

WR-35
Rev (9-11)

State of West Virginia
Department of Environmental Protection
Office of Oil and Gas
Well Operator's Report of Well Work

DATE: 2-26-2015
API #: 47-069-00077

REVISÉD

Farm name: Edward Nichols 8H Operator Well No.: 637870

LOCATION: Elevation: 1310' Quadrangle: Wheeling WV

District: Richland County: Ohio
Latitude: 1480' Feet South of 40 Deg. 07 Min. 30 Sec.
Longitude 8730' Feet West of 80 Deg. 37 Min. 30 Sec.

Company: Chesapeake Appalachia, L.L.C.

Address:	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
<u>P.O. Box 18496</u>				
<u>Oklahoma City, OK 73154-0496</u>	<u>13 3/8"</u>	<u>608'</u>	<u>608'</u>	<u>117 Cu. Ft.</u>
Agent: <u>Eric Gillespie</u>	<u>9 5/8"</u>	<u>2077'</u>	<u>2077'</u>	<u>932 Cu. Ft.</u>
Inspector: <u>Bill Hendershot</u>	<u>5 1/2"</u>	<u>12980'</u>	<u>12980'</u>	<u>3340 Cu. Ft.</u>
Date Permit Issued: <u>5-2-2011</u>				
Date Well Work Commenced: <u>6-20-2011</u>				
Date Well Work Completed: <u>5-30-2013</u>				
Verbal Plugging:				
Date Permission granted on:				
Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rig <input type="checkbox"/>				
Total Vertical Depth (ft): <u>6335'</u>				
Total Measured Depth (ft): <u>12980'</u>				
Fresh Water Depth (ft.): <u>229' & 350'</u>				
Salt Water Depth (ft.): <u>973'-1179' & 1330'</u>				
Is coal being mined in area (N/Y)? <u>N</u>				
Coal Depths (ft.): <u>545'</u>				
Void(s) encountered (N/Y) Depth(s) <u>Y 545'</u>				

Received
Office of Oil & Gas
JUL 30 2015

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheets)

Producing formation Marcellus Pay zone depth (ft) 6,200-12,842

Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d

Final open flow 2,124* MCF/d Final open flow 327 Bbl/d

Time of open flow between initial and final tests 48 Hours *Calculated

Static rock Pressure 4,118* psig (surface pressure) after 48 Hours

Second producing formation _____ Pay zone depth (ft) _____

Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d

Final open flow _____ MCF/d Final open flow _____ Bbl/d

Time of open flow between initial and final tests _____ Hours

Static rock Pressure _____ psig (surface pressure) after _____ Hours

RECEIVED
Office of Oil and Gas
FEB 27 2015

WV Department of
Environmental Protection

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

Mallene Williams
Signature

2-26-15
Date

04/29/2016

Were core samples taken? Yes _____ No _____
Were cuttings caught during drilling? Yes _____ No _____

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list _____
Gamma ray, neutron, density, and resistivity open hole logs were run from 0'-6250' MD, and LWD GR was run from 5214'-12932' MD.

NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.

Perforated Intervals, Fracturing, or Stimulating:

See attached

Plug Back Details Including Plug Type and Depth(s): Cement plugs @ 420'-540' & 5450'-6250'

Formations Encountered:	Top Depth	/	Bottom Depth
-------------------------	-----------	---	--------------

Surface:

See attached

Received
Office of Oil & Gas
JUL 30 2015

RECEIVED
Office of Oil and Gas
FEB 17 2015

WV Department of
Environmental Protection

04/29/2016

VERTICAL PILOT HOLE

Formation/Lithology	Top Depth, TVD/MD (ft)	Bottom Depth, TVD/MD (ft)
LS/SS	0	390
LS/SHALE	390	545
PITTSBURGH COAL	545	552
LS/SHALE	552	650
SS	650	1910
SHALE	1980	6010
GENESEO (SH)	6010	6030
TULLY (LS)	6030	6076
HAMILTON (SH)	6076	6156
MARCELLUS (SH)	6156	6234
ONONDAGA (LS)	6234	
TD OF PILOT HOLE		6250

**LATERAL SIDETRACK
WELLBORE**

Formation/Lithology	Top Depth, MD (ft)	Top Depth, TVD (ft)	Bottom Depth, MD (ft)	Bottom Depth, TVD (ft)
LS/SS	0	0	390	390
LS/SHALE	390	390	545	545
PITTSBURGH COAL	545	545	555	555
LS/SHALE	555	555	750	750
SS/SHALE	750	750	1930	1930
SHALE	1930	1930	6032	6014
GENESEO (SH)	6032	6014	6064	6033
TULLY (LS)	6064	6033	6148	6088
SHALE	6148	6088	6430	6180
MARCELLUS (SH)	6430	6180		
TD OF LATERAL			12980	

