



RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

OIL AND GAS DOCKET NO. 7C-0286217

THE APPLICATION OF RAINS ENERGY, LLC FOR COMMERCIAL DISPOSAL
AUTHORITY PURSUANT TO STATEWIDE RULE 46, FOR THE BARNHART SOUTH
SWD LEASE, WELL NO. 2, IRION 163 (ELLEN) FIELD, IRION COUNTY, TEXAS

HEARD BY: Richard Atkins, P.E. – Technical Examiner
Michael Crnich – Hearings Examiner

PFD WRITTEN BY: Paul Dubois – Technical Examiner

APPEARANCES:

APPLICANT:

George Neale
John F. Miller
Tony Smith
Bonnie Burkland

REPRESENTING:

Rains Energy, LLC

PROTESTANTS:

Steve Benson	Self
Rebecca Benson	Self
Ellen Williams	Self
Larry McWilliams	Self
Audrey Martin	Self
Michell Martin	Self

PROCEDURAL HISTORY

Application Filed:	September 9, 2013
Request for Hearing:	October 31, 2013
Notice of Hearing:	January 30, 2014
Date of Hearing:	February 19, 2014
Transcript Received:	February 25, 2014
Proposal For Decision Issued:	May 30, 2014

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

Rains Energy, LLC (Rains), requests authority pursuant to Statewide Rule 46 to operate Well No. 2 on its Barnhart South SWD Lease in Irion County, Texas, as a commercial disposal well in the Ellenburger Formation, Irion 163 (Ellen) Field. The proposed disposal well will be a newly drilled well.

Rains originally filed the application pursuant to Statewide Rule 9 for disposal into an interval not productive of hydrocarbons. After the application was protested and set for hearing, Rains re-filed the application under Rule 46, as production of oil and gas from the Ellenburger Formation occurs within two miles of the proposed well.

Notice of the revised application was published in *San Angelo Standard Times*, a newspaper of general circulation in Irion County, on January 29, 2014. Notice of the revised application was mailed on January 28, 2014 to the Irion County Clerk, to offset operators within one-half mile of the proposed location, and to the surface owners of the disposal tract and each tract adjoining the disposal tract.

The application was protested by Barnhart residents Steve and Rebecca Benson, Larry McWilliams, and Audrey and Michell Martin. Ellen Williams, an Austin attorney, was also present at the hearing in support of, but not representing, the Bensons.

Rains also proposes to drill Well No. 1 on the same lease; however, the No. 1 well is being permitted under Docket No. 7C-0286218 and is not a part of the current matter.

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

Rains proposes to drill a new disposal well, the Barnhart South SWD Lease, Well No. 2, located on a 3.71 acre tract of land about one-half mile southeast of the unincorporated town of Barnhart, Irion County, Texas. The well will be located on the northeast corner of the intersection of State Highway 163 and County Road 301. The facility will be accessed from County Road 301. Rains proposes to drill, complete and operate the well as follows:

- A total depth of 10,000 feet below ground surface, encountering the Ellenburger Formation at about 8,550 feet.

- A 9 5/8-inch surface casing set to a depth of 880 feet with 475 sacks of cement, which is sufficient to return cement to the surface.
- A 7-inch longstring casing set to a depth of about 8,600 feet and cemented back to the surface with 1,525 sacks of cement.
- The 4 1/2-inch injection tubing will be set with a packer at 8,500 feet.
- An open hole injection interval in the Ellenburger Formation from about 8,550 to 10,000 feet.
- A maximum daily injection volume of 25,000 BPD of saltwater and RCRA-exempt oil and gas waste, with an estimated average daily injection volume of 15,000 BPD.
- A maximum surface injection pressure of 4,275 psig.

The Commission's Groundwater Advisor Unit (GAU) recommends that usable-quality groundwater be protected to a depth of 700 feet below ground surface. This depth, the base of usable quality groundwater (BUQW) 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 850 feet. The GAU indicated that, if the well is otherwise compliant with Commission rules, injection of oil and gas waste into the interval from 8,750 to 10,000¹ feet will not endanger freshwater strata in the area.

The proposed disposal interval is the Ellenburger Formation and the well will be assigned to the Irion 163 (Ellen) Field. The Applicant expects the well to encounter the Ellenburger Formation from about 8,550 to 10,000 feet, based on its interpretation of a log of the Gulf Oil Exploration & Production Company State "VE" No. 4 Well (Applicant's exhibit no. 8), located about 1.5 miles southeast of the proposed disposal well. This well log identifies the Ellenburger with a relatively low gamma ray signature compared to the overlying Strawn Formation with a significantly higher gamma ray signature signifying higher shale mineral content. Rains asserts that there is at least 500 feet of confining interval above the proposed injection interval that would prevent the vertical migration of the disposal fluids.

