

OIL & GAS DOCKET NO. 09-0253660

THE APPLICATION OF HEP OIL COMPANY, LTD. TO CONSIDER UNITIZATION AND SECONDARY RECOVERY AUTHORITY FOR THE RUTH PEEK 'A' CADDO WATERFLOOD UNIT IN THE LOST VALLEY (CADDO) FIELD, JACK COUNTY, TEXAS

HEARD BY: Andres J. Trevino P.E., Technical Examiner
Marshall Enquist, Hearings Examiner

DATE OF HEARING: October 16, 2007

APPEARANCES:

Anthony S. Cutia
Richard Jones
Tom Boelers

REPRESENTING:

HEP Oil Company, LTD.

EXAMINERS' REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

HEP Oil Company, LTD. requests Commission authority for unitization of the Ruth Peek 'A' Caddo Waterflood Unit and approval of secondary recovery operations on the Unit in the Lost Valley (Caddo) Field.

This application was unopposed and the examiners recommend approval.

DISCUSSION OF THE EVIDENCE

The Lost Valley (Caddo) Field was discovered in 1971 at an approximate depth of 4,610 feet. Production peaked in 1998 with a monthly production rate of 14,620 BO per month from 33 wells. Current production is approximately 1,786 BO per month from 24 wells in the proposed Unit area.

The area proposed for the subject unitization covers acreage that includes the majority of the productive reservoir. The reservoir limits are well defined and are believed to include both drained and undrained areas. Leaseholders of productive areas not in the unit were offered to participate in the unit. The area is in the late stage of primary

production. Cumulative primary production from the 24 wells is 1,196,069 BO. Remaining primary production from wells on the unit is estimated to be 3,500 BO.

The unitized formation is the Caddo III formation which is an algal mound buildup that forms along a shelf margin. The proposed Caddo III interval contains naturally occurring fractures and non uniform porosity throughout the build up. The algal mound buildups do not exist in all wellbores and are of limited lateral extent. The formation is described as the carbonate formation encountered in the interval from 4,600 feet to 4,655 feet on the log of the Miles Production Co. Ruth Peek "A" No. 4, (API No. 42-445-31965) located in the James W. Williams Survey, A-877, Jack County, Texas.

Average porosity is 6.5% and average water saturation is 35%. The initial reservoir pressure was 1,939 psi and current pressure beneath the unit area is less than 400 psi. HEP Oil performed extensive waterflood studies including waterflood susceptibility test to predict the waterflood's performance. The waterflood program will consist of 5 producing wells, 3 injection wells and one water supply well. Initially make up water will be supplied from the Buttram Sand, a saltwater aquifer, to supplement the waterflood project.

The proposed Ruth Peek 'A' Caddo Waterflood Unit consists of 3 tracts which contain a total of 443.5 acres. There are approximately 311.1 acre-feet of Caddo III in the proposed unit area. The proposed Ruth Peek 'A' Caddo Waterflood Unit will only water flood a portion of the entire Lost Valley (Caddo) Field. The field is composed of numerous algal mound build ups some separated by several miles apart. The Ruth Peek 'A' Caddo Waterflood Unit will waterflood one of the algal mounds under the unit's boundaries. The participation formula is based on a ratio of reservoir volume, tract cumulative production, active tract wells and surface area. The Unit Agreement has been ratified by 100% of the royalty interest ownership and 100% of the working interest ownership. There are no state lands in the Unit Area.

It is estimated that the total cost to implement the project will be \$806,000. Secondary reserves are estimated to be 716,000 BO. Estimated revenue from the secondary recovery project is \$46 million.

FINDINGS OF FACT

1. Notice of this hearing was sent to all operators and royalty interest owners within the proposed unit and to offset operators and mineral owners of unleased tracts. There were no protests to the application.
2. The proposed unit consists of 3 tracts which contain a total of 443.5 acres.
3. The unitized formation is the subsurface portion of the Unit Area commonly known as the Caddo III reservoir. The formation is described as the interval from 4,600 feet to 4,655 feet on the log of the Miles Production Co. Ruth

Peek "A" No. 4, (API No. 42-445-31965) located in the James W. Williams Survey, A-877, Jack County, Texas.

4. Secondary recovery operations will result in the recovery of an estimated 716 MBO which would otherwise go unrecovered.
5. The cost to implement the project does not exceed the value of additional reserves to be recovered.
6. The participation formula is based on a ratio of reservoir volume, tract cumulative production, active tract wells and surface area.
7. The secondary recovery project will not be successful unless the area is unitized.
8. The secondary recovery program will use water from Buttram Sand initially.
9. 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.
10. 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.
11. 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.
12. The unitization agreement is necessary to accomplish the purposes of establishing a unit to effect secondary recovery operations and to operate the necessary cooperative facilities. Other available or existing methods or facilities for secondary recovery operations are inadequate for the purpose of secondary recovery.
13. 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.

14. The unit agreement is subject to all valid orders, rules and regulations of the Railroad Commission.
15. 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.
16. The unit agreement is a voluntary agreement entered into for the purpose of conducting secondary recovery operations.
17. The unit agreement does not provide for the location of wells.
18. There are no State lands in the unit.
19. The reservoir described in the unit agreement is a suitable reservoir for the proposed secondary recovery operation.
20. The unit agreement contains only the acreage reasonably necessary to accomplish the proposed secondary recovery project.
21. The unit agreement has been ratified by 100% of the working interest ownership and over 100% of the royalty interest ownership.

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. (Vernon 1993).
4. Approval of the proposed unit agreement and 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 Ruth Peek 'A' Caddo Waterflood Unit and secondary recovery operations project as set out in the attached order.

Respectfully submitted,

Andres J. Trevino
Technical Examiner

Marshall Enquist
Hearings Examiner