



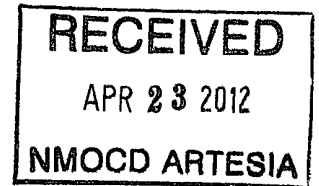
PHOENIX
TECHNOLOGY SERVICES

April 19, 2012

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

Dear District 2 - Artesia

Re: Chesapeake Operating Inc.
Crow Flats 14 Federal 4H
Eddy County, NM
API #30-015-38466
Job No. 1210260



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	
Shane Hebel	4H	160	11,023	03/29/12	04/13/12	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,

Gretchen Briggs
Operations Administrator

Certified mail receipt number: **7011 1570 0001 4365 0120**

RECEIVED

APR 23 2012

NMOCD ARTESIA



PHOENIX
TECHNOLOGY SERVICES

**Phoenix Technology Services
SURVEY DATA CERTIFICATION**

PHOENIX JOB NUMBER

1210260

OPERATOR

Chesapeake

WELL NAME

Crow flats 14 Federal 4H

COUNTY & STATE

Eddy, New Mexico

API WELL NUMBER

30-019-38466

PROPOSED DIRECTION

90.5

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 SURVEY DATE	FIRST SURVEY DEPTH	INCLIN	AZIMUTH
29-Mar-12	160 ft	0.3	112.3

SURVEY INSTRUMENT TYPE
Phoenix MWD

LAST SURVEY DATE	LAST SURVEY DEPTH	INCLIN	AZIMUTH
13-Apr-12	11,023 ft	88.9	87.9

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
13-Apr-12	11,077 ft	88.9	87.9

Shane Hebel

PRINT YOUR NAME ABOVE

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	DECLINATION
7.72	
DECLINATION OR GRID	DECLINATION

4/13/2012

TODAY'S DATE

MWD SUPERVISOR 1

Shane Hebel

DIRECTIONAL DRILLER 1

Casey Hendrixx

MWD SUPERVISOR 2

Paul Perhonis

DIRECTIONAL DRILLER 2

Dustin Barnett

1805 Brittmore Road

Houston, Texas 77043

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

DISTRICT I
1625 N FRENCH DR., HOBBS, NM 88240

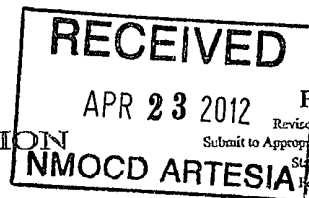
DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
1220 S. ST. FRANCIS DR., SANTA FE, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505



WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code 97102	Pool Name Undes. Crow Flats; Wolfcamp
Property Code 37197	Property Name CROW FLATS 14 FEDERAL	Well Number 4H
OGRID No. 147179	Operator Name CHESAPEAKE OPERATING, INC.	Elevation 3593'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	14	16-S	28-E		1980	SOUTH	200	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
I	14	16-S	28-E		1980	SOUTH	330	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

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

	GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y=699016.9 N X=554986.6 E LAT.=32.921546° N LONG.=104.154139° W BOTTOM HOLE LOCATION Y=699013.2 N X=559674.3 E Project Area	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 to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Bryan Arrant</i> 5/7/2010 Signature Date Bryan Arrant Printed Name
	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. Date Surveyed: APR 19 2010 Signature & Seal of Professional Surveyor Certificate No. GARY G. EIDSON 12641 RONALD J. EIDSON 3239	

EXHIBIT A-1

Chesapeake Operating Inc.

Eddy County, New Mexico (NAD27)

Crow Flats 14 federal 4H

Job # 1210260

Rig: Cactus 120

Survey: Phoenix MWD Surveys

Chesapeake Energy, Survey Report

13 April, 2012

Chesapeake Energy, Survey Report

Company:	Chesapeake Operating Inc.	Local Co-ordinate Reference:	Site Crow Flats 14 federal 4H
Project:	Eddy County, New Mexico (NAD27)	TVD Reference:	WELL @ 3618.00usft (Cactus 120)
Site:	Crow Flats 14 federal 4H	MD Reference:	WELL @ 3618.00usft (Cactus 120)
Well:	Job # 1210260	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 federal 4H			
Site Position:		Northing:	699,016.90 usft
From:	Map	Easting:	554,986.60 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 55' 17.5648 N
		Longitude:	104° 9' 14.9003 W
		Grid Convergence:	0.10 °