6335
RECEIVED
Office of Oil and Gas
FEB 27 2015
 WNY Department of
Environmental Protection

CHESAPEAKE ENERGY CORPORATION

Field: Ohio County, WV
 Site: Edward Nichols Pad
 Well: 8H
 Wellpath: Lateral

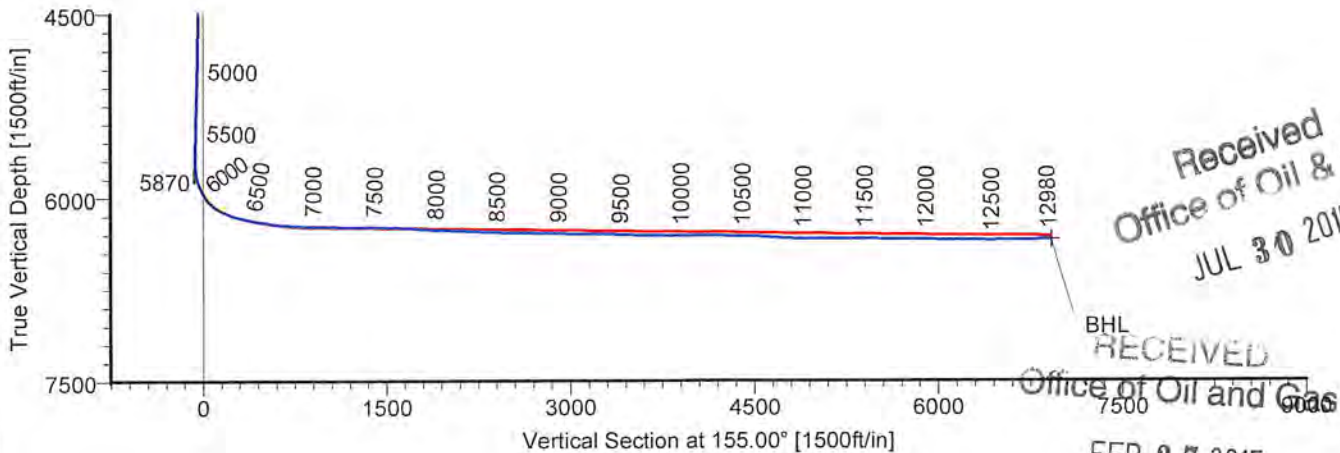
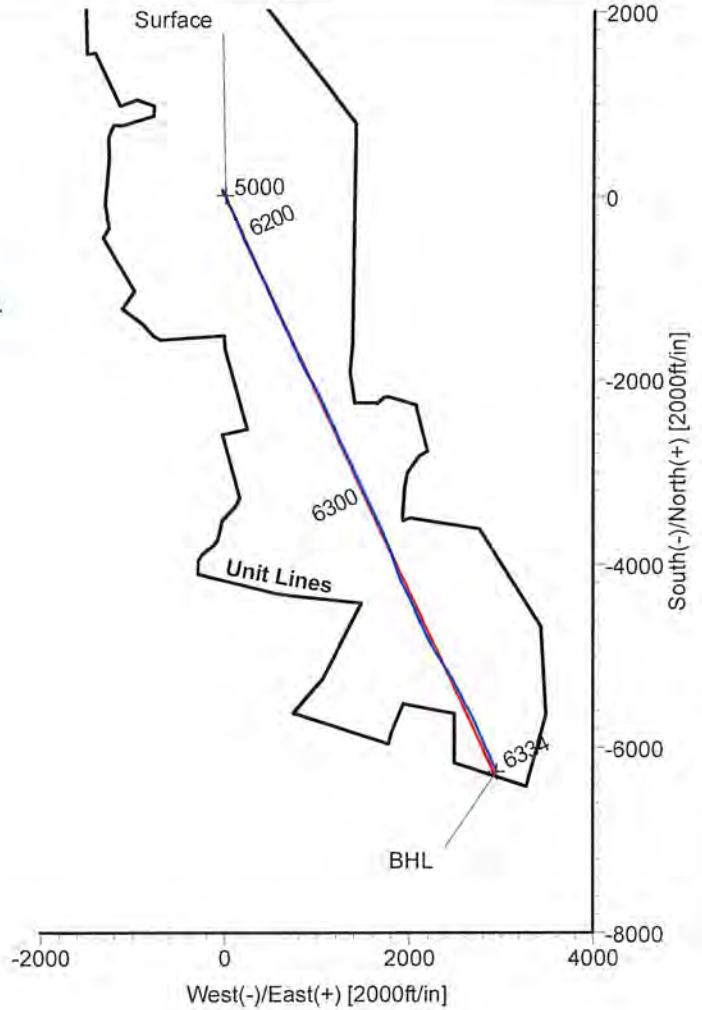


