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RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

PROPOSAL FOR DECISION

OIL AND GAS DOCKET NO. 7C-0285432

THE APPLICATION OF TEXAS ENERGY SERVICES, LLC PURSUANT TO STATEWIDE RULE 9 FOR A COMMERCIAL PERMIT TO DISPOSE OF OIL AND GAS WASTE BY INJECTION INTO A POROUS FORMATION NOT PRODUCTIVE OF OIL OR GAS, PONDEROSA LEASE, WELL NO. 2, PRICE (GRAYBURG) FIELD, REAGAN COUNTY, TEXAS

HEARD BY: Paul Dubois – Technical Examiner
Marshall Enquist – Hearings Examiner

APPEARANCES:

APPLICANT:	**REPRESENTING:**
David Gross	TX Energy Services, LLC
Dale Miller	
Richard Atkins	
PROTESTANTS:	
Paul Tough	Probity Operating, L.L.C.
George Neale	DLB Oil & Gas. Inc.
Donna Chandler	

PROCEDURAL HISTORY

Application Filed:	May 7, 2013
Request for Hearing:	October 23, 2013
Notice of Hearing:	April 14, 2013
Date of Hearing:	May 23, 2014
Transcript Received:	June 3, 2014
Proposal For Decision Issued:	October 1, 2014

STATEMENT OF THE CASE

Pursuant to Statewide Rule 9, Texas Energy Services LLC, f/k/a Alice Environmental Services, LP (TES), requests authority to operate its Ponderosa Lease Well No. 2 in Reagan County, Texas, as a commercial disposal well in the San Andres Formation and assigned to the Price (Grayburg) Field. The proposed disposal well will be a newly drilled well.

Notice of the application was published in *The Big Lake Wildcat*, a newspaper of general circulation in Reagan County, on April 4, 2013. Notice of the application was mailed on May 7, 2013 to the Reagan County Clerk, offset operators within a one-half mile radius of the propose site, and to the surface owners of the disposal tract and each tract adjoining the disposal tract. The application is protested by DLB Oil & Gas, Inc. (DLB), and Probity SWD LLC (Probity).

DISCUSSION OF THE EVIDENCE

Applicant's Evidence

TES proposes to drill a disposal well, the Ponderosa Lease, Well No. 2, which is located 3.6 miles east of Big Lake, Reagan County, Texas. Access to the well will be off of U.S. Highway 67. TES has not yet applied for a drilling permit for the well. The proposed well will be constructed as follows:[1]

- The well will be drilled to a total depth of 3,500 feet below ground surface (bgs), encountering the San Andres formation at about 2,600 feet.
- 9 5/8^{ths}-inch surface casing will be set to a depth of 900 feet with 450 sacks of cement circulated to the surface.
- 7-inch long string casing will be set to a depth of 2,600 feet with 625 sacks of cement circulated to the surface.
- 4 ½ -inch injection tubing will be set with a packer at 2,500 feet.
- The open-hole injection interval will be from 2,600 feet to 3,500 feet.

TES proposes the following operating parameters for the well:

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[1] A well bore schematic diagram (Applicant's Exhibit No. 6) is presented in Attachment 1.

- A maximum daily injection volume of 20,000 barrels per day (BPD) of saltwater and RCRA-exempt oil and gas waste, with an estimated average daily injection volume of 3,500 BPD.

- A maximum surface injection pressure of 1,300 per square inch gauge (psig), and an estimated average surface injection pressure of 1,000 psig.

The Commission's Groundwater Advisory Unit (GAU) recommends that usable-quality groundwater be protected to a depth of 850 feet bgs (the base of usable quality groundwater, or BUQW), which corresponds to the estimated depth of the base of the Santa Rosa Formation. The base of underground sources of drinking water (USDW) is estimated to be at 900 feet. The GAU indicated that, if the well is otherwise compliant with Commission rules, injection of oil and gas waste into the interval from 2,600 to 3,500 feet will not endanger freshwater in the area. TES identified eight (8) groundwater wells within a one-half mile radius of the proposed well. The deepest of these wells were 750 feet deep.[2]