Well Job # 1210260			
Well Position	+N/-S	0.00 usft	Northing: 699,016.90 usft
	+E/-W	0.00 usft	Easting: 554,986.60 usft
Position Uncertainty		0.00 usft	Wellhead Elevation: 25.00 usft
			Latitude: 32° 55' 17.5648 N
			Longitude: 104° 9' 14.9003 W
			Ground Level: 3,593.00 usft

Wellbore Rig: Cactus 120					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	03/26/12	7.81	60.71	48,892

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	90.05

Survey Program Date 04/13/12				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
160.00	11,077.00	Phoenix MWD Surveys (Rig: Cactus 120)	MWD	MWD - Standard

Chesapeake Energy, Survey Report

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Project:	Eddy County, New Mexico (NAD27)	TVD Reference:	WELL @ 3618.00usft (Cactus 120)
Site:	Crow Flats 14 federal 4H	MD Reference:	WELL @ 3618.00usft (Cactus 120)
Well:	Job # 1210260	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	3,618.00	0.00	0.00	0.00	0.00	0 00	699,016.90	554,986.60	
1.00	0.00	112.30	3,617.00	1.00	0.00	0.00	0.00	0 19	699,016.90	554,986.60	
Surface											
160.00	0.30	112.30	3,458.00	160.00	-0.16	0.39	0.39	0 19	699,016.74	554,986.99	
First Phoenix MWD Survey @ 160' MD											
398.00	0.40	201.40	3,220.00	398.00	-1.17	0.66	0.66	0.21	699,015.73	554,987.26	
598.00	0.70	245.20	3,020.01	597.99	-2.33	-0 70	-0.70	0.25	699,014.57	554,985.90	
715.00	0.80	254.80	2,903.02	714.98	-2 85	-2 14	-2 14	0.14	699,014.05	554,984.46	
906.00	0.60	237.80	2,712.04	905.96	-3 73	-4 27	-4.27	0.15	699,013.17	554,982.33	
1,096.00	0.30	248.70	2,522.04	1,095.96	-4.44	-5.58	-5.57	0.16	699,012.46	554,981.02	
1,288.00	0.30	255.40	2,330.05	1,287.95	-4.75	-6 53	-6.53	0.02	699,012.15	554,980.07	
1,479.00	0.00	353.70	2,139.05	1,478.95	-4.87	-7.02	-7.01	0.16	699,012.03	554,979.58	
1,670.00	0.10	342.50	1,948.05	1,669.95	-4.71	-7 07	-7 06	0.05	699,012.19	554,979.53	
1,861.00	0.10	316.10	1,757.05	1,860.95	-4.44	-7.23	-7.23	0.02	699,012.46	554,979.37	
2,134.00	0.20	40.90	1,484.05	2,133.95	-3.90	-7.09	-7.08	0.08	699,013.00	554,979.51	
2,326.00	0.30	88.80	1,292.05	2,325.95	-3.64	-6.36	-6 36	0.12	699,013.26	554,980.24	
2,516.00	0 40	45.30	1,102.05	2,515.95	-3.16	-5.40	-5.39	0.15	699,013.74	554,981 20	
2,707.00	0.20	6.10	911.05	2,706.95	-2.36	-4.89	-4.88	0.14	699,014.54	554,981.71	
2,898.00	0.30	12.00	720 06	2,897.94	-1.54	-4.75	-4.75	0.05	699,015.36	554,981.85	
3,090.00	0.30	64.70	528.06	3,089.94	-0.84	-4.19	-4.19	0.14	699,016.06	554,982.41	
3,281.00	0.20	74.50	337 06	3,280.94	-0.53	-3.41	-3.41	0.06	699,016.37	554,983 19	
3,472 00	0.10	106.90	146.06	3,471.94	-0.49	-2.93	-2.93	0 07	699,016.41	554,983.67	
3,664.00	0.00	7.60	-45 94	3,663.94	-0.54	-2.77	-2.77	0.05	699,016.36	554,983.83	
3,855.00	0.10	226.50	-236 94	3,854.94	-0.66	-2.89	-2.89	0.05	699,016.24	554,983.71	
4,046.00	0.40	263.30	-427.94	4,045.94	-0.85	-3.68	-3.68	0.17	699,016 05	554,982.92	
4,237.00	0.60	274.70	-618.93	4,236.93	-0.84	-5.34	-5 34	0.12	699,016.06	554,981.26	
4,429.00	0.60	271.00	-810.92	4,428 92	-0.74	-7.34	-7.34	0 02	699,016.16	554,979.26	

