



RAILROAD COMMISSION OF TEXAS

OFFICE OF GENERAL COUNSEL

OIL AND GAS DOCKET NO. 01-0271929

THE APPLICATION OF ENERGY EQUITY COMPANY FOR A COMMERCIAL PERMIT TO DISPOSE OF OIL AND GAS WASTE BY INJECTION INTO A POROUS FORMATION NOT PRODUCTIVE OF OIL OR GAS, FIEDLER BROTHERS SWD LEASE WELL NO. 2, FIEDLER BROTHERS FIELD, LA SALLE COUNTY, TEXAS

HEARD BY: Andres J. Trevino P.E., Technical Examiner
James M. Doherty, Hearings Examiner

APPEARANCES:

APPLICANT:

George Neale
Rick Johnston
Jimmy Jones

REPRESENTING:

Energy Equity Company

PROTESTANTS:

James Bostic
Monica Jacobs
Buddy Richter
Richard Peebles

Peebles Family Limited Partnership

Sid Harle

Harle Family Interest

OBSERVER:

Claire Vaughn

Herself

PROCEDURAL HISTORY

Application Filed:	June 1, 2011
Request for Hearing:	June 17, 2011
Notice of Hearing:	August 9, 2011
Date of Hearing:	August 30, 2011
Proposal For Decision Issued:	June 11, 2012

EXAMINERS' REPORT AND PROPOSAL FOR DECISION**STATEMENT OF THE CASE**

Energy Equity Company ("Energy Equity") requests authority pursuant to Statewide Rule 9 to operate the Well No. 2 on its Fiedler Brothers SWD Lease in La Salle County as a commercial disposal well. This application is protested by Mr. Richard Peebles, representing the Peebles Family Limited Partnership. Additionally, Mr. Sid Harle, representing the Harle Family Interest also protested the application. The Protestants own property adjacent to the tract on which the proposed disposal well is located.

DISCUSSION OF THE EVIDENCE**Applicant's Evidence**

The subject well has not yet been drilled but a permit to drill was issued by the Commission on May 11, 2011. It is proposed that the well be drilled through the Wilcox sands to a maximum depth of 5,800 feet. It is proposed that the well have 4,150 feet of 9⁵/₈" surface casing with cement circulated from the casing shoe to the ground surface, and 7" casing set through the Wilcox sands, estimated to occur beginning at a depth of 4,000 feet. The 7" casing will be cemented with 500 sacks of cement with the top of cement behind the longstring casing estimated to be at 3,500 feet. (See Wellbore Diagram attachment). The Texas Commission on Environmental Quality recommends that usable-quality ground water be protected to a depth of 4,000 feet. TCEQ further recommends that fresh water contained in the interval from the land surface to a depth of 100 feet and the zone from a depth of 1,700 feet to 4,000 feet be protected. Furthermore, TCEQ requires the Carrizo from 3,000 feet to 3,750 feet, which contains superior quality water, must be isolated from water in the underlying and overlying beds. TCEQ identifies the base of USDW as being at a depth approximately at 4,800 feet.

The proposed injection will be through 3¹/₂" tubing set on a packer at approximately 4,850 feet. The proposed injection interval is the Wilcox formation, the top of which is expected to occur at about 4,850 feet. The proposed injection interval is between 4,850 and 5,800 feet. This estimated depth of the Wilcox is based on the log of the Royal Oil & Gas Corp.'s Fiedler Brothers No. 1D. This well is approximately one mile to the south of the proposed well and is the closest well which penetrated the Wilcox and for which an electric log is available. The proposed maximum injection volume is 20,000 BWPD, with an estimated average of 6,000 BWPD. The proposed maximum injection pressure is 2,200 psig.

There are no oil or gas wellbores within a 1/2 mile radius of the proposed disposal well. Without any wellbores within the 1/2 miles radius, there are no conduits for injected fluids to escape the proposed disposal interval. A well log from the Fielder Brothers No. 1D indicates there is in excess of 300 feet of shale intervals between the base of the

freshwater in the Carrizo and the top of the proposed disposal interval.

