



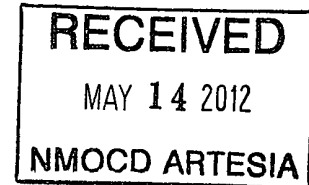
PHOENIX
TECHNOLOGY SERVICES

May 9, 2012

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

Dear District 2 - Artesia

Re: Chesapeake Operating Inc.
Crows Flats 14-16-28 USA 2H
Eddy Co., NM
API #30-015-39945
Job No. 1210325



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	
Will Harper	2H	205	11,036	04/22/2012	05/06/2012	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: 7010 1670 0000 9227 7249

Phoenix Technology Services
SURVEY DATA CERTIFICATION



PHOENIX JOB NUMBER 1210325

OPERATOR Chesapeake Energy

WELL NAME Crows Flats 14-16-28 USA 2H

COUNTY & STATE Eddy, NM

API WELL NUMBER	30-015-39945
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PROPOSED DIRECTION	89.98
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TIE-IN DATA						
MEASURED	VERTICAL			N-S	E-W	DATA
DEPTH	DEPTH	INCLIN	AZIMUTH	COORD	COORD	SOURCE
ft	.00 ft	.0 ft	.0 ft	.00 ft	.00 ft	Surface

FIRST	FIRST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
22-Apr-12	205 ft	1.6	269.9

SURVEY INSTRUMENT
TYPE
Phoenix MWD

LAST	LAST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
06-May-12	11,036 ft	88.7	89.7

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

PROJECTED	PROJECTED		
TD SURVEY	TD SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
06-May-12	11,100 ft	88.7	89.7

Will Harper

PRINT YOUR NAME ABOVE

Will Harper

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	7.71
DECLINATION OR GRID	GRID

6 May, 2012

TODAY'S DATE

MWD SUPERVISOR 1 Will Harper

DIRECTIONAL DRILLER 1

Casey Hendrix

MWD SUPERVISOR 2 Paul Perhonis

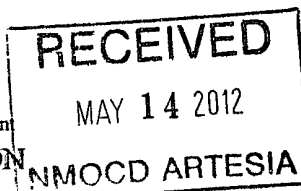
DIRECTIONAL DRILLER 2

Dustin Barrnet

1805 Brittmore Road Houston, Texas 77043 (713)3370609 (Voice), (713)337-0599 (Fax)

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240
DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210
DISTRICT III
1000 RIO BRAZOS RD., AZTEC, NM 87410
DISTRICT IV
11885 S. ST. FRANCIS DR., SANTA FE, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505



Form C-102
Revised July 16, 2010
Submit to Appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code 97102/96794	Pool Name CROW FLATS; WOLFCAMP OIL/WILDCAT; WOLFCAMP OIL
Property Code	Property Name CROW FLATS 14 16 28 USA	Well Number 2H
OGRID No. 147179	Operator Name CHESAPEAKE OPERATING, INC.	Elevation 3575'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	14	16-S	28-E		1980	NORTH	10	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	14	16-S	28-E		1980	NORTH	350	EAST	EDDY

Dedicated Acres 160	Joint or Infill	Consolidation Code	Order No. NSL-Pending
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

1980' Projected Penetration Point 1980' FNL & 10' FWL (A) S.L. SEE DETAIL 10'		Project Area Producing Area GRID AZ = 89°58'57" HORIZ. DIST. = 4855.2' (B) B.H. 350' 1980'	
(C) DETAIL 3569.3' 3577.6' 600' 3573.9' 3579.6'		(D) GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y=700396.0 N X=554794.7 E LAT.=32.925337° N LONG.=104.154757° W BOTTOM HOLE LOCATION Y=700397.5 N X=559648.7 E SECTION, QUARTER & SIXTEENTH CORNER COORDINATES ① - Y=701040.7 N, X=554783.9 E ② - Y=701040.6 N, X=559995.9 E ③ - Y=699705.9 N, X=554785.5 E ④ - Y=699704.2 N, X=560001.4 E	

OPERATOR CERTIFICATION

I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest or in a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Bryan Arrant 10/13/2011

Signature _____ Date _____

Printed Name _____

bryan.arrant@chk.com

E-mail Address _____

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

OCTOBER 05, 2011

Date of Survey _____

Signature of Registered Professional Surveyor: *Donald J. Eidson*

Donald J. Eidson 12641
3239

AR IVSC W.O.: 11.11.2052

EXHIBIT A-L



PHOENIX
TECHNOLOGY SERVICES

Chesapeake Operating Inc.