¹ Applicant's exhibit no. 18. The interval from 8,750 to 10,000 was feet stated on the original Form W-14 filed for this well and was the basis for the GAU's determination. The Applicant is not required under Statewide Rule 46 not seek a revised GAU 'no harm' letter after modifying the application to a Form H-1/H-1A with an injection interval from 8,550 to 10,000 feet.

One wellbore was identified within the one-quarter mile area of review around the proposed well location. Four additional wellbores are located within a one-half mile radius of the proposed well. A dry hole (API No. 235-31890) is located about 2,200 feet southwest of the proposed location. This borehole was drilled to a depth of 2,022 feet, which is not deep enough to penetrate the proposed disposal interval. The other four wells within a one-half mile radius are horizontal wellbores that extend to vertical depths of about 6,500 feet, too shallow to penetrate the proposed disposal interval. Rains therefore asserts that there are no artificial conduits in the half-mile area through which the injected fluids could migrate from the proposed disposal interval.

Rains identified two active commercial disposal wells within 10 miles of the proposed disposal well. The MTN Energy Venado Grande 1 well is located about six miles west of Barnhart, and the Henderson & Erickson Barnhart SWD No. 1 is located in Barnhart about three-quarters of a mile north of the proposed well location. Neither of those two wells are located south of Barnhart. The Black Mountain SWD Barnhart 687 No. 3 Well is permitted but has not yet been drilled on the east side of Barnhart. Additionally, Rains has applied for a permit for its Barnhart South SWD No. 1 well on the same tract as the subject application. All of these wells are permitted for disposal into the Ellenburger Formation.

The general manager for Rains testified that there was a tremendous current need for additional disposal capacity in the area. Specifically, the witness noted that drilling activity south of Barnhart, coupled with disposal facilities in the area that are often full to capacity is a good indicator for a current need for additional disposal capacity. Rains believes that the proposed well is necessary to accommodate the increasing drilling and hydraulic fracturing activity, most of which is occurring in the Lin (Wolfcamp) Field. The horizontal wells in this field typically require multi-stage hydraulic fracturing, resulting in hundreds of thousands of barrels of water that must be disposed of properly.

Rains stated that use of the proposed facility will reduce the tanker truck traffic in Irion County and will allow water-hauling trucks from south of Barnhart to avoid having to go through the town. This will result in lower water hauling and disposal costs, which will extend the economic life for oil and gas wells in the area.

Rains stated the company operates three fluid disposal facilities and five disposal wells. The company also operates a trucking company that hauls produced and fresh water. Rains has an active Form P-5 on file with the Commission with a \$25,000 letter of credit to meet the financial assurance requirements of the Texas Water Code.

Protestant's Evidence

The Protestants are adjoining surface owners and residents of Barnhart. The Bensons and McWilliams live immediately south and southeast of the proposed well, and the Martins live in town. The Protestants all raised general concerns with regard to negative impacts caused by the industrialization of their rural community in general. They are concerned that such industrialization threatens their drinking water, environmental quality, safety, and overall quality of life.

The Bensons and Mr. McWilliams also specifically object to the placement of the proposed Barnhart South SWD Well No. 2. The Bensons testified that the proposed well location was 375 feet from the front door of their home. Such a facility, they believe, will necessarily impact them by traffic, light, noise, dust and odors. There have been other related industrial developments in the immediate area, including the Pumpco facility on the west side of State Highway 163.

Both the Bensons and the McWilliams have leased their mineral rights to Devon. The Benson's lease provision allows surface activity on their land, but prohibits the on-site disposal of waste fluids. Mr. McWilliams stated that his lease with Devon prohibits a well within 660 feet of his house, and he questioned why Rains couldn't similarly place their well at such a distance.

The Bensons were also concerned about the accuracy of the Applicant's survey of the proposed disposal tract, and that their survey was at odds with the survey record in the Bensons' own deed of land. The proposed facility did not, however, appear to encroach upon the Bensons' property.

The Protestants also provided information to show that there are more than two active commercial disposal wells in the area. Just beyond the 10-mile radius studied by Rains, the Protestants identified about 8 additional wells, most of which were along US Highway 67 towards Big Lake. The Protestants believe that this more completely represents the available disposal capacity in the area and demonstrates there is not a current industry need for more.

