



RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

OIL AND GAS DOCKET NO. 06-0318019

APPLICATION OF BARROW-SHAVER RESOURCES CO. (053321) FOR A NEW FIELD DESIGNATION, TEMPORARY FIELD RULES, AND TRANSFER OF WELLS FROM THE LINDEN, EAST (COTTON VALLEY) FIELD TO THE PROPOSED HIDDEN ROCK (COTTON VALLEY LIME) FIELD, CASS AND MORRIS COUNTIES, TEXAS

PROPOSAL FOR DECISION

HEARD BY: John L. Moore – Technical Examiner
Austin Gaskamp – Technical Examiner
Kristi M. Reeve – Administrative Law Judge

APPEARANCES:

APPLICANT: Barrow-Shaver Resources, Co.

Doug Dashiell, Attorney
Scott Shaver, President
Rick Johnston, Consulting Petroleum Engineer

PROTESTANT: Brooks Petroleum Company

William Bentley, Manager

David Gross, Attorney (assumed representation post-hearing on June 5, 2019)

PROCEDURAL HISTORY:

Application Filed:	January 29, 2019
Notice of Hearing Issued:	March 8, 2019
Corrected Notice of Hearing Issued:	March 14, 2019
Hearing Date:	April 4, 2019
Record Closed Date:	June 25, 2019
Proposal for Decision Issued:	July 15, 2019

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I. DETAILED PROCEDURAL HISTORY

January 29, 2019	Request for hearing received on behalf of Barrow-Shaver Resources, Co.
February 1, 2019	Amended request for hearing received on behalf of Barrow-Shaver Resources, Co.
February 7, 2019	Hearing docket No. 06-0318019 assigned and Hearing Request Form sent to Barrow-Shaver Resources, Co.
February 8, 2019	Field No. 41096100 assigned to Hidden Rock (Cotton Valley) Field
February 11, 2019	Hearing date set for April 4, 2019
March 8, 2019	Notice of hearing issued to service list
March 13, 2019	Received letter from Burk Royalty Co., LTD. requesting that its well be removed from the application and notice of hearing
March 14, 2019	Corrected notice of hearing issued to service list
March 28, 2019	Received notice of intent to appear at hearing in protest of application filed by Brooks Petroleum Company
April 4, 2019	Hearing on the merits held
April 16, 2019	Transcript received
June 5, 2019	Received re-designation of protestant representation
June 20, 2019	Examiners' letter sent to Barrow-Shaver Resources Co. requesting clarification regarding the completion status of the Jenkins No. 1 Well
June 25, 2019	Response to letter received, record closed

II. CASE SUMMARY

Barrow-Shaver Resources Co. (Operator No. 053321) ("BSR" or "Applicant") filed an application requesting a new field designation, the establishment of temporary field rules, and the transfer of five (5) wells (see Attachment A) into the newly designated field. BSR proposes the name of the newly designated field to be the Hidden Valley (Cotton Valley Lime) Field and the adoption of temporary field rules to be:

1. Designation of a correlative interval for the field being those depths between 11,420 and 11,540 feet as seen on the dual induction log of the Watson No. 1 well (API No. 42-067-30787) Cass County, Texas.
2. Well spacing of 660 feet from the lease or property line for all wells, 1,200 feet between wells on the same lease or pooled unit, zero spacing between horizontal and vertical wells.
3. 320-acre density for oil wells.
4. Additional acreage assignable to horizontal wells as permitted by Statewide Rule 86.
5. Oil allowables based on 100% acreage using the 1965 yardstick.

At the hearing, BSR withdrew its request for administrative exception to Statewide Rule 13(b)(4)(A) regarding the requirement of having to produce through tubing for new wells, reworks, recompletions, or newly fracture treated wells.

The application was protested by Brooks Petroleum Company (“Brooks” or Protestant”).

The Examiners’ recommend BSR’s application for a new field designation and the adoption of temporary field rules be approved. The Examiners’ also recommend that BSR’s wells identified on Attachment A be transferred into the newly designated field, with the exception of the Jenkins No. 1 Well which is currently being tested in the Cotton Valley Sand formation outside of the new field’s designated interval.