Azimuths to Grid North
 True North: 0.72°
 Magnetic North: -7.95°

Magnetic Field
 Strength: 53034nT
 Dip Angle: 67.69°
 Date: 09/04/2011
 Model: IGRF2010

LEGEND

- 8H, Lateral, Plan #4
- 8H (Pilot Hole)
- Lateral



TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Surface	0.00	0.00	0.00	585113.20	1683758.50	Point
BHL	6333.78	-6258.02	2956.32	578855.18	1686714.82	Point

Received
 Office of Oil & Gas
 JUL 30 2015

RECEIVED
 Office of Oil & Gas
 FEB 27 2015

Department of
 Environmental Protection

Wellpath: (8H/Lateral)

Created By: Ivonne Gonzalez Date: 09/19/2011

ARCHER DIRECTIONAL DRILLING SERVICES
 911 Regional Park Drive Houston, Texas 77060
 Phone: 713-934-9600 Fax: 713-934-9067



04/29/2016

ARCHER Survey Report

Company: CHESAPEAKE ENERGY CORPORATION	Date: 09/19/2011	Time: 09:11:30	Page: 1
Field: Ohio County, WV	Co-ordinate(N/E) Reference: Well: 8H, Grid North		
Site: Edward Nichols Pad	Vertical (TVD) Reference: Est.1310'GL+20'KB 1330.0		
Well: 8H	Section (VS) Reference: Well (0.00N,0.00E,155.00Azi)		
Wellpath: Lateral	Survey Calculation Method: Minimum Curvature	Db: Adapti	

Field: Ohio County, WV		
Map System: US State Plane Coordinate System 1927	Map Zone: West Virginia, Northern Zone	
Geo Datum: NAD27 (Clarke 1866)	Coordinate System: Well Centre	
Sys Datum: Mean Sea Level	Geomagnetic Model: IGRF2010	

Site: Edward Nichols Pad		
Centered on well 8H		
Site Position:	Northing: 585113.20 ft	Latitude: 40 6 3.494 N
From: Map	Easting: 1683758.50 ft	Longitude: 80 37 49.699 W
Position Uncertainty: 0.00 ft		North Reference: Grid
Ground Level: 1310.00 ft		Grid Convergence: -0.72 deg

Well: 8H	Slot Name: 8H
Well Position:	Northing: 585113.20 ft
+N/-S 0.00 ft	Latitude: 40 6 3.494 N
+E/-W 0.00 ft	Easting: 1683758.50 ft
Position Uncertainty: 0.00 ft	Longitude: 80 37 49.699 W

Wellpath: Lateral	Drilled From: Pilot Hole
Current Datum: Est.1310'GL+20'KB	Tie-on Depth: 5870.00 ft
Magnetic Data: 09/04/2011	Above System Datum: Mean Sea Level
Field Strength: 53034 nT	Declination: -8.67 deg
Vertical Section: Depth From (TVD)	Mag Dip Angle: 67.69 deg
ft	ft
0.00	0.00
0.00	0.00
0.00	155.00
ft	deg

Survey Program for Definitive Wellpath				
Date: 09/19/2011	Validated: No	Version: 0		
Actual From	To	Survey	Toolcode	Tool Name
ft	ft			
100.00	5700.00	Survey #1 (100.00-5870.00)	Gyroscope	Gyroscope
5739.00	12932.00	Survey #2 (5739.00-12932.00)	MWD	Std MWD
12980.00	12980.00	Survey #3 (12980.00-12980.00)	Project	Projection

