



RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

RULE 37 CASE NO. 0291096
STATUS NO. 790071
DISTRICT 05

**TO CONSIDER THE APPLICATION OF CHESAPEAKE OPERATING, INC. FOR A
RULE 37 EXCEPTION, PEGASUS LEASE, WELL NO. 5H, NEWARK, EAST
(BARNETT SHALE) FIELD, JOHNSON COUNTY, TEXAS**

HEARD BY: Laura E. Miles-Valdez - Legal Examiner
Karl Caldwell - Technical Examiner

PROPOSAL FOR DECISION

PROCEDURAL HISTORY

APPLICATION FILED:	June 23, 2014
NOTICE OF HEARING:	January 5, 2015
HEARING DATE :	January 29, 2015
PFD CIRCULATION DATE:	May 22, 2015

APPEARANCES:

FOR APPLICANT:

Glenn E. Johnson, Attorney
Bill G. Spencer, Regulatory Consultant
James Clark, P.E.

APPLICANT:

Chesapeake Operating, Inc.

PROTESTANT:

Mr. Curtis Kidwill

REPRESENTING:

Himself and Texas Res Com LLC

STATEMENT OF THE CASE

STATEMENT OF THE CASE

Chesapeake Operating, Inc. (“Chesapeake” or “Applicant”), seeks to amend its drilling permit pursuant to the provisions of Statewide Rule 37¹ for the Pegasus Lease, Well No. 5H, (a horizontal well) in the Newark, East (Barnett Shale) Field, Tarrant County, Texas. On June 23, 2014, Chesapeake filed the initial drilling permit for the Pegasus 5H well. Chesapeake received a drilling permit on August 7, 2014, to drill its Well No. 5H on its pooled unit, which consisted of 461.11 acres at that time. The initial permit application was for a long lateral/short perforation permit and was approved administratively on August 7, 2014. The plat associated with that application is attached to this proposal for decision as Exhibit I², which is incorporated herein by reference.

An amended application for Well No. 5H was filed on October 8, 2014 pursuant to Statewide Rule 37. It seeks to change the wellbore length and authority to perforate portions of the proposed wellbore located less than 330 feet from unleased tracts.. A Form P-12, a certificate of pooling authority, for the Pegasus Lease showing that the Pegasus Unit is 98.92% leased, was filed on June 23, 2014. Chesapeake has four wells currently drilled within the boundaries of the 466.14-acre Pegasus Lease unit, of which 461.11 acres of the unit are leased by Chesapeake.

The surface location of Well No. 5H is offlease, 490 feet from the north west line and offlease 3,600 feet from the southwest line and 490 feet from the north west line and offlease 3,600 feet from the southwest line of the JW Henderson Survey. The penetration point is 50 feet from the northeast lease line and 147.1 feet from the southwest lease line. The terminus is 246.5 feet from the southwest line and 452.2 feet from the northwest line of the lease and 246.5 feet from the southwest line and 2,740 feet from the southeast line of the JW Henderson Survey. The well was proposed to be drilled at an approximate depth of 9,000 feet.

Special gas field rules for the Newark, East (Barnett Shale) Field provide for 330 feet from the nearest lease line and zero (0) between wells on the same lease in the same field and reservoir on 320 acre proration units, with optional 20 acre units. 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,

¹ 16 Tex. Admin. Code 3.37 (Statewide Spacing Rule).

² See Chesapeake Exh. 1, page 7.

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.

Chesapeake contends a Rule 37 exception is needed for the drilled Pegasus Lease, Well No. 5H, because the section of the well proposed to be perforated is closer than 330 feet to the boundary of a tract which is internal to the unit and unleased. Mr. Curtis Kidwell presented a statement on his own behalf and behalf of Texas Res-Com, LLC, as the owner of unleased property near wellbore of the proposed drilled Well 5H, designated as Tract 231.

Because Chesapeake demonstrated that an exception is necessary to prevent waste and to prevent confiscation, it is recommended that the application be granted.

DISCUSSION OF THE EVIDENCE

CHESAPEAKE OPERATING, INC.