Eddy County, New Mexico (NAD27)

Crow Flats 14-16-28 USA 2H

Job # 1210325

Rig: Cactus 120

Survey: Phoenix MWD Surveys

Chesapeake Energy, Survey Report

07 May, 2012





Chesapeake Energy, Survey Report

Chesapeake

Company:	Chesapeake Operating Inc.	Local Co-ordinate Reference:	Well Job # 1210325
Project:	Eddy County, New Mexico (NAD27)	TVD Reference:	WELL @ 3598.00usft (Cactus 120)
Site:	Crow Flats 14-16-28 USA 2H	MD Reference:	WELL @ 3598.00usft (Cactus 120)
Well:	Job # 1210325	North Reference:	Grid
Wellbore:	Rig Cactus 120	Survey Calculation Method:	Minimum Curvature
Design:	Rig Cactus 120	Database:	Compass5000

Project	Eddy County, New Mexico (NAD27)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Crow Flats 14-16-28 USA 2H		
Site Position:		Northing:	700,396.00 usft
From:	Map	Easting:	554,795.00 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 55' 31.2146 N
		Longitude:	104° 9' 17.1207 W
		Grid Convergence:	0.10 °

Well	Job # 1210325		
Well Position	+N-S	0.00 usft	Northing: 700,396.00 usft
	+E-W	0.00 usft	Easting: 554,795.00 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	3,598.00 usft
		Latitude:	32° 55' 31.2146 N
		Longitude:	104° 9' 17.1207 W
		Ground Level:	3,575.00 usft

Wellbore	Rig Cactus 120				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	04/17/12	7.81	60.71	48,888

Design	Rig Cactus 120			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)
	0.00	0.00	0.00	89.98

Survey Program	Date 05/07/12			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
205.00	11,100.00	Phoenix MWD Surveys (Rig Cactus 120)	MWD	MWD - Standard