Energy Equity plans to use the proposed well to dispose of produced water and frac water generated as a result of the active and ongoing development of the Eagleford Shale in this area. Energy Equity believes that additional disposal facilities are necessary to accommodate the active drilling as there are only currently two commercial wells in La Salle County. The operations manager for Energy Equity testified there is need for additional disposal capacity in the area as drilling in the Eagle Ford Shale will continue. With only two commercial disposal wells in La Salle County, occasionally trucks are forced to wait long times along roads to unload their water loads or are turned away as the facility is too busy. Energy Equity and other large operators are forced to haul disposal fluids to the nearest available disposal facility Energy Equity's facility in Frio County. The trip would require a 100 mile round trip from existing La Salle facilities to Energy Equity's Frio disposal well. Energy Equity believes this facility will reduce truck traffic traveling to adjacent counties. Energy Equity believes providing regional disposal facilities near Eagle Ford Shale wells will reduce disposal costs and reduce fuel costs to transport disposal water to adjacent counties.

Energy Equity Company has an active P-5 on file with the Commission, with \$50,000 financial assurance. There are no past or pending enforcement actions against Energy Equity Company.

Notice of the subject application was published in *Frio-Nueces Current*, a newspaper of general circulation in La Salle County, on June 9, 2011. A copy of the application was mailed on June 1, 2011 to the La Salle County Clerk's Office and the offsetting surface owners and operators within ½ mile of the proposed well. Energy Equity leases the surface of the 634.8 acre tract on which the well is proposed.

Protestant's Evidence

Mr. Richard Peebles, representing the Peebles Family Limited Partnership was present to represent his family and other Protestants' concerns. Peebles Family Limited Partnership owns land that adjoins the proposed disposal well's location. Mr. Peebles has concerns that the proposed well will cause pollution and potentially adversely affect the deep Carrizo groundwater. Mr. Peebles' land uses, and only has, groundwater available from the very deep Carrizo Aquifer. Any damage to the Carrizo Aquifer will damage the value of their land. Additionally, the Peebles' do not believe the well is in the public interest as it is not needed because there are sufficient existing commercial disposal wells in the area. Mr. Sid Harle, representing the Harle Family Interest, is an adjacent landowner and has similar concerns over contamination of the Carrizo Aquifer that they use for farming, raising cattle and wild game. They are concerned that the TCEQ identified usable drinking water (USDW) at a depth of 4,800 feet. This water may be contaminated by the proposed commercial disposal well as the proposed top of the injection interval will begin at 4,850 feet.

The Protestant's engineering expert, Buddy Richter, presented Commission guidance documents identifying underground source of drinking water (USDW) as water with less than 10,000 ppm total dissolved solids (TDS) or which supplies drinking water for human consumption. Commission Field Operations guidance document further states water containing more than 500 ppm TDS should not be used as drinking water. The expert further identified that water containing up to 7,800 ppm salt (NaCL) can be used for horses to live on, and cattle can live on water containing up to 9,375 ppm salt. The expert used excerpts from the Commission's Disposal Well Permit Seminar Manual stating there should be at least 250 feet of clay or shale separating the authorized disposal zone and the overlying usable quality water. The expert presented several Examiner Reports of disposal wells in the Newark, East (Barnett Shale) Field where the examiners recommended a 250 foot separation between the top of the disposal interval and the base of the Barnett shale. The experts were implying the 250 foot shale separation should apply between the disposal zone and the USDW. The Protestants proposed the disposal interval should be lowered to 5,410 feet pursuant to the Commission's guidelines. The Protestants presented evidence showing numerous wells between ½ mile and one mile from the proposed well that could become a conduit for disposal water to leave the disposal zone and enter the usable quality water.

The Protestants' expert engineering witness also performed pressure front calculation at various rates, at one mile distance and after a 20 year time period. The expert used 22% porosity, 70 feet of net reservoir thickness and an injection rate of 20,000 BWPD. After injecting 20,000 BWPD for 20 years, at a distance of one mile the pressure is expected to increase by 453 psi. The expert calculated it would take a pressure increase of 23 psi for brine to reach the base of the USDW and 395 psi to reach BUQW. The protestants alleged that this constitutes a potential for pollution.

