RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

PROPOSAL FOR DECISION

OIL AND GAS DOCKET NO. 03-0296476

THE APPLICATION OF EAGLE FORD WATER AND DISPOSAL, 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, CALDWELL SWD LEASE, WELL NO.1, GIDDINGS (AUSTIN CHALK -3) FIELD, BURLESON COUNTY, TEXAS

HEARD BY: Richard Eyster, P.G. – Technical Examiner
Randall Collins – Administrative Law Judge

REVIEWED BY:
Marshall Enquist – Administrative Law Judge
Dana R. Lewis – Administrative Law Judge

APPEARANCES:	**REPRESENTING:**
Applicant:	
Stephen Fenoglio	Eagle Ford Water and Disposal, LLC
Richard Atkins	
Clayton Reaser	
William Wilson	
Krystal Eversdyk	
Protestants:	
Joseph Briers	Mr. & Mrs.Thomas L. Goodnight, & Mr. Thomas Novosad
Thomas Richter	
Thomas Goodnight	

PROCEDURAL HISTORY:

Application Filed:	April 23, 2015
Protest Received:	June 16, 2015
Request for Hearing:	April 23, 2015
Notice of Hearing:	May 29, 2015
Date of Hearing:	August 27, 2015
Transcript Received:	September 24, 2015
Applicants Closing	September 29, 2015
Protestants Closing	October 01, 2015

Response to Applicants Closing	October 13, 2015
Reply to Protestants Closing	October 14, 2015
Proposal For Decision Issued:	April 26, 2016
Conference Date:	June 07, 2015

STATEMENT OF THE CASE

Pursuant to Statewide Rule 9 (16 Tex. Admin. Code § 3.9), Eagle Ford Water and Disposal, LLC, (Eagle Ford) seeks a commercial permit to dispose of oil and gas waste by injection into a porous formation not productive of oil or gas, Caldwell SWD Lease, Well No.1, Giddings (Austin Chalk-3) Field, Burleson County, Texas. The proposed well (Caldwell No. 1 Well) is located about 2.0 miles southwest of the City of Caldwell, in the L. Dickinson Survey, A20, Burleson County, Texas. This permit would authorize Eagle Ford to drill and operate a new well in the Edwards and Glen Rose Formations for injection into the depth interval from 8,090 ft to 10,195 ft. On March 11, 2015, Notice of the Application was mailed to the Burleson County Clerk, the surface owner of the subject tract, and to the surface owners of adjoining tracts. Notice of the Application was published on March 12, 2015, in the *Burleson County Tribune*, a newspaper of general circulation in Burleson County. There are no offsetting operators of wells within a one-half mile radius of the proposed well.

The Application was protested by several adjoining surface owners who appeared at the hearing, including Mr. & Mrs. Thomas L. Goodnight, and Mr. Tommy Novosad, (collectively the "Protestants").

APPLICABLE LAW

The Railroad Commission may grant an application for a disposal well permit under Texas Water Code § 27.051(b)[1] and may issue a permit 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 as required by Section 27.073.

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[1] Tex. Water Code §27.051(b)(1-4).

The Examiners conclude that Eagle Ford has met its burden of proof and recommend the permit be granted.

DISCUSSION OF THE EVIDENCE

EAGLE FORD'S EVIDENCE

Eagle Ford proposes to drill and complete a new commercial salt water disposal (SWD) well in the Edwards and Glen Rose Formations and to use the well for the disposal of salt water and non-hazardous waste from the production of oil and gas. Eagle Ford has an active Form P-5 and a cash deposit in the amount of $25,000 for financial assurance. The proposed well will be located about 2 miles southwest of the City of Caldwell.

