



PHOENIX
TECHNOLOGY SERVICES



May 4, 2012

Oil Conservation Division
State of New Mexico
811 S. First St.
Artesia, New Mexico 88210

Dear District 2 - Artesia

Re: Chesapeake Operating Inc.
PLU Phantom Banks 4-26-31 USA 1H
Eddy Co., NM
API #30-015-39847
Job No. 1210289

Enclosed please find the Survey Data Certification, and the original Plat and one copy of the Survey Report performed on the above referenced Well by Phoenix Technology Services, Inc. (P-5 No. 606018). Other information required by your office is as follows:

Name & Title of Surveyor	Drainhole Number	Surveyed Depths		Dates Performed		Type of Survey
		From	To	Start	End	
Ronnie Watson	1H	193	13,625	04/10/2012	04/26/2012	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Best Regards,

Amy Castroman
Operations Administrator

Certified mail receipt number: 7011 1570 0001 4365 0106

RECEIVED

MAY 24 2012

NMOCD ARTESIA
Phoenix Technology Services
SURVEY DATA CERTIFICATION**PHOENIX**
TECHNOLOGY SERVICES

PHOENIX JOB NUMBER

1210289

OPERATOR

Chesapeake

WELL NAME

PLU Phantom Banks 4-26-31 USA 1H

COUNTY & STATE

Eddy County

API WELL NUMBER

30-015-39847

PROPOSED DIRECTION

357.48

TIE-IN DATA

MEASURED DEPTH ft	VERTICAL DEPTH .00 ft	INCLIN .0 ft	AZIMUTH .0 ft	N-S COORD .00 ft	E-W COORD .00 ft	DATA SOURCE Surface
-------------------------	-----------------------------	-----------------	------------------	------------------------	------------------------	---------------------------

FIRST SURVEY DATE	FIRST SURVEY DEPTH	INCLIN	AZIMUTH
10-Apr-12	193 ft	.04	262.4

SURVEY INSTRUMENT**TYPE**

Phoenix QDT MWD

LAST SURVEY DATE	LAST SURVEY DEPTH	INCLIN	AZIMUTH
26-Apr-12	13,625 ft	91.4	354.5

TO THE BEST OF MY KNOWLEDGE I
CERTIFY THIS SURVEY DATA TO BE
TRUE AND CORRECT.

PROJECTED TD SURVEY DATE	PROJECTED TD SURVEY DEPTH	INCLIN	AZIMUTH
26-Apr-12	13,675 ft	.92	354.9

Ronnie Watson

PRINT YOUR NAME ABOVE

Ronnie Watson

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	7.28
DECLINATION OR GRID	GRID

27-Apr-12

TODAY'S DATE

MWD SUPERVISOR 1

Ronnie Watson

DIRECTIONAL DRILLER 1

Shane Ates/Brad Watkins

MWD SUPERVISOR 2

Tony Mack

DIRECTIONAL DRILLER 2

Terry Masters

1805 Brittmore Road

Houston, Texas 77043

(713)3370609 (Voice), (713)337-0599 (Fax)



Chesapeake Operating Inc.

Project: Eddy County, New Mexico (NAD 1983)

