



RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

August 23, 2013

Rule 37 Case No. 0271793
Status No. 720326
District 09

APPLICATION OF CHESAPEAKE OPERATING, INC. FOR A RULE 37 EXCEPTION FOR ITS CANUCKS LEASE, WELL NO. 1H, NEWARK EAST (BARNETT SHALE) FIELD, TARRANT COUNTY, TEXAS.

APPEARANCES:

FOR APPLICANT:

Glenn Johnson, Attorney
Erin Rolstad, Attorney
David Triana, Petroleum Engineer
Bill Spencer, Regulatory Consultant
Rachael Pollard, Reservoir Engineer

APPLICANT:

Chesapeake Operating, Inc.

FOR PROTESTANTS:

David Meyer

REPRESENTING:

Self, Gina Gober & Mary Layne

PROPOSAL FOR DECISION

PROCEDURAL HISTORY

APPLICATION FILED:

November 1, 2012

NOTICE OF HEARING:

December 20, 2012

HEARD BY:

Marshall Enquist - Hearings Examiner
Andres J. Trevino - Technical Examiner

HEARING DATE :

February 22, 2013

PFD CIRCULATION DATE:

August 23, 2013

STATEMENT OF THE CASE

Chesapeake Operating, Inc. ("Chesapeake" or "Applicant"), seeks an amended drilling permit pursuant to the provisions of Statewide Rule 37 for the Canucks Lease, Well No. 1H, a horizontal well in the Newark, East (Barnett Shale) Field, Tarrant County, Texas. Chesapeake received a drilling permit on November 1, 2012 to drill its Well No. 1H on its pooled unit, which consisted of 278.99 acres at that

time. The permit was restricted by two “no perforation zones” (“NPZs”) and was approved administratively.

On the same day that Chesapeake received the grant of its drilling permit restricted by NPZs, November 1, 2012, Chesapeake filed a new permit application for its 278.99-acre Canucks Lease, seeking removal of the two NPZs on its Well No. 1H.

The surface location of Well No. 1H is off-unit. It is 299 feet north of the north line of the lease and 904 feet east of the east line of the lease and 299 feet from the north line and 904 feet from the east line of the R. Collins Survey, A-351. The proposed penetration point is 444 feet from the northwest line and 844 feet from the east line of the lease. The terminus is 855 feet from the northwest line and 158 feet from the east line of the lease and 662 feet from the west line and 158 feet from the south line of the W.S. Sublett Survey, A-1443. The lateral runs on an NW-SE trend.

Special field rules for the Newark, East (Barnett Shale) Field provide for 330 foot leaseline spacing. As to horizontal wells, where the horizontal portion of the well is cased and cemented back above the top of the Barnett Shale formation, the distance to any property line, leaseline, or subdivision line is calculated based on the distance to the nearest perforation point in the well, and not based on the penetration point or terminus. Where an external casing packer is placed in a horizontal well and cement is pumped above the external casing packer to a depth above the top of the Barnett Shale formation, the distance to any property line, leaseline, or subdivision line is calculated based on the top of the external casing packer or the closest open hole section in the Barnett Shale. The standard drilling and proration unit for the Newark, East (Barnett Shale) Field is 320 acres. An operator is permitted to form optional drilling units of 20 acres.

A Rule 37 exception is needed for the proposed Canucks Lease, Well No. 1H, because the section of the well proposed to be perforated is closer than 330 feet to the boundary of tracts which are internal to the unit and unleased. David Meyer appeared at the hearing in protest and represented himself, Gina Gober and Mary N. Layne, as the owners of Tracts 20 and 21. Tract 20 is owned by Mary N. Layne and Tract 21 is owned by David Meyer and Gina Gober.

DISCUSSION OF THE EVIDENCE

CHESAPEAKE OPERATING, INC.

