



# RAILROAD COMMISSION OF TEXAS

## OFFICE OF GENERAL COUNSEL

OIL AND GAS DOCKET NO. 09-0271441

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THE APPLICATION OF JETTA OPERATING COMPANY, INC TO ADOPT FIELD RULES  
FOR THE BIG MINERAL CREEK (WOODFORD) FIELD, GRAYSON COUNTY, TEXAS

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Heard by: Brian K. Fancher - Technical Examiner

**Appearances:**

Mickey Olmstead  
Cody Piel  
Chris Liles

**Representing:**

Jetta Operating Co., Inc.

**PROCEDURAL HISTORY:**

Application filed:	July 01, 2011
Notice of Hearing:	July 12, 2011
Hearing Held:	August 02, 2011
Hearing Reopened:	September 15, 2011
Transcripts Received:	October 18, 2011
PFD Issued:	January 27, 2012

**EXAMINER'S REPORT AND RECOMMENDATION**

**STATEMENT OF THE CASE**

Jetta Operating Company, Inc. ("Jetta") requests that Field Rules be adopted for the Big Mineral Creek (Woodford) Field, which currently operates under statewide rules. Jetta proposes the following Field Rules.

1. Designation of the field as the correlative interval from 7,980 feet to 8,370 feet as shown on the log of the Jetta Operating Company, Inc., Green Lease, Well No. 45, API No. 181-31323, E. C. Smithson Survey, A-1082, Grayson County, Texas;
2. 330' lease line spacing and no between well spacing with special provisions for "take points", an "off-lease" penetration point, and a "box rule" for horizontal drainhole wells.

3. 320 acre units with 10% tolerance, an optional 40 acre density provision, and an additional acreage assignment limitation for horizontal drainhole wells based on a proposed formula.
4. Allocation based upon 100% acres.
5. Special provision for stacked lateral horizontal drainhole wells to be considered a single well for regulatory purposes.

Furthermore, Jetta requests the proposed field rules be adopted on a temporary basis for 24 months, the field be classified as associated-prorated, and the gas allocation formula be suspended as there is a 100% market demand for all of the gas produced.

This application was unopposed and the examiner recommends that the Field Rules for the Big Mineral Creek (Woodford) Field be adopted as proposed by Jetta, with exception of the formula allocating additional acreage to horizontal wells. The applicant has indicated that it considers the examiner's opinion adverse.

#### **DISCUSSION OF EVIDENCE**

The Big Mineral Creek (Woodford) Field was discovered in December 2009 upon completion of the J. E. Barnes Lease, Well No. 3. Jetta is the only operator in the field and there are currently two producing wells carried on the oil proration schedule. The field operates under statewide rules and the top allowable in the field is 121 BOPD with an allowable gas-oil ratio of 2,000 cubic feet per barrel and a casinghead gas limit of 242 MCFGPD. The August 2011 proration schedule indicates the subject field is designated as an oil field with two producing wells, both operated by Jetta.

Within the subject field, the Woodford Shale formation is stratigraphically situated between the base of the Atoka Detrital (Pennsylvanian Age) and the top of the Viola Limestone (Devonian) formations. Within the exterior margins of the subject field, the Woodford Shale is found at depths between 7,000 feet and 12,000 feet below the ground surface and has a gross thickness ranging from 50 feet to 400 feet. The Big Mineral Creek (Woodford) Field has been determined to be a constituent of a faulted, anticlinal fold. The regional strike direction for this field is from northwest to southeast. Analyses of petrophysical data taken from wells penetrating the Woodford formation within the subject area present the net pay to be based upon a value greater than 4.5% Total Organic Carbon (T.O.C.). The applicant determined the subject field is an oil field with gas in solution through core analyses that indicate hydrocarbon thermal maturation to be in the oil window.

Jetta has indicated its intention to drill horizontal wells in the proposed field and requests horizontal rules in order to promote the efficient and effective development of the remaining hydrocarbons suspended in the Woodford Shale. Jetta requests a spacing rule

that requires 330' lease line spacing and no between well spacing with special limitations for "take points", an "off-lease" penetration point, and a "box rule" for horizontal drainhole wells. Jetta also seeks Field Rules to allow for "stacked lateral" wells. Jetta feels that the proposed spacing is necessary to allow drilling of horizontal wells which may have to be placed very near each other, in some cases, to promote the maximum horizontal length of a wellbore.

