

## HEARINGS DIVISION

OIL AND GAS DOCKET NO. 03-0278096

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THE APPLICATION OF SAMSON LONE STAR, LLC, INC. TO AMEND FIELD RULES  
FOR THE BSR (SUB-CLARKSVILLE) FIELD, MADISON COUNTY, TEXAS

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HEARD BY: Andres J. Trevino, P.E. - Technical Examiner  
Laura Miles Valdez - Hearings Examiner

HEARING DATE: October 1, 2012

APPEARANCES:

REPRESENTING:

James M. Clark, P.E.

Samson Lone Star, LLC

### EXAMINERS' REPORT AND RECOMMENDATION

#### STATEMENT OF THE CASE

Field rules for the BSR (Sub-Clarksville) Field were last amended in Final Order No. 03-0275564, effective June 12, 2012, and are summarized as follows:

1. Designation of the field as the correlative interval from 7,565' to 7,788' as shown on the log of the Barrow-Shaver Resources Co., BSR (Subclarksville) Unit Well No. 1201;
2. 330'-660' well spacing, 0' between vertical and horizontal wells, special language for "take points" in horizontal wells, 100' first & last take point distance, 33' box rule, and off-lease penetration points;
3. 160 acre units with a 4,500 foot maximum diagonal, 40 acre tolerance, with an 80 acre option and maximum diagonal of 3,250 feet;
4. Allocation based on 100% acreage.

Samson Lone Star requests that the rules for the field be amended as follows:

1. Designation of the field as the correlative interval from 7,660 feet to 9,036 feet as shown on the log of the Samson Lone Star, LLC, Blakeney, Well No. 1H;

2. No Change;
3. 160 acre units, allowance for the assignment of additional acreage to a horizontal well based on a formula, 40 acre tolerance, with an 80 acre option, maximum diagonal based on a formula and no individual plats;
4. Allocation based on 95% acreage, 5% per well.

The application was unopposed, and the examiners recommend that the field rules for the BSR (Sub-Clarksville) Field be amended as proposed by Samson Lone Star.

### **DISCUSSION OF EVIDENCE**

The BSR (Sub-Clarksville) Field was discovered in December 1994 at a depth of 7,580 feet. The field currently has 31 vertical oil wells on the proration schedule. There are two other operators in the field. Samson has no wells on the proration schedule but has drilled two horizontal wells in the field. The field operates under Special Rules that contain some horizontal well rules that allow 160/80 acre density and 330'/660' well spacing, 0' between vertical and horizontal wells, take points and off-lease penetration.

The BSR (Sub-Clarksville) Field is currently under going horizontal drilling. Samson requests the designated interval be expanded to include potentially productive zones found below the Sub-Clarksville Sands. Prior to drilling the Blakeney No.1H, a horizontal well, a vertical pilot hole was drilled. Mud log shows found hydrocarbons in the Buda and Georgetown formations. Additionally, oil shows were found in the sand intervals within the Eagleford Shale which are commonly identified as the Lewisville and Dexter Sands. Samson proposes the correlative interval from 7,660 feet to 9,036 feet as shown on the log of the Samson Lone Star, LLC, Blakeney, Well No. 1H be designated as the BSR (Sub-Clarksville) Field. The interval begins at the top of the Sub-Clarksville Sands to the base of the Georgetown. The interval includes the Sub-Clarksville Sands, Eagleford/Woodbine, Lewisville and Dexter Sands, Buda and Georgetown carbonates. The Buda and Georgetown carbonates are naturally fractured and are currently being developed with open hole horizontal wells in other fields in the area. Fields such as the ICI (Georgetown), the Day and the North Zulch (L-D-B-G) fields have similar intervals as proposed with the BSR (Sub-Clarksville) Field. The Georgetown and Buda are being developed locally with dually opposed horizontal wells in the Fort Trinidad, ICI Iola and Kurten fields.

Samson proposes that the 160-acre density rule be amended to provide for additional acreage by adding a multiplying factor for acreage assignment to horizontal wells. Samson requests a formula with a factor of .11488 to be multiplied by the length of the lateral and be added to the 160 acres base units. This formula will give operators in the field larger acreage assignments than Rule 86 would give. The formula is commonly used

to assign acreage in fields that have formations that are naturally fractured and are being developed with open hole horizontal drilling. In naturally fractured reservoirs, drainage occurs primarily along the existing extensive natural fractures as opposed to the rock's matrix. The natural fractures drain larger areas compared to normal rock matrix drainage.