Chesapeake seeks removal of the “no perforation zone” (“NPZ”) on its Pegasus Lease, Well No. 5H which Chesapeake sought in its August 7, 2014 Commission-approved well permit. The NPZ is marked in red on the attached Exhibit II.³ At the time this permit was approved, the Pegasus Lease contained 461.11 leased acres in a 466.14-acre unit and Chesapeake notes that the unit is 98.92 percent leased.

An isopach map derived from the logs of nearby wells indicates the Barnett Shale Formation is roughly 340 feet thick under the Pegasus 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. Using that study, and correcting for the thickness of the Newark, East (Barnett Shale) Field under the Pegasus Lease and the leased acreage, Chesapeake calculated the original gas in place beneath 460.810 leased acres of the Pegasus Lease. Chesapeake calculates there is 89.219 BCF of recoverable gas beneath the entire leased acreage of the Pegasus Lease. Assuming a recovery factor of 61%, of the original gas in place (89.219 BCF), there is approximately a total of 54.4 BCF gas. As of the date of the hearing, the four producing wells on the Pegasus Unit have recovered an estimated 7.9 BCF; leaving an estimated 46.512 BCF remaining under the Unit. Of the 4 current wells and the proposed 5H well, Chesapeake calculates that all 5 wells drilled at regular locations without any additional Rule 37 exceptions will recover 29.951 BCF of the estimated 46.512 BCF of recoverable gas remaining

³ Chesapeake Exh. 22.

under the Unit.⁴

Chesapeake reviewed the Newark, East (Barnett Shale) Field wells within a 2-mile radius of the well, and found 102 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 " $y = .6042x$ ".

The current NPZ of 580.92 feet limits the wellbore lateral available for perforation of the Pegasus Lease, Well No. 5H, to 3,112 feet. Chesapeake contends that leaving the NPZ which covers just the protestant, Mr. Kidwell's unleased tract, would leave Chesapeake with a wellbore of 3,112 feet and an EUR of 4.993 BCF. A full length wellbore of 3,693 feet is projected to recover 5.925 BCF over its useful life. A 3,112 foot wellbore would leave 0.932 BCF unrecovered. Chesapeake argues that 0.932 BCF of gas is a significant quantity of hydrocarbons.

Chesapeake contends that failure to remove the NPZ would deprive Chesapeake and its lessors of the opportunity to produce their fair share of the recoverable hydrocarbons in place beneath the 461.11 leased acres of the Pegasus Lease, which constitute confiscation.

PROTESTANT'S POSITION AND EVIDENCE

Mr. Curtis Kidwell presented his statement as the owner of Texas Res-Com LLC's unleased property located within the 330-foot buffer of the wellbore of the Well 5H, designated as "Tract 231" of the attached plat. Mr. Kidwell expressed his concerns as an unleased land owner and stated that he had problems with the language and terms in Chesapeake's offer to lease his land. At one point in the hearing, Mr. Kidwell stated that "I am protesting the leasing procedure. I'm not protesting the application."⁵ In response to this statement, Chesapeake's attorney made an oral motion to dismiss this matter since "there is no protest of what is before the Commission."⁶ The Examiner did not rule on that motion, since Mr. Kidwell did not formally, and in writing, withdraw his protest.

⁴ Chesapeake Exh. 16.

⁵ Transcript p. 45, lns 15-17.

⁶ Transcript p. 48, lns. 15-18.

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 as much as possible of their fair share of gas from beneath the Pegasus Lease. "Fair share" is measured by the currently recoverable reserves from regular locations beneath the entire lease, including the four wells already producing on the lease and which in this case is 29.951 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 Pegasus Lease Well No. 5H, at its full length of 3,693 feet, is projected to recover 5.925 BCF over its useful life.

The issue raised by Protestant, regarding the leasing terms offered as not reasonable, may be addressed by the Protestant filing an application under the Mineral Interest Pooling Act and letting the Commission determine whether he should be included in the unit. Second, Mr. Kidwell has the right to choose to lease to another operator or to seek a permit themselves and drill his own wells on his mineral property. Although the practicality of this remedy is doubtful due to the relative small size of the Protestant's tract, it is a potentially available remedy under the law.