Site: PLU Phantom Banks 4-26-31 USA 1H

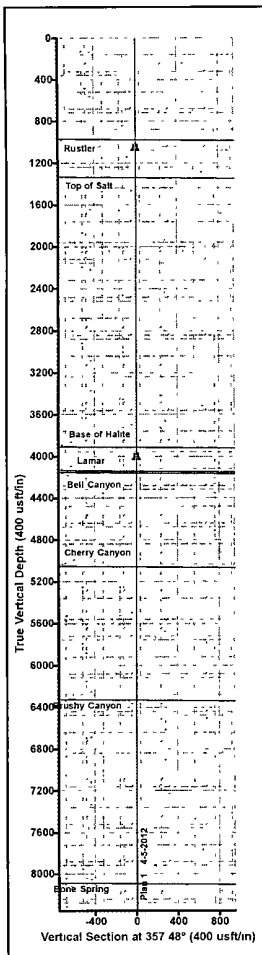
Well: Job # 1210289

Wellbore: Rig: Latshaw 14

Plan: Plan 1 4-5-2012

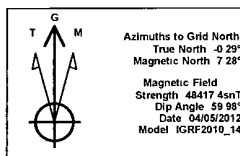
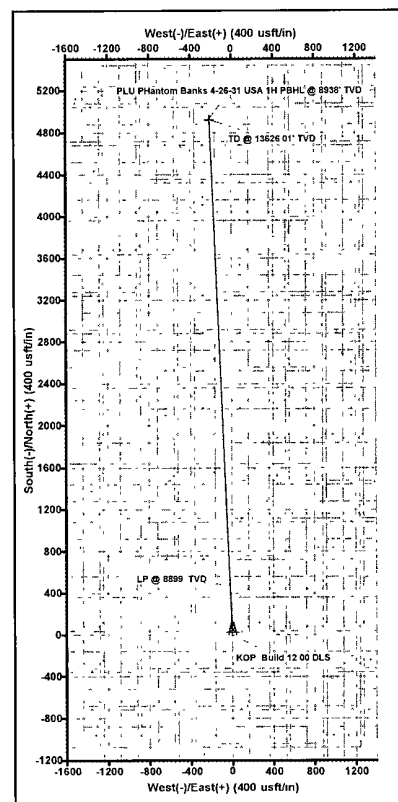
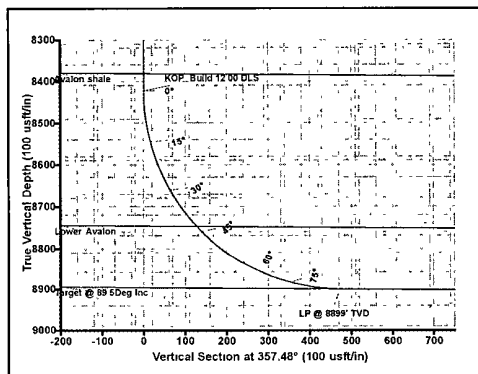
WELL DETAILS Job # 1210289

Ground Level 3277.00
Northing 388028.00 Easting 711264.0032° 3' 56.0937° N03° 47' 5.1904 W



SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSecl	
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	
8421 50	0 00	0 00	8421 50	0 00	0 00	0 00	0 00	0 00	
9167 42	89 50	357 48	8899 00	472 89	-20 81	12 00	357 48	473 35	
9191 11	89 50	357 48	8899 21	436 56	-21 85	0 01	-119 99	497 04	
13626 01	89 50	357 48	8938 00	4927 00	-217 00	0 00	0 00	4931 78	PLU Phantom Banks 4-26-31 USA 1H PBHL @ 8938' TVD

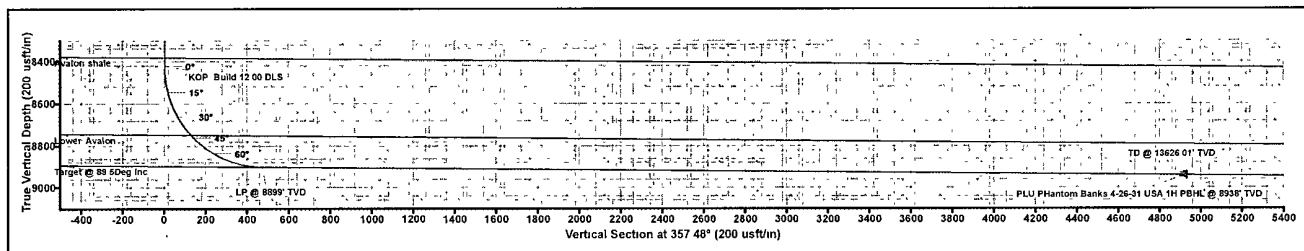
FORMATION TOP DETAILS					
TVDPath	MDPath	Formation	DipAngle	DipDir	
975 00	975 00	Rustler	0 50	357 48	
1335 00	1335 00	Top of Salt	0 50	357 48	
3809 00	3809 00	Base of Halite	0 50	357 48	
4137 00	4137 00	Lamar	0 50	357 48	
4155 00	4155 00	Bell Canyon	0 50	357 48	
5056 00	5056 00	Cherry Canyon	0 50	357 48	
6327 00	6327 00	Brushy Canyon	0 50	357 48	
8087 00	8087 00	Bone Spring	0 50	357 48	
8380 00	8380 00	Avalon shale	0 50	357 48	
8746 11	8778 43	Lower Avalon	0 50	357 48	



