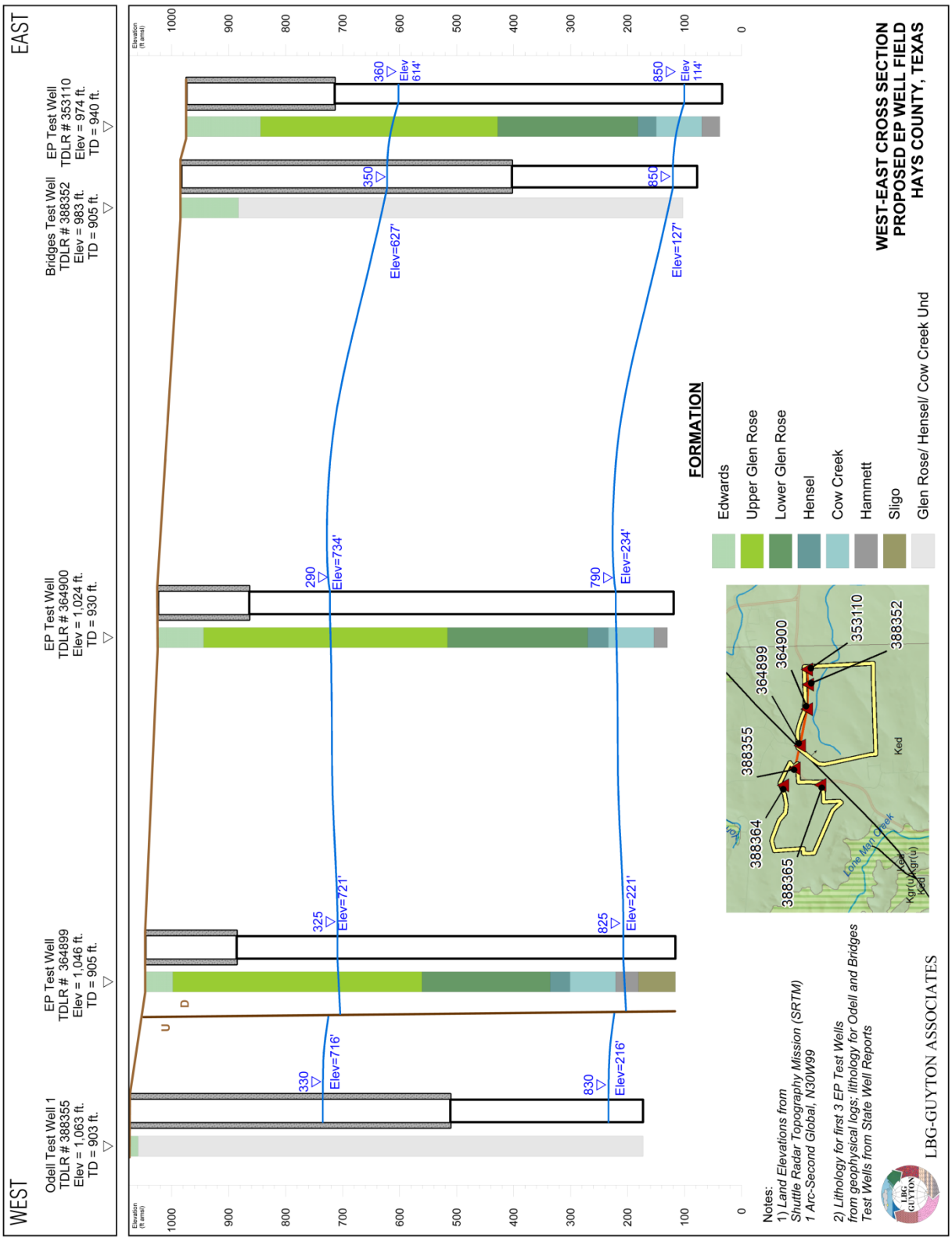

Figure 7. East-West Cross Section Showing Water Level Decline of 500 feet.

Conclusions and Recommendations

There is limited hydrogeologic data to use for developing drawdown estimates, with a high degree of certainty, given the potential long-term effects of production. The complex hydrogeologic setting adds uncertainty with regard to the calculations. However, based on our review of the available data provided by local GCDs, information obtained from public sources, and discussions with EP's hydrogeologist, we feel that the ranges of potential drawdown in the Middle Zone of the Trinity Aquifer due to production are realistic.

The estimated water level decline due to production of 1.5 MGD for 1 year is about 90 feet at 5 miles from the center of the EP wellfield and over 160 feet near the wellfield. The estimated water level decline due to production of 3 MGD for 1 year is about 170 feet at 5 miles from the center of the EP wellfield and over 350 feet near the wellfield. If EP produces 5.3 MGD for 1 year, the water level decline near the EP wellfield is over 500 feet, which would be below the top of the Cow Creek formation of the Middle Trinity aquifer. Based on the analysis and assumptions used herein, pumping between about 2 to 2.5 MGD will cause the water level in the Middle Zone of the Trinity Aquifer to decline to the top of the Cow Creek after 30 years. However, the assumptions and methods employed herein have limitations and it will be critical to assess the validity of those assumptions and methods as more data is collected from the aquifer. Evaluation and monitoring of similar wellfields in the Middle Trinity indicates that it is especially important to understand how the aquifer responds to drought conditions, continuous and peak-demand pumping, and potential recharge events.

If total production from the Middle Zone of the Trinity Aquifer (from EP and other pumpers) is high enough, water level in the Middle Zone of the Trinity Aquifer may be decrease to a level so that some wells completed to shallower depths may need to be drilled deeper because the pump has been lowered as far as it can. This might occur in wells close to the EP wellfield that are not completed to the bottom of the Middle Zone of the Trinity Aquifer but were completed at a shallower depth within the Middle Trinity.

We recommend identification of surrounding wells to establish a network for which a comprehensive monitoring program can be established to measure water levels at least quarterly (and preferably continuously in several wells) in order to:

- establish current water level conditions in the Middle Zone of the Trinity Aquifer,
- to develop an understanding of the current impact of existing demands on the aquifer,
- gain insight into the existing seasonality of water levels in the aquifer, and to
- provide a basis for discerning the impact of any future pumping by EP.

We believe ten to twenty wells should be in the program, including two or three within the EP wellfield and the remainder of the wells ranging in distance and direction from a quarter mile up to

five miles from the EP wellfield. Monitoring could be performed in coordination with groundwater conservation districts.

We also recommend the development of a mitigation plan that incorporates as much detail as possible. Elements of the mitigation plan might include:

1) a program for current well owners within a prescribed distance of the EP wellfield to verify and document:
    a) current location and status of well
    b) screened interval of the well
    c) current water level in the well
2) development of mitigation rules and methodology for determining impact from EP wells on surrounding wells and the impact of surrounding wells on EP wells. To the degree possible, the rules and methodology should address:
    a) what data and scientific approaches will be used to assess impact
    b) what level of impact is mitigatable
    c) how to determine who is responsibility for impacts
    d) how to apportion responsibility for impacts, and
    e) who will fund and administer the mitigation plan.

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Attachment 1 –
State Well Reports for EP Test Wells

STATE OF TEXAS WELL REPORT for Tracking #353110

Owner:	**Electro Purification, LLC**	Owner Well #:	**1**
Address:	**4605 Post Oak Place Dr. Houston , TX 77027**	Grid #:	**57-64-9**
Well Location:	**FM 3237 Wimberley , TX 78676**	Latitude:	**30° 02' 27" N**
Well County:	**Hays**	Longitude:	**098° 00' 12" W**
Elevation:	**954 ft.**	GPS Brand Used:	**Magellan Explorist 100**
Type of Work:	**New Well**	Proposed Use:	**Test Well**

Drilling Date:	Started: **12/18/2013** Completed: **1/4/2014**
Diameter of Hole:	Diameter: **14 in From Surface To 260 ft** Diameter: **8.5 in From 260 ft To 940 ft**
Drilling Method:	**Air Rotary**
Borehole Completion:	**Straight Wall**
Annular Seal Data:	1st Interval: **From 0 ft to 260 ft with 190TH/10hp/12bs (#sacks and material)** 2nd Interval: **No Data** 3rd Interval: **No Data** Method Used: **Pos. Displacement** Cemented By: **Whisenant & Lyle Water Services** Distance to Septic Field or other Concentrated Contamination: **N/A ft** Distance to Property Line: **500+ ft** Method of Verification: **Measured** Approved by Variance: **No Data**
Surface Completion:	**Surface Slab Installed**

Water Level:	Static level: **360 ft. below land surface on 12/23/2013** Artesian flow: **No Data**
Packers:	**6MIL Poly/Shale Packer 260'**
Plugging Info:	Casing or Cement/Bentonite left in well: **No Data**
Type Of Pump:	**No Data**
Well Tests:	**Jetted** Yield: **50+ GPM with (No Data) ft drawdown after (No Data) hours**

Water Quality:	Type of Water: **Good** Depth of Strata: **730/905 ft.** Chemical Analysis Made: **No** Did the driller knowingly penetrate any strata which contained undesirable constituents: **No**
Certification Data:	The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for

completion and resubmittal.

Company Information:	**Whisenant & Lyle Water Services P.O. Box 525 Dripping Springs , TX 78620**
Driller License Number:	**54813**
Licensed Well Driller Signature:	**Martin Lingle**
Registered Driller Apprentice Signature:	**Travis Haffelder**
Apprentice Registration Number:	**No Data**
Comments:	**TDS 675**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking number (Tracking **#353110**) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0-.5 Topsoil
.5-10 White Limestone Hard
10-20 White Red Limestone Hard
20-35 White Limestone Red Clay
35-50 White Brown Limestone Fractured
50-70 White Limestone
70-110 Gray Limestone
110-140 Gray Limestone
140-180 Brown Limestone
180-210 Gray Limestone
210-500 Brown Gray Limestone
500-540 White Tan Limestone
540-620 Tan Gray Limestone
620-660 Brown White Limestone
660-825 Tan Gray Limestone
825-890 Tan Brown Limestone Cow Creek
890-905 Gray Limestone
905-940 Gray Clay

CASING, BLANK PIPE & WELL SCREEN DATA

Dia. New/Used Type Setting From/To
10" New PVC-SDR 17IB +2'/260

STATE OF TEXAS WELL REPORT for Tracking #364899

Owner:	**Electro Purification**	Owner Well #:	**1**
Address:	**4605 Post Oak Place Dr Houston , TX 77027**	Grid #:	**57-64-6**
Well Location:	**FM 3237 Wimberley , TX 78676**	Latitude:	**30° 02' 51" N**
Well County:	**Hays**	Longitude:	**098° 01' 26" W**
Elevation:	**931 ft.**	GPS Brand Used:	**Garmin**
Type of Work:	**New Well**	Proposed Use:	**Test Well**

Drilling Date: Started: **12/10/2013**
Completed: **12/20/2013**

Diameter of Hole: Diameter: **14.75 in From Surface To 160 ft**
Diameter: **9.87 in From 160 ft To 930 ft**