TES submitted two well logs of nearby wells to establish geologic conditions within and adjacent to the proposed disposal interval. The United Resources LP Chico Company Well No. 2 (API No. 42-383-36916) is located about 1.8 miles southwest of the proposed well. The well log submitted[3] covered the interval from about 2,300 feet (roughly corresponding to the top of the Grayburg Formation) to about 3,500 feet. Mr. Dale Miller, TES' expert engineering witness, identified two zones of porosity development suitable for injection. The upper zone was from about 2,600 feet to 2,800 feet, and the lower porosity development zone showed increased porosity below about 3,200 feet. The top of the Grayburg Formation occurs at a depth of about 2,300 feet, and the top of the San Andres Formation is about 300 feet below that. Both formations are dolomitic, and Mr. Miller stated that it is difficult to identify the contact between the two.[4] Nearby production has been from the Grayburg Formation.

TES operates a disposal well, the Ponderosa Well No. 1A (API No. 42-383-37486), which is located about 0.9 miles east-southeast of the proposed well. The Ponderosa 1A well is permitted to inject into the San Andres Formation in the depth interval of 2,600 to 3,500 feet. The log[5] for this well, according to Mr. Miller, also indicates significant porosity development, especially in the upper part of the proposed injection interval, from about

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2 Applicant's Exhibit No. 19.

3 Applicant's Exhibit No. 7.

4 Transcript, page 25, lines 3 to 7.

5 Applicant's Exhibit No. 28.

2,600 feet to about 2,870 feet. The porosity is lower below about 2,970 feet, but increases again from about 3,100 feet to 3,200 feet. Mr. Miller stated that utilizing only the lower porosity zone would involve giving up very high quality reservoir rock in the shallower zone.[6] Mr. Miller concluded that he considers the injection interval (the San Andres Formation) to be a "blanket formation, an unbounded reservoir, so you would expect the fluids to dissipate and the pressure to dissipate off in all directions."[7]

The proposed injection well is on the northwest edge of the Price (Grayburg) Field. There are three existing wellbores within a one-quarter mile radius of the proposed well:

- DLB's TXL No. 5 well (API No. 383-33645) is about 900 feet east-southeast of the proposed location. It was drilled in 1985 to a depth of 2,620 feet and produces from the Price (Grayburg) Field.

- Stanolind Oil and Gas Company's TXL "F" No. 1 well (API No. 383-01496), located about 800 feet southeast, was drilled in 1953 to a depth of 9,745 feet. The well was plugged-back to 2,690 feet and produced from the Price (Grayburg) Field at a depth of 2,410 feet. In 1956 the well was plugged with at four depths: at a depth of 2,200 feet with 150 sacks of cement, at 1,470 feet with 50 sacks of cement, at 640 feet with 25 sacks of cement, and at 90 feet with 25 sacks.

- The Kodiak Productions LTD (Kodiak) Miller 226 No. 2 well (API No. 383-31678), located about 1,200 feet southwest, was drilled in 1980 to a depth of 2,714 feet and produces from the Price (Grayburg) Field.

Seven additional existing wellbores were identified from one-quarter to one-half mile from the proposed location, all of which were completed in the Grayburg Formation; one has been plugged, one is shut-in, and five are producing. TES reviewed completion and plugging information for these wells. Mr. Miller stated that all wells within a one-half mile radius were sufficiently constructed and, if applicable, plugged to protect usable-quality groundwater. He stated that the seven producing/shut-in wells would serve as good monitoring wells for the subject disposal well, as a confinement issue would manifest in a bradenhead pressure, which the operator is required to report to the Commission.[8]

The May 1, 2014, proration schedule indicates that many of the 240 wells producing from the Price (Grayburg) Field have potential production rates of less than one barrel oil per day (BOPD). Currently, DLB's six TXL lease wells each produce an average of 0.67

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6 Transcript, page 67, lines 5 to 13.

7 Transcript, page 53, lines 20 to 25.

8 Transcript, page 33, line 21, through page 34, line 3.

BOPD, which has been fairly consistent over the last 25 years or so.[9] In addition to DLB and Kodiak, within a one-half mile radius of the proposed well there are two other operators of wells identified in Commission records: L & M Operating, Inc., and Endeavor Energy Resources L.P. Probity is not an operator of wells within a one-half mile radius of the proposed disposal well; Probity does operate one commercial disposal well about 4,000 feet north of the proposed well and has a second permitted well in the same general location.