Azimuths to Grid North
True North -0.29°
Magnetic North 7.23°
Magnetic Field
Strength 48417.45nT
Dip Angle 59.98°
Date 04/05/2012
Model IGRF2010_14

ANNOTATIONS

TVD MD Annotation
8421 50 8421 50 KOP Build 12.00 DLS
8899 00 9167 42 LP @ 8899' TVD
8938 00 13626 00 TD @ 13626.01' TVD



File
Created By Jose Hernandez



Chesapeake Operating Inc.

Eddy County, New Mexico (NAD 1983)

PLU Phantom Banks 4-26-31 USA 1H

Job # 1210289

Rig: Latshaw 14

Survey: Phoenix MWD Surveys

Chesapeake Energy, Survey Report

27 April, 2012





Chesapeake Energy, Survey Report



Company:	Chesapeake Operating Inc.	Local Co-ordinate Reference:	Well Job #.1210289
Project:	Eddy County, New Mexico (NAD 1983)	TVD Reference:	WELL @ 3299.00usft (Latshaw 14)
Site:	PLU Phantom Banks 4-26-31 USA 1H	MD Reference:	WELL @ 3299.00usft (Latshaw 14)
Well:	Job #.1210289	North Reference:	Grid
Wellbore:	Rig: Latshaw 14	Survey Calculation Method:	Minimum Curvature
Design:	Rig: Latshaw 14	Database:	Compass5000

Project	Eddy County, New Mexico (NAD 1983)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	PLU Phantom Banks 4-26-31 USA 1H		
Site Position:		Northing:	388,028.00 usft
From:	Map	Easting:	711,264.00 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 3' 56.0937 N
		Longitude:	103° 47' 5.1904 W
		Grid Convergence:	0.29 °

Well	Job #.1210289		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	22.00 usft
		Latitude:	32° 3' 56.0937 N
		Longitude:	103° 47' 5.1904 W
		Ground Level:	3,277.00 usft

Wellbore	Rig: Latshaw 14		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010_14	04/05/12	7.57
			Dip Angle
			(°)
			59.98
			Field Strength
			(nT)
			48,417

Design	Rig: Latshaw 14		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			357.48

Survey Program	Date: 04/27/12		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
193.00	13,675.00	Phoenix MWD Surveys (Rig: Latshaw 14)	MWD
			Description
			MWD - Standard



Chesapeake Energy, Survey Report



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Project:	Eddy County, New Mexico (NAD 1983)	TVD Reference:	WELL @ 3299.00usft (Latshaw 14)
Site:	PLU Phantom Banks 4-26-31 USA 1H	MD Reference:	WELL @ 3299.00usft (Latshaw 14)
Well:	Job # 1210289	North Reference:	Grid
Wellbore:	Rig: Latshaw 14	Survey Calculation Method:	Minimum Curvature
Design:	Rig: Latshaw 14	Database:	Compass5000