Drilling Method: **Air Rotary**

Borehole Completion: **Open Hole**

Annular Seal Data: 1st Interval: **From 160 ft to 0 ft with 95 (#sacks and material)**
2nd Interval: **No Data**
3rd Interval: **No Data**
Method Used: **Pos. Disp.**
Cemented By: **DDPS**
Distance to Septic Field or other Concentrated Contamination: **150+ ft**
Distance to Property Line: **150+ ft**
Method of Verification: **Measured**
Approved by Variance: **No Data**

Surface Completion: **Alternative Procedure Used**

Water Level: Static level: **325 ft. below land surface on 12/20/2013**
Artesian flow: **No Data**

Packers: **N/A**

Plugging Info: Casing left in well: Cement/Bentonite left in well:
From (ft) To (ft) From (ft) To (ft) Cem/Bent Sacks Used
N/A

Type Of Pump: **Other: N/A**
Depth to pump bowl: **(No Data) ft**

Well Tests: **Jetted**
Yield: **350 GPM with (No Data) ft drawdown after (No Data) hours**

Water Quality: Type of Water: **Trinity**
Depth of Strata: **745 ft.**
Chemical Analysis Made: **Yes**
Did the driller knowingly penetrate any strata which contained undesirable constituents: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the

statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company Information:	**Davenport Drilling & Pump Service** **10293 FM 1560** **Helotes , TX 78023**
Driller License Number:	**50268**
Licensed Well Driller Signature:	**Rick Pfeiffer**
Registered Driller Apprentice Signature:	**No Data**
Apprentice Registration Number:	**No Data**
Comments:	**Test Well #1-temp casing left in hole**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Please include the report's Tracking number (Tracking **#364899**) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
E-log on file

CASING, BLANK PIPE & WELL SCREEN DATA

Dia. New/Used Type Setting From/To
10.75 New SDR 17 PVC 0-160

STATE OF TEXAS WELL REPORT for Tracking #364900

Owner:	**Electro Purification**	Owner Well #:	**2**
Address:	**4605 Post Oak Place Dr Houston , TX 77027**	Grid #:	**57-64-6**
Well Location:	**FM 3237 Wimberley , TX 78676**	Latitude:	**30° 02' 45" N**
Well County:	**Hays**	Longitude:	**098° 00' 54" W**
Elevation:	**974 ft.**	GPS Brand Used:	**Garmin**
Type of Work:	**New Well**	Proposed Use:	**Test Well**

Drilling Date:
Started: **1/6/2014**
Completed: **1/15/2014**

Diameter of Hole:
Diameter: **14.75 in From Surface To 160 ft**
Diameter: **9.87 in From 160 ft To 905 ft**

Drilling Method: **Air Rotary**

Borehole Completion: **Open Hole**

Annular Seal Data:
1st Interval: **From 160 ft to 0 ft with 110 (#sacks and material)**
2nd Interval: **No Data**
3rd Interval: **No Data**
Method Used: **Pos. Disp.**
Cemented By: **DDPS**
Distance to Septic Field or other Concentrated Contamination: **150+ ft**
Distance to Property Line: **150+ ft**
Method of Verification: **Measured**
Approved by Variance: **No Data**

Surface Completion: **Alternative Procedure Used**

Water Level:
Static level: **290 ft. below land surface on 1/15/2014**
Artesian flow: **No Data**

Packers: **N/A**

Plugging Info:
Casing left in well: Cement/Bentonite left in well:
From (ft) To (ft) From (ft) To (ft) Cem/Bent Sacks Used
N/A

Type Of Pump:
Other: N/A
Depth to pump bowl: **(No Data) ft**

Well Tests:
Jetted
Yield: **350 GPM with (No Data) ft drawdown after (No Data) hours**

Water Quality:
Type of Water: **Trinity**
Depth of Strata: **790 ft.**
Chemical Analysis Made: **Yes**
Did the driller knowingly penetrate any strata which contained undesirable constituents: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the

statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for completion and resubmittal.

Company Information:	**Davenport Drilling & Pump Service** **10293 FM 1560** **Helotes , TX 78023**
Driller License Number:	**50268**
Licensed Well Driller Signature:	**Rick Pfeiffer**
Registered Driller Apprentice Signature:	**No Data**
Apprentice Registration Number:	**No Data**
Comments:	**Test Well #1-temp casing left in hole**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Please include the report's Tracking number (Tracking **#364900**) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
E-log on file

CASING, BLANK PIPE & WELL SCREEN DATA

Dia. New/Used Type Setting From/To
10.75 New SDR 17 PVC 0-160

STATE OF TEXAS WELL REPORT for Tracking #388352

Owner:	**Electro Purification, LLC**	Owner Well #:	**Bridges TW#4**
Address:	**4605 Post Oak Place Dr Houston , TX 77027**	Grid #:	**57-64-9**
Well Location:	**7200 FM 3237 Wimberley , TX 78676**	Latitude:	**30° 02' 26" N**
Well County:	**Hays**	Longitude:	**098° 00' 20" W**
Elevation:	**977 ft.**	GPS Brand Used:	**Magellan Explorist 100**
Type of Work:	**New Well**	Proposed Use:	**Test Well**

Drilling Date:
Started: **1/27/2015**
Completed: **2/14/2015**

Diameter of Hole:
Diameter: **9 7/8 in From Surface To 905 ft**
Diameter: **14 3/4 in From 0 ft To 580 ft**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:
1st Interval: **From 575 ft to 565 ft with 7 Type H (#sacks and material)**
2nd Interval: **From 10 ft to 0 ft with 4 benseal (#sacks and material)**
3rd Interval: **No Data**
Method Used: **Pos Displacement**
Cemented By: **Whisenant & Lyle Water Services**
Distance to Septic Field or other Concentrated Contamination: **N/A ft**
Distance to Property Line: **100+ ft**
Method of Verification: **measured**
Approved by Variance: **No Data**

Surface Completion: **Alternative Procedure Used**

Water Level:
Static level: **350 ft. below land surface on 1/28/2015**
Artesian flow: **No Data**

Packers:
Shale packer 575'
6Mil poly 580'

Plugging Info: Casing or Cement/Bentonite left in well: **No Data**

Type Of Pump: **No Data**

Well Tests:
Jetted
Yield: **150 GPM with (No Data) ft drawdown after (No Data) hours**

Water Quality:
Type of Water: **Good TDS 1000**
Depth of Strata: **580-905 ft.**
Chemical Analysis Made: **No**
Did the driller knowingly penetrate any strata which contained undesirable constituents: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for

completion and resubmittal.

Company Information:	**Whisenant & Lyle Water Services** **PO Box 525** **Dripping Springs , TX 78620**
Driller License Number:	**54855**
Licensed Well Driller Signature:	**Brice Bormann**
Registered Driller Apprentice Signature:	**Tyler Loman**
Apprentice Registration Number:	**No Data**
Comments:	**Other driller** **Martin Lingle** **Apprentices** **Walker Dodson** **Justin Nance**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Please include the report's Tracking number (Tracking **#388352**) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0-1 rock
1-18 brown limestone
18-23 gray limestone
23-100 brown tan limestone 105 fractured
100-300 tan limestone
300-600 tan gray limestone
600-740 tan limestone
740-745 gray tan limestone clay
745-820 gray shale
820-830 gray clay
830-880 gray tan limestone
880-905 gray clay

CASING, BLANK PIPE & WELL SCREEN DATA

Dia. New/Used Type Setting From/To
10" New PVC-SDR17IB +2 -580

STATE OF TEXAS WELL REPORT for Tracking #388355

Owner:	**Electro Purification, LLC**	Owner Well #:	**Odell TW#1**
Address:	**4605 Post Oak Place Dr Houston , TX 77027**	Grid #:	**57-64-6**
Well Location:	**5801 Old Kyle Rd Wimberley , TX 78676**	Latitude:	**30° 02' 33" N**
Well County:	**Hays**	Longitude:	**098° 01' 21" W**
Elevation:	**1063 ft.**	GPS Brand Used:	**Magellan Explorist 100**
Type of Work:	**New Well**	Proposed Use:	**Test Well**

Drilling Date:
Started: **1/12/2015**
Completed: **1/20/2015**

Diameter of Hole:
Diameter: **9 7/8 in From Surface To 903 ft**
Diameter: **14 3/4 in From 0 ft To 565 ft**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:
1st Interval: **From 565 ft to 553 ft with 7 Type H (#sacks and material)**
2nd Interval: **From 10 ft to 0 ft with 2 benseal (#sacks and material)**
3rd Interval: **No Data**
Method Used: **Pos Displacement**
Cemented By: **Whisenant & Lyle Water Services**
Distance to Septic Field or other Concentrated Contamination: **N/A ft**
Distance to Property Line: **100+ ft**
Method of Verification: **measured**
Approved by Variance: **No Data**

Surface Completion: **Alternative Procedure Used**

Water Level:
Static level: **330 ft. below land surface on 1/13/2015**
Artesian flow: **No Data**

Packers:
Shale packer 560'
6Mil poly 565'

Plugging Info: Casing or Cement/Bentonite left in well: **No Data**

Type Of Pump: **No Data**

Well Tests:
Jetted
Yield: **75 GPM with (No Data) ft drawdown after (No Data) hours**

Water Quality:
Type of Water: **Good TDS 300**
Depth of Strata: **800-860 ft.**
Chemical Analysis Made: **No**
Did the driller knowingly penetrate any strata which contained undesirable constituents: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for

completion and resubmittal.

Company Information:	**Whisenant & Lyle Water Services** **PO Box 525** **Dripping Springs , TX 78620**
Driller License Number:	**54855**
Licensed Well Driller Signature:	**Brice Bormann**
Registered Driller Apprentice Signature:	**Tyler Loman**
Apprentice Registration Number:	**No Data**
Comments:	**Other driller** **Martin Lingle** **Apprentices** **Walker Dodson** **Justin Nance**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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Please include the report's Tracking number (Tracking **#388355**) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0-10 white limestone
10-17 brown limestone
17-80 gray limestone
80-85 brown limestone
85-280 gray limestone
280-885 gray tan limestone
885-900 shale gray limestone
900-903 shale

CASING, BLANK PIPE & WELL SCREEN DATA

Dia. New/Used Type Setting From/To
10" New PVC-SDR 17IB 0-565

STATE OF TEXAS WELL REPORT for Tracking #388364

Owner:	**Electro Purificaton, LLC**	Owner Well #:	**Odell TW#2**
Address:	**4805 Post Oak Place Dr Houston , TX 77027**	Grid #:	**57-64-6**
Well Location:	**4885 Loneman Mt Rd Wimberley , TX 78676**	Latitude:	**30° 03' 03" N**
Well County:	**Hays**	Longitude:	**098° 01' 36" W**
Elevation:	**1056 ft.**	GPS Brand Used:	**Magellan Explorist 100**
Type of Work:	**New Well**	Proposed Use:	**Test Well**

Drilling Date:
Started: **1/21/2015**
Completed: **2/11/2015**

Diameter of Hole:
Diameter: **9 7/8 in From Surface To 850 ft**
Diameter: **14 3/4 in From 0 ft To 540 ft**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data:
1st Interval: **From 535 ft to 525 ft with 7 Type H (#sacks and material)**
2nd Interval: **From 10 ft to 0 ft with 5 benseal (#sacks and material)**
3rd Interval: **No Data**
Method Used: **Pos Displacement**
Cemented By: **Whisenant & Lyle Water Services**
Distance to Septic Field or other Concentrated Contamination: **N/A ft**
Distance to Property Line: **100+ ft**
Method of Verification: **measured**
Approved by Variance: **No Data**

Surface Completion: **Alternative Procedure Used**

Water Level:
Static level: **340 ft. below land surface on 1/25/2015**
Artesian flow: **No Data**

Packers:
Shale packer 535'
6Mil poly 540'

Plugging Info: Casing or Cement/Bentonite left in well: **No Data**

Type Of Pump: **No Data**

Well Tests:
Jetted
Yield: **150 GPM with (No Data) ft drawdown after (No Data) hours**

Water Quality:
Type of Water: **Good TDS 220**
Depth of Strata: **540-850 ft.**
Chemical Analysis Made: **No**
Did the driller knowingly penetrate any strata which contained undesirable constituents: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for

completion and resubmittal.