III. JURISDICTION AND NOTICE

Sections 81.051 and 81.052 of the Texas Natural Resources Code provide the Railroad Commission of Texas (“Commission”) with jurisdiction over all persons owning or engaged in drilling or operating oil or gas wells in Texas and the authority to adopt all necessary rules for governing and regulating persons and their operations under the jurisdiction of the Commission.

On March 8, 2019 and again on March 14, 2019 (corrected notice), the Hearings Division of the Commission sent a Notice of Hearing (“Notice”) to Applicant and Protestant, and all other entitled to notice, setting a hearing date of April 4, 2019. Consequently, the parties received more than 10 days’ notice. The Notice contains: (1) a statement of the time, place, and nature of the hearing; (2) a statement of the legal authority and jurisdiction under which the hearing is to be held; (3) a reference to the particular sections of the statutes and rules involved; and (4) a short and plain statement of the matters asserted.¹ The hearing was held on April 4, 2019, as noticed. Applicant and Protestant appeared and participated at the hearing.

IV. APPLICABLE LAW

Barrow-Shaver seeks a new field designation under Statewide Rule 41² which states in part:

- (a) The commission shall assign a new field designation and/or discovery allowable after an operator furnishes to the commission’s Austin

¹ See Tex. Gov’t Code §§ 2001.051, 052; 16 Tex. Admin. Code §§ 1.42, 1.45.

² Statewide Rule 41 refers to 16 Tex. Admin. Code § 3.41.

office proper evidence, other than horizontal distance, proving that a well is a new discovery.

Additionally, Barrow-Shaver seeks adoption of temporary field rules under Statewide Rule 43³ which states:

- (a) The commission will accept applications for temporary field rule hearings for oil, gas, or geothermal resource fields after the first well has been completed.
- (b) When requesting such hearings, the applicant must furnish the commission a list of the names and addresses of all operators holding leases on land touching the tract on which the discovery well is located. The applicant must list the names and addresses of the owners of the abutting unleased land.
- (c) Temporary field rules will apply until permanent field rules are adopted.

Brooks is an operator of such wells and protested the application.

Statewide Rule 37⁴ governs well spacing. Statewide Rule 37 provides for exceptions to the between well spacing and lease-line spacing requirements.

(B) When an exception to the minimum between-well spacing requirement of this section is desired, the applicant is required to file the mailing addresses of those persons identified in subparagraph (A)(i)-(iii) of this paragraph for each adjacent tract and each tract nearer to the well than the greater of one-half the prescribed minimum between-well spacing distance or the minimum lease-line spacing.

Statewide Rule 37 outlines when an exception to the between well spacing stating:

(3) An exception may be granted pursuant to subsection (h)(2) of this section, or after a public hearing held after at least 10 days notice to all persons described in paragraph (2) of this subsection. At any such hearing, the burden shall be on the applicant to establish that an exception to this section is necessary either to prevent waste or to prevent the confiscation of property. For purposes of giving notice of an application for an exception, the commission will presume that every person described in paragraph (2) of this subsection will be affected by the application, unless the Oil and Gas Division director or the director's delegate determines they are unaffected. Such determination will be made only upon written request and a showing by the applicant that:

³ Statewide Rule 43 refers to 16 Tex. Admin. Code § 3.43.

⁴ Statewide Rule 37 refers to 16 Tex. Admin. Code § 3.37.

(A) competent, conclusive geological or engineering data indicate that no drainage of hydrocarbons from the particular tract(s) subject to the request will occur due to production from the applicant's proposed well; and

(B) notice to the particular operator(s), lessee(s) of record, or owner(s) of record of unleased mineral interest would be unduly burdensome or expensive.

Statewide Rule 38⁵ governs well density, provides for an exception when:

(2) Density exception required. An exception to the density provision is required, and may be granted only to prevent waste, for a well on a lease, pooled unit, or unitized tract that is composed of substandard acreage and that:

(A) took its present size and shape after the date of attachment of the voluntary subdivision rule (§3.37(g) of this title (relating to the Statewide Spacing Rule)); and

(B) was composed of substandard acreage in the field according to the density rules in effect at the time it took its present size and shape.

