



# RAILROAD COMMISSION OF TEXAS

## OFFICE OF GENERAL COUNSEL

OIL AND GAS DOCKET NO. 06-0273210

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THE APPLICATION OF STETSON PETROLEUM CORP. TO AMEND THE PERMANENT  
FIELD RULES FOR THE LINDEN, EAST (COTTON VALLEY) FIELD, CASS COUNTY,  
TEXAS

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HEARD BY: Brian K. Fancher - Technical Examiner

HEARING DATE: November 30, 2011

APPEARANCES:

REPRESENTING:

**APPLICANT:**

George Neale  
Mike Donovan  
Bill Sudderth  
William Denman

Stetson Petroleum Corp.

### EXAMINER'S REPORT AND RECOMMENDATION

#### STATEMENT OF THE CASE

The Linden, East (Cotton Valley) Field currently operates under Field Rules adopted in Final Order No. 6-55,144, effective August 16, 1965. The Field Rules in effect for the field are summarized as follows:

1. 660'-1800' well spacing;
2. 160 acre units and 40 acre tolerance with a maximum diagonal of 4,200 feet. Operators are required to file proration unit plats;
3. Oil allowable based on 75% acreage and 25% per well. The top oil allowable based on the 1947 Yardstick Allowable of 302 barrels of oil per day.
4. Surface casing setting requirements for wells completed in the subject field.

Stetson Petroleum Corp. ("Stetson") requests that Field Rules for the Linden, East (Cotton Valley) Field be amended and renumbered, as shown below:



1. Designation of the field as the correlative interval from 9,600 feet - 10,355 feet, as shown on the laterolog of the Loyce Philips Estate -O.E. Brown Lease, Well No. 1, located in the Matthew Rayburn Survey, A-891, Cass County, Texas;
2. Well spacing of 467 feet from the nearest lease or unit line and 933 feet between well spacing for wells on the same lease or unit with no between well spacing for horizontal and vertical wells on the same lease or unit;
3. Density of 160 acre base proration units with 40 acre optional proration units;
4. Horizontal rules - adoption of "standard" rules to facilitate the drilling of wells relating to (a) take points, (b) off-lease penetration points, (c) drilling boxes, (d) stacked laterals and (e) no required filing of the Form P-15 or a proration unit plat for wells completed in the field;
5. Maximum diagonals - 4,500 maximum diagonal for the existing 160 acre proration units and 2,100 feet maximum diagonal for the proposed 40 acre optional proration units;
6. Allocation formula - (no change) 75% acreage and 25% per well.

At the hearing, representatives on behalf of Stetson requested to withdraw several portions of its proposed rules, as described in the Notice of Hearing dated November 04, 2011. It was requested that the designated correlative interval be expanded and identified through a well log performed for the Estate of Wm. McBee, Sallie Loffer Lease, Well No. 1 (API No. 42-067-30309), located in the J. Turner Survey, A-1032, Cass County, Texas, the proposed well spacing be withdrawn with exception to the no between well spacing for horizontal and vertical wells on the same lease or unit, the proposed density of 160 acre base units with 40 acre options be withdrawn and the current density remain in effect, and that the maximum diagonal of 2,100' for the proposed 40 acre optional proration unit be withdrawn.

The examiner takes notice of the subject field's top allowable of 302 BOPD per well and Field Rule No. 4, currently in effect. The 302 BOPD oil allowable was originally adopted as an MER for the Linden, East (9800') Field on December 7, 1962. It has been indicated in the report and recommendation for Oil and Gas Docket No. 6-50,567, dated December 07, 1962, the 302 BOPD MER allowable is based upon the 1947 Yardstick for wells completed at 10,600 feet on 160 acre units. The examiner concludes the appropriate allowable for the subject field should be based upon the 1965 Yardstick of 471 BOPD, as Final Order No. 6-55,144 adopted the subject field's current Field Rules, effective August 16, 1965. Also, the examiner concludes Field Rule No. 4 should be rescinded from the Linden, East (Cotton Valley) Field Rules, as the determination of the surface casing setting depth is based upon the language set forth in Statewide Rule 8(b)(2)(A).

The application was unopposed and the examiner recommends that Field Rules for the Linden, East (Cotton Valley) Field be amended and renumbered as proposed by Stetson, along with the above conclusions opined by the examiner.

### DISCUSSION OF EVIDENCE

The Linden, East (Cotton Valley) Field is designated as an oil field and was established under the jurisdiction of the Railroad Commission on August 16, 1965 through the consolidation of the Linden, East (9800'), Linden, East (10,200'), Linden, East (10,600'), and Linden, NE. (10,300') Fields. Currently, the November 2011 Oil Proration schedule indicates there are three active operators in the field with twenty-one producing wells. Cumulative production is estimated at approximately 3.63 million barrels of oil and 2.4 BCFG.