Company Information:	**Whisenant & Lyle Water Services** **PO Box 525** **Dripping Springs , TX 78620**
Driller License Number:	**54855**
Licensed Well Driller Signature:	**Brice Bormann**
Registered Driller Apprentice Signature:	**Tyler Loman**
Apprentice Registration Number:	**No Data**
Comments:	**Other driller** **Martin Lingle** **Apprentices** **Justin Nance** **Walker Dodson**

IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking number (Tracking **#388364**) on your written request.

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
(512) 463-7880

DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0-2 topsoil
2-18 brown tan limestone
18-65 brown gray limestone clay
65-100 brown gray limestone
100-130 gray limestone
130-200 brown limestone
200-220 gray limestone
220-800 gray tan limestone
800-850 dark gray limestone clay

CASING, BLANK PIPE & WELL SCREEN DATA

Dia. New/Used Type Setting From/To
10" New PVC-SDR 17IB +2-540

STATE OF TEXAS WELL REPORT for Tracking #388365

Owner:	**Electro Purification, LLC**	Owner Well #:	**Odell TW#3**
Address:	**4605 Post Oak Place Dr Houston , TX 77027**	Grid #:	**57-64-9**
Well Location:	**8452 Old Kyle Rd Wimberley , TX 78676**	Latitude:	**30° 02' 22" N**
Well County:	**Hays**	Longitude:	**098° 02' 00" W**
Elevation:	**1086 ft.**	GPS Brand Used:	**Magellan Explorist 100**
Type of Work:	**New Well**	Proposed Use:	**Test Well**

Drilling Date: Started: **1/10/2015**
Completed: **1/30/2015**

Diameter of Hole: Diameter: **9 7/8 in From Surface To 845 ft**
Diameter: **14 3/4 in From 0 ft To 520 ft**

Drilling Method: **Air Rotary**

Borehole Completion: **Straight Wall**

Annular Seal Data: 1st Interval: **From 830 ft to 840 ft with 7 Type H (#sacks and material)**
2nd Interval: **From 2 ft to 10 ft with 3 benseal (#sacks and material)**
3rd Interval: **No Data**
Method Used: **Pos Displacement**
Cemented By: **Whisenant & Lyle Water Services**
Distance to Septic Field or other Concentrated Contamination: **N/A ft**
Distance to Property Line: **100+ ft**
Method of Verification: **measured**
Approved by Variance: **No Data**

Surface Completion: **Alternative Procedure Used**

Water Level: Static level: **330 ft. below land surface on 1/8/2015**
Artesian flow: **No Data**

Packers: **Shale packer 515'**
6Mil poly 520'

Plugging Info: Casing or Cement/Bentonite left in well: **No Data**

Type Of Pump: **No Data**

Well Tests: **Jetted**
Yield: **150 GPM with (No Data) ft drawdown after (No Data) hours**

Water Quality: Type of Water: **Good TDS 300**
Depth of Strata: **660-680 755-800 ft.**
Chemical Analysis Made: **No**
Did the driller knowingly penetrate any strata which contained undesirable constituents: **No**

Certification Data: The driller certified that the driller drilled this well (or the well was drilled under the driller's direct supervision) and that each and all of the statements herein are true and correct. The driller understood that failure to complete the required items will result in the log(s) being returned for

completion and resubmittal.

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DESC. & COLOR OF FORMATION MATERIAL

From (ft) To (ft) Description
0-2 topsoil
2-45 brown limestone clay
45-140 tan limestone
140-180 gray shale limestone
180-640 gray tan limestone
640-720 tan limestone
720-830 tan dark gray limestone
830-845 clay

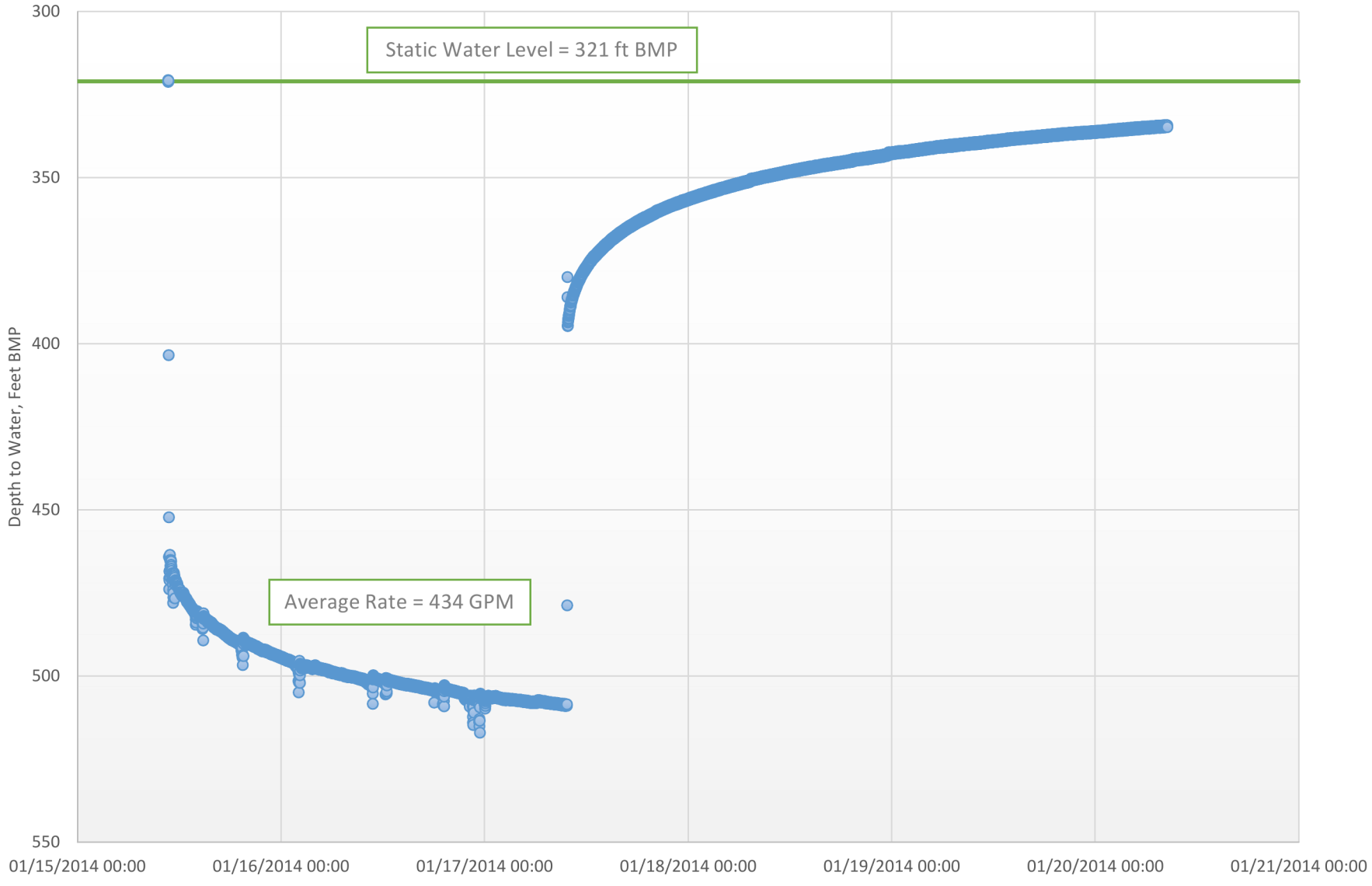
CASING, BLANK PIPE & WELL SCREEN DATA

Dia. New/Used Type Setting From/To
10" New PVC-SDR 17IB 0-520

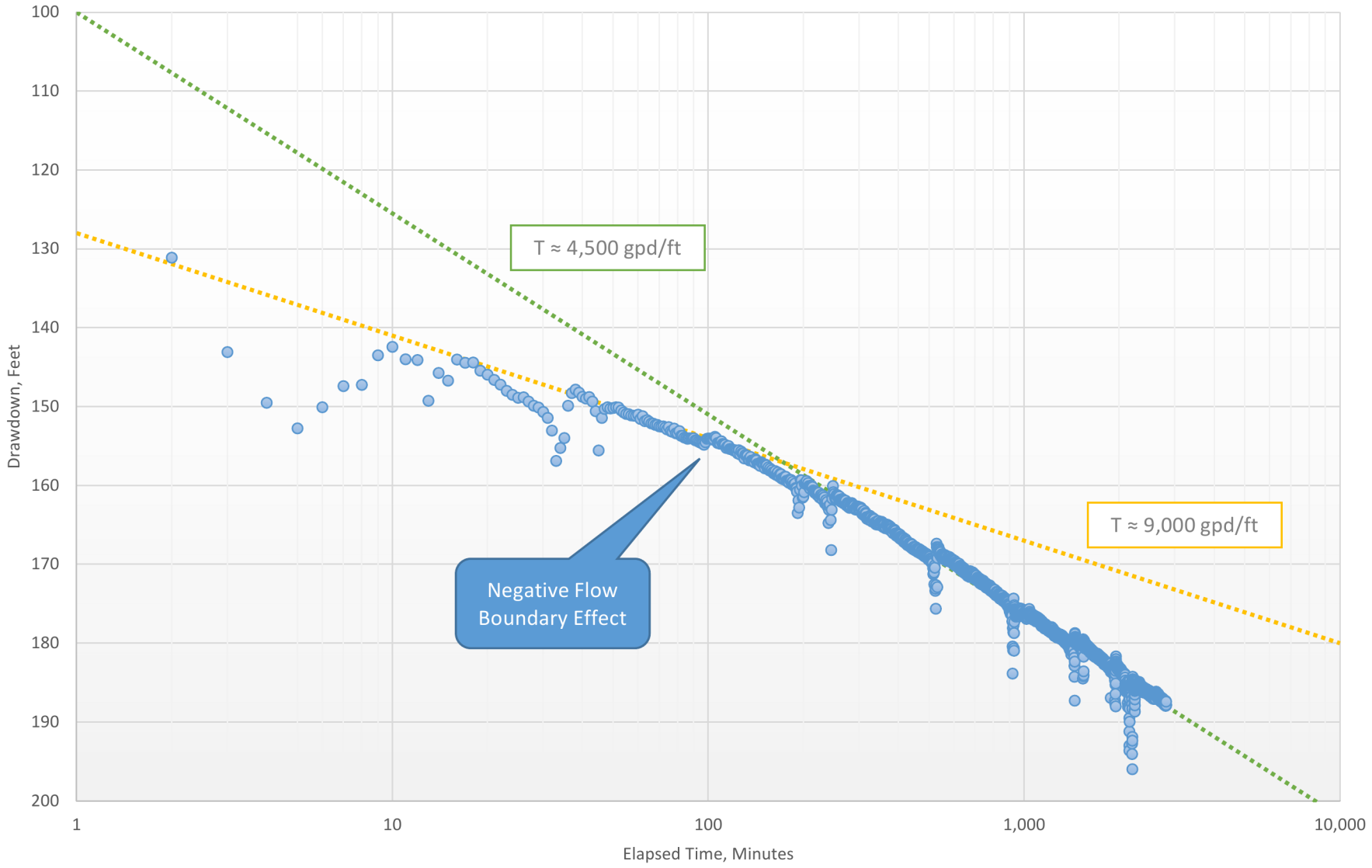
Attachment 2 –
Pumping Test Charts for EP Test Wells

