



RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

OIL AND GAS DOCKET NO. 03-0283392

THE APPLICATION OF UNIT PETROLEUM COMPANY TO CONSIDER A NEW FIELD DESIGNATION AND TO ADOPT TEMPORARY FIELD RULES FOR THE PROPOSED JAZZ (MAGIC) FIELD, POLK COUNTY, TEXAS

HEARD BY: Andres J. Trevino, P.E. - Technical Examiner
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ER&R PREPARED BY: Richard D. Atkins, P.E. - Technical Examiner

DATE OF HEARING: August 2, 2013

APPEARANCES:

REPRESENTING:

APPLICANT:

Michael E. McElroy
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Unit Petroleum Company

EXAMINERS' REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Unit Petroleum Company ("Unit") requests that a new field designation called the Jazz (Magic) Field (ID No. 45993 500) be approved for its Epstein Lease, Well No. 3. Unit proposes that the following Temporary Field Rules be adopted for the new field, subject to review in 24 months:

1. Designation of the field as the correlative interval from 14,360 feet to 14,900 feet as shown on the log of the Unit Petroleum Company - Epstein Gas Unit, Well No. 3 (API No. 42-373-31209);
2. 467'-660' well spacing with special provisions for "take points", 100' lease line spacing for the first and last take points, no minimum between well spacing limitation for horizontal drainhole wells and vertical wells or horizontal drainhole wells that are parallel or sub-parallel and do not overlap more than 500 feet, a 50' "box" rule and "off-lease" penetration point for horizontal drainhole wells;

3. 40 acre gas units with a special provision for the additional acreage assignment to horizontal drainhole wells based on the formula $A = (L \times 0.15) + 40$;
4. Allocation based on 95% acres and 5% per well with AOF status;
5. Special provisions for "stacked laterals" in horizontal drainhole wells.

Unit also requests that proration unit plats not be required for individual wells, but that Form P-15 be filed to designate the number of acres to be assigned to each well with no maximum diagonal limitation.

The application is unopposed and the examiners recommend approval of the new field designation and adoption of Temporary Field Rules for the Jazz (Magic) Field, subject to review in 24 months, as requested by Unit.

DISCUSSION OF EVIDENCE

Unit completed its Epstein Gas Unit, Well No. 3, in March 2012 with perforations in the Wilcox formation between 14,528 feet and 14,538 feet. On initial test, the well produced flowing at a maximum rate of 5,742 MCFGPD and 29 BOPD with a gas-oil ratio of 198,016 cubic feet per barrel. Currently, Unit is the only operator in the field and has completed two additional wells into the new field.

A new field designation should be approved for the Epstein Gas Unit, Well No. 3, as there is no comparable production within a 2.5 mile radius of the discovery well. The nearest production is in the Jazz (Wilcox Deep) Field at an average depth of 13,500 feet. Unit requests that the correlative interval from 14,360 feet to 14,900 feet as shown on the log of the Unit Petroleum Company - Epstein Gas Unit, Well No. 3 (API No. 42-373-31209), J Stephenson Survey, A-523, Polk County, Texas, be designated as the Jazz (Magic) Field. The correlative interval includes the entire deeper productive portion of the Wilcox formation.

Unit is proposing to develop the field with horizontal drainhole wells and requests Temporary Field Rules to promote the efficient and effective development of the remaining hydrocarbons. Unit proposes 467'-660' well spacing with special provisions for "take points", 100' lease line spacing for the first and last take points, no minimum between well spacing limitation for horizontal drainhole wells and vertical wells or horizontal drainhole wells that are parallel or sub-parallel and do not overlap more than 500 feet, a 50' "box" rule and "off-lease" penetration point for horizontal drainhole wells. Similar Field Rules have been adopted in other tight reservoirs, including the Eagle Ford, Wolfcamp, Cotton Valley, Wilcox and Barnett Shale formations.

Unit requests that a field rule be adopted which includes language relevant to the measurement of distances to lease lines for horizontal drainhole wells. Unit's proposed rule specifies that, for purposes of lease line spacing, the nearest "take point" in a horizontal well be used. This take-point could be a perforation in a horizontal well that is cased and cemented, an external casing packer in a cased well, or any open-hole section in an uncased well.

