November 7, 2008

RULE 37 CASE NO. 0245869
DISTRICT 06

APPLICATION OF CHESAPEAKE OPERATING, INC. FOR AN EXCEPTION TO STATEWIDE RULE 37 TO DRILL WELL NO. 4 ON THE GREEN GAS UNIT LEASE, OAK HILL (COTTON VALLEY) FIELDS, GREGG COUNTY, TEXAS.

APPEARANCES:

FOR APPLICANT CHESAPEAKE OPERATING, INC.:
George Neale
Robert Hilty
Cary McGregor

FOR PROTESTANT ANADARKO E & P COMPANY, L.P.:
Ana Maria Marsland-Griffith
Andrew Mehlhop
Rick Johnston

FOR OBSERVER TEXAS GENERAL LAND OFFICE:
James Irwin

PROPOSAL FOR DECISION

PROCEDURAL HISTORY

APPLICATION FILED:	January 12, 2006
NOTICE OF HEARING:	June 13, 2008
HEARING DATES:	July 30 and 31, 2008 August 6, 2008
RECORD CLOSED:	September 18, 2008
HEARD BY:	Mark Helmueller - Hearings Examiner Donna Chandler - Technical Examiner
PFD CIRCULATION DATE:	November 7, 2008

STATEMENT OF THE CASE

Chesapeake Operating, Inc. ("Applicant" or "Chesapeake") seeks an exception to Statewide Rule 37 to drill Well No. 4 on the Green Gas Unit Lease, Oak Hill (Cotton Valley) Field. The Green Gas Unit is an irregularly shaped 683 acre pooled unit which includes land owned by the State of Texas and private lands. The 307.8 acres owned by the state is an approximately 10 mile long section of the Sabine River. The remaining 375.2 acres are privately owned tracts. This configuration is very atypical. A square 640 acre unit is one mile wide, but this unit is over 10 miles wide. The proposed well would be the fourth well on the unit. Chesapeake has also requested an exception to the maximum diagonal requirement for the proposed proration unit associated with the Green No. 4 well. The application is protested by Anadarko E & P Company, L.P. ("Anadarko"), the offset operator on both sides of the river tract where the proposed well is located.

The Oak Hill (Cotton Valley) Field is subject to spacing requirements of 467 feet minimum distance to the nearest lease line and 1200 feet minimum distance between wells. The proposed bottom hole location is in the center of the river tract, 75 feet from the offsetting property on both sides. A copy of the plat filed with Applicant's W-1 (Application for Permit to Drill, Deepen, Plug Back or Re-Enter) is attached for reference.

The maximum diagonal requirement for the Oak Hill (Cotton Valley) Field is 5500 feet for 160 acre units, 3250 feet for 80 acre units, and 2100 feet for 40 acre units. Chesapeake proposes two alternative proration units for its Green No. 4 Well. The first unit includes176 acres with a diagonal of approximately 58,000 feet. This lengthy diagonal is required because the proposed unit assigns a portion of the entire length of the Sabine River tract to the Green No. 4 Well. Alternatively, Chesapeake proposes a 40 acre proration unit with a diagonal of approximately 15,815 feet. The 40 acre proration unit assigns a portion of the river tract from the general vicinity of the proposed well to the easternmost terminus of the river tract, approximately 3 miles from the proposed location.

APPLICANT'S POSITION AND EVIDENCE

The Oak Hill (Cotton Valley) Field is productive from the lower Taylor sand, a uniform marine bar deposit, and from the Upper Cotton Valley, a group of independent sand lenses formed in a fluvial depositional environment. Both formations are recognized as tight and require fracture stimulation of the producing interval.

The Taylor sand is present throughout the Green Gas Unit. Chesapeake's structural cross section of wells over the entire area shows that the Taylor sand thins and becomes more water saturated on an east to west trend. The Upper Cotton Valley is described as "hit and miss" and does not exhibit a reliable trend within the Green Gas Unit.

The Oak Hill (Cotton Valley) Field underlies the entire unit as shown by Chesapeake's net pay and isopach maps for the area. However, Chesapeake contends the Cotton Valley is thicker and less water saturated in the eastern portion of the Green Gas Unit. Chesapeake's maps and volumetric analysis of the Green Gas Unit reflect the entire Cotton Valley interval.

Chesapeake currently operates three wells on the Green Gas Unit. The Green Gas Unit No. 1 was completed in December 1995 on an 80 acre pooled unit comprised of 62.8 acres of the State's Sabine River lands and 17.2 acres of private property adjacent to the river. The Green No. 1 Well has produced over 1 Bcf since it was completed.

