

Chesapeake Energy

EOW Survey Report

Well Name: Alice Edge OHI

Well Number: 3H

Date: 12/18/14

Prepared by Troy Lewis





Chesapeake

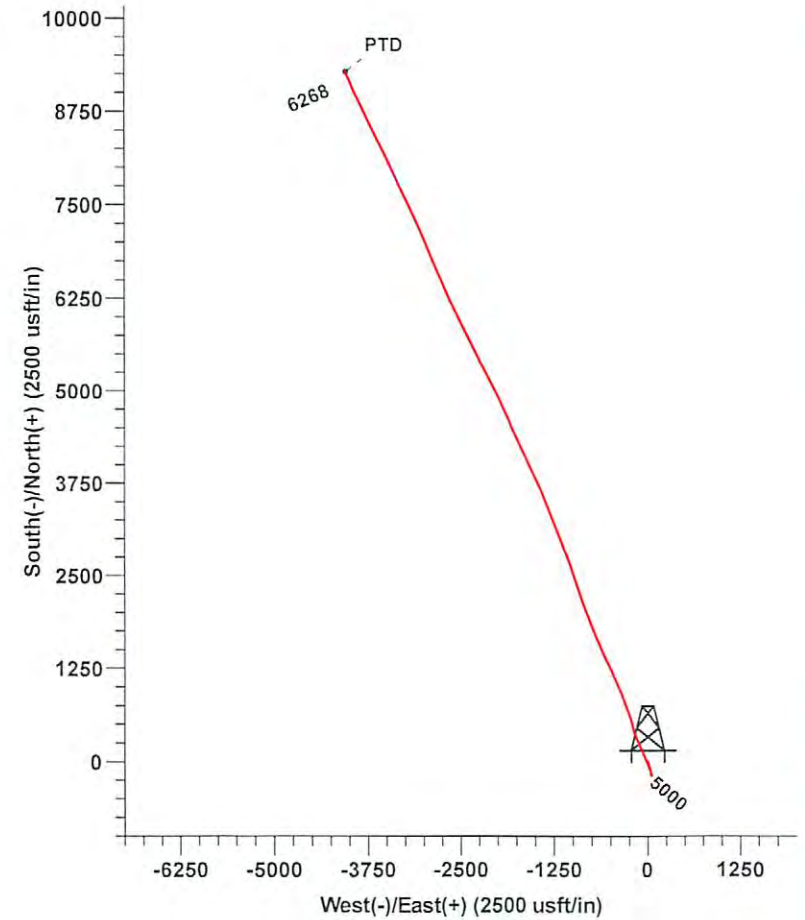
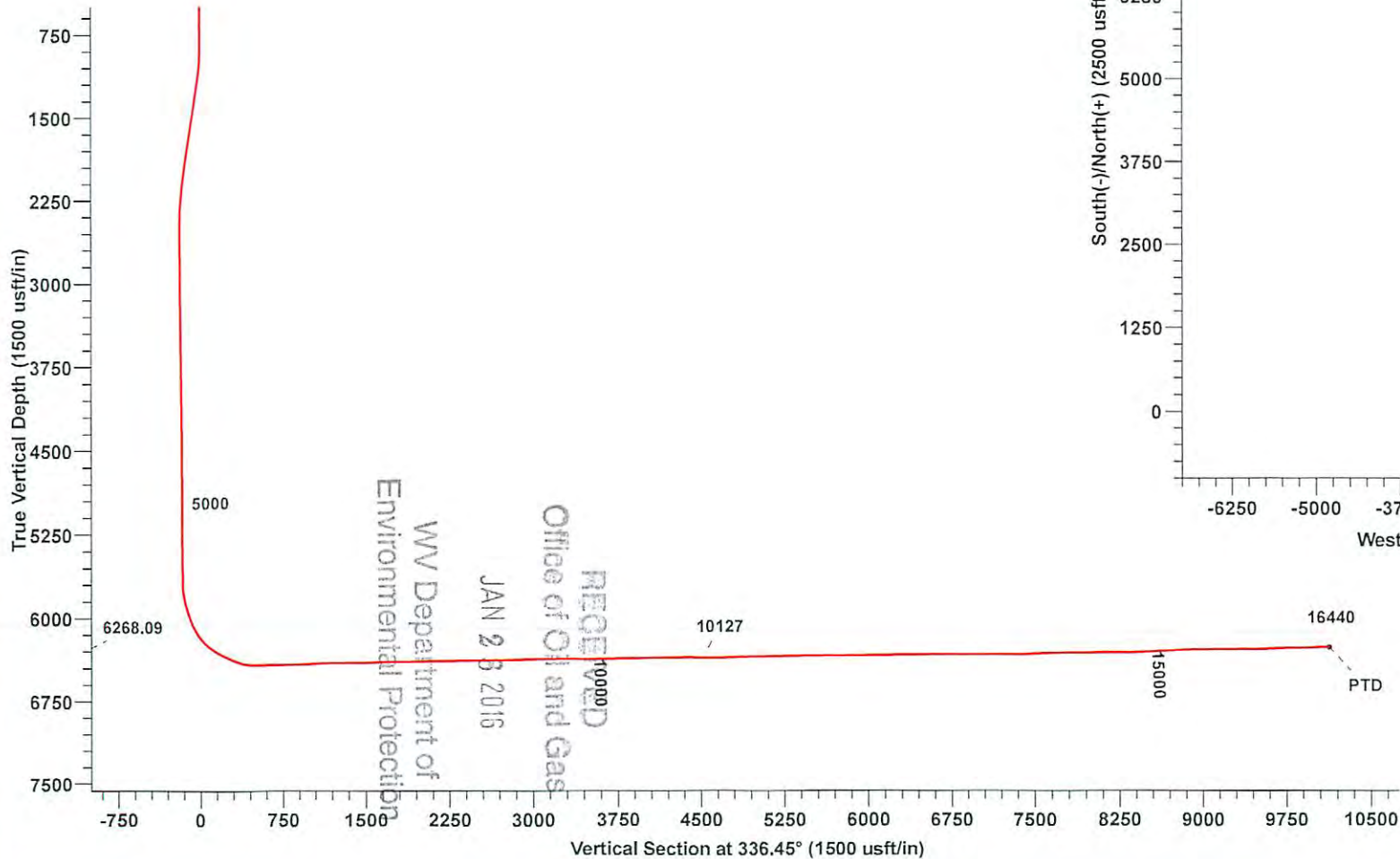
Project: Ohio Co, WV
 Site: Alice Edge OHI
 Well: 3H
 Wellbore: OH
 Plan: OH



WELL DETAILS: 3H

Ground Level: GL 1198+RKB 20 @ 1218.00usft (Nomac 74)							Slot
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude		
0.00	0.00	584490.40	1703292.10	40° 5' 59.693 N	80° 33' 38.251 W		

Target Line = 6399' TVD @ 90.7 Inc. @ 336.45 Azm.



Azimuths to Grid North
 True North: 0.68°
 Magnetic North: -8.10°
 Magnetic Field
 Strength: 52568.7snT
 Dip Angle: 67.42°
 Date: 12/17/2014
 Model: BGGM2014

Company: Chesapeake	Local Co-ordinate Reference: Well 3H
Project: Ohio Co, WV	TVD Reference: GL 1198+RKB 20 @ 1218.00usft (Nomac 74)
Site: Alice Edge OHI	MD Reference: GL 1198+RKB 20 @ 1218.00usft (Nomac 74)
Well: 3H	North Reference: Grid
Wellbore: OH	Survey Calculation Method: Minimum Curvature
Design: OH	Database: EDM LEWIS

Project Ohio Co, WV	
Map System: US State Plane 1927 (Exact solution)	System Datum: Mean Sea Level
Geo Datum: NAD 1927 (NADCON CONUS)	
Map Zone: West Virginia North 4701	

Site Alice Edge OHI		
Site Position:	Northing: 584,442.30 usft	Latitude: 40° 5' 59.221 N
From: Map	Easting: 1,703,320.70 usft	Longitude: 80° 33' 37.876 W
Position Uncertainty: 0.00 usft	Slot Radius: 0 "	Grid Convergence: -0.68 °

Well 3H		
Well Position +N/-S 0.00 usft	Northing: 584,490.40 usft	Latitude: 40° 5' 59.693 N
+E/-W 0.00 usft	Easting: 1,703,292.10 usft	Longitude: 80° 33' 38.251 W
Position Uncertainty 0.00 usft	Wellhead Elevation: 0.00 usft	Ground Level: 1,198.00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	12/17/14	-8.78	67.42	52,569

