



RAILROAD COMMISSION OF TEXAS

OFFICE OF GENERAL COUNSEL

OIL & GAS DOCKET NO. 02-0267718

THE APPLICATION OF HILCORP ENERGY COMPANY TO CONSIDER UNITIZATION OF THE LAKE PASTURE (H-440 SAND) GAS UNIT, LAKE PASTURE (H-440 SAND) FIELD, REFUGIO COUNTY, TEXAS

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

DATE OF HEARING: November 16, 2010

APPEARANCES:

REPRESENTING:

APPLICANT:

John Soule
Russell Parker
Greg Gunter

Hilcorp Energy Company

OBSERVER:

Roger E. Dixon

T-C Oil Company

EXAMINERS' REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Hilcorp Energy Company ("Hilcorp") requests Commission authority for unitization of the Lake Pasture (H-440 Sand) Gas Unit.

This application was unopposed and the examiners recommend approval.

DISCUSSION OF THE EVIDENCE

The Lake Pasture (H-440 Sand) Field was discovered in August 1959 at an average depth of 4,500 feet. Although 348 wells have been completed in the proposed unit, there are only 130 producing wells carried on the proration schedule. Field Rules provide for 467'-0' well spacing, 40 acre oil units with optional 5 acre density and a capacity oil

allowable. Cumulative production from the field through October 2010 is 71.1 MMBO and 505.8 BCFG. Most of the produced gas has been re-injected into the gas cap of the reservoir, pursuant to the permissible gas-oil ratio of 231 cubic feet per barrel. There are two operators in the field, Hilcorp Energy Company and T-C Oil Company. All wells in the field have been classified as oil wells.

The field covers approximately 4,500 acres and has a strong bottom water drive. The original oil-water contact was -4,470 feet and the original gas-oil contact was -4,427 feet. Over time, the oil-water contact has moved up and in some areas is into the original gas cap. In other areas, tight streaks in the reservoir have prevented movement of the oil column up into the gas cap. It is these areas where tight streaks are present that there is remaining oil to be produced. Increasing gas withdrawals from the gas cap will not affect these small areas of oil trapped beneath the tight streaks.

Since 2001, 88 wells have been drilled in the field, recovering an incremental 4.1 MMBO. Current production from the 130 producing wells is approximately 1,600 BOPD with a water cut of approximately 96%. With original oil-in-place of 129.6 MMBO, recovery to date is 54.2%. Estimated ultimate oil recovery from the field is 74.3 MMBO, or 57% of the original oil-in-place.

Hilcorp's Tom O'Connor complex uses produced gas from hundreds of Tom O'Connor and Lake Pasture fields to operate production facilities and to provide gas for gas lift operations in many fields. Unless gas production from the H-440 field is increased, Hilcorp will be forced to start purchasing gas to fuel its facilities by 2011. Purchasing gas would not be economic and would ultimately result in the loss of 2.5 MMBO. Under the proposed plan, a maximum of 8,400 MCFGPD would be produced from the H-440 field, which is equivalent to 3.1 BCF per year. Remaining gas-in-place in the field is estimated to be 139 BCF, 65% of which underlies Hilcorp acreage and 35% of which underlies TC acreage.

The proposed Lake Pasture (H-440 Sand) Gas Unit consists of four tracts which contain 6,771 acres. The unitized formation is the subsurface portion of the Unit Area commonly known as the H-440 Sand between the subsurface depths of 4,343 feet and 4,539 feet as shown on the log of the Quintana Petroleum Corporation - Maude Williams "A" Lease, Well No. D-2G, Refugio County, Texas. The proposed unit contains all of the productive portions of the H-440 Sand, as demonstrated by a net pay isopach map provided by Hilcorp.

The participation formula for each tract on the Unit is based 100% on the gas cap volume contained under each tract. At the time of the hearing, 100% of the working interest ownership and 99.8% of the royalty interest ownership had signed the unit agreement. Hilcorp anticipates 100% sign up of the royalty interest ownership, but will conduct monthly well tests to allocate production to wells on tracts for which 100% sign-up was not achieved. There are no state lands contained within the proposed unit.