The proposed construction and operational details of the well are as follows:

- The well will be drilled to a depth of 10,295 ft.
- Surface casing (9 5/8-inch) will be set to a depth of 3,600 ft with cement circulated to the surface.
- Long String casing (7-inch) will be set to a depth of 10,295 ft with cement circulated to a depth of 6,500 ft (by calculation).
- Injection tubing (4-½ inch) will be set with a packer at 8,040 ft, which is 50 ft above the injection interval of 8,090 ft to 10,195 ft.
- The proposed well will inject saltwater into the Edwards and Glen Rose Formations.
- The maximum daily injection volume will be 25,000 barrels per day (BPD) with an average daily injection volume of 20,000 BPD.
- The maximum surface injection pressure will be 4,045 pounds per square inch gauge (psig) with an average surface injection pressure of 3,945 psig.
- The facility will receive salt water for disposal by truck with access from CR 105.

Mr. Reaser stated that the proposed facility will have 4 unloading bays and the facility is designed to unload a truck in 8-10 minutes instead of the 30 plus minutes it

usually takes to unload a truck, and he will be able to get 16 trucks off the road into his facility without any of the trucks sitting out on CR 105 causing traffic safety issues.[2]

The Use or Installation of the Injection Well Is in the Public Interest:

Eagle Ford asserts the proposed Caldwell No. 1 Well is in the public interest as there is a current, ongoing and future need for waste disposal in the immediate area. Although drilling in the Eagle Ford Shale Formation has decreased, wells continue to be drilled in the area. Eagle Ford's Exhibit No. 17 identified a total of 248 completions and 577drilling permits issued from January 2013 through August 2015 within a 20 mile radius of the proposed injection well. The majority of these wells are horizontal wells that will require hydraulic fracturing, and consequently produce large amounts of flowback and produced water.

Eagle Ford's Exhibit No. 17 also shows there are 11 commercial disposal wells within 20 mile radius of the proposed disposal well. Clayton Reaser, President of Eagle Ford testified that of the 11 disposal wells six wells are private disposal wells. Mt Reaser stated that by private disposal well he means the disposal wells are for use only by water haulers contracted with the operator of the disposal wells and are not available for use by the general waste hauling public.

Key Energy Services, LLC has four disposal wells for Key Energy Services contracted water haulers use only:

- USA 1 D Well,
- Bettie Unit 1 Well,
- Earl Sebesta 1 Well,
- Holland Porter No. 1 Well.

Advanced Hydrocarbon Corporation also has two wells that are for private use, the:

- Early NE No 1 Well,
- Wood "K" No. 2 Well.

3-D Disposal has three disposal wells,

- Billy Blaha 1 Well.

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[2] Tr. pg 69.

- Davidson Disposal No. 1 Well.
- Lyons SWD 3 Well.

Mr. Reaser testified that the 3-D Disposal's Billy Blaha 1 Well is non operational, the Davidson Disposal No. 1 Well No. 1 Well is permitted for a maximum disposal pressure of 1,000 psi. According to their most recent H-5s their operating pressure is 950 psi and they are at capacity.

Mr. Reaser further testified that he had spoken with the operator of the 3-D Disposal's Lyons S 1WD Well and the operator said that they have two truck unloading bays but that one of the bays was out of service so they could only unload one truck at a time so they are not capable of taking their permitted maximum daily volume of 15,000 bbls.

GSI Oil & Gas, Inc. has one disposal well, the M&B SWD 1 Well. According to Mr. Reaser, the M&B Well has only two unloading bays and therefore cannot inject their permitted 15,000 bbls/d.

Boundary Ventures, Inc. is primarily a solids facility, taking drill cuttings, oil and water based mud. They use their disposal well to dispose of the fluids they get from spinning off the solids. It is permitted for only 5,000 bbl/d and have truck unloading waiting times up to two hours.[3]

Eagle Ford has letters from Complete Oilfield Solutions (Complete), D & D Vacuum Services (D&D), Marlin Energy Resources, LLC, (Marlin) and Rosewood Resources, Inc.,(Rosewood) supporting the proposed disposal well.