Currently, there is no defined correlative interval for the Big Mineral Creek (Woodford) Field. Jetta requests that the subject field be defined as the correlative interval from 7,980 feet to 8,370 feet, as shown on the log of the Jetta Operating Company, Inc., Green Lease, Well No. 45 (API No. 42-181-31323), E.C. Smithson Survey, A-1082, Grayson County, Texas.

Jetta requests that a field rule be adopted which includes language relevant to the measurement of well spacing for horizontal drainhole wells. Jetta's proposes that, for purposes of well spacing, the nearest "take point" in a horizontal well be used. This take-point could be a perforation, if a horizontal well is cased and cemented, an external casing packer in a cased well, or any open-hole section in an uncased well.

Jetta seeks to adopt language in the proposed Field Rules that will allow for an off lease penetration point. In some instances, it is beneficial to penetrate a reservoir off lease, while still having "take points" no closer to lease lines than allowed under the Field Rules. Without a Special Field Rule authorizing off-lease penetration, Statewide Rule 86 requires that the penetration point of a horizontal drainhole be on the associated lease. The exterior margins of the subject field are defined by the Texas/Oklahoma state line to the north and a geologic unconformity to the west and south. The applicant indicated a portion of Lake Texoma and adjacent land, known as the Hagarman Wildlife Refuge, aerially incorporates seventy to eighty percent of the subject field. Similar field rules allowing offsite penetration points have been adopted in multiple horizontal well fields. These rules allow off-lease penetration points after notice to the affected mineral owners of the off-lease tract on which the penetration point is to be located has been issued and if no protest is received. The examiner finds the requested off-lease penetration points, as proposed by Jetta, to be appropriate at this time due to the highly faulted structure of the Woodford formation comprising the subject field.

Jetta proposes a tolerance "box rule" for a horizontal drainhole that would allow the portion of any wellbore in the field to deviate 50 feet from either side of it's permitted track without the necessity of obtaining a Statewide Rule 37 exception. An as drilled well for which all points are located within the "box" would be considered in compliance with it's relative drilling permit. Any point of the horizontal drainhole outside of the described "box" must conform to the permitted distance to the nearest property line, lease line, or subdivision line, measured perpendicular to the wellbore.

Jetta also requests that a Field Rule be adopted to accommodate the drilling of stacked horizontal lateral wells. As previously mentioned, the gross thickness of the Woodford formation varies from 50 feet up to 400 feet in the geographic region comprising

the field, due to structural variances. The proposed rule would allow stacked horizontal laterals within the Woodford correlative interval that are drilled from different surface locations to be considered a single well for regulatory purposes. It is proposed that a stacked lateral well be defined as multiple horizontal drainholes which are drilled from different surface locations. Jetta believes that several separate laterals may be necessary to effectively develop the reservoir with horizontal wells.

Jetta requests 320 acre density with 10% tolerance, an optional 40 acre density provision, and that additional acreage be assigned to horizontal wells completed in the subject field, based on a proposed formula. The additional acreage formula, as proposed by Jetta, is expressed as the following:

$$A = (L \times 0.14 + 320)$$

where A is the acreage assignable to the well for proration purposes rounded upward to the next whole number evenly divisible by 40 acres, and L is the horizontal drainhole distance measured in feet between the first take point and the terminus within the Woodford formation.

The factor of 0.14 was claimed by Jetta to be the value at which the lateral length of a horizontal well in the Big Mineral Creek (Woodford) Field will produce additionally per foot, when compared to a vertical well in the subject field. The final constituent of the proposed formula is the number three-hundred and twenty (320) and is the base acreage assigned to the field that has been indicated by the applicant to be the radial acreage a vertical well will drain.