Chesapeake seeks removal of the “no perforation zones” (“NPZs”) on its Canucks Lease, Well No. 1H imposed on the well by Chesapeake’s November 1, 2012 Commission-approved well permit. The NPZs are marked in red on the attached Exhibit I. At the time this permit was approved, the Canucks Lease contained 278.99 leased acres in a 304.345-acre unit. By the time of the present hearing, on February 22, 2013, Chesapeake had leased additional acreage for a total of 283.454 leased acres (see attached Exhibit II). Chesapeake notes that the unit contains a total of 304.345 acres and that the unit is 93 percent leased. Chesapeake is engaged in ongoing leasing activities.

An isopach map derived from the logs of nearby wells indicates the Barnett Shale is roughly 340 feet thick under the Canucks Lease. Devon Energy Production Co., LLP conducted a study of the Tarrant/Denton/Wise County area which calculated total gas in place at 139 BCF per square mile in those counties, based on an average formation thickness of 433 feet, porosity of 0.04% and TOC (Total Organic Carbon) of 4%. Using that study, and correcting for the thickness of the Newark, East (Barnett Shale) Field under the Canucks Lease and the leased acreage, Chesapeake calculated the original gas in place in the 282.454 leased acres of the Canucks Lease to be 48.34 BCF. Assuming a recovery factor of 46%, Chesapeake calculates there is 22.236 BCF of recoverable gas beneath the Canucks Lease.

Chesapeake reviewed the Newark, East (Barnett Shale) Field wells within a 3-mile radius of the proposed well, finding 117 wells within that radius. Plotting the estimated ultimate recovery (EUR) of each of the wells, Chesapeake developed a scatter diagram and used a least squares regression method to produce a trend line to predict the ultimate recovery of a well in the area based on its length. Based on the scatter diagram, with the drainhole length as the "x" axis and the estimated EUR in MMCF as the "y" axis, Chesapeake derived a well recovery formula of " $y = 0.5942x + 1734.3$ ". This formula indicates each incremental foot of wellbore will recover 594 MCF of gas. The 1734.3 is the amount of gas, in MMCF, that Chesapeake would expect to recover with a vertical wellbore and no incremental horizontal drainhole length. Thus, Chesapeake calculates its proposed full-length lateral of 4167 feet will recover 4.210 BCF of gas.

The current NPZs affect 1942 feet of the Canucks Lease, Well No. 1H. Absent the removal of the NPZs, Chesapeake argues it would be left with a wellbore lateral available to perforate that is only 2225 feet in length. The wellbore lateral available for perforation would recover only 3.056 BCF of gas, leaving 1.154 BCF unrecovered. Chesapeake argues that 1.154 BCF of gas is a significant quantity of hydrocarbons.

Failure to remove the NPZs would deprive Chesapeake and its lessors of the opportunity to produce their fair share of the recoverable hydrocarbons in place beneath the 282.454 leased acres of the Canucks Lease, which would be confiscation. Absent Rule 37 exceptions and the removal of the existing NPZs, Chesapeake and its lessors will not be able to recover their fair share of the recoverable hydrocarbons beneath the Canucks Lease.

PROTESTANTS' POSITION AND EVIDENCE

David Meyer

Mr. Meyer protests the confiscation and taking of his mineral rights by Chesapeake Energy in its application for an exception to Statewide Rule 37. He asserts that a grant of the Statewide Rule 37 permit would be tantamount to reverse forced pooling of the unleased properties that lie within the envelope that describes the distance 330 feet from the perforated well path. Mr. Meyer considers this the involuntary appropriation of his mineral rights. Mr. Meyer requested that, if the permit is granted, the protestants be granted the terms prescribed by the Commission for combined royalty and working interest in the Final Order of the Finley Resources case dated August 25, 2008.

EXAMINERS' OPINION

It is the basic right of every landowner or lessee to a fair and reasonable chance to recover the oil and gas under their 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.* To obtain an exception to Statewide Rule 37 to protect correlative rights and prevent confiscation, the applicant must show that 1.) it is not possible for the applicant to recover its fair share of minerals under its tract from regular locations; and 2.) that the proposed irregular location is reasonable.

