RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

OIL AND GAS DOCKET NO. 7B-0296161

THE APPLICATION OF BRIGADIER OPERATING, LLC TO AMEND FIELD RULES FOR THE BURNS-DALTON (MARBLE FALLS) FIELD, PALO PINTO COUNTY, TEXAS

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

ER&R PREPARED BY: Karl Caldwell – Technical Examiner
Marshall Enquist – Hearings Examiner

DATE OF HEARING: May 14, 2015
CONFERENCE DATE: July 14, 2015

APPEARANCES:	**REPRESENTING:**
APPLICANT:	
Mickey Olmstead	Brigadier Operating, LLC
James Clark, P.E.	

EXAMINERS' REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Field rules for the Burns-Dalton (Marble Falls) Field were made permanent in Final Order No. 7B-0201858, effective August 6, 1996. The current field rules in effect for the field are summarized as follows:

1. Correlative interval from 4,342 feet to 4,534 feet as shown on the log of the Mitchell Energy Corporation: J. P. Ritchie Lease, Well No. 1 (API No. 42-363-33961), T.W. Moore A-1907 Survey, Palo Pinto County, Texas, designated as a single reservoir for proration purposes and designated as the Burns-Dalton (Marble Falls) Field;

2. 467'-1,200' well spacing;

3. Oil wells: 320 acre oil units, with 40 acre tolerance, and a maximum diagonal of 6,000' maximum diagonal; optional 80 acre oil units, with a maximum diagonal of 3,250'

   Gas wells: 320 acre gas units with 10% tolerance and a maximum diagonal of 6,000'; 80 acre optional units with a maximum diagonal 3,250 feet;

4. Allocation formula based on 100% acreage for both oil and gas wells.

Brigadier Operating, LLC (Brigadier) is requesting to amend the current field rules for the Burns-Dalton (Marble Falls) Field. Brigadier proposes lease line spacing of 330 feet, with no between well spacing, and to adopt field rules pertaining to horizontal wells drilled and completed in the field. The proposed horizontal well field rules include dual lease line spacing of 100 foot lease line spacing from first and last take points (heel and toe) and 330 foot lease line spacing from all other take points, a 50 foot box rule, an offsite penetration point, adopting a formula to assign additional acreage to horizontal wells, and stacked laterals. Brigadier is also proposing to adopt a 5000:1 GOR rule, filing Form P-15 for acreage assignment, and no maximum diagonal rule. Brigadier also requests to adopt language pertaining to Statewide Rule 38 exceptions for fractional drilling units, not less than 40 acres, with notice provided to parties within 660 feet. The hearing notice contained conflicting language regarding maximum diagonal in the field, as the proposed standard proration unit language stated no maximum diagonal for the field, while the proposed optional proration unit language stated a maximum diagonal of 3,250 feet. The Applicant clarified that the proposed rule for the standard unit (no maximum diagonal) was the correct language and the maximum diagonal for the optional units was removed. The application is unprotested and the Examiners recommend amending the field rules for the Burns-Dalton (Marble Falls) Field as requested by Brigadier.

DISCUSSION OF THE EVIDENCE

The Burns-Dalton (Marble Falls) Field was originally discovered as a gas field on September 5, 1969. The field became an associated field with both oil and gas wells in 1989. The Burns-Dalton (Marble Falls) Field was originally discovered in Palo Pinto County, and as the extents of the field have expanded, the field now overlaps the KRS (Marble Falls) Field in Jack County, and both fields are producing from the same reservoir. The difference in the productive intervals for the Burns-Dalton (Marble Falls) and the KRS (Marble Falls) Fields is that the productive interval in the (KRS Marble Falls) Field also contains the Comyn Limestone, which is not productive in the Burns-Dalton (Marble Falls) Field.

The well count in the Burns-Dalton (Marble Falls) Field has been increasing rapidly over the past two to three years, and now approaches a total of 80 wells in the field. The field contains both vertical and horizontal wells. Gas and condensate production has also been increasing along with the well count. At the present time, oil and condensate production in the field is 10,000 barrels per month, and gas production is approximately 250 to 300 MMcf of gas per month.

The correlative interval for the Burns-Dalton (Marble Falls) Field is naturally fractured, and the fractures within the reservoir are oriented in an approximate north-south direction. Production from the field is a direct result of the natural fracture system, as well as induced fractures. Wells completed in the field are hydraulically fracture-stimulated to create and connect fractures in the reservoir to the wellbore.

Both the Burns-Dalton (Marble Falls) and KRS (Marble Falls) Fields have experienced rapid development in recent years with both vertical and horizontal wells. In the context of the subject application, Brigadier is requesting to amend the current field rules for the Burns-Dalton (Marble Falls) Field for two purposes; to add standard horizontal well field rules, and to make the field rules more consistent with the KRS (Marble Falls) Field. The proposed well spacing of 330 feet lease line and no between well spacing would make the Burns-Dalton (Marble Falls) Field consistent with the well spacing rules in the Newark, East (Barnett Shale) Field in which a Statewide Rule 10 exception was granted in Final Order No. 7B-0289583 for the Burns-Dalton (Marble Falls) Field and the Newark, East (Barnett Shale) Field.

The proposed dual lease-line spacing for horizontal wells of 100 foot lease line spacing from first and last take points (heel and toe), and 330 foot lease line spacing from all other take points has been previously adopted in the KRS (Marble Falls) Field in Final Order No. 09-0286297. The other horizontal well rules proposed for the Burns-Dalton (Marble Falls) Field, including a 50 foot box rule, an offsite penetration point provision, a stacked lateral rule, and assigning additional acreage to horizontal wells by the formula below, have been adopted for the KRS (Marble Falls) Field in Final Order No. 09-0286297.