Brooks protested the well density exception portion of Barrow-Shaver's application.⁶

V. DISCUSSION OF THE EVIDENCE

A. APPLICANT'S CASE⁷

The first well drilled and completed in the newly discovered productive horizon of the subject Cotton Valley limestone formation in Cass County is BSR's Watson No. 1 Well (API No. 42-067-30787). The Commission Form P-7 filed by BSR indicates the name of the producing formation to be the Cotton Valley Lime and the field name preference to be Hidden Rock (Cotton Valley Lime).⁸ The top of the reservoir is stated to be at 11,420 feet and the bottom of the reservoir is at 11,540 feet. The nearest production to the discovery well is in the Lassater (Cotton Valley) Field, approximately 7.1 miles to the southwest. The lithology of Lassater (Cotton Valley) Field is Cotton Valley Sandstone. The nearest comparable production to the discovery well is the Linden, East (Cotton Valley) Field approximately 9.2 miles to the east. There are no operators or wells producing from the newly discovered productive horizon of the Cotton Valley limestone formation within a 2.5-mile radius of the subject discovery well.

⁵ Statewide Rule 38 refers to 16 Tex. Admin. Code § 3.38.

⁶ Tr, at 10, line(s) 4 - 6.

⁷ The hearing transcript in this case is referred to as "Tr. at [pages], line(s) [lines]". Applicant's exhibits will be referred to as "Applicant's Exhibit [exhibit no(s)].". Protestant's exhibits will be referred to as "Protestant's Exhibit [exhibit no(s)].".

⁸ Applicant's Exhibit 1.

Mr. Doug Shaver, BSR's Manager and President, testified that BSR has drilled five (5) wells in the region which encountered and produced from the subject Cotton Valley Lime correlative interval. (see Attachment A) The wells are spaced apart an average of 4.75 miles. Mr. Shaver stated that one of the BSR wells, the Jenkins No. 1 Well, was being recompleted up-hole into the Cotton Valley Sand stratigraphic interval.⁹ Initially, all of the BSR wells were assigned to in the Linden, East (Cotton Valley) Field.

Mr. Shaver testified regarding the distinguishing stratigraphic characteristics of the Hidden Rock (Cotton Valley Lime) Field. He also opined regarding the differences in the downhole pressure and reservoir fluid gravity of the subject field and the Linden, East (Cotton Valley) Field. Mr. Shaver sponsored exhibits depicting east-west and north-south cross-sections based on the well logs of the BSR wells and other wells assigned to distinct regional fields. The cross-sections demonstrate the subject reservoir to be an elongated stratigraphic trap with the production-quality porosity lens generally aligned along the east-west axis.¹⁰ The production quality porosity lens pinches out more abruptly along the north-south axis of the cross-section.¹¹ Mr. Shaver testified in the five BSR wells, the pressure gradient of the Cotton Valley Lime reservoir was .56 pounds per foot ("psi/ft"), whereas the pressure gradient of the Linden, East (Cotton Valley) Field was .465 psi/ft.¹² Mr. Shaver stated the fluid gravity of the Cotton Valley Lime reservoir ranged from 50.1 API gravity to 52.8 API gravity, whereas the fluid gravity of the liquids produced from the Linden, East (Cotton Valley) Field is 48.8 API gravity. Mr. Shaver contends that the differences in reservoir pressure and fluid gravities, along with the well log signatures, clearly indicate that the Hidden Rock (Cotton Valley Lime) Field is a separate and distinct reservoir.

Mr. Rick Johnston, BSR's consulting petroleum engineer, testified regarding the respective Commission well completion forms that had been filed for the five (BSR) wells, his well drainage calculation and the applicability of the requested field rules. The BSR wells were drilled between December 2014 and October 2018, and had been assigned from Wildcat status to the Linden, East (Cotton Valley) Field by BSR. All of the wells were drilled vertically and three (3) of the wells were fracture treated during completion.

Mr. Johnston sponsored exhibits relating to the calculated volumetric drainage area for two wells producing from the subject productive interval. In the discovery well, the BSR Watson No. 1 Well, Mr. Johnston calculated the well to drain 591 acres.¹³ Mr. Johnston based his calculation on an ultimate recoverable oil volume of 223,790 barrels, eight (8) feet of 4.5% porosity, a recovery factor of 20%, a water saturation of 25% and an oil formation volume factor (reservoir barrels per stock tank barrels) of 1.1. Using the same reservoir related variables, an ultimate recoverable oil volume of 119,270 barrels, and 5.5 feet of 4.5% porosity, Mr. Johnston calculated that the BSR Quarles No.1 Well

⁹ Tr. at 19, line(s) 4 and 5.