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
0.00	0.00	0.00	3,299.00	0.00	0.00	0.00	0.00	0.00	388,028.00	711,264.00	
193.00	0.40	262.40	3,106.00	193.00	-0.09	-0.67	-0.06	0.21	388,027.91	711,263.33	
First Phoenix MWD Survey @ 193' MD											
379.00	0.40	286.70	2,920.01	378.99	0.01	-1.93	0.10	0.09	388,028.01	711,262.07	
569.00	0.30	274.90	2,730.01	568.99	0.24	-3.06	0.38	0.06	388,028.24	711,260.94	
760.00	0.00	265.80	2,539.01	759.99	0.29	-3.56	0.44	0.16	388,028.29	711,260.44	
950.00	0.10	74.00	2,349.01	949.99	0.33	-3.40	0.48	0.05	388,028.33	711,260.60	
1,169.00	0.50	109.80	2,130.01	1,168.99	0.06	-2.32	0.16	0.19	388,028.06	711,261.68	
1,360.00	0.30	88.90	1,939.02	1,359.98	-0.21	-1.04	-0.16	0.13	388,027.79	711,262.96	
1,548.00	0.20	63.00	1,751.02	1,547.98	-0.05	-0.25	-0.04	0.08	388,027.95	711,263.75	
1,738.00	0.20	352.40	1,561.02	1,737.98	0.43	0.00	0.43	0.12	388,028.43	711,264.00	
1,928.00	0.50	311.30	1,371.02	1,927.98	1.30	-0.67	1.33	0.20	388,029.30	711,263.33	
2,118.00	0.80	310.40	1,181.04	2,117.96	2.71	-2.30	2.81	0.16	388,030.71	711,261.70	
2,308.00	0.70	302.80	991.05	2,307.95	4.20	-4.29	4.38	0.07	388,032.20	711,259.71	
2,499.00	0.80	291.40	800.07	2,498.93	5.32	-6.51	5.60	0.09	388,033.32	711,257.49	
2,689.00	0.80	310.90	610.09	2,688.91	6.67	-8.74	7.05	0.14	388,034.67	711,255.26	
2,879.00	0.90	305.60	420.11	2,878.89	8.41	-10.96	8.88	0.07	388,036.41	711,253.04	
3,069.00	1.00	294.70	230.13	3,068.87	9.97	-13.68	10.56	0.11	388,037.97	711,250.32	
3,259.00	0.80	296.20	40.16	3,258.84	11.25	-16.38	11.96	0.11	388,039.25	711,247.62	
3,450.00	0.10	24.20	-150.84	3,449.84	11.99	-17.50	12.74	0.42	388,039.99	711,246.50	
3,640.00	0.90	123.40	-340.83	3,639.83	11.32	-16.19	12.02	0.48	388,039.32	711,247.81	
3,830.00	2.00	129.60	-530.76	3,829.76	8.38	-12.39	8.92	0.58	388,036.38	711,251.61	
3,925.00	2.20	130.10	-625.70	3,924.70	6.15	-9.72	6.57	0.21	388,034.15	711,254.28	
4,114.00	1.70	134.20	-814.59	4,113.59	1.86	-4.93	2.07	0.27	388,029.86	711,259.07	
4,304.00	1.40	133.30	-1,004.52	4,303.52	-1.70	-1.22	-1.64	0.16	388,026.30	711,262.78	
4,494.00	1.20	118.20	-1,194.47	4,493.47	-4.23	2.22	-4.32	0.21	388,023.77	711,266.22	
4,684.00	1.00	112.00	-1,384.44	4,683.44	-5.79	5.51	-6.03	0.12	388,022.21	711,269.51	

Company:	Chesapeake Operating Inc.	Local Co-ordinate Reference:	Well Job # 1210289
Project:	Eddy County New Mexico (NAD:1983)	TVD Reference:	WELL @ 3299.00usft (Latshaw 14)
Site:	PLU Phantom Banks 4-26-31 USA 1H	MD Reference:	WELL @ 3299.00usft (Latshaw 14)
Well:	Job # 1210289	North Reference:	Grid
Wellbore:	Rig: Latshaw 14	Survey Calculation Method:	Minimum Curvature
Design:	Rig: Latshaw 14	Database:	Compass5000