Chesapeake Energy, Survey Report



Company:	Chesapeake Operating Inc.	Local Co-ordinate Reference:	Well Job # 1210325
Project:	Eddy County, New Mexico (NAD27)	TVD Reference:	WELL @ 3598.00usft (Cactus 120)
Site:	Crow Flats 14-16-28 USA 2H	MD Reference:	WELL @ 3598.00usft (Cactus 120)
Well:	Job # 1210325	North Reference:	Grid
Wellbore:	Rig Cactus 120	Survey Calculation Method:	Minimum Curvature
Design:	Rig. Cactus 120	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	3,598.00	0.00	0.00	0.00	0 00	0.00	700,396.00	554,795.00	
205.00	1.60	269 90	3,393.03	204.97	0.00	-2.86	-2.86	0.78	700,396.00	554,792.14	
First Phoenix MWD Surveys @ 205' MD											
281.00	1.00	93.60	3,317.03	280.97	-0.05	-3.26	-3.26	3.42	700,395.95	554,791.74	
408 00	3.60	92.10	3,190.15	407.85	-0.26	1.83	1 83	2 05	700,395.74	554,796.83	
603 00	3.90	88 30	2,995.56	602.44	-0.29	14 58	14.58	0.20	700,395.71	554,809.58	
794.00	3.20	96.10	2,804.93	793.07	-0.67	26.37	26.37	0 44	700,395.33	554,821.37	
985.00	2.90	88.00	2,614.20	983.80	-1.06	36 50	36.50	0 27	700,394.94	554,831.50	
1,176.00	1.70	89.70	2,423 36	1,174.64	-0.88	44.16	44.16	0.63	700,395.12	554,839.16	
1,367.00	1.20	75.40	2,232.42	1,365.58	-0.36	48.93	48.93	0.32	700,395.64	554,843 93	
1,558 00	0.60	84.70	2,041.44	1,556.56	0.24	51.86	51.86	0 32	700,396 24	554,846.86	
1,749.00	0.70	63.30	1,850.46	1,747.54	0.85	53.90	53.90	0.14	700,396 85	554,848.90	
1,916.00	0.50	62.40	1,683.47	1,914.53	1.65	55.46	55.46	0.12	700,397 65	554,850.46	
2,115.00	0 30	95.70	1,484.47	2,113.53	2 00	56 74	56.75	0.15	700,398.00	554,851.74	
2,307.00	0.20	36.40	1,292.47	2,305.53	2 22	57.44	57.44	0 14	700,398.22	554,852.44	
2,498.00	0.50	16 60	1,101.48	2,496.52	3.29	57.88	57.88	0.17	700,399.29	554,852.88	
2,688.00	0.80	26.60	911.49	2,686.51	5.27	58.71	58.71	0.17	700,401.27	554,853.71	
2,879.00	0.90	31.20	720.51	2,877.49	7.74	60.08	60.09	0.06	700,403.74	554,855.08	
3,070.00	1.00	20.80	529.53	3,068.47	10.58	61.45	61 46	0.10	700,406.58	554,856.45	
3,260.00	1 00	24.00	339.56	3,258.44	13.65	62.72	62.72	0.03	700,409.65	554,857.72	
3,452 00	1.10	20.50	147.60	3,450.40	16.90	64.04	64.05	0.06	700,412 90	554,859.04	
3,643.00	1.00	14.30	-43.37	3,641.37	20.24	65.10	65.10	0.08	700,416.24	554,860.10	
3,835.00	0.90	0.90	-235.35	3,833.35	23 37	65.53	65.54	0.13	700,419 37	554,860.53	
4,026.00	1.00	6.70	-426.32	4,024.32	26 52	65.75	65.76	0.07	700,422.52	554,860.75	
4,217.00	0.80	1 40	-617 30	4,215 30	29.51	65.98	65.99	0.11	700,425.51	554,860.98	
4,407.00	0.70	358.20	-807.28	4,405.28	32.00	65.98	65.99	0.06	700,428.00	554,860.98	
4,598.00	0.80	359.80	-998.26	4,596.26	34.50	65.93	65 95	0.05	700,430.50	554,860.93	