The letter from Complete dated August 21, 2015, and signed by Mathew Vaughn, President of Complete, states that they are currently contracted to haul 44 truckloads per day in the area and anticipate hauling up to 72 truckloads per day to the proposed well if the facility has the capacity. The letter also states that there are days when Complete's trucks have a wait time of over 1.75 hours per truck to unload at facilities they use in Burleson County. The letter goes on to state that there is a definite need for Eagle Fords' commercial well in Burleson County. According to the letter Complete estimates that using the proposed disposal well will reduce operating time by 9.16 hours per truck per day and will result in $774.03 savings per day per truck.[4]

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[3] Tr. pgs, 37-38

[4] Applicants Exhibit No. 20, letter from Complete Olifield Solutions.

The D & D Vacuum Services letter dated August 20, 2015 states that they haul between 3 and 5 truckloads per day and there are days when they have to wait over an hour to unload at other facilities in Burleson County. The letter also states D&D would use the proposed disposal well if it is permitted.[5]

Marlin and Rosewood both submitted letters of support dated August 26, 2015 for the proposed disposal well. The letters stated there is a need for the saltwater disposal well and its availability will enhance their E&P operations, and having the new disposal well will allow both of them to be more competitive in the market today.[6]

Mr. Reaser testified that the proposed injection well and facilities would cost around $ 4.3 million to construct and he would not invest that kind of money if he didn't think there was a need for the proposed injection well.

The Use or Installation of the Disposal Well Will Not Endanger or Injure Any Oil, Gas, or Other Mineral Formation:

There is no oil or gas production from the Edwards and Glen Rose Formations within a two-mile radius of the proposed disposal well. There are no wellbores within the one-quarter or one-half mile area of review around the proposed well location. Production in the area is from the Austin Chalk and the Eagle Ford Formations. The base of the Eagle Ford Formation is approximately 7300 ft. The base of the Austin Chalk is immediately above the Eagle Ford at approximately 6900 ft.

There are three wells within one mile of the proposed well, one plugged well, and two horizontal wells as shown on the Eagle Ford's Exhibit No. 15. The plugged well is the S & H Operating Co. Vacuum Service Well No. 1 (API No. 42-051-30716) which has a Total Depth (TD) of 7,800 ft, and is located about one mile south of the proposed well. The second well is the Clayton Williams Energy, Inc. Well No.2 (API No. 42-051-33897), a horizontal well completed at a TD of 7,950 ft. The third well is another Clayton Williams Energy, Inc. horizontal well, (API No. 42-051-33630), which was completed at a total depth 7,307 ft. All three wells are completed above the proposed disposal interval of 8,090 ft to 10,195 ft.[7] The proposed disposal well will be completed in manner that will be protective of the hydrocarbon bearing formations occurring above the proposed disposal interval. Mr. Wilson the Eagle Ford's geologist testified that there is over 300 ft of shale including the Del Rio clay isolating the top of the proposed disposal interval from the hydrocarbon bearing formations. The Del Rio clay is a swelling clay called smectite which can swell up

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[5] Applicants Exhibit No. 21, letter from D&D Vacuum Service.

[6] Applicants Exhibit Nos. 22 & 23, letters from Marlin Energy Resources, LLC and Rosewood Resources, Inc.

[7] Eagle Ford's Exhibit No. 15

to 200% of its dry volume which would seal itself if were to fracture thereby sealing off the formations above the Del Rio from any fluids that could possibly migrate up the well bore.[8]

With Proper Safeguards, Both Ground and Surface Fresh Water Can Be Adequately Protected from Pollution

There are no wellbores within the one-quarter or one-half mile area of review around the proposed well location. The Commission's Groundwater Advisory Unit (GAU) determined the base of usable quality groundwater (BUQW) to be at a depth of 3,500 ft, which includes the Carrizo and Simsboro Formations. The base of underground sources of drinking water, (USDW) is at a depth of 4,050 ft. The top of the injection interval is 8,090 ft. The GAU determined that, if otherwise compliant with Commission rules, the proposed well will not endanger freshwater in the area.[9] The proposed well will be cased and operated in a manner that will be protective of freshwater.[10] A three well cross section shows the base of the BUQW is 4,590 ft above the top of the injection interval and the BUQW and USDW are separated from the disposal interval by a 300 ft shale stratum from approximately 8,000 to 7,700ft.[11]