TES identified eight existing commercial disposal wells within about three miles of the proposed well. In Reagan County, there are 31 active commercial disposal wells, and there are another 20 wells that are not yet active but have been permitted (eight of which have not been drilled). Of these 51 wells, all but about nine inject into the San Andres Formation or a shallower interval.[10] Some of the wells inject into intervals very similar if not identical to the 2,600 foot to 3,500 foot interval being sought by TES in this application. TES made specific mention of the following wells:

- Basic Energy Services' TXL Lease Well No. 12, is an existing Price (Grayburg) Field producing well that was permitted for injection service in 2007 by DLB, the operator of the well at that time. The well was originally permitted to inject 2,500 barrels a day into the San Andres Formation open hole interval from 2,600 feet to 3,050 feet. In 2008 the permit was amended for a maximum injection rate of 10,000 barrels a day. The well is currently operated by Basic Energy Services.

- Probity SWD's Big Lake 225 SWD Well No. 1, located about 4,000 feet to the north of the proposed well, was drilled in October 2013 with an open hole San Andres Formation injection interval from 2,653 feet to 3,500 feet. The well was originally permitted with a maximum daily injection rate of 12,500. The maximum daily rate was increased to 35,000 barrels in January 2014.

- Probity SWD's Big Lake 225 SWD Well No. 2, also located about 4,000 feet to the north, has not yet been drilled. This well has been permitted for an open hole San Andres Formation injection interval from 3,050 feet to 3,500 feet and a maximum daily injection rate of 12,000 barrels.

- Alice Environmental Services' (now TES) Ponderosa Lease Well No. 1A, located about 0.9 miles to the southeast, has an open hole injection interval in the San Andres Formation from 2,619 feet to 3,500 feet and a maximum daily injection rate of 20,000 barrels.

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9 Applicant's Exhibit No. 12.

10 Applicant's Exhibit No. 15.

Mr. Miller testified that the San Andres has been used for disposal extensively in Reagan County and in the particular subject area; he is not aware of any problems caused by injection into this interval.

TES reports that Reagan County has seen a sustained increase in the number of drilling permits issued each year. For the last few years 400 to 500 permits have been issued each year. This year is anticipated to be similar to the previous years.[11] Similarly, oil and gas production have increased significantly in the last few years, and those increases are anticipated to be sustained this year.[12] Increased production corresponds to an increased need to dispose of fluid waste.

TES submits that it has the expertise to build and manage the proposed well. TES has a current approved Form P-5 (Organization Report) and a $50,000 cash deposit for its financial assurance.

Protestant's Evidence – DLB Oil & Gas, Inc.

DLB is an operator of nearby wells in the Price (Grayburg) Field. DLB is concerned that the proposed injection well will harm its production. DLB's expert engineering witness, Donna Chandler, P. E., presented production data from DLB's TXL Lease from January 2006 through March 2014. She stated that the data was very consistent during this time, with no discernable decline in oil production. For the six wells on the lease, the production was averaging about 100 barrels per month, or about 0.56 barrels per well per day[13], a number similar to with the 0.67 BOPD value reported by TES. Because there was no discernable decline in production, Ms. Chandler stated that she was not able to evaluate an economic limit to production of the wells or lease.

DLB's nearest well is the TXL No. 5, about 900 feet to the southeast. It was drilled to a depth of 2,620 feet and is perforated from 2,401 feet to 2,439 feet. DLB's TXL Lease Well No. 3 is located about 2,200 feet to the east-southeast of the proposed injection well. Well No. 3 was drilled to a depth of 2,630 feet and is perforated from 2,401 feet to 2,575 feet. A geologic cross section submitted by DLB indicated a porosity development in the middle of the Grayburg Formation, about 150 feet above the Grayburg/San Andres contact. Nearby Price (Grayburg) Field oil wells produce from this interval. In addition, the TXL No. 3 produces from this interval down to a depth of 2,575 feet, 25 feet above the proposed injection interval. Ms. Chandler stated that she sees no confinement on available well logs between the Grayburg Formation productive interval and the San Andres Formation interval proposed for injection.

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11 Applicant's Exhibit Nos. 21 and 22.