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
4,875.00	1.20	123.70	-1,575.40	4,874.40	-7.52	8.72	-7.90	0.16	388,020.48	711,272.72	
5,065.00	1.10	127.90	-1,765.36	5,064.36	-9.75	11.81	-10.26	0.07	388,018.25	711,275.81	
5,255.00	1.00	119.90	-1,955.33	5,254.33	-11.70	14.69	-12.33	0.09	388,016.30	711,278.69	
5,444.00	0.70	134.90	-2,144.31	5,443.31	-13.33	16.94	-14.06	0.20	388,014.67	711,280.84	
5,634.00	0.70	138.20	-2,334.30	5,633.30	-15.02	18.53	-15.82	0.02	388,012.98	711,282.53	
5,825.00	0.40	186.70	-2,525.29	5,824.29	-16.55	19.23	-17.38	0.28	388,011.45	711,283.23	
6,015.00	0.50	178.40	-2,715.28	6,014.28	-18.04	19.18	-18.86	0.06	388,009.96	711,283.18	
6,206.00	0.60	180.30	-2,906.27	6,205.27	-19.87	19.20	-20.69	0.05	388,008.13	711,283.20	
6,397.00	0.80	186.90	-3,097.26	6,396.26	-22.19	19.03	-23.01	0.11	388,005.81	711,283.03	
6,587.00	0.90	188.80	-3,287.24	6,586.24	-24.98	18.64	-25.78	0.05	388,003.02	711,282.64	
6,776.00	1.10	170.90	-3,476.21	6,775.21	-28.24	18.70	-29.04	0.20	387,999.76	711,282.70	
6,967.00	1.60	180.90	-3,667.16	6,966.16	-32.72	18.95	-33.52	0.29	387,995.28	711,282.95	
7,157.00	2.00	176.00	-3,857.06	7,156.06	-38.68	19.14	-39.48	0.23	387,989.32	711,283.14	
7,346.00	2.30	172.60	-4,045.93	7,344.93	-45.73	19.86	-46.56	0.17	387,982.27	711,283.86	
7,536.00	2.40	172.30	-4,235.77	7,534.77	-53.45	20.88	-54.32	0.05	387,974.55	711,284.88	
7,726.00	2.60	171.70	-4,425.59	7,724.59	-61.66	22.04	-62.57	0.11	387,966.34	711,286.04	
7,917.00	2.60	173.00	-4,616.39	7,915.39	-70.25	23.19	-71.20	0.03	387,957.75	711,287.19	
8,107.00	2.10	183.70	-4,806.23	8,105.23	-78.00	23.49	-78.96	0.35	387,950.00	711,287.49	
8,297.00	1.40	202.80	-4,996.14	8,295.14	-83.61	22.37	-84.51	0.47	387,944.39	711,286.37	
8,329.00	0.80	197.40	-5,028.14	8,327.14	-84.18	22.15	-85.08	1.90	387,943.82	711,286.15	
8,411.00	1.40	339.00	-5,110.13	8,409.13	-83.80	21.62	-84.67	2.55	387,944.20	711,285.62	
8,443.00	7.10	357.30	-5,142.03	8,441.03	-81.45	21.39	-82.32	18.09	387,946.55	711,285.39	
8,475.00	12.40	359.50	-5,173.56	8,472.56	-76.04	21.26	-76.90	16.60	387,951.96	711,285.26	
8,507.00	17.70	0.50	-5,204.45	8,503.45	-67.73	21.28	-68.60	16.58	387,960.27	711,285.28	
8,538.00	22.10	0.00	-5,233.59	8,532.59	-57.18	21.32	-58.07	14.20	387,970.82	711,285.32	
8,570.00	23.80	358.70	-5,263.06	8,562.06	-44.71	21.17	-45.60	5.54	387,983.29	711,285.17	
8,602.00	27.00	359.00	-5,291.96	8,590.96	-30.99	20.90	-31.88	10.01	387,997.01	711,284.90	