EP Test Well – Tracking Number 364899

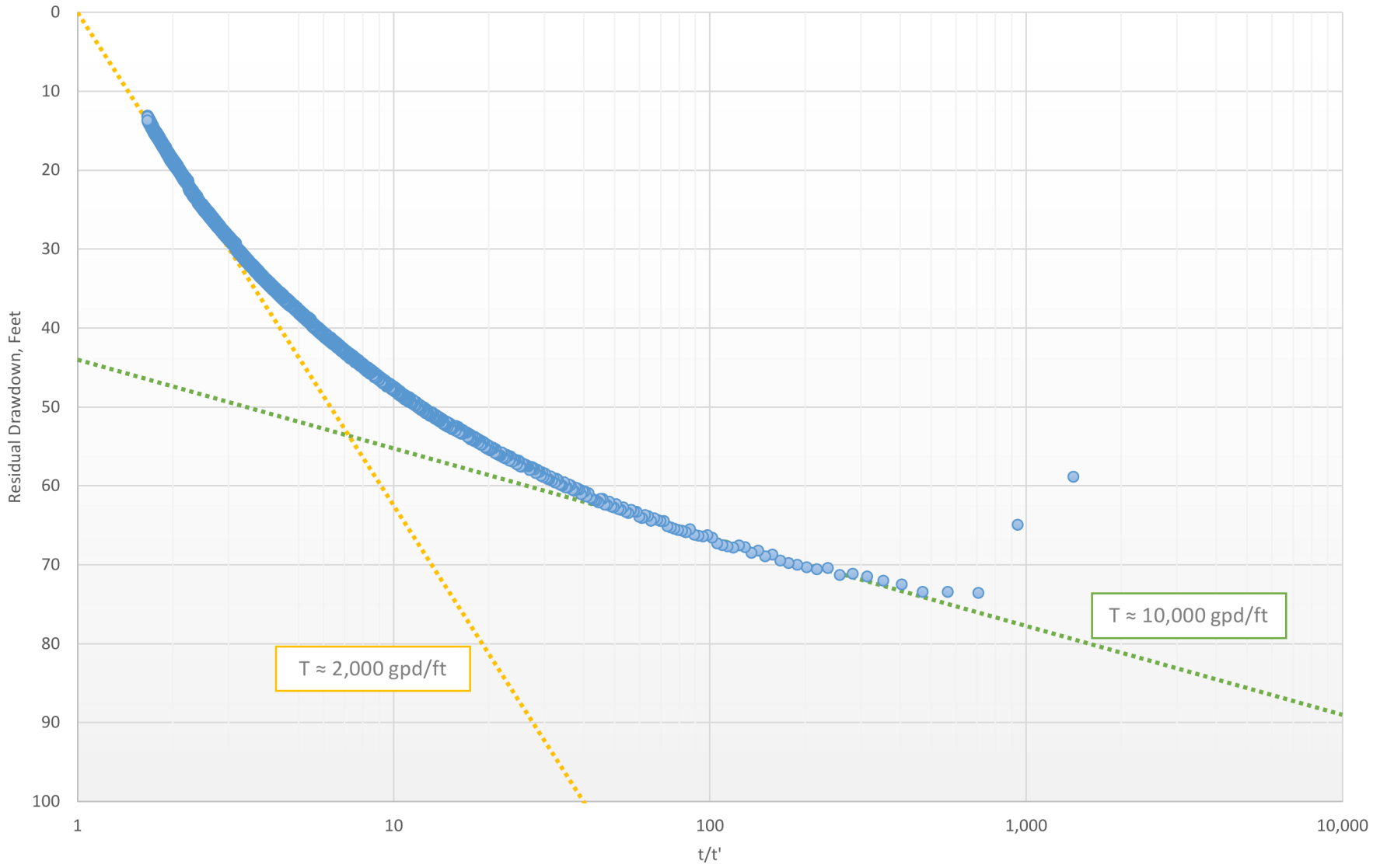
Braun and Gresham, Attorneys at Law
Electro Purification, LLC Hays County Project - EP Test Well Tracking Number: 364899
Pumping Test Hydrograph



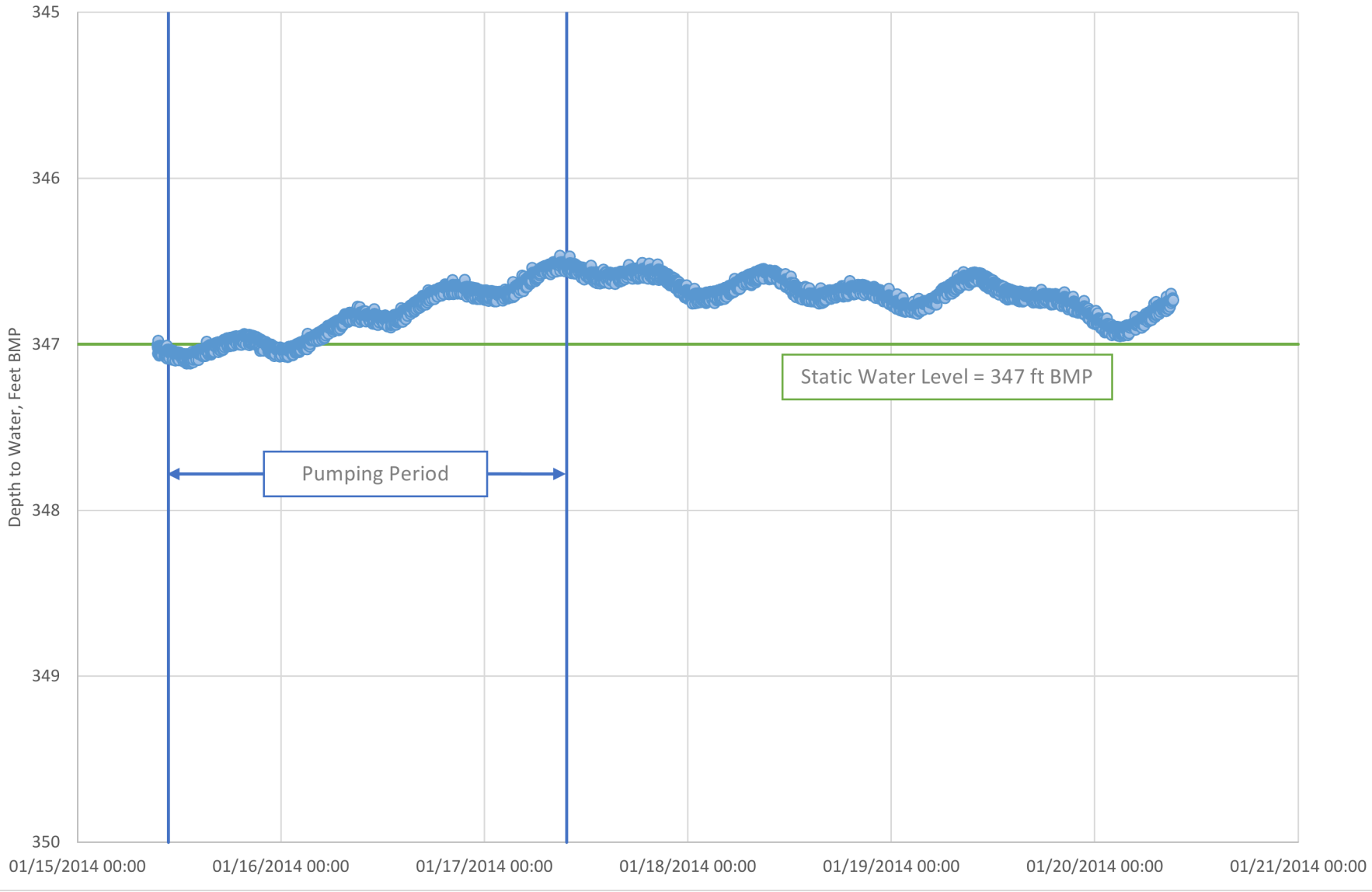
Braun and Gresham, Attorneys at Law
Electro Purification, LLC Hays County Project - EP Test Well Tracking Number: 364899
Cooper-Jacob Drawdown Analysis



Braun and Gresham, Attorneys at Law
Electro Purification, LLC Hays County Project - EP Test Well Tracking Number: 364899
Cooper-Jacob Recovery Analysis

