



RAILROAD COMMISSION OF TEXAS

OFFICE OF GENERAL COUNSEL

OIL AND GAS DOCKET NO. 10-0272903

**THE APPLICATION OF DEVON ENERGY PRODUCTION CO., L.P. FOR ADOPTION OF
FIELD RULES FOR THE MATHERS RANCH (GRANITE WASH) FIELD, HEMPHILL
COUNTY, TEXAS**

Heard by: Brian K. Fancher - Technical Examiner
Gene Montes - Legal Examiner

Hearing Date: November 17, 2011

Appearances:

Sandra Buch
Cameron Thompson
Richard J. Morrow

Representing:

Devon Energy Production Company, LP

EXAMINERS' REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Devon Energy Production Co., L.P. ("Devon") requests that Field Rules be adopted for the Mathers Ranch (Granite Wash) Field in Hemphill County, Texas. Current Field Rules for the Mathers Ranch (Granite Wash) Field are governed by Statewide Rules. Devon's proposed field rules are summarized as follows:

1. Designated correlative interval from 10,097 feet to 11,400 feet, as shown on the log of the Devon Energy Production, Co., L.P., Mathers Ranch, Well No. 5 (originally drilled by McCullough) (API No. 42-211-30088), Section 165, H&TC Survey, Hemphill County, Texas.
2. 467' lease line spacing with no between well spacing limitation and special provisions for take points, a "box" rule, and an off-lease penetration point.
3. 640 acre base density with 10% tolerance acreage, optional 320 acre density, and special provisions for Rule 38 exceptions after notice;

4. Allocation based on 95% deliverability and 5% per well, with AOF status.
5. Special provisions for stacked lateral wells.

At the hearing, the examiners concluded the evidence proffered by Devon in support of its requested optional 320 acre units and no between well spacing request between all wells, were inappropriate due to lack of evidence. Counsel on behalf of Devon requested the applicant be allowed the opportunity to submit late-file exhibits in support of its application, subsequent to the hearing. By correspondence dated December 09, 2011, counsel on behalf of Devon withdrew the optional 320 acre density and no between well spacing requirement between all wells, as initially proposed. Furthermore, the applicant amended its request to include a field rule that provides for a between horizontal wells spacing requirement of 1,200 feet and no between well spacing between vertical and horizontal wells.

Also, the letter dated December 09, 2011 submitted by counsel on behalf of Devon explains that Devon seeks to adopt its remaining proposed field rules on a temporary basis for 24 months. By correspondence dated January 13, 2012, counsel on behalf of Devon identified three additional parties required to be notified per Texas Administrative Code Title 16, Part 1, Chapter 3, Statewide Rule 43(b). Consequentially, a letter was mailed to Unit Petroleum Company, Forest Oil Corporation, and BP America Production Company indicating each party had been identified as an affected party in the subject application and if each party wishes to protest or participate in a re-opened hearing, to notify the examiners by February 03, 2012. No protest was received by any of the aforementioned parties.

The amended application was unprotested and the examiners recommend that the field rules for the Mathers Ranch (Granite Wash) Field be amended, as ultimately proposed by Devon.

DISCUSSION OF EVIDENCE

The Mathers Ranch (Granite Wash) Field is a non-associated gas field that was discovered in October 1973 at an average depth of 11,550 feet. The November 2011 Proration Schedule indicates there are five producing wells and two operators active in the field. Cumulative production from the field is reported as 1.6 BCFG and 40 MBC. The field is classified as AOF status.

