

OIL AND GAS DOCKET NO. 05-0261133

THE APPLICATION OF TEXAS M. O. R., INC. FOR A PERMIT TO INJECT FLUID INTO A RESERVOIR PRODUCTIVE OF OIL OR GAS, CORSICANA SHALLOW AREA LEASE, WELL NOS. 4I, 6I, 7I, I205, I207 AND I208, CORSICANA (SHALLOW) FIELD, NAVARRO COUNTY, TEXAS

HEARD BY: Richard D. Atkins, P.E. - Technical Examiner
Marshall F. Enquist - Legal Examiner

APPEARANCES:

APPLICANT:

Vern Wilson

REPRESENTING:

Texas M. O. R., Inc.

COMMISSION STAFF:

David W. Cooney, Jr.
Doug Johnson

RRC Technical Permitting

PROCEDURAL HISTORY

Date of Application:	February 25, 2009
Date of Notice:	March 10, 2009
Date of Hearing:	March 26, 2009
Record Closed:	March 26, 2009
Proposal For Decision Issued:	April 30, 2009

EXAMINERS' REPORT AND PROPOSAL FOR DECISION

STATEMENT OF THE CASE

On February 25, 2009, the Commission administratively denied an area injection permit pursuant to Statewide Rule 46 to Texas M. O. R., Inc. ("M. O. R.") for the Corsicana (Shallow) Field, Navarro County, Texas. On February 27, 2009, M. O. R. requested that a hearing be held to consider the subject application.

The Notice of Hearing dated March 10, 2009 indicated that Texas M.O.R., Inc. was requesting a permit to inject fluid into a reservoir productive of oil or gas on the Corsicana Shallow Area Lease, Well Nos. 4I, 6I, 7I, I205, I207 and I208, Corsicana (Shallow) Field, Navarro County, Texas. However, the application and file contained information for an area permit encompassing 4,000 acres and requested an injection permit for an additional Well No. I206.

Subsequent to the hearing, Texas M. O. R. confirmed in writing that it was requesting an injection permit for seven wells and an area permit encompassing 4,000 acres in the Corsicana (Shallow) Field. The seven specific wells are listed below:

<u>Lease Name</u>	<u>Lease No.</u>	<u>Well No.</u>
Central Petroleum	00265	I205
Central Petroleum	00265	I206
King B	00286	I207
King B	00286	I208
Helen H. Pierce	01390	4I
Cavender B	01690	6I
Cavender B	01690	7I

Commission staff appeared at the hearing to request denial of the area injection application. The examiners recommend that the application for an area injection permit be denied.

DISCUSSION OF THE EVIDENCE

APPLICANT'S EVIDENCE

M. O. R. seeks authority for an area injection permit encompassing 4,000 acres in the Corsicana (Shallow) Field. The permit includes seven injection wells on various leases and will expand its fluid injection authority granted administratively in May 2007 for six wells on the King "A" Lease. M. O. R. proposes to inject a fresh water based polymer and produced salt water into the productive Nacatoch Sand formation at an average depth of 800 feet. The proposed injection is for the purpose of enhanced oil recovery. M. O. R. plans to inject a maximum of 200 BWPD per well with a maximum injection pressure of 375 psig.

The proposed injection wells were initially drilled and completed as producing wells. They all received an exception to Statewide Rule 13 from the RRC District Office and don't have any surface casing. The wells were drilled in 2008 to a total depth of 950 feet. They all have 4½" casing set at 950 feet with cement circulated back to the surface (See attached Wellbore Diagram). The proposed injection would be through 2⅜" tubing set above the proposed injection interval at approximately 750 feet.

The Texas Commission on Environmental Quality ("TCEQ") recommends that usable-quality ground water be protected down to a depth of 100 feet. M. O. R. stated that there is no useable quality ground water in this area and that the 100 foot depth is the TCEQ minimum when no ground water is present. TCEQ confirmed that there was no useable ground water. Both the Trinity Cretaceous aquifer which occurs to the northwest and the Carrizo Wilcox aquifer which occurs to the southeast are absent in this portion of Navarro County. This fact led to the first discovery of oil in Texas in the Corsicana Field, as the City of Corsicana was originally drilling for water.

M. O. R. submitted a reservoir study on the Corsicana Field that was done in February 1989 by Tejas Petroleum Engineers, Inc. located in Irving, Texas. The requested 4,000 acre area injection permit is contained within the "Mildred Pool" portion of the Corsicana Field. The study contained 146 core analysis records that showed that the Mildred Pool had an average porosity of 32%, an average permeability of 850 md and an original oil in place of 58.5 MMBO. Primary and secondary cumulative production through December 1988 was 10.8 MMBO or 18.5% of the original oil in place. M. O. R. believes that it can recover an additional 10% of the original oil in place, or 5.8 MMBO, by its enhanced oil recovery polymer injection.

There are at least 60 wellbores within the ¼ mile radius of review for each injection well. Many of these wells have no drilling, completion, cementing or plugging records on file with the Commission and are of unknown status. M. O. R. measured the field bottomhole pressure in two wells to be 117 psig and submitted pressure front calculations to show that the proposed injection at 375 psig will not cause an increase in pressure sufficient to raise a column of fluid up to the surface in any well within ¼ mile of the proposed injection wells. The calculations assume injection into a well for 20 years and resulted in a 58 psig increase in bottomhole pressure.

M. O. R. has an active P5 Organization Report and a \$250,000 financial assurance bond on file with the Commission. M. O. R. currently operates 531 wells with 404 of the wells shut-in under 14B2 extensions.