Unit proposes a tolerance "box rule" for horizontal drainhole wells that would allow drainholes to deviate 50 feet from either side of their permitted track without the necessity of obtaining a Statewide Rule 37 exception. As drilled wells for which all points are located within the "box" would be considered in compliance with their drilling permits.

In some cases, it is beneficial to penetrate the reservoir off lease, while still having "take points" no closer to lease lines than allowed under the field rules. Unit requests that Field Rules for the subject field provide for an "off-lease" penetration point. Statewide Rule 86 requires that the penetration point of a horizontal drainhole be on the lease. In this field, a well generally requires approximately 600 feet of horizontal displacement to make the 90 degree turn from vertical to horizontal. If the penetration point is required to be on the lease, then the first point of production would be about 600 feet from the lease line. The proposed rule will allow approximately 500 feet of additional producing drainhole, resulting in the recovery of additional oil and gas reserves. The Commission has adopted similar rules allowing offsite penetration points in other fields, after the operator has given notice to the mineral owners of the off-lease tract on which the penetration point is to be located and received no protest.

The Jazz (Magic) Field is located in the East Texas Basin and the Wilcox formation is correlative across the entire area. The Wilcox formation is a low permeability sandstone reservoir that requires fracture stimulation and has a solution gas drive as the primary drive mechanism. Unit is requesting that the first and last take points of a lateral be as close as 100' to lease lines. The Wilcox reservoir has oriented fractures and most of the drainage is along the fracture orientation with little contribution from the matrix in a perpendicular direction. A wellbore can be presumed to be drilled to encounter the maximum number of fractures and, therefore, be perpendicular to the fracture direction. The end points of such a lateral will not drain over 100' from the matrix in a direction perpendicular to fracture direction. The 100' lease line spacing for the first and last take points will result in the additional recovery of reserves.

Unit requests 40 acre gas units with a special provision for the additional acreage assignment to horizontal drainhole wells based on the formula $A = (L \times 0.15) + 40$. Unit believes that horizontal drainhole wells will drain up to 640 acres and the proposed formula is similar to the one used in other tight formation fields. For purposes of the assignment of additional acreage pursuant to the formula above, it is proposed that the distance between the first and last take points in a horizontal drainhole well be used.

Unit also requests that a Field Rule be adopted to accommodate the drilling of stacked lateral horizontal drainhole wells. The gross thickness of the field interval is almost 600 feet. Unit believes that several separate laterals may be necessary to effectively develop the reservoir with horizontal drainhole wells. The rule would allow stacked horizontal laterals within the field correlative interval that are drilled from different surface locations to be considered a single well for regulatory purposes. Similar stacked lateral rules have already been adopted in Bone Spring, Granite Wash, Wolfcamp and Cotton Valley formations, as well as in the Newark, East (Barnett Shale) Field.

Unit proposes that proration unit plats not be required for individual wells, but that Form P-15 be filed to designate the number of acres to be assigned to each well with no maximum diagonal limitation. Unit requests allocation based on 95% acres and 5% per well and that the allocation formula be suspended, as there is a 100% market demand for all of the gas produced from the field.

FINDINGS OF FACT

1. Notice of this hearing was provided to all persons entitled to notice at least ten (10) days prior to the date of the hearing and no protests were received.
2. Unit Petroleum Company ("Unit") completed its Epstein Gas Unit, Well No. 3, in March 2013 with perforations in the Wilcox formation between 14,528 feet and 14,538 feet. .
 - a. On initial test, the well produced flowing at a maximum rate of 5,742 MCFGPD and 29 BOPD with a gas-oil ratio of 198,016 cubic feet per barrel.
 - b. Currently, Unit is the only operator in the field and has completed two additional wells into the new field.
 - c. The Epstein Gas Unit, Well No. 3, is entitled to a new field designation, as there is no comparable production within a 2.5 mile radius of the discovery well.
 - d. The proposed Jazz (Magic) Field is actively being developed with horizontal drainhole wells.
3. The correlative interval from 14,360 feet to 14,900 feet as shown on the log of the Unit Petroleum Company - Epstein Gas Unit, Well No. 3 (API No. 42-373-31209), J Stephenson Survey, A-523, Polk County, Texas, should be designated as the Jazz (Magic) Field. The correlative interval includes the entire deeper productive portion of the Wilcox formation.