The Green No. 2 and No. 3 wells were drilled and completed in January 2006. Performance from both of these wells has been marginal. Cumulative production from the Green No. 2 is .091 Bcf while the Green No. 3 is .18 Bcf. These two wells were drilled under an amended unit agreement which increased the overall size of the unit to its present 683 acres by adding an additional 358 acres of privately owned land and 245 acres of the State's Sabine River lands. Additionally, the proration units for the Green No. 1, Green No. 2 and Green No. 3 were drawn so that each well included a portion of the complete 10 mile Sabine River lands, and a portion of the privately held land. Exceptions to the maximum diagonal requirements were approved administratively for these three wells.

The proposed Green No. 4 well would be located on a portion of the Sabine River acreage which was originally assigned to the Green No. 1 well. Chesapeake claims that the Green No. 4 is necessary to prevent confiscation as the three existing wells will not recover a significant portion of the remaining recoverable natural gas underlying under the Green Gas Unit. As of the hearing date, the three existing wells cumulative production was 1.274 Bcf. The estimated ultimate recovery from the 3 existing wells is 1.468 Bcf of natural gas. Chesapeake's volumetric analysis shows 62.1 Bcf in currently recoverable reserves underlying the entire Green Gas Unit, and 23 Bcf underlying the easternmost 160 acres of the State's river lands. Chesapeake therefore urges that an exception is necessary because there are significant reserves which will not be recovered by the existing wells.

Chesapeake admits regular locations exist on the unit. However, it claims a well drilled at a regular location, while productive, would not be economic to drill. The nearest offset well to the portion of the unit with regular locations is the Gibson "A" No. 2 Well. The Gibson "A" No. 2 Well first reported production in October 2007. Through April 2008, the cumulative production from the well is .094 Bcf. Chesapeake's EUR for the well ranges between .16 and .22 Bcf based only on the current completion in the Taylor sand. Chesapeake claims that with this EUR, the Gibson "A" No. 2 Well will never be profitable using current economic projections. Chesapeake therefore asserts that no reasonable regular locations exist on the Green Gas Unit.

Chesapeake also relies on maps depicting the drainage patterns of the existing wells as estimated by Anadarko. Based on these maps, Chesapeake asserts that some of the acreage in the river tract is being drained by offsetting wells. Chesapeake urges it therefore needs the well at the proposed location to protect its correlative rights.

Chespeake also requests an exception to the maximum diagonal requirement in the field. Chesapeake proposes that the Green No. 4 well further split the Sabine River lands so that a portion is assigned to all four wells. This results in several "ribbons" necessary to create four proration units which will include all of the State's river acreage. Each ribbon is approximately 10 miles in length. Alternatively, Chesapeake requests that the acreage for the Green No. 1 well be split with the Green No. 4 well with exceptions to the maximum diagonal requirement consistent with the alternative proposed 160 acre unit.

PROTESTANT'S POSITION AND EVIDENCE

Anadarko contends that Chesapeake failed to submit the required evidence to support a well at the exception location because there are multiple regular locations available on the 683 acre Green Gas Unit. It is undisputed that regular locations on the Green Gas Unit will encounter both the Taylor and Upper Cotton Valley sands. While Chesapeake argues its proposed location is more reasonable due to the economic risk associated with developing the regular locations, Anadarko asserts that the proper standard for supporting an exception to prevent confiscation is whether the exception is *necessary*. Anadarko further notes that no prior Commission case has granted an exception to spacing rules on the basis of economic risk alone. Anadarko urges that until Chesapeake has developed its regular locations that it cannot seek exception locations on the basis of confiscation.

Anadarko also questions the technical basis for Chesapeake's confiscation case. Anadarko first argued that Chesapeake's central premise of an east-west trend in the Oak Hill (Cotton Valley) Field was based on a flawed analysis. Anadarko claims that Chesapeake inappropriately evaluated the Oak Hill (Cotton Valley) Field in its hydrocarbon pore volume and net pay maps by aggregating the Upper Cotton Valley sand with the Taylor sand in its analysis. The Taylor sand is a structural trap while the Upper Cotton Valley is a series of laterally discontinuous sands which form stratigraphic traps. Stratigraphic traps are not likely to be affected by the syncline Chesapeake posits for the formation. Further, published studies of the Oak Hill (Cotton Valley) Field relied on by both parties specifically caution against using the Upper Cotton Valley as a predictive tool of estimated ultimate recovery (EUR) trends. Anadarko therefore urges that Chesapeake's maps are fatally flawed as the aggregate values do not establish a trend for all of the contributing sands and do not accurately reflect recoverable reserves.