The surface facilities will be constructed with access to CR 105. Water and skim oil storage tanks will be located within a containment structure made of high-density polyethylene (HDPE), an impermeable synthetic material. The structure will have sidewalls and a sufficient volume to contain 100% of the combined fluid capacity of all of the tankage and equipment within the structure and to contain a 24 hour rainfall event landing within the containment areas.[12] The facility will be a closed system. Water hauling trucks will connect directly to the receiving system; waste fluids will not come into contact with the ground surface or be openly exposed to the atmosphere. If the permit is approved, Eagle Ford will develop a Spill Prevention, Control and Countermeasure (SPCC) plan as a best practices management tool governing facility processes to prevent or mitigate the impacts from potential spills. Eagle Ford uses SPCC plans at its other facilities.

Financial Assurance

Eagle Ford has an active Form P-5 and a cash deposit for the amount of $25,000 for financial assurance.

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[8] Tr. pg 158, lns 16-25

[9] Applicants Exhibit No. 9, well bore schematic. Applicants Exhibit 13 GAU letter.

[10] Applicants Exhibit No. 9, well bore schematic.

[11] Applicants Exhibit No. 19, 3-well cross section.

[12] Tr. pgs. 59 -60

Seismic Activity

A review of U.S. Geological Survey seismic activity data did not identify any historical seismic events within a 6-mile radius of the proposed well location (about 113 square miles) from January 1, 1973 to August 26, 2015.

PROTESTANTS EVIDENCE

The Protestants are the owners of adjoining tracts of land. The Protestants' stated their primary issue is the proposed well is not in the public interest due to excess existing permitted disposal capacity. The Protestant's also have issues with regard to additional traffic on CR 105. One of the Protestants, Mr. Goodnight, whose property is located across CR 105 from the proposed disposal well site, testified that he was protesting the application because he was concerned that the well would lower his property values and there would be increased traffic on CR 105. He is also concerned about the possibility of runoff from the site polluting his property.[13]

The Protestants expert witness Mr. Thomas Richter, introduced Protestants Exhibit No. 1, a map indicating the locations of 14 commercial disposal wells within a 20 mile radius of the proposed disposal well. The Protestant's map includes three disposal wells that have been permitted but not drilled, or the drilling permit has expired.[14] Otherwise the map shows the same 11 wells shown on Eagle Ford's Exhibit 17. Protestants Exhibit No. 2, is a table that shows permitted capacity and the percent of the permitted capacity injected for each of the 14 wells shown on Protestants Exhibit No. 1. According to Mr. Richter there are three wells on his exhibit that have not been drilled but he said he used the maximum permitted volumes in his capacity calculations.[15] The three wells are the High Roller Wells, LLC,Hwy 696 SWD No.1, permitted for 25,000 bbl/d, the OSR SWD Torres no. 1 Well, is permitted for 25,000 bbl/d, and an the Eagle Ford well, the Snook SWD No. 1, permitted for 25,000 bbl/d.

According to Mr. Richter, the permitted capacity of the 14 disposal wells, including the three that are not drilled is 214,000 bbl/d and the permitted wells are injecting 31,900 bbl/d. To get the percentage of the permitted disposal capacity Mr. Richter divided the actual disposal volumes by the permitted capacity resulting in 14.9 percent of permitted capacity.[16] Mr. Richter introduced Protestant's Exhibit No. 3, which is a series of graphs

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[13] Tr. pgs 238 and 239.

[14] Tr. pg.176. Ins 19-25

[15] Tr. pgs 204-206

[16] Tr. pg 181, Ins, 6-25

which show a decline in disposal volumes over time for the commercial disposal wells in the area.

