



RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

OIL AND GAS DOCKET NO. 03-0291959

**THE APPLICATION OF EOG RESOURCES, INC. TO AMEND, ADOPT, AND
RENUMBER THE FIELD RULES FOR THE FT. TRINIDAD, E. (EDWARDS) FIELD IN
HOUSTON AND MADISON COUNTIES, TEXAS**

HEARD BY: Karl Caldwell – Technical Examiner
Terry Johnson – Legal Examiner

DATE OF HEARING: October 21, 2014
DATE RECORD CLOSED: December 30, 2014
REPORT PREPARED: January 5, 2015
CONFERENCE DATE: January 27, 2015

APPEARANCES: **REPRESENTING:**

APPLICANT:

Flip Whitworth
Rick Johnston

EOG Resources, Inc.

EXAMINERS' REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Field rules for the Ft. Trinidad, E. (Edwards) Field were adopted in Final Order 3-54,664, effective April 26, 1965. The field rules were made permanent in Final Order 3-56,636, effective October 14, 1966. The current field rules in effect for oil wells in the field are summarized as follows:

1. Spacing: 660'-2,640' (lease line – between well spacing);
2. 320 acre oil proration units with a 6,000' maximum diagonal and the filing of proration unit plats;
3. Oil allocation based on 100% acres;

4. Surface casing (minimum depth of 2,150').

Gas wells in the subject field are currently governed by Statewide rules.

EOG Resources, Inc. ("EOG") requests to amend, adopt, and renumber the field rules as shown below:

1. Designate a correlative interval from 10,467 feet (MD) to 10,940 feet (MD) as shown on the Induction-BHC Sonic-Caliper-Gamma Ray log of the Texas Eastern Expl. Co. – W.L. Baker Well No. 1 (API No. 42-313-30441), as the Ft. Trinidad, E. (Edwards) Field;
2.
 - (a) 330 – 0' spacing for vertical oil and gas wells;
 - (b) dual lease line spacing of 330' – 100' with 0' between well spacing for horizontal oil and gas wells;
 - (c) A take point spacing rules for horizontal oil and gas wells to incorporate the spacing rule changes proposed in 2 (a) and (b);
 - (d) 50' box rule;
 - (e) An off-lease penetration point rule;
3. Standard proration unit density of 320 acres for oil and gas wells with an optional 160 acre density for oil and gas wells. Add a provision to assign additional acreage to horizontal oil and gas wells using the following formula: $A = (L \times 0.1723 + 320 \text{ acres})$,

Where: A = calculated area assignable, if available, to a horizontal drainhole for proration purposes rounded upward to the next whole number divisible by 40 acres;

L = the horizontal drainhole distance measured in feet between the first take point and the last take point;

The two furthestmost points in any horizontal drainhole well proration unit shall be determined by the formula: maximum diagonal = $475.933 \times \sqrt{A}$;

Eliminate the requirement to file proration unit plats for individual oil and gas wells and allow the assignment of acreage using Form P-15;

4. Add a stacked lateral rule;
5.
 - (a) The maximum daily oil allowable for each vertical oil well in the field shall be 515 barrels of oil per day and the actual allowable for an individual oil well shall be determined by multiplying 515 barrels of oil per day by a fraction, the numerator of which is the acreage assigned to the well for proration purposes and the denominator of which is the maximum acreage authorized by these rules for a vertical well for proration purposes, exclusive of tolerance acreage. The daily oil allowable for a well in the field shall be adjusted in accordance with Statewide Rule 49(a) when applicable;
 - (b) Gas well allowables to be based on 100% acreage with associated prorated status (no Rule 49b allowables).

The application is unopposed and the examiners recommend that the field rules be amended and renumbered, as proposed by EOG.

DISCUSSION OF THE EVIDENCE

The Ft. Trinidad, E. (Edwards) Field was discovered January 5, 1965, by the drilling of the E.L. Knox Oil Unit No. 1 well in Houston County Texas, and special field rules were adopted (Final Order No. 3-54,664) on April 26, 1965. The special field rules were made permanent on October 14, 1966 (Order No. 3-56,636) and these special field rules are the current rules in effect for the subject field. A top well allowable of 515 BOPD was approved by the Commission to be in effect after the date the discovery allowable for the field expired.

