

THE APPLICATION OF SM ENERGY COMPANY TO ADOPT FIELD RULES FOR THE MESQUITE CREEK (MISS.) FIELD, BORDEN COUNTY, TEXAS

HEARD BY: Richard D. Atkins, P.E. - Technical Examiner

HEARING DATE: April 20, 2011

APPEARANCES:

REPRESENTING:

APPLICANT:

Dale E. Miller
Preston S. Grambling

SM Energy Company

EXAMINER'S REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

SM Energy Company ("SM Energy") requests that Field Rules for the Mesquite Creek (Miss.) Field be adopted. SM Energy proposes the following Field Rules:

1. Designation of the fields as the correlative interval from 9,048 feet to 9,383 feet, as shown on the log of the SM Energy Company - Tonya Lease, Well No. 402 (API No. 42-033-32085);
2. 330'-660' well spacing with no between well spacing for vertical and horizontal wells and special provisions for "take points", off-lease penetration point and a "box rule" for a horizontal drainhole well;
3. 80 acre units with optional 40 acre density, the assignment of additional acreage for horizontal wells pursuant to Statewide Rule 86 and no filing of individual well proration unit plats;
4. Allocation based on 100% acres;
5. Special provisions for stacked lateral horizontal wells.

This application was unopposed and the examiner recommends that Field Rules for the Mesquite Creek (Miss.) Field be adopted, as proposed by SM Energy.

DISCUSSION OF THE EVIDENCE

The Mesquite Creek (Miss.) Field was discovered in June 1987 at an average depth of 9,100 feet. The field operates under Statewide Rules. There are currently nine producing oil wells and three operators carried on the proration schedule. Cumulative production from the field through February 2011 is 563.6 MBO and 340.0 MMCFG.

There is currently no defined field interval for the field. SM Energy requests that the field be defined as the correlative interval from 9,048 feet to 9,383 feet, as shown on the log of the SM Energy Company - Tonya Lease, Well No. 402 (API No. 42-033-32085), Section 4, Block 31, T-5-N, T&P RR Co. Survey, A-968, Borden County, Texas. This interval includes the entire Mississippian formation and is located stratigraphically between the base of the Barnett Shale and the top of the Woodford formations.

SM Energy is proposing to drill additional horizontal wells and requests horizontal rules in order to promote the efficient and effective development of the remaining hydrocarbons. SM Energy requests a spacing rule that requires 330'-660' well spacing with no between well spacing for vertical and horizontal wells and special provisions for "take points", off-lease penetration point, a "box rule" and "stacked laterals" for a horizontal drainhole well. SM Energy also proposes that the spacing restriction not apply to horizontal drainhole wells that are parallel or subparallel and do not overlap more than 100 feet. SM Energy argues that the proposed spacing is necessary to allow drilling of horizontal wells which may have to be placed very near each other in some cases to achieve optimal fracture treatment results. SM Energy also requests 80 acre units with 40 acre optional units and the assignment of additional acreage for horizontal wells pursuant to Statewide Rule 86.

SM Energy requests that a field rule be adopted which includes language relevant to measurement of distances to lease lines for horizontal drainhole wells. SM Energy'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, if a horizontal well is cased and cemented, an external casing packer in a cased well, or any open-hole section in an uncased well. Similar rules have been adopted in other tight reservoirs, including the Newark, East (Barnett Shale), Carthage (Haynesville Shale) and Eagleville (Eagle Ford-1) Fields.

SM Energy proposes a 10% 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. SM Energy 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 800 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 800 feet from the lease line. Since there is a requested 330' lease line spacing for the first and last take points, the proposed rule will allow approximately 500 feet of additional producing drainhole, resulting in the recovery of additional oil and gas reserves. Similar rules allowing offsite penetration points have been adopted in other fields, after notice to the mineral owners of the off-lease tract on which the penetration point is to be located and if no protest is received.

SM Energy proposes a "stacked lateral" rule that would allow stacked horizontal laterals within the Mississippian correlative interval that are drilled from different surface locations to be considered a single well for regulatory purposes. It is proposed that a stacked lateral be defined to be multiple horizontal drainholes which are drilled from different surface locations.