EXAMINERS' OPINION

The examiners recommend that the application for disposal authority be approved. Rains has established:

1. The freshwater resources (surface and sub-surface) will be adequately protected from pollution;
2. The proposed injection well will not endanger or injure any oil, gas, or mineral formations;

3. The proposed injection is in the public interest; and
4. The applicant has made a satisfactory showing of financial responsibility, as required under State statutes and Commission regulatory requirements.

The examiners find that the surface and subsurface freshwater will be adequately protected from pollution. The special requirements placed on permits for commercial disposal wells are, in large part, intended to provide for the containment, recovery, and protection from surface releases of waste fluids. The BUQW is at about 700 feet, and the USDW is estimated to be at 850 feet. The proposed injection well will be cased through both the BUQW and USDW to a depth of 880 feet and cemented to the surface.

The examiners find that the construction and proposed well will prevent injected waste fluids from leaving the disposal interval and potentially harming freshwater or other mineral resources. The injection interval is overlain and confined by 400-500 feet of continuous shale strata, with additional shale formations above that interval. Further, no wellbores penetrated the disposal horizon within a one-half mile radius of the proposed disposal well.

The examiners find that Rains has made a satisfactory showing of financial responsibility, as required under State statutes and Commission regulatory requirements. Rains has an active Form P-5 and has a \$25,000 letter of credit on file with the Commission.

The examiners find that the proposed well is in the public interest, as the term is applied to matters under the jurisdiction of the Railroad Commission. The examiners recognize that it is difficult, if not impossible, to justify either the need for additional disposal capacity or the absence of such a need based on the number of existing facilities, permitted facilities, drilling activity and other factors, especially when the sector is experiencing such rapid growth. Irion County and surrounding areas are experiencing rapid development in oil and gas exploration and production. Most of the development includes horizontal wells with multi-stage fracture stimulation treatments, and fluid disposal is a consequential need of the industry. In this matter, Rains is willing to place capital at risk for the opportunity to construct and operate a commercial disposal well to meet the industry need for such services; the willingness to undertake such risk is also in the public interest.

The examiners recognize that such industrial development in general—and the proposed Rains well in particular—will necessarily affect people who live in close proximity. The Commission's jurisdiction in these matters, however, is limited and does not include the preferential siting of facilities, except as such siting may affect freshwater or mineral resources. The examiners conclude that the proposed well is in the public interest and

Rains' application should be approved.

FINDINGS OF FACT

1. Notice of the revised H-1/H-1A application was published in *San Angelo Standard Times*, a newspaper of general circulation in Irion County, on January 29, 2014. Notice of the revised application was mailed on January 28, 2014 to the Irion County Clerk, to offset operators within one-half mile of the proposed location, and to the surface owners of the disposal tract and each tract adjoining the disposal tract.
2. The application was protested by Barnhart residents Steve and Rebecca Benson, Larry McWilliams, and Audrey and Michell Martin.
3. Rains proposes to drill and operate its Barnhart South SWD Lease, Well No. 2, on a 3.71 acre tract of land about one-half mile southeast of Barnhart, Irion County, Texas.
 - a. The well will be located on the northeast corner of the intersection of State Highway 163 and County Road 301.
 - b. The facility will be accessed from County Road 301.
4. Rains proposes to drill, complete and operate the well as follows:
 - a. Total depth of 10,000 feet below ground surface, encountering the Ellenburger Formation at about 8,550 feet.
 - b. 9 5/8-inch surface casing set to a depth of 880 feet with 475 sacks of cement, which is sufficient to return cement to the surface.
 - c. 7-inch longstring casing set to a depth of about 8,600 feet and cemented back to the surface with 1,525 sacks of cement.
 - d. 4 1/2-inch injection tubing will be set with a packer at 8,500 feet.
 - e. Open hole injection interval in the Ellenburger Formation from about 8,550 to 10,000 feet.
 - f. Maximum daily injection volume of 25,000 BPD of saltwater and RCRA-exempt oil and gas waste, with an estimated average daily injection volume of 15,000 BPD.

