



RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

OIL AND GAS DOCKET NO. 01-0276416

THE APPLICATION OF COASTAL PLAINS DISPOSAL #1, LLC FOR A COMMERCIAL PERMIT TO DISPOSE OF OIL AND GAS WASTE BY INJECTION INTO A POROUS FORMATION NOT PRODUCTIVE OF OIL OR GAS, WILSON SWD LEASE WELL NO.1, STOCKDALE, EAST (CHALK, LOWER) FIELD, WILSON COUNTY, TEXAS

HEARD BY: Andres J. Trevino P.E., Technical Examiner
Marshall F. Enquist, Hearings Examiner

APPEARANCES:

APPLICANT:

Stephen Fenoglio
Kerry Pollard
Andy Cunningham
Amber Lorick
Clay Keath

REPRESENTING:

Coastal Plains Disposal #1, LLC

PROTESTANTS:

Odelle Zarsky
Diane Savage
William R. Bruce
Charles Rice
Gale Hodge
Patricia Mishler
Jimmy Stevens
Banks Akin
Joe Wiatrek

Self, Wilson County landowners
Wilson County Water Action Project
Self
Self
Self & Randy Hodge
Self & Kenneth & Robert Mishler
Self, Wilson County citizens
City of Stockdale
Sunko Water Supply Corporation

PROCEDURAL HISTORY

Application Filed:	January 20, 2012
Request for Hearing:	April 30, 2012
Notice of Hearing:	June 27, 2012
Date of Hearing:	August 23, 2012
Proposal For Decision Issued:	March 8, 2013

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

Coastal Plains Disposal #1, LLC (Coastal Plains) requests authority pursuant to Statewide Rule 9 to operate Well No. 1 on its Wilson SWD Lease in Wilson County as a commercial disposal well. This application is protested by numerous adjacent landowners to the tract on which the proposed disposal well will be located.

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

The subject well has not yet been drilled. It is proposed that the well be drilled through the Lower Cretaceous to a maximum depth of 7,350 feet. It is proposed that the well have 2,650 feet of 9⁵/₈" surface casing with cement circulated from the casing shoe to the ground surface, and 7" casing set through the Lower Cretaceous, estimated to occur beginning at a depth of 5,400 feet. The 7" casing will be cemented with 345 sacks of cement with the top of cement behind the longstring casing estimated to reach a depth of 4,000 feet. A DV tool will be set at a depth of 4,000 feet and will be cemented with 1,500 sacks of cement circulated to the surface. (See Wellbore Diagram attachment). The Commission's Groundwater Advisory Unit recommends that usable-quality ground water be protected to a depth of 2,550 feet. Furthermore, the Groundwater Advisory Unit requires the Carrizo from 350 feet to 1,100 feet, to be isolated from water in the underlying and overlying beds. The Groundwater Advisory Unit identifies the base of USDW as being at a depth approximately at 2,800 feet.

The proposed injection will be through 4¹/₂" tubing set on a packer at approximately 5,350 feet, but no higher than 100 feet above the top of the injection interval. The proposed injection interval is the Lower Cretaceous formation, the top of which is expected to occur at about 5,400 feet. The Lower Cretaceous formation includes the Edwards A, Edwards B, the Glen Rose and the Sligo. The proposed injection interval is between 5,400 and 7,000 feet. The estimated top of the Edwards A is based on the log of the Clayton Williams, Jr. - Irene Robbins No. 1. This well is approximately five miles to the southeast from the proposed well and is the closest well which penetrated the Lower Cretaceous and for which an electric log is available. The log was run to a depth of 7,750 feet. The Lower Cretaceous is an expansive set of formations that are found through out Wilson County. The log shows there is approximately 2,000 feet of Midway Shale separating the top of the injection interval and the base of the usable quality water. Additionally, there is approximately 100 feet of Eagle Ford Shale, above the Lower Cretaceous. Below the base of the injection interval is approximately 170 feet of shale which will confine the injected fluids. Because the proposed injection interval is below the Eagle Ford Shale, oil operators wishing to produce the Eagle Ford will not have to penetrate the proposed injection

interval. Additionally, due to the thick, expansive nature of the proposed injection interval, it is unlikely the interval will have a significant rise in pressure as the formation will easily absorb the disposal fluids. The proposed maximum injection volume is 25,000 BWPD. The proposed maximum injection pressure is 2,700 psig.