Chesapeake Energy, Survey Report

Company:	Chesapeake Operating Inc.	Local Co-ordinate Reference:	Site Crow Flats 14 federal 4H
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Site:	Crow Flats 14 federal 4H	MD Reference:	WELL @ 3618.00usft (Cactus 120)
Well:	Job # 1210260	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)	
4,621.00	0.40	266.30	-1,002.91	4,620.91	-0.77	-9.02	-9.02	0.11	699,016.13	554,977.58	
4,812.00	0.40	285.60	-1,193.91	4,811.91	-0.63	-10.32	-10.32	0.07	699,016.27	554,976.28	
5,004.00	0.50	275.10	-1,385.90	5,003.90	-0.38	-11.80	-11.80	0.07	699,016.52	554,974.80	
5,195.00	0.80	302.00	-1,576.89	5,194.89	0.40	-13.77	-13.77	0.22	699,017.30	554,972.83	
5,386.00	0.50	37.20	-1,767.88	5,385.88	1.77	-14.39	-14.39	0.51	699,018.67	554,972.21	
5,482.00	0.40	84.90	-1,863.88	5,481.88	2.14	-13.81	-13.81	0.39	699,019.04	554,972.79	
5,672.00	0.90	96.60	-2,053.87	5,671.87	2.02	-11.66	-11.66	0.27	699,018.92	554,974.94	
5,863.00	1.80	112.20	-2,244.81	5,862.81	0.72	-7.39	-7.40	0.50	699,017.62	554,979.21	
6,045.00	2.60	105.40	-2,426.68	6,044.68	-1.46	-0.77	-0.77	0.46	699,015.44	554,985.83	
6,109.00	4.40	101.20	-2,490.55	6,108.55	-2.32	3.04	3.04	2.84	699,014.58	554,989.64	
6,141.00	6.00	97.70	-2,522.42	6,140.42	-2.78	5.90	5.90	5.10	699,014.12	554,992.50	
6,173.00	7.50	95.10	-2,554.20	6,172.20	-3.19	9.64	9.64	4.78	699,013.71	554,996.24	
6,204.00	10.50	88.70	-2,584.81	6,202.81	-3.31	14.48	14.48	10.19	699,013.59	555,001.08	
6,236.00	13.10	88.10	-2,616.13	6,234.13	-3.12	21.02	21.02	8.13	699,013.78	555,007.62	
6,268.00	15.60	88.80	-2,647.13	6,265.13	-2.91	28.95	28.95	7.83	699,013.99	555,015.55	
6,300.00	18.50	90.20	-2,677.72	6,295.72	-2.84	38.33	38.33	9.15	699,014.06	555,024.93	
6,332.00	22.00	90.10	-2,707.74	6,325.74	-2.87	49.40	49.40	10.94	699,014.03	555,036.00	
6,363.00	26.80	89.50	-2,735.96	6,353.96	-2.82	62.20	62.21	15.50	699,014.08	555,048.80	
6,395.00	31.90	88.90	-2,763.85	6,381.85	-2.59	77.88	77.88	15.96	699,014.31	555,064.48	
6,427.00	37.10	88.50	-2,790.21	6,408.21	-2.18	96.00	96.00	16.27	699,014.72	555,082.60	
6,459.00	42.00	88.40	-2,814.88	6,432.88	-1.63	116.36	116.36	15.31	699,015.27	555,102.96	
6,491.00	47.10	88.20	-2,837.67	6,455.67	-0.96	138.79	138.79	15.94	699,015.94	555,125.39	
6,522.00	52.30	88.10	-2,857.72	6,475.72	-0.19	162.41	162.41	16.78	699,016.71	555,149.01	
6,554.00	57.50	88.00	-2,876.11	6,494.11	0.70	188.57	188.57	16.25	699,017.60	555,175.17	
6,586.00	62.10	87.30	-2,892.20	6,510.20	1.84	216.19	216.19	14.50	699,018.74	555,202.79	
6,618.00	64.20	88.60	-2,906.66	6,524.66	2.85	244.72	244.72	7.50	699,019.75	555,231.32	
6,649.00	66.10	88.90	-2,919.68	6,537.68	3.47	272.85	272.84	6.19	699,020.37	555,259.45	

Chesapeake Energy, Survey Report

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Site:	Crow Flats 14 federal 4H	MD Reference:	WELL @ 3618.00usft (Cactus 120)
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Design:	Rig: Cactus 120	Database:	Compass5000