Design OH

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	336.45

Survey Program	Date	From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
	12/18/14	120.49	5,508.11	Survey #1 (OH)	NS-GYRO-MS	North sensing gyrocompassing m
		5,674.00	16,440.00	Survey #2 (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120.49	0.28	139.45	120.49	-0.22	0.19	-0.28	0.23	0.23	0.00
213.38	0.33	185.02	213.38	-0.66	0.32	-0.73	0.26	0.05	49.06
306.27	0.26	185.61	306.27	-1.14	0.27	-1.15	0.08	-0.08	0.64
399.16	0.09	183.53	399.16	-1.42	0.25	-1.40	0.18	-0.18	-2.24
492.05	0.16	161.31	492.05	-1.62	0.28	-1.60	0.09	0.08	-23.92
584.94	0.25	158.41	584.94	-1.93	0.40	-1.93	0.10	0.10	-3.12
677.83	0.09	127.29	677.83	-2.16	0.53	-2.19	0.19	-0.17	-33.50
770.72	0.23	121.41	770.72	-2.30	0.75	-2.41	0.15	0.15	-6.33
863.61	0.38	125.79	863.60	-2.58	1.16	-2.83	0.16	0.16	4.72

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Company:	Chesapeake	Local Co-ordinate Reference:	Well 3H
Project:	Ohio Co, WV	TVD Reference:	GL 1198+RKB 20 @ 1218.00usft (Nomac 74)
Site:	Alice Edge OHI	MD Reference:	GL 1198+RKB 20 @ 1218.00usft (Nomac 74)
Well:	3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM LEWIS

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
956.50	2.57	147.57	956.46	-4.52	2.53	-5.15	2.39	2.36	23.45
1,049.39	4.89	156.16	1,049.15	-9.90	5.24	-11.17	2.56	2.50	9.25
1,142.28	7.80	153.32	1,141.46	-19.15	9.67	-21.42	3.15	3.13	-3.06
1,235.17	8.46	165.63	1,233.42	-31.41	14.20	-34.46	2.00	0.71	13.25
1,328.06	9.48	169.81	1,325.17	-45.55	17.25	-48.65	1.30	1.10	4.50
1,420.95	9.36	164.48	1,416.81	-60.36	20.62	-63.57	0.95	-0.13	-5.74
1,513.84	8.54	164.66	1,508.57	-74.29	24.47	-77.88	0.88	-0.88	0.19
1,606.73	8.38	161.82	1,600.45	-87.37	28.41	-91.45	0.48	-0.17	-3.06
1,699.62	8.39	167.52	1,692.35	-100.42	31.98	-104.84	0.89	0.01	6.14
1,792.51	8.98	164.36	1,784.17	-114.02	35.40	-118.67	0.82	0.64	-3.40
1,885.40	8.50	168.82	1,875.99	-127.74	38.69	-132.55	0.89	-0.52	4.80
1,978.29	7.76	164.64	1,967.94	-140.52	41.68	-145.47	1.02	-0.80	-4.50
2,071.18	7.07	161.14	2,060.06	-151.98	45.19	-157.37	0.89	-0.74	-3.77
2,164.07	6.71	163.57	2,152.27	-162.59	48.57	-168.46	0.50	-0.39	2.62
2,256.96	4.45	162.69	2,244.72	-171.24	51.18	-177.42	2.43	-2.43	-0.95
2,349.85	2.75	156.99	2,337.42	-176.73	53.12	-183.23	1.87	-1.83	-6.14
2,442.74	1.41	144.94	2,430.25	-179.72	54.65	-186.58	1.51	-1.44	-12.97
2,535.63	0.55	175.98	2,523.13	-181.10	55.34	-188.12	1.06	-0.93	33.42
2,628.52	0.47	267.53	2,616.01	-181.56	54.99	-188.41	0.79	-0.09	98.56
2,721.41	0.57	271.94	2,708.90	-181.56	54.15	-188.07	0.12	0.11	4.75
2,814.30	0.48	277.02	2,801.79	-181.49	53.30	-187.67	0.11	-0.10	5.47
2,907.19	0.77	289.00	2,894.67	-181.24	52.32	-187.05	0.34	0.31	12.90
3,000.08	0.86	304.80	2,987.55	-180.64	51.16	-186.04	0.26	0.10	17.01
3,092.97	0.96	311.53	3,080.43	-179.73	50.00	-184.74	0.16	0.11	7.25
3,185.86	0.75	307.73	3,173.31	-178.84	48.94	-183.50	0.23	-0.23	-4.09
3,278.75	0.83	301.88	3,266.19	-178.11	47.89	-182.41	0.12	0.09	-6.30
3,371.64	0.75	293.61	3,359.07	-177.51	46.76	-181.41	0.15	-0.09	-8.90
3,464.53	0.78	302.77	3,451.95	-176.93	45.67	-180.44	0.14	0.03	9.86
3,557.42	0.62	300.45	3,544.84	-176.33	44.71	-179.51	0.17	-0.17	-2.50
3,650.31	0.78	300.13	3,637.72	-175.76	43.73	-178.59	0.17	0.17	-0.34
3,743.20	0.81	299.56	3,730.60	-175.12	42.61	-177.56	0.03	0.03	-0.61
3,836.09	0.84	324.77	3,823.48	-174.24	41.65	-176.37	0.39	0.03	27.14
3,928.98	0.62	359.50	3,916.36	-173.18	41.25	-175.24	0.52	0.24	97.39
4,021.87	0.89	355.71	4,009.25	-171.96	41.19	-174.09	0.30	0.29	-4.08
4,114.76	0.89	350.84	4,102.12	-170.53	41.02	-172.71	0.08	0.00	-5.24
4,207.65	0.92	342.27	4,195.00	-169.10	40.68	-171.27	0.15	0.03	-9.23
4,300.54	0.77	16.18	4,287.88	-167.79	40.63	-170.05	0.55	-0.16	36.51
4,393.43	0.58	40.27	4,380.77	-166.84	41.10	-169.36	0.36	-0.20	25.93
4,486.32	0.46	32.75	4,473.65	-166.16	41.61	-168.95	0.15	-0.13	-8.10
4,579.21	0.61	4.78	4,566.54	-165.36	41.85	-168.31	0.32	0.16	-30.11
4,672.10	0.75	14.65	4,659.42	-164.28	42.05	-167.39	0.20	0.15	10.63
4,764.99	0.64	45.40	4,752.31	-163.32	42.57	-166.73	0.41	-0.12	33.10
4,857.88	0.65	40.58	4,845.19	-162.56	43.28	-166.31	0.06	0.01	-5.19

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Site:	Alice Edge OHI	MD Reference:	GL 1198+RKB 20 @ 1218.00usft (Nomac 74)
Well:	3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM LEWIS