12 Applicant's Exhibit No. 23.

13 DLB's Exhibit Nos. 1 and 2.

DLB identified seven commercial disposal wells within a two mile radius of the proposed well and examined injection rates and pressures for two of these wells. According to Ms. Chandler, Basic Energy Service's TXL Lease Well No. 1 well appears to be pressure constrained.[14] The well is operating at or near its permitted maximum surface injection pressure of 1,300 psig but injection volumes are consistently below 4,000 BPD (it is permitted to inject 10,000 BPD). TES' Ponderosa Lease Well No. 1A well, located about 2,200 feet to the east-southeast is reported to have operated at a maximum injection pressure of 495 psig for the past two years, well below its permitted maximum surface injection pressure of 1,300 psig. At the hearing TES provided the parties copies of two Form H-10s (Annual Disposal/Injection Well Monitoring Report), reporting the 2012 and 2013 monthly injection fluid, volume and pressure data for its Ponderosa Lease Well No. 1A, data which was not presently available in the Commission's online system. However, the well has experienced declining injection volumes from about 8,000 to 10,000 BPD in 2012 to 1,000 to 3,000 BPD in late 2013 and early 2014. Ms. Chandler stated that she believes the Ponderosa Lease Well No. 1A well may also be experiencing pressure constraint problems, although the available data is not sufficient for her to form a firm opinion.[15]

Given the absence of separation or a confining layer between the Grayburg and San Andres Formations, as well as the evidence of injection pressure constraints in at least one and possibly more wells, Ms. Chandler believes that there is an increased chance that injection fluids may migrate into the overlying productive Grayburg Formation reservoir.[16]

Ms. Chandler submitted a well log of the Palo Petroleum Ball Lease Well No. 3 (API No. 42-383-31737), located about 1.2 miles northeast, to demonstrate porosity distribution in the Grayburg and San Andres Formations' injection interval. According to Ms. Chandler, the San Andres Formation exhibits two porosity developments within the proposed injection interval, and both are good candidates for injection. Porosity intervals of 10 percent and greater were identified on the well log.[17] Ms. Chandler stated her opinion that, if approved, TES' permit application should be limited to the deeper porosity interval–from about 3,200 feet to 3,500 feet–as this would provide additional physical separation to adequately protect DLB's hydrocarbon resources.

Protestant's Evidence – Probity SWD LLC

Probity participated in cross examination and offered its Exhibit No. 1, a portion of the hearing transcript for Docket No. 7C-0280238, Probity's application for its Pro-Select

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14 The producing well that DLB converted to injection in 2007.

15 Transcript, page 129, lines 2 to 7.

16 Transcript, page 129, lines 17 to 25 and page 130, lines 1 through 9.

17 The highlighted areas were identified based on the 10 percent porosity for a limestone matrix; according to the well log headers.

SWD Well No. 1 (now Big Lake 225 SWD No. 1). Probity highlighted the closing arguments of Alice Environmental Services (predecessor to TES), in which Alice argued that the proposed injection interval was not suitable for reasons demonstrated in that hearing. Probity did not put on a direct case.

EXAMINERS' OPINION

The Railroad Commission may grant a permit under Chapter 27 of the Texas Water Code, Subchapter D[18] in whole or part and may issue a permit to dispose of fluids by underground injection if it finds:

1. The use or installation of the injection well is in the public interest;

2. The use or installation of the injection well will not endanger or injure any oil, gas, or other mineral formation;

3. With proper safeguards, both ground and surface fresh water can be adequately protected from pollution; and

4. The Applicant has made a satisfactory showing of financial responsibility if required by Section 27.073.

It is the examiners' opinion that the application should be denied because the Applicant has not met its burden to prove that the use or installation of the injection well will not endanger or injure any oil, gas, or other mineral formation (No. 2 above). The examiners will consider this requirement of Chapter 27 of the Texas Water Code first.

Through direct, cross, and re-direct examination there was testimony given and exhibits offered establishing an acrimonious relationship between the three parties in this matter. Disposal well applications made by TES (and its predecessor entity, Alice Environmental) were protested by Probity and DLB. Probity's disposal well applications were protested by Alice and DLB. The sincerity of DLB's protests were questioned as it was the first of the three in the area to obtain a commercial disposal well permit in 2007, a well now operated by Basic. Alice made arguments against Probity's wells that, if consistently applied to all disposal wells in the area, would undermine TES' own application in this matter. All three entities have or had an interest in commercial disposal wells in this area. Therefore, the examiners have focused their attention on the testimony and evidence given to establish technical and scientific facts relating to this proposed well at this proposed location.