There is one plugged dry hole within a ¼ mile radius of the proposed disposal well. The dry hole was drilled to a total depth of 2,712 feet and does not penetrate the proposed injection interval. There are two additional plugged dry holes found within a ½ mile radius of the proposed disposal well. One dry hole, the Henry, E.F. No.1 was drilled to a total depth of 1,482 feet and does not penetrate the proposed injection interval. The second plugged dry hole, the Ethel M. Porter No.1, was drilled to a total depth of 5,234 feet. The well is filled with mud, plugs were set from 5,003 feet to 4,629 feet and a surface plug was set. This plugged dry hole also does not penetrate the proposed injection interval.

Due to area landowners' concerns of possible water-well contamination, Coastal Plains conducted a water-well study in the area. They used a consultant (Banks Environmental Data) to identify thirteen water wells within one mile of the proposed disposal well. The wells are used for livestock, irrigation and for domestic purposes. The water well depths range from 91 feet to 765 feet, down into the Carrizo, indicating all area water wells are exploiting only the shallowest groundwater resources. The proposed Wilson SWD Well No. 1 will have 2,650 feet of 9 5/8" surface casing with cement circulated to protect the base of the usable quality water. The proposed top of the injection interval is at 5,400 feet or 4,635 feet below the deepest water well in the area.

Coastal Plains 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 Eagle Ford Shale in the area. Coastal Plains believes that additional disposal facilities are necessary to accommodate the active drilling which generates large quantities of mineralized fluids. Coastal Plains presented two letters of support from potential customers stating they had a need and interest in using the proposed disposal facility. Coastal Plains received the letters from two water hauling companies, Chalk Mountain Services of Texas, LLC and Stevens Tanker Division, LLC, that haul and dispose of salt water in Wilson and surrounding counties. The trucking companies indicated they would welcome and support the additional disposal capacity the proposed facility would provide. All trucking companies stated in their letters that additional disposal capacity will reduce truck travel, and reduce fuel expenses.

The design of the facility is based on Coastal Disposal's experience operating other disposal facilities in Karnes, McMullen and Gonzales counties. Mr. Clay Keath, an officer of Coastal Plains is an engineer who has designed 30 disposal facilities for his past employers and as a consultant for third party customers. The proposed facility will consist of a location pad, with six 750 bbl saltwater tanks, two 1,000 bbl oil separator tanks, four 400 bbl oil tanks, two 800 bbl de-sanding tanks, and two injection pumps. All tanks will sit inside a secondary concrete tank containment basin. The secondary concrete containment basin will surround the facility's pumps to contain any spills or leaks. All salt water pipes

will be placed over a concrete lined containment conduit. A tertiary earthen containment dike approximately 2.5 feet high will surround all tanks, pumps, salt water pipes and the injection well to contain any spills. The tertiary earthen dike is designed to hold 100% of the entire tank volume plus the volume of water generated by a 25-year, 24-hour rainfall event (8.2 inches) plus an additional 25% buffer.

The facility will be built on a 25 foot elevated hill that sits outside any flood plain as determined by FEMA. All surface areas which are expected to handle fluids will be constructed of concrete and in accordance with the Commission's requirements for commercial disposal facilities designed to prevent pollution. The entire location pad will have a built-up limestone rock base. The truck roadway inside the property is large enough to accommodate 28 trucks without the need to have trucks parked and waiting along State Highway 123 to off-load disposal fluids. If additional space is needed for trucks to park inside the property, it will be provided. At other area disposal facilities, trucks often wait along county roads to enter the disposal facility to unload their fluids. Trucks will enter the facility off State Highway 123 onto the southeast corner of the property. The disposal fluids will be unloaded at the unloading bay. The unloading bay will allow up to four trucks to unload their fluids at once. The fluids will be pumped to the de-sanding tanks to settle and separate any solids or oil from the injection water. Any oil recovered will be pumped into the oil tanks. The remaining water will be transferred into the water storage tanks where it will be stored until it is pumped down the disposal well.

To ensure that the proposed surface injection pressure limitation of 2,700 psi is not accidentally exceeded, Coastal Plains will install electric motors to the injection pumps with horsepower limitations that will limit the maximum surface injection pressure to 2,300 psi. In order to increase surface injection pressure, Coastal Plains, would need to add larger electric motors with higher horsepower ratings. All injection activities, including volumes, and pressures will be monitored and recorded using the facility's computer system. The facility will have directional lighting that will be directed inwards towards the facility. Coastal Plains plans to comply with all the standard provisions found in a commercial disposal permit designed to prevent pollution from activities associated with the surface facilities.

