



RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

OIL AND GAS DOCKET NO. 02-0289118

THE APPLICATION OF MARATHON OIL EF LLC TO AMEND FIELD RULES FOR THE SUGARKANE (AUSTIN CHALK) FIELD ATASCOSA, BEE, LIVE OAK, AND KARNES COUNTIES, TEXAS

HEARD BY: Karl Caldwell – Technical Examiner
Cecile Hanna – Legal Examiner

DATE OF HEARING: July 2, 2014

APPEARANCES: REPRESENTING:

APPLICANT:

Mark Hanna
Steve Virant
Tim Smith

Marathon Oil EF LLC

OBSERVERS:

Hudnall Shannon
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Blackbrush Oil & Gas, L.P.
Burlington Resources Oil and Gas Company, LP

EXAMINERS' REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Temporary Field Rules for the Sugarkane (Austin Chalk) Field were adopted in Final Order No. 02-0264837, when the Sugarkane (Cretaceous) Field was separated into the Sugarkane (Austin Chalk) and Sugarkane (Eagle Ford) Fields, effective June 22, 2010. The Temporary Field Rules for the Sugarkane (Austin Chalk) Field are summarized as follows:

1. Designated correlative interval from 11,360 feet to 11,450 feet as shown on the log of the Kunde Lease, Well No. 1 (API No. 297-34621);

2. 330' lease line spacing and no minimum between well spacing with special provisions for "take points", 100' leaseline spacing for the first and last take points, 33' "box" rule and "off-lease" penetration point for horizontal drainhole wells;
3. 320 acre gas units, with special provisions for multiple drainholes, and the assignment of additional acreage to horizontal drainhole gas wells;
4. Allocation based on 100% acreage with AOF status.

The Sugarkane (Austin Chalk) Field has been granted an exception to semi-annual G-10 deliverability testing in Final Order No. 02-0264837.

Marathon Oil EF LLC ("Marathon") proposes to amend the field rules and requests that the field rules be made permanent. Marathon proposes rules similar to those adopted in the Sugarkane (Eagle Ford) Field, including classifying the field as associated-prorated, 80 acre oil units with optional 40 acre density, a formula for the assignment of additional acreage to horizontal drainhole oil wells, an oil allowable of 2,000 barrels of oil per day with unlimited net gas-oil ratio authority and an expedited Rule 38 exception for gas wells down to, but not less than 40 acres, with notice to tracts within 1,500 feet of the bottomhole or drainhole of the well. Marathon also requests that all over-production in the Sugarkane (Austin Chalk) Field be canceled. In addition, Marathon also requests that gas allowables remain prorated-suspended, add or modify the provisions for annual G-10 testing, and a request for permanent gas well classification for all wells with a gas-oil ratio of 3,000 cubic feet per barrel and above.

In the examiners opinion, there was insufficient data at this time to permanently classify all wells with a gas-oil ratio of 3,000 cubic feet per barrel as gas wells. Marathon does not consider omitting the classification rule in the recommendation to be adverse. The application is unopposed and the examiners recommend that the field rules be amended and made permanent for the Sugarkane (Austin Chalk) Field and all over-production be canceled in the field, as proposed by Marathon.

DISCUSSION OF THE EVIDENCE

Temporary field rules were adopted for the The Sugarkane (Austin Chalk) Field June 22, 2012 when the Sugarkane (Cretaceous) Field was separated into the Sugarkane (Eagle Ford) Field and the Sugarkane (Austin Chalk) Field. The Sugarkane (Austin Chalk) Field occurs at an average depth of 11,360 feet.

Marathon has completed a total of six wells in the Sugarkane (Austin Chalk) Field, and is still in the evaluation stage with regards to the development of the Sugarkane (Austin Chalk) Field. At the current time, Marathon is planning to develop wells in the Sugarkane (Austin Chalk) Field and drill wells from the same pads as wells

that will be drilled in Sugarkane (Eagle Ford) Field and propose to utilize the same spacing as the Sugarkane (Eagle Ford) Field.

Marathon has recently completed two wells in the subject field that the Commission can not administratively classify as gas wells, the Turnbull Unit D Lease, Well Nos. 18H and 20H. Marathon is in agreement with the Commission's determination that the Turnbull Unit D Lease, Well No. 20H is an oil well, but is requesting that the Turnbull Unit D Lease, Well No. 18H be classified as a gas well. Since Marathon has completed at least one oil well in the Sugarkane (Austin Chalk) Field, Marathon is requesting to amend the field rules to add field rules for oil wells. The Sugarkane (Austin Chalk) Field is currently classified as a non-associated gas field, as until recently, there were no oil wells in the field. Marathon expects to discover more oil wells as the Sugarkane (Austin Chalk) Field continues to be developed. Marathon is proposing oil field rules similar to the Sugarkane (Eagle Ford) Field.