The examiners are of the opinion that approval of the Statewide Rule 37 exception requested by Chesapeake is necessary to prevent confiscation and protect correlative rights. Chesapeake and its lessors are entitled to recover their fair share of gas from beneath the Canucks Lease. "Fair share" is measured by the currently recoverable reserves beneath the lease, which in this case is 22.236 BCF. The evidence shows that it is not feasible for Chesapeake to recover its fair share of gas from regular locations in the unit. The Canucks Lease Well No. 1H, at its full length of 4167 feet is projected to recover 4.210 BCF over its useful life.

The issues raised by Mr. Meyer, regarding the alleged confiscation of his mineral rights, may be remedied. First, Mr. Meyer has the option of leasing his minerals to Chesapeake so that he may receive royalty payments for the recovery of his proportional share of the minerals in the Canucks Lease. Second, if Mr. Meyer believes the terms he is being offered are not reasonable, he may file an application under the Mineral Interest Pooling Act and let the Commission determine whether he should be included in the unit. Third, Mr. Meyer has the right to choose to lease to another operator or to seek a permit himself and drill his own well on his mineral property. Although the practicality of this remedy is doubtful due to the small size of the protestant's tract, it is a potentially available remedy under the law. The remedy proposed by Mr. Meyer, that he be included in the unit as both a royalty owner and a working interest owner as per the Commission's Final Order dated August 25, 2008 in the Finley Resources case, is not available in this docket. The present docket is only a Statewide Rule 37 exception case.

The subject well, as currently permitted, is subject to two NPZ restrictions. The NPZs total 1942 feet and reduce the effective length of the wellbore to 2225 feet, which is projected to recover 3.056 BCF. The full wellbore, at 4167 feet, is projected to recover 4.210 BCF of gas. The NPZ restrictions result in the loss of 1.154 BCF of gas that would otherwise be recoverable.

The examiners find that 1.154 BCF of gas is a substantial quantity of hydrocarbons that would go unrecovered if the "no perf zone" restrictions are not removed. Failure to remove the wellbore restrictions would result in the confiscation of the fair share of reserves attributable to Chesapeake and its lessors.

The examiners recommend that Chesapeake be granted an exception to Statewide Rule 37 for its Well No. 1H on the 283.454 leased acres of the 304.345-acre Canucks Lease in Tarrant County based

on prevention of confiscation. 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. At least 10 days notice of this hearing was given to the designated operator, all offset operators, all lessees of record for tracts that have no designated operator, and all owners of record of unleased mineral interests for each affected adjacent tract.
2. Chesapeake Operating, Inc. (“Chesapeake” or “Applicant”), seeks an exception to Statewide Rule 37 for the Canucks Lease, Well No. 1H, in the Newark, East (Barnett Shale) Field in Tarrant County.
3. On November 1, 2012, Chesapeake obtained a permit to drill Well No. 1H, at a Rule 37 location on the 278.99 leased acres of the 304.345-acre Canucks Lease, approved administratively with a 4167 foot lateral and two NPZs totaling 1942 feet. The plat associated with that application is attached to this proposal for decision as Exhibit I, which is incorporated into this finding by reference.
4. On November 1, 2012, Chesapeake submitted an application to remove the two NPZs totaling 1942 feet from the lateral of its Well No. 1H on its Canucks Lease.
5. A Rule 37 exception is needed for the proposed Canucks Lease, Well No. 1H, because sections of the well proposed to be perforated are closer than 330 feet to the boundaries of certain tracts internal to the unit that are unleased.
6. Special field rules for the Newark, East (Barnett Shale) Field provide for 330 foot lease line spacing. As to horizontal wells, where the horizontal portion of the well is cased and cemented back above the top of the Barnett Shale formation, the distance to any property line, lease line, or subdivision line is calculated based on the distance to the nearest perforation point in the well, and not based on the penetration point or terminus. Where an external casing packer is placed in a horizontal well and cement is pumped above the external casing packer to a depth above the top of the Barnett Shale formation, the distance to any property line, lease line, or subdivision line is calculated based on the top of the external casing packer or the closest open hole section in the Barnett Shale. The standard drilling and proration unit for the Newark, East (Barnett Shale) Field is 320 acres. An operator is permitted to form optional drilling units of 20 acres.
7. The surface location of the Canucks Lease, Well No. 1H is located off-unit. It is 299 feet north of the north line of the lease and 904 feet east of the east line of the lease, and 299 feet from the north line and 904 feet from the east line of the R. Collins Survey, A-351. The proposed penetration point is 444 feet from the northwest line and 844 feet from the east line of the lease. The terminus is 855 feet from the northwest line and 158 feet from the east line of the lease and 662 feet from the west line and 158 feet from the south line of the W.S. Sublett Survey, A-1442.

