



RAILROAD COMMISSION OF TEXAS

OFFICE OF GENERAL COUNSEL

OIL AND GAS DOCKET NO. 8A-0261719

THE APPLICATION OF FASKEN OIL AND RANCH, LTD. FOR AUTHORIZATION PURSUANT TO STATEWIDE RULE 36 TO INJECT FLUIDS CONTAINING HYDROGEN SULFIDE IN THE HANFORD (SAN ANDRES) FIELD, GAINES COUNTY, TEXAS

HEARD BY: Richard D. Atkins, P.E. - Technical Examiner

DATE OF HEARING: June 16, 2009

APPEARANCES:

REPRESENTING:

Joe T. Sanders
Carl Brown (By Telephone)

Fasken Oil and Ranch, Ltd.

EXAMINER'S REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Fasken Oil and Ranch, Ltd. ("Fasken") requests authority pursuant to Statewide Rule 36 to inject fluids containing hydrogen sulfide into injection wells 207, 208, 209, 305, 307, 308, 309, 505, 506, 603, 2010, 2011, 2012, 2013, 2014 and 3010 on the Hanford (San Andres) Unit in the Hanford (San Andres) Field, Gaines County, Texas.

Statewide Rule 36(c)(10)(A)(i) states that injection of fluids containing hydrogen sulfide will be allowed only after public hearing when "... injection fluid is a gaseous mixture, or would be a gaseous mixture in the event of a release to the atmosphere, and where the 100 ppm radius of exposure is in excess of 50 feet and includes any part of a public area except a public road; or, if the 500 ppm radius of exposure is in excess of 50 feet and includes any part of a public road; or if the 100 ppm radius of exposure is 3,000 feet or greater."

This application was unopposed and the examiner recommends approval.

DISCUSSION OF THE EVIDENCE

The Hanford (San Andres) Field was discovered in October 1977 and the field has been subject to waterflooding and carbon dioxide (CO₂) injection since 1986. Production from the Hanford (San Andres) Unit is from the San Andres formation at depths between

5,290 feet and 5,800 feet. The native gas in the field contains H₂S at an average concentration of 17,000 parts per million (ppm). Cumulative production for the unit through April 2009 is 10.4 MMBO and 5.5 BCFG.

Currently, pure CO₂ is purchased and injected into the Hanford (San Andres) Field as a water alternating gas (WAG) tertiary project. Produced gas from the field has been processed to remove the hydrocarbon gas by the Hess Corporation - Seminole Gas Processing Plant. However, the sour gas processing plant no longer has any excess capacity to process gas from the Hanford (San Andres) Field and a small scale Hanford processing plant would be uneconomical.

As a result, Fasken proposes to reinject the sour CO₂ gas into sixteen injection wells on the Hanford (San Andres) Unit as part of the WAG tertiary project in the field. The reinjection will reduce the purchase of new CO₂ gas by 3 BCFG over the remaining life of the project. The Hanford (San Andres) Unit currently has 24 producing wells and 26 injection wells. Production from the unit is about 250 BOPD and 820 MCFGPD which contains 82% CO₂.

The Commission's District Office has approved Form H-9 (Certificate of Compliance Statewide Rule 36) and the Contingency Plan submitted by Fasken. The Contingency Plan includes all operations associated with the proposed injection, including the wells, gathering lines, tank battery, compressor and distribution lines. All equipment associated with the injection program satisfies the requirements in the latest editions of NACE Standard MR1075 and API RP-14E. For each injection well, the 500 ppm radius of exposure (ROE) is 418 feet and the 100 ppm ROE is 916 feet. These calculations are based on a maximum injection rate to any one well of 2,000 MCFGPD. For the compressor, the 500 ppm ROE is 832 feet and the 100 ppm ROE is 1,821 feet. These calculations are based on a maximum release of 6,000 MCFGPD. For the Hanford (San Andres) Unit, the 500 ppm and 100 ppm ROE includes portions of County Road 212.