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,950.77	0.59	40.64	4,938.07	-161.80	43.94	-165.88	0.06	-0.06	0.06	
5,043.66	0.62	40.09	5,030.96	-161.05	44.57	-165.44	0.03	0.03	-0.59	
5,136.55	0.70	52.05	5,123.84	-160.32	45.34	-165.08	0.17	0.09	12.88	
5,229.44	0.72	56.46	5,216.73	-159.64	46.28	-164.84	0.06	0.02	4.75	
5,322.33	0.60	53.77	5,309.61	-159.03	47.16	-164.63	0.13	-0.13	-2.90	
5,415.22	0.68	323.82	5,402.50	-158.30	47.22	-163.98	0.98	0.09	-96.83	
5,508.11	0.50	309.56	5,495.38	-157.60	46.58	-163.09	0.25	-0.19	-15.35	
5,674.00	0.30	169.90	5,661.27	-157.57	46.10	-162.86	0.45	-0.12	-84.19	
5,768.00	4.80	342.70	5,755.17	-154.05	44.98	-159.19	5.42	4.79	183.83	
5,800.00	10.00	342.80	5,786.89	-150.12	43.75	-155.09	16.25	16.25	0.31	
5,832.00	12.70	339.60	5,818.26	-144.16	41.71	-148.82	8.66	8.44	-10.00	
5,863.00	13.60	337.90	5,848.45	-137.59	39.15	-141.77	3.16	2.90	-5.48	
5,895.00	16.10	337.00	5,879.38	-130.02	36.00	-133.57	7.85	7.81	-2.81	
5,926.00	17.80	337.70	5,909.03	-121.68	32.52	-124.54	5.52	5.48	2.26	
5,958.00	17.40	335.40	5,939.53	-112.80	28.67	-114.86	2.51	-1.25	-7.19	
5,991.00	17.70	334.80	5,970.99	-103.78	24.48	-104.92	1.06	0.91	-1.82	
6,022.00	19.60	336.30	6,000.37	-94.75	20.39	-95.01	6.32	6.13	4.84	
6,054.00	21.50	339.10	6,030.33	-84.36	16.14	-83.78	6.68	5.94	8.75	
6,085.00	24.30	340.90	6,058.88	-73.02	12.02	-71.74	9.31	9.03	5.81	
6,117.00	27.30	341.50	6,087.69	-59.84	7.54	-57.87	9.41	9.38	1.88	
6,148.00	30.80	341.50	6,114.79	-45.56	2.76	-42.87	11.29	11.29	0.00	
6,180.00	33.60	339.90	6,141.86	-29.48	-2.88	-25.87	9.15	8.75	-5.00	
6,211.00	36.50	338.20	6,167.24	-12.86	-9.25	-8.09	9.87	9.35	-5.48	
6,243.00	39.60	337.60	6,192.43	5.41	-16.68	11.63	9.76	9.69	-1.88	
6,274.00	43.20	338.50	6,215.68	24.43	-24.33	32.11	11.77	11.61	2.90	
6,306.00	47.20	339.40	6,238.23	45.61	-32.48	54.79	12.66	12.50	2.81	
6,337.00	50.70	338.50	6,258.58	67.43	-40.88	78.15	11.50	11.29	-2.90	
6,369.00	54.10	336.50	6,278.11	90.84	-50.59	103.49	11.72	10.63	-6.25	
6,400.00	56.90	336.30	6,295.66	114.25	-60.82	129.03	9.05	9.03	-0.65	
6,432.00	59.80	335.90	6,312.45	139.15	-71.86	156.27	9.12	9.06	-1.25	
6,463.00	62.10	336.80	6,327.50	163.97	-82.72	183.37	7.84	7.42	2.90	
6,495.00	63.10	336.60	6,342.23	190.07	-93.96	211.78	3.17	3.13	-0.63	
6,527.00	64.10	334.60	6,356.46	216.17	-105.80	240.44	6.41	3.15	-6.25	
6,558.00	65.50	335.70	6,369.66	241.62	-117.59	268.48	5.54	4.52	3.55	
6,590.00	67.10	336.30	6,382.52	268.39	-129.51	297.78	5.29	5.00	-1.88	
6,621.00	69.30	336.80	6,394.03	294.79	-140.96	326.56	7.25	7.10	1.61	
6,653.00	72.10	337.00	6,404.61	322.57	-152.81	356.75	8.77	8.75	0.63	
6,684.00	76.20	338.50	6,413.07	350.16	-164.09	386.56	14.02	13.23	4.84	
6,716.00	80.30	341.50	6,419.59	379.60	-174.80	417.82	15.76	12.81	9.38	
6,779.00	89.20	344.10	6,425.35	439.46	-193.32	480.10	14.71	14.13	4.13	
6,811.00	90.10	345.80	6,425.55	470.36	-201.63	511.75	6.01	2.81	5.31	
6,905.00	90.20	343.40	6,425.30	560.98	-226.59	604.79	2.56	0.11	-2.55	
7,000.00	92.50	340.40	6,423.06	651.24	-256.09	699.32	3.98	2.42	-3.16	

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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM LEWIS

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,094.00	92.20	339.70	6,419.21	739.52	-288.13	793.05	0.81	-0.32	-0.74
7,189.00	91.80	340.90	6,415.89	828.91	-320.14	887.78	1.33	-0.42	1.26
7,284.00	92.00	337.90	6,412.74	917.77	-353.54	982.59	3.16	0.21	-3.16
7,379.00	92.20	336.40	6,409.26	1,005.26	-390.40	1,077.52	1.59	0.21	-1.58
7,473.00	91.10	336.90	6,406.55	1,091.52	-427.64	1,171.48	1.29	-1.17	0.53
7,568.00	90.90	336.20	6,404.89	1,178.66	-465.44	1,266.46	0.77	-0.21	-0.74
7,662.00	89.60	332.10	6,404.48	1,263.23	-506.42	1,360.36	4.58	-1.38	-4.36
7,757.00	91.70	335.30	6,403.41	1,348.38	-548.50	1,455.23	4.03	2.21	3.37
7,851.00	91.60	335.90	6,400.70	1,433.95	-587.32	1,549.18	0.65	-0.11	0.64
7,946.00	91.80	338.20	6,397.88	1,521.38	-624.34	1,644.12	2.43	0.21	2.42
8,041.00	91.80	335.90	6,394.90	1,608.81	-661.36	1,739.07	2.42	0.00	-2.42
8,136.00	91.10	339.70	6,392.49	1,696.73	-697.24	1,833.99	4.07	-0.74	4.00
8,230.00	91.40	338.80	6,390.44	1,784.61	-730.53	1,927.86	1.01	0.32	-0.96
8,325.00	91.10	340.30	6,388.37	1,873.60	-763.72	2,022.69	1.61	-0.32	1.58
8,420.00	91.30	338.50	6,386.38	1,962.50	-797.13	2,117.54	1.91	0.21	-1.89
8,514.00	89.30	337.80	6,385.89	2,049.74	-832.12	2,211.49	2.25	-2.13	-0.74
8,609.00	89.10	341.80	6,387.21	2,138.87	-864.91	2,306.30	4.22	-0.21	4.21
8,704.00	90.70	340.80	6,387.38	2,228.85	-895.37	2,400.96	1.99	1.68	-1.05
8,798.00	90.10	342.40	6,386.72	2,318.04	-925.03	2,494.57	1.82	-0.64	1.70
8,893.00	92.60	342.70	6,384.48	2,408.64	-953.51	2,589.00	2.65	2.63	0.32
8,988.00	92.30	341.60	6,380.42	2,498.98	-982.61	2,683.44	1.20	-0.32	-1.16
9,082.00	91.30	342.20	6,377.47	2,588.28	-1,011.79	2,776.97	1.24	-1.06	0.64
9,177.00	90.90	342.50	6,375.65	2,678.79	-1,040.59	2,871.45	0.53	-0.42	0.32
9,272.00	90.70	338.50	6,374.32	2,768.32	-1,072.30	2,966.18	4.22	-0.21	-4.21
9,366.00	89.70	337.00	6,373.99	2,855.31	-1,107.89	3,060.15	1.92	-1.06	-1.60
9,461.00	91.50	340.70	6,373.00	2,943.89	-1,142.15	3,155.05	4.33	1.89	3.89
9,555.00	91.80	338.50	6,370.29	3,031.95	-1,174.90	3,248.86	2.36	0.32	-2.34
9,650.00	89.20	339.20	6,369.46	3,120.54	-1,209.18	3,343.76	2.83	-2.74	0.74
9,744.00	88.30	337.50	6,371.51	3,207.89	-1,243.85	3,437.68	2.05	-0.96	-1.81
9,839.00	89.20	338.50	6,373.58	3,295.95	-1,279.43	3,532.63	1.42	0.95	1.05
9,934.00	91.20	339.20	6,373.25	3,384.54	-1,313.70	3,627.54	2.23	2.11	0.74
10,028.00	91.10	339.60	6,371.37	3,472.51	-1,346.77	3,721.39	0.44	-0.11	0.43
10,123.00	90.40	339.10	6,370.12	3,561.40	-1,380.27	3,816.26	0.91	-0.74	-0.53
10,218.00	90.30	338.50	6,369.54	3,649.97	-1,414.62	3,911.18	0.64	-0.11	-0.63
10,313.00	91.90	336.30	6,367.72	3,737.65	-1,451.12	4,006.14	2.86	1.68	-2.32
10,408.00	91.10	334.80	6,365.23	3,824.10	-1,490.42	4,101.09	1.79	-0.84	-1.58
10,502.00	91.50	335.00	6,363.10	3,909.20	-1,530.29	4,195.03	0.48	0.43	0.21
10,597.00	90.90	335.40	6,361.11	3,995.42	-1,570.13	4,289.99	0.76	-0.63	0.42
10,692.00	90.00	334.30	6,360.36	4,081.41	-1,610.50	4,384.95	1.50	-0.95	-1.16
10,787.00	89.50	335.20	6,360.78	4,167.33	-1,651.02	4,479.90	1.08	-0.53	0.95
10,881.00	90.50	334.80	6,360.78	4,252.52	-1,690.75	4,573.87	1.15	1.06	-0.43
10,976.00	89.60	335.60	6,360.69	4,338.76	-1,730.59	4,668.85	1.27	-0.95	0.84
11,071.00	92.40	336.20	6,359.04	4,425.45	-1,769.38	4,763.82	3.01	2.95	0.63
11,165.00	91.90	337.00	6,355.51	4,511.66	-1,806.68	4,857.75	1.00	-0.53	0.85

Company:	Chesapeake	Local Co-ordinate Reference:	Well 3H
Project:	Ohio Co, WV	TVD Reference:	GL 1198+RKB 20 @ 1218.00usft (Nomac 74)
Site:	Alice Edge OHI	MD Reference:	GL 1198+RKB 20 @ 1218.00usft (Nomac 74)
Well:	3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM LEWIS