The lateral runs in a NW-SE trend.

8. The Chesapeake application is opposed by the owners of two unleased tracts, Tract Nos. 20 and 21, internal to the Canucks Lease. The tracts are within 330 feet of the proposed lateral. Tract No. 20 is owned by Mary N. Layne and Tract No. 21 is owned by David Meyer and Gina Gober.
9. The Barnett Shale formation is present and productive under the entirety of the Canucks Lease.
10. At the time of the hearing, the leased acreage in the Canucks Lease had increased to 283.454 acres. The unit contains a total of 304.345 acres within its boundaries and is 93 percent leased.
11. To establish the currently recoverable reserves under the 283.454 leased acres of the 304.345 Canucks Unit, Chesapeake used a volumetric calculation:
 - a. Available well logs in the vicinity of the Canucks Lease indicate the thickness of the Barnett Shale locally to be 340 feet.
 - b. A study conducted by Devon Energy Production Co., LLP for the Tarrant/Denton/Wise County calculated original gas in place at 139 BCF per square mile in those counties, based on an average formation thickness of 433 feet, porosity of 0.04 and %TOC (Total Organic Carbon) of 4%. Using that study, and correcting for the thickness of the Newark, East (Barnett Shale) Field under the Canucks Lease and the leased acreage, Chesapeake calculated the original gas in place in the 283.454 leased acres of the Canucks lease to be 48.34 BCF. Assuming a recovery factor of 46%, Chesapeake calculates there is 22.236 BCF of recoverable gas beneath the Canucks Lease.
12. Chesapeake plotted drainhole length versus estimated ultimate recovery for 117 wells within a 3 mile radius of the applied-for well on a scatter diagram. Using the least squares regression method, Chesapeake derived a well recovery formula of " $y = 0.5942x + 1734.3$ ", with drainhole length represented by "x" and estimated EUR in MMCF represented by "y". This indicates that each incremental foot of horizontal wellbore will recover an additional 594 MCF of gas, while a purely vertical well would recover 1,734.3 MMCF.
13. The total usable length of the Well No. 1H drainhole, after removal of the 1942 feet of NPZs placed on the subject well under the permit granted on November 1, 2012, is 4167 feet. Applying Chesapeake's calculated well recovery formula, Well No. 1H will have an estimated ultimate recovery of 4.210 BCF of gas.
14. As permitted on November 1, 2012, Well No. 1H had 1942 feet of NPZs. Removal of the NPZs would result in the recovery of 1.154 BCF that would otherwise not be recoverable.
15. The amount of gas that would go unrecovered absent removal of the 1942 feet of NPZs, 1.154

BCF, is a significant quantity of hydrocarbons.