The subject 5H well, as currently permitted, is subject to one NPZ restriction equaling 581 feet. Given the NPZ, the effective length of the wellbore is 3,112 feet, and is projected to recover 4.993 BCF. Chesapeake's proposed full wellbore length is 3,693 feet, and is projected to recover 5.925 BCF of gas. The NPZ restriction in the current permit results in the reduced production of 0.932 BCF of gas that would otherwise be recoverable.

The Examiners find that 0.932 BCF of gas is a substantial quantity of hydrocarbons that would go unrecovered if the "no perforation zone" restriction is not removed. Testimony provided indicated that failure to remove the wellbore restriction would result in the confiscation of the fair share of reserves attributable to Chesapeake and its lessors.

The Examiners recommend Chesapeake be granted an exception to Statewide Rule 37 for its Well No. 5H on the 461.11 leased acres of the 466-acre Pegasus Lease unit in Johnson 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 Pegasus Lease, Well No. 5H, in the Newark, East (Barnett Shale) Field in Johnson County.
3. On June 23, 2014, Chesapeake filed the initial drilling permit for the Pegasus 5H well. Chesapeake received a drilling permit on August 7, 2014, to drill its Well No. 5H on its pooled unit, which consisted of 461.11 acres at that time. The initial permit application was for a long lateral/short perforation permit and was approved administratively on August 7, 2014. The plat associated with that application is attached to this proposal for decision as Exhibit I, which is incorporated herein by reference.
4. On October 8, 2014, an amended application for Well No. 5H was filed, which amended the wellbore length seeking authority to perforate portions of the proposed wellbore located less than 330 feet from unleased tracts. The amended application at issue in this docket was filed on October 8, 2014 and seeks a Rule 37 exception.
5. On June 23, 2014, a Form P-12, a certificate of pooling authority, for the Pegasus Lease showing that the Pegasus Unit is 98.92% leased, was filed. Chesapeake has four wells currently drilled on the 466.14-acre Pegasus Lease unit, of which 461.11 acres of the lease are leased by Chesapeake.
6. A Rule 37 exception is needed for the drilled Pegasus Lease, Well No. 5H, because a section of the well proposed to be perforated is closer than 330 feet to the boundary of a tract internal to the unit that is unleased.
7. 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.

8. The surface location of Well No. 5H is offlease, 490 feet from the north west line and offlease 3,600 feet from the southwest line and 490 feet from the north west line and offlease 3,600 feet from the southwest line of the JW Henderson Survey. The penetration point is 50 feet from the northeast lease line and 147.1 feet from the southwest lease line. The terminus is 246.5 feet from the southwest line and 452.2 feet from the northwest line of the lease and 246.5 feet from the southwest line and 2,740 feet from the southeast line of the JW Henderson Survey. The well was proposed to be drilled at an approximate depth of 9,000 feet.
9. The Chesapeake application is opposed by Mr. Curtis Kidwell, owner of Texas Res-Com, LLC and of an unleased tract internal to the Pegasus Lease. Mr. Kidwell's tract, Tract 231, is within the 330 feet buffer zone of the proposed lateral.
10. The Barnett Shale Formation is present and productive under the entirety of the Pegasus Lease.
11. At the time of the hearing, the leased acreage in the Pegasus Lease was 461 acres. The Pegasus Lease unit contains a total of 466 acres within its boundaries and is 98.92 percent leased.
12. To establish the currently recoverable reserves under the 461 leased acres of the 466 acre Pegasus Unit, Chesapeake used a volumetric calculation:
 - a. Available well logs in the vicinity of the Pegasus 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. Using that study, and correcting for the thickness of the Newark, East (Barnett Shale) Field under the Pegasus Lease and the leased acreage, and assuming a recovery factor of 61%, Chesapeake calculated the original gas in place lease, based on the currently recoverable reserves from regular locations beneath the entire lease, is 29.951 BCF.
13. Chesapeake reviewed the Newark, East (Barnett Shale) Field wells within a 2-mile radius of the proposed well, finding 102 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 of EUR = $x * y$, where “ $y = 1.6042$ ” and x = the drainhole length. Thus, the proposed full-length lateral of 3,693 feet should recover 5.925 BCF of gas.