Warning signs are posted at each entrance to the unit off of County Road 212, the compressor and at the tank battery. All fixed facilities near County Road 212 will also have chain link fences with locked gates. The compressor will have high and low pressure shutdowns set at approximately 2,000 psig and 1,800 psig, respectively, and will be equipped with a flare system. There will be H₂S monitors at five field and five injection well locations along County Road 212. The monitors will trigger an alarm when the H₂S level exceeds 10 ppm. The alarm will shut down the compressor, divert sour CO₂ gas to the flare and transmit to a callout number which will be manned 24/7 by an operator.

All Fasken employees associated with the Hanford (San Andres) Unit area receive hydrogen sulfide safety training regarding the proper response to an H₂S release. Each employee is trained on proper notification procedures in case of a release and are required to be familiar with the contingency plan. Employees also receive periodic training in hazardous material operations, respiratory equipment use, well control procedures and first aid.

FINDINGS OF FACT

1. Notice of this hearing was given to all persons entitled to notice at least ten (10) days prior to the subject hearing.
2. The Hanford (San Andres) Field was discovered in October 1977 and the field has been subject to waterflooding and carbon dioxide (CO₂) injection since 1986.
3. Production from the Hanford (San Andres) Unit is from the San Andres formation at depths between 5,290 feet and 5,800 feet. The native gas in the field contains H₂S at an average concentration of 17,000 ppm.
4. Currently, pure CO₂ is purchased and injected into the Hanford (San Andres) Field as a water alternating gas (WAG) tertiary project.
 - a. Produced gas from the field has been processed to remove the hydrocarbon gas by the Hess Corporation - Seminole Gas Processing Plant.
 - b. The sour gas processing plant no longer has any excess capacity to process gas from the Hanford (San Andres) Field and a small scale Hanford processing plant would be uneconomical.
 - c. The sour CO₂ gas will be distributed back to the Hanford (San Andres) Unit for injection, as part of the WAG tertiary project in the field.
 - d. The reinjection will reduce the purchase of new CO₂ gas by 3 BCFG over the remaining life of the project.
5. The Commission's District Office has approved Form H-9 (Certificate of Compliance Statewide Rule 36) and the Contingency Plan submitted by Fasken.
6. The Contingency Plan includes all operations associated with the proposed injection, including the wells, gathering lines, tank battery, compressor and distribution lines.
 - a. For each injection well, the 500 ppm radius of exposure (ROE) is 418 feet and the 100 ppm ROE is 916 feet. These calculations are based on a maximum injection rate to any one well of 2,000 MCFGPD.

- b. For the compressor, the 500 ppm ROE is 832 feet and the 100 ppm ROE is 1,821 feet. These calculations are based on a maximum release of 6,000 MCFGPD.
 - c. For the Hanford (San Andres) Unit, the 500 ppm and 100 ppm ROE includes portions of County Road 212.
7. Warning signs are posted at each entrance to the unit off of County Road 212, the compressor and at the tank battery. All fixed facilities near County Road 212 will also have chain link fences with locked gates.
 8. There will be H₂S monitors at five field and five injection well locations along County Road 212. The monitors will trigger an alarm when the H₂S level exceeds 10 ppm. The alarm will shut down the compressor, divert sour CO₂ gas to the flare and transmit to a callout number which will be manned 24/7 by an operator.
 9. The proposed injection meets the safety requirements of Rule 36 regarding warning and marker provisions, security provisions and materials and equipment.

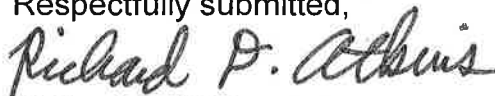
CONCLUSIONS OF LAW

1. Proper notice was timely given to all parties entitled to be noticed pursuant to applicable statutes and rules.
2. All things have occurred and have been accomplished to give the Commission jurisdiction in this case.
3. Fasken Oil and Ranch, Ltd. has complied with the safety provisions of Statewide Rule 36 for injection of fluid containing hydrogen sulfide.

EXAMINER'S RECOMMENDATION

Based on the above findings of fact and conclusions of law, the examiner recommends approval of the application of Fasken Oil and Ranch, Ltd. to inject fluid containing hydrogen sulfide into sixteen wells on the Hanford (San Andres) Unit in the Hanford (San Andres) Field, Gaines County, Texas.

Respectfully submitted,



Richard D. Atkins, P.E.
Technical Examiner