Survey										
MD	Incl	Azim	TVD	+N/-S	+E/-W	VS	DLS	Build	Turn	Tool/Comment
ft	deg	deg	ft	ft	ft	ft	deg/100ft	deg/100ft	deg/100ft	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	TIE LINE
100.00	0.32	45.30	100.00	0.20	0.20	-0.09	0.32	0.32	0.00	Gyroscope
200.00	0.29	148.95	200.00	0.18	0.53	0.06	0.48	-0.03	103.65	Gyroscope
300.00	0.22	138.60	300.00	-0.18	0.79	0.50	0.08	-0.07	-10.35	Gyroscope
400.00	0.17	174.40	400.00	-0.48	0.93	0.82	0.13	-0.05	35.80	Gyroscope
500.00	0.27	219.81	500.00	-0.81	0.79	1.06	0.19	0.10	45.41	Gyroscope
600.00	0.42	273.84	599.99	-0.96	0.27	0.99	0.34	0.15	54.03	Gyroscope
700.00	0.36	261.65	699.99	-0.98	-0.40	0.72	0.10	-0.06	-12.19	Gyroscope
800.00	0.05	197.05	799.99	-1.07	-0.73	0.66	0.34	-0.31	-64.60	Gyroscope
900.00	0.22	35.83	899.99	-0.96	-0.63	0.60	0.27	0.17	-161.22	Gyroscope
1000.00	0.20	350.01	999.99	-0.63	-0.54	0.34	0.16	-0.02	-45.82	Gyroscope
1100.00	0.34	255.88	1099.99	-0.53	-0.86	0.11	0.41	0.14	-94.13	Gyroscope
1200.00	0.27	236.85	1199.99	-0.73	-1.35	0.09	0.12	-0.07	-19.03	Gyroscope
1300.00	0.32	246.20	1299.99	-0.97	-1.80	0.12	0.07	0.05	9.35	Gyroscope
1400.00	0.31	232.34	1399.99	-1.25	-2.27	0.17	0.08	-0.01	-13.86	Gyroscope
1500.00	0.54	310.63	1499.98	-1.11	-2.84	-0.20	0.57	0.23	78.29	Gyroscope
1600.00	0.51	285.89	1599.98	-0.68	-3.63	-0.92	0.23	-0.03	-24.74	Gyroscope
1700.00	0.32	229.51	1699.98	-0.74	-4.27	-1.13	0.43	-0.19	-56.38	Gyroscope
1800.00	0.41	321.22	1799.98	-0.64	-4.70	-1.41	0.53	0.09	91.71	Gyroscope
1900.00	0.42	297.70	1899.97	-0.19	-5.25	-2.05	0.17	0.01	-23.52	Gyroscope
2000.00	0.20	179.73	1999.97	-0.20	-5.58	-2.18	0.54	-0.22	-117.97	Gyroscope

Received
 Office of Oil & Gas
 JUL 30 2015

ARCHER

Survey Report

Company: CHESAPEAKE ENERGY CORPORATION	Date: 09/19/2011	Time: 09:11:30	Page: 2
Field: Ohio County, WV	Co-ordinate(NE) Reference: Well: 8H, Grid North		
Site: Edward Nichols Pad	Vertical (TVD) Reference: Est. 1310'GL+20'KB 1330.0		
Well: 8H	Section (VS) Reference: Well (0.00N,0.00E,155.00Azi)		
Wellpath: Lateral	Survey Calculation Method: Minimum Curvature	Db: Adapti	