The Mathers Ranch (Granite Wash) Field is located in central Hemphill County and is adjacent to multiple other Granite Wash fields in the area. The gross interval of the Granite Wash Formation is continuous across the Mathers Ranch (Granite Wash) Field. Devon submitted a geologic descriptive and opines the Granite Wash Formation underlying the subject field in Hemphill County contains a series of Arkosic sandstones derived from the diagenetic weathering of granitic rock types. In situ, the individual sand members within the Granite Wash Formation are sought as a series of stacked, lenticular sandstones that are discontinuous and laterally extend across short distances. Reservoir properties of the

Granite Wash Formation comprising the Mathers Ranch (Granite Wash) Field include the depth of the Granite Wash Formation to occur from 9,950 to 11,650 feet, the gross interval to incorporate 1,500 feet of formation, the net pay thickness to include 60 feet to 170 feet of the total gross formation thickness, porosity to occur from six percent to twelve percent, and conic water to be present from 30 percent to 40 percent. Initial bottomhole pressure was measured to be 4475 psi @ 10,300 feet and formation temperature was recorded as 197 degrees Fahrenheit @ 10,300 feet. Fluid properties of the hydrocarbons produced from the subject field include gas gravity values from 0.71 to 0.73 and condensate gravity to occur from 55 to 60 API gravity.

Devon requests field rules be adopted on a temporary basis of 24 months to provide a designated correlative interval, 467' perpendicular lease line spacing, 200' leaseline spacing for the first and last take points with no between well spacing, a 47 foot "box" rule for horizontal drainhole wells, off-lease penetration points, and special provisions for stacked lateral wells. Further, Devon requests that administrative Rule 38 exceptions be incorporated into the field rules.

Devon proposes the correlative interval from 10,097 feet to 11,400 feet in the Devon Energy Production Co., L.P., Mathers Ranch, Well No. 5 (API No. 42-211-30088), Section 165, H&TC Survey, Hemphill County, Texas, be designated as the Mathers Ranch (Granite Wash) Field.

Devon indicated it intends to drill at least six additional horizontal wells and requests a field rule to provide for 467' - 0' well spacing, with 200' lease line spacing for the first and last take points. At the hearing, representatives of Devon testified that due to the limited well data available for the Mathers Ranch (Granite Wash) Field, evidentiary support to demonstrate the need for its proposed dual lease line spacing was acquired from data taken from a nearby field, the Hemphill (Granite Wash) Field. The applicant concluded from reservoir modeling performed for the Hemphill (Granite Wash) Field, that by decreasing a wellbore's lease line spacing requirement from 467 feet to 200 feet for the first and last take-points, wells completed in the Hemphill (Granite Wash) Field are expected to recover an additional 0.3 BCF of gas, when two adjacent horizontal wells are offset with their respective first and last take points at 200' from the lease line. Devon testified it anticipates additional gas recovery for horizontal wells completed in the Mathers Ranch (Granite Wash) Field are to be the same as horizontal wells completed in the Hemphill (Granite Wash) Field. Devon's proposed "take point" rule specifies that, for purposes of lease line and between-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.

Devon seeks to adopt 640 acre base units with 320 acre optional units as provisions governing the density requirement for the subject field. Further, Devon seeks to adopt an administrative exception to Statewide Rule 38 for any well located on a tract of less than 640 acres. In support of it's request, Devon testified that it did not attempt to provide volumetric analyses for wells completed in the subject field due to the limited horizontal

well production for the Mathers Ranch (Granite Wash) Field. Devon asserts that in lieu of volumetric analyses, it believes alternate information may be provided to demonstrate the necessity of 640 acre base density units for the subject field.

Representatives on behalf of Devon indicated the Devon, Wright-151, Well No. 2H (API No. 42-211-34743) was drilled and began initial production in March 2011 from the Mathers Ranch (Granite Wash) Field. Approximately three months later, Devon encountered interrupted production in its Wright-151, Well No. 2H, subsequent to a frac stimulation performed on a horizontal well located 2,600 feet to the east. Devon concluded that the well located 2,600 feet to the east of the Wright-151 Well No. 2H, the Unit Petroleum Co., Wright 'A', Well No. 1H (API No. 42-211-34819), had established communication through the hydrofrac process asserted on the Wright 'A', Well No. 1H. Devon testified the wells had established sub-surface communication after personnel employed by Devon reported the Wright-151, Well No. 2H began producing a significant increase of produced water, of which contained frac water from the Wright 'A', Well No. 1H. Devon believes that the communication established between the two wellbores 2,600 feet apart from each other concludes horizontal wells completed in the Mathers Ranch (Granite Wash) Field are capable of draining up to 640 acres, thus the basis for its requested 640 acre base density units at this time. The examiner finds that a radial distance of 2,600 feet equates to approximately 487 acres of radial drainage.