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,260.00	91.40	336.10	6,352.77	4,598.78	-1,844.47	4,952.71	1.08	-0.53	-0.95
11,355.00	91.10	335.60	6,350.70	4,685.44	-1,883.33	5,047.68	0.61	-0.32	-0.53
11,449.00	90.10	337.20	6,349.72	4,771.57	-1,920.96	5,141.67	2.01	-1.06	1.70
11,544.00	89.90	337.40	6,349.72	4,859.21	-1,957.62	5,236.66	0.30	-0.21	0.21
11,638.00	90.40	332.70	6,349.47	4,944.42	-1,997.26	5,330.61	5.03	0.53	-5.00
11,723.00	90.60	332.70	6,348.73	5,019.95	-2,036.24	5,415.42	0.24	0.24	0.00
11,818.00	91.50	333.70	6,346.99	5,104.72	-2,079.07	5,510.25	1.42	0.95	1.05
11,912.00	90.40	332.50	6,345.43	5,188.54	-2,121.59	5,604.07	1.73	-1.17	-1.28
12,007.00	90.80	333.00	6,344.44	5,272.99	-2,165.08	5,698.87	0.67	0.42	0.53
12,101.00	91.00	332.30	6,342.96	5,356.47	-2,208.26	5,792.65	0.77	0.21	-0.74
12,196.00	91.10	333.70	6,341.22	5,441.10	-2,251.38	5,887.46	1.48	0.11	1.47
12,290.00	90.50	333.40	6,339.91	5,525.25	-2,293.25	5,981.33	0.71	-0.64	-0.32
12,385.00	90.70	333.20	6,338.91	5,610.12	-2,335.93	6,076.18	0.30	0.21	-0.21
12,480.00	90.50	332.70	6,337.92	5,694.72	-2,379.13	6,171.00	0.57	-0.21	-0.53
12,575.00	90.20	333.20	6,337.34	5,779.33	-2,422.33	6,265.82	0.61	-0.32	0.53
12,669.00	90.20	334.10	6,337.01	5,863.56	-2,464.06	6,359.71	0.96	0.00	0.96
12,764.00	91.80	336.10	6,335.35	5,949.71	-2,504.05	6,454.66	2.70	1.68	2.11
12,859.00	90.60	334.50	6,333.36	6,035.99	-2,543.73	6,549.61	2.10	-1.26	-1.68
12,953.00	89.80	333.60	6,333.03	6,120.51	-2,584.86	6,643.53	1.28	-0.85	-0.96
13,048.00	89.20	335.00	6,333.86	6,206.11	-2,626.06	6,738.45	1.60	-0.63	1.47
13,143.00	89.80	334.90	6,334.69	6,292.17	-2,666.28	6,833.42	0.64	0.63	-0.11
13,237.00	90.70	335.40	6,334.28	6,377.47	-2,705.78	6,927.39	1.10	0.96	0.53
13,332.00	90.30	335.40	6,333.45	6,463.84	-2,745.33	7,022.37	0.42	-0.42	0.00
13,427.00	90.00	335.60	6,333.20	6,550.29	-2,784.72	7,117.36	0.38	-0.32	0.21
13,522.00	88.60	333.90	6,334.36	6,636.20	-2,825.24	7,212.30	2.32	-1.47	-1.79
13,616.00	90.80	337.90	6,334.86	6,721.98	-2,863.61	7,306.27	4.86	2.34	4.26
13,711.00	92.40	338.40	6,332.20	6,810.12	-2,898.96	7,401.19	1.76	1.68	0.53
13,806.00	92.20	336.60	6,328.39	6,897.81	-2,935.28	7,496.09	1.90	-0.21	-1.89
13,901.00	91.90	337.70	6,324.99	6,985.30	-2,972.15	7,591.02	1.20	-0.32	1.16
13,995.00	91.50	336.70	6,322.20	7,071.91	-3,008.56	7,684.97	1.15	-0.43	-1.06
14,090.00	90.80	336.80	6,320.30	7,159.18	-3,046.05	7,779.95	0.74	-0.74	0.11
14,185.00	90.00	335.90	6,319.63	7,246.20	-3,084.16	7,874.95	1.27	-0.84	-0.95
14,279.00	91.00	334.70	6,318.81	7,331.59	-3,123.43	7,968.92	1.66	1.06	-1.28
14,374.00	90.20	334.30	6,317.82	7,417.33	-3,164.33	8,063.86	0.94	-0.84	-0.42
14,469.00	89.50	335.10	6,318.07	7,503.22	-3,204.93	8,158.82	1.12	-0.74	0.84
14,563.00	90.80	333.20	6,317.82	7,587.81	-3,245.91	8,252.73	2.45	1.38	-2.02
14,658.00	89.90	333.10	6,317.24	7,672.56	-3,288.82	8,347.57	0.95	-0.95	-0.11
14,753.00	93.80	336.30	6,314.17	7,758.38	-3,329.38	8,442.45	5.31	4.11	3.37
14,848.00	93.20	335.40	6,308.37	7,844.90	-3,368.18	8,537.27	1.14	-0.63	-0.95
14,943.00	92.90	335.90	6,303.32	7,931.33	-3,407.29	8,632.12	0.61	-0.32	0.53
15,037.00	92.60	334.80	6,298.81	8,016.66	-3,446.45	8,725.99	1.21	-0.32	-1.17
15,132.00	92.20	333.40	6,294.83	8,102.04	-3,487.91	8,820.83	1.53	-0.42	-1.47
15,227.00	91.30	334.80	6,291.93	8,187.46	-3,529.39	8,915.70	1.75	-0.95	1.47

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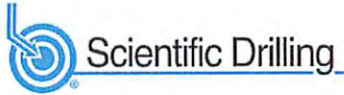
Company:	Chesapeake	Local Co-ordinate Reference:	Well 3H
Project:	Ohio Co, WV	TVD Reference:	GL 1198+RKB 20 @ 1218.00usft (Nomac 74)
Site:	Alice Edge OHI	MD Reference:	GL 1198+RKB 20 @ 1218.00usft (Nomac 74)
Well:	3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM LEWIS

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
15,322.00	91.10	333.00	6,289.94	8,272.75	-3,571.17	9,010.58	1.91	-0.21	-1.89	
15,417.00	90.40	333.30	6,288.70	8,357.50	-3,614.07	9,105.42	0.80	-0.74	0.32	
15,512.00	89.60	333.50	6,288.70	8,442.44	-3,656.61	9,200.28	0.87	-0.84	0.21	
15,606.00	90.20	334.10	6,288.86	8,526.78	-3,698.11	9,294.18	0.90	0.64	0.64	
15,701.00	91.00	333.80	6,287.86	8,612.13	-3,739.83	9,389.08	0.90	0.84	-0.32	
15,795.00	91.50	334.80	6,285.81	8,696.81	-3,780.58	9,482.99	1.19	0.53	1.06	
15,890.00	92.10	335.70	6,282.83	8,783.04	-3,820.33	9,577.92	1.14	0.63	0.95	
15,985.00	91.70	333.40	6,279.68	8,868.76	-3,861.13	9,672.81	2.46	-0.42	-2.42	
16,079.00	90.60	332.00	6,277.79	8,952.27	-3,904.24	9,766.59	1.89	-1.17	-1.49	
16,174.00	92.10	337.00	6,275.55	9,037.96	-3,945.11	9,861.47	5.49	1.58	5.26	
16,269.00	92.10	337.80	6,272.07	9,125.61	-3,981.59	9,956.40	0.84	0.00	0.84	
16,363.00	91.10	336.40	6,269.45	9,212.16	-4,018.15	10,050.35	1.83	-1.06	-1.49	
16,376.00	91.00	337.00	6,269.21	9,224.10	-4,023.30	10,063.35	4.68	-0.77	4.62	
16,440.00	91.00	337.00	6,268.09	9,283.01	-4,048.30	10,127.33	0.00	0.00	0.00	

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
16,440.00	6,268.09	9,283.01	-4,048.30	PTD	

Checked By: _____ Approved By: _____ Date: _____

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SDI
Survey Report - Geographic

Company: Chesapeake	Local Co-ordinate Reference: Well 3H
Project: Ohio Co, WV	TVD Reference: GL 1198+RKB 20 @ 1218.00usft (Nomac 74)
Site: Alice Edge OHI	MD Reference: GL 1198+RKB 20 @ 1218.00usft (Nomac 74)
Well: 3H	North Reference: Grid
Wellbore: OH	Survey Calculation Method: Minimum Curvature
Design: OH	Database: EDM LEWIS

Project Ohio Co, WV	
Map System: US State Plane 1927 (Exact solution)	System Datum: Mean Sea Level
Geo Datum: NAD 1927 (NADCON CONUS)	
Map Zone: West Virginia North 4701	

Site Alice Edge OHI		
Site Position:	Northing: 584,442.30 usft	Latitude: 40° 5' 59.221 N
From: Map	Easting: 1,703,320.70 usft	Longitude: 80° 33' 37.876 W
Position Uncertainty: 0.00 usft	Slot Radius: 0 "	Grid Convergence: -0.68 °

Well 3H		
Well Position +N/-S 0.00 usft	Northing: 584,490.40 usft	Latitude: 40° 5' 59.693 N
+E/-W 0.00 usft	Easting: 1,703,292.10 usft	Longitude: 80° 33' 38.251 W
Position Uncertainty 0.00 usft	Wellhead Elevation: 0.00 usft	Ground Level: 1,198.00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	12/17/14	-8.78	67.42	52,569