14. The subject 5H well is subject to one NPZ restriction totaling 581 feet.
 - a. The regular and effective length of the wellbore of Well No. 5H is 3,112 feet, which is projected to recover 4.993 BCF.
 - b. The full wellbore without NPZ would be 3,693 feet, and is projected to recover 5.925 BCF of gas.
 - c. The NPZ restriction would result in the failure to recover 0.932 BCF of gas that would otherwise be recoverable.
15. The amount of gas that would go unrecovered absent removal of the 581 feet of NPZ, 0.932 BCF, is a significant quantity of hydrocarbons.
16. Chesapeake’s fair share of gas in place beneath the Pegasus lease, (including the four wells currently producing and the proposed well), based on the currently recoverable reserves from regular locations beneath the entire lease, is 29.951 BCF.
17. Granting the requested Rule 37 exception for the Pegasus Well No. 5H will allow Chesapeake and its lessors to recover more of their fair share of hydrocarbons under the pooled unit. All 5 wells drilled at regular locations without any additional Rule 37 exceptions are estimated to recover 29.951 BCF of the estimated 46.512 BCF of recoverable gas remaining under the Unit. The full wellbore of Well No. 5H, without the NPZ restriction, would be 3,693 feet, and is projected to recover an additional 5.925 BCF of gas.
18. The drilled location of the Pegasus Lease Well No. 5H is reasonable.
 - a. Based on 500 foot well spacing, the Pegasus Lease will accommodate five wells.
 - b. If the location of the Pegasus Lease Well No. 5H were moved to the northeast, it would interfere with the recovery of Well No. 1H.

CONCLUSIONS OF LAW

1. Proper notice of hearing was timely given to all persons legally entitled to notice. 16 Tex. Admin. Code § 3.37(a)(2)(A).
2. All things have occurred to give the Commission jurisdiction to decide this matter. Tex. Nat.

Res. Code §81.051.

3. Approval of a Rule 37 exception for removal of the NPZ currently part of the drilling permit for the drilled location of the Pegasus Lease, Well No. 5H, as proposed by Chesapeake Operating, Inc. is necessary to prevent confiscation and protect the correlative rights of the mineral owners. 16 Tex. Admin. Code § 3.37(a)(1).
4. Chesapeake has met its burden of proof or satisfy the requirements of the Railroad Commission's Statewide Rule 37.

RECOMMENDATION

The Examiners recommend the application of Chesapeake Operating, Inc., for a Statewide Rule 37 exception removing the NPZ for the drilled location of the Pegasus Lease, Well No. 5H in the Newark, East (Barnett Shale) Field, Johnson County, be GRANTED as necessary to prevent confiscation.

Respectfully submitted,


Laura E. Miles-Valdez
Legal Examiner


Karl Caldwell
Technical Examiner

1000 0 1000 2000 3000

GRAPHIC SCALE - FEET

BEARINGS AND COORDINATES REFER TO THE TEXAS COORDINATE SYSTEM OF 1927, NORTH CENTRAL ZONE (4202), AS OBTAINED BY GPS OBSERVATIONS.