Chesapeake Energy, Survey Report

Chesapeake

Company:	Chesapeake Operating Inc.	Local Co-ordinate Reference:	Well Job # 1210325
Project:	Eddy County, New Mexico (NAD27)	TVD Reference:	WELL @ 3598.00usft (Cactus 120)
Site:	Crow Flats 14-16-28 USA 2H	MD Reference:	WELL @ 3598.00usft (Cactus 120)
Well:	Job # 1210325	North Reference:	Grid
Wellbore:	Rig Cactus 120	Survey Calculation Method:	Minimum Curvature
Design:	Rig Cactus 120	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)	
4,789.00	0.60	348.90	-1,189.25	4,787.25	36.81	65.74	65.75	0.13	700,432.81	554,860.74	
4,980.00	0.40	344.20	-1,380.24	4,978.24	38.43	65.36	65.38	0.11	700,434.43	554,860.36	
5,171.00	0.50	357.10	-1,571.24	5,169.24	39.91	65.14	65.15	0.07	700,435.91	554,860.14	
5,362.00	1.30	80.50	-1,762.22	5,360.22	41.10	67.23	67.25	0.70	700,437.10	554,862.23	
5,554.00	2.30	92.00	-1,954.12	5,552.12	41.32	73.23	73.25	0.55	700,437.32	554,868.23	
5,745.00	4.00	94.80	-2,144.82	5,742.82	40.63	83.70	83.72	0.89	700,436.63	554,878.70	
5,937.00	4.10	95.30	-2,336.34	5,934.34	39.44	97.21	97.22	0.06	700,435.44	554,892.21	
6,045.00	4.80	93.60	-2,444.02	6,042.02	38.80	105.56	105.58	0.66	700,434.80	554,900.56	
6,077.00	5.30	95.10	-2,475.89	6,073.89	38.58	108.37	108.39	1.62	700,434.58	554,903.37	
6,109.00	7.20	97.40	-2,507.70	6,105.70	38.19	111.83	111.85	5.99	700,434.19	554,906.83	
6,141.00	10.20	98.50	-2,539.33	6,137.33	37.51	116.63	116.64	9.39	700,433.51	554,911.63	
6,173.00	13.70	98.30	-2,570.63	6,168.63	36.55	123.18	123.19	10.94	700,432.55	554,918.18	
6,205.00	18.10	98.00	-2,601.40	6,199.40	35.31	131.86	131.87	13.75	700,431.31	554,926.86	
6,237.00	22.50	97.80	-2,631.41	6,229.41	33.79	142.85	142.86	13.75	700,429.79	554,937.85	
6,269.00	26.20	97.50	-2,660.55	6,258.55	32.03	155.92	155.94	11.57	700,428.03	554,950.92	
6,300.00	29.50	97.30	-2,687.96	6,285.96	30.17	170.28	170.29	10.65	700,426.17	554,965.28	
6,332.00	32.50	96.90	-2,715.39	6,313.39	28.13	186.64	186.65	9.40	700,424.13	554,981.64	
6,364.00	36.00	96.60	-2,741.83	6,339.83	26.02	204.52	204.53	10.95	700,422.02	554,999.52	
6,396.00	39.40	96.30	-2,767.15	6,365.15	23.82	223.96	223.97	10.64	700,419.82	555,018.96	
6,428.00	42.30	95.90	-2,791.35	6,389.35	21.60	244.77	244.78	9.10	700,417.60	555,039.77	
6,460.00	44.80	95.30	-2,814.54	6,412.54	19.45	266.71	266.72	7.92	700,415.45	555,061.71	
6,492.00	47.30	94.80	-2,836.75	6,434.75	17.43	289.66	289.67	7.89	700,413.43	555,084.66	
6,523.00	50.10	95.00	-2,857.21	6,455.21	15.44	312.86	312.87	9.05	700,411.44	555,107.86	
6,555.00	54.30	94.90	-2,876.82	6,474.82	13.26	338.05	338.05	13.13	700,409.26	555,133.05	
6,587.00	58.40	94.70	-2,894.54	6,492.54	11.03	364.59	364.59	12.82	700,407.03	555,159.59	
6,619.00	60.70	94.70	-2,910.76	6,508.76	8.77	392.08	392.08	7.19	700,404.77	555,187.08	
6,651.00	64.10	94.40	-2,925.58	6,523.58	6.52	420.34	420.34	10.66	700,402.52	555,215.34	



