February 27, 2007

OIL AND GAS DOCKET NO. 09-0249782

THE APPLICATION OF CHIEF OPERATING LLC FOR A COMMERCIAL PERMIT TO INJECT FLUID INTO A RESERVOIR NOT PRODUCTIVE OF OIL OR GAS, CASTO SWD LEASE WELL NO. 1, NEWARK, EAST (BARNETT SHALE) FIELD AREA, DENTON COUNTY, TEXAS

HEARD BY: Thomas H. Richter, P.E., Technical Examiner
Andy J. Trevino, P.E., Technical Examiner
Marshall Enquist, Hearings Examiner

APPLICANT:	**REPRESENTING:**
Philip Whitworth, Attorney	Chief Operating LLC
Rick Johnston	
Jason Dewolf	
Kurt Hansen	

PROTESTANTS:	
John Schofield	Self

PROCEDURAL HISTORY

Date of Application:	November 27, 2006
Date of Notice:	December 21, 2006
Date of Hearing:	January 24, 2007
Date of Transcript:	February 1, 2007
Date PFD Issued:	March 1, 2007

EXAMINERS' REPORT AND PROPOSAL FOR DECISION
STATEMENT OF THE CASE

This is the application of Chief Operating ("Chief") to drill and complete a new well for disposal of saltwater and operate a commercial disposal facility. The saltwater will come from wells operated by Chief Operating and other wells in the Barnett Shale Field area. The protestant, John Schofield, lives across from the proposed well and opposes the well, as do other residents in the area, because of the road deterioration that will occur due to the large volume of truck traffic and the heavy loads carried as well as the noise caused by the trucks operating 24hours a day and year round.

DISCUSSION OF THE EVIDENCE

APPLICANT'S EVIDENCE

Chief was once the third largest operator in the Barnett Shale Field but recently sold most of its wells to Devon Energy. However, it did retain a cluster of wells near the proposed disposal well. The well will be located on a 219 acre tract owned by Chief Operating. Located on the tract is the CrossTex (formerly Chief), Casto compressor station.

The proposed disposal well, the Casto SWD Well No. 1, will be completed as follows:

- Surface casing (9-5/8") set at 1300' and cement was circulated from the casing shoe to the ground surface.

- Longstring casing (7") set at 12,750' and cemented with 1305 sacks of cement and set a DV tool at ± 6000' and attempt to circulate cement to the surface.

The proposed injection interval is from 8,600' to 12,750' (the Ellenburger Formation, which is not productive in this area). Tubing (4-1/2") will be set on a packer at 8,600'. The base of the deepest usable quality water is 1,245 feet (TCEQ Letter dated September 14, 2006). The proposed maximum injection volume is 25,000 (estimated average 15,000) barrels per day and a maximum injection pressure of 3,500 psig. The Ellenburger Formation is an ideal candidate for saltwater disposal because of depth. The Ellenburger is expected to occur at ± 8,750' subsurface depth.[1] There are numerous shale barriers between the Ellenburger and the usable quality water bearing strata to prevent fluid migration.

A review was made of all well completions, producing or plugged, within ½ mile of the subject well. There are six wells all of which are Barnett Shale wells that are completed above the Ellenburger Formation. There is no avenue for fluid migration away from the intended zone of injection for the protection of usable quality water and provide zonal confinement.

The subject facility is necessary for the proper, safe and economical disposal of water produced by Chief's wells located south of the subject well. Chief operates 31 Barnett Shale wells and is continuing to develop the area. Currently, Chief uses 12 other operator owned commercial disposal facilities. As demand for saltwater disposal facilities increases, the volume that these facilities can handle remains constant. Thus either "wait time" increases or water must be transported to facilities farther away. The current Chief wells produce ± 120,000 BWPM. This is equivalent to 33 truck loads per day. Assuming the closest disposal facility with sufficient capacity is always available, the daily mile reduction between using that disposal facility and Chief's new disposal facility will be approximately 947 miles per day or 345,533 miles/year. This is a conservative calculation as 11 other facilities at a greater distance were used through the months of

[1] Based on log analysis of the closest well to penetrate the Ellenburger, the Mitchell Energy, Coal Trust "A" Well No. 1.

November and December 2006. [2] Currently, Chief's disposal expense is $300 - $400/load. The disposal facility is in the public interest: 1) fewer truck traffic hours and miles equates to less public exposure; 2) the lowering of operating expenses results in the recovery of additional oil and gas reserves by lowering the economic limit; and 3) the safe and proper disposal of saltwater is an environmental concern.

The Commission requires additional special conditions for a commercial facility: catch basins made of concrete, steel or fiberglass; all fabricated waste storage and pretreatment facilities (tanks, separators, etc.) shall be constructed of concrete, steel or fiberglass; dikes around the tank battery; property will be sufficiently fenced and gated (attendant or key controlled access) to prevent unauthorized dumping. The facility will be fenced and there will be a 24-hr attendant. The well will be equipped with pressure gauges for monitoring the casing annulus. The Commission routinely makes inspections of commercial disposal wells.

The Commission's Environmental staff has reviewed the application and did not state any concerns or problems based on its administrative review.

Chief Operating LLC does have a current approved form P-5 and maintains a $50,000 bond for financial assurance as required by the Commission.

Notice was given to the surface owner, all surface owners of adjoining tracts and all operators within one-half mile. Notice of this application was published in the *Denton Record-Chronicle*, a newspaper of general circulation in Denton County, on September 12, 2006. The application was filed with the Denton County Clerk on September 15, 2006.