¹⁰ Applicant's Exhibit 4.

¹¹ Applicant's Exhibit 5.

¹² Tr. at 26, line(s) 5 - 7.

¹³ Applicant's Exhibit 17.

would drain 455.1 acres.¹⁴ Based on his calculated drainage areas, Mr. Johnston testified that well density of 320 acres per well is appropriate for the Hidden Rock (Cotton Valley Lime) Field.

B. PROTESTANT'S CASE

Mr. William Bentley, Manager for Brooks Petroleum, appeared in protest of the application. Mr. Bentley presented one exhibit, a map depicting the aerial extent of an east – west cross section line.¹⁵ Mr. Bentley testified that 160-acre well density is appropriate for the reservoir rather than the 320 acres proposed by the Applicant. Mr. Bentley did not present any evidence to support his opinion.

C. EXAMINERS' ANALYSIS

I. Application for New Field Discovery

Applicant demonstrated that the discovery well, the BSR Watson No. 1 Well, was completed and is producing from a previously untapped reservoir in the Cotton Valley Lime formation. The discovery well is over two and one-half miles from the nearest well and the reservoir fluid characteristics and pressure distinguish the Hidden Rock (Cotton Valley Lime) Field from a similar reservoir in the established Linden, East (Cotton Valley) Field. Protestant did not refute the new field designation. The Examiners find that the new field discovery designation should be granted.

II. Application for the adoption of Temporary Field Rules

Applicant demonstrated that the adoption of the requested field rules will provide for the orderly development of the newly designated field with both vertical and horizontal wells, and protect correlative rights. Using the basis of estimated ultimate hydrocarbon recovery, Applicant presented drainage calculations showing that two wells in the newly designated field would drain 591 and 455 acres, respectively. Applicant intends to continue developing the field, including the drilling of horizontal wells to maximize ultimate recovery of hydrocarbons. Zero spacing between vertical and horizontal wells is therefore appropriate and a commonly accepted practice to optimize well placement. Protestant objected to Applicant's proposed well density, but offered no rebuttal evidence to support Protestant's verbal opinion. The Examiners find that adoption of the proposed temporary field rules should be granted.

¹⁴ Applicant's Exhibit 16.

¹⁵ Protestant's Exhibit 1.

III. Transfer of wells from the Linden, East (Cotton Valley) Field to the newly designated field

Applicant drilled and completed five (5) wells in the requested designated interval of the Hidden Rock (Cotton Valley Lime) Field between December 2014 and October 2018, and each had been assigned to the Linden, East (Cotton Valley) Field by Applicant. Well logs demonstrate that all five (5) wells penetrated and were initially completed in the Cotton Valley Lime reservoir. Subsequently, in one well, the Jenkins No. 1 Well, the Cotton Valley Lime reservoir was temporarily abandoned and the well is currently being tested up-hole and outside of the requested designated interval for the Hidden Rock (Cotton Valley Lime) Field. Applicant filed a post-hearing exhibit demonstrating that two cast iron bridge plugs and cement were placed above the Cotton Valley Lime formation reservoir in the wellbore of the Jenkins No. 1 Well. Protestant did not contest the requested field transfer of the wells. The Examiners recommend that four (4) wells identified in Attachment A to the Proposal for Decision, excluding the Jenkins Well No. 1, be transferred to the Hidden Rock (Cotton Valley Lime) Field.

VI. PROPOSED FINDINGS OF FACT, PROPOSED CONCLUSIONS OF LAW, AND EXAMINERS' RECOMMENDATION,

Based on the evidence and testimony presented at the hearing, the Examiners recommend that the Commission adopt the following findings of fact and conclusions of law.