The formula for assigning additional acreage to horizontal wells in the field, which has been previously adopted in the KRS (Marble Falls) Field, is as follows:

$$A = (L \times 0.14) + 320 \text{ acres}$$

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

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

Brigadier is also requesting a maximum permitted gas-oil ratio for oil wells of 5,000 cubic feet of gas per barrel of oil for the Burns-Dalton (Marble Falls) Field. This field rule was adopted for the KRS (Marble Falls) Field in Final Order No. 09-0286297. There is a fine line between oil and gas wells in the Burns-Dalton (Marble Falls) Field, and oil wells produce volatile oil, and a lot of gas. The gas proration schedule for the Burns-Dalton (Marble Falls) Field shows the status to be AOF.

Wells in the Burns-Dalton (Marble Falls) Field, as well as the KRS (Marble Falls Field) have exhibited signs of communication upon hydraulic fracture stimulation. In the KRS (Marble Falls) Field, the gas production from the Jerry Craft No. 1 well decreased for approximately 2 days after the Stamper Fowler No. 16 well was hydraulically fracture stimulated on November 23, 2013. After observing a decrease in gas production for two days after the offset well was hydraulically fracture stimulated, the gas production sharply increased. The distance between these two wells is 4,133 feet.

In the Burns-Dalton (Marble Falls) Field, Brigadier had been drilling the Sikes B1 well, and on October 15, 2014, was preparing to log the well prior to setting casing. Newark E & P Operating, LLC hydraulically fracture-stimulated the Johnson No. 1 well, located 2,950 feet to the south-southeast of the Sikes B1 well on October 14, and 15, 2014. When the Johnson No. 1 well was being hydraulically fracture-stimulated the Sikes B1 took a gas kick, which resulted in the tool string getting stuck in the hole, requiring the well to be killed. Brigadier was eventually able to recover the tool string, log the well, run casing, and complete the Sikes B1 well.

The Burns-Dalton (Marble Falls) Field is extensively naturally fractured in many parts of the fields, however, in other areas of the field the reservoir is naturally fractured to a lesser degree. Brigadier is convinced that there are some wells draining less than 40 acres in areas of the field where the reservoir does not contain natural fractures. As a result, Brigadier is requesting to adopt a Statewide Rule 38 "light" exception as a field rule. Brigadier did not request to adopt 40 acre optional proration units as a field rule as an alternative to requesting an exception to Statewide Rule 38, as Brigadier anticipated other operators in the field would protest a request to add 40 acre optional units as a field rule. Brigadier is requesting to adopt a field rule that grants an exception to Statewide Rule 38 with notice provided to offset parties within 660 feet, which has been previously adopted as a field rule in several other fields (Appendix A).

Brigadier's witness testified that Brigadier does not consider fracture communication between their own wells to be detrimental. According to Brigadier's witness, operators in the field communicate and get along well. All operators in the field abide by the rule of capture regarding whatever reserves they can recover. Brigadier does not view well communication between their wells in the field to be negative.

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. Field rules for the Burns-Dalton (Marble Falls) Field were made permanent in Final Order No. 7B-0201858, effective August 6, 1996.

3. The Burns-Dalton (Marble Falls) Field and the KRS (Marble Falls) Field contain the same productive interval.

4. Reducing the lease line spacing from 467 feet to 330 feet will prevent waste.

5. Reducing the between well spacing from 1,200 feet to no minimum spacing will prevent waste by providing flexibility in spacing wells in the field to maximize the recovery of hydrocarbons.

6. Adopting field rules for horizontal wells will prevent waste.

7. Wells completed in areas of the field where the productive interval is not naturally fractured drain less than 40 acres.

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 Burns-Dalton (Marble Falls) 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 Burns-Dalton (Marble Falls) Field as proposed by Brigadier Operating, LLC.

Respectfully submitted,

Karl Caldwell
Technical Examiner

Marshall Enquist
Hearings Examiner

Attachment A

Oil and Gas Docket No. 7B-0296161
Brigadier Operating, LLC
May 14, 2015 **Exhibit No. 19**

Statewide Rule 38 Notice Provisions

Field Rules with Administrative Rule 38 Provisions

Mendota, NW (Granite Wash) Field
467' - 467' well spacing; 160 acres with 80 acre options
Rule 38 less than 80 acres / 660 feet notice

Allison Parks (Granite Wash) Field
467' - 660' well spacing; 40 acres
Rule 38 less than 40 acres / 660 feet notice

Hemphill (Granite Wash) Field
467' - 467' well spacing; 160 acres with 80 acre options
Rule 38 less than 80 acres / 660 feet notice

West Park (Granite Wash) Field
467' - 0' well spacing; 40 acres
Rule 38 less than 40 acres / 660 feet notice

Sugarkane (Eagle Ford) Field
330' - 0' well spacing; 320 acres with 80 acre options for gas / 80 acres with 40 acre options for oil
Rule 38 less than 320 acres but greater than or equal to 40 acres for gas only / 660 feet notice

Spraberry (Trend Area) Field
330' - 0' well spacing; 80 acres
Rule 38 less than 80 acres but greater than or equal to 20 acres / 660 feet notice

Hawkville (Eagleford Shale) Field
330' - 0' well spacing; 320 acres
Rule 38 less than 320 acres but greater than or equal to 40 acres / 660 feet notice