LEGEND

- UNIT LINE
- UNLEASED TRACT
- TRACT LINE
- APPROX SURVEY LINE
- 330' OFFSET

1H WELL	DISTANCE	ZONE
SHL TO PP	1589.81'	-
PP TO UPP	276.03'	-
UPP TO LPP	3614.95'	PERF ZONE
LPP TO BHL	115.47'	-

2H WELL	DISTANCE	ZONE
SHL TO PP	2006.69'	-
PP TO UPP	2581.96'	-
UPP TO LPP	7005.39'	PERF ZONE
LPP TO BHL	159.00'	-

3H WELL	DISTANCE	ZONE
SHL TO PP	1574.56'	-
PP TO UPP	628.73'	-
UPP TO LPP	9084.29'	PERF ZONE
LPP TO BHL	200.03'	-

4H WELL	DISTANCE	ZONE
SHL TO PP	1113.58'	-
PP TO UPP	555.72'	-
UPP TO LPP	9248.02'	PERF ZONE
LPP TO BHL	181.83'	-

5H WELL	DISTANCE	ZONE
PSHL TO KOP	1269.64'	-
KOP TO PP/PUPP	150.00'	-
PP/PUPP TO PI	2621.13'	PERF ZONE
PI TO NP1	146.95'	PERF ZONE
NP1 TO NP2	580.92'	NPZ
NP2 TO PLPP	344.14'	PERF ZONE
PLPP TO PBHL	90.00'	-

PEGASUS
TOTAL = 466.14 ACRES
LEASED = 461.11 ACRES

H. G. CATLETT
SURVEY, A-181
JOHNSON CO., TX.

CHESAPEAKE OPERATING, LLC
HOG B.

J. W. HENDERSON
SURVEY, A-376

CHESAPEAKE OPERATING, LLC
UNICORN

CHESAPEAKE OPERATING, LLC
DEER CREEK ESTATES

CHESAPEAKE OPERATING, LLC
DEER CREEK

H. ALSBURY
SURVEY, A-31
TARRANT CO., TX.

H. ALSBURY
SURVEY, A-5
JOHNSON CO., TX.

CHESAPEAKE OPERATING, LLC
COWBOY

H. G. CATLETT
SURVEY, A-183

WELL	TOTAL PERF LENGTH	TOTAL NON-PERF LENGTH	TOTAL LATERAL LENGTH
1H	3614.95'	-	3614.95'
2H	7005.39'	-	7005.39'
3H	9084.29'	-	9084.29'
4H	9248.02'	-	9248.02'
5H	3112.22'	580.92'	3693.14'

CHESAPEAKE OPERATING, LLC
PEGASUS WELL EXHIBIT

CITY OF BURLESON
JOHNSON & TARRANT COUNTIES, TEXAS

Surface location is located in the city limits of Burleson, Johnson County, Texas.

January 28, 2015

LAMPE SURVEYING, INC
PROFESSIONAL LAND SURVEYORS

1408 WEST MAIN STREET
P. O. BOX 2037

BRENNHAM, TEXAS 77834

(979) 836-6677 • FAX (979) 836-1177
TEXAS LICENSED SURVEYING FIRM NO. 10040700
WD 2422 PEGASUS HYPO-2.DWG 2422COI.CGC

SHL=SURFACE HOLE LOCATION
PSHL=PROPOSED SURFACE HOLE LOCATION
PBHL=PROPOSED BOTTOM HOLE LOCATION
NPZ=NON-PERF ZONE
KOP=KICK OFF POINT
PP=PENETRATION POINT
PUPP=PROPOSED UPPER PERFORATION POINT
UPP=UPPER PERFORATION POINT
PI=POINT OF INTERSECTION
PLPP=PROPOSED LOWER PERFORATION POINT
LPP=LOWER PERFORATION POINT
BHL=BOTTOM HOLE LOCATION

Reference is hereby made to a separate tract listing and detail sheet.

Title & As Drilled data furnished by CHESAPEAKE OPERATING, LLC.

Prepared from a partial on the ground survey, prior unit plots, deeds and other instruments furnished by CHESAPEAKE OPERATING, LLC.

THOMAS CHANDLER
SURVEY, A-127

Exhibit No. 15-A
CHESAPEAKE OPERATING, INC.
Rule 37 Case No. 0291096
January 29, 2015

HOG B 3H 20' PEGASUS 1H
HOG B 1H 15' PEGASUS 2H
HOG A 3H 15' PEGASUS 3H
HOG A 1H 15' PEGASUS 4H
HOG A 2H 15' PEGASUS 5H
HOG A 1H 15' PEGASUS 6H
HOG A 1H 15' PEGASUS 7H
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HOG A 1H 15' PEGASUS 96H
HOG A 1H 15' PEGASUS 97H
HOG A 1H 15' PEGASUS 98H
HOG A 1H 15' PEGASUS 99H
HOG A 1H 15' PEGASUS 100H

