

**THE APPLICATION OF SINCLAIR OIL & GAS COMPANY TO CONSIDER UNITIZATION AND SECONDARY RECOVERY AUTHORITY FOR THE MILLER SPRABERRY UNIT, HOOD (SPRABERRY) FIELD, BORDEN COUNTY, TEXAS**

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**HEARD BY:** Donna K. Chandler, Technical Examiner  
Marshall F. Enquist, Hearings Examiner

**DATE OF HEARING:** December 5, 2008

**APPEARANCES:**

Ana Maria Marsland-Griffith  
Thomas Zadick  
Marilyn Meehan  
Ellis Harris, Jr.

**REPRESENTING:**

Sinclair Oil & Gas Company

**EXAMINERS' REPORT AND RECOMMENDATION**

**STATEMENT OF THE CASE**

Sinclair Oil & Gas Company requests Commission authority for unitization of the Miller Spraberry Unit and approval of secondary recovery operations on the Unit.

This application was unopposed and the examiners recommend approval.

**DISCUSSION OF THE EVIDENCE**

The Hood (Spraberry) Field was discovered in 1975 at a depth of approximately 5,260 feet. There are six producing wells carried in the field, four operated by Sinclair, one operated by Fasken Oil & Ranch and one operated by Tacor Resources. The two wells not operated by Sinclair are not within the proposed unit and are located several miles to the west of the field. Cumulative production from the wells to be included in the unit is 284,000 BO. Current production from the wells 35-40 BOPD.

The unitized formation is the Spraberry underlying the Unit Area correlative to the interval identified between the depths of 5,096 feet and 5,343 feet as shown on the log of the RAD Oil Company "527" No. 2A well located 2,640 feet FNL and 467 feet FEL, Section 527, Block 97, H & TC RR Co. Survey, Borden County, Texas.

The proposed Miller Spraberry Unit consists of 3 tracts which contain 200 acres. The proposed unit contains the entire reservoir, as demonstrated by the sand isopach maps of the F and G Sands of the Spraberry which will be flooded. The two other wells carried on the Commission's proration schedule do not produce from a common reservoir as Sinclair's wells to be included in the unit. The limits of the reservoir are well defined by an oil-water contact at 2,505 feet subsea and a pinch-out of the sands to the east.

Sinclair plans to implement a waterflood initially using one injection well and three producing wells. Eventually, there will be three injection wells and four producing wells. The injected fluid will be produced salt water.

Productive area of the reservoir is 181 acres and original oil-in-place is 1.38 million BO. Average porosity is 19% and average water saturation is 45%, with average net pay of 8.8 feet. Ultimate primary recovery is estimated to be 22% of original oil-in-place, or 304,000 BO. Estimated secondary recovery from the unit is estimated to be 184,000 BO, or an additional 13% of original oil-in-place. The estimates for secondary recovery are based on performance of a similar waterflood in the nearby Cain (Spraberry) Field.

The total cost to implement and operate the secondary recovery project is approximately \$2 million. Estimated net income as a result of the secondary recovery project is approximately \$7.6 million over the life of the project. These estimates are based on an oil price of \$70 per barrel. Even at \$45 per barrel, the project will be economic.

The participation formula for the Unit is based on 50% surface acreage and 50% productive volume (net acre-feet). At the time of the hearing, 100% of the working interest ownership and approximately 91% of the royalty interest ownership had signed the unit agreement. There are no state lands in the Unit. Sinclair will conduct monthly well tests to allocate production to wells on tracts for which 100% sign-up was not achieved.

### **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 *Borden Star*, a newspaper of general circulation in Borden County, for four consecutive weeks beginning October 29, 2008.
2. The proposed unit consists of 3 tracts which contain 200 acres.
3. The unitized formation is the Spraberry underlying the Unit Area correlative to the interval identified between the depths of 5,096 feet and 5,343 feet as shown on the log of the RAD Oil Company "527" No. 2A well located in Section 527, Block 97, H & TC RR Co. Survey, Borden County, Texas.

4. At the time of the hearing, 100% of the working interest ownership and approximately 91% of the royalty interest ownership had signed the unit agreement.
5. Cumulative recovery from the leases proposed for unitization is 284,000 BO. Secondary recovery operations will result in the recovery of an estimated 184,000 BO which would otherwise go unrecovered.
6. Estimated cost to implement and operate the secondary recovery project is approximately \$2 million. The cost does not exceed the value of additional reserves to be recovered.
7. The participation formula for the Unit is based 50% surface acreage and 50% productive volume.
8. The secondary recovery project will not be successful unless the area is unitized.
9. The secondary recovery project will be a waterflood initially utilizing one injection well and three producing wells.
10. 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.
11. 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.
12. The proposed injection program will move hydrocarbons across lease lines, and unitization is necessary in order to protect the correlative rights of the various interest owners.
13. The unitization agreement is necessary to accomplish the purposes of establishing a unit to effect secondary recovery operations for water injection and to operate cooperative facilities necessary thereto. Other available or existing methods or facilities for secondary recovery operations are inadequate for the purpose of secondary recovery.

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 conducting secondary recovery operations.
18. The unit agreement does not provide for the location of wells.
19. There are no state lands in the 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 and is a suitable reservoir for a water injection secondary recovery operation.
22. The unit agreement contains only the acreage reasonably necessary to accomplish the proposed secondary recovery project.
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 for secondary recovery operations 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 Miller Spraberry Unit and secondary recovery operations project as set out in the attached order.

Respectfully submitted,

Donna K. Chandler  
Technical Examiner

Marshall F. Enquist  
Hearings Examiner