Anadarko also challenges Chesapeake's assertion that the Gibson "A" No. 2 Well will never be profitable using current economic projections. Anadarko's own economic analysis predicts that the Gibson "A" No. 2 Well will be economic currently, and will be even more profitable if the well is later completed in the Upper Cotton Valley sand. Anadarko also notes that with the unpredictability of Upper Cotton Valley production in the field, it is inappropriate to rule out potential reserves from that formation contributing to production at the regular locations on the Green Gas Unit.

Finally, Anadarko urges the additional acreage added to the Green Gas Unit was a deliberate attempt to support a drilling program for 16 additional wells on the easternmost river acreage without obtaining density exceptions. Anadarko notes that 358 acres were leased from the Eastman Chemical Company underlying a large facility it operates and added to the Green Gas Unit with additional State lands in the Sabine River. However, the Eastman lease agreements include covenants prohibiting the use of the surface or subsurface for development of the underlying mineral estate. Anadarko argues that the restrictions in the lease are an effective moratorium on the development of the Eastman acreage. It believes the only purpose of agreeing to such restrictions was to support drilling at greater density along the river acreage through gerrymandering the proration units to encompass the entire unit. Anadarko admits the proration units technically comply with Commission rules if a maximum diagonal exception is obtained. However, Anadarko argues that this process is designed to circumvent Commission's rules regarding density and double assignment of acreage.

EXAMINERS' OPINION

Chesapeake contends it is entitled to an exception at the proposed location for its Green No. 4 Well. Chesapeake argues that the proposed well is necessary to prevent confiscation on the full 683 acre unit. Alternatively, Chesapeake argues that the proposed well is necessary to prevent confiscation on the easternmost 160 acres of the unit. Finally, Chesapeake seeks an exception to the maximum diagonal requirement in order to assign a portion of the Sabine river acreage and the privately held acreage to each of its 4 wells on the 683 acre unit.

The examiners recommend that Chesapeake's application be denied because Chesapeake did not provide reliable evidence to support an exception at the proposed location. Additionally, Chesapeake cannot subdivide the 683 acre unit identified in its drilling permit application to argue that it is entitled to a well on a portion of the unit.

Exceptions to Prevent Confiscation

To establish entitlement to an exception to Rule 37 to prevent confiscation, an applicant must show that absent the applied-for well, it will be denied a reasonable opportunity to recover its fair share of hydrocarbons currently in place under the lease, or its equivalent in kind. The applicant must satisfy a two pronged test: 1) the applicant must show that it will not be afforded a reasonable opportunity to recover its fair share of hydrocarbons currently in place by drilling wells at regular locations; and 2) the applicant must show that the proposed irregular location is reasonable.

It is the basic right of every landowner or lessee to a fair and reasonable chance to recover the oil and gas under his property as recognized by the Texas Supreme Court in *Gulf Land Co. v. Atlantic Refining Co.*, 131 S.W.2d 73, 80 (Tex. 1939). Denial of that fair chance is confiscation within the meaning of Rule 37. *Id.* Because an application cannot seek redress for past drainage, an applicant must provide evidence that it will not be afforded an opportunity to recover the reserves currently in place under its lease - this is its "fair share".

Chesapeake Failed to Establish the Necessity for an Exception to Prevent Confiscation.

Chesapeake failed to establish that it is entitled to a well at the proposed location to prevent confiscation on the Green Gas Unit. Chesapeake submitted a volumetric estimate of 62.1 Bcf in current recoverable reserves underlying the entire 683 acre Green Gas Unit. Chesapeake argues its existing three wells will only recover 1.5 Bcf and that the proposed well is therefore necessary to give it an opportunity to recover its fair share of reserves. As discussed below, Chesapeake's volumetric analysis is flawed and does not provide a reliable estimate of the remaining reserves underlying the unit.

Chesapeake's estimates of the current recoverable reserves underlying the full 683 acre unit are unreliable because it inappropriately consolidated the Upper Cotton Valley and Taylor when analyzing the remaining reserves. Because each interval has different characteristics, they must be analyzed separately. Chesapeake's own geologist confirmed this when describing the characteristics of the Upper Cotton Valley interval as a "hit or miss" play.

Chesapeake's analysis lumped the two intervals together and then mapped the cumulative total to provide the basis for the volumetric analysis. The proper methodology here would have been to separately map each interval, perform separate volumetric analyses and then add the volumetric results together to arrive at an accurate and reliable estimate of the remaining recoverable reserves. Because the proper methodology was not followed, it is not reliable evidence to support an exception based on confiscation. In the absence of reliable volumetrics, there are insufficient facts upon which to base Chesapeake's application for an exception based on confiscation.