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[18] Tex. Water Code § 27.051(b)(1 through 4).

Endanger or Injure Any Oil, Gas, or Other Mineral Formation

The Grayburg Formation is productive in the immediate area of the proposed well. Protestant DLB's production is small, from about one-half to two-thirds of a barrel of oil per day; these wells produce almost no water or gas. Production data from DLB's TXL Lease wells in the Price (Grayburg) Field exhibit flat production curves. That is, they exhibit no apparent decline. Neither party could identify a lower economic limit to the productivity of these wells. The data suggests the wells will continue to produce less than a barrel of oil per day indefinitely, as some of them have for more than 50 years now.

TES and DLB both acknowledge that the boundary between the Grayburg and San Andres Formations is difficult to interpret due to similar lithology, and no party in this case has identified a distinct contact. The top of the Grayburg Formation, however, is easily identified on all of the well logs entered into evidence based on its sharp decrease in porosity log response at a depth of about 2,300 feet, followed by a gradual increase in porosity with depth. Additionally, TES indicated the Grayburg Formation is both on top of San Andres Formation and 300 feet thick. In so doing, TES established the base of the Grayburg Formation as being 300 feet below the top of the formation, at a depth of about 2,600 feet. The Grayburg Formation's productive interval appears to be centered around a 40 to 50-foot thick porosity development in the middle of the formation interval. The examiners agree with the parties that the well logs entered into evidence do not provide any indication of a distinct lithologic separation between the Grayburg Formation's productive interval and the proposed San Andres Formation injection interval. In fact, the two formations in this area could be considered a single lithologic unit, and have, in other areas, been consolidated into a single productive reservoir as suggested by DLB,[19] but that is immaterial to this matter. In the examiners' opinion, no geologic evidence has been introduced in this case to suggest any sort of material separation between the formations that would confine injected fluids and protect the productive interval.

Well logs submitted into evidence include three logs penetrating the entire injection interval and three logs (in cross-section form, DLB's Exhibit No. 4) terminating at or near the Grayburg/San Andres contact. Spatially, the well logs are located from 900 feet to 1.8 miles from the proposed well, the deeper wells being farther away. The examiners find the spatial coverage of the well logs to be adequate to represent local conditions and variability therein. The well log data indicates that the neutron porosity characteristics of the upper San Andres Formation continue uphole unimpeded into the Grayburg Formation, and the gamma ray logs indicate no significant shale strata separating the two zones. Thus no evidence of material separation by porosity or lithology has been established to confine injected fluids to the proposed injection interval.

With regard to the disposal interval from 2,600 feet to 3,500 feet, TES and DLB are in agreement that the well log data indicate two distinct zones of developed porosity

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[19] DLB Cross-examination Exhibit No. 1.

suitable for injection. The examiners agree that the well log evidence establishes an upper zone of developed porosity; the examiners find the evidence for the lower zone to be inconclusive. TES identified a zone of increasing porosity below about 3,270 feet in the United Resources LP Chico No. 2 well (Applicant's Exhibit No. 7). However, the logged interval in question indicates: (1) an increase in neutron porosity response without a corresponding increase in bulk density; (2) a sharp parallel increase in gamma ray response; and (3) an increased caliper measurement. The examiners believe this evidence indicates a shale interval in which the neutron porosity increase is attributable to a shale effect,[20] not an increase in injectable porosity.

DLB also indicated an increase in porosity in the lower portion of the proposed injection interval based on the well log of the Palo Petroleum Ball Lease Well No. 3 (DLB Exhibit No. 7). DLB annotated the exhibit to highlight all neutron porosity values greater than 10 percent[21]; however, this annotation appears to be based on the limestone scale in the well log header. If the interval in question is, in fact, dolomite (per the Applicant's unrebutted testimony[22]), the dolomite scale on the well log header should have been used. As it was annotated and presented, the highlighted areas actually indicate neutron porosity greater than about four percent (4%) , somewhat reducing the available injectable porosity. Also, the Ball Lease Well No. 3 well log indicates increasing gamma ray activity below 3,250 feet, which also suggests increasing shale content causing a shale effect increase to the neutron porosity values (that is, a similar phenomena the examiners noted on the Chico Lease Well No. 2 log). The exhibit did not include a bulk density curve, which would have helped distinguish limestone and dolomite lithology. Thus the examiners are not convinced that simply restricting the injection interval to the lower zone, as proposed by DLB, would represent a viable choice for TES desired disposal operations. It would, however, adequately isolate the Grayburg Formation's producing zone from harm.