Chesapeake Energy, Survey Report



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Design:	Rig: Latshaw 14	Database:	Compass5000

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
8,633.00	30.50	359.40	-5,319.13	8,618.13	-16.08	20.69	-16.97	11.31	388,011.92	711,284.69	
8,664.00	32.30	357.80	-5,345.59	8,644.59	0.06	20.29	-0.83	6.40	388,028.06	711,284.29	
8,696.00	37.00	355.90	-5,371.91	8,670.91	18.22	19.27	17.36	15.07	388,046.22	711,283.27	
8,727.00	41.50	355.20	-5,395.91	8,694.91	37.77	17.75	36.96	14.59	388,065.77	711,281.75	
8,759.00	45.60	355.70	-5,419.10	8,718.10	59.75	16.00	58.98	12.86	388,087.75	711,280.00	
8,791.00	47.00	358.80	-5,441.21	8,740.21	82.85	14.90	82.11	8.26	388,110.85	711,278.90	
8,822.00	49.50	0.40	-5,461.85	8,760.85	105.97	14.74	105.22	8.94	388,133.97	711,278.74	
8,854.00	53.70	1.40	-5,481.72	8,780.72	131.04	15.14	130.25	13.35	388,159.04	711,279.14	
8,885.00	58.20	1.40	-5,499.08	8,798.08	156.71	15.77	155.87	14.52	388,184.71	711,279.77	
8,917.00	62.50	358.60	-5,514.91	8,813.91	184.51	15.76	183.64	15.44	388,212.51	711,279.76	
8,949.00	65.70	357.40	-5,528.88	8,827.88	213.27	14.75	212.42	10.55	388,241.27	711,278.75	
8,980.00	68.70	356.50	-5,540.89	8,839.89	241.81	13.23	240.99	10.04	388,269.81	711,277.23	
9,012.00	70.50	356.50	-5,552.05	8,851.05	271.74	11.39	270.98	5.62	388,299.74	711,275.39	
9,044.00	73.60	357.00	-5,561.91	8,860.91	302.13	9.67	301.42	9.80	388,330.13	711,273.67	
9,076.00	77.70	357.90	-5,569.84	8,868.84	333.10	8.29	332.41	13.10	388,361.10	711,272.29	
9,107.00	83.00	358.50	-5,575.03	8,874.03	363.63	7.33	362.96	17.20	388,391.63	711,271.33	
9,170.00	90.20	357.00	-5,578.77	8,877.77	426.43	4.86	425.80	11.67	388,454.43	711,268.86	
9,266.00	89.70	357.40	-5,578.85	8,877.85	522.32	0.17	521.80	0.67	388,550.32	711,264.17	
9,361.00	89.40	357.40	-5,579.60	8,878.60	617.21	-4.13	616.80	0.32	388,645.21	711,259.87	
9,456.00	89.00	357.40	-5,580.92	8,879.92	712.11	-8.44	711.79	0.42	388,740.11	711,255.56	
9,552.00	88.30	358.00	-5,583.19	8,882.19	808.00	-12.30	807.76	0.96	388,836.00	711,251.70	
9,647.00	88.30	356.70	-5,586.00	8,885.00	902.86	-16.69	902.72	1.37	388,930.86	711,247.31	
9,743.00	87.70	359.00	-5,589.35	8,888.35	998.72	-20.28	998.65	2.47	389,026.72	711,243.72	
9,838.00	85.30	357.60	-5,595.15	8,894.15	1,093.50	-23.10	1,093.45	2.92	389,121.50	711,240.90	
9,933.00	88.60	354.80	-5,600.21	8,899.21	1,188.13	-29.39	1,188.27	4.55	389,216.13	711,234.61	
10,028.00	91.20	355.70	-5,600.38	8,899.38	1,282.79	-37.25	1,283.19	2.90	389,310.79	711,226.75	
10,123.00	91.30	355.60	-5,598.30	8,897.30	1,377.50	-44.46	1,378.12	0.15	389,405.50	711,219.54	