Design OH

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	336.45

Survey Program	Date	12/18/14		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
120.49	5,508.11	Survey #1 (OH)	NS-GYRO-MS	North sensing gyrocompassing m
5,674.00	16,440.00	Survey #2 (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	584,490.40	1,703,292.10	40° 5' 59.693 N	80° 33' 38.251 W
120.49	0.28	139.45	120.49	-0.22	0.19	584,490.18	1,703,292.29	40° 5' 59.691 N	80° 33' 38.248 W
213.38	0.33	185.02	213.38	-0.66	0.32	584,489.74	1,703,292.41	40° 5' 59.687 N	80° 33' 38.247 W
306.27	0.26	185.61	306.27	-1.14	0.27	584,489.26	1,703,292.37	40° 5' 59.682 N	80° 33' 38.247 W
399.16	0.09	183.53	399.16	-1.42	0.25	584,488.98	1,703,292.34	40° 5' 59.679 N	80° 33' 38.248 W
492.05	0.16	161.31	492.05	-1.62	0.28	584,488.79	1,703,292.38	40° 5' 59.677 N	80° 33' 38.247 W
584.94	0.25	158.41	584.94	-1.93	0.40	584,488.47	1,703,292.50	40° 5' 59.674 N	80° 33' 38.246 W
677.83	0.09	127.29	677.83	-2.16	0.53	584,488.24	1,703,292.63	40° 5' 59.672 N	80° 33' 38.244 W
770.72	0.23	121.41	770.72	-2.30	0.75	584,488.10	1,703,292.85	40° 5' 59.671 N	80° 33' 38.241 W
863.61	0.38	125.79	863.60	-2.58	1.16	584,487.82	1,703,293.26	40° 5' 59.668 N	80° 33' 38.236 W
956.50	2.57	147.57	956.46	-4.52	2.53	584,485.89	1,703,294.62	40° 5' 59.649 N	80° 33' 38.218 W



Company:	Chesapeake	Local Co-ordinate Reference:	Well 3H
Project:	Ohio Co, WV	TVD Reference:	GL 1198+RKB 20 @ 1218.00usft (Nomac 74)
Site:	Alice Edge OH	MD Reference:	GL 1198+RKB 20 @ 1218.00usft (Nomac 74)
Well:	3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM LEWIS

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,049.39	4.89	156.16	1,049.15	-9.90	5.24	584,480.51	1,703,297.34	40° 5' 59.596 N	80° 33' 38.182 W
1,142.28	7.80	153.32	1,141.46	-19.15	9.67	584,471.25	1,703,301.77	40° 5' 59.505 N	80° 33' 38.124 W
1,235.17	8.46	165.63	1,233.42	-31.41	14.20	584,459.00	1,703,306.30	40° 5' 59.385 N	80° 33' 38.063 W
1,328.06	9.48	169.81	1,325.17	-45.55	17.25	584,444.85	1,703,309.35	40° 5' 59.245 N	80° 33' 38.022 W
1,420.95	9.36	164.48	1,416.81	-60.36	20.62	584,430.04	1,703,312.72	40° 5' 59.099 N	80° 33' 37.976 W
1,513.84	8.54	164.66	1,508.57	-74.29	24.47	584,416.11	1,703,316.57	40° 5' 58.962 N	80° 33' 37.925 W
1,606.73	8.38	161.82	1,600.45	-87.37	28.41	584,403.03	1,703,320.50	40° 5' 58.833 N	80° 33' 37.872 W
1,699.62	8.39	167.52	1,692.35	-100.42	31.98	584,389.98	1,703,324.08	40° 5' 58.705 N	80° 33' 37.824 W
1,792.51	8.98	164.36	1,784.17	-114.02	35.40	584,376.38	1,703,327.50	40° 5' 58.571 N	80° 33' 37.778 W
1,885.40	8.50	168.82	1,875.99	-127.74	38.69	584,362.67	1,703,330.79	40° 5' 58.436 N	80° 33' 37.734 W
1,978.29	7.76	164.64	1,967.94	-140.52	41.68	584,349.88	1,703,333.78	40° 5' 58.310 N	80° 33' 37.693 W
2,071.18	7.07	161.14	2,060.06	-151.98	45.19	584,338.43	1,703,337.29	40° 5' 58.197 N	80° 33' 37.646 W
2,164.07	6.71	163.57	2,152.27	-162.59	48.57	584,327.81	1,703,340.67	40° 5' 58.092 N	80° 33' 37.601 W
2,256.96	4.45	162.69	2,244.72	-171.24	51.18	584,319.17	1,703,343.28	40° 5' 58.007 N	80° 33' 37.566 W
2,349.85	2.75	156.99	2,337.42	-176.73	53.12	584,313.67	1,703,345.22	40° 5' 57.953 N	80° 33' 37.541 W
2,442.74	1.41	144.94	2,430.25	-179.72	54.65	584,310.69	1,703,346.75	40° 5' 57.924 N	80° 33' 37.520 W
2,535.63	0.55	175.98	2,523.13	-181.10	55.34	584,309.31	1,703,347.44	40° 5' 57.910 N	80° 33' 37.511 W
2,628.52	0.47	267.53	2,616.01	-181.56	54.99	584,308.85	1,703,347.09	40° 5' 57.906 N	80° 33' 37.516 W
2,721.41	0.57	271.94	2,708.90	-181.56	54.15	584,308.85	1,703,346.24	40° 5' 57.906 N	80° 33' 37.527 W
2,814.30	0.48	277.02	2,801.79	-181.49	53.30	584,308.91	1,703,345.40	40° 5' 57.906 N	80° 33' 37.538 W
2,907.19	0.77	289.00	2,894.67	-181.24	52.32	584,309.16	1,703,344.42	40° 5' 57.908 N	80° 33' 37.550 W
3,000.08	0.86	304.80	2,987.55	-180.64	51.16	584,309.76	1,703,343.26	40° 5' 57.914 N	80° 33' 37.565 W
3,092.97	0.96	311.53	3,080.43	-179.73	50.00	584,310.67	1,703,342.10	40° 5' 57.923 N	80° 33' 37.580 W
3,185.86	0.75	307.73	3,173.31	-178.84	48.94	584,311.56	1,703,341.04	40° 5' 57.932 N	80° 33' 37.594 W
3,278.75	0.83	301.88	3,266.19	-178.11	47.89	584,312.29	1,703,339.99	40° 5' 57.939 N	80° 33' 37.608 W
3,371.64	0.75	293.61	3,359.07	-177.51	46.76	584,312.89	1,703,338.86	40° 5' 57.945 N	80° 33' 37.622 W
3,464.53	0.78	302.77	3,451.95	-176.93	45.67	584,313.47	1,703,337.77	40° 5' 57.950 N	80° 33' 37.636 W
3,557.42	0.62	300.45	3,544.84	-176.33	44.71	584,314.07	1,703,336.81	40° 5' 57.956 N	80° 33' 37.649 W
3,650.31	0.78	300.13	3,637.72	-175.76	43.73	584,314.64	1,703,335.83	40° 5' 57.962 N	80° 33' 37.662 W
3,743.20	0.81	299.56	3,730.60	-175.12	42.61	584,315.28	1,703,334.71	40° 5' 57.968 N	80° 33' 37.676 W
3,836.09	0.84	324.77	3,823.48	-174.24	41.65	584,316.16	1,703,333.74	40° 5' 57.976 N	80° 33' 37.689 W
3,928.98	0.62	359.50	3,916.36	-173.18	41.25	584,317.22	1,703,333.35	40° 5' 57.987 N	80° 33' 37.694 W
4,021.87	0.89	355.71	4,009.25	-171.96	41.19	584,318.45	1,703,333.29	40° 5' 57.999 N	80° 33' 37.695 W
4,114.76	0.89	350.84	4,102.12	-170.53	41.02	584,319.88	1,703,333.12	40° 5' 58.013 N	80° 33' 37.697 W
4,207.65	0.92	342.27	4,195.00	-169.10	40.68	584,321.30	1,703,332.78	40° 5' 58.027 N	80° 33' 37.702 W
4,300.54	0.77	16.18	4,287.88	-167.79	40.63	584,322.61	1,703,332.72	40° 5' 58.040 N	80° 33' 37.703 W
4,393.43	0.58	40.27	4,380.77	-166.84	41.10	584,323.57	1,703,333.20	40° 5' 58.050 N	80° 33' 37.697 W
4,486.32	0.46	32.75	4,473.65	-166.16	41.61	584,324.24	1,703,333.71	40° 5' 58.056 N	80° 33' 37.690 W
4,579.21	0.61	4.78	4,566.54	-165.36	41.85	584,325.05	1,703,333.95	40° 5' 58.064 N	80° 33' 37.687 W
4,672.10	0.75	14.65	4,659.42	-164.28	42.05	584,326.13	1,703,334.15	40° 5' 58.075 N	80° 33' 37.685 W
4,764.99	0.64	45.40	4,752.31	-163.32	42.57	584,327.08	1,703,334.67	40° 5' 58.084 N	80° 33' 37.678 W
4,857.88	0.65	40.58	4,845.19	-162.56	43.28	584,327.84	1,703,335.38	40° 5' 58.092 N	80° 33' 37.669 W
4,950.77	0.59	40.64	4,938.07	-161.80	43.94	584,328.61	1,703,336.03	40° 5' 58.100 N	80° 33' 37.661 W
5,043.66	0.62	40.09	5,030.96	-161.05	44.57	584,329.35	1,703,336.67	40° 5' 58.107 N	80° 33' 37.653 W
5,136.55	0.70	52.05	5,123.84	-160.32	45.34	584,330.09	1,703,337.44	40° 5' 58.114 N	80° 33' 37.643 W
5,229.44	0.72	56.46	5,216.73	-159.64	46.28	584,330.76	1,703,338.37	40° 5' 58.121 N	80° 33' 37.631 W
5,322.33	0.60	53.77	5,309.61	-159.03	47.16	584,331.37	1,703,339.25	40° 5' 58.127 N	80° 33' 37.620 W
5,415.22	0.68	323.82	5,402.50	-158.30	47.22	584,332.10	1,703,339.32	40° 5' 58.135 N	80° 33' 37.619 W
5,508.11	0.50	309.56	5,495.38	-157.60	46.58	584,332.80	1,703,338.68	40° 5' 58.141 N	80° 33' 37.628 W
5,674.00	0.30	169.90	5,661.27	-157.57	46.10	584,332.84	1,703,338.20	40° 5' 58.142 N	80° 33' 37.634 W
5,768.00	4.80	342.70	5,755.17	-154.05	44.98	584,336.35	1,703,337.07	40° 5' 58.176 N	80° 33' 37.649 W
5,800.00	10.00	342.80	5,786.89	-150.12	43.75	584,340.29	1,703,335.85	40° 5' 58.215 N	80° 33' 37.665 W
5,832.00	12.70	339.60	5,818.26	-144.16	41.71	584,346.24	1,703,333.80	40° 5' 58.274 N	80° 33' 37.692 W
5,863.00	13.60	337.90	5,848.45	-137.59	39.15	584,352.81	1,703,331.25	40° 5' 58.338 N	80° 33' 37.726 W
5,895.00	16.10	337.00	5,879.38	-130.02	36.00	584,360.38	1,703,328.10	40° 5' 58.413 N	80° 33' 37.768 W