The Applicant asserted that the San Andres Formation acts as an "infinite unbounded blanket formation" in the area, and therefore injected fluids would dissipate radially from the well.[23] As mentioned above, the examiners observe heterogeneity within the San Andres Formation as indicated on the well logs admitted into the record; while the San Andres Formation does overlie most if not all of Reagan County as a blanket, within the several miles between the logged wells the logs demonstrate variation of dolomite, shale and limestone within the formation itself; the blanket is wrinkled. Further, if the porosity (as a surrogate for permeability, to the extent that is reasonable) of the formation

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20 In a shale stratum, water bound to the clay minerals within the shale increases the neutron porosity response and has no effect on the density porosity response.

21 Transcript, page 117, lines 13 to 14.

22 Transcript, page 25, line 5, and page 73, line 1.

23 Transcript, page 53, lines 20 to 25.

is greater at the top of the interval, then the proposed injected fluids would be concentrated into the zone closest to the nearby Grayburg Formation production.

DLB provided injection pressure and rate data demonstrating one and possibly two of the nearby injection wells are pressure constrained. That is, the San Andres Formation in those locations does not appear to be capable of taking on more water at or below permitted injection pressures, and actual injection rates are far below permitted rates.

The examiners conclude that the Applicant has failed to demonstrate that the proposed injection well will not harm hydrocarbon resources being produced from the Grayburg Formation.

Public Interest

Under the provisions of the Texas Water Code, the Commission cannot approve an injection well unless it finds, "that the use or installation of the injection well is in the public interest." Texas Water Code § 27.051(b)(1). This is a separate, and independent, prerequisite from the required findings that the injection well will not endanger or injure oil or gas formations, that both ground and surface fresh water will be adequately protected, and that the Applicant has shown financial responsibility.

It is the examiners' opinion that the Applicant has demonstrated a sufficient public interest claim for the proposed injection well–separate and apart from the potential for injury to mineral formations describe above–as there is a continuing need for fluid disposal options in Reagan and nearby counties. The San Andres Formation has been and will continue to be an important receptor for waste fluids in the area. Most of the disposal wells identified in Reagan County–including those permitted but not yet constructed or operational–are or will be completed in the San Andres Formation. However, the Applicant's data suggests an increasing trend in recently approved permits to exploit the disposal capacity of deeper formations (such as the Ellenberger) at depths at or below about 10,000 feet.[24] Data provided by the Applicant and DLB indicate a high degree of variance in the capability of San Andres Formation wells to accept fluid injection volumes. The injection capacity of at least some of the San Andres Formation wells appears to be pressure constrained, and the formation itself exhibits heterogeneity in internal lithology and porosity that likely affects the performance of individual wells.

Adequate Protection of Ground and Surface Fresh Water

The examiners are of the opinion that, with proper safeguards, both ground and surface fresh water can be adequately protected from pollution. The Commission's GAU identified the BUQW at a depth of 850 feet, corresponding to the base of the Santa Rosa Formation. The GAU issued a 'no harm' letter stating that the well, completed and

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[24] Applicant's Exhibit No. 15.

operated as proposed, will not endanger fresh water in the area. A review of nearby water wells in the area confirm freshwater production from depths above the BUQW.

The well will have 9 5/8-inch surface casing set to a depth of 900 feet and cemented to the surface with 450 bags of cement. The 7-inch long-string casing will be set to a depth of 2,600 feet, and cemented to the surface with 625 bags of cement, providing full overlap between the two casing strings. The 4 1/2-inch injection tubing will be set with a packer at 2,500 feet.

There are three active or plugged wellbores within a one-quarter mile radius of the proposed injection well. All three were cased, cemented, and, in one case, plugged in such a way to prevent the vertical migration of injection fluids into overlying zones.

