

OIL & GAS DOCKET NO. 8A-0269970

THE APPLICATION OF MEDDERS OIL COMPANY, INC. TO CONSIDER UNITIZATION AND SECONDARY RECOVERY AUTHORITY FOR THE PITCHFORK BALT WATERFLOOD UNIT, BALT (TANNEHILL) FIELD, KING COUNTY, TEXAS

HEARD BY: Richard D. Atkins, P.E. - Technical Examiner
James M. Doherty - Legal Examiner

DATE OF HEARING: April 21, 2011

APPEARANCES:

REPRESENTING:

APPLICANT:

Glenn E. Johnson
David C. Triana
Lewis Cadman
Bob Gilmore
Bryant Medders
Cullen Medders

Medders Oil Company, Inc.

EXAMINERS' REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Medders Oil Company, Inc. ("Medders") requests Commission authority for unitization of the Pitchfork Balt Waterflood Unit and approval of secondary recovery operations on the Unit.

This application was unopposed and the examiners recommend approval.

DISCUSSION OF THE EVIDENCE

The Balt (Tannehill) Field was discovered in February 1996 at an average depth of 3,800 feet. There are 68 producing oil wells carried on the proration schedule. Field Rules provide for 467'-1,200' well spacing, 80 acre density and allocation based on 100% acres. The top allowable is 144 BOPD with an allowable gas-oil ratio of 2,000 cubic feet per barrel and a casinghead gas limit of 288 MCFGPD. Cumulative production from the field through March 2011 is 5.6 MBO and 68.4 MMCFG.

The unitized formation is the subsurface portion of the Unit Area commonly known as the Tannehill Sand formation between the subsurface depths of 3,800 feet and 3,820 feet as shown on the log of the Medders Oil Company, Inc. - Forks "1" Lease, Well No. 2A (API No. 42-269-32216), Somervell County School Land Survey, League 1, A-284, King

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County, Texas. The Tannehill Sand formation is located between the base of the Stockwether Lime and the top of the Tannehill Lime formations.

The proposed Pitchfork Balt Waterflood Unit consists of 6 tracts which contain 2,765 acres. The productive interval is a sand which is a stratigraphic trap and a solution gas drive is the primary drive mechanism. The proposed unit contains a part of the productive portions of the Tannehill Sand, as demonstrated by a cross section, structure map and net pay isopach map submitted by Medders. The sand has an average porosity of 21%, an average water saturation of 39% and an average net pay thickness of 15 feet.

Medders proposes to initially implement a peripheral waterflood by converting 10 producing wells to injection, which will leave 15 producing wells on the unit. Medders plans to inject 1,600 BPD of produced saltwater and additional makeup saltwater from a water source well to be drilled at a later date.

Medders estimates that secondary recovery will be equal to 150% of primary recovery or approximately 2.5 MMBO. The total cost to implement and operate the secondary recovery project is expected to be \$2.7 million and \$11.5 million, respectively. The projected net undiscounted working interest income is \$83.9 million, resulting in a return on investment of 5.9. This calculation is based on an oil price of \$50 per barrel.

The participation formula for each tract is based on five percent (5%) number of wells, sixty percent (60%) floodable reservoir volume, fifteen percent (15%) ultimate primary oil recovery and twenty percent (20%) secondary oil reserves. At the time of the hearing, 100% of the working interest ownership and 100% of the royalty interest ownership had signed the unit agreement. There are no state owned lands in the proposed unit.

FINDINGS OF FACT

1. Notice of this hearing was sent to all operators and royalty interest owners within and adjacent to the proposed unit.
2. The proposed Pitchfork Balt Waterflood Unit consists of 6 tracts which contain 2,765 acres.
3. The unitized formation is the subsurface portion of the Unit Area commonly known as the Tannehill Sand formation between the subsurface depths of 3,800 feet and 3,820 feet as shown on the log of the Medders Oil Company, Inc. - Forks "1" Lease, Well No. 2A (API No. 42-269-32216), Somervell County School Land Survey, League 1, A-284, King County, Texas.
4. The productive interval is a sand which is a stratigraphic trap and a solution gas drive is the primary drive mechanism.
5. At the time of the hearing, 100% of the working interest ownership and 100%

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of the royalty interest ownership had signed the unit agreement.

6. Secondary recovery operations are expected to result in the recovery of an estimated 2.5 MMBO which would otherwise go unrecovered.
7. The total cost to implement and operate the secondary recovery project is expected to be \$2.7 million and \$11.5 million, respectively. The projected net undiscounted working interest income is \$83.9 million, resulting in a return on investment of 5.9. The cost does not exceed the value of additional reserves to be recovered.
8. The participation formula for each tract is based on five percent (5%) number of wells, sixty percent (60%) floodable reservoir volume, fifteen percent (15%) ultimate primary oil recovery and twenty percent (20%) secondary oil reserves.
9. The secondary recovery project will not be successful unless the area is unitized.
10. Medders proposes to initially implement a peripheral waterflood by converting 10 producing wells to injection, which will leave 15 producing wells on the unit. Medders plans to inject 1,600 BPD of produced saltwater and additional makeup saltwater from a water source well to be drilled at a later date.
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 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.
14. 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

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inadequate for the purpose of secondary recovery.

15. 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.
16. The unit agreement is subject to all valid orders, rules and regulations of the Railroad Commission.
17. 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.
18. The unit agreement is a voluntary agreement entered into for the purpose of conducting secondary recovery operations.
19. The unit agreement does not provide for the location of wells.
20. There are no state owned lands in the proposed unit.
21. The unit agreement is in the interest of public welfare as being reasonably necessary to prevent waste and to promote conservation.
22. 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.
23. The unit agreement contains only the acreage reasonably necessary to accomplish the proposed secondary recovery project.

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.

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EXAMINERS' RECOMMENDATION

Based on the above findings of fact and conclusions of law, the examiners recommend approval of the proposed Pitchfork Balt Waterflood Unit and secondary recovery operations project, as set out in the attached order.

Respectfully submitted,

James M. Doherty
Legal Examiner

Richard D. Atkins, P.E.
Technical Examiner