Mr. Richter stated that in disposal volumes are declining because new wells are not being completed and the Austin Chalk wells in the area were hitting their economic limits.[17] Mr. Richter then introduced Protestants Exhibit No. 4 a series of charts indicating there has been a decline in drilling permits over the last half of 2014 and in 2015.

In conclusion, the Protestants believe the proposed well is not in the public interest due to excess disposal capacity in the area, the well would lower property values, and there would be increased traffic on CR 105. They are also concerned about the possibility of runoff from the site polluting the Protestants property.

EXAMINERS' OPINION

The Railroad Commission may grant a permit for a commercial disposal well if the application meets the requirements of the Texas Water Code § 27.051(b)(1-4). The Examiners conclude Eagle Ford has demonstrated the proposed well meets these requirements and recommend the permit be granted. A discussion of the required elements in the Texas Water Code § 27.051(b)(1-4) follows.

The Use or Installation of the Disposal Well Is in the Public Interest

The Applicant has demonstrated that the use or installation of the proposed SWD Well No. 1 is in the public interest. Eagle Ford contends additional disposal capacity is needed in Burleson County. Eagle Ford has four letters of support for the proposed injection well, two from waste haulers, and two from exploration and production companies in the area.

The Protestants believe the proposed disposal well is not in the public interest due to excess disposal capacity within a 20 mile radius of the proposed disposal well. There are multiple issues associated with attempts to forecast the demand for fluid disposal and the supply of fluid disposal capacity in a given area. A disposal permit issued by the Commission stating the maximum volume the well is permitted to inject is a regulatory limit and not the volume that could actually be injected. This is true for several reasons. First, there is no guarantee that the permitted well will become operational, either because the operator may not construct the facility, or the facility may not be physically able to inject the permitted volume. This could be due the way the operator constructed the well, for example due to the size of the disposal tubing or the disposal pumps may not be able to inject the permitted volumes or the formation may not be able to accept the permitted volume of fluid. Second, operators are not required to report production of flow back and salt water from their wells, which is the source of most of the waste requiring disposal in

[17] Tr. pg 189, lns17-25

commercial SWDs in Burleson county. This impairs any estimation of current or potential future demand for wastewater disposal.

The Protestants also expressed concern about the location of the proposed well causing traffic problems. The Commission does not have jurisdiction over roadway safety.

Protecting Oil, Gas, or Other Mineral Formations

The Edwards and Glen Rose Formations disposal interval is not productive of oil or gas within two miles of the proposed well. There are no wellbores within one-quarter or one-half mile area of review around the proposed well location. There are three wells within one mile of the proposed well, one plugged well, and two horizontal wells. All three wells are completed above the proposed disposal interval. A minimum of 300 ft of shale stratum is present between the top of the disposal interval and the hydrocarbon producing interval. The Pearsall Formation is a several thousand foot thick shale formation starting at approximately 10,100 ft which isolates the base of the proposed injection interval.

The Protestants had no concerns that the proposed disposal well would not be protective of hydrocarbon bearing formations.

Protecting Ground and Surface Fresh Water from Pollution

Eagle Ford has demonstrated that, with adequate safeguards, the proposed disposal well will not result in pollution of fresh surface or ground water. To protect surface water, the facility will feature a closed liquid collection system, waste fluids will not be exposed to the atmosphere or ground surface. Tanks and mechanical equipment will be located within a secondary containment structure with sufficient capacity to contain all received fluids on the site at any one time. Further, Eagle Ford will develop and implement a SPCC to prevent and mitigate potential spills. There are no wetlands on site. The proposed disposal permit includes standard provisions for commercial surface facilities to protect ground and surface fresh water from pollution. The proposed wellbore design and operational parameters will be protective of fresh groundwater at and above the BUQW, which is at a depth of 3,500 ft. The well will be cased and cemented to isolate the BUQW from the disposal interval. There is over 300 ft of shale isolating the proposed disposal interval from the BUQW and the USDW.