Devon seeks to adopt a field rule that provides for an administrative exception to Statewide Rule 38 for any well completed in the Mathers Ranch (Granite Wash) Field. Devon proposes that a well to be drilled in the subject field may obtain a Rule 38 exception after notice has been provided to all designated operators, lessees of record for tracts that have no designated operator, and all owners of unleased mineral interests within 660 feet of a vertical well or any point on a horizontal well within the correlative interval. If no written protest is received after 21 days of Commission issued notice of an application, or if waivers are received, the application will be approved administratively without the filing of evidence to support the exception. If a written protest is received, the application will be set for hearing. The examiner notes the Hemphill (Granite Wash), Mendota, NW (Granite Wash), Parks (Granite Wash), and West Park (Granite Wash) Fields operate under field rules which include special provisions allowing the administrative approval of Rule 38 exceptions, as Devon has proposed.

Devon proposes a tolerance "box" rule for horizontal drainhole wells that would allow drainholes to deviate 47 feet from either side of their permitted track, without the necessity of obtaining a Statewide Rule 37 exception. As drilled wells for which all points are located within the "box" would be considered in compliance with their drilling permits. Similar box rules have been adopted in several other Granite Wash fields adjacent to the Mathers Ranch (Granite Wash) Field.

In some cases, 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. Devon requests that field rules be adopted to allow for the Mathers Ranch (Granite Wash) Field to provide

for an off-lease penetration point. Without a field rule authorizing off-lease penetration points, Statewide Rule 86 requires that the penetration point of a horizontal drainhole be on the lease. In the subject field, Devon believes a well may require up to 600 feet of horizontal displacement to make the 90 degree turn from vertical to horizontal. The proposed rule would allow operators to drill horizontal wells with the penetration point, as defined by Rule 86, off of the associated lease, as long as no take-point is closer than 467' to the lease line for the perpendicular distance measured along the horizontal drainhole and 200' to the lease line for the first and last take points. Devon proposes that an off-lease penetration point be allowed after notice to the mineral owners of the off-lease tract on which the penetration point is to be located and if no protest is received.

Devon requests its proposed field rules for the Mathers Ranch (Granite Wash) Field allow for the implementation of "stacked lateral" wells. Devon believes that the Granite Wash formation in the subject field will require development in certain areas using multiple horizontal wells. This approach to development has been adopted in field rules governing the nearby Mendota, NW and the Hemphill (Granite Wash) Fields. Such a rule would allow stacked horizontal laterals within the Granite Wash correlative interval comprising the Mathers Ranch (Granite Wash) Field to be considered a single well for regulatory purposes. Devon proposes that in order to be considered a stacked lateral well, (1) there must be two or more horizontal drainhole wells on the same lease or pooled unit within the correlative interval for the field; (2) horizontal drainholes are drilled from different surface locations; (3) Each point of a stacked lateral's horizontal drainhole shall be no more than 300 feet in a horizontal direction from any point along the distance measured perpendicular to the orientation of the horizontal drainhole; (4) there shall be no vertical distance limitations between horizontal drainholes comprising the stacked lateral well.

Finally, Devon proposed to adopt a two-factor allocation formula for the Mathers Ranch (Granite Wash) Field that consists of 95% deliverability and 5% per well. Also, for purposes of additional allocation to horizontal wellbores, Devon concludes additional acreage shall be governed by Statewide Rule 86 and measured by the distance between the first and last take-point in a horizontal well.