At the initial hearing dated August 02, 2011, Jetta submitted drainage area calculations for two vertical oil wells currently producing in the Big Mineral Creek (Woodford) Field. The applicant indicated the Jetta Operating Company, Inc., Green Lease, Well Number 45 would drain 164 acres and the Jetta Operating Company, Inc., J.E. Barnes lease, Well Number 3 would drain 44 acres. Jetta asserted that 320 acre base units are necessary in order to maintain consistency with Commission policy. Further, the applicant indicated it is seeking field rules similar to the rules for the Big Mineral Creek (Viola) Field, stratigraphically situated directly below the Big Mineral Creek (Woodford) Field; however, the applicant failed to present any evidence to support it's testimony in this respect.

At the re-opened hearing dated September 15, 2011, the applicant submitted supplemental drainage area calculations for the Green Lease, Well Number 45 and the J.E. Barnes lease, Well Number 3. In it's new evidence, Jetta calculated the Green Lease, Well No. 45 will drain approximately 260 acres and the Barnes Lease, Well No. 3 will drain approximately 51 acres. Jetta testified the supplemental drainage area calculations were based upon production data collected from an additional one month and eleven days of production. Jetta asserts the additional production data allowed for the realization of the increase in the GORs for each well that, in turn, increased the calculated drainage areas.

Lastly, Jetta requests that the allocation be based on 100% acreage as the Woodford interval is a shale formation. Jetta indicated horizontal wells completed in the subject field will be economic only through the completion method of hydraulic fracturing. Further, witnesses on behalf of Jetta testified that all production of natural gas from the Big Mineral Creek (Woodford) Field is under 100% market demand and requests that the allocation formula for the subject field be suspended.

After the close of the re-opened hearing on October 31, 2011, counsel on behalf of Jetta submitted late-file exhibits as evidence in support of its application. The exhibits consisted of The Oklahoma 2011 Shale Reservoir Development Act ("Shale Act") and a copy of the order issued by the Oklahoma Corporation Commission enacting emergency rules to provide for the filing of applications to operate under the 2011 Shale Reservoir Development Act. Jetta's counsel requested the aforementioned documents be admitted based on the Commission having previously considered the field rules of bordering states when establishing special field rules for Texas shale fields. No where in his request did the counsel on behalf of Jetta support his opinion in this respect. The documents were admitted as Jetta Exhibits 38 and 39, respectively.

Subsequent to the hearing performed on August 02, 2011, correspondence from counsel on behalf of Jetta indicated the applicant wishes to adopt its proposed field rules as temporary field rules under Texas Administrative Code Title 16, Part 1, Chapter 3, Statewide Rule 43. The examiner takes note that Statewide Rule 43(b), governing temporary field rules, prescribes the following:

"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."

The examiner concluded the Notice of Application dated July 12, 2011 was issued as an application to amend field rules for the Big Mineral Creek (Woodford) Field in Grayson County, Texas, not to adopt field rules on a temporary basis. As a result, on January 12, 2012, the examiner requested that counsel on behalf of Jetta provide the Commission with the names and addresses, as prescribed in Statewide Rule 43(b), so that sufficient notice may be provided to all affected parties in the subject application.

In response to the examiner's letter dated January 12, 2012, counsel on behalf of Jetta advised that Chesapeake Operating, Inc. ("Chesapeake") and Atoka Operating, Inc. ("Atoka") had been identified as separate, affected parties, as prescribed in Statewide Rule 43(b). Consequentially, on January 18, 2012, the examiner provided both Chesapeake and Atoka with a copy of Jetta's proposed application and a written explanation as to why they were identified as affected parties in the subject application. Further, if either party should choose to respond or protest to Jetta's proposed application, their remarks or opposition were to be submitted within fifteen (15) days of the date of the letter. At the time the examiner's Proposal for Decision was issued, no protest from Chesapeake or Atoka was received by the Commission.

**EXAMINER'S OPINION**

The examiner recommends that the Field Rules proposed by Jetta be approved as they were ultimately presented, with the exception of the formula allocating additional acreage to horizontal wells. The examiner concludes the allocation formula, as presented by Jetta, is a deviation from Statewide Rule 86 and is not supported by sufficient evidence at this time.