The protestant expert witness did not believe that there was an industry need for additional disposal capacity in this area at this time. The expert submitted a table of eight area commercial disposal wells permitted within a 20 mile radius or within La Salle County. The table shows 83,500 BPD of permitted injection capacity already approved for the eight wells. Of the eight wells, only two wells are reporting any injection volumes to the Commission. The total H-10 disposal volume reported by the two wells is only 10,300 BPD, or 12.3% of permitted capacity. Two other wells were completed but have not yet entered the H-10 cycle to report volumes. The remaining four wells are not yet completed. The expert opined that the current permitted disposal capacity was more than sufficient to meet the current demand.

EXAMINERS' OPINION

The examiners believe that this application should be approved. The Fiedler Brothers SWD No. 2 will be completed in a manner which will confine disposal fluids to the proposed disposal interval in the Wilcox sands. Surface casing will be set and cemented through the base of usable quality water. By definition, the useable-quality groundwater has a TDS content of less than 3,000 ppm, while the USDW has a TDS content between 3,000 and 10,000 ppm. TCEQ recommends protection to a depth of 4,000 feet and the

proposed disposal well will have 4,150 feet of surface casing that is cemented to surface. The reference to the USDW at 4,800 feet in the June 17, 2011, letter is simply information provided by TCEQ to insure that there is no disposal of fluids into any USDW zone.¹ Additionally, the proposed disposal interval of 4,850 feet is requested to insure the first available disposal sand identified as having a top at 4,950 feet in the Royal Oil & Gas Corp.'s Fiedler Brothers No. 1D log will be included in the Fiedler Brothers SWD Well No. 2 which will be updip of the No. 1D. There is approximately 130 feet of mostly impervious shales and sands separating the 4,950 foot sand and the base of the USDW at 4,800 feet. The longstring production casing will also be cemented up to a depth of 3,500 feet to prevent migration from the injection interval. There are no oil or gas wells within the one-half mile radius of review and the water wells in the area will be protected by surface casing as recommended by the TCEQ. All wells inside of a ½ mile radius are plugged or completed in accordance to the Commission's requirements. The proposed disposal interval is 950 feet thick. Within the 950 foot disposal interval are numerous sands totaling approximately 240 feet of net sands available for disposal. The several sands available for disposal will minimize the potential to over pressure any one sand.

Approval of the requested permit is in the public interest given it is in the public interest to promote the development of the Eagleford Shale in La Salle County while minimizing potential disposal problems. Energy Equity has shown that the proposed disposal well is necessary to provide needed capacity for disposal of frac and produced water from numerous wells to be drilled and produced within La Salle and surrounding counties. The proposed Fiedler Brothers SWD disposal well is centrally located between permitted and completed commercial disposal wells to the south and permitted and not yet completed commercial disposal wells to the north and west. The two existing commercial disposal wells in La Salle County have a limited capacity of 10,000 BWPD each. Eagle Ford Shale horizontal wells require large fracs with up to 200,000 barrels of water per well. Having only two completed wells in La Salle County, there is no certainty the permitted disposal wells will be constructed and completed. Having numerous disposal wells located through out the county is preferable over having just two wells. The Fiedler Brothers SWD disposal well will reduce truck traffic from La Salle County to Frio County which is currently occurring. The Fiedler Brothers SWD disposal well will reduce congestion at other Frio County disposal facilities caused by trucks transporting La Salle County produced water. Horizontal drilling is increasing at a rapid rate in the Eagleford Shale in La Salle County. Having a disposal facility close to the horizontal wells will reduce disposal costs to operators, which will lower the economic limit of wells and thereby ultimately increase total production. The evidence indicates that the operation of the subject disposal well and facility will not adversely impact any surface or subsurface useable quality water.