Survey											
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6,681.00	68.70	90.20	-2,931.98	6,549.98	3.70	302.38	302.38	8.95	699,020.60	555,288.98	
6,713.00	71.00	91.10	-2,943.00	6,561.00	3.35	332.42	332.42	7.66	699,020.25	555,319.02	
6,745.00	72.50	92.00	-2,953.03	6,571.03	2.53	362.80	362.80	5.40	699,019.43	555,349.40	
6,777.00	74.30	91.10	-2,962.17	6,580.17	1.70	393.45	393.45	6.24	699,018.60	555,380.05	
6,808.00	76.10	90.90	-2,970.09	6,588.09	1.18	423.42	423.42	5.84	699,018.08	555,410.02	
6,840.00	78.70	90.80	-2,977.07	6,595.07	0.72	454.64	454.64	8.13	699,017.62	555,441.24	
6,872.00	81.40	90.50	-2,982.59	6,600.59	0.36	486.16	486.16	8.49	699,017.26	555,472.76	
6,890.00	83.20	88.60	-2,985.01	6,603.01	0.50	503.99	503.99	14.47	699,017.40	555,490.59	
6,922.00	85.90	88.00	-2,988.05	6,606.05	1.44	535.83	535.83	8.64	699,018.34	555,522.43	
7,017.00	89.10	89.20	-2,992.19	6,610.19	3.76	630.70	630.69	3.60	699,020.66	555,617.30	
7,113.00	90.70	89.40	-2,992.36	6,610.36	4.93	726.69	726.68	1.68	699,021.83	555,713.29	
7,208.00	90.90	90.20	-2,991.03	6,609.03	5.27	821.68	821.67	0.87	699,022.17	555,808.28	
7,304.00	92.20	90.10	-2,988.43	6,606.43	5.01	917.64	917.63	1.36	699,021.91	555,904.24	
7,399.00	90.40	90.40	-2,986.28	6,604.28	4.60	1,012.61	1,012.60	1.92	699,021.50	555,999.21	
7,494.00	90.80	90.50	-2,985.28	6,603.28	3.85	1,107.60	1,107.60	0.43	699,020.75	556,094.20	
7,590.00	89.60	91.70	-2,984.95	6,602.95	2.01	1,203.58	1,203.58	1.77	699,018.91	556,190.18	
7,685.00	90.60	91.40	-2,984.78	6,602.78	-0.56	1,298.54	1,298.54	1.10	699,016.34	556,285.14	
7,781.00	89.70	92.00	-2,984.53	6,602.53	-3.41	1,394.50	1,394.50	1.13	699,013.49	556,381.10	
7,876.00	89.70	91.90	-2,985.03	6,603.03	-6.64	1,489.44	1,489.45	0.11	699,010.26	556,476.04	
7,972.00	89.90	91.70	-2,985.36	6,603.36	-9.65	1,585.39	1,585.40	0.29	699,007.25	556,571.99	
8,067.00	88.00	90.20	-2,987.10	6,605.10	-11.23	1,680.36	1,680.37	2.55	699,005.67	556,666.96	
8,162.00	88.80	90.00	-2,989.76	6,607.76	-11.40	1,775.32	1,775.33	0.87	699,005.50	556,761.92	
8,258.00	89.90	90.40	-2,990.85	6,608.85	-11.73	1,871.31	1,871.32	1.22	699,005.17	556,857.91	
8,353.00	89.00	89.50	-2,991.76	6,609.76	-11.65	1,966.30	1,966.31	1.34	699,005.25	556,952.90	
8,449.00	87.50	88.70	-2,994.69	6,612.69	-10.14	2,062.24	2,062.25	1.77	699,006.76	557,048.84	
8,598.00	88.00	88.10	-3,000.54	6,618.54	-5.98	2,211.07	2,211.08	0.52	699,010.92	557,197.67	
8,640.00	88.40	88.00	-3,001.86	6,619.86	-4.55	2,253.03	2,253.03	0.98	699,012.35	557,239.63	

