

October 30, 2007

**OIL AND GAS DOCKET NO. 09-0252229**

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**THE APPLICATION OF INFINITY OIL & GAS OF TX, INC. TO DISPOSE OF OIL AND GAS WASTE BY INJECTION INTO A POROUS FORMATION NOT PRODUCTIVE OF OIL OR GAS, GOLIGHTLY LEASE WELL NO. 1SD, NEWARK, EAST (BARNETT SHALE) FIELD, ERATH COUNTY, TEXAS**

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**HEARD BY:** Thomas H. Richter, P.E., Technical Examiner  
James M. Doherty, Hearings Examiner

**APPLICANT:**  
Jerry Gentry  
Gary C. Mitchell

**REPRESENTING:**  
Infinity Oil & Gas of TX, Inc.

**PROTESTANTS:**

Joe Cooper, General Manager

Middle Trinity Groundwater  
Conservation District

Elaine Smith  
Wes Biglin  
Dale Henry

Self  
2-Bar C Ranch  
Self

**PROCEDURAL HISTORY**

|                               |                    |
|-------------------------------|--------------------|
| Date of Application:          | June 11, 2007      |
| Date of Notice:               | July 24, 2007      |
| Date of Hearing:              | August 17, 2007    |
| Date of Transcript:           | September 11, 2007 |
| Proposal For Decision Issued: | October 31, 2007   |

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

This is the application of Infinity Oil & Gas of TX, Inc. for a disposal permit to dispose of its own produced salt water from leases it operates in the area. The Protestants oppose the facility because of various environmental reasons and safety concerns.

**DISCUSSION OF THE EVIDENCE****APPLICANT'S EVIDENCE**

Infinity Oil & Gas of TX, Inc. proposes to drill and complete a disposal well for the sole purpose of disposing of its own produced water from wells it currently operates and to be drilled in the area (Barnett Shale producers). The subject well will be completed as follows:

- Surface casing (9-5/8") set at  $\pm 500'$  and cemented from the casing shoe to the ground surface.
- Longstring casing (7") set at  $\pm 7,000'$  and cement from the casing shoe to the ground surface or a DV Tool (deviation tool) will be used. Cement tops will be determined by casing bond log if necessary.
- Plastic-lined steel tubing (3-1/2") set at  $\pm 6,400'$  on a packer at  $\pm 6,400'$ .

The proposed zone of disposal is the Hickory/Ellenburger Formations. The estimated Ellenburger Formation (a carbonate) is anticipated to occur at  $\pm 4,600'$  and the estimated Hickory Formation (a sandstone) at  $\pm 5,900'$ .<sup>1</sup> The proposed injection interval is from 6,500' to 7,000'. The depth to the base of the deepest fresh water is 395' (TCEQ letter dated February 8, 2007). The proposed maximum volume is 10,000 BWPD and a maximum permitted pressure 3,000 psig.

There are no producing or plugged wells within the 1/4 mile required area of review. Infinity Oil & Gas controls 34,000 acres in the area. The subject well will be located on a 12 acre tract owned by Charles and Cynthia Golightly. In the immediate area, Infinity's 12,000 acre tract is divided by Texas Hwy 6. Infinity's other disposal well, the Taylor SWD No. 1, is located in the central area north of Texas Hwy 6 and the subject well/facility will be located in the central area south of the highway and is needed for capacity. Generally, no water is trucked for normal operating as the water gathering lines (4") are laid in the same easement as the gas gathering lines. Water is only trucked after a fracture stimulation because of the volume of flow-back frac-water. The water lines transfer the water to a central collection tank facility consisting of a separator and five - 400 barrel tanks and one - 500 barrel tank. The holding facility will be earthen-bermed and there will be an underlying plastic sheeting. The facility area will be fenced with electronic access only.

The safe and proper disposal of saltwater is in the public interest. The disposal of Infinity's own produced saltwater will result in the lowering of lease operating expenses allowing for the recovery of hydrocarbon reserves that otherwise would not be recovered. There have been no producing wells drilled on the southern portion of Infinity's acreage and the proposed disposal well is a proactive step anticipating future development.

Infinity Oil & Gas has agreed to a water well monitoring/testing program for 3 domestic

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<sup>1</sup> Based on the log of the Infinity Oil & Gas, Taylor "SWD" Well No. 1 located approx. 8 miles to the north.

water wells (within 1 mile) and a water supply well to be drilled by Infinity at the proposed facility.<sup>2</sup>

Infinity states that the monitoring/testing as conditions of the permit (if approved) are not considered adverse. In general, an initial test would include determination of Benzene, Toluene, Ethylbenzene and Xylene or total hydrocarbons. Similar testing will be made annually for the life of the well with copies of reports to the Water District and the owners of the wells monitored. Testing shall be by a third party certified to do such testing. As required by the Commission, all the tubing and casing strings will be pressure monitored.

Infinity Oil & Gas of TX, Inc. does have a current approved Form P-5 and maintains a \$50,000 bond for financial assurance as required by the Commission.