EOG has acquired an acreage position in the Ft. Trinidad, E. (Edwards) Field and is planning a horizontal well development project in the field. EOG requests to amend and adopt field rules to accommodate horizontal wells to maximum ultimate recovery, as the current field rules were adopted in 1965 and do not include horizontal well provisions. According to the October 1, 2014 oil proration schedule for the Ft. Trinidad, E. (Edwards) Field there are no oil wells in the field. Mr. Rick Johnston, a witness representing EOG conducted a study of the subject field and testified that EOG has drilled and completed two vertical wells in the field and the completion papers have been approved by the Commission but have yet to be added to the oil proration schedule.

There are currently 11 wells carried on the October 1, 2014 gas proration schedule for the subject field. Of the 11 gas wells, 9 are denoted with a Statewide Rule 10 designation for reporting purposes, whereby the wells are perforated in the Ft. Trinidad, E. (Edwards) Field. However, gas production is commingled and gas well production is reported on the proration schedule for different fields. EOG has drilled two

horizontal wells in the Ft. Trinidad, E. (Edwards) Field, however as of the date of the hearing, no production had been reported. A plot of all wells that have reported production in the field indicated that production in the field has been sporadic since 1988. To date, cumulative production in the field is 789,670 BO and 865 MMCF gas.

EOG is planning to drill laterals of approximately 6,000 feet to 7,000 feet in length. Horizontal wellbores will be drilled perpendicular to any natural fractures in the reservoir. Hydraulically induced fractures will also propagate from the wellbore in the general direction of natural fractures. EOG expects the stress to be parallel to the coast. As a result of the orientation of the wellbore with regard to the stresses in the reservoir, EOG expects minimal fracture growth parallel to the horizontal drainhole. Spacing of 100 feet from first and last take points is appropriate as the majority of fracture growth in the reservoir will be perpendicular to the wellbore. Mr. Johnston testified that he is unsure if 330 feet lease line spacing for vertical wells, and 330 feet perpendicular lease line spacing for horizontal is the appropriate spacing distance at this time. EOG is requesting flexible rules at this time to drill wells to determine the appropriate distance. The proposed field rules will provide the operator to move forward with development of the field with some experimentation. Mr. Johnston anticipates seeing interference between wells as wells are completed closer together, however at this point in time that distance is unknown.

EOG is proposing horizontal well rules including an off-lease penetration point provision, stacked laterals, and a 50 foot box rule. Similar rules have been adopted in other fields undergoing horizontal well development to prevent waste. EOG is requesting to assign additional acreage to horizontal wells using a formula that has been adopted in the Fort Trinidad, East (Buda) Field. The Fort Trinidad, East (Buda) Field is a horizon located slightly above the Edwards Formation and exhibits similar reservoir characteristics to the Ft. Trinidad, E. (Edwards) Field. The proposed formula is:

$$A = (L \times 0.1723 + 320 \text{ acres}),$$

Where: A = calculated area assignable, if available, to a horizontal drainhole for proration purposes rounded upward to the next whole number divisible by 40 acres;

L = the horizontal drainhole distance measured in feet between the first take point and the last take point;

The two furthestmost points in any horizontal drainhole well proration unit shall be determined by the formula:

$$\text{maximum diagonal} = 475.933 \times \sqrt{A}; \text{ } ^1$$

¹ The Notice of Hearing inadvertently excluded the square root symbol in the formula for assigning additional acreage to horizontal wells that was requested in the replacement application letter dated September 19, 2014, received by the Commission on September 24, 2014. The examiners determined that the omission was a typographical error and re-notice was not required.

FINDINGS OF FACT

1. Notice of this hearing was provided to all operators in the field at least ten (10) days prior to the date of the hearing and no protests were received.
2. The Ft. Trinidad, E. (Edwards) Field was discovered January 5, 1965.
3. Special field rules for the Ft. Trinidad, E. (Edwards) Field were adopted in Final Order No. 3-54,664 on April 26, 1965.
4. The special field rules for the Ft. Trinidad, E. (Edwards) Field were made permanent on October 14, 1966 (Order No. 3-56,636).
5. Adopting field rules for horizontal well development in the subject field will prevent waste.
6. Designating a correlative interval for the field is appropriate and will aid operators in determining whether wells are completed in the Ft. Trinidad, E. (Edwards) Field.


CONCLUSIONS OF LAW


1. Proper notice was issued as required by all applicable statutes and regulatory codes.
2. All things have occurred and been accomplished to give the Commission jurisdiction in this matter.
3. Amending the field rules for the Ft. Trinidad, E. (Edwards) Field will prevent waste.

EXAMINERS' RECOMMENDATION

Based on the above findings of fact and conclusions of law, the examiners recommend that the Commission amend and renumber the field rules for the Ft. Trinidad, E. (Edwards) Field, as proposed by EOG Resources, Inc.

Respectfully submitted,


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