Chesapeake Energy, Survey Report



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Project:	Eddy County, New Mexico (NAD27)	TVD Reference:	WELL @ 3598 00usft (Cactus 120)
Site:	Crow Flats 14-16-28 USA 2H	MD Reference:	WELL @ 3598 00usft (Cactus 120)
Well:	Job # 1210325	North Reference:	Grid
Wellbore:	Rig: Cactus 120	Survey Calculation Method:	Minimum Curvature
Design:	Rig: Cactus 120	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)	
6,682.00	68.30	93.80	-2,938.09	6,536.09	4.50	448.63	448.63	13.66	700,400.50	555,243.63	
6,714.00	73.50	93.20	-2,948.56	6,546.56	2.65	478.80	478.80	16.35	700,398.65	555,273.80	
6,746.00	76.60	93.20	-2,956.81	6,554.81	0.93	509.66	509.66	9.69	700,396.93	555,304.66	
6,778.00	79.50	93.10	-2,963.44	6,561.44	-0.79	540.92	540.92	9.07	700,395.21	555,335.92	
6,810.00	81.60	93.10	-2,968.69	6,566.69	-2.50	572.44	572.44	6.56	700,393.50	555,367.44	
6,842.00	84.80	92.30	-2,972.48	6,570.48	-4.00	604.17	604.17	10.30	700,392.00	555,399.17	
6,876.00	89.50	90.90	-2,974.17	6,572.17	-4.94	638.11	638.10	14.42	700,391.06	555,433.11	
6,908.00	91.00	91.00	-2,974.03	6,572.03	-5.47	670.10	670.10	4.70	700,390.53	555,465.10	
6,939.00	91.10	91.60	-2,973.46	6,571.46	-6.18	701.09	701.09	1.96	700,389.82	555,496.09	
7,035.00	91.20	90.50	-2,971.54	6,569.54	-7.94	797.05	797.05	1.15	700,388.06	555,592.05	
7,130.00	91.50	89.40	-2,969.30	6,567.30	-7.85	892.02	892.02	1.20	700,388.15	555,687.02	
7,226.00	90.30	89.80	-2,967.79	6,565.79	-7.18	988.01	988.00	1.32	700,388.82	555,783.01	
7,321.00	91.10	90.30	-2,966.63	6,564.63	-7.27	1,083.00	1,083.00	0.99	700,388.73	555,878.00	
7,416.00	90.50	90.00	-2,965.30	6,563.30	-7.51	1,177.99	1,177.99	0.71	700,388.49	555,972.99	
7,512.00	89.40	88.80	-2,965.39	6,563.39	-6.51	1,273.98	1,273.98	1.70	700,389.49	556,068.98	
7,607.00	89.80	88.60	-2,966.05	6,564.05	-4.35	1,368.95	1,368.95	0.47	700,391.65	556,163.95	
7,703.00	89.30	88.60	-2,966.80	6,564.80	-2.01	1,464.92	1,464.92	0.52	700,393.99	556,259.92	
7,798.00	90.30	89.30	-2,967.13	6,565.13	-0.27	1,559.90	1,559.90	1.28	700,395.73	556,354.90	
7,894.00	90.50	89.10	-2,966.46	6,564.46	1.07	1,655.89	1,655.89	0.29	700,397.07	556,450.89	
7,989.00	87.80	87.20	-2,967.87	6,565.87	4.14	1,750.82	1,750.82	3.48	700,400.14	556,545.82	
8,084.00	91.00	90.30	-2,968.87	6,566.87	6.21	1,845.77	1,845.77	4.69	700,402.21	556,640.77	
8,180.00	91.10	92.00	-2,967.11	6,565.11	4.28	1,941.73	1,941.73	1.77	700,400.28	556,736.73	
8,275.00	87.70	88.20	-2,968.10	6,566.10	4.12	2,036.69	2,036.69	5.37	700,400.12	556,831.69	
8,371.00	88.60	88.50	-2,971.20	6,569.20	6.88	2,132.60	2,132.60	0.99	700,402.88	556,927.60	
8,466.00	89.60	90.00	-2,972.70	6,570.70	8.12	2,227.58	2,227.58	1.90	700,404.12	557,022.58	
8,561.00	89.30	90.30	-2,973.61	6,571.61	7.87	2,322.57	2,322.57	0.45	700,403.87	557,117.57	
8,657.00	90.20	92.10	-2,974.03	6,572.03	5.86	2,418.54	2,418.55	2.10	700,401.86	557,213.54	



Chesapeake Energy, Survey Report



Company: Chesapeake Operating Inc.
Project: Eddy County, New Mexico (NAD27)
Site: Crow Flats 14-16-28 USA 2H
Well: Job # 1210325
Wellbore: Rig, Cactus 120
Design: Rig Cactus 120