SM Energy calculated drainage areas for eight producing and two plugged wells in the field. The drainage areas ranged from 188 acres down to 1 acre, with an average of 68 acres. Three wells had drainage areas less than 40 acres. SM Energy submitted a table which showed that 38 fields in RRC District 8A already had similar spacing and density rules. The table included the Jo-Mill (Spraberry), D.E.B. (Wolfcamp) and MWH (Ellenburger) Fields.

Allocation based on 100% acreage is appropriate given that the interval is not lenticular. Additionally, SM Energy 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.

FINDINGS OF FACT

1. Notice of this application and hearing was provided to all persons entitled to notice at least ten (10) days prior to the date of the hearing.
2. The Mesquite Creek (Miss.) Field was discovered in June 1987 at an average depth of 9,100 feet. The field operates under Statewide Rules. There are currently nine producing oil wells and three operators carried on the proration schedule.
3. The Mesquite Creek (Miss.) Field is actively being developed with horizontal drainhole wells.
4. The Mesquite Creek (Miss.) Field should be defined as the correlative interval from 9,048 feet to 9,383 feet, as shown on the log of the SM Energy

Company - Tonya Lease, Well No. 402 (API No. 42-033-32085). This interval includes the entire Mississippian formation and is located stratigraphically between the base of the Barnett Shale and the top of the Woodford formations.

5. Adoption of an 80 acre density with an optional 40 acre density rule for the Mesquite Creek (Miss.) Field is appropriate.
 - a. The calculated drainage areas for eight producing and two plugged wells in the field ranged from 188 acres down to 1 acre, with an average of 68 acres. Three wells had drainage areas less than 40 acres.
 - b. Thirty eight fields in RRC District 8A already have similar spacing and density rules. The fields include the Jo-Mill (Spraberry), D.E.B. (Wolfcamp) and MWH (Ellenburger) Fields.
6. A spacing rule which utilizes “take-points” in a horizontal well for determination of distances to lease lines will not harm correlative rights.
 - a. The Mississippian formation is a tight formation and is not commercially productive unless fracture-stimulated.
 - b. A take-point in a horizontal well in this field may be a perforation, if a horizontal well is cased and cemented, an external casing packer in a cased well, or any open-hole section in an uncased portion of the wellbore.
 - c. “Take points” will allow the horizontal drainhole length on a lease to be maximized.
7. Field Rules that provide for 330'-660' well spacing with no between well spacing for vertical and horizontal wells and special provisions for “take points”, off-lease penetration point, a “box rule” and “stacked laterals” for a horizontal drainhole well will provide consistency in developing the field and will allow greater flexibility in selecting future drilling locations.
8. The proposed 50 foot “box rule” will allow operators reasonable minor deviations from the wellbore track that has been permitted without the need to re-permit the well.
9. The proposed “stacked lateral” rule will allow stacked horizontal laterals within the Mississippian 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 oil.

10. Allowing an off-lease penetration point will result in maximum producing drainhole length, thereby increasing ultimate recovery from horizontal drainhole wells. The proposed rule will allow approximately an additional 500 feet of producing drainhole. To protect correlative rights, prior notice and opportunity to object should be given to the mineral owners of offsite surface locations.
11. For purposes of assignment of additional acreage pursuant to Statewide Rule 86, the distance between the first and last take-point in a horizontal well should be used.
12. Allocation based on 100% acres is a reasonable formula which will protect correlative rights of mineral owners in the field. Elimination of the requirement to file individual well proration unit plats will reduce 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. Adopting Field Rules for the Mesquite Creek (Miss.) Field is necessary to prevent waste, protect correlative rights and promote development of the field.

RECOMMENDATION

Based on the above findings of fact and conclusions of law, the examiner recommends that the Commission adopt Field Rules for the Mesquite Creek (Miss.) Field, as recommended by SM Energy Company.

Respectfully submitted,

Richard D. Atkins, P.E.
Technical Examiner