16. Chesapeake's fair share of gas in place beneath the Canucks lease is 22.236 BCF of gas.
 - a. The calculated EUR of Chesapeake's proposed well on the Canucks Lease, Well No. 1H, plus the EUR of two hypothetical wells that could only be partially completed at this time, would allow Chesapeake to recover 7.088 BCF.
 - b. The calculated EUR of Chesapeake's proposed well on the Canucks Lease, Well No. 1H, plus the calculated EUR of two hypothetical wells that could only be partially completed at this time, for a total of 7.088 BCF of gas, is less than Chesapeake's fair share of the recoverable reserves in place beneath the Canucks Lease, which is 22.236 BCF of gas.
17. The proposed location of the Canucks Lease Well No. 1H is reasonable.
 - a. Based on 500 foot well spacing, the Canucks Lease will accommodate three wells.
 - b. If the location of the Canucks Lease Well No. 1H were moved to the southwest, it would interfere with the future placement and recoveries of Well Nos. 2H and 3H.
18. Chesapeake continues its attempt to sign unleased mineral interest owners in the Canucks Lease.

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. Approval of a Rule 37 exception for the proposed location of the Canucks Lease, Well No. 1H, as proposed by Chesapeake Operating, Inc. is necessary to prevent confiscation and protect the correlative rights of the mineral owners.

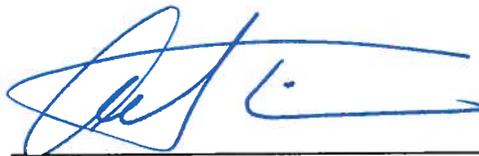
RECOMMENDATION

The examiners recommend that the application of Chesapeake Operating, Inc., for a Statewide Rule 37 exception for the proposed location of the Canucks Lease, Well No. 1H in the Newark, East (Barnett Shale) Field, Tarrant County, be granted as necessary to prevent confiscation and protect correlative rights.

Respectfully submitted,

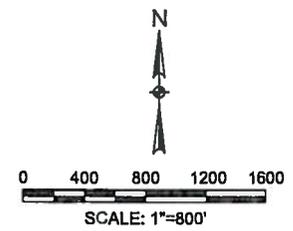


Marshall Enquist
Hearings Examiner



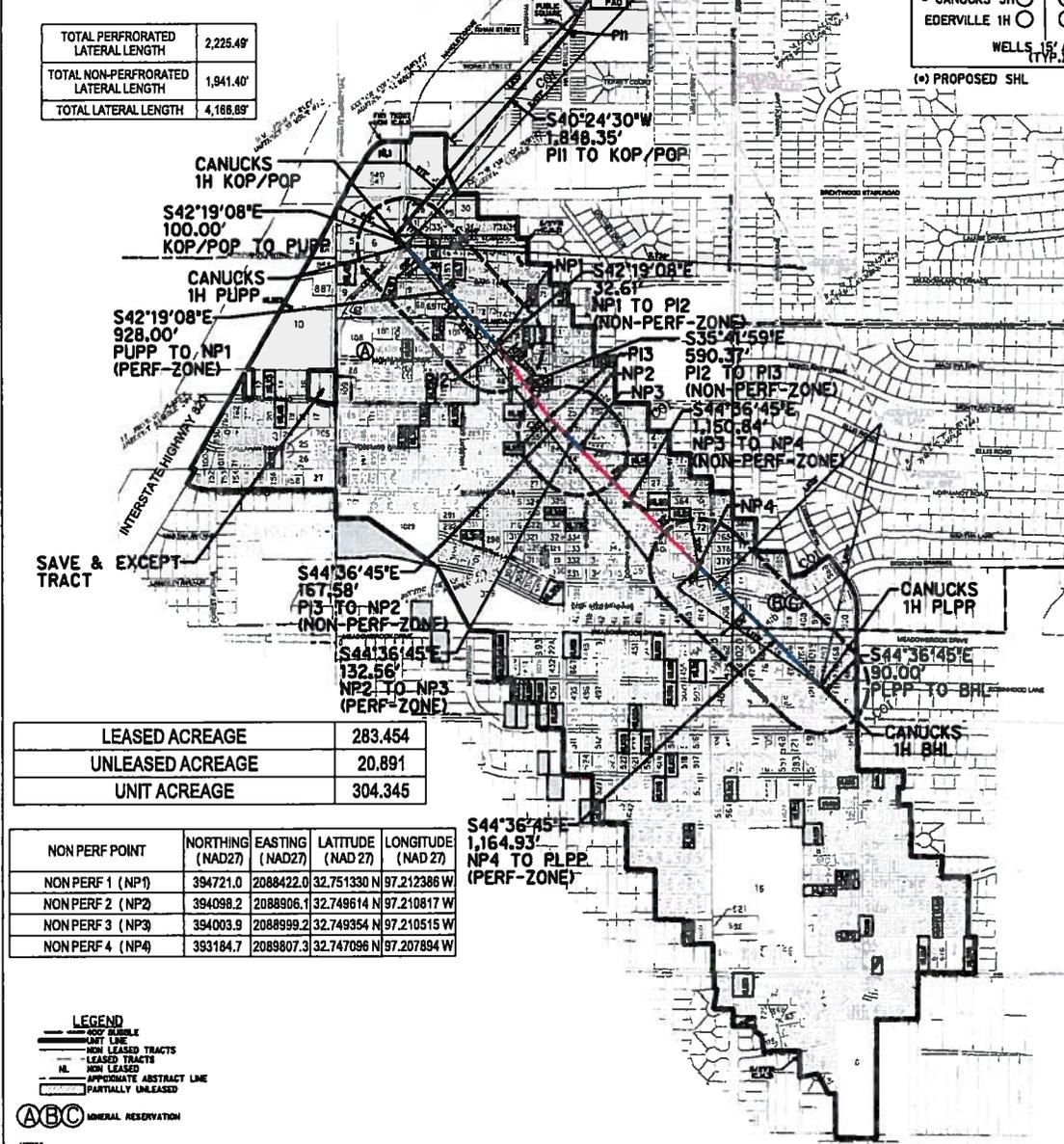
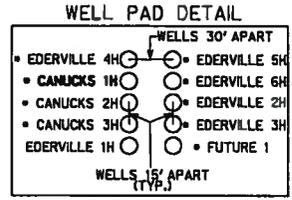
Andres Trevino
Technical Examiner