Chesapeake Energy, Survey Report

Company:	Chesapeake Operating Inc.	Local Co-ordinate Reference:	Site Crow Flats 14 federal 4H
Project:	Eddy County, New Mexico (NAD27)	TVD Reference:	WELL @ 3618.00usft (Cactus 120)
Site:	Crow Flats 14 federal 4H	MD Reference:	WELL @ 3618.00usft (Cactus 120)
Well:	Job # 1210260	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)
8,735.00	88.30	87.10	-3,004.59	6,622.59	-0.50	2,347.90	2,347.90	0.95	699,016.40	557,334.50
8,829.00	87.50	88.00	-3,008.04	6,626.04	3.52	2,441.75	2,441.74	1.28	699,020.42	557,428.35
8,924.00	88.90	90.70	-3,011.02	6,629.02	4.60	2,536.68	2,536.68	3.20	699,021.50	557,523.28
9,020.00	89.90	90.80	-3,012.03	6,630.03	3.34	2,632.67	2,632.66	1.05	699,020.24	557,619.27
9,115.00	90.80	90.50	-3,011.45	6,629.45	2.26	2,727.66	2,727.66	1.00	699,019.16	557,714.26
9,211.00	91.50	89.50	-3,009.52	6,627.52	2.26	2,823.64	2,823.64	1.27	699,019.16	557,810.24
9,307.00	92.70	89.30	-3,006.00	6,624.00	3.27	2,919.57	2,919.56	1.27	699,020.17	557,906.17
9,402.00	93.00	89.40	-3,001.28	6,619.28	4.34	3,014.44	3,014.44	0.33	699,021.24	558,001.04
9,497.00	90.00	90.20	-2,998.79	6,616.79	4.67	3,109.40	3,109.39	3.27	699,021.57	558,096.00
9,593.00	88.50	90.80	-3,000.05	6,618.05	3.84	3,205.38	3,205.38	1.68	699,020.74	558,191.98
9,688.00	88.80	91.10	-3,002.29	6,620.29	2.26	3,300.34	3,300.34	0.45	699,019.16	558,286.94
9,783.00	89.60	90.50	-3,003.61	6,621.61	0.94	3,395.32	3,395.32	1.05	699,017.84	558,381.92
9,879.00	87.70	91.10	-3,005.88	6,623.88	-0.40	3,491.28	3,491.28	2.08	699,016.50	558,477.88
9,975.00	88.60	91.70	-3,008.98	6,626.98	-2.75	3,587.20	3,587.20	1.13	699,014.15	558,573.80
10,070.00	87.20	91.70	-3,012.46	6,630.46	-5.57	3,682.10	3,682.10	1.47	699,011.33	558,668.70
10,165.00	87.50	90.80	-3,016.85	6,634.85	-7.64	3,776.97	3,776.98	1.00	699,009.26	558,763.57
10,260.00	88.10	90.50	-3,020.50	6,638.50	-8.71	3,871.89	3,871.90	0.71	699,008.19	558,858.49
10,356.00	88.70	89.90	-3,023.18	6,641.18	-9.05	3,967.85	3,967.86	0.88	699,007.85	558,954.45
10,451.00	89.10	88.90	-3,025.00	6,643.00	-8.05	4,062.83	4,062.84	1.13	699,008.85	559,049.43
10,546.00	89.80	88.70	-3,025.91	6,643.91	-6.06	4,157.80	4,157.81	0.77	699,010.84	559,144.40
10,642.00	88.30	88.80	-3,027.50	6,645.50	-3.97	4,253.77	4,253.77	1.57	699,012.93	559,240.37
10,737.00	88.50	89.00	-3,030.16	6,648.16	-2.15	4,348.71	4,348.71	0.30	699,014.75	559,335.31
10,832.00	88.30	88.30	-3,032.81	6,650.81	0.09	4,443.65	4,443.65	0.77	699,016.99	559,430.25
10,928.00	88.40	88.10	-3,035.57	6,653.57	3.11	4,539.56	4,539.56	0.23	699,020.01	559,526.16
11,023.00	88.90	87.90	-3,037.81	6,655.81	6.42	4,634.48	4,634.47	0.57	699,023.32	559,621.08

Last Phoenix MWD Surveys @ 11023' MD

Chesapeake Energy, Survey Report

Company:	Chesapeake Operating Inc.	Local Co-ordinate Reference:	Site Crow Flats 14 federal 4H
Project:	Eddy County, New Mexico (NAD27)	TVD Reference:	WELL @ 3618.00usft (Cactus 120)
Site:	Crow Flats 14 federal 4H	MD Reference:	WELL @ 3618.00usft (Cactus 120)
Well:	Job: # 1210260	North Reference:	Gnd
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)
11,077.00	88.90	87.90	-3,038.85	6,656.85	8.40	4,688.43	4,688.42	0.00	699,025.30	559,675.03
Projection to TD @ 11077' MD										

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1.00	1.00	0.00	0.00	Surface
160.00	160.00	-0.16	0.39	First Phoenix MWD Survey @ 160' MD
11,023.00	6,655.81	6.42	4,634.48	Last Phoenix MWD Surveys @ 11023' MD
11,077.00	6,656.85	8.40	4,688.43	Projection to TD @ 11077' MD

Checked By: _____	Approved By: _____	Date: _____
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