Notice of the application was given to the surface owner, and all surface owners within one-half mile of the proposed well. Notice of the application was also provided to the Middle Trinity Groundwater Conservation District, Bill Gordon (on behalf of Erath County Citizens for Clean Water ("ECCCCW")), and the County Clerk of Erath County on March 1, 2007. Notice of this application was published in the *Stephenville Empire Tribune*, a newspaper of general circulation in Erath County, on February 8, 2007. Notice of this application was published in the *Hico News Review*, a newspaper of general circulation in Hamilton County, on February 8, 2007.

## PROTESTANTS' EVIDENCE

Elaine Smith lives about 15 miles from the proposed well and asserts that the majority of the citizens of Erath County oppose any disposal wells in areas of recharge and source water zones. To substantiate this position, the following was submitted: a resolution from the Erath County Commissioner's Court, a resolution from the City of Stephenville, an ordinance from the City of Hico and a resolution from the Middle Trinity Groundwater Conservation District. Smith submitted pictures of two one-lane bridges with signs that read "**Weight Limit Tandem Axle 24000 lbs**". Smith believes that injection wells such as this adversely affect quality of life, property values and the environment for the surrounding citizens. The subject well is not in the best interest of the citizens of Erath County.

Dale Henry lives in Lampasas County, 2 counties away from the subject well, and is concerned with the proposed completion of the well. Henry believes at issue is the usable quality water (surface and subsurface) for the State of Texas. Henry's primary concerns are the mechanical integrity issues including: the grade of the casing, new or used, burst/collapse pressures, casing program, type of cement, weight of cement, additives in the cement, compressive strength of the cement, and volumes of cement. Further concern is the method that will be used to determine the height of the cement and the procedure to be used in running the casing bond log if a casing bond log is run. Wes Biglin, a rancher, lives about 15 miles from the proposed well and is against any injection through the Trinity aquifer as it may result in the pollution of the aquifer. Biglin believes that all operators should recycle any produced water. There is no 100% guarantee that any well will

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<sup>2</sup> This was a result of negotiations with the Middle Trinity Groundwater Conservation District and Bill Gordon representing the Erath County Citizens for Clean Water ("ECCCCW").

not ever leak. Biglin asserts that crystalline silica is used in frac-fluids and is a known carcinogen. Biglin further submits that it is unfortunate that water districts have no control over the drilling of oil and gas industry wells. Every well is another opportunity for the usable quality water to be contaminated.

Joe Cooper, Manager of the Middle Trinity Groundwater Conservation District is essentially opposed to all disposal wells within an aquifer boundary. However, in lieu of application denial by the Commission, the agreed water well monitoring/testing program is acceptable as Infinity appears to be attempting to do the right thing. It is proposed that the agreement conditions and monitoring be included in the permit in the event that the subject application is approved.

### **EXAMINERS' OPINION**

Texas Water Code Section 27.051 (b) provides with respect to permitting disposal and injection wells:

- (b) The railroad commission may grant an application in whole or part and may issue the permit if it finds:
  - (1) that the use or installation of the injection well is in the public interest;
  - (2) that the use or installation of the injection well will not endanger or injure any oil, gas, or other mineral formation;
  - (3) that, with proper safeguards, both ground and surface fresh water can be adequately protected from pollution; and
  - (4) that the applicant has made a satisfactory showing of financial responsibility if required by Section 27.073 of this code.

The examiners recommend the application be approved pursuant to §27.051 of the Texas Water Code and Commission Statewide Rule 9. The proposed new disposal well will be completed in such a manner as to prevent the migration of injected fluids to zones other than the intended zone. There are no wells, plugged or unplugged, within 1/4 mile of the proposed injection well that could serve as a conduit for fluid migration from the injection interval. Therefore, the usable quality water above and below the ground surface will not be placed at risk of pollution or contamination.

Infinity substantiated that the subject well is in the public interest. The safe and proper disposal of produced saltwater serves the public interest. Produced water will come exclusively from Infinity Oil and Gas leases that it operates in the area. This is not a commercial disposal well. The projected normal volume of the produced water will be transferred through a “closed” pipeline system. By reducing lease operating expenses, additional hydrocarbons will be recovered and the production of hydrocarbons serves the general public interest. The Commission’s Rules concerning

underground disposal and surface facilities are premised to assure the protection of fresh water above and below the ground surface (well completion technique, proper cementing, proper plugging and saltwater handling). There is no evidence to indicate that the operation of the subject injection well will adversely impact the quality of any nearby surface water or subsurface water.

The proposed monitoring/testing of domestic water wells, by agreement with the protestant, Middle Trinity Groundwater Conservation District, and Infinity substantially addresses the issues of concern to the District.

The protestants (Smith, Henry and Biglin) are not affected parties for the subject application. It appears, that the protestants have only general complaints which are not germane to the subject Infinity application.

Henry's concerns are addressed by the Commission's Statewide Rules and specifically, Statewide Rule No. 13 - Casing , Cementing, Drilling and Completion Requirements.