¹ This issue has been raised previously in **Oil and Gas Docket No. 04-0267765**; *The Application of J & R Contractors for Commercial Disposal Authority Pursuant to Statewide Rule 9 for the Zapata SWD Lease, Well No. 2, Falcon Lake, N. (Wilcox 6400) Field, Zapata County, Texas - Final Order dated April 6, 2011 (See D. Chandler's Proposal for Decision dated February 16, 2011, Examiners' Opinion on page 4)*. The issue was also raised previously in **Oil and Gas Docket Nos. 02-0272528 & 02-0272530**; *The Application of Preferred Fluids Management for Commercial Disposal Authority Pursuant to Statewide Rule 9 for the Beta SWD Lease, Well Nos. 1 & 2, Austin Pierce (Austin Chalk) Field, De Witt County, Texas - Final Orders dated February 28, 2012.*

FINDINGS OF FACT

1. Notice of this hearing was given to all persons entitled to notice at least ten (10) days prior to the hearing. Notice of the application was published in *Frio-Nueces Current*, a newspaper of general circulation in La Salle County, on June 9, 2011. Notices of the application was sent to the La Salle County Clerk, offset Operators within ½ mile, and to the surface owners of each tract which adjoins the disposal tract on June 1, 2011.
2. The Fiedler Brothers SWD No. 2 has not been drilled. Energy Equity Company plans to drill the well to a maximum depth of approximately 5,800 feet. The top of the Wilcox is expected to occur at approximately 4,850 feet.
3. The maximum requested injection volume is 20,000 barrels of water per day and the maximum requested surface injection pressure is 2,200 psi. The requested disposal interval is the Wilcox formation between approximately 4,850 and 5,800 feet.
4. The Fiedler Brothers SWD No. 2 will be cased and cemented in a manner to protect usable quality water, the USDW and injection will be confined to the injection interval.
 - a. The subject well will have 4,150 feet of 9⁵/₈" surface casing cemented to surface.
 - b. The subject well will have approximately 5,800 feet of 7" casing, cemented with 500 sacks of cement with a top of cement at approximately 3,500 feet.
 - c. Injection will be through tubing set on a packer no higher than 100 feet above the top of the injection interval.
 - d. The Texas Commission on Environmental Quality recommends that usable-quality water be protected to 4,000 feet in the area of the proposed well.
 - e. Injection will not occur into the USDW zone; the base is estimated to be found at a depth of 4,800 feet.
5. There are no wellbores within one-half mile of the proposed disposal well.
6. Trucks traveling from La Salle County to commercial disposal wells in Frio County are creating congestion at those facilities and trucks unloading there experience frequent waiting times.
7. There are two active commercial disposal wells located in La Salle County. One well is located approximately 9 miles to the south of the Fiedler Brothers SWD No. 2 and the other well is approximately 20 miles southwest of the proposed well.

8. Due to increasing development of the Eagle Ford Shale with horizontal drilling in this area, large quantities of produced water must be disposed of. Use of the Fiedler Brothers SWD No. 2 as a commercial disposal well is in the public interest to promote this development by providing a safe and economic means of disposal of the fluids associated with production. Currently, there are significant wait times at existing disposal facilities.
9. Energy Equity's nearest other facility, the Lehman No. 1 SWD well is located in Frio County, approximately 50 miles away from the proposed disposal well.
10. Energy Equity Company has an active P-5 on file with the Commission, with \$50,000 financial assurance.

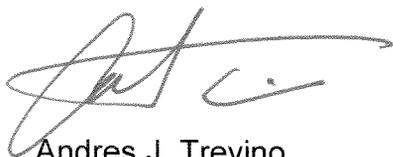
CONCLUSIONS OF LAW

1. Proper notice was issued in accordance with the applicable statutory and regulatory requirements.
2. All things have occurred to give the Railroad Commission jurisdiction to consider this matter.
3. The use or installation of the proposed injection well is in the public interest.
4. The use or installation of the proposed injection well will not endanger or injure any oil, gas, or other mineral formation.
5. With proper safeguards, as provided by terms and conditions in the attached final order which are incorporated herein by reference, both ground and surface fresh water can be adequately protected from pollution.
6. Energy Equity Company has made a satisfactory showing of financial responsibility to the extent required by Section 27.073 of the Texas Water Code.
7. Energy Equity Company has met its burden of proof and satisfied the requirements of Chapter 27 of the Texas Water Code and the Railroad Commission's Statewide Rule 9.

EXAMINERS' RECOMMENDATION

Based on the above findings and conclusions, the examiners recommend that the application be approved as set out in the attached Final Order.