Other fields developing the Buda and Georgetown in the area, have similar acreage allocation formulas. The ICI (Georgetown) and Kurten (Buda) fields have identical acreage allocation formulas as proposed for the BSR (Sub-Clarksville) Field of acreage assigned =  $L \cdot 0.11488 + 160$ . The Iola (Georgetown) and Kurten (Georgetown) fields have identical acreage allocation formulas as proposed for the BSR (Sub-Clarksville) Field but also contain an acreage multiplier of 3.25 and 1.5, respectively, that adds additional acreage by a factor of 3.25 and 1.5. The Fort Trinidad, East (Buda) Field which also produces from the Buda and Georgetown formations and has an acreage allocation formula of acreage assigned =  $L \cdot 0.1723 + 640$ . The proposed factor will give operators larger acreage holding when developing the Buda and Georgetown formations as their natural fractures drain large areas.

The gross thickness of the designated interval in this field is 1,376 feet. The interval includes multiple formations that could support "stacked" horizontal drilling. The Sub-Clarksville is currently being developed with cased horizontal wellbores. The Buda and Georgetown formations are additional formations that may be developed with open hole horizontal wellbores. Typically, the Buda and Georgetown formations are drilled with opposing dual laterals. Amending the field rules as proposed will allow stacked lateral drainholes to be simultaneously drilled from multiple surface locations and consider them a single well. The stacked lateral rules also require that each point of a stacked lateral horizontal drainhole be no more than 300 feet in a horizontal direction from any point along any other horizontal drainhole of the same stacked lateral well. Other fields with multiple horizontal objectives have similar stacked lateral rules.

Because the proposed designated intervals contains multiple zones, a two factor allocation formula is required by statute. Samson proposes that allocation be based on 95% acreage and 5% per well.

### **FINDINGS OF FACT**

1. Notice of this hearing was given to all persons entitled to notice and no protests were received.
2. The BSR (Sub-Clarksville) Field was discovered in December 1994 at a depth of 7,580 feet. The field currently has 31 vertical oil wells on the proration schedule.
3. The BSR (Sub-Clarksville) Field is a oil field which operates under Special

Rules that contain some horizontal well development rules that allow 160/80 acre density and 330'/660' well spacing, 0' between vertical and horizontal wells, take points and off-lease penetration.

4. The BSR (Sub-Clarksville) Field is currently under going horizontal drilling. Samson requests the designated interval be expanded to included potentially productive zones below the Sub-Clarksville Sands.
5. Mud log shows in the Blakeney No.1H found hydrocarbons in the Buda and Georgetown formations. Additionally, oil shows were found in the sand intervals within the Eagleford Shale which are commonly identified as the Lewisville and Dexter Sands.
6. The entire correlative interval between 7,660 feet to 9,036 feet as shown on the log of the Samson Lone Star, LLC, Blakeney, Well No. 1H be designated as the BSR (Sub-Clarksville) Field. The interval begins at the top of the Sub-Clarksville Sands to the base of the Georgetown. The interval includes the Sub-Clarksville Sands, Eagleford/Woodbine, Lewisville and Dexter Sands, Buda and Georgetown carbonates.
7. The Buda and Georgetown carbonates are naturally fractured and are currently being developed with open hole horizontal wells in other fields in the area. The ICI (Georgetown), the Day and the North Zulch (L-D-B-G) fields have similar intervals as proposed with the BSR (Sub-Clarksville) Field.
8. Adoption of a formula to assign additional acreage above the 160-acre density for the field is appropriate.
  - a. An acreage allocation formula is commonly used to assign additional acreage in fields that have formations that are naturally fractured and are being developed with open hole horizontal drilling.
  - b. In naturally fractured reservoirs, drainage occurs primarily along extensive natural fractures as opposed to the rock's matrix. The natural fractures drain larger areas compared to normal rock matrix drainage.
  - c. Other fields developing the naturally fractured Buda and Georgetown in the area, have similar acreage allocation formulas.
  - d. The ICI (Georgetown) and Kurten (Buda) fields have identical acreage allocation formulas as proposed for the BSR (Sub-Clarksville) Field of acreage assigned =  $L * 0.11488 + 160$ . The Iola (Georgetown) and

Kurten (Georgetown) fields have similar acreage allocation formulas but also contain an acreage multiplier of 3.25 and 1.5.

9. The Sub-Clarksville is currently being developed with cased horizontal wellbores. The Buda and Georgetown formations are additional formations that may be developed with opposing dual lateral open hole horizontal wellbores in the future.
10. Given that the gross thickness of the designated interval in this field is 1,376 feet, and the existence of multiple pay zones, multiple stacked laterals will be required to fully develop the reservoirs. Other fields with multiple horizontal objectives have similar stacked lateral rules.
11. Allocation based on 95% acreage and 5% per well is a reasonable allocation formula which satisfies statutory requirements.

#### **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 the field rules for the BSR (Sub-Clarksville) 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 examiners recommend amendment of the field rules for the BSR (Sub-Clarksville) Field as proposed by Samson Lone Star, LLC.

Respectfully submitted,

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Technical Examiner

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Hearings Examiner