The Protestants had no concerns that the proposed disposal well would not be protective of the BUQW or the USDW.

Financial Responsibility

Eagle Ford has an active Form P-5 and a cash deposit for the amount of $25,000 for financial assurance. Eagle Ford has made a satisfactory showing of financial responsibility as required by the Texas Water Code §27.073.

FINDINGS OF FACT

1. On March 11, 2015, Notice of the Application was mailed to the Burleson County Clerk, the surface owner of the subject tract, and to the surface owners of adjoining tracts.

    a. Notice of the Application was published on March 12, 2015, in the *Burleson County Tribune*, a newspaper of general circulation in Burleson County

    b. There are no offsetting operators of wells within a one-half mile radius of the proposed disposal well which is located about 2.0 miles southwest of the City of Caldwell, in the L. Dickinson Survey, A-20, Burleson County, Texas

2. The Application was protested by adjoining surface owners who appeared at the hearing, including Mr. & Mrs. Thomas L. Goodnight

3. The proposed well will be completed and operated in the following manner;.

    a. The well will be drilled to a depth of 10,295 ft and inject into the Edwards and Glen Rose Formations in the depth interval from 8,090 ft to 10,195 ft.

    b. Surface casing (9 5/8-inch) will be set to a depth of 3,600 ft with cement circulated to the surface.

    c. Production casing (7-inch) will be set to a depth of 10,295 ft with cement circulated to a depth of 6,500 ft.

    d. Disposal tubing (4-½ inch) will be set with a packer at 8,040 ft, 50 ft above the top of the disposal zone.

    e. The maximum daily disposal volume will be 25,000 barrels per day (BPD) with an average daily disposal volume of 20,000 BPD.

    f. The maximum surface disposal pressure will be 4,050 pounds per square inch gauge (psig), with an average surface disposal pressure of 3,945 psig.

g. The facility will receive salt water for disposal by truck with access from CR 105 on the southwest side of the tract.

4. The base of the quality groundwater (BUQW) is at a depth of 3,500 ft. The well will be cased and cemented to isolate the BUQW from the disposal interval.

a. A minimum of 300 ft of continuous shale is present immediately above the disposal interval.

5. There is no production from the Edwards and Glen Rose Formations within a two-mile radius of the proposed disposal well.

6. Within a one-half mile radius of the proposed well, there are no wellbores that penetrate the disposal interval.

7. Highway traffic safety on CR 105 is not within the jurisdiction of the Commission.

8. Eagle Ford will develop a Spill Prevention, Control and Countermeasure (SPCC) plan as a best practices management tool governing facility processes to prevent or mitigate the impacts from potential spills.

9. USGS records do not indicate any seismic activity within a six mile radius (about 113 square miles) of the proposed well location.

10. Eagle Ford has an active Form P-5 and a cash deposit in the amount of $25,000 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. The installation and use of the proposed commercial disposal well is in the public interest. Texas Water Code § 27.051(b)(1)

4. The installation and use of the proposed disposal well will not endanger or injure any oil, gas, or other mineral formation. Texas Water Code §27.051(b)(2)

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. Texas Water Code § 27.051(b)(3)

6. Eagle Ford Environmental, LLC has made a satisfactory showing of financial responsibility. Texas Water Code § 27.051(b)(4)

7. Eagle Ford Environmental, LLC 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. 16 Tex. Admin. Code § 3.9

RECOMMENDATION

Based on the above findings of fact and conclusions of law, the Examiners recommend the Commission enter an order approving Eagle Ford's application and issue a permit for the Caldwell SWD Lease, Well No.1, Giddings (Austin Chalk-3) Field, Burleson County, Texas.

Respectfully submitted,

Richard Eyster, P. G.
Technical Examiner

Dana R. Lewis
Administrative Law Judge