Statewide Rule 86(d) allows for the assignment of additional acreage to horizontal wellbores based upon an incremental succession of horizontal drainhole displacement measured in feet. In the notice of hearing dated July 12, 2011, Jetta requested a maximum diagonal of 6,500 feet for wells completed in the subject field based on the maximum diagonal allowance for 320 acre density units. Representatives on behalf of Jetta indicated in their testimony that structurally, the Woodford formation and the underlying Viola formation are the same (See Transcript of September 15, 2011 Hearing, p16, L6-7). In the re-opened hearing dated September 15, 2011, the applicant testified the maximum diagonal for horizontal wells drilled in the Viola formation are restricted to approximately 2,000 feet due to the highly fractured nature of the formation. According to the applicants proposed additional allocation formula, a 2,000 foot lateral section of a horizontal well would be entitled to an additional 280 acres, for a total of 600 acres. Under Statewide Rule 86, a well in the field with a 2,000 foot lateral would be limited to an additional 120 acres for a total of 440 acres.

At the reopened hearing on September 15, 2011, the examiner inquired as to why the applicant seeks to deviate from Statewide Rule 86, with respect to additional allocation for horizontal wells. In response to the examiners inquiry, counsel on behalf of the applicant expressed his concern that Statewide Rule 86 does not accurately assign the acreage a horizontal well might require. Counsel for Jetta subsequently added that, due to the developmental direction in which horizontal plays are moving at present time, the majority of fields with special field rules are being modified to incorporate an additional allocation formula, as Statewide Rule 86 does not apply to today's technology (See Transcript of September 15, 2011 Hearing, p50, L 13-25 and p51, L 1-14). Furthermore, counsel for Jetta asserted that there are many additional allocation formulas currently approved by the Commission that are more aggressive than the proposed additional allocation formula presented in the subject application.

Statewide Rules are intended to apply to the typical or general situation throughout the state. Special field rules, like the additional acreage formula proposed by Jetta, are necessary when evidence is presented demonstrating that the otherwise applicable statewide rules are inappropriate because of geology, production methods, or other factors specific to the field at issue. In this case, Jetta does not have data from even a single horizontal well in this field but seeks a fairly dramatic deviation from the statewide horizontal well acreage assignment provisions of Statewide Rule 86.

Jetta seeks to support its proposed special field rule not with data from the field at issue but with data taken from a horizontal well that statistically occurs one time out of ten times, known as the P90 well, in the Woodford formation located in Oklahoma at a distance of 18 miles away (See Transcript of September 15, 2011 Hearing, p51, L 15-25 and p52, L 1-3,). Representatives on behalf of Jetta asserted that the P90 well will theoretically demonstrate an Estimated Ultimate Recovery (EUR) capability of 600,000 barrels of oil estimated (BOE). Jetta then applied the theoretical well production value of 600,000 BOE to a radial drainage calculation that also incorporates production data from the Jetta Operating, Green Lease, Well No. 45 (API No. 181-31323), notably a significant distance from the P90 well. Mixing the P90 well EUR and data from the Green Lease, Well No. 45, Jetta calculated that theoretically a horizontal well drilled into the Woodford formation in the Big Mineral Creek (Woodford) Field will drain an area of 1,006 acres. Finally, using the 1,006 acres as the product in the applicant's proposed acreage allocation formula ( $A = L \times 0.14 + 320$ ), the applicant found 0.14 to be the approximate value presented when L is 5,000 feet.

The examiner concludes that Jetta is premature in their request to deviate from Statewide Rule 86(d). As Jetta testified, the data ascertained in calculating what a horizontal well will drain in the Woodford formation, 18 miles away from the Big Mineral Creek (Woodford) Field, is based upon a statistical horizontal well that occurs ten percent (10%) of the time. By subsequently inferring that horizontal wells completed in the Big Mineral Creek (Woodford) Field will have the same effect on the Woodford formation as wells completed 18 miles away is inappropriate. Further, a horizontal drainage area, such as the one submitted by Jetta, cannot be calculated from a radial drainage formula due to the two types of drainage patterns consisting of substantially dissimilar drainage patterns.