CANUCKS 1H WELL	NORTHING (NAD27)	EASTING (NAD27)	LATITUDE (NAD 27)	LONGITUDE (NAD 27)	NORTHING (NAD83)	EASTING (NAD83)	LATITUDE (NAD 83)	LONGITUDE (NAD 83)	UNIT LINE	SURVEY LINE
SURFACE HOLE (SHL)	397263.7	2089158.2	32.758314 N	97.209869 W	6961301.3	2364958.8	32.758444 N	97.210260 W	1533' SW	1533' SW 299' N 904' E
KICK OFF POINT/POINT OF PENETRATION (KOP) / (POP)	395481.0	2087730.0	32.753424 N	97.214630 W	6959506.1	2363547.7	32.753555 N	97.214921 W	444' NW 844' E	2092' N 407' W
PROPOSED UPPER PERFORATION POINT (PUPP)	395407.0	2087797.3	32.753220 N	97.214412 W	6959431.8	2363615.7	32.753351 N	97.214703 W	720' N 846' E	2166' N 474' W
PROPOSED LOWER PERFORATION POINT (PLPP)	392355.8	2090625.3	32.744811 N	97.205241 W	6956407.3	2366472.7	32.744942 N	97.205532 W	779' NW 251' E	221' S 597' W
BOTTOM HOLE LOCATION (BHL)	392291.5	2090688.5	32.744834 N	97.205036 W	6956343.9	2366536.5	32.744765 N	97.205327 W	855' NW 188' E	158' S 682' W



POINT OF INTERSECTION (PI)	NORTHING (NAD27)	EASTING (NAD27)	LATITUDE (NAD27)	LONGITUDE (NAD27)
PI1	396888.2	2088928.0	32.757283 N	97.210721 W
PI2	394696.9	2088444.0	32.751263 N	97.212315 W
PI3	394217.5	2088788.4	32.749943 N	97.211199 W

TOTAL PERFORATED LATERAL LENGTH	2,225.49'
TOTAL NON-PERFORATED LATERAL LENGTH	1,941.40'
TOTAL LATERAL LENGTH	4,166.89'