A. FINDINGS OF FACT

1. Barrow-Shaver Resources Co. (Operator No. 053321) filed an application requesting a New Field Designation, Temporary Field Rules and Transfer of Wells from the Linden, East (Cotton Valley) Field to the proposed Hidden Rock (Cotton Valley Lime) Field, Cass and Morris Counties, Texas.
2. Notice of the application was sent to all operators within a two and one-half mile radius of the proposed discovery well, all operators and unleased mineral owners offsetting the discovery well tract and all operators in the existing Linden, East (Cotton Valley) Field.
3. The application is protested by an offset operator, Brooks Petroleum Company.
4. The first well drilled and completed in the subject productive horizon of the Cotton Valley limestone formation in Cass County is Applicant's Watson No. 1 Well (API No. 42-067-30787).

5. The subject reservoir of the proposed Hidden Rock (Cotton Valley Lime) Field is an elongated stratigraphic trap with the production-quality porosity lens generally aligned along an east-west axis. The designated field interval is 11,420 to 11,540 feet as seen in the reference well log of the Watson No. 1 Well.
6. Barrow-Shaver Resources Co. drilled and completed five (5) vertical wells in the subject reservoir (see Attachment A to the Proposal for Decision).
 - a) These five (5) wells were initially assigned to the Linden, East (Cotton Valley) Field.
 - b) Applicant requests the five (5) wells be transferred to the Hidden Rock (Cotton Valley Lime) Field.
 - c) One of these wells, the Jenkins No. 1 Well, is being tested up-hole and outside of the proposed designated interval for the Hidden Rock (Cotton Valley Lime) Field. The proposed designated interval in this wellbore has been isolated and temporarily abandoned with two cast iron bridge plugs and cement.
7. The calculated volumetric drainage area for the discovery well, the BSR Watson No. 1 Well, is 591 acres.
8. The calculated volumetric drainage area for the BSR Quarles No.1 Well is 455.1 acres.
9. Adopting temporary field rules, as requested by Applicant, for the proposed Hidden Valley (Cotton Valley Lime) Field and transferring Applicant's wells which are producing from the subject reservoir into the newly designated field will provide an orderly future development of the subject reservoir, protect correlative rights, and prevent the waste.

B. CONCLUSIONS OF LAW

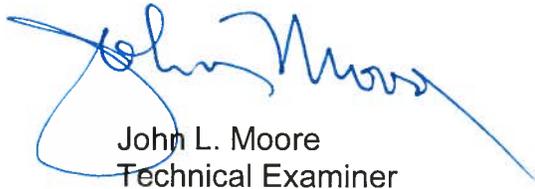
1. Resolution of the subject application is a matter committed to the jurisdiction of the Railroad Commission of Texas. Tex. Nat. Res. Code § 81.051.
2. All notice requirements have been satisfied. 16 Tex. Admin. Code § 1.42.
3. Designation of the proposed Hidden Rock (Cotton Valley Lime) Field and temporary field rules authority will promote orderly development of the subject reservoir, protect correlative rights and prevent waste.

4. Applicant has satisfied the requirements of Statewide Rule 41. 16 Tex. Admin. Code § 3.41.

C. EXAMINERS' RECOMMENDATION

The Examiners' recommend approval of BSR's application designating the reservoir as the Hidden Rock (Cotton Valley Lime) Field, adopting temporary field rules as proposed and transferring four of the five requested BSR wells to the newly designated field (see Attachment A to this Proposal for Decision).

Respectfully submitted,



John L. Moore
Technical Examiner



Kristi M. Reeve
Administrative Law Judge

Attachment A

1. Barrow-Shaver Resources Co. Watson Well No. 1 (API No. 42-067-30787)
Lease ID 15607
2. Barrow-Shaver Resources Co. Downs Well No. 1 (API No. 42-067-30812)
Lease ID 15661
3. Barrow-Shaver Resources Co. Jenkins Well No. 1 (API No. 42-067-30812)
Lease ID 15660¹⁶
4. Barrow-Shaver Resources Co. Quarles Well No. 1 (API No. 42-343-30109)
Lease ID 15574
5. Barrow-Shaver Resources Co. Pollan Well No. 1 (API No. 42-343-30110)
Lease ID 15664

¹⁶ The Examiners' do not recommend that the Jenkins Well No. 1 be transferred to the Hidden Rock (Cotton Valley Lime) Field. In this wellbore, the designated interval/reservoir for this field has been temporarily abandoned and isolated with two cast iron bridge plugs and cement.