The Eagle Ford Shale trend is a large trend extending from the Texas/Mexico border to College Station, TX. The map provided by Coastal Plains shows Wilson County is just north of Karnes County, and shows numerous Eagle Ford completions and Eagle Ford permits issued in Karnes and Wilson counties. Karnes County is one of the most active counties for Eagle Ford horizontal drilling. The Texas Monthly Oil and Gas Statistics posted on the Commission's website, shows Karnes County was the State's leading county for crude oil production with 3,135,866 barrels produced in December 2012. There are Eagle Ford Shale wells being drilled in the southeastern portions of Wilson County. Coastal Plains stated they would not engage in permitting and building the facility if they were not confident the facilities' services would be in demand.

Coastal Plains Disposal #1, LLC has an active P-5 on file with the Commission, with \$25,000 financial assurance bond. There are no active enforcement actions against Coastal Plains Disposal #1, LLC.

Notice of the subject application was published in *Wilson County News*, a newspaper of general circulation in Wilson County, on April 11, 2012. A copy of the application was mailed on April 12, 2012, to the Wilson County Clerk's Office and the offsetting surface owners. There are no operators within ½ mile of the proposed well. Coastal Plains Disposal #1, LLC owns the surface of the 17.253-acre tract on which the well is proposed.

Protestant's Evidence

The Protestants were present to voice their concerns over the proposed disposal well. The Protestants are adjacent landowners, farmers and mineral owners to the tract on which the proposed disposal well is located. There are six residences within 300 yards of the proposed facility. Most Protestants live within view of the proposed facility. The Protestants are concerned over truck traffic, ground water contamination, the potential for contaminated run-off from leaving the site, flooding, the existence of an unplugged, unmapped well within ½ mile of the proposed disposal well and a potential decrease in quality of life.

The unplugged well is approximately 20 to 25 years old and was drilled to a depth of 600 feet according to one of the Protestants, William R. Bruce. He stated the driller found traces of oil but drilled too deep and penetrated the Carrizo fresh water zone. The driller was later killed in a car accident before he was able to plug the well. Other unplugged wells are located within the city limits of Stockdale, 2 miles south of the proposed disposal site. The unplugged wells have been documented by Railroad Commission inspectors and presumably placed on the Commission's orphan well list to be plugged with state funds. A review of the Commission's orphan well list on the Commission's website show several 600 foot wells completed in the Stockdale (Carrizo) Field as being on the list. The proposed disposal well will be near the Clifton Branch of the Cibolo Creek and various ponds. The Protestants fear any spills from the site could run off and enter the creeks and ponds. The Protestants are concerned the permit will be trespassing on the mineral rights of the mineral owners in the area. By disposing of fluids in the well, the Protestants fear their mineral estates will be damaged as they may become less attractive to develop. The Protestants stated oil companies will not lease their lands if the disposal well is permitted. The Protestants are concerned over protecting the Eagle Ford Shale and the Pearsall Shale.

The Protestants have concerns about the potential for surface and groundwater contamination as many area landowners have water wells on their properties that they use for supplying their livestock with water and use for domestic purposes. Although there is a rural water supply system, Sunko Water Supply Corporation, many landowners use their private water wells for domestic purposes. Joe Wiatrek, a representative of the Sunko Water Supply Corporation is concerned over the potential pollution by the proposed disposal well of Sunko's fresh water wells. Sunko has several water supply wells near the proposed disposal facility, that produce fresh water from the Carrizo Aquifer at a depth of 852 feet.

One Protestant, Diane Savage did state she did not have an issue with the well's design but had an issue with the site selection for the well and its associated facility.

EXAMINERS' OPINION

The examiners believe that this application should be approved. The Wilson SWD No. 1 will be completed in a manner which will confine disposal fluids to the proposed disposal interval in the Lower Cretaceous. Surface casing will be set and cemented through the base of usable quality water. The longstring casing will be cemented with a DV tool that will circulate cement to surface to prevent migration from the injection interval. There are no oil or gas wells within the ½ mile radius of review that have penetrated the proposed disposal interval, therefore there are no wellbores that could pose a threat to groundwater or confinement of injected fluids in the Lower Cretaceous formation. Further, there is approximately 2,000 feet of Midway Shale, that is impervious to fluid flow, that separates the disposal interval (the Lower Cretaceous) and the base of the usable quality water at a depth of 2,550 feet.