4. Temporary Field Rules providing for 467'-660' well spacing with special provisions for "take points", 100' lease line spacing for the first and last take points, no minimum between well spacing limitation for horizontal drainhole wells and vertical wells or horizontal drainhole wells that are parallel or sub-parallel and do not overlap more than 500 feet, a 50' "box" rule and "off-lease" penetration point for horizontal drainhole wells will provide consistency in developing the field and will allow greater flexibility in selecting future drilling locations.
5. A spacing rule which utilizes "take-points" in a horizontal well for determination of distances to lease lines will prevent waste and will not harm correlative rights.
 - a. A take-point in a horizontal drainhole well in this field may be a perforation in a horizontal well that is cased and cemented, an external casing packer in a cased well, or any open-hole section in an uncased portion of the wellbore.
 - b. Adoption of the proposed rule will allow the horizontal drainhole length on a lease to be maximized.
 - c. For purposes of assignment of additional acreage pursuant to the special formula, the distance between the first and last take points in a horizontal drainhole well should be used.
6. The proposed 50' "box" rule is necessary to allow operators reasonable minor deviations from the wellbore track that has been permitted.
7. Allowing an "off-lease" penetration point will result in maximum producing drainhole length, thereby increasing ultimate recovery from horizontal drainhole wells. To protect correlative rights, prior notice and opportunity to object should be given to the mineral owners of "off-lease" surface locations.
8. A 100' leaseline spacing for the first and last take points will result in an additional recovery of reserves.
 - a. The Wilcox formation is a low permeability sandstone reservoir that requires fracture stimulation.
 - b. The Wilcox reservoir has oriented fractures and most of the drainage is along the fracture orientation with little contribution from the matrix in a perpendicular direction.

- c. A wellbore can be presumed to be drilled to encounter the maximum number of fractures and, therefore, be perpendicular to the fracture direction.
 - d. The end points of such a lateral will not drain over 100' from the matrix in a direction perpendicular to fracture direction.
9. Adoption of 40 acre gas units with a special provision for the additional acreage assignment to horizontal drainhole wells based on the formula $A = (L \times 0.15) + 40$ is appropriate for the field.
- a. Horizontal drainhole wells will drain up to 640 acres and the proposed formula is similar to the one used in other tight formation fields.
 - b. For purposes of the assignment of additional acreage pursuant to the formula above, the distance between the first and last take points in a horizontal drainhole well should be used.
10. The proposed "stacked lateral" rule will allow stacked horizontal laterals within the Wilcox correlative interval that are drilled from different surface locations to be considered a single well for regulatory purposes, which will facilitate the additional recovery of reserves.
11. Similar Field Rules have been adopted in other tight reservoirs, including the Eagle Ford, Wolfcamp, Cotton Valley, Wilcox and Barnett Shale formations.
12. Allocation based on 95% acres and 5% per well is a reasonable formula which will satisfy state statutes and protect correlative rights of mineral owners in the field.
13. Suspension of the allocation formula is appropriate, as there is a 100% market demand for all of the gas produced from the field.
14. The filing of Form P-15 to designate the number of acres to be assigned to each well for proration purposes with no proration unit plats and no maximum diagonal limitation will eliminate unnecessary paperwork.

CONCLUSIONS OF LAW

- 1. Proper notice of this hearing was issued.
- 2. All things have been accomplished or have occurred to give the Commission jurisdiction in this matter.

3. Approval of the requested new field designation and adoption of Temporary Field Rules for the Jazz (Magic) Field will prevent waste, protect correlative rights and promote the orderly development of the field.

EXAMINERS' RECOMMENDATION

Based on the above findings of fact and conclusions of law, the examiners recommend that the Commission approve the new field designation and adopt Temporary Field Rules for the proposed Jazz (Magic) Field, subject to review in 24 months, as requested by Unit Petroleum Company.

Respectfully submitted,



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Michael Crnich
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