Respectfully submitted,



Andres J. Trevino
Technical Examiner



James M. Doherty
Hearings Examiner

Fiedler Brothers # 2
API # 42-283-32625
Energy Equity Company
La Salle County, Texas

Proposed Disposal Configuration

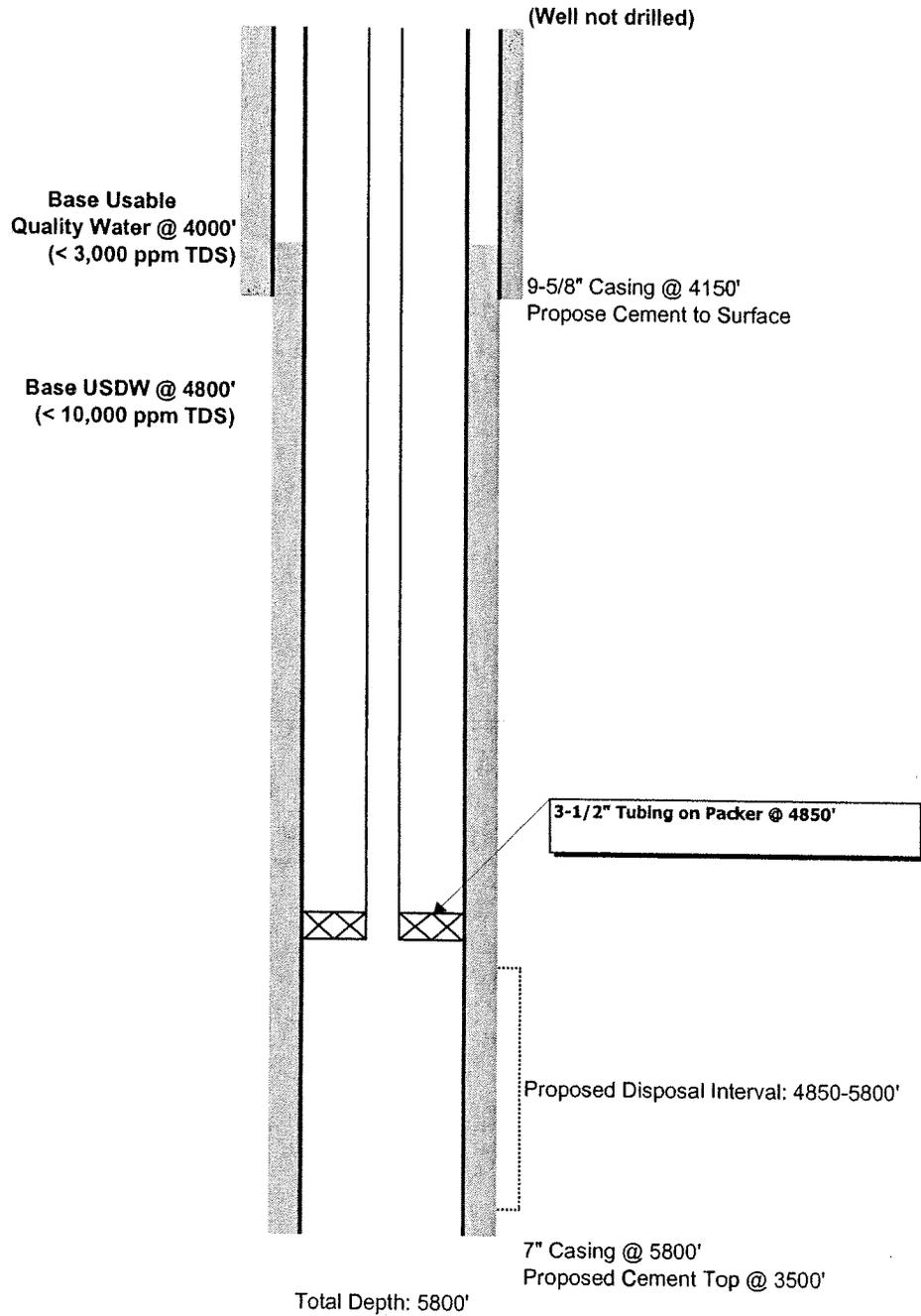


Exhibit No. 3
O & G Docket No. 01-0271929
Date: August 30, 2011
Energy Equity Company