The surface facility design will be state of the art to prevent pollution. Disposal fluids will be stored in fiberglass tanks which are considered corrosion proof. All surface piping will be poly pipe or PVC, and will have a secondary containment system made of concrete. All tanks will have a secondary containment system made of concrete with a concrete dike designed to contain 100% volume of the largest tank within the secondary containment system and rainfall. The pumps will have a concrete secondary containment to contain any spills or leaks. The facility will have a tertiary containment system composed of an earthen dike 2.5 feet high surrounding the tanks, pumps, associated surface pipes and the injection well. The earthen dike will hold 100% of the entire tank volume plus the volume of water generated by a 25-year, 24-hour rainfall event (8.2 inches) plus an additional 25% buffer. In order to have a release from the facility, the primary tanks must fail, the secondary concrete dikes must fail, followed by a failure of the tertiary containment system along with a large rain event. The truck unloading area within the facility will accommodate up to 28 trucks to prevent the trucks from waiting along State Highway 123 to enter the facility. If additional truck parking space is required, Coastal Plains stated they will build more space as needed. Other features that Coastal Plains will use to minimize impact on the Protestant's quality of life include the use of electric pumps versus diesel pumps to eliminate fumes, minimize sound, and the use of directional lighting to minimize light pollution.

There is adequate separation between the Lower Cretaceous and the potentially productive formations the Protestants are concerned may be damaged. The Lower Cretaceous is found below the Eagle Ford Shale, therefore operators wishing to produce the Eagle Ford Shale will not have to penetrate the disposal interval, the Lower Cretaceous. The Eagle Ford is separated from the Lower Cretaceous by the Buda and Georgetown formations. There will be approximately 170 feet separating the base of the Eagle Ford from the top of the Lower Cretaceous. There will be approximately 700 feet between the base of the Lower Cretaceous and the top of the Pearsall Shale. There are many examples in the Eagle Ford Shale area and throughout the State, where producing oil wells are drilled adjacent to existing disposal wells. With the proper safeguards in place,

there should be no damage to the mineral estate. It is highly unlikely the operation of the Wilson SWD No. 1 will result in the contamination of surface or subsurface water or will endanger or injure any oil, gas, or other mineral formation.

Approval of the requested permit is in the public interest because it will promote the development of the Eagle Ford Shale in Wilson County and adjacent counties. The southeastern portion of Wilson County and the majority, if not all, of Karnes County is believed to be productive due to the widespread presence of the Eagle Ford Shale. Placing a disposal well in the edge of the expanding Eagle Ford development will relieve disposal injection demands in Karnes County and will help distribute the disposal fluids through out the area of development. This disposal well and others will be needed to accommodate current and future disposal needs. Letters from salt water truck operators in the area support and welcome additional disposal capacity. Having an additional facility to dispose of produced water will reduce wait times observed at other disposal facilities in the area. Having a disposal facility close to the horizontal wells will reduce disposal cost and increase hydrocarbon recovery.

The Commission has historically interpreted the "public interest" finding required by Texas Water Code 27.051(b) as limited to matters related to oil and gas production and as not including issues such as traffic safety and road conditions. The Commission's interpretation has been upheld by the Texas Supreme Court as reasonable and in alignment with the statute's meaning. See, *Railroad Commission v. Texas Citizens for a Safe Future and Clean Drinking Water*, 336 S.W.3d 619, 630 (Tex. 2011). The evidence indicates that the operation of the subject disposal well and facility will not adversely impact any surface or subsurface useable quality water and will enhance hydrocarbon recovery.

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 the *Wilson Country News*, a newspaper of general circulation in Wilson County, on April 11, 2012.
2. The Wilson SWD No. 1 has not been drilled. Coastal Plains Disposal #1, LLC plans to drill the well to a maximum depth of approximately 7,350 feet. The top of the Lower Cretaceous is expected to occur at approximately 5,400 feet.
3. The maximum requested injection volume is 25,000 barrels of water per day and the maximum requested surface injection pressure is 2,700 psi. The requested disposal interval is the Lower Cretaceous formation between approximately 5,400 and 7,000 feet.
4. The Wilson SWD No. 1 will be cased and cemented in a manner to protect usable quality water, and injection will be confined to the injection interval.

