
THE APPLICATION OF HEADINGTON OIL COMPANY L.P. FOR NEW FIELD DESIGNATION AND FIELD RULES FOR THE (PROPOSED) SAMANO (FIFTH MASSIVE) FIELD; AND RULE 10 EXCEPTIONS FOR SAMANO (FIFTH MASSIVE) AND (FOURTH MASSIVE) FIELDS, HIDALGO AND STARR COUNTIES, TEXAS

Heard by: Margaret Allen, Technical Hearings Examiner

Procedural history

Application received: July 14, 2003

Hearing held: August 22, 2003

Appearances

Philip Whitworth
Clinton Randall Bissell
W.R. (Bill) Johnston

Representing
Headington Oil Company L.P.

Keith Lilie

Thorp Petroleum

EXAMINER'S REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Headington Oil Company ("Headington") is requesting that its B.L. Murch Lease, Well No. 16, be designated as the discovery well for the (proposed) Samano (Fifth Massive) Field. The field rules Headington is requesting are summarized as follows:

1. Designated interval from 10,030' to 11,179' as shown on the log of the its B.L. Murch Lease Well No. 16;
2. 467-933' well spacing;
3. 40-acre gas drilling units; and
4. allocation based 95% on deliverability and 5% per well.

The applicant also requested that rule 10 exceptions be granted to downhole commingle wells in the Samano (Fifth Massive) and (Fourth Massive) Fields.

DISCUSSION OF THE EVIDENCE

The proposed new field was discovered with the completion of Headington's B.L. Murch Lease Well No. 16, in April, 2003. The well is perforated in several sandstones--from 10,524' to 10,540', from 10,576' to 10,584', and from 11,035' to 11,050'. These sandstones are part of the Fifth Massive sandstone of the Vicksburg Formation that occurs between 10,030' and 11,179' in this well. A few other wells have penetrated the Fifth Massive but none within 2-1/2 miles has previously encountered potential reservoir. There are a thousand feet of shale between the Fourth and Fifth Massive sandstones.

The bottom-hole pressure in the Fifth Massive is expected to be virgin pressure of 8736 psi. The pressure gradient is 0.871 psi per foot of depth which is higher than the pressure gradient of 0.801 psi per foot of depth in the Fourth Massive. Ten other Samano fields have been approved in the First through Fourth Massive Vicksburg sandstones, all with the same rules. The proposed spacing is standard for 40-acre density and the applicant wants to retain the Statewide Rule drilling units of 40 acres. Between-well spacing of 933' will facilitate locating wells at the precise structural and stratigraphic locations necessary to encounter the Samano reservoirs. The area is highly faulted.

The proposed designated interval includes several lenticular sandstones with multiple reservoirs that are not in natural communication. A two-factor allocation formula is required by statute for such multiple-reservoir fields. One based 5% per well and 95% on deliverability will satisfy statutory requirements. The applicant plans a total of five wells that will be completed in this field.

The highest deliverability on this well's initial test was 6200 MCF/D, with a gas/liquid ratio of 25,036 cubic feet per barrel. Headington is requesting authority to downhole commingle production in this and subsequent wells from the Fourth and Fifth Massive sandstones. The Fourth Massive has not yet been perforated in Well No. 16 but is expected to contribute about 8 MMCF of the total 12 MMCF of daily production predicted. All of the sandstone reservoirs have very low permeability but the Fourth Massive has somewhat better reservoir rock than the Fifth.

There are 30 to 40 wells in the various Massive Vicksburg sandstones, and almost all of them have been downhole commingled. These are expensive wells which require hydraulic fracture stimulation to produce. Production declines rapidly and the economic limit per completion is 3000 MCF per month. Downhole commingling is expected to result in the recovery of an incremental 180 MMCF and 7380 BC per well.

Both the Fourth and Fifth Massive sandstones are at virgin pressure in Well No. 16. No crossflow will occur during normal operations. Neither the Fourth nor the Fifth Massive produce formation water and the hydrocarbons produced are similar. Any crossflow that occurred when the well was shut-in would not cause any harm.

Well No. 16 is at a regular location with respect to both fields proposed for downhole commingling. Royalty and working interests are identical with respect to all proposed combined zones. Headington is proposing that future wells be allowed to downhole commingle production from the Fourth and Fifth Massive sandstones.

FINDINGS OF FACT

1. Notice of this hearing was mailed to all operators offsetting the discovery well for the (proposed) Samano (Fifth Massive) Field on August 20, 2003.
2. The Samano (Fifth Massive) Field was discovered with the completion of the Headington Oil Company B.L. Murch Lease Well No. 16 in August of 2003.
3. The discovery well is perforated in the Fifth Massive sandstone of the Vicksburg Formation from 10,524' to 10,540', from 10,576' to 10,584', and from 11,035' to 11,050'.
4. There are no other wells within 2-1/2 miles that have been completed in the Fifth Massive sandstone of the Vicksburg Formation.
5. The interval from 10,030' to 11,179' as shown on the log of the Headington Oil Company B.L. Murch Lease Well No. 16, includes all of the productive Fifth Massive Vicksburg sandstones in the Samano Field.
6. A two-factor allocation formula, such as the proposed one based 5% per well and 95% on deliverability, will protect correlative rights and satisfy statutory requirements.
7. Well spacing of 467-933' is standard for 40 acre drilling units and will facilitate commingling and recompletions with other Samano Vicksburg fields.
8. Downhole commingling production from the Samano (Fifth Massive) and Samano (Fourth Massive) Fields will prevent waste.
 - a. Downhole commingling is expected to result in the recovery of an incremental 180 MMCF and 7380 BC per well.
 - b. Both the Fourth and Fifth Massive sandstones are at virgin pressure in Well No. 16.
 - c. Neither the Fourth nor the Fifth Massive produce formation water and the hydrocarbons produced are similar.
 - d. Well No. 16 is at a regular location with respect to both fields proposed for downhole commingling.
 - e. Royalty and working interests are identical with respect to all proposed combined zones.
 - f. Commingled production in the B.L. Murch Well No. 16 is expected to be 12 MMCF per day initially but decline very rapidly in these low permeability sandstones.

CONCLUSIONS OF LAW

1. Proper notice was given as required by statute.
2. All things have been done or occurred to give the Railroad Commission jurisdiction to resolve this matter.
3. The requested new field and field rules will prevent waste, protect correlative rights and promote orderly development of the field.
4. Downhole commingling production from the Samano (Fifth Massive) and Samano (Fourth Massive) Fields will prevent waste and promote conservation.

EXAMINER'S RECOMMENDATION

Based on the above findings and conclusions, the examiner recommends that the Samano (Fifth Massive) Field be approved as a new field with the requested field rules, as per the attached order.

Respectfully submitted,

Margaret Allen
Technical Hearings Examiner