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
2100.00	0.53	285.20	2099.97	-0.25	-6.02	-2.32	0.61	0.33	105.47	Gyroscope
2200.00	0.17	228.26	2199.97	-0.23	-6.58	-2.57	0.46	-0.36	-56.94	Gyroscope
2300.00	0.76	302.38	2299.97	0.03	-7.25	-3.09	0.73	0.59	74.12	Gyroscope
2400.00	0.64	278.54	2399.96	0.47	-8.36	-3.96	0.31	-0.12	-23.84	Gyroscope
2500.00	0.41	319.75	2499.95	0.82	-9.15	-4.61	0.43	-0.23	41.21	Gyroscope
2600.00	0.87	289.58	2599.95	1.35	-10.09	-5.49	0.56	0.46	-30.17	Gyroscope
2700.00	1.12	296.45	2699.93	2.04	-11.68	-6.79	0.28	0.25	6.87	Gyroscope
2800.00	0.76	335.52	2799.92	3.08	-12.83	-8.21	0.71	-0.36	39.07	Gyroscope
2900.00	0.53	306.27	2899.91	3.96	-13.48	-9.28	0.39	-0.23	-29.25	Gyroscope
3000.00	0.91	305.03	2999.91	4.69	-14.50	-10.38	0.38	0.38	-1.24	Gyroscope
3100.00	1.10	324.41	3099.89	5.92	-15.71	-12.01	0.39	0.19	19.38	Gyroscope
3200.00	0.77	335.80	3199.88	7.32	-16.55	-13.62	0.38	-0.33	11.39	Gyroscope
3300.00	0.82	288.72	3299.87	8.16	-17.50	-14.79	0.64	0.05	-47.08	Gyroscope
3400.00	1.25	309.48	3399.85	9.08	-19.02	-16.27	0.56	0.43	20.76	Gyroscope
3500.00	1.22	325.60	3499.83	10.65	-20.46	-18.30	0.35	-0.03	16.12	Gyroscope
3600.00	1.22	304.75	3599.81	12.14	-21.94	-20.27	0.44	0.00	-20.85	Gyroscope
3700.00	1.24	308.05	3699.79	13.41	-23.67	-22.16	0.07	0.02	3.30	Gyroscope
3800.00	0.66	311.60	3799.77	14.46	-24.95	-23.65	0.58	-0.58	3.55	Gyroscope
3900.00	0.69	329.89	3899.76	15.37	-25.68	-24.78	0.22	0.03	18.29	Gyroscope
4000.00	1.23	351.23	3999.75	16.95	-26.15	-26.41	0.64	0.54	21.34	Gyroscope
4100.00	1.05	1.61	4099.73	18.92	-26.28	-28.26	0.27	-0.18	10.38	Gyroscope
4200.00	1.09	5.31	4199.71	20.79	-26.17	-29.90	0.08	0.04	3.70	Gyroscope
4300.00	1.56	350.75	4299.69	23.08	-26.30	-32.03	0.57	0.47	-14.56	Gyroscope
4400.00	1.06	340.79	4399.66	25.29	-26.82	-34.26	0.55	-0.50	-9.96	Gyroscope
4500.00	1.77	5.20	4499.63	27.71	-26.99	-36.52	0.92	0.71	24.41	Gyroscope
4600.00	1.15	16.37	4599.60	30.21	-26.57	-38.60	0.68	-0.62	11.17	Gyroscope
4700.00	1.72	9.99	4699.57	32.65	-26.02	-40.59	0.59	0.57	-6.38	Gyroscope
4800.00	1.00	12.86	4799.54	34.98	-25.57	-42.50	0.72	-0.72	2.87	Gyroscope
4900.00	1.06	1.12	4899.52	36.75	-25.36	-44.02	0.22	0.06	-11.74	Gyroscope
5000.00	1.49	359.11	4999.50	38.98	-25.36	-46.04	0.43	0.43	-2.01	Gyroscope
5100.00	1.58	356.26	5099.46	41.65	-25.47	-48.51	0.12	0.09	-2.85	Gyroscope
5200.00	1.58	346.67	5199.42	44.37	-25.88	-51.15	0.26	0.00	-9.59	Gyroscope
5219.00	1.50	354.80	5218.41	44.87	-25.96	-51.64	1.22	-0.42	42.79	Gyroscope
5263.00	1.50	351.30	5262.40	46.01	-26.10	-52.73	0.21	0.00	-7.95	Gyroscope
5300.00	1.86	347.22	5299.38	47.08	-26.30	-53.78	1.02	0.97	-11.03	Gyroscope
5306.00	1.50	347.30	5305.38	47.25	-26.34	-53.96	6.00	-6.00	1.33	Gyroscope
5349.00	1.50	346.90	5348.37	48.35	-26.59	-55.06	0.02	0.00	-0.93	Gyroscope
5393.00	1.50	347.80	5392.35	49.47	-26.85	-56.18	0.05	0.00	2.05	Gyroscope
5400.00	1.17	341.39	5399.35	49.63	-26.89	-56.34	5.17	-4.71	-91.57	Gyroscope
5436.00	1.40	344.50	5435.34	50.40	-27.12	-57.14	0.67	0.64	8.64	Gyroscope
5479.00	1.40	342.60	5478.33	51.41	-27.42	-58.18	0.11	0.00	-4.42	Gyroscope
5500.00	1.72	352.63	5499.32	51.97	-27.54	-58.74	2.00	1.52	47.76	Gyroscope
5523.00	1.40	343.30	5522.31	52.58	-27.66	-59.34	1.77	-1.39	-40.57	Gyroscope
5566.00	1.30	340.80	5565.30	53.54	-27.98	-60.35	0.27	-0.23	-5.81	Gyroscope
5600.00	1.60	332.50	5599.29	54.33	-28.32	-61.21	1.07	0.88	-24.41	Gyroscope
5609.00	1.30	339.50	5608.29	54.53	-28.41	-61.43	3.87	-3.33	77.78	Gyroscope
5653.00	1.40	340.60	5652.27	55.51	-28.77	-62.47	0.23	0.23	2.50	Gyroscope
5700.00	1.04	333.77	5699.26	56.43	-29.15	-63.46	0.82	-0.77	-14.53	Gyroscope
5739.00	1.80	133.00	5738.26	56.33	-28.86	-63.25	7.17	1.95	408.28	MWD
5783.00	7.20	146.40	5782.11	53.56	-26.82	-59.88	12.42	12.27	30.45	MWD
5826.00	12.00	153.90	5824.49	47.30	-23.36	-52.74	11.51	11.16	17.44	MWD
5869.00	17.30	158.00	5866.08	37.35	-19.00	-41.88	12.55	12.33	9.53	MWD
5913.00	22.50	158.20	5907.44	23.46	-13.42	-26.93	11.82	11.82	0.45	MWD
5956.00	28.10	156.70	5946.30	6.50	-6.35	-8.58	13.11	13.02	-3.49	MWD