The examiners also question the reliability of Chesapeake's study based on the extrapolation of estimated reserves from the eastern 160 acres to the full 10 mile wide 683 acre Green Gas Unit. Normally, the issue of reservoir characteristics would not be an issue on a single pooled unit. However, the issue is relevant here to the unusual configuration of a 10 mile wide unit.

It is unquestioned that there has been heavy development in the Oak Hill (Cotton Valley) Field in the easternmost area of the Green Gas Unit. However, there have been very few wells drilled in the western area. Further, Chesapeake argues that the closest well drilled to the regular locations on the Green Gas Unit, the Gibson "A" No. 2 Well, will only be a marginal well with .2 Bcf of production. The absence of well control in the western portion of the unit, coupled with the limited expected performance of the Gibson "A" No. 2 well indicate that Chesapeake's estimates of over 60 Bcf of recoverable reserves are speculative at best.

Chesapeake's witnesses claim they need the applied-for irregular location to allow them to have a commercial well. However, neither Chesapeake nor any other operator is guaranteed a well that meets its self-imposed criteria for economic viability - each mineral interest owner is entitled to a fair and equal opportunity to recover its fair share of the hydrocarbons under its tract. Economic requirements: 1) vary from company to company (applicant to applicant); 2) are not evenly applied; and, 3) are not specific to the property rights on a given tract. An operator's economic requirements therefore cannot be the basis for granting an exception to Statewide Rule 37 to protect correlative rights. See *Rule 37 Case No. 0206334: Application of Enron Oil & Gas Company for an exception to Statewide Rule 37 to Drill Its No. 17 Well, Frank Reed 117 Lease, Sawyer (Canyon) Field, Sutton County, Texas.*

Rule 37 is equally applicable to all operators. While the non-discriminatory application of Commission spacing rules may result in some economic loss by an operator, this loss does not amount to legal confiscation. See *Railroad Commission v. Manziel*, 361 S.W.2d 560, 565 (Tex. 1962); *Railroad Commission v. Fain*, 161 S.W.2d 498, 500 (Tex. Civ. App. -- Austin 1942, writ dism'd w.o.m.). The determination of what is a fair opportunity must be based on the relationship between potential drillsite locations and the currently recoverable reserves under a tract, not on economic viability guidelines that each operator selects for itself.

Chesapeake's economic assessment that regular wells would not be commercial is not reliable evidence for ruling out the other regular locations on the Green Gas Unit. The claim that it would not be economic for Chesapeake to drill a regular well is not sufficient to establish that an exception at the proposed location is necessary to afford it a reasonable opportunity to recover the reserves in the Green Gas Unit. Therefore, the examiners do not believe that this argument supports Chesapeake's request for a well at the proposed location.

Chesapeake cannot Legally Assert a Confiscation Exception on an Alternative 160 acre unit.

Chesapeake alternatively argued that it is entitled to a fourth well on the easternmost 160 acres to prevent confiscation. This argument should be rejected because Chesapeake has not applied for a well at an exception location on a 160 acre unit, and cannot carve out a portion of its Green Gas Unit for consideration of an exception based on confiscation.

When an operator voluntarily designates a pooled unit for the purpose of permitting wells or for subsequent production, any application for additional wells on the designated pooled unit must stand or fall on the basis of the existing unit. Chesapeake created the Green Gas Unit by pooling several tracts together for the purpose of cooperative development of 683 acres. When it formed the pooled unit, it assigned its one existing well, the Green No. 1 for production purposes. It then permitted and drilled two additional wells on the 683 acre unit. The current application for a fourth well therefore must be considered under the existing 683 acre pooled unit.

This is particularly relevant when considering the potential application of Statewide Rule 38(d)(3).[1] The Commission Form P-12 (Certificate of Pooling Authority) filed with the permit applications for the Green No. 2 and No. 3 wells, as well as the proposed Green No. 4 well identifies 7 tracts which are substandard under the field rules for the Oak Hill (Cotton Valley) Field.

[1] Statewide Rule 38(d)(3) requires Commission approval of the dissolution of a pooled unit where the pooled unit includes any tract composed of substandard acreage in the field.

Chesapeake could potentially dissolve the existing pooled unit. After Commission approval of the unit dissolution under Statewide Rule 38(d)(3), it could then create a new pooled unit on 160 acres. However, until the Commission approves dissolution of the Green Gas Unit, any application for a new well must be evaluated on the basis of the 683 acre unit Chesapeake voluntarily identified when it assigned the Green No. 1 well to the unit, and permitted and drilled the Green No. 2 and No. 3 wells. Accordingly, Chesapeake's alternative argument that it is entitled to a well on the easternmost 160 acres of the Green Gas Unit is not a legally permissible basis to support an exception to prevent confiscation.