FINDINGS OF FACT

1. Notice of this hearing was sent to all operators and royalty interest owners within the proposed unit. Notice was published in *The County Press*, a newspaper of general circulation in Refugio County, for four consecutive weeks beginning October 14, 2010.
2. The proposed Lake Pasture (H-440 Sand) Gas Unit consists of four tracts which contain 6,771 acres.
3. The unitized formation is the subsurface portion of the Unit Area commonly known as the H-440 Sand between the subsurface depths of 4,343 feet and 4,539 feet as shown on the log of the Quintana Petroleum Corporation - Maude Williams "A" Lease, Well No. D-2G, Refugio County, Texas.
4. The reservoir has a strong water drive. Over time, the oil-water contact has moved up and in some areas is into the original gas. In other areas, tight streaks in the reservoir have prevented movement of the oil column up into the gas cap.
5. At the time of the hearing, 100% of the working interest ownership and 99.8% of the royalty interest ownership had signed the unit agreement. Hilcorp anticipates 100% sign up of the royalty interest ownership.
6. The estimated remaining oil reserves is 4.1 MMBO. This oil will be recovered from small traps beneath the tight streaks in the reservoir. Increasing gas withdrawals from the gas cap will not affect these small areas of oil trapped beneath the tight streaks.
7. By 2011, the fuel source to continue operations at the Tom O'Connor production complex and provide gas for gas lift operations will be depleted and Hilcorp will be forced to start purchasing gas to fuel its facilities. Purchasing gas would not be economic and would ultimately result in the loss of 2.4 million BO.
8. Remaining gas-in-place in the field is estimated to be 139 BCFG, 65% of which underlies Hilcorp acreage and 35% of which underlies TC acreage.
9. The participation formula for each tract on the Unit is based 100% on the gas cap volume contained under each tract.
10. Increasing gas withdrawals from the Lake Pasture (H-440) Field will not be successful unless the area is unitized.

11. The agreement was voluntarily executed by all parties affixing their signatures thereto and no person has been compelled or required to enter into the agreement. The unit agreement binds only those persons who have executed it, their heirs, successors, assigns and legal representatives. The rights of all owners of interests in the field will be protected under the operation of the unit, regardless of whether an owner signed the unit agreement.
12. The owners of interest in the oil and gas under each tract of land within the area reasonably defined by development have been given an opportunity to enter into the unit on the same yardstick basis as owners of interest in the oil and gas under the other tracts in the unit.
13. The unitization agreement is necessary to accomplish the purposes of establishing a unit to increase gas production and to operate cooperative facilities necessary thereto.
14. The unit agreement does not provide, either directly or indirectly, for the cooperative refining or marketing of crude petroleum, distillate, condensate, or gas, or any by-product thereof.
15. The unit agreement is subject to all valid orders, rules and regulations of the Railroad Commission.
16. The unit agreement contains no provision regarding field rules, nor does it limit the amount of production of oil or gas from the unitized area. The unit agreement does not release the operator from his obligation to reasonably develop lands or leases as a whole.
17. The unit agreement is a voluntary agreement entered into for the purpose of increasing gas production from the field.
18. The unit agreement does not provide for the location of wells.
19. There are no state lands contained within the proposed unit.
20. The unit agreement is in the interest of public welfare as being reasonably necessary to prevent waste and to promote conservation.
21. The reservoir described in the unit agreement is identified as a single reservoir for Commission purposes.
22. The unit agreement contains only the acreage reasonably necessary to accomplish the proposed increase in gas production .

23. Monthly well tests will be conducted to allocate production to wells on tracts for which 100% sign-up was not achieved.

CONCLUSIONS OF LAW

1. Proper notice was given to all persons legally entitled to notice.
2. All things have occurred or have been accomplished that are necessary to give the Commission jurisdiction in this matter.
3. Applicant's proposed secondary recovery project satisfies all of the requirements set out in TEX. NAT. RES. CODE ANN. §§101.001 et seq.
4. Approval of the proposed unit agreement is in the public interest and is necessary to prevent waste and to promote the conservation of oil or gas or both.

EXAMINERS' RECOMMENDATION

Based on the above findings of fact and conclusions of law, the examiners recommend approval of the proposed Lake Pasture (H-440 Sand) Gas Unit, as set out in the attached order.

Respectfully submitted,


Marshall F. Enquist
Legal Examiner


Richard D. Atkins, P.E.
Technical Examiner