At the hearing, the examiners concluded the no between well spacing for all wells completed in the field is inappropriate, as testimony given by Devon indicated that parallel horizontal wells 2,600 feet from one another are capable of establishing communication through hydrofrac stimulation. In response, Devon ultimately indicated the examiner's opinion non-adverse. By correspondence dated December 09, 2011, counsel on behalf of Devon amended its initial request of a no between well spacing requirement for all wells completed in the Mathers Ranch (Granite Wash) Field and requested that no between well spacing between vertical and horizontal wells be adopted, along with 1,200 feet between well spacing between horizontal wells.

Also at the hearing, Devon indicated five vertical wells were currently producing from the Mathers Ranch (Granite Wash) Field. The examiner requested that Devon provide volumetric calculations to demonstrate the drainage area a vertical well completed in the Mathers Ranch (Granite Wash) Field may encounter. By correspondence dated December 09, 2011, counsel on behalf of Devon withdrew the 320 acre optional units that were initially requested.

FINDINGS OF FACT

1. Notice of this hearing was given to all persons entitled to notice.
2. The Mathers Ranch (Granite Wash) Field was discovered in October 1973 at an average depth of 11,550 feet. The field is actively being developed with horizontal drainhole wells.
3. The November 2011 Proration Schedule indicates there are five producing wells and two operators active in the field. Cumulative production from the field is 1.6 BCFG and 40 MBC.
4. Field rules for the Mathers Ranch (Granite Wash) Field are currently governed by Statewide Rules.
5. The gross interval of the Granite Wash Formation is continuous across the Mathers Ranch (Granite Wash) Field.
6. The Granite Wash Formation comprising the Mathers Ranch (Granite Wash) Field includes a gross thickness of 1,500 feet and is comprised of lenticular sand members.
7. The Mathers Ranch (Granite Wash) Field should be designated as the correlative interval between 10,097 feet to 11,400 feet, as shown in the Devon Energy Production Co., L.P., Mathers Ranch, Well No. 5 (API No. 42-211-30088), Section 165, H&TC Survey, Hemphill County, Texas
8. The proposed minimum lease line spacing of 467 feet from the nearest lease line, 200 feet for the first and last take points, 1,200 feet between horizontal well spacing, and no limitation between horizontal and vertical wells, will provide flexibility in developing the Mathers Ranch (Granite Wash) Field.
9. A spacing rule which utilizes "take-points" in a horizontal well for determination of distances to lease lines will prevent waste.
 - a. 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.
 - b. Adoption of the proposed dual lease line spacing rule will allow the horizontal drainhole length on a lease to be maximized.
10. A density rule providing for 640 acres is appropriate for the field.

- a. A horizontal well completed in the Mathers Ranch (Granite Wash) Field is capable of establishing a radial length of 2,600 feet from a horizontal well bore.
 - b. A drainage radius of 2,600 feet equates to approximately 487 acres of radial drainage.
11. Allowing off-lease penetration points after notice to mineral owners of the offsite tract will result in maximum producing drainhole length, thereby increasing ultimate recovery from horizontal drainhole wells.
 12. Allowing off-lease penetration points to be incorporated into the Mathers Ranch (Granite Wash) Field will increase the ultimate recovery of hydrocarbons.
 13. The proposed "stacked lateral" rule for the Mathers Ranch (Granite Wash) Field will allow multiple stacked horizontal drainholes on the same lease, within the fields designated correlative interval, to be considered a single well for regulatory purposes.
 14. For purposes of assignment of additional acreage pursuant to Statewide Rule 86, the distance between the first and last take-point in a horizontal well should be used.
 15. Allocation based on 95% deliverability and 5% per well will satisfy statutory requirements.
 16. Absolute Open Flow (AOF) status for the Mathers Ranch (Granite Wash) Field is appropriate at this time, as there is a 100% market demand for all gas produced from the field.

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 Mathers Ranch (Granite Wash) Field on a temporary basis of 24 months 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 the field rules for the Mathers Ranch (Granite Wash) Field be adopted on a temporary basis of 24 months, as ultimately proposed by Devon.

Respectfully submitted,



Brian K. Fancher
Technical Examiner



Gene Montes
Legal Examiner