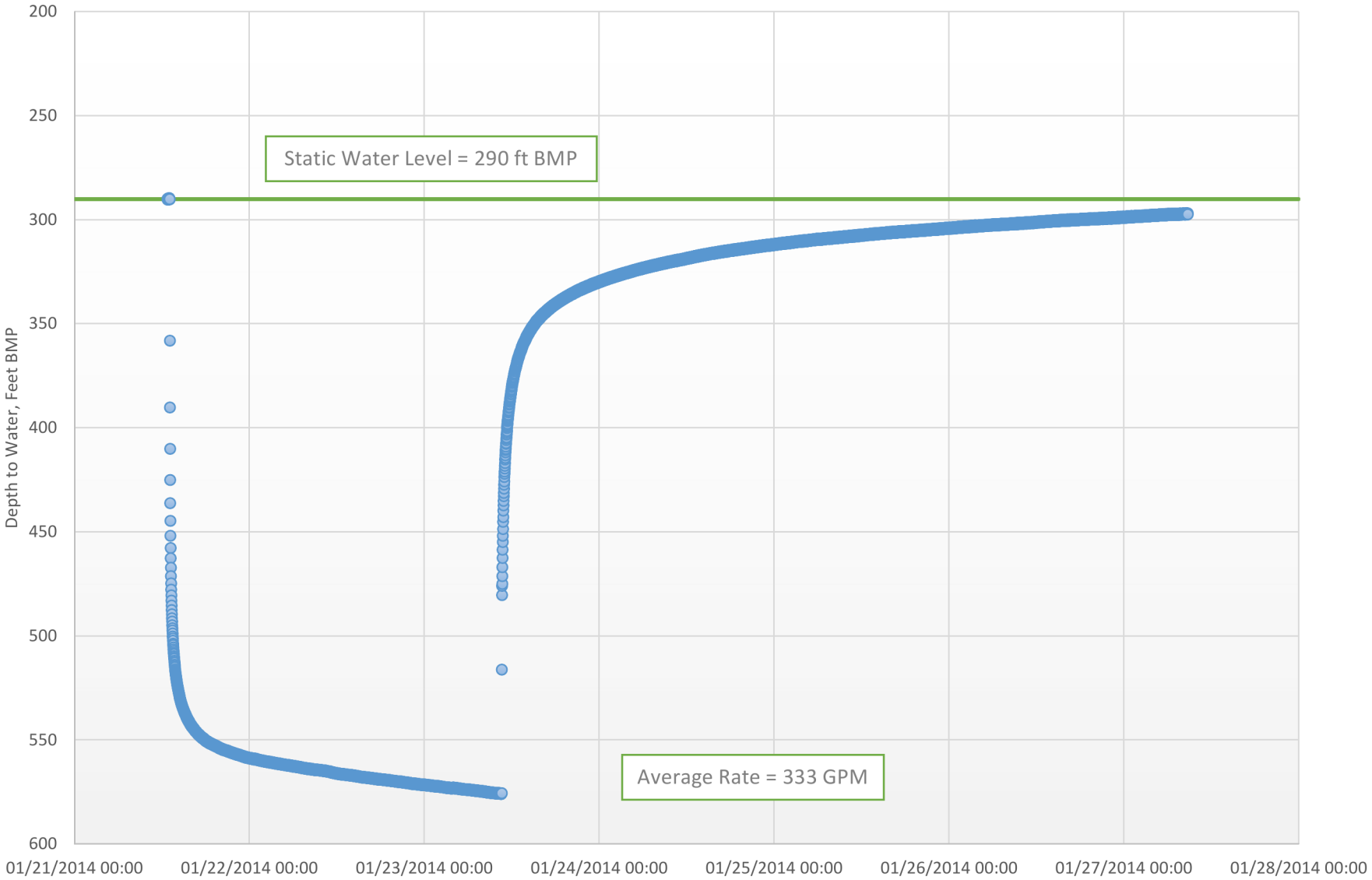


Braun and Gresham, Attorneys at Law
Electro Purification, LLC Hays County Project - EP Test Well Tracking Number: 364899
Pumping Test Hydrograph - Observation EP Test Well Tracking Number: 353110

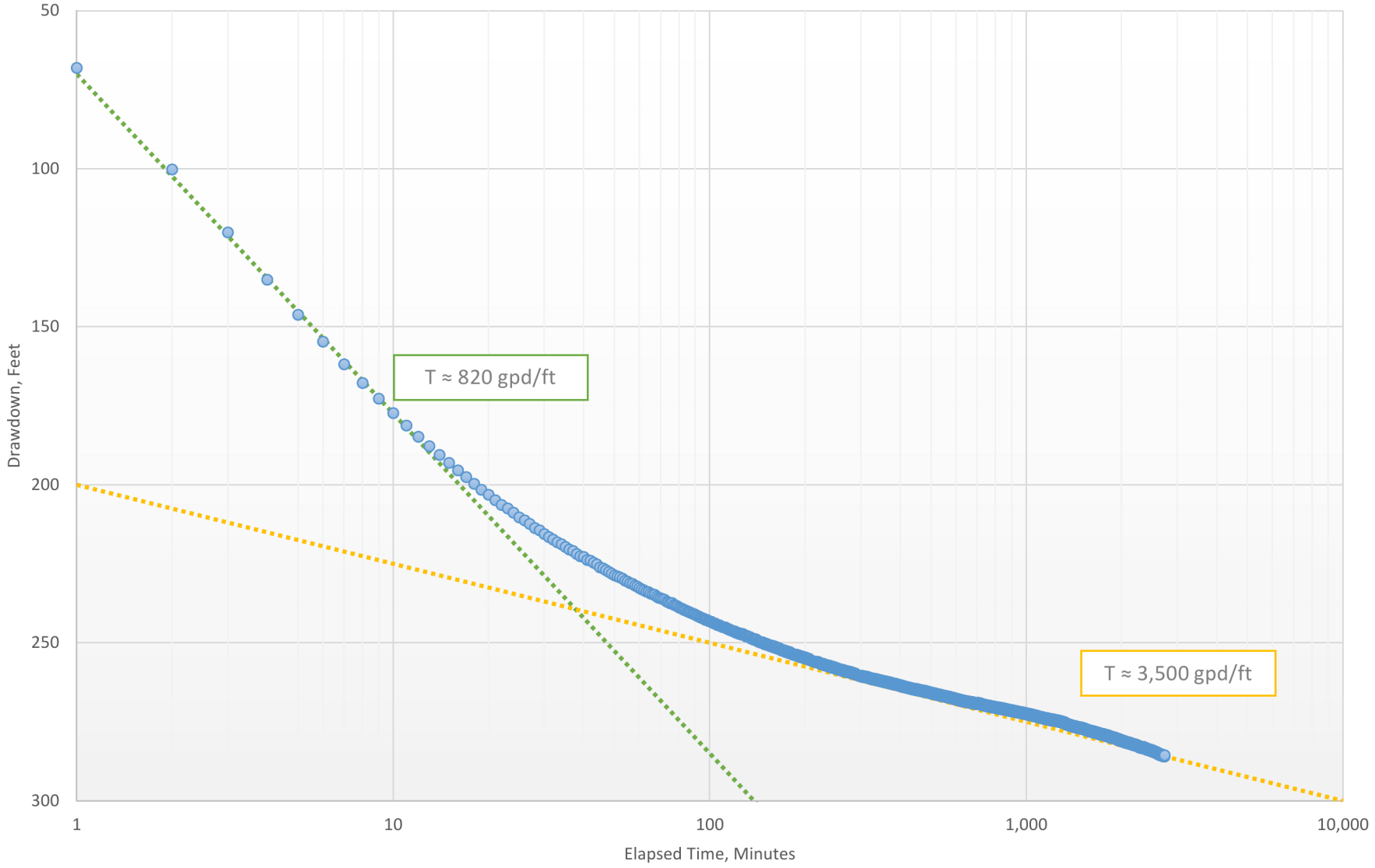


EP Test Well – Tracking Number 364900

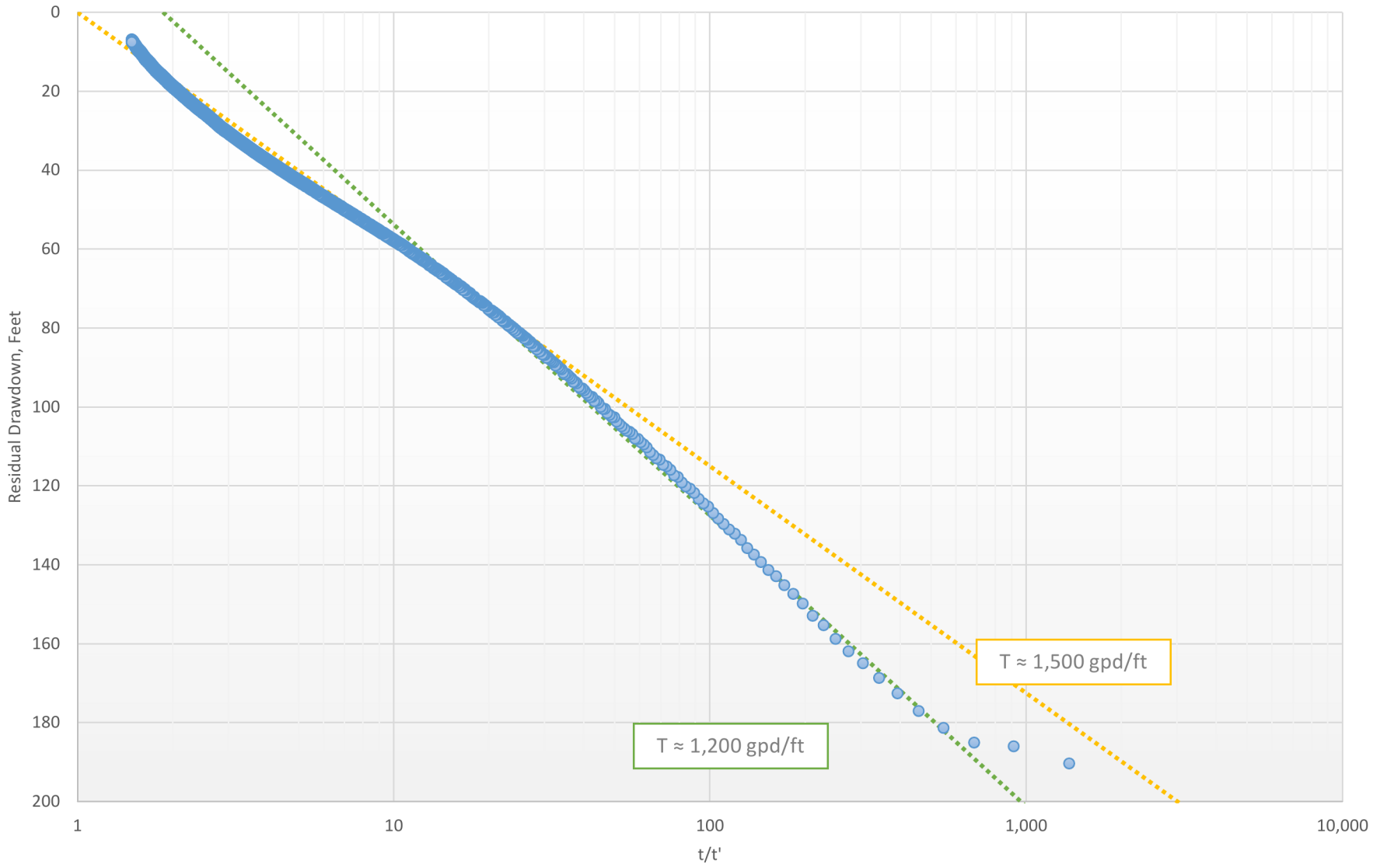
Braun and Gresham, Attorneys at Law
Electro Purification, LLC Hays County Project - EP Test Well Tracking Number: 364900
Pumping Test Hydrograph