- a. The subject well will have 2,650 feet of 9⁵/₈" surface casing cemented to surface.
 - b. The subject well will have approximately 7,350 feet of 7" casing, cemented with 350 sacks of cement with a top of cement calculated to be at a depth of 4,000 feet. A DV tool will be set at a depth of 4,000 feet and will be cemented with 1,500 sacks of cement to circulate to the surface.
 - c. Injection will be through tubing set on a packer no higher than 100 feet above the top of the injection interval.
 - d. The Groundwater Advisory Unit recommends that usable-quality water be protected to 2,550 feet in the area of the proposed well.
5. There are no wells within the ½ mile radius of the proposed disposal well that has penetrated the proposed disposal interval.
 6. The unplugged, unmapped well identified by the Protestants was drilled to a depth of 600 feet and does not penetrate the proposed disposal interval.
 7. Coastal Plains conducted a water-well study in the area and found thirteen water wells within one mile of the proposed disposal well. The wells are used for livestock, irrigation and domestic purposes. The water-well depths range from 91 feet to 765 feet, indicating all area water wells are exploiting only the shallowest ground water sources in the Carrizo.
 8. The Coastal Plains Wilson SWD facility will incorporate all required standard features plus additional containment design features designed to prevent pollution.
 - a. All fluid storage tanks will be constructed of fiberglass to eliminate corrosion.
 - b. All tanks will have a secondary containment system made of concrete with a concrete dike designed to contain 100% volume of the largest tank within the secondary containment system and rainfall.
 - c. The pumps will have a concrete secondary containment to contain any spills or leaks.
 - d. All surface piping will be poly pipe or PVC, and will have a secondary containment system made of concrete.
 - e. The facility will have a tertiary containment system composed of an earthen dike 2.5 feet high surrounding the tanks, pumps, associated surface pipes and the disposal well. The earthen dike will hold 100%

of the entire tank volume plus the volume of water generated by a 25-year, 24-hour rainfall event (8.2 inches) plus an additional 25% buffer.

9. Coastal Plains will implement several additional measures at the proposed facility to minimize the impact on the Protestants' quality of life.
 - a. Coastal Plains is proposing to use electric pumps versus diesel pumps to eliminate exhaust fumes and minimize sound.
 - b. Coastal Plains is proposing to use directional lighting to minimize light pollution.
 - c. Coastal Plains will provide sufficient parking on the facility, as needed, for trucks to unload fluids without needing to park on State Highway 123 while waiting to unload fluids.
10. There is adequate separation between the Lower Cretaceous and the potentially productive formations the Protestants are concerned may be damaged.
 - a. The Lower Cretaceous is located below the Eagle Ford. Operators wishing to exploit the Eagle Ford will not have to penetrate the disposal interval.
 - b. The Buda and Georgetown formations lay in between the base of the Eagle Ford Shale and the top of the Lower Cretaceous (top of Edwards).
 - c. There will be 170 feet separating the base of the Eagle Ford and the top of the Lower Cretaceous.
 - d. There will be approximately 700 feet between the base of the Lower Cretaceous (base of Glen Rose) and the top of the Pearsall Shale.
11. There are many examples in the Eagle Ford Shale area and throughout the State of Texas, where producing oil wells are drilled adjacent to existing disposal wells.
12. The Eagle Ford Shale trend is a large trend extending from the Texas/Mexico border to College Station, TX.
 - a. There are Eagle Ford Shale wells being drilled in the southeastern portions of Wilson County.
 - b. Wilson County is north of Karnes County, which is one of the most active counties for Eagle Ford horizontal drilling.

- c. Texas Monthly Oil and Gas Statistics posted on the Commission's website, shows Karnes County was the State's leading county for crude oil production with 3,135,866 barrels produced in December.
13. Coastal Plains received letters of support from Chalk Mountain Services of Texas, LLC and Stevens Tanker Division, LLC, that haul and dispose of salt water in Wilson and surrounding counties. The trucking companies indicated they would welcome and support additional disposal capacity the proposed facility would provide. Both trucking companies stated in their letters that additional disposal capacity will reduce truck travel, and reduce fuel expenses.
14. 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 Wilson SWD No. 1 as a commercial disposal well is in the public interest of promoting this development by providing a safe and economic means of disposal of the fluids associated with drilling and production.
15. Having a disposal facility close to the horizontal wells will reduce disposal cost, and increase hydrocarbon recovery.
16. Coastal Plains Disposal #1, LLC has an active P-5 on file with the Commission, and \$25,000 bond as 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. Coastal Plains Disposal #1, LLC has made a satisfactory showing of financial responsibility to the extent required by Section 27.073 of the Texas Water Code.

7. Coastal Plains Disposal #1, 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.

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 P.E.
Technical Examiner



Marshall F. Enquist
Hearings Examiner