Smith's concerns about truck load limits, property values and "quality of life" issues were evaluated by the examiners. Public safety related to oil and gas operations is a paramount responsibility of the Commission, as expressed in Texas Natural Resources Code Section 85.042(b). However, the Commission does not possess either the jurisdiction or expertise to address potential traffic safety issues which may arise from the use of public roadways used for access to a disposal facility. Local governmental entities with jurisdiction over local roads, county roads, and other byways, state governmental entities with jurisdiction over state roads and highways, and federal governmental entities with jurisdiction over federal highways and interstates, all may have potential responsibility and jurisdiction to consider the types of traffic safety issues raised by Smith. Additionally, land use determinations regarding diminished property values and "quality of life" are outside of the purview of the Commission.

The Middle Trinity Groundwater Conservation District, represented by Joe Cooper, General Manager, confirmed that the agreed monitoring, testing and reporting requirements as submitted in the hearing were acceptable to the "District" as an alternative to complete denial of the proposed permit application.

### **FINDINGS OF FACT**

1. Notice of this hearing was given to all persons required to be given notice by the provisions of Statewide Rule 9. Notice of this hearing was given to all affected persons, at least ten (10) days prior to the date of the hearing.
2. Infinity Oil & Gas of TX, Inc. proposes to drill and complete a disposal well for the sole purpose of disposing of its own produced water from wells it operates to be drilled in the area (Barnett Shale producers).
3. The well will be completed as follows:

- a. Surface casing (9-5/8") set at  $\pm 500'$  and cemented from the casing shoe to the ground surface.
  - b. Longstring casing (7") set at  $\pm 7,000'$  and cement from the casing shoe to the ground surface or a DV Tool (deviation tool) will be used. Cement tops will be determined by casing bond log if necessary.
  - c. Plastic-lined steel tubing (3-1/2") set at  $\pm 6,400'$  on a packer at  $\pm 6,400'$ .
4. The proposed zone of disposal are the Hickory/Ellenburger Formations.
  - a. The Ellenburger Formation (a carbonate) is anticipated to occur at  $\pm 4,600'$  and the anticipated Hickory Formation (a sandstone) at  $\pm 5,900'$ . The proposed injection interval is from 6,500' to 7,000'.
  - b. The depth to the base of the deepest fresh water is 395' (TCEQ letter dated February 8, 2007).
  - c. The proposed maximum volume is 10,000 BWPD and a maximum permitted pressure 3,000 psig.
5. Zonal isolation has been achieved to prevent the migration of injected fluids to zones other than the intended zone of injection and for the protection of usable quality water.
  - a. There are no producing or plugged wells within the 1/4 mile required area of review.
6. The subject well will be located on a 12 acre tract owned by Charles and Cynthia Golightly surrounded by Infinity's 12,000 acre tract which is divided by Texas Hwy 6.
  - a. Infinity's other disposal well, the Taylor SWD No. 1, is located in the central area north of Texas Hwy 6 and the subject well/facility will be located in the central area south of the highway and is needed for capacity.
  - b. Generally, no water is trucked for normal operating as water gathering lines (4") are laid in the same easement as the gas gathering lines. Water is only trucked after a fracture stimulation because of the volume of flow-back frac-water.
7. Use of the proposed disposal well is in the public interest.
  - a. The disposal of Infinity's own produced saltwater will result in the lowering of lease operating expenses allowing for the recovery of hydrocarbon reserves that otherwise would not be recovered.
  - b. The safe and proper disposal of saltwater is in the public interest.

8. The operation of the subject well will not adversely impact the water quality of any nearby surface water or subsurface water.
9. Infinity Oil & Gas of TX, Inc. does have a current approved Form P-5 and maintains a \$50,000 bond for financial assurance as required by the Commission.

**CONCLUSIONS OF LAW**

1. Proper notice was timely given to all parties entitled to notice pursuant to applicable statutes and rules.
2. All things have occurred and have been accomplished to give the Commission jurisdiction in this case.
3. The use of the proposed disposal well will not endanger oil, gas, or geothermal resources or cause the pollution of surface water or fresh water strata unproductive of oil, gas, or geothermal resources.
4. The applicant has complied with the requirements for approval set forth in Statewide Rule 9 and the provisions of Sec. 27.051 of the Texas Water Code.
5. The use of the proposed injection well is in the public interest pursuant to Sec 27.051 of the Texas Water Code.
6. Approval of the application will prevent waste of hydrocarbons that otherwise would remain unrecovered.

**EXAMINERS' RECOMMENDATION**

Based on the above findings and conclusions, the examiners recommend that the application of Infinity Oil & Gas of TX, Inc. for a disposal permit to dispose of its own produced salt water in the Golightly Lease Well No. 1SD from leases it operates in the area be approved as set out in the attached Final Order.

Respectfully submitted,

Thomas H. Richter, P.E.  
Technical Hearings Examiner  
Office of General Counsel

James M. Doherty  
Hearings Examiner  
Office of General Counsel