Company:	Chesapeake	Local Co-ordinate Reference:	Well 3H
Project:	Ohio Co, WV	TVD Reference:	GL 1198+RKB 20 @ 1218.00usft (Nomac 74)
Site:	Alice Edge OH	MD Reference:	GL 1198+RKB 20 @ 1218.00usft (Nomac 74)
Well:	3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM LEWIS

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,926.00	17.80	337.70	5,909.03	-121.68	32.52	584,368.72	1,703,324.62	40° 5' 58.495 N	80° 33' 37.814 W
5,958.00	17.40	335.40	5,939.53	-112.80	28.67	584,377.60	1,703,320.77	40° 5' 58.582 N	80° 33' 37.865 W
5,991.00	17.70	334.80	5,970.99	-103.78	24.48	584,386.62	1,703,316.58	40° 5' 58.671 N	80° 33' 37.920 W
6,022.00	19.60	336.30	6,000.37	-94.75	20.39	584,395.65	1,703,312.48	40° 5' 58.759 N	80° 33' 37.974 W
6,054.00	21.50	339.10	6,030.33	-84.36	16.14	584,406.04	1,703,308.23	40° 5' 58.862 N	80° 33' 38.031 W
6,085.00	24.30	340.90	6,058.88	-73.02	12.02	584,417.38	1,703,304.12	40° 5' 58.973 N	80° 33' 38.085 W
6,117.00	27.30	341.50	6,087.69	-59.84	7.54	584,430.57	1,703,299.64	40° 5' 59.103 N	80° 33' 38.145 W
6,148.00	30.80	341.50	6,114.79	-45.56	2.76	584,444.84	1,703,294.86	40° 5' 59.243 N	80° 33' 38.209 W
6,180.00	33.60	339.90	6,141.86	-29.48	-2.88	584,460.93	1,703,289.22	40° 5' 59.402 N	80° 33' 38.284 W
6,211.00	36.50	338.20	6,167.24	-12.86	-9.25	584,477.55	1,703,282.84	40° 5' 59.565 N	80° 33' 38.368 W
6,243.00	39.60	337.60	6,192.43	5.41	-16.68	584,495.82	1,703,275.42	40° 5' 59.745 N	80° 33' 38.466 W
6,274.00	43.20	338.50	6,215.68	24.43	-24.33	584,514.83	1,703,267.76	40° 5' 59.932 N	80° 33' 38.568 W
6,306.00	47.20	339.40	6,238.23	45.61	-32.48	584,536.02	1,703,259.62	40° 6' 0.140 N	80° 33' 38.676 W
6,337.00	50.70	338.50	6,258.58	67.43	-40.88	584,557.83	1,703,251.22	40° 6' 0.355 N	80° 33' 38.787 W
6,369.00	54.10	336.50	6,278.11	90.84	-50.59	584,581.24	1,703,241.51	40° 6' 0.585 N	80° 33' 38.916 W
6,400.00	56.90	336.30	6,295.66	114.25	-60.82	584,604.65	1,703,231.28	40° 6' 0.815 N	80° 33' 39.051 W
6,432.00	59.80	335.90	6,312.45	139.15	-71.86	584,629.55	1,703,220.24	40° 6' 1.060 N	80° 33' 39.197 W
6,463.00	62.10	336.80	6,327.50	163.97	-82.72	584,654.38	1,703,209.37	40° 6' 1.304 N	80° 33' 39.340 W
6,495.00	63.10	336.60	6,342.23	190.07	-93.96	584,680.47	1,703,198.14	40° 6' 1.561 N	80° 33' 39.489 W
6,527.00	64.10	334.60	6,356.46	216.17	-105.80	584,706.57	1,703,186.29	40° 6' 1.817 N	80° 33' 39.645 W
6,558.00	65.50	335.70	6,369.66	241.62	-117.59	584,732.02	1,703,174.51	40° 6' 2.067 N	80° 33' 39.801 W
6,590.00	67.10	336.30	6,382.52	268.39	-129.51	584,758.79	1,703,162.59	40° 6' 2.330 N	80° 33' 39.958 W
6,621.00	69.30	336.80	6,394.03	294.79	-140.96	584,785.19	1,703,151.14	40° 6' 2.590 N	80° 33' 40.110 W
6,653.00	72.10	337.00	6,404.61	322.57	-152.81	584,812.97	1,703,139.29	40° 6' 2.863 N	80° 33' 40.266 W
6,684.00	76.20	338.50	6,413.07	350.16	-164.09	584,840.57	1,703,128.01	40° 6' 3.135 N	80° 33' 40.416 W
6,716.00	80.30	341.50	6,419.59	379.60	-174.80	584,870.00	1,703,117.30	40° 6' 3.424 N	80° 33' 40.558 W
6,779.00	89.20	344.10	6,425.35	439.46	-193.32	584,929.87	1,703,098.78	40° 6' 4.014 N	80° 33' 40.805 W
6,811.00	90.10	345.80	6,425.55	470.36	-201.63	584,960.77	1,703,090.47	40° 6' 4.318 N	80° 33' 40.917 W
6,905.00	90.20	343.40	6,425.30	560.98	-226.59	585,051.38	1,703,065.51	40° 6' 5.211 N	80° 33' 41.252 W
7,000.00	92.50	340.40	6,423.06	651.24	-256.09	585,141.64	1,703,036.01	40° 6' 6.099 N	80° 33' 41.645 W
7,094.00	92.20	339.70	6,419.21	739.52	-288.13	585,229.93	1,703,003.97	40° 6' 6.968 N	80° 33' 42.071 W
7,189.00	91.80	340.90	6,415.89	828.91	-320.14	585,319.31	1,702,971.96	40° 6' 7.847 N	80° 33' 42.496 W
7,284.00	92.00	337.90	6,412.74	917.77	-353.54	585,408.18	1,702,938.56	40° 6' 8.721 N	80° 33' 42.940 W
7,379.00	92.20	336.40	6,409.26	1,005.26	-390.40	585,495.66	1,702,901.69	40° 6' 9.582 N	80° 33' 43.427 W
7,473.00	91.10	336.90	6,406.55	1,091.52	-427.64	585,581.92	1,702,864.45	40° 6' 10.430 N	80° 33' 43.920 W
7,568.00	90.90	336.20	6,404.89	1,178.66	-465.44	585,669.06	1,702,826.66	40° 6' 11.286 N	80° 33' 44.419 W
7,662.00	89.60	332.10	6,404.48	1,263.23	-506.42	585,753.64	1,702,785.68	40° 6' 12.117 N	80° 33' 44.960 W
7,757.00	91.70	335.30	6,403.41	1,348.38	-548.50	585,838.78	1,702,743.60	40° 6' 12.954 N	80° 33' 45.514 W
7,851.00	91.60	335.90	6,400.70	1,433.95	-587.32	585,924.35	1,702,704.78	40° 6' 13.795 N	80° 33' 46.027 W
7,946.00	91.80	338.20	6,397.88	1,521.38	-624.34	586,011.79	1,702,667.76	40° 6' 14.655 N	80° 33' 46.516 W
8,041.00	91.80	335.90	6,394.90	1,608.81	-661.36	586,099.22	1,702,630.74	40° 6' 15.514 N	80° 33' 47.006 W
8,136.00	91.10	339.70	6,392.49	1,696.73	-697.24	586,187.13	1,702,594.86	40° 6' 16.379 N	80° 33' 47.481 W
8,230.00	91.40	338.80	6,390.44	1,784.61	-730.53	586,275.01	1,702,561.56	40° 6' 17.243 N	80° 33' 47.923 W
8,325.00	91.10	340.30	6,388.37	1,873.60	-763.72	586,364.00	1,702,528.38	40° 6' 18.119 N	80° 33' 48.364 W
8,420.00	91.30	338.50	6,386.38	1,962.50	-797.13	586,452.90	1,702,494.97	40° 6' 18.993 N	80° 33' 48.807 W
8,514.00	89.30	337.80	6,385.89	2,049.74	-832.12	586,540.14	1,702,459.98	40° 6' 19.851 N	80° 33' 49.271 W
8,609.00	89.10	341.80	6,387.21	2,138.87	-864.91	586,629.27	1,702,427.19	40° 6' 20.728 N	80° 33' 49.706 W
8,704.00	90.70	340.80	6,387.38	2,228.85	-895.37	586,719.25	1,702,396.73	40° 6' 21.614 N	80° 33' 50.112 W
8,798.00	90.10	342.40	6,386.72	2,318.04	-925.03	586,808.44	1,702,367.06	40° 6' 22.492 N	80° 33' 50.507 W
8,893.00	92.60	342.70	6,384.48	2,408.64	-953.51	586,899.04	1,702,338.59	40° 6' 23.384 N	80° 33' 50.887 W
8,988.00	92.30	341.60	6,380.42	2,498.98	-982.61	586,989.38	1,702,309.49	40° 6' 24.273 N	80° 33' 51.276 W
9,082.00	91.30	342.20	6,377.47	2,588.28	-1,011.79	587,078.68	1,702,280.30	40° 6' 25.152 N	80° 33' 51.665 W
9,177.00	90.90	342.50	6,375.65	2,678.79	-1,040.59	587,169.20	1,702,251.51	40° 6' 26.043 N	80° 33' 52.049 W
9,272.00	90.70	338.50	6,374.32	2,768.32	-1,072.30	587,258.72	1,702,219.80	40° 6' 26.924 N	80° 33' 52.471 W
9,366.00	89.70	337.00	6,373.99	2,855.31	-1,107.89	587,345.72	1,702,184.21	40° 6' 27.780 N	80° 33' 52.942 W