The examiner takes notice of the completion report (Commission Form W-2) dated August 03, 2010 for the Green Lease, Well No. 45 (API No. 181-31323). The Green Lease, Well No. 45 is currently perforated at depths of 8,032 feet to 9,766 feet down-hole. Commission records further indicate the Woodford formation occurs at 8,032 feet and the Viola formation occurs at 8,430 feet below the ground surface at the Green Lease, Well No. 45's location. The examiner notes the Green Lease, Well No. 45 is currently operating under a Commission approved Statewide Rule 10 down-hole commingling authority, permit number 09-5505. The approved down-hole commingle authority allows the Green Lease, Well No. 45 to produce from the Woodford and Viola formations concurrently. The examiner finds the Green Lease, Well No. 45 information included in the additional allocation formula, as proposed by Jetta, is inappropriate due to the Green Lease, Well No. 45 currently producing from multiple fields into the same well-bore. As a result, the Green Lease, Well No. 45 production does not accurately reflect the drainage capability of the Woodford formation alone.

The examiner concludes that Jetta did not present any testimony or other evidence that demonstrates the need for the proposed deviation from Statewide Rule 86. The witnesses on behalf of Jetta testified that a horizontal well in the Big Mineral Creek (Woodford) Field will produce 0.14 hydrocarbons per foot more in the lateral section of a horizontal wellbore than a vertical well will produce. The examiner concludes the data used to determine the 0.14 well factor was based on multiple assumptions and is speculative in nature. Wellbore information and horizontal well production values have yet to be

demonstrated as there are no horizontal wells currently completed in the subject field and the nearest comparable Woodford Shale field is the Madill Field located 23 miles to the north in the State of Oklahoma<sup>1</sup>.

In summary, Jetta operating indicated it is seeking flexibility for the proposed field rules in determination of how to develop the Big Mineral Creek (Woodford) Field (See Transcript of August 02, 2011 Hearing, p26, L 8-13). However, special field rules, and particularly special field rules that are inconsistent with applicable statewide rules, must be supported by evidence of conditions in the field at issue. Jetta has not yet completed even a single horizontal well in this field. The examiner is of the opinion that it is more appropriate for Jetta to complete and obtain data from at least some initial horizontal wells in the Big Mineral Creek (Woodford) Field, prior to seeking field rules inconsistent with the provision of Statewide Rule 86(d).

The examiner recommends that the additional allocation to horizontal wellbores completed in the Big Mineral Creek (Woodford) Field be based upon Statewide Rule 86, rather than the formula proposed by the applicant, and that the remaining field rules proposed by the applicant be adopted for a temporary period of 24 months.

#### **FINDINGS OF FACT**

1. Notice of this hearing was given to all persons entitled to notice and no protests were received.
2. The Big Mineral Creek (Woodford) Field currently operates under statewide rules and the top allowable in the field is 121 BOPD with an allowable gas-oil ratio of 2,000 cubic feet per barrel and a casinghead gas limit of 242 MCFGPD
3. The Big Mineral Creek (Woodford) Field was discovered in December 2009.
4. The Big Mineral Creek (Woodford) Field contains two producing, vertical wells. The field currently does not contain a horizontal well. At least one of the vertical wells is commingled with another field and is reporting all of the commingled production in the Big Mineral Creek (Woodford) Field.
5. Within the Big Mineral Creek (Woodford) Field, the Woodford Shale formation is stratigraphically situated between the base of the Atoka Detrital (Pennsylvanian Age) and the top of the Viola Limestone (Devonian) formations.
6. The Big Mineral Creek (Woodford) Field has been determined to be a constituent of a faulted, anticlinal fold.

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<sup>1</sup> Oil & Gas Docket No. 09-0267397; Finding of Fact No. 6 - Blackwell BMC, LLC for a Net Gas Oil Ratio Authority; Big Mineral Creek (Woodford) Field, Grayson County, Texas, January 07, 2011.