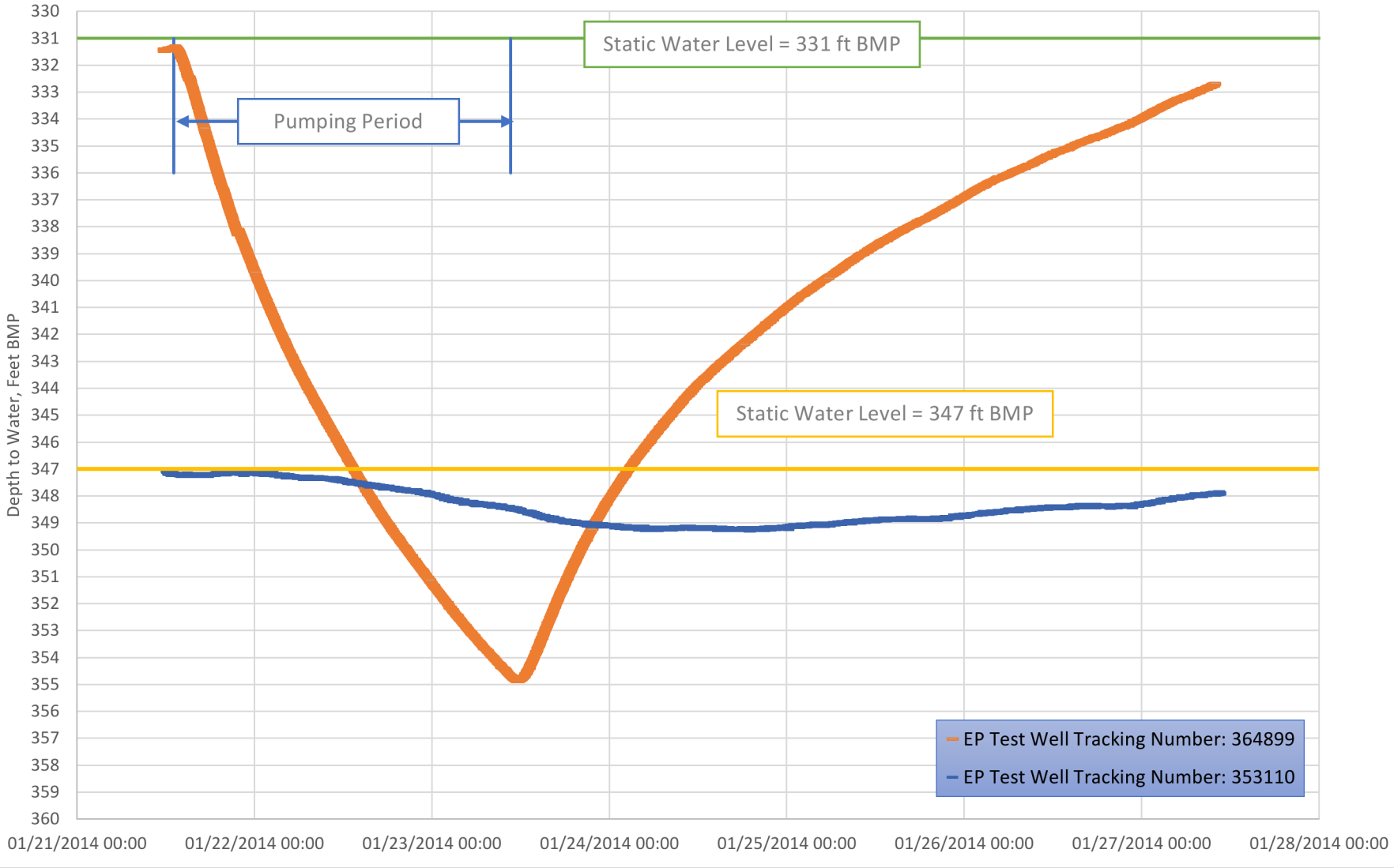
Braun and Gresham, Attorneys at Law
Electro Purification, LLC Hays County Project - EP Test Well Tracking Number: 364900
Cooper-Jacob Drawdown Analysis



Braun and Gresham, Attorneys at Law
Electro Purification, LLC Hays County Project - EP Test Well Tracking Number: 364900
Cooper-Jacob Recovery Analysis



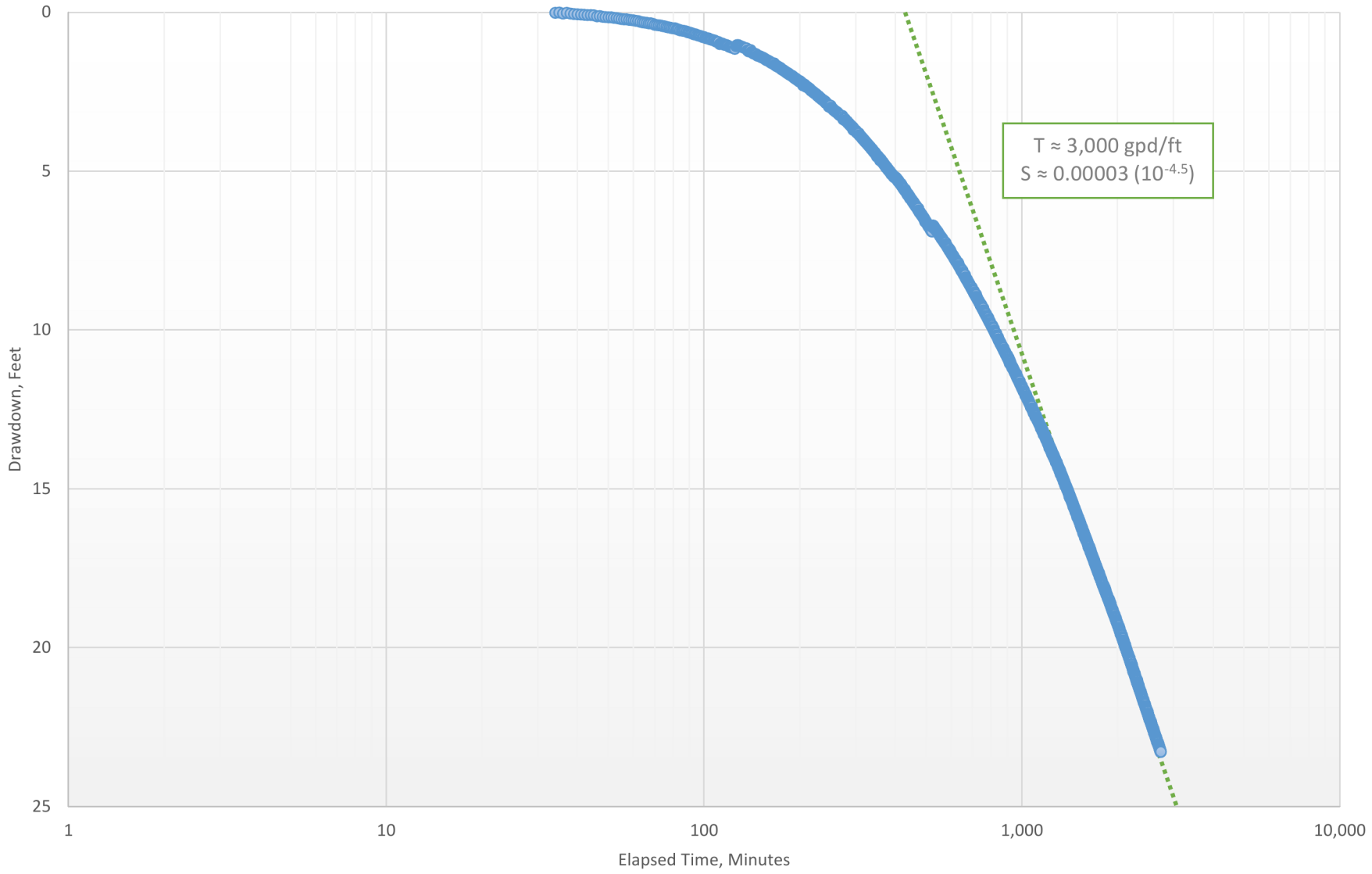
Braun and Gresham, Attorneys at Law
Electro Purification, LLC Hays County Project - EP Test Well Tracking Number: 364900
Pumping Test Hydrograph - Observation EP Test Well Tracking Number: 364899
& EP Test Well Tracking Number: 353110



Braun and Gresham, Attorneys at Law

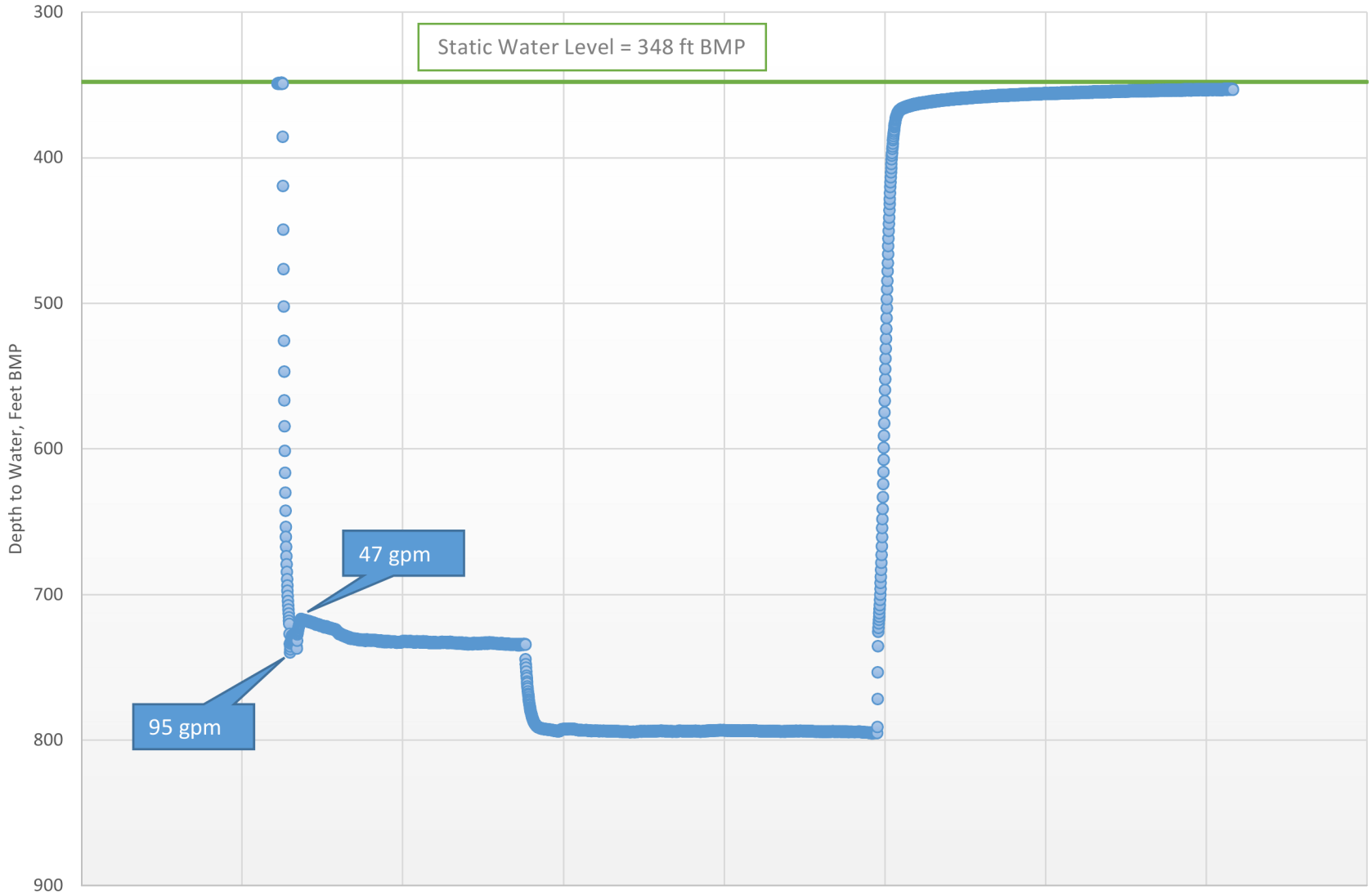
Electro Purification, LLC Hays County Project - EP Test Well Tracking Number: 364900