Company:	Chesapeake	Local Co-ordinate Reference:	Well 3H
Project:	Ohio Co, WV	TVD Reference:	GL 1198+RKB 20 @ 1218.00usft (Nomac 74)
Site:	Alice Edge OHI	MD Reference:	GL 1198+RKB 20 @ 1218.00usft (Nomac 74)
Well:	3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM LEWIS

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,461.00	91.50	340.70	6,373.00	2,943.89	-1,142.15	587,434.29	1,702,149.94	40° 6' 28.651 N	80° 33' 53.397 W
9,555.00	91.80	338.50	6,370.29	3,031.95	-1,174.90	587,522.36	1,702,117.19	40° 6' 29.517 N	80° 33' 53.832 W
9,650.00	89.20	339.20	6,369.46	3,120.54	-1,209.18	587,610.94	1,702,082.92	40° 6' 30.389 N	80° 33' 54.286 W
9,744.00	88.30	337.50	6,371.51	3,207.89	-1,243.85	587,698.29	1,702,048.25	40° 6' 31.248 N	80° 33' 54.746 W
9,839.00	89.20	338.50	6,373.58	3,295.95	-1,279.43	587,786.35	1,702,012.67	40° 6' 32.114 N	80° 33' 55.217 W
9,934.00	91.20	339.20	6,373.25	3,384.54	-1,313.70	587,874.94	1,701,978.40	40° 6' 32.985 N	80° 33' 55.672 W
10,028.00	91.10	339.60	6,371.37	3,472.51	-1,346.77	587,962.92	1,701,945.33	40° 6' 33.851 N	80° 33' 56.111 W
10,123.00	90.40	339.10	6,370.12	3,561.40	-1,380.27	588,051.80	1,701,911.83	40° 6' 34.725 N	80° 33' 56.555 W
10,218.00	90.30	338.50	6,369.54	3,649.97	-1,414.62	588,140.37	1,701,877.48	40° 6' 35.597 N	80° 33' 57.011 W
10,313.00	91.90	336.30	6,367.72	3,737.65	-1,451.12	588,228.05	1,701,840.98	40° 6' 36.459 N	80° 33' 57.494 W
10,408.00	91.10	334.80	6,365.23	3,824.10	-1,490.42	588,314.50	1,701,801.68	40° 6' 37.308 N	80° 33' 58.013 W
10,502.00	91.50	335.00	6,363.10	3,909.20	-1,530.29	588,399.60	1,701,761.81	40° 6' 38.145 N	80° 33' 58.539 W
10,597.00	90.90	335.40	6,361.11	3,995.42	-1,570.13	588,485.82	1,701,721.97	40° 6' 38.992 N	80° 33' 59.065 W
10,692.00	90.00	334.30	6,360.36	4,081.41	-1,610.50	588,571.81	1,701,681.60	40° 6' 39.837 N	80° 33' 59.598 W
10,787.00	89.50	335.20	6,360.78	4,167.33	-1,651.02	588,657.73	1,701,641.08	40° 6' 40.681 N	80° 34' 0.132 W
10,881.00	90.50	334.80	6,360.78	4,252.52	-1,690.75	588,742.92	1,701,601.35	40° 6' 41.518 N	80° 34' 0.657 W
10,976.00	89.60	335.60	6,360.69	4,338.76	-1,730.59	588,829.16	1,701,561.50	40° 6' 42.366 N	80° 34' 1.183 W
11,071.00	92.40	336.20	6,359.04	4,425.45	-1,769.38	588,915.86	1,701,522.72	40° 6' 43.218 N	80° 34' 1.695 W
11,165.00	91.90	337.00	6,355.51	4,511.66	-1,806.68	589,002.06	1,701,485.42	40° 6' 44.066 N	80° 34' 2.188 W
11,260.00	91.40	336.10	6,352.77	4,598.78	-1,844.47	589,089.18	1,701,447.63	40° 6' 44.922 N	80° 34' 2.688 W
11,355.00	91.10	335.60	6,350.70	4,685.44	-1,883.33	589,175.85	1,701,408.77	40° 6' 45.774 N	80° 34' 3.201 W
11,449.00	90.10	337.20	6,349.72	4,771.57	-1,920.96	589,261.97	1,701,371.14	40° 6' 46.621 N	80° 34' 3.699 W
11,544.00	89.90	337.40	6,349.72	4,859.21	-1,957.62	589,349.62	1,701,334.48	40° 6' 47.482 N	80° 34' 4.184 W
11,638.00	90.40	332.70	6,349.47	4,944.42	-1,997.26	589,434.82	1,701,294.84	40° 6' 48.320 N	80° 34' 4.707 W
11,723.00	90.60	332.70	6,348.73	5,019.95	-2,036.24	589,510.35	1,701,255.86	40° 6' 49.061 N	80° 34' 5.220 W
11,818.00	91.50	333.70	6,346.99	5,104.72	-2,079.07	589,595.13	1,701,213.03	40° 6' 49.894 N	80° 34' 5.785 W
11,912.00	90.40	332.50	6,345.43	5,188.54	-2,121.59	589,678.94	1,701,170.51	40° 6' 50.717 N	80° 34' 6.345 W
12,007.00	90.80	333.00	6,344.44	5,272.99	-2,165.08	589,763.39	1,701,127.01	40° 6' 51.547 N	80° 34' 6.917 W
12,101.00	91.00	332.30	6,342.96	5,356.47	-2,208.26	589,846.88	1,701,083.83	40° 6' 52.367 N	80° 34' 7.486 W
12,196.00	91.10	333.70	6,341.22	5,441.10	-2,251.38	589,931.50	1,701,040.71	40° 6' 53.198 N	80° 34' 8.054 W
12,290.00	90.50	333.40	6,339.91	5,525.25	-2,293.25	590,015.66	1,700,998.85	40° 6' 54.025 N	80° 34' 8.605 W
12,385.00	90.70	333.20	6,338.91	5,610.12	-2,335.93	590,100.52	1,700,956.17	40° 6' 54.858 N	80° 34' 9.168 W
12,480.00	90.50	332.70	6,337.92	5,694.72	-2,379.13	590,185.13	1,700,912.97	40° 6' 55.689 N	80° 34' 9.737 W
12,575.00	90.20	333.20	6,337.34	5,779.33	-2,422.33	590,269.73	1,700,869.76	40° 6' 56.520 N	80° 34' 10.306 W
12,669.00	90.20	334.10	6,337.01	5,863.56	-2,464.06	590,353.96	1,700,828.04	40° 6' 57.348 N	80° 34' 10.856 W
12,764.00	91.80	336.10	6,335.35	5,949.71	-2,504.05	590,440.11	1,700,788.05	40° 6' 58.194 N	80° 34' 11.384 W
12,859.00	90.60	334.50	6,333.36	6,035.99	-2,543.73	590,526.40	1,700,748.37	40° 6' 59.042 N	80° 34' 11.908 W
12,953.00	89.80	333.60	6,333.03	6,120.51	-2,584.86	590,610.92	1,700,707.23	40° 6' 59.873 N	80° 34' 12.450 W
13,048.00	89.20	335.00	6,333.86	6,206.11	-2,626.06	590,696.51	1,700,666.04	40° 7' 0.714 N	80° 34' 12.993 W
13,143.00	89.80	334.90	6,334.69	6,292.17	-2,666.28	590,782.57	1,700,625.82	40° 7' 1.559 N	80° 34' 13.524 W
13,237.00	90.70	335.40	6,334.28	6,377.47	-2,705.78	590,867.87	1,700,586.31	40° 7' 2.398 N	80° 34' 14.046 W
13,332.00	90.30	335.40	6,333.45	6,463.84	-2,745.33	590,954.24	1,700,546.77	40° 7' 3.246 N	80° 34' 14.568 W
13,427.00	90.00	335.60	6,333.20	6,550.29	-2,784.72	591,040.69	1,700,507.37	40° 7' 4.096 N	80° 34' 15.088 W
13,522.00	88.60	333.90	6,334.36	6,636.20	-2,825.24	591,126.60	1,700,466.86	40° 7' 4.940 N	80° 34' 15.623 W
13,616.00	90.80	337.90	6,334.86	6,721.98	-2,863.61	591,212.38	1,700,428.48	40° 7' 5.783 N	80° 34' 16.130 W
13,711.00	92.40	338.40	6,332.20	6,810.12	-2,898.96	591,300.52	1,700,393.14	40° 7' 6.650 N	80° 34' 16.598 W
13,806.00	92.20	336.60	6,328.39	6,897.81	-2,935.28	591,388.21	1,700,356.82	40° 7' 7.512 N	80° 34' 17.079 W
13,901.00	91.90	337.70	6,324.99	6,985.30	-2,972.15	591,475.70	1,700,319.95	40° 7' 8.373 N	80° 34' 17.567 W
13,995.00	91.50	336.70	6,322.20	7,071.91	-3,008.56	591,562.32	1,700,283.54	40° 7' 9.224 N	80° 34' 18.049 W
14,090.00	90.80	336.80	6,320.30	7,159.18	-3,046.05	591,649.58	1,700,246.05	40° 7' 10.082 N	80° 34' 18.545 W
14,185.00	90.00	335.90	6,319.63	7,246.20	-3,084.16	591,736.60	1,700,207.94	40° 7' 10.938 N	80° 34' 19.049 W
14,279.00	91.00	334.70	6,318.81	7,331.59	-3,123.43	591,822.00	1,700,168.66	40° 7' 11.777 N	80° 34' 19.568 W
14,374.00	90.20	334.30	6,317.82	7,417.33	-3,164.33	591,907.74	1,700,127.77	40° 7' 12.619 N	80° 34' 20.107 W
14,469.00	89.50	335.10	6,318.07	7,503.22	-3,204.93	591,993.62	1,700,087.17	40° 7' 13.463 N	80° 34' 20.645 W
14,563.00	90.80	333.20	6,317.82	7,587.81	-3,245.91	592,078.21	1,700,046.19	40° 7' 14.294 N	80° 34' 21.183 W