Local Co-ordinate Reference: Well Job # 1210325
TVD Reference: WELL @ 3598.00usft (Cactus 120)
MD Reference: WELL @ 3598.00usft (Cactus 120)
North Reference: Grd
Survey Calculation Method: Minimum Curvature
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)
8,752.00	89.20	92.00	-2,974.52	6,572.52	2.47	2,513.48	2,513.48	1.06	700,398.47	557,308.48
8,847.00	88.40	90.10	-2,976.51	6,574.51	0.72	2,608.44	2,608.44	2.17	700,396.72	557,403.44
8,943.00	88.60	89.10	-2,979.03	6,577.03	1.39	2,704.40	2,704.40	1.06	700,397.39	557,499.40
9,038.00	89.30	90.00	-2,980.77	6,578.77	2.14	2,799.38	2,799.38	1.20	700,398.14	557,594.38
9,134.00	89.00	88.00	-2,982.19	6,580.19	3.82	2,895.35	2,895.35	2.11	700,399.82	557,690.35
9,230.00	88.90	88.80	-2,983.95	6,581.95	6.50	2,991.30	2,991.30	0.84	700,402.50	557,786.30
9,325.00	89.40	89.50	-2,985.36	6,583.36	7.90	3,086.28	3,086.28	0.91	700,403.90	557,881.28
9,420.00	90.40	90.20	-2,985.53	6,583.53	8.15	3,181.27	3,181.28	1.28	700,404.15	557,976.27
9,516.00	91.90	91.60	-2,983.60	6,581.60	6.65	3,277.24	3,277.24	2.14	700,402.65	558,072.24
9,611.00	92.00	91.70	-2,980.37	6,578.37	3.91	3,372.14	3,372.14	0.15	700,399.91	558,167.14
9,706.00	92.40	93.10	-2,976.72	6,574.72	-0.06	3,466.99	3,466.99	1.53	700,395.94	558,261.99
9,802.00	91.30	92.20	-2,973.62	6,571.62	-4.50	3,562.83	3,562.83	1.48	700,391.50	558,357.83
9,897.00	89.80	90.10	-2,972.71	6,570.71	-6.40	3,657.80	3,657.80	2.72	700,389.60	558,452.80
9,993.00	88.60	88.20	-2,974.05	6,572.05	-4.98	3,753.77	3,753.77	2.34	700,391.02	558,548.77
10,088.00	88.40	87.80	-2,976.54	6,574.54	-1.67	3,848.68	3,848.68	0.47	700,394.33	558,643.68
10,184.00	88.40	87.40	-2,979.22	6,577.22	2.35	3,944.56	3,944.56	0.42	700,398.35	558,739.56
10,279.00	87.70	86.40	-2,982.45	6,580.45	7.49	4,039.37	4,039.37	1.28	700,403.49	558,834.37
10,375.00	88.00	87.30	-2,986.05	6,584.05	12.76	4,135.15	4,135.16	0.99	700,408.76	558,930.15
10,470.00	87.90	88.90	-2,989.45	6,587.45	15.91	4,230.04	4,230.04	1.69	700,411.91	559,025.04
10,566.00	87.60	89.20	-2,993.22	6,591.22	17.50	4,325.95	4,325.95	0.44	700,413.50	559,120.95
10,661.00	88.20	89.90	-2,996.70	6,594.70	18.24	4,420.88	4,420.89	0.97	700,414.24	559,215.88
10,757.00	88.40	90.20	-2,999.55	6,597.55	18.16	4,516.84	4,516.84	0.38	700,414.16	559,311.84
10,852.00	88.70	90.50	-3,001.95	6,599.95	17.58	4,611.81	4,611.81	0.45	700,413.58	559,406.81
10,948.00	89.00	90.10	-3,003.88	6,601.88	17.07	4,707.78	4,707.79	0.52	700,413.07	559,502.78
11,036.00	88.70	89.70	-3,005.64	6,603.64	17.23	4,795.77	4,795.77	0.57	700,413.23	559,590.77

Last Phoenix MWD Surveys @ 11036' MD



Chesapeake Energy, Survey Report



Company: Chesapeake Operating Inc.
Project: Eddy County, New Mexico (NAD27)
Site: Crow Flats 14-16-28 USA 2H
Well: Job # 1210325
Wellbore: Rig Cactus 120
Design: Rig Cactus 120

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well Job # 1210325
WELL @ 3598.00usft (Cactus 120)
WELL @ 3598 00usft (Cactus 120)
Grid
Minimum Curvature
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)
11,100.00	88.70	89.70	-3,007.10	6,605.10	17.56	4,859.75	4,859.75	0.00	700,413.56	559,654.75
Projection to TD @ 11100' MD										

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
205.00	204.97	0.00	-2.86	First Phoenix MWD Surveys @ 205' MD
11,036.00	6,603.64	17.23	4,795.77	Last Phoenix MWD Surveys @ 11036' MD
11,100.00	6,605.10	17.56	4,859.75	Projection to TD @ 11100' MD

Checked By: _____ Approved By: _____ Date: _____