Received
 Office of Oil & Gas
 09/30 2015

ARCHER Survey Report

Company: CHESAPEAKE ENERGY CORPORATION	Date: 09/19/2011	Time: 09:11:30	Page: 3
Field: Ohio County, WV	Co-ordinate(NE) Reference: Well: 8H, Grid North		
Site: Edward Nichols Pad	Vertical (TVD) Reference: Est.1310'GL+20'KB 1330.0		
Well: 8H	Section (VS) Reference: Well (0.00N,0.00E,155.00Azi)		
Wellpath: Lateral	Survey Calculation Method: Minimum Curvature	Db: Adapti	

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
6000.00	33.80	155.80	5984.02	-14.19	2.77	14.04	13.00	12.95	-2.05	MWD
6043.00	39.70	155.10	6018.46	-37.58	13.47	39.75	13.76	13.72	-1.63	MWD
6086.00	46.20	155.20	6049.92	-64.15	25.77	69.03	15.12	15.12	0.23	MWD
6130.00	53.20	154.90	6078.36	-94.56	39.92	102.57	15.92	15.91	-0.68	MWD
6173.00	60.40	155.00	6101.89	-127.13	55.15	138.53	16.75	16.74	0.23	MWD
6217.00	66.40	155.40	6121.58	-162.83	71.64	177.85	13.66	13.64	0.91	MWD
6260.00	70.70	155.40	6137.30	-199.21	88.29	217.86	10.00	10.00	0.00	MWD
6304.00	72.70	155.50	6151.12	-237.21	105.65	259.64	4.55	4.55	0.23	MWD
6347.00	76.70	156.10	6162.46	-275.03	122.65	301.10	9.40	9.30	1.40	MWD
6390.00	78.30	156.70	6171.77	-313.50	139.45	343.06	3.96	3.72	1.40	MWD
6434.00	79.50	157.00	6180.24	-353.20	156.43	386.22	2.81	2.73	0.68	MWD
6477.00	80.30	157.10	6187.78	-392.18	172.93	428.52	1.87	1.86	0.23	MWD
6521.00	81.00	157.10	6194.93	-432.18	189.83	471.91	1.59	1.59	0.00	MWD
6564.00	81.00	156.40	6201.65	-471.20	206.59	514.36	1.61	0.00	-1.63	MWD
6607.00	81.40	155.60	6208.23	-510.02	223.88	556.85	2.06	0.93	-1.86	MWD
6651.00	83.10	155.80	6214.16	-549.75	241.82	600.44	3.89	3.86	0.45	MWD
6694.00	84.70	155.20	6218.73	-588.66	259.55	643.19	3.97	3.72	-1.40	MWD
6737.00	85.90	154.90	6222.26	-627.51	277.62	686.05	2.88	2.79	-0.70	MWD
6781.00	87.30	155.30	6224.87	-667.35	296.12	729.97	3.31	3.18	0.91	MWD
6824.00	87.80	154.80	6226.70	-706.30	314.24	772.93	1.64	1.16	-1.16	MWD
6867.00	88.20	154.80	6228.21	-745.19	332.54	815.90	0.93	0.93	0.00	MWD
6911.00	88.80	154.60	6229.36	-784.95	351.33	859.89	1.44	1.36	-0.45	MWD
6954.00	89.30	155.00	6230.07	-823.85	369.64	902.88	1.49	1.16	0.93	MWD
6997.00	89.80	154.70	6230.41	-862.78	387.91	945.88	1.36	1.16	-0.70	MWD