LEASED ACREAGE	283.454
UNLEASED ACREAGE	20.891
UNIT ACREAGE	304.345

NON PERF POINT	NORTHING (NAD27)	EASTING (NAD27)	LATITUDE (NAD 27)	LONGITUDE (NAD 27)
NON PERF 1 (NP1)	394721.0	2088422.0	32.751330 N	97.212386 W
NON PERF 2 (NP2)	394098.2	2088906.1	32.749614 N	97.210817 W
NON PERF 3 (NP3)	394003.9	2088999.2	32.749354 N	97.210515 W
NON PERF 4 (NP4)	393184.7	2089807.3	32.747096 N	97.207894 W



NOTES:
 1. IS INTENDED TO DEPICT THOSE TRACTS THAT DO LEASE INFORMATION HAS BEEN PROVIDED TO HALFF.
 TRACT NUMBERS SHOWN HEREIN ARE IN REFERENCE TO A SEPARATE SHEET/ADDRESS CONTAINING LEASE INFORMATION AND AREA CALCULATIONS, SUBMITTED TO THE AS OF THE DATE OF THIS PLAN.
 COORDINATES FOR SURFACE HOLES, PROPOSED UPPER PERFORATION POINTS, PROPOSED LOWER PERFORATION POINTS, KICK OFF POINTS AND BOTTOM HOLES ARE BASED UPON COORDINATE COORDINATES WERE CONVERTED TO LEASE LINE COORDINATES FOR HORIZONTAL VERTICAL CURVE. ALL COORDINATES ARE GROUND SURFACE. ALL MEASUREMENTS ARE SURFACE UNLESS OTHERWISE NOTED.
 BASES OF BEARING IS THE TEXAS COORDINATE SYSTEM (NAD83), NORTH CENTRAL ZONE (CONV. BASED UPON GPS MEASUREMENTS FROM TRANSITION STATION LAMPSON (CONV. NATIONAL GEODETIC SURVEY DATA) FROM APRIEN AND 2700 AS BASED FROM CLASSIC CONVENTION ANGLE AT WASHINGTON BORE IS 408 DEGREES 47 MINUTES 00.0 SECONDS AS COMPUTED BY COMPTON VERSION 4.31. COORDINATE SCALE FACTOR FOR LEASING/LEASE SURFACE COORDINATES = TEXAS COORDINATE SYSTEM X CON.
 INFO: THIS IS A PRELIMINARY PREPARED PLAN. IT IS NOT A FINAL PLAN. ALL MEASUREMENTS TO LEASE UNIT, AND SURVEY LINES ARE DIMENSIONS TO SURVEY LINES ARE APPROXIMATE.
 SURFACE HOLES, PROPOSED UPPER PERFORATION POINT, PROPOSED LOWER PERFORATION POINT, KICK OFF POINT, BOTTOM HOLE LOCATION, POP = POINT OF PENETRATION
 CALLS SOUTH 85°00'00" WEST 1,000.00' FROM CANUCKS IN SHL
 CALLS SOUTH 85°00'00" WEST 1,000.00' FROM CANUCKS IN SHL
 CALLS SOUTH 85°00'00" EAST 1,000.00' FROM CANUCKS IN SHL

Exhibit No. 44
CHESAPEAKE OPERATING, INC.
 Rule 37 Case No. 0271793
 February 22, 2013

CANUCKS 1H WELL EXHIBIT
 IN THE
CITY OF FORT WORTH
TARRANT COUNTY, TEXAS
 FOR
CHESAPEAKE OPERATING, INC.
 DATED: 2/18/2013
 BY



"F ASSOCIATES INC., ENGINEERS - SURVEYORS
 | BOWSER ROAD ~ RICHARDSON, TEXAS ~ 75081-2275
 |ALE: 1"=800' (214)346-6200 AVO. 26724

EXHIBIT I
Rule 37 Case No. 0271793