PROTESTANTS EVIDENCE

The proposed facility will be located in a residential area (approximately 30 residences received mailed notices of the hearing). Mr. Schofield lives across the road from the proposed facility. The roads surrounding the facility are either gravel or asphalt, none of which were designed for semi-truck traffic and the load weight of the tank trucks. The bridges are not designed for such weight loads on these county roads. Because of the current drilling activity the county roads are already showing signs of deterioration.

EXAMINERS' OPINION

The examiners recommend the application be approved pursuant to §27.051 of the Texas Water Code and Commission Statewide Rule 9. The proposed new commercial disposal well will be completed in such a manner as to prevent the migration of injected fluids to zones other than the intended zone. Documentation of zone isolation for every well and protection of the usable quality water has been provided from all wells within ½ mile of the proposed injection well. Therefore, the usable quality water above and below the ground surface will not be placed at risk of pollution or

[2] Other facilities are located in Jack, Wise, Montague and Cooke Counties.

contamination.

The safe and proper disposal of produced saltwater and waste water serves the public interest. The production of hydrocarbons serves the public interest. The Commission's Rules concerning underground injection and surface commercial disposal 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).

The requirements and restrictions of a commercial disposal facility permit addresses concerns as to security and the surface handling of fluids. The Commission District offices routinely inspect commercial disposal facilities. There is no evidence to indicate that the operation of the subject disposal well will adversely impact the water quality of any nearby surface water or subsurface usable quality water.

The protestant's concerns over traffic safety and other quality of life issues are understandable. However, the Commission does not have jurisdictional authority for such matters as truck traffic/highway safety matters. These community concerns and issues fall under the jurisdiction of other state agencies or county authorities. The examiners conclude that Chief Operating LLC has met its burden of proof on the statutory issues the Commission is required to consider, including the public interest issue.

The examiners recommend an additional condition for the permitting of the subject well. After the cementing of the longstring casing, but before the opening of the DV tool for the second stage of cementing, logging or other measuring devices shall be used to Confirm that the height of the cement behind pipe and the formation is at least 600' feet above the top of the Ellenburger Formation, or 8,000 feet subsurface depth whichever is shallower. This condition is necessary to assure zonal confinement of injected fluids for the proposed injection interval from 8,600' to 12,750' subsurface depth.

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. Notice was given to the surface owner, all surface owners of adjoining tracts and all operators within one-half mile. Notice of this application was published in the *Denton Record-Chronicle*, a newspaper of general circulation in Denton County, on September 12, 2006. The application was filed with the Denton County Clerk on September 15, 2006.

2. The proposed disposal well, the Chief Operating, Casto SWD Well No. 1, will be completed as follows:

   a. Surface casing (9-5/8") set at 1300' and cement was circulated from the casing shoe

to the ground surface.

b. Longstring casing (7") set at 12,750' and cemented with 1305 sacks of cement and set a DV tool at ± 6000' and attempt to circulate cement to the surface.

3. Injection zone isolation will be accomplished to prevent fluid migration and protect usable quality subsurface waters.

a. The proposed injection interval is from 8,600' to 12,750' (the Ellenburger Formation, which is not productive in this area).

b. Tubing (4-1/2") will be set on a packer at 8,600'. The Ellenburger is expected to occur at ± 8,750' subsurface depth.

c. The base of the deepest usable quality water is 1,245 feet (TCEQ Letter dated September 14, 2006).

d. There are numerous shale barriers between the Ellenburger and the usable quality water bearing strata to prevent fluid migration.

e. The proposed maximum injection volume is 25,000 (estimated average 15,000) barrels per day and a maximum injection pressure of 3,500 psig.

f. Cement between the longstring casing and the formation shall be in-place to a height of at least 600 feet above the Ellenburger Formation or 8,000 feet, whichever is shallower.

4. There are six wells within ½ mile of the subject well all of which are Barnett Shale wells, that are completed above the Ellenburger Formation. There is no avenue for fluid migration away from the intended zone of injection for the protection of usable quality water and provide zonal confinement.

5. The proposed method of operation and the requirements and restrictions of a commercial disposal facilities permit address concerns regarding the surface handling of fluids.

a. The Commission District offices routinely inspects commercial disposal facilities.

b. The Commission adopted Statewide Rules (specifically 8, 9, 13, 46), and environmental policies, and established special permit requirements to minimize and mitigate the possibility of an adverse environmental impact on usable water.

c. The Commission requires additional special conditions for a commercial facility which include: catch basins made of concrete, steel or fiberglass; all fabricated waste storage and pretreatment facilities (tanks, separators, etc.) constructed of concrete,

steel or fiberglass; dikes around the tank battery; property sufficiently fenced and gated (attendant or key controlled access) to prevent unauthorized dumping.

6. The safe and proper disposal of produced saltwater serves the public interest. Use of the proposed disposal well is in the public interest because it will provide needed additional safe disposal capacity and an economical means of disposing of produced salt water from completed wells in the rapidly expanding Barnett Shale Field Area, thereby increasing ultimate recovery of hydrocarbon reserves.

7. Chief Operating LLC has current, approved Form P-5 and maintains a $50,000 bond for financial assurance as required by the Commission.

8. The Commission does not have jurisdictional authority for such matters as truck traffic volume or noise. These community concerns and issues fall under the jurisdiction of other state agencies or county authorities.

9. No existing rights will be impaired by operation of the proposed disposal well.

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.

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 disposal well is in the public interest pursuant to Sec. 27.051 of the Texas Water Code.

EXAMINERS' RECOMMENDATION

Based on the above findings and conclusions, the examiners recommend that the application of Chief Operating LLC to operate a commercial facility to dispose of field produced saltwater into the Casto SWD Well No. 1 into the Newark, East (Barnett Shale) Field area in Denton County be approved as set out in the attached Final Order.

Respectfully submitted,

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