7041.00	89.50	155.20	6230.68	-902.64	406.54	989.88	1.33	-0.68	1.14	MWD
7128.00	88.50	155.20	6232.20	-981.60	443.03	1076.86	1.15	-1.15	0.00	MWD
7172.00	89.20	155.80	6233.08	-1021.63	461.27	1120.85	2.10	1.59	1.36	MWD
7215.00	89.80	155.60	6233.45	-1060.82	478.97	1163.85	1.47	1.40	-0.47	MWD
7258.00	89.80	156.00	6233.60	-1100.04	496.59	1206.84	0.93	0.00	0.93	MWD
7302.00	89.60	156.10	6233.83	-1140.25	514.45	1250.84	0.51	-0.45	0.23	MWD
7345.00	89.60	156.00	6234.13	-1179.55	531.91	1293.83	0.23	0.00	-0.23	MWD
7389.00	88.90	155.20	6234.71	-1219.61	550.08	1337.82	2.42	-1.59	-1.82	MWD
7428.00	89.00	155.10	6235.42	-1255.00	566.47	1376.81	0.36	0.26	-0.26	MWD
7475.00	89.50	155.10	6236.04	-1297.62	586.26	1423.81	1.06	1.06	0.00	MWD
7562.00	87.70	155.20	6238.17	-1376.54	622.80	1510.78	2.07	-2.07	0.11	MWD
7649.00	87.00	155.00	6242.19	-1455.37	659.40	1597.69	0.84	-0.80	-0.23	MWD
7736.00	86.70	155.00	6246.97	-1534.10	696.11	1684.55	0.34	-0.34	0.00	MWD
7823.00	86.60	155.10	6252.05	-1612.85	732.74	1771.41	0.16	-0.11	0.11	MWD
7910.00	87.20	155.50	6256.76	-1691.77	769.05	1858.28	0.83	0.69	0.46	MWD
7996.00	88.00	154.80	6260.36	-1769.74	805.15	1944.20	1.24	0.93	-0.81	MWD
8083.00	89.00	154.60	6262.64	-1848.36	842.32	2031.17	1.17	1.15	-0.23	MWD
8170.00	86.70	151.50	6265.90	-1925.85	881.71	2118.04	4.43	-2.64	-3.56	MWD
8257.00	88.00	152.00	6269.92	-2002.40	922.85	2204.80	1.60	1.49	0.57	MWD
8344.00	87.60	150.20	6273.26	-2078.51	964.86	2291.54	2.12	-0.46	-2.07	MWD
8430.00	88.40	152.90	6276.26	-2154.07	1005.80	2377.32	3.27	0.93	3.14	MWD
8517.00	89.50	154.50	6277.86	-2232.05	1044.34	2464.28	2.23	1.26	1.84	MWD
8604.00	88.70	157.00	6279.23	-2311.35	1080.06	2551.25	3.02	-0.92	2.87	MWD
8691.00	89.20	156.00	6280.82	-2391.12	1114.75	2638.21	1.28	0.57	1.15	MWD
8778.00	87.40	152.20	6283.40	-2469.33	1152.72	2725.14	4.83	-2.07	-4.37	MWD
8821.00	88.65	154.50	6284.88	-2507.74	1172.00	2768.09	6.08	2.01	5.35	MWD
8952.00	89.80	156.30	6286.66	-2626.83	1226.52	2899.07	1.63	0.88	1.37	MWD
9038.00	88.20	153.10	6288.16	-2704.56	1263.26	2985.04	4.16	-1.86	-3.72	MWD
9125.00	89.00	154.10	6290.28	-2782.46	1301.93	3071.99	1.47	0.92	1.15	MWD