7. Analyses of petrophysical data taken from wells penetrating the Woodford formation within the Big Mineral Creek (Woodford) Field present the net pay to be based upon a value greater than 4.5% Total Organic Carbon (T.O.C.).
8. The Big Mineral Creek (Woodford) Field is an oil field with gas in solution.
9. The Big Mineral Creek (Woodford) Field should be defined as the correlative interval from 7,980 feet to 8,370 feet, as shown on the log of the Jetta Operating Company, Inc., Green Lease, Well No. 45 (API No. 42-181-31323), E.C. Smithson Survey, A-1082, Grayson County, Texas.
10. Field Rules that provide for 330'-0' well spacing, 330' lease line spacing for the first and last take points and special provisions for "take points", a "box rule" and "off-lease" penetration point for horizontal drainhole wells will provide consistency in developing the field and will allow greater flexibility in selecting future drilling locations.
11. A spacing rule which utilizes "take-points" in a horizontal well for determination of distances to lease lines will not harm correlative rights.
  - a. The Woodford formation is a shale formation.
  - b. A take-point in a horizontal well in this field may be a perforation, if a horizontal well is cased and cemented, an external casing packer in a cased well, or any open-hole section in an uncased portion of the wellbore.
  - c. "Take points" will allow the horizontal drainhole length on a lease to be maximized.
  - d. Allowing the first and last take points to be as close as 330 feet from the lease lines will allow for recovery of additional reserves that would otherwise remain unrecovered.
12. The proposed 50 foot "box rule" will allow operators reasonable minor deviations from the wellbore track that has been permitted without the need to re-permit the well.
13. Allowing an off-lease penetration point will result in maximum producing drainhole length, thereby increasing ultimate recovery from horizontal drainhole wells. To protect correlative rights, prior notice and opportunity to object should be given to the affected mineral owners of offsite surface locations.
14. For purposes of assignment of additional acreage to horizontal drainhole wells, additional allocation should be based on Statewide Rule 86 and the

15. The additional allocation formula of  $A = L \times 0.14 + 320$ , as proposed by Jetta Operating Company, is a deviation from Statewide Rule 86.
16. The additional allocation formula of  $A = L \times 0.14 + 320$ , as proposed by Jetta Operating Company is not based on any evidence specific to the Big Mineral Creek (Woodford) Field.
17. The Jetta Operating Company, Green Lease, Well No. 45 (API No. 181-31323) is currently perforated at depths of 8,032 feet to 9,766 feet down-hole and operating under a Commission approved Statewide Rule 10 down-hole commingling authority, permit number 09-5505.
18. The Woodford formation consists of shale and is continuous across the Big Mineral Creek (Woodford) Field.
19. The Big Mineral Creek (Woodford) Field should be classified as associated-prorated and allocation should be based upon 100% acreage.
20. Suspension of the allocation formula is appropriate, as there is a 100% market demand for all of the gas produced from the field.
21. By letter dated January 17, 2012 from counsel on behalf of Jetta Operating Company, Inc., Chesapeake Operating, Inc. and Atoka Operating, Inc. were identified as affected parties, pursuant to Texas Administrative Code Title 16, Part 1, Chapter 3, Statewide Rule 43(b).
22. By letter dated January 18, 2012, Chesapeake Operating, Inc. And Atoka Operating, Inc. were provided notice of Jetta Operating Company, Inc.'s intention to adopt the proposed field rules on a temporary basis for a period of 24 months.

**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. Texas Administrative Code Title 16, Part 1, Chapter 3, Statewide Rule 43(b) governs affected parties to be identified under an application for temporary field rules and subsequent identification to be furnished to the Commission.
4. Deviation from the provisions of Statewide Rule 86, regarding allocation of additional acreage for horizontal wells, is not necessary to prevent waste or to protect correlative rights.

5. Adoption of the proposed Field Rules, other than the proposed rule regarding additional allocation for horizontal wells, for the Big Mineral Creek (Woodford) Field on a temporary basis 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 examiner recommends that the Commission adopt the Field Rules proposed by Jetta Operating Company for the Big Mineral Creek (Woodford) Field on a temporary basis, except that additional allocation for horizontal wells in the field should be governed by Statewide Rule 86, subject to review in 24 months.

Respectfully submitted,



Brian K. Fancher  
Technical Examiner