Chesapeake Energy, Survey Report



Company:	Chesapeake Operating Inc.	Local Co-ordinate Reference:	Well Job # 1210289
Project:	Eddy County, New Mexico (NAD:1983)	TVD Reference:	WELL @ 3299.00usft (Latshaw 14)
Site:	PLU Phantom Banks 4-26-31 USA 1H	MD Reference:	WELL @ 3299.00usft (Latshaw 14)
Well:	Job # 1210289	North Reference:	Grid
Wellbore:	Rig: Latshaw 14	Survey Calculation Method:	Minimum Curvature
Design:	Rig: Latshaw 14	Database:	Compass5000

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
10,218.00	90.60	355.90	-5,596.73	8,895.73	1,472.22	-51.49	1,473.06	0.80	389,500.22	711,212.51
10,313.00	90.20	355.90	-5,596.06	8,895.06	1,566.98	-58.29	1,568.02	0.42	389,594.98	711,205.71
10,409.00	90.20	356.10	-5,595.73	8,894.73	1,662.74	-64.98	1,663.99	0.21	389,690.74	711,199.02
10,503.00	90.80	356.80	-5,594.91	8,893.91	1,756.56	-70.80	1,757.97	0.98	389,784.56	711,193.20
10,597.00	89.90	356.80	-5,594.33	8,893.33	1,850.41	-76.05	1,851.96	0.96	389,878.41	711,187.95
10,691.00	92.20	359.60	-5,592.61	8,891.61	1,944.33	-79.00	1,945.92	3.85	389,972.33	711,185.00
10,785.00	90.80	359.60	-5,590.15	8,889.15	2,038.29	-79.66	2,039.83	1.49	390,066.29	711,184.34
10,878.00	90.60	358.00	-5,589.02	8,888.02	2,131.26	-81.61	2,132.79	1.73	390,159.26	711,182.39
10,973.00	90.20	357.10	-5,588.35	8,887.35	2,226.17	-85.67	2,227.79	1.04	390,254.17	711,178.33
11,068.00	90.80	356.80	-5,587.52	8,886.52	2,321.03	-90.72	2,322.78	0.71	390,349.03	711,173.28
11,162.00	90.90	357.00	-5,586.13	8,885.13	2,414.89	-95.80	2,416.76	0.24	390,442.89	711,168.20
11,258.00	89.90	356.80	-5,585.46	8,884.46	2,510.74	-101.00	2,512.76	1.06	390,538.74	711,163.00
11,353.00	89.20	357.80	-5,586.20	8,885.20	2,605.63	-105.47	2,607.75	1.28	390,633.63	711,158.53
11,448.00	88.80	358.00	-5,587.86	8,886.86	2,700.55	-108.95	2,702.73	0.47	390,728.55	711,155.05
11,543.00	88.20	357.90	-5,590.35	8,889.35	2,795.46	-112.35	2,797.70	0.64	390,823.46	711,151.65
11,637.00	85.70	357.40	-5,595.35	8,894.35	2,889.24	-116.20	2,891.56	2.71	390,917.24	711,147.80
11,732.00	88.50	357.20	-5,600.16	8,899.16	2,984.00	-120.67	2,986.42	2.95	391,012.00	711,143.33
11,827.00	89.70	357.60	-5,601.65	8,900.65	3,078.89	-124.97	3,081.41	1.33	391,106.89	711,139.03
11,922.00	89.30	358.00	-5,602.48	8,901.48	3,173.82	-128.62	3,176.40	0.60	391,201.82	711,135.38
12,017.00	87.80	356.40	-5,604.88	8,903.88	3,268.67	-133.26	3,271.37	2.31	391,296.67	711,130.74
12,112.00	90.10	356.00	-5,606.62	8,905.62	3,363.44	-139.55	3,366.32	2.46	391,391.44	711,124.45
12,207.00	89.70	356.70	-5,606.79	8,905.79	3,458.24	-145.60	3,461.30	0.85	391,486.24	711,118.40
12,303.00	90.00	356.30	-5,607.04	8,906.04	3,554.06	-151.46	3,557.29	0.52	391,582.06	711,112.54
12,398.00	91.50	356.60	-5,605.80	8,904.80	3,648.87	-157.34	3,652.26	1.61	391,676.87	711,106.66
12,493.00	91.20	356.60	-5,603.56	8,902.56	3,743.68	-162.98	3,747.22	0.32	391,771.68	711,101.02
12,589.00	90.70	356.00	-5,601.97	8,900.97	3,839.46	-169.17	3,843.19	0.81	391,867.46	711,094.83
12,684.00	91.90	355.90	-5,599.81	8,898.81	3,934.20	-175.88	3,938.13	1.27	391,962.20	711,088.12