Financial Responsibility

The examiners conclude that TES has made a satisfactory showing of financial responsibility as required by Section 27.073 of the Texas Water Code. TES submits that it has the expertise to build and manage the proposed well. TES has a current approved Form P-5 (Organization Report) and a $50,000 cash deposit for financial assurance. A review of the Commission mainframe system did not identify any current active enforcement matters involving TES.

FINDINGS OF FACT

1. Notice of the application was published in *The Big Lake Wildcat*, a newspaper of general circulation in Reagan County, on April 4, 2013.

2. Notice of the application was mailed on May 7, 2013 to the Reagan County Clerk, offset operators within a one-half mile radius of the propose site, and to the surface owners of the disposal tract and each tract adjoining the disposal tract.

3. Texas Energy Services proposes to permit a newly-drilled commercial disposal well in the San Andres Formation and assigned to the Price (Grayburg) Field. Texas Energy Services proposes to construct and operate the well as follows:

   a. The proposed well will be drilled to a depth of 3,500 feet.

   b. 9 5/8-inch surface casing will be set to a depth of 900 feet and cemented to the surface with 450 bags of cement.

c. 7-inch long-string casing will be set to a depth of 2,600 feet, and cemented to a depth of 2,600 feet below ground surface with 625 bags of cement;

d. 4 1/2-inch tubing will be set with a packer at 2,500 feet.

e. The open hole injection interval will be in the San Andres Formation from a depth of 2,600 feet to 3,500 feet;

f. The requested maximum daily injection volume is 20,000 bpd, and the average daily injection volume will be 3,500 bpd.

g. The requested maximum surface injection pressure is 1,300 psig, and the average surface injection pressure will be 1,000 psig.

4. The Applicant has not proven that injected fluids will be confined to the injection interval, and thus will not endanger or injure oil or gas formations.

a. DLB Oil & Gas produces oil from its TXL Lease in the adjacent Price (Grayburg) Field, the closest well being the TXL Lease Well No. 5, about 900 feet east-southeast of the proposed well.

b. The Grayburg Formation immediately overlies the San Andres Formation injection interval.

c. The parties agree that the Grayburg and San Andres Formations exhibit similar lithologies, and a contact between the two is difficult to identify.

d. Well log data does not establish a confining or separating lithology between the proposed injection interval and the current active oil production zone.

e. Well log data establishes a consistent neutron porosity profile across the Grayburg Formation producing interval and the proposed San Andres Formation injection interval.

f. Well log data establishes the best zone for injection to be at the top of the San Andres Formation, in the porosity development closest to the adjacent Grayburg Formation producing interval.

g. Well log data establishes the lower portion of the proposed injection interval to contain shale.

5. With proper safeguards, both ground and surface fresh water can be adequately protected from pollution.

   a. The well will be cased and cemented through the BUQW to the surface.

   b. There are two producing and one plugged wellbores within a one-quarter mile radius of the proposed injection well. All of these wells have been completed and/or plugged in such a way to prevent the vertical migration of injection fluids into overlying fresh water zones.

6. The proposed injection well is in the public interest–separate and apart from the potential for injury to mineral formations describe above–as there is a continuing need for fluid disposal options in Reagan and nearby counties.

   a. Ongoing development of various resource plays in Reagan and surrounding counties are generating waste fluids requiring disposal.

   b. There are 31 permitted commercial disposal wells in Reagan County, and about 20 more commercial disposal wells have been permitted but are not yet built or active.

7. Texas Energy Services has a current approved Form P-5 (Organization Report) and has posted a $50,000 cash deposit for financial assurance.

CONCLUSIONS OF LAW

1. Resolution of the subject application is a matter committed to the jurisdiction of the Railroad Commission of Texas. Tex. Nat. Res. Code § 81.051

2. All notice requirements have been satisfied. 16 Tex. Admin. Code § 3.9

3. Texas Energy Services, LLC has failed to demonstrate that the proposed disposal well will not endanger oil resources. Texas Water Code § 27.051(b)(2).

4. Texas Energy Services, LLC has not met its burden of proof and its application does not satisfy the requirements of Chapter 27 of the Texas Water Code and the Railroad Commission's Statewide Rule 9.