Notice of the application was published in the *Corsicana Daily Sun*, a newspaper of general circulation in Navarro County, on February 4, 2008. A copy of the application was mailed on March 7, 2008 to the Navarro County Clerk, the City Clerk of Corsicana, the surface owners, adjacent surface owners and all offsetting operators within ½ mile.

COMMISSION STAFF'S EVIDENCE

Commission staff noted that M. O. R.'s application for an area injection permit pursuant to Statewide Rule 46 was administratively denied for failure to complete the application after two supplemental filings, as per the requirements of the Texas Administrative Code. The application failed to identify all of the wellbores located within the 4,000 acre permit area and all wellbores located within a ¼ mile radius of the area boundaries. Staff stated that M. O. R. had only performed a review of all wellbores within the ¼ mile radius of review for the seven proposed injection wells.

Commission staff also disputed the applicant's pressure front calculations and asserted that they lacked adequate substantiation regarding the porosity and permeability values used. Staff did concede that the engineering study furnished during the hearing appeared to address this issue. However, the calculations only addressed injection into one well and did not consider the cumulative effect from multiple injection wells.

EXAMINERS' OPINION

The examiners recommend that the application for an area injection permit be denied. M. O. R. did not meet its burden of proof to show that the proposed area injection permit would not cause pollution of surface water and that injected fluids would be confined to the proposed injection interval. For an area injection permit, Statewide Rule 46(k)(1)(I) requires a review of all wells located within the permit area, as well as all wells located within a ¼ mile radius of the area boundaries.

The requested 4,000 acre area injection permit is bounded on the northwest by Lake Halbert and to the east by the upper extension of Richland Chambers Reservoir. The 4,000 acres contains hundreds of producing, injection and plugged wells and so does the ¼ mile radius of review outside the area boundaries. Many of the wells are located under water in the lakes or below the lake pool elevation lines. In addition, many of the wells have no drilling, completion, cementing or plugging records on file with the Commission and are of unknown status. Any of these wells could be a potential conduit for injected fluids to migrate from the injection interval and contaminate the adjacent lakes or other surface usable quality water.

M. O. R. only performed a review of all wellbores within the ¼ mile radius of review for the seven proposed injection wells. This review listed many wells that have no drilling, completion, cementing or plugging records on file with the Commission and are of unknown status. Although M. O. R. did verify the 32% porosity and 850 md permeability values used in the pressure front calculations, the calculations were only for one well and did not consider the cumulative effect from multiple injection wells.

The examiners recommend that the area injection application be denied and that the Commission adopt the following Findings of Fact and Conclusions of Law.

FINDINGS OF FACT

1. M. O. R., Inc. gave notice of this application and hearing to all persons entitled to notice pursuant to Statewide Rule 46. A copy of the application was mailed on March 7, 2008 to the Navarro County Clerk, the City Clerk of Corsicana, the surface owners, adjacent surface owners and all offsetting operators within ½ mile.

2. Notice of the application was published in the *Corsicana Daily Sun*, a newspaper of general circulation in Navarro County, on February 4, 2008.
3. M. O. R. seeks authority for an area injection permit encompassing 4,000 acres in the Corsicana (Shallow) Field. The permit includes seven injection wells on various leases and would expand its fluid injection authority granted administratively in May 2007 for six wells on the King "A" Lease.
4. M. O. R. proposes to inject a fresh water based polymer and produced salt water into the productive Nacatoch Sand formation at an average depth of 800 feet. The proposed injection is for the purpose of enhanced oil recovery.
5. The proposed injection wells were initially drilled and completed as producing wells. They all received an exception to surface casing requirements of Statewide Rule 13 from the RRC District Office. None of the wells have surface casing.
6. M. O. R. did not meet its burden of proof to show that the proposed area injection permit would not cause pollution of surface water and that injected fluids would be confined to the proposed injection interval.
 - a. M. O. R. only performed a review of all wellbores within the ¼ mile radius of review for the seven proposed injection wells. This review listed numerous plugged wells which do not have plugging records on file with the Commission and are of unknown status.
 - b. The application failed to identify all of the wellbores located within the 4,000 acre permit area and all wellbores located within a ¼ mile radius of the area boundaries.
 - c. The requested 4,000 acre area injection permit is bounded on the northwest by Lake Halbert and to the east by the upper extension of Richland Chambers Reservoir. Many wells are located under water in the lakes or below the lake pool elevation lines.
 - d. The 4,000 acres contains hundreds of producing, injection and plugged wells and so does the ¼ mile radius of review outside the area boundaries. Many of the wells have no drilling, completion, cementing or plugging records on file with the Commission and are of unknown status. Any of these wells could be a potential conduit for injected fluids to migrate from the injection interval and contaminate the adjacent lakes or other surface usable quality water.

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. M. O. R. has not satisfied the requirements of Chapter 27 of the Texas Water Code and the Railroad Commission's Statewide Rule 46 for an area fluid injection permit, Corsicana (Shallow) Field, Navarro County, Texas.
 - a. M. O. R. failed to show that the use of the proposed injection Well No. 4 would not cause pollution of surface water or fresh water strata as required under Texas Water Code §27.051(b)(3).
 - b. M. O. R. did not meet its burden of proof in showing that injected fluids will be confined to the proposed injection interval as required under Texas Water Code §27.051(b)(2).

EXAMINERS' RECOMMENDATION

Based on the above findings of fact and conclusions of law, the examiners recommend that the application of Texas M. O. R., Inc. for an area fluid injection permit pursuant to Statewide Rule 46, Corsicana (Shallow) Field, Navarro County, Texas, be denied.

Respectfully submitted,

Richard D. Atkins, P.E.
Technical Examiner

Marshall F. Enquist
Legal Examiner