Received
 Office of Oil & Gas
 Office of WV Oil & Gas
 FEB 27 2015
 WV Department of
 Environmental Protection

ARCHER Survey Report

Company: CHESAPEAKE ENERGY CORPORATION	Date: 09/19/2011	Time: 09:11:30	Page: 4
Field: Ohio County, WV	Co-ordinate(NE) Reference: Well: 8H, Grid North		
Site: Edward Nichols Pad	Vertical (TVD) Reference: Est.1310'GL+20'KB 1330.0		
Well: 8H	Section (VS) Reference: Well (0.00N,0.00E,155.00Azi)		
Wellpath: Lateral	Survey Calculation Method: Minimum Curvature	Db: Adapti	

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
9212.00	89.90	154.40	6291.12	-2860.82	1339.73	3158.97	1.09	1.03	0.34	MWD
9299.00	89.90	155.10	6291.27	-2939.50	1376.84	3245.97	0.80	0.00	0.80	MWD
9385.00	89.20	155.20	6291.95	-3017.54	1412.98	3331.97	0.82	-0.81	0.12	MWD
9472.00	87.50	154.50	6294.45	-3096.25	1449.94	3418.93	2.11	-1.95	-0.80	MWD
9559.00	88.70	156.60	6297.34	-3175.40	1485.92	3505.87	2.78	1.38	2.41	MWD
9646.00	88.50	153.70	6299.46	-3254.32	1522.47	3592.83	3.34	-0.23	-3.33	MWD
9733.00	89.10	154.90	6301.28	-3332.69	1560.19	3679.81	1.54	0.69	1.38	MWD
9820.00	88.70	153.40	6302.95	-3410.97	1598.11	3766.78	1.78	-0.46	-1.72	MWD
9906.00	90.00	156.00	6303.93	-3488.71	1634.86	3852.76	3.38	1.51	3.02	MWD
9993.00	89.40	154.50	6304.38	-3567.71	1671.28	3939.76	1.86	-0.69	-1.72	MWD
10080.00	89.50	156.00	6305.22	-3646.71	1707.70	4026.75	1.73	0.11	1.72	MWD
10167.00	89.40	156.90	6306.06	-3726.46	1742.46	4113.72	1.04	-0.11	1.03	MWD
10254.00	89.00	157.20	6307.27	-3806.57	1776.38	4200.65	0.57	-0.46	0.34	MWD
10340.00	89.00	158.60	6308.77	-3886.24	1808.73	4286.53	1.63	0.00	1.63	MWD
10427.00	89.80	162.60	6309.68	-3968.27	1837.62	4373.09	4.69	0.92	4.60	MWD
10514.00	89.80	161.90	6309.99	-4051.13	1864.14	4459.39	0.80	0.00	-0.80	MWD
10601.00	86.80	157.90	6312.57	-4132.77	1894.02	4546.01	5.75	-3.45	-4.60	MWD
10688.00	86.60	153.90	6317.58	-4212.04	1929.47	4632.84	4.60	-0.23	-4.60	MWD
10775.00	86.40	152.80	6322.89	-4289.65	1968.42	4719.64	1.28	-0.23	-1.26	MWD
10861.00	88.10	153.90	6327.02	-4366.42	2006.95	4805.50	2.35	1.98	1.28	MWD
10948.00	90.40	157.50	6328.15	-4445.69	2042.74	4892.46	4.91	2.64	4.14	MWD
11035.00	88.50	156.80	6328.99	-4525.85	2076.52	4979.39	2.33	-2.18	-0.80	MWD
11122.00	90.30	157.10	6329.90	-4605.90	2110.58	5066.33	2.10	2.07	0.34	MWD
11208.00	88.40	152.50	6330.88	-4683.69	2147.18	5152.30	5.79	-2.21	-5.35	MWD
11295.00	90.80	157.50	6331.48	-4762.50	2183.94	5239.27	6.37	2.76	5.75	MWD
11382.00	90.00	151.50	6330.88	-4840.99	2221.37	5326.22	6.96	-0.92	-6.90	MWD
11468.00	89.20	149.50	6331.48	-4915.83	2263.72	5411.95	2.50	-0.93	-2.33	MWD
11555.00	89.60	148.90	6332.39	-4990.56	2308.26	5498.50	0.83	0.46	-0.69	MWD
11641.00	89.30	148.50	6333.21	-5064.04	2352.94	5583.97	0.58	-0.35	-0.47	MWD
11728.00	89.00	148.60	6334.50	-5138.25	2398.33	5670.41	0.36	-0.34	0.11	MWD
11815.00	89.50	150.90	6335.64	-5213.39	2442.15	5757.03	2.71	0.57	2.64	MWD
11902.00	89.70	152.90	6336.25	-5290.13	2483.12	5843.90	2.31	0.23	2.30	MWD
11989.00	89.40	151.30	6336.93	-5367.01	2523.83	5930.78	1.87	-0.34	-1.84	MWD
12076.00	89.10	152.00	6338.07	-5443.57	2565.14	6017.63	0.88	-0.34	0.80	MWD
12162.00	89.60	152.10	6339.05	-5519.54	2605.44	6103.51	0.59	0.58	0.12	MWD
12249.00	89.10	151.70	6340.04	-5596.28	2646.42	6190.37	0.74	-0.57	-0.46	MWD
12336.00	89.10	152.60	6341.40	-5673.19	2687.06	6277.25	1.03	0.00	1.03	MWD
12423.00	89.60	155.00	6342.39	-5751.24	2725.46	6364.22	2.82	0.57	2.76	MWD
12509.00	90.20	156.00	6342.54	-5829.49	2761.13	6450.22	1.36	0.70	1.16	MWD
12596.00	90.50	155.90	6342.01	-5908.94	2796.58	6537.20	0.36	0.34	-0.11	MWD
12683.00	90.80	155.60	6341.02	-5988.26	2832.31	6624.19	0.49	0.34	-0.34	MWD
12769.00	91.00	155.20	6339.67	-6066.44	2868.11	6710.18	0.52	0.23	-0.47	MWD
12856.00	91.50	155.40	6337.77	-6145.46	2904.45	6797.16	0.62	0.57	0.23	MWD
12932.00	92.00	155.20	6335.45	-6214.48	2936.19	6873.12	0.71	0.66	-0.26	MWD
12980.00	92.00	155.20	6333.78	-6258.02	2956.32	6921.09	0.00	0.00	0.00	PROJECT TO TD

Name	Description Dip. Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	Latitude Deg Min	Longitude Deg Min Sec
Surface		0.00	0.00	0.00	585113.20	1683758.50	40 6 3.494 N	80 37 49.699 W
BHL		6333.78	-6258.02	2956.32	578855.18	1686714.82	40 5 2.019 N	80 37 10.654 W

Received
 Office of Oil & Gas
 JUL 24 2015