UNCLASSIFIED
 CONFIDENTIAL
 SECRET

Company:	Chesapeake	Local Co-ordinate Reference:	Well 3H
Project:	Ohio Co, WV	TVD Reference:	GL 1198+RKB 20 @ 1218.00usft (Nomac 74)
Site:	Alice Edge OH	MD Reference:	GL 1198+RKB 20 @ 1218.00usft (Nomac 74)
Well:	3H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM LEWIS

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
14,658.00	89.90	333.10	6,317.24	7,672.56	-3,288.82	592,162.97	1,700,003.28	40° 7' 15.127 N	80° 34' 21.749 W
14,753.00	93.80	336.30	6,314.17	7,758.38	-3,329.38	592,248.78	1,699,962.71	40° 7' 15.970 N	80° 34' 22.284 W
14,848.00	93.20	335.40	6,308.37	7,844.90	-3,368.18	592,335.30	1,699,923.92	40° 7' 16.820 N	80° 34' 22.797 W
14,943.00	92.90	335.90	6,303.32	7,931.33	-3,407.29	592,421.73	1,699,884.81	40° 7' 17.670 N	80° 34' 23.314 W
15,037.00	92.60	334.80	6,298.81	8,016.66	-3,446.45	592,507.06	1,699,845.65	40° 7' 18.508 N	80° 34' 23.831 W
15,132.00	92.20	333.40	6,294.83	8,102.04	-3,487.91	592,592.44	1,699,804.19	40° 7' 19.347 N	80° 34' 24.377 W
15,227.00	91.30	334.80	6,291.93	8,187.46	-3,529.39	592,677.86	1,699,762.71	40° 7' 20.186 N	80° 34' 24.924 W
15,322.00	91.10	333.00	6,289.94	8,272.75	-3,571.17	592,763.15	1,699,720.93	40° 7' 21.024 N	80° 34' 25.475 W
15,417.00	90.40	333.30	6,288.70	8,357.50	-3,614.07	592,847.90	1,699,678.03	40° 7' 21.857 N	80° 34' 26.041 W
15,512.00	89.60	333.50	6,288.70	8,442.44	-3,656.61	592,932.84	1,699,635.49	40° 7' 22.691 N	80° 34' 26.601 W
15,606.00	90.20	334.10	6,288.86	8,526.78	-3,698.11	593,017.19	1,699,593.99	40° 7' 23.520 N	80° 34' 27.148 W
15,701.00	91.00	333.80	6,287.86	8,612.13	-3,739.83	593,102.53	1,699,552.27	40° 7' 24.358 N	80° 34' 27.699 W
15,795.00	91.50	334.80	6,285.81	8,696.81	-3,780.58	593,187.21	1,699,511.52	40° 7' 25.190 N	80° 34' 28.236 W
15,890.00	92.10	335.70	6,282.83	8,783.04	-3,820.33	593,273.44	1,699,471.76	40° 7' 26.037 N	80° 34' 28.761 W
15,985.00	91.70	333.40	6,279.68	8,868.76	-3,861.13	593,359.17	1,699,430.97	40° 7' 26.880 N	80° 34' 29.299 W
16,079.00	90.60	332.00	6,277.79	8,952.27	-3,904.24	593,442.68	1,699,387.86	40° 7' 27.700 N	80° 34' 29.867 W
16,174.00	92.10	337.00	6,275.55	9,037.96	-3,945.11	593,528.37	1,699,346.99	40° 7' 28.542 N	80° 34' 30.407 W
16,269.00	92.10	337.80	6,272.07	9,125.61	-3,981.59	593,616.01	1,699,310.51	40° 7' 29.404 N	80° 34' 30.890 W
16,363.00	91.10	336.40	6,269.45	9,212.16	-4,018.15	593,702.57	1,699,273.94	40° 7' 30.255 N	80° 34' 31.374 W
16,376.00	91.00	337.00	6,269.21	9,224.10	-4,023.30	593,714.51	1,699,268.80	40° 7' 30.372 N	80° 34' 31.442 W
16,440.00	91.00	337.00	6,268.09	9,283.01	-4,048.30	593,773.41	1,699,243.80	40° 7' 30.951 N	80° 34' 31.773 W

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
16,440.00	6,268.09	9,283.01	-4,048.30	PTD

Checked By: _____ Approved By: _____ Date: _____

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 Ohio Department of Environmental Protection
 Jan 8 2015