Cooper-Jacob Drawdown Analysis - EP Test Well Tracking Number: 364899



EP Test Well – Tracking Number 353110

Braun and Gresham, Attorneys at Law
Electro Purification, LLC Hays County Project - EP Test Well Tracking Number: 353110
Pumping Test Hydrograph



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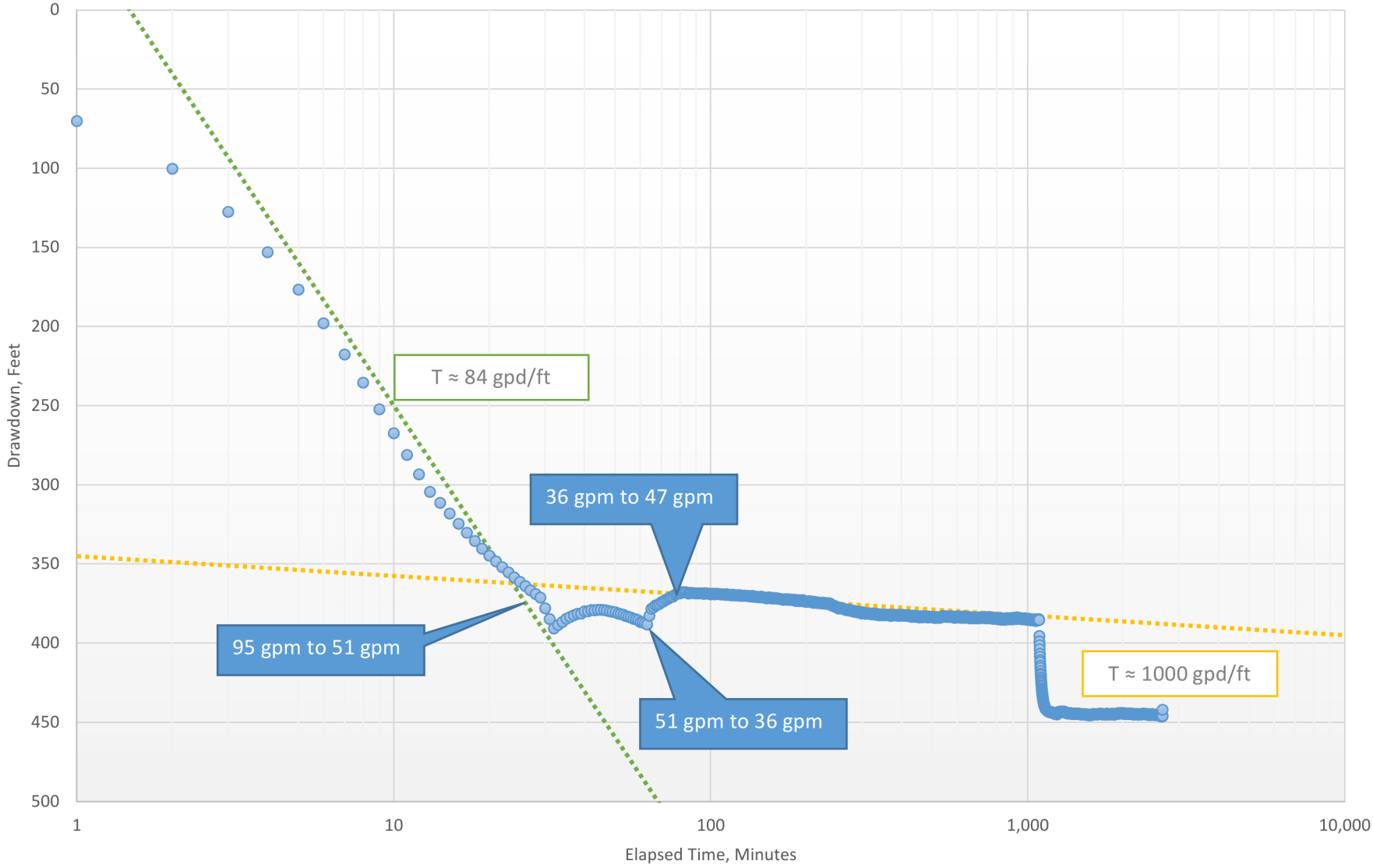
Electro Purification, LLC Hays County Project - EP Test Well Tracking Number: 353110
Cooper-Jacob Drawdown Analysis



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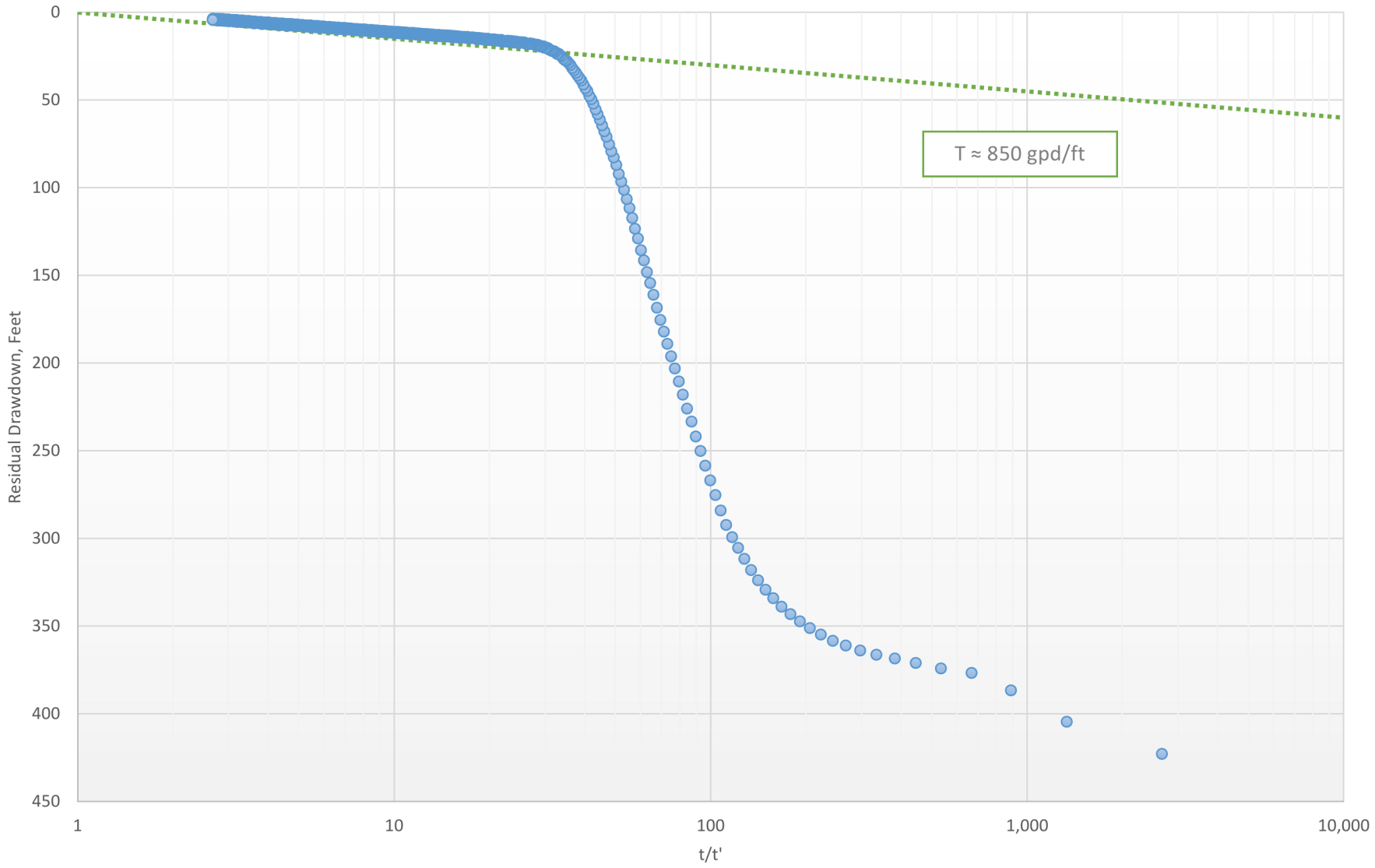
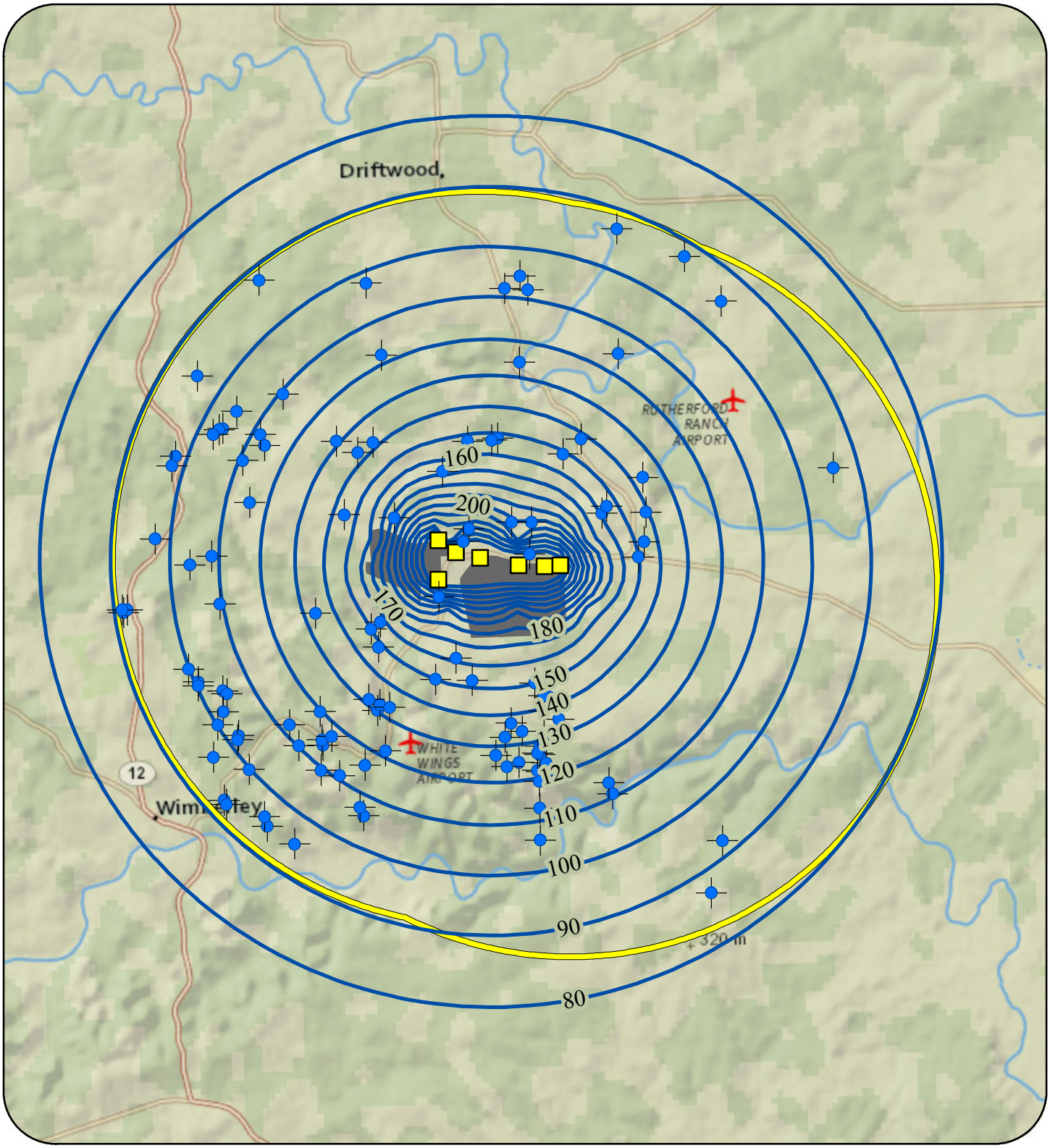
Cooper-Jacob Recovery Analysis