Currently, there is no defined correlative interval for the subject field. Stetson requests that the field be defined as the correlative interval from 9,540 feet to 10,600 feet, as shown on the log of the Estate of Wm. McBee, Sallie Loffer Lease, Well No. 1 (API No. 42-067-30309), located in the J. Turner Survey, A-1032, Cass County, Texas. In the Notice of Hearing dated November 04, 2011, Stetson proposed to adopt a designated correlative interval from 9,600 feet to 10,355 feet, as set forth on the laterolog for the Loyce Philips Estate, O.E. Brown Lease, Well No. 1, located in the Matthew Rayburn Survey, A-891, Cass County, Texas (API No. 42-067-30072). At the hearing, Stetson requested to replace the initially requested correlative interval with the interval indicated on the log of the Sallie Loffer, Well No. 1 (See Exhibit No. 5). On December 7<sup>th</sup> and 8<sup>th</sup>, 2011, the examiner mailed a letter to the affected parties indicating that if an affected party seeks to protest the proposed deviation to inform the examiner in writing within ten days of the date of the letter. No protest was received.

Stetson indicated it will be developing the Linden, East (Cotton Valley) Field by drilling horizontal wells and requests horizontal drainhole Field Rules in order to promote the efficient and effective development of the remaining hydrocarbons. The applicant proposes to leave the current well spacing of 660'/1800' unchanged but seeks to adopt a no minimum well spacing between horizontal and vertical wells and special provisions for "take points", "off lease" penetration point, a 50 foot "box" rule, and stacked laterals for horizontal drainhole wells in the field. Similar horizontal drainhole field rules have been adopted in several other fields, which includes the Cotton Valley, Bossier, and Granite Wash formations.

Stetson requests that a field rule be adopted which includes language relevant to the measurement of distances to lease lines for horizontal drainhole wells. Stetson's proposed rule specifies that, for purposes of lease line and between-well 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.

In certain instances, it is beneficial to penetrate a reservoir off lease, while still having "take points" no closer to lease lines than allowed under the field rules. Stetson 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 well be on the lease. Similar rules allowing an "off-lease" penetration point 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.

Stetson 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.

Stetson requests that a Field Rule be adopted to accommodate the drilling of horizontal drainhole "stacked lateral" wells. In reference to the proposed type-log, the gross thickness of the field interval is approximately 1,060 feet. Stetson believes that several separate laterals may be necessary to effectively develop the reservoir with horizontal wells. The rule would allow horizontal "stacked laterals" within the Cotton Valley correlative interval that are drilled from different surface locations to be considered a single well for regulatory purposes. It is proposed that a horizontal "stacked lateral" be defined to be multiple horizontal drainholes which are drilled from different surface locations.

Stetson requests that the allocation formula remain unchanged and that there be no requirement for filing Form P-15 or proration unit plats for wells completed in the subject field.

#### **FINDINGS OF FACT**

1. Notice of this hearing was given to all persons entitled to notice and no protests were received.
2. The Linden, East (Cotton Valley) Field is an oil field and was established under the Railroad Commission's jurisdiction on August 16, 1965.
  - a. The November 2011 Oil Proration schedule indicates there are three active operators in the field with twenty-one producing wells.
  - b. Field Rules currently provide for 660'-1,800' well spacing with 160 acre base units and 40 acre tolerance units.
  - c. The allocation formula is based on 75% acreage and 25% per well. The top oil allowable is 302 barrels of oil per day.
3. Stetson is developing the Linden, East (Cotton Valley) Field by drilling horizontal drainhole wells.

4. Field Rules that provide for 660'-1,800' well spacing with no minimum between well spacing for horizontal and vertical wells and special provisions for "take points", "off lease" penetration point, a 50 foot "box" rule, and stacked laterals 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 the determination of well spacing will not harm correlative rights.
  - a. A "take-point" in a horizontal drainhole 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.
  - b. "Take points" will allow the horizontal drainhole length on a lease to be maximized.
6. The proposed 50 foot "box" rule is necessary to allow operators reasonable minor deviations from the wellbore track that has been permitted.
7. The proposed "stacked lateral" rule will allow stacked horizontal laterals within the subject field's 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.
8. 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.
9. Similar horizontal drainhole well field rules have been adopted in several other fields, including the Cotton Valley, Bossier, and Granite Wash formations.
10. Allocation based on 75% acreage and 25% per well is appropriate and will protect correlative rights.
11. The 1965 Yardstick of 471 BOPD per well for 160 acre density is appropriate for the subject field.
12. The current Field Rule No. 4, establishing the criteria for the setting of surface casing for wells completed in the Linden, East (Cotton Valley) field is inconsistent with Railroad Commission Rules and should be based upon Statewide Rule 8(b)(2)(A).

**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. Amending and renumbering Field Rules for the Linden, East (Cotton Valley) Field is necessary to prevent waste, protect correlative rights and promote development of the field.
4. The two-part allocation formula based upon 75% acreage and 25% per well meets statutory requirements.

**RECOMMENDATION**

Based on the above findings of fact and conclusions of law, the examiner recommends that the Commission amend and renumber Field Rules for the Linden, East (Cotton Valley) Field as requested by Stetson Resources, Inc., along with the examiner's conclusions pertaining to the top allowable currently established for the field and the rescinding of the current Field Rule No. 4.

Respectfully submitted,



Brian K. Fancher  
Technical Examiner