Marathon requests a permanent gas well classification for the Sugarkane (Austin Chalk) Field for all wells with a gas-oil ratio (GOR) of 3,000 cubic feet per barrel. The W-2 for the Turnbull Unit D, Well No. 20H, indicated a GOR of 1,911, with a test date of June 12, 2013. This well has been classified as an oil well, and Marathon agrees with the oil well classification for this well.

The W-2 for the Turnbull Unit D, Well No. 18H, indicated a GOR of 2,240, with a test date of June 14, 2013. Test data from a sample taken on January 7, 2014 indicated a producing GOR of 3,358 cubic feet per stock tank barrel. The heptanes plus composition measured 12.026 mole percent. Marathon provided a technical journal paper, as well an excerpt from a textbook that states "the dividing line between volatile oils and retrograde gases of 12.5 mole percent is fairly definite... when the heptanes plus concentration is greater than 12.5 mole percent, the reservoir is almost always a liquid...less than 12.5 mole percent, the reservoir fluid is almost always a gas".¹

In the examiners' opinion, there is insufficient data at this time to classify all wells in the field as permanent gas wells with a GOR of 3,000 or greater. Based on the most recent heptanes plus test data for the Turnbull Unit D, Well No. 18H, the examiners recommended that the Turnbull Unit D, Well No. 18H be classified as a gas well, as of January 7, 2014. This was the date the sample was taken that was tested on January 15, 2014 and measured a heptanes plus mole percent of 12.026. Marathon did not consider this recommendation to be adverse.

Marathon is requesting that the subject field be classified as associated-prorated with an unlimited net gas-oil ratio. Marathon's expert witness considers restricting gas

¹McCain, William D. Jr., *Petroleum Fluids*. 2nd Ed. Pg. 153, referencing Moses, P.L. Engineering Applications of Phase Behavior of Crude Oil and Condensate Systems. *J. Pet. Tech.* (July 1986) 38, Pg. 715-723.

production to be harmful to a resource play gas field as there is no harm to oil production in producing gas at any levels in relation to oil production.

The average horizontal drainhole length in the Sugarkane (Austin Chalk) Field to-date has been 3,927 feet. Marathon is planning to drill horizontal drainhole wells with lateral lengths between 5,000 feet to 7,500 feet in the future. Projecting the current oil production for the average drainhole length of 3,927 to 7,500 feet in the future supports a maximum daily allowable of 2,000 BOPD. In addition, the Sugarkane (Eagle Ford) Field has an MER of 2,000 BOPD. Marathon is requesting that all over-production in the field be cancelled and the gas allocation formula remain suspended, 100% AOF status.

The oil field rules for proration units of 80 acre units with optional 40 acre units proposed by Marathon are identical to those adopted in the Sugarkane (Eagle Ford) Field. Drainage area calculations support the request for 80 acre units, while optional 40 acre units will provide flexibility in planning and drilling wells in the subject field. Marathon requests to assign additional acreage to horizontal drainhole oil wells using Statewide Rule 86.

Marathon is also requesting the same expedited Statewide Rule 38 exception with regard to notice and data that has been adopted in the Sugarkane (Eagle Ford) Field and requests that the field rules for the Sugarkane (Austin Chalk) Field be made permanent.

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. The Sugarkane (Austin Chalk) Field was created in December 2009 when the Sugarkane (Cretaceous) Field was separated into the Sugarkane (Austin Chalk Field) and the Sugarkane (Eagle Ford) Field.
3. Temporary field rules for the Sugarkane (Austin Chalk) Field were established in Final Order No. 02-0264837.
4. An oil well has been completed in the Sugarkane (Austin Chalk) 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 and making the field rules permanent for the Sugarkane (Austin Chalk) Field will prevent waste.

EXAMINERS' RECOMMENDATION

Based on the above findings of fact and conclusions of law, the examiners recommend that the Commission amend the field rules for the Sugarkane (Austin Chalk) Field, and make the field rules permanent. The examiners also recommend that all overproduction in the field be cancelled, and the Turnbull Unit D Lease, Well No. 18H be permanently classified as a gas well, as of January 7, 2014.

Respectfully submitted,



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