EXAMINERS' RECOMMENDATION

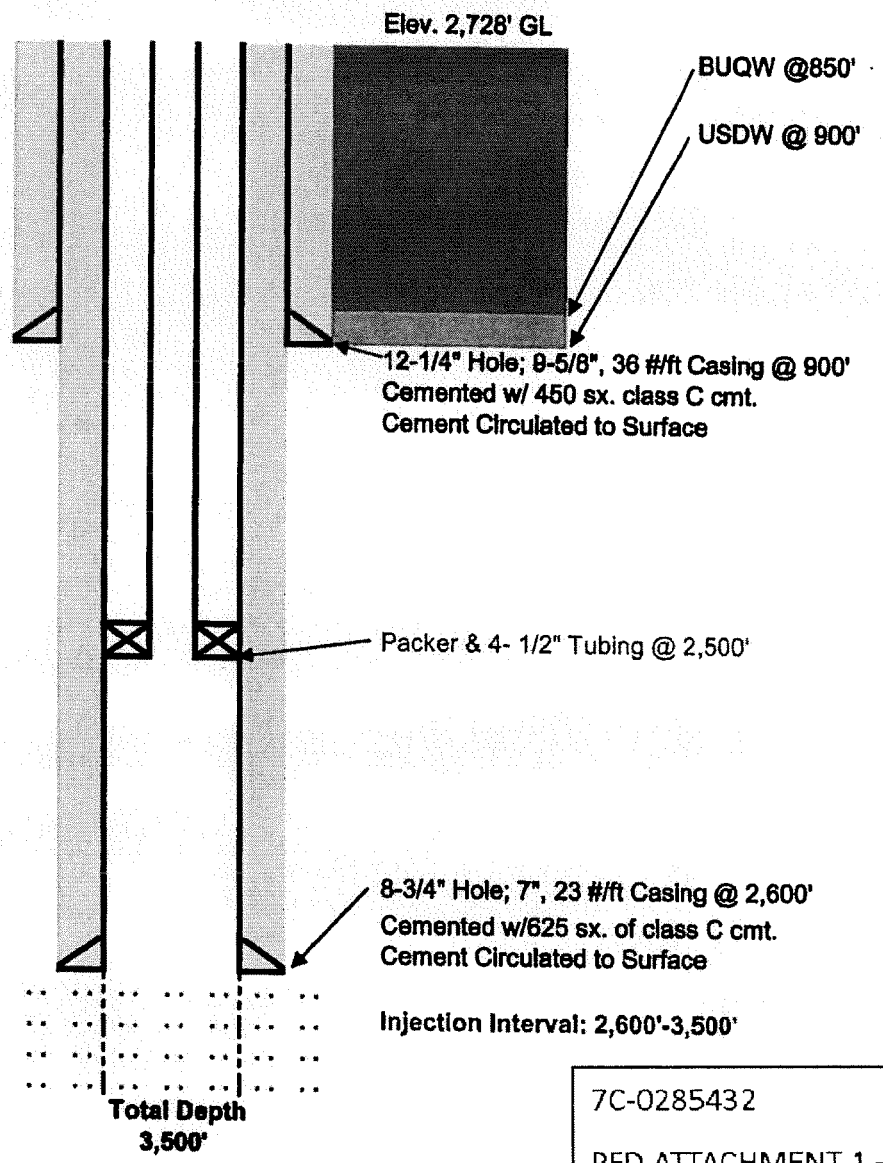
The examiners recommend that Texas Energy Services, LLC's application for its proposed Ponderosa Lease Well No. 2 commercial disposal well be denied because the Applicant has not demonstrated that the proposed well will not endanger or injure any oil, gas or other mineral formation.

Respectfully Submitted,

Paul Dubois
Technical Examiner

Marshall Enquist
Hearing Examiner

PROPOSED COMPLETION
TX ENERGY SERVICES, LLC
PONDEROSA LEASE (17597) WELL NO. 2
REAGAN COUNTY, TEXAS



7C-0285432

PFD ATTACHMENT 1 – Well Schematic

Applicant's Exhibit No. 6

OPERATOR: TX ENERGY SERVICES, LLC
EXHIBIT NO.: 6
DOCKET NO.: 7C-0285432
DATE: MAY 23, 2014