Attachment 3 –
Maps of Calculated Potential Drawdown Due to Proposed EP Pumping



Explanation

- EP Test Wells
- Five Mile Test Well Buffer
- EP Project Area
- Wells completed (at least partially) in the Middle Trinity Aquifer
- Calculated Drawdown (feet)

N

Scenario 1

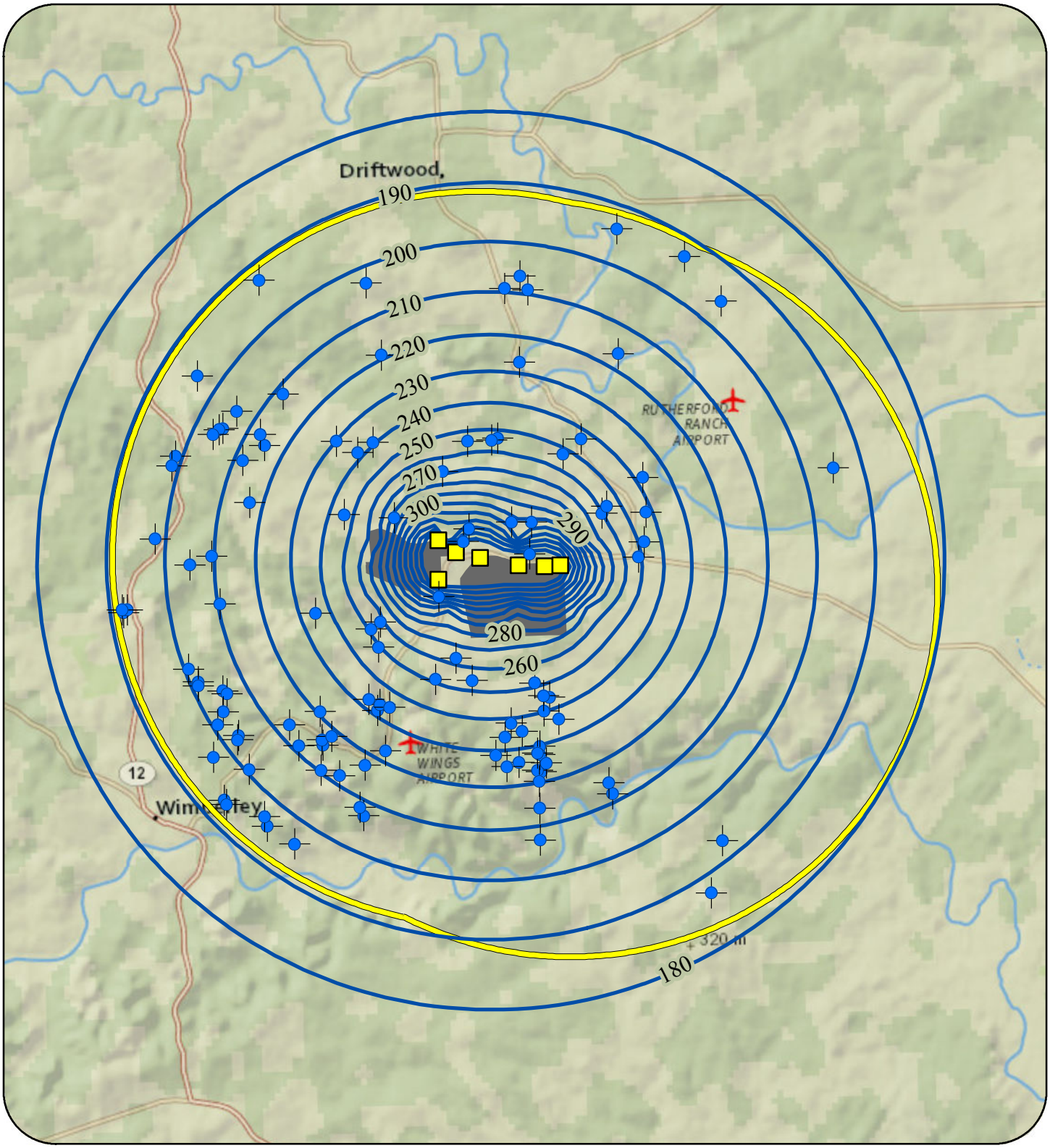
Pumping Rate: 1.5 MGD
Pumping Time: 1 Year
Transmissivity: 4,000 gpd/ft
Stor. Coef.: 0.00003

0 — 12,000
Feet

BRAUN & GRESHAM ATTORNEYS AT LAW

LBG GUYTON

Electro Purification, LLC
Calulated Middle Trinity Drawdown
Model Scenario 1



Explanation

- EP Test Wells
- Five Mile Test Well Buffer
- EP Project Area
- Wells completed (at least partially) in the Middle Trinity Aquifer
- Calculated Drawdown (feet)

N

Scenario 2

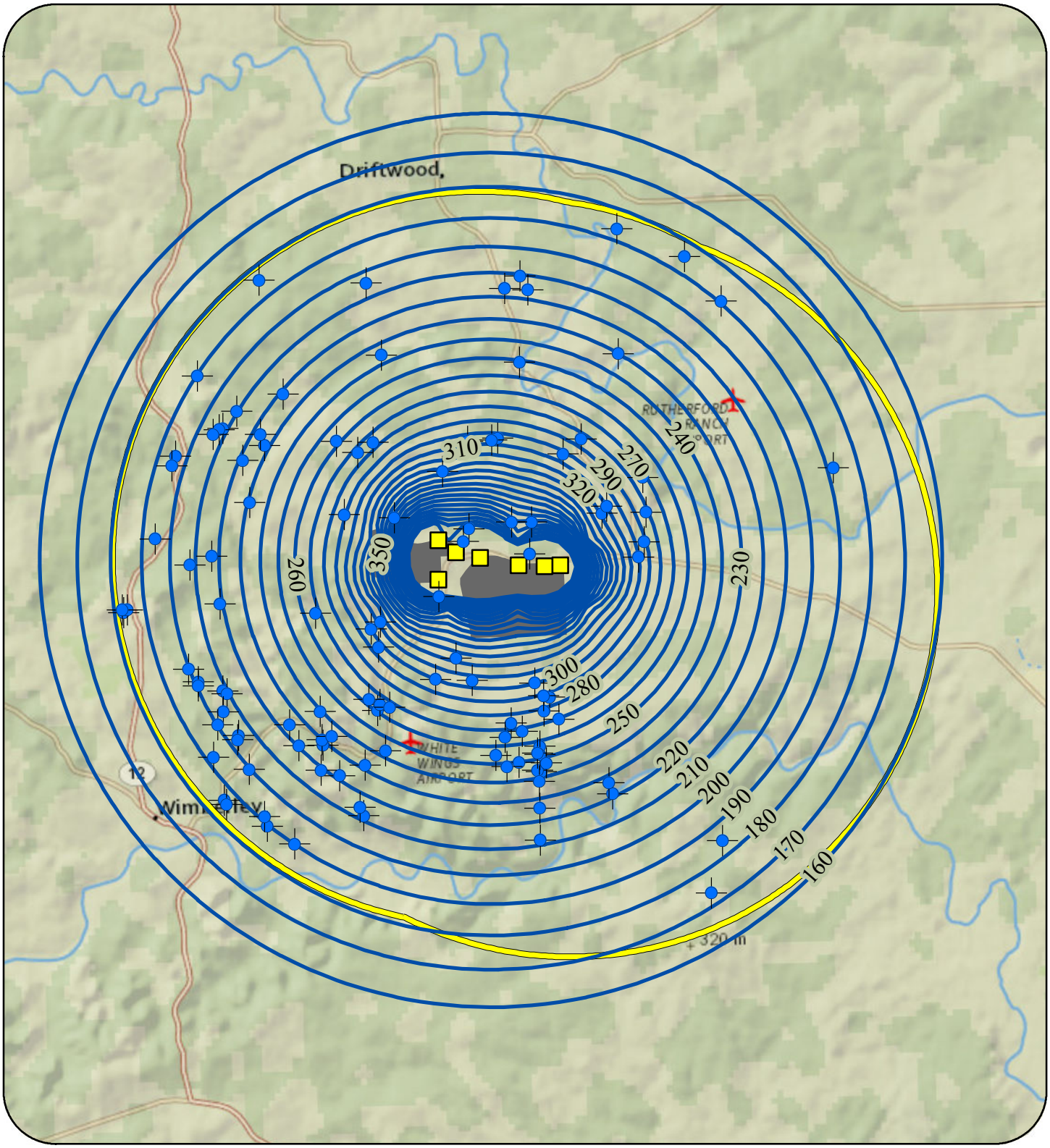
Pumping Rate: 1.5 MGD
Pumping Time: 30 Years
Transmissivity: 4,000 gpd/ft
Stor. Coef.: 0.00003

0 — 12,000
Feet

BRAUN & GRESHAM ATTORNEYS AT LAW

LBG GUYTON

Electro Purification, LLC
Calulated Middle Trinity Drawdown
Model Scenario 2



Explanation

- EP Test Wells
- Five Mile Test Well Buffer
- EP Project Area
- Wells completed (at least partially) in the Middle Trinity Aquifer
- Calculated Drawdown (feet)

N

Scenario 3

Pumping Rate: 3.0 MGD
Pumping Time: 1 Year
Transmissivity: 4,000 gpd/ft
Stor. Coef.: 0.00003

0 12,000
Feet

BRAUN & GRESHAM ATTORNEYS AT LAW

LBG GUYTON

Electro Purification, LLC
Calulated Middle Trinity Drawdown
Model Scenario 3