CONCLUSION

Chesapeake failed to establish that is entitled to an exception to Rule 37 to prevent confiscation of natural gas underlying the Green Gas Unit in the Oak Hill (Cotton Valley) Field. Accordingly, the application for an exception to Rule 37 should be denied.

Based on the record in this Docket, the examiners recommend adoption of the following Findings of Fact and Conclusions of Law.

FINDINGS OF FACT

1. Chesapeake Operating, Inc. ("Applicant" or "Chesapeake") seeks an exception to Statewide Rule 37 to drill Well No. 4 on the Green Gas Unit Lease, Oak Hill (Cotton Valley) Field. Chesapeake has also requested an exception to the maximum diagonal requirement for the proposed proration unit associated with the Green No. 4 well. Chesapeake appeared at the hearing and presented evidence in support of its application.

2. The application is protested by Anadarko E & P Company, L.P. ("Anadarko"), the offset operator on both sides of the river tract where the proposed well is located. Anadarko also appeared at the hearing.

3. The Green Gas Unit is an irregularly shaped 683 acre pooled unit which includes land owned by the State of Texas and private lands. The 307.8 acres owned by the state is an approximately 10 mile long section of the Sabine River. The remaining 375.2 acres are privately owned tracts. The proposed well would be the fourth well on the unit.

4. The Oak Hill (Cotton Valley) Field is subject to spacing requirements of 467 feet minimum distance to the nearest lease line and 1200 feet minimum distance between wells. The maximum diagonal requirement for the Oak Hill (Cotton Valley) Field is 5500 feet for 160 acre units, 3250 feet for 80 acre units, and 2100 feet for 40 acre units.

5. The proposed bottom hole location is in the center of the river tract, 75 feet from the offsetting property on both sides.

6. Chesapeake proposes two alternative proration units for its Green No. 4 Well. The first unit includes176 acres with a diagonal of approximately 58,000 feet. This lengthy diagonal is required because the proposed unit assigns a portion of the entire length of the Sabine River tract to the Green No. 4 Well. Alternatively, Chesapeake proposes a 40 acre proration unit with a diagonal of approximately 15,815 feet. The 40 acre proration unit assigns a portion of the river tract from the general vicinity of the proposed well to the easternmost terminus of the river tract, approximately 3 miles from the proposed location.

7. Regular locations exist on the Green Gas Unit in the Oak Hill (Cotton Valley) Field.

8. Chesapeake did not provide evidence establishing that regular locations on the Green Gas unit would not afford it a reasonable opportunity to recover the reserves currently underlying the subject lease in the Oak Hill (Cotton Valley) Field.

9. Chesapeake did not provide reliable evidence of the estimated current recoverable reserves underlying the Green Gas Unit.

   a. The Oak Hill (Cotton Valley) Field is productive from the lower Taylor sand, a uniform marine bar deposit, and from the Upper Cotton Valley, a group of independent sand lenses formed in a fluvial depositional environment.

   b. The Taylor sand is a structural trap while the Upper Cotton Valley is a series of laterally discontinuous sands which form stratigraphic traps.

   c. Both formations are recognized as tight and require fracture stimulation of the producing interval.

   d. The Upper Cotton Valley is described as “hit and miss” and does not exhibit a reliable trend within the Green Gas Unit.

   e. Chesapeake inappropriately evaluated the Oak Hill (Cotton Valley) Field in its hydrocarbon pore volume and net pay maps by aggregating the Upper Cotton Valley sand with the Taylor sand in its analysis.

   f. Published studies of the Oak Hill (Cotton Valley) Field relied on by both parties specifically caution against using the Upper Cotton Valley as a predictive tool of estimated ultimate recovery (EUR) trends.

   g. Chesapeake’s analysis considered the two intervals together and then mapped the cumulative total to provide the basis for the volumetric analysis.

CONCLUSIONS OF LAW

1. Proper notice of hearing was timely given to all persons legally entitled to notice.

2. All things have occurred to give the Commission jurisdiction to decide this matter.

3. Applicant failed to establish that an exception to Statewide Rule 37 for a well at the applied-for location is necessary to prevent confiscation or waste.

RECOMMENDATION

The examiners recommend that Chesapeake's application be denied in accordance with the attached final order.

Respectfully submitted,

Mark J. Helmueller Hearings Examiner	Donna Chandler Technical Examiner