- g. Maximum surface injection pressure of 4,275 psig.
5. The surface casing and cementing plan will protect the usable-quality groundwater to a depth of 700 feet below ground surface, which corresponds to the estimated depth of the base of the Santa Rosa formation, and the USDW estimated to be at 850 feet.
6. Special permit conditions to provide for the containment, recovery, and protection from surface releases of waste fluids will protect fresh groundwater and surface water.
7. The Ellenburger Formation injection interval is overlain by 400-500 feet of shale; injected fluids will be contained within the Ellenburger.
8. No wellbores were identified within a one-half mile radius of the proposed location penetrated the injection interval; there are no artificial conduits for migration of injected fluids from the disposal interval into productive or fresh water zones.
9. There is production from the Ellenburger Formation within a two-mile radius of the proposed injection well. No offset operators protested the application.
10. Rains Energy, LLC has an active P-5 on file with the Commission, and \$25,000 letter of credit 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. Rains Energy, LLC, has made a satisfactory showing of financial responsibility to the extent required by Section 27.073 of the Texas Water Code.
7. Rains Energy, 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 46.

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,



Paul Dubois
Technical Examiner



Michael Crnich
Hearings Examiner

Rains Energy, LLC
Barnhart South SWD No. 2
Irion County, Texas

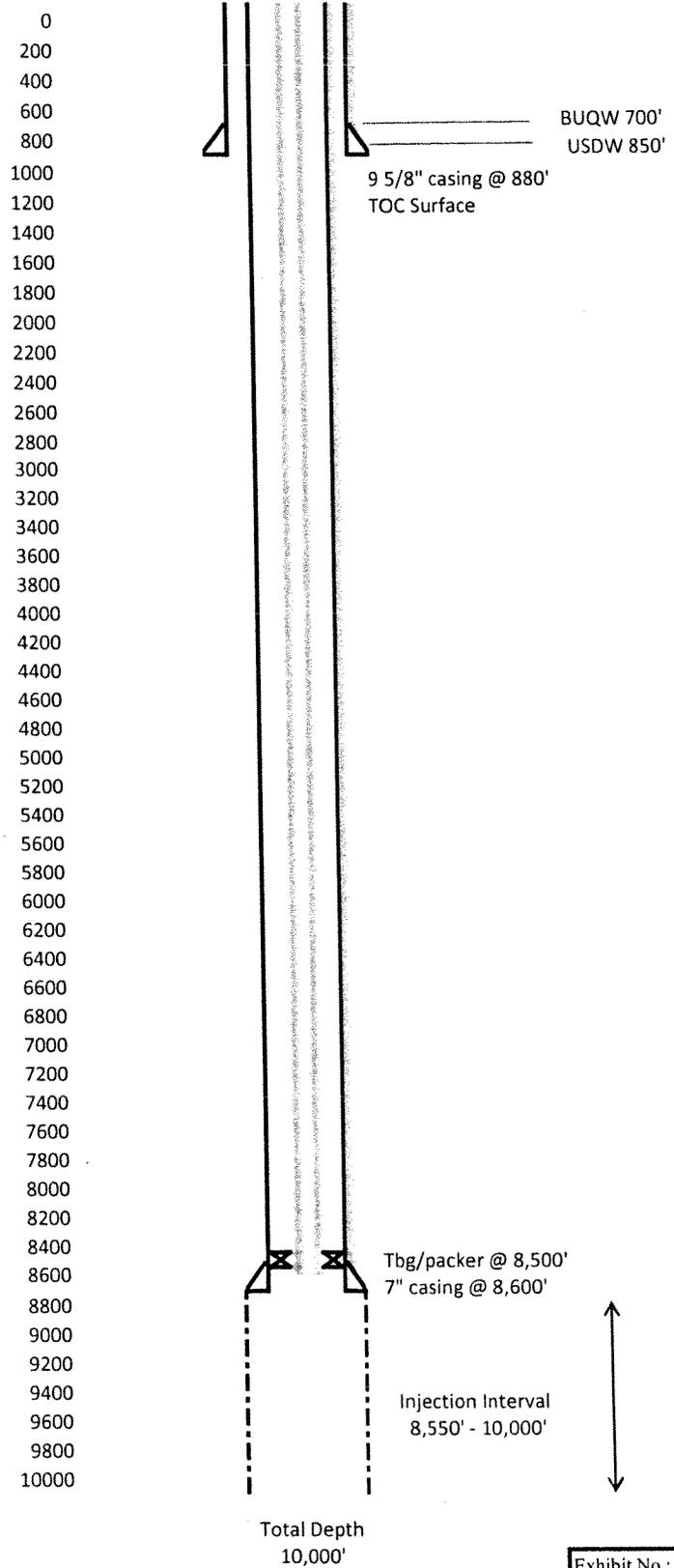


Exhibit No.:
Operator: Rains Energy LLC
Docket No.: 7C-0286217
Date: February 19, 2014

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