Chesapeake Energy, Survey Report



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Site:	PLU Phantom Banks 4-26-31 USA 1H	MD Reference:	WELL @ 3299.00usft (Latshaw 14)
Well:	Job # 1210289	North Reference:	Grid
Wellbore:	Rig: Latshaw 14	Survey Calculation Method:	Minimum Curvature
Design:	Rig: Latshaw 14	Database:	Compass5000

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec. (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
12,779.00	92.50	355.50	-5,596.16	8,895.16	4,028.86	-183.00	4,033.01	0.76	392,056.86	711,081.00
12,874.00	93.10	354.90	-5,591.52	8,890.52	4,123.42	-190.94	4,127.82	0.89	392,151.42	711,073.06
12,969.00	91.60	355.10	-5,587.63	8,886.63	4,217.97	-199.21	4,222.65	1.59	392,245.97	711,064.79
13,064.00	91.00	354.50	-5,585.47	8,884.47	4,312.56	-207.82	4,317.52	0.89	392,340.56	711,056.18
13,159.00	91.90	354.70	-5,583.07	8,882.07	4,407.10	-216.75	4,412.37	0.97	392,435.10	711,047.25
13,254.00	91.70	354.50	-5,580.08	8,879.08	4,501.63	-225.69	4,507.20	0.30	392,529.63	711,038.31
13,350.00	91.70	354.30	-5,577.24	8,876.24	4,597.13	-235.05	4,603.02	0.21	392,625.13	711,028.95
13,444.00	92.70	355.10	-5,573.63	8,872.63	4,690.66	-243.73	4,696.84	1.36	392,718.66	711,020.27
13,539.00	92.00	354.90	-5,569.73	8,868.73	4,785.22	-252.00	4,791.67	0.77	392,813.22	711,012.00
13,625.00	91.40	354.50	-5,567.18	8,866.18	4,870.81	-259.94	4,877.53	0.84	392,898.81	711,004.06
Last Phoenix MWD Surveys @ 13625' MD										
13,675.00	91.40	354.50	-5,565.96	8,864.96	4,920.57	-264.73	4,927.45	0.00	392,948.57	710,999.27
Projection to TD @ 13675' MD										

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
193.00	193.00	-0.09	-0.67	First Phoenix MWD Survey @ 193' MD
13,625.00	8,866.18	4,870.81	-259.94	Last Phoenix MWD Surveys @ 13625' MD
13,675.00	8,864.96	4,920.57	-264.73	Projection to TD @ 13675' MD

Checked By: _____	Approved By: _____	Date: _____
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