DETAIL A

CONROY 4H
CONROY 3H
CONROY 2H
CONROY 1H
PEGASUS 4H AS DRILLED & PERMITTED
PEGASUS 3H AS DRILLED & PERMITTED
PEGASUS 2H AS DRILLED & PERMITTED
PEGASUS 1H AS DRILLED & PERMITTED

DETAIL B

J. W. HENDERSON
SURVEY, A-376

DEVON
MAYFIELD

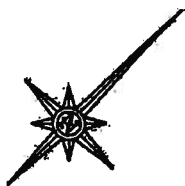
DEVON
MAYFIELD

SEE DETAIL "B"

1000 0 1000 2000 3000

GRAPHIC SCALE - FEET

READINGS AND COORDINATES REFER TO THE TEXAS COORDINATE SYSTEM OF 1927, NORTH CENTRAL ZONE (4302), AS OBTAINED BY GPS OBSERVATIONS.



PEGASUS
TOTAL = 466.14 ACRES
LEASED = 461.11 ACRES

LEGEND

- = UNIT LINE
- = UNLEASED TRACT
- = TRACT LINE
- = ROAD/STREET R.O.W.
- = APPROX. SURVEY LINE
- = NO PERFORATION ZONE

SURFACE NOTE

NAD 87	NAD 83
LAR: 32.531667N	LAR: 32.531769N
LONG: 97.333715W	LONG: 97.333609W
X: 2,050,831.8	Y: 6,878,401.0
Y: 314,728.3	X: 2,327,218.5

DRILL DATA

S. TO KOP	NORTH 17° 12' 00" E
KOP TO PP/PPP	SOUTH 88° 15' 00" W
KOP TO P	SOUTH 88° 15' 00" W
P TO PPH	SOUTH 88° 15' 00" W
PPP TO PPH	SOUTH 88° 15' 00" W

PERFORATION POINTS

POINT	NAD 87
PP1	LAR: 32.531667N
	LONG: 97.333715W
	X: 2,050,831.8
	Y: 314,728.3
PP2	LAR: 32.531667N
	LONG: 97.333715W
	X: 2,050,831.8
	Y: 314,728.3

PERFORATED LATERAL DATA

PPP 10 P	368.11'
P TO PPP	116.85'
PPP 2 TO PPP	344.13'

LATERAL PERFORATION SCHEME: (PP1 TO PPH)
PERFORATED LATERAL LENGTH = 311.23'
NO PERFORATED LATERAL LENGTH = 585.85'
TOTAL LATERAL LENGTH = 388.13'

- KOP=KICK OFF POINT
- PP=PERFORATION POINT
- PPP=PROPOSED UPPER PERFORATION POINT
- P=POINT OF INTERSECTION
- PPH=PROPOSED LOWER PERFORATION POINT
- PPH=PROPOSED BOTTOM HOLE LOCATION
- PPH=PERFORATION POINT

Reference is hereby made to a separate tract listing and detail sheet.

Title & As Drilled data furnished by CHESAPEAKE OPERATING, INC.

Prepared from a portion of the ground survey prior to this date, and other information furnished by CHESAPEAKE OPERATING, INC.

I, Matt D. Lampe, Registered Professional Land Surveyor No. 5429 of the State of Texas, do hereby certify that this plat shows the surface location of the subject well as stated on the ground under my direction.

Dated this the 20th day of June, 2016.

Matt D. Lampe
Matt D. Lampe
P.L.S. No. 5429
Lampe Surveying, Inc.



THOMAS CHANDLER SURVEY, A-127

CHESAPEAKE OPERATING, INC.
PEGASUS 5H
CITY OF BURLESON
JOHNSON & TARRANT COUNTIES, TEXAS
Surface location is located in the city limits of Burleson, Johnson County, Texas.

LAMPE SURVEYING, INC.
PROFESSIONAL LAND SURVEYORS
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BURLESON, TEXAS 77620
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NO 2422 2422000322-36.DWG 2422000.000