



Actual Wellpath Report
 MND-6A-HS AWP Proj: 18674'
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REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot A
Area	Marshall County, WV	Well	MND-6A-HS
Field	Marshall	Wellbore	MND-6A-HS AWB
Facility	MND-6 Pad		

REPORT SETUP INFORMATION

Projection System	NAD27 / Lambert West Virginia SP, Northern Zone (4701), US feet	Software System	WellArchitect@ 4.0.1
North Reference	Grid	User	Kroschr
Scale	0.999946	Report Generated	10/13/2014 at 10:59:10 AM
Convergence at slot	0.82° West	Database/Source file	W_A_NorthEast/MND-6A-HS_AWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North(ft)	East(ft)	Northing(US ft)	Easting(US ft)	Latitude	Longitude
Slot Location	19.27	-5.12	482531.50	1637172.66	39°49'03.564"N	80°47'30.152"W
Facility Reference Pt			482512.23	1637177.78	39°49'03.375"N	80°47'30.083"W
Field Reference Pt			0.00	609601.22	38°23'48.753"N	84°21'09.765"W

WELLPATH DATUM

Calculation method	Minimum curvature	Nomac 79 (RKB) to Facility Vertical Datum	746.98ft
Horizontal Reference Pt	Slot	Nomac 79 (RKB) to Mean Sea Level	746.98ft
Vertical Reference Pt	Nomac 79 (RKB)	Nomac 79 (RKB) to Mind Line at Slot (Slot A)	26.00ft
MD Reference Pt	Nomac 79 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	325.00°



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REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot A
Area	Marshall County, WV	Well	MND-6A-HS
Field	Marshall	Wellbore	MND-6A-HS AWB
Facility	MND-6 Pad		

WELLPATH DATA (225 stations) † = interpolated/extrapolated station													
MD [ft]	Inclination [°]	Azimuth [°]	TYD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]
0.00†	0.000	316.420	0.00	0.00	0.00	0.00	1637172.66	482531.50	39°49'03.564"N	80°47'30.152"W	0.00	0.000	0.00
26.00	0.000	316.420	26.00	0.00	0.00	0.00	1637172.66	482531.50	39°49'03.564"N	80°47'30.152"W	0.00	0.000	0.00
50.00	0.160	316.420	50.00	0.03	0.02	-0.02	1637172.64	482531.52	39°49'03.565"N	80°47'30.153"W	0.03	316.420	0.67
100.00	0.370	351.540	100.00	0.25	0.23	-0.09	1637172.57	482531.73	39°49'03.567"N	80°47'30.154"W	0.25	337.954	0.51
150.00	0.270	322.270	150.00	0.51	0.49	-0.19	1637172.47	482531.96	39°49'03.569"N	80°47'30.155"W	0.52	338.619	0.38
200.00	0.160	275.400	200.00	0.67	0.59	-0.33	1637172.33	482533.09	39°49'03.570"N	80°47'30.157"W	0.67	330.483	0.40
250.00	0.300	345.220	250.00	0.84	0.72	-0.44	1637172.22	482532.22	39°49'03.571"N	80°47'30.158"W	0.84	328.852	0.57
275.00	0.710	315.520	275.00	1.05	0.89	-0.56	1637172.10	482532.39	39°49'03.573"N	80°47'30.160"W	1.06	327.914	1.89
309.00	0.440	300.420	309.00	1.38	1.05	-0.82	1637171.84	482532.61	39°49'03.575"N	80°47'30.163"W	1.38	323.533	0.90
327.00	0.440	296.670	326.99	1.50	1.18	-0.94	1637171.72	482532.68	39°49'03.576"N	80°47'30.165"W	1.51	321.314	0.76
339.00	0.230	298.290	338.99	1.57	1.21	-1.00	1637171.66	482532.71	39°49'03.576"N	80°47'30.165"W	1.57	320.270	1.75
432.00	0.500	277.350	431.99	2.01	1.35	-1.57	1637171.09	482532.85	39°49'03.578"N	80°47'30.173"W	2.07	310.647	0.32
525.00	1.050	266.060	524.98	2.72	1.34	-2.82	1637169.84	482532.84	39°49'03.577"N	80°47'30.189"W	3.13	295.425	0.61
622.00	1.780	257.230	621.95	3.75	0.95	-5.18	1637167.48	482532.45	39°49'03.573"N	80°47'30.219"W	5.27	280.374	0.78
704.00	1.350	253.280	703.92	4.55	0.39	-7.35	1637165.31	482531.89	39°49'03.567"N	80°47'30.247"W	7.36	273.030	0.54
763.00	1.030	253.030	762.91	4.91	0.03	-8.52	1637164.14	482531.53	39°49'03.564"N	80°47'30.262"W	8.52	270.230	0.54
811.00	0.870	253.800	810.90	5.17	-0.19	-9.28	1637163.38	482531.31	39°49'03.561"N	80°47'30.271"W	9.28	268.806	0.33
901.00	0.860	249.070	900.89	5.55	-0.63	-10.57	1637162.09	482530.87	39°49'03.557"N	80°47'30.288"W	10.59	266.614	0.08
998.00	0.860	256.580	997.88	5.99	-1.05	-11.96	1637160.70	482530.45	39°49'03.552"N	80°47'30.305"W	12.00	264.961	0.12
1092.00	0.780	241.650	1091.87	6.33	-1.52	-13.21	1637159.45	482529.96	39°49'03.548"N	80°47'30.321"W	13.29	263.426	0.24
1188.00	0.720	239.700	1187.86	6.45	-2.14	-14.30	1637158.36	482529.36	39°49'03.541"N	80°47'30.335"W	14.46	261.504	0.07
1283.00	0.590	259.860	1282.86	6.71	-2.52	-15.30	1637157.36	482528.98	39°49'03.537"N	80°47'30.348"W	15.51	260.633	0.28
1378.00	0.310	267.090	1377.86	7.05	-2.62	-16.04	1637156.62	482528.88	39°49'03.536"N	80°47'30.357"W	16.25	260.712	0.30
1472.00	0.320	258.520	1471.85	7.29	-2.69	-16.55	1637156.11	482528.81	39°49'03.536"N	80°47'30.364"W	16.77	260.774	0.05
1567.00	1.520	107.610	1566.84	6.39	3.12	-15.61	1637157.05	482528.38	39°49'03.533"N	80°47'30.352"W	15.92	258.688	1.90
1661.00	1.780	93.180	1660.81	4.50	-3.58	-12.96	1637159.70	482527.92	39°49'03.527"N	80°47'30.318"W	13.45	254.559	0.52
1756.00	1.560	87.660	1755.77	2.89	-3.41	-10.20	1637162.46	482527.89	39°49'03.527"N	80°47'30.282"W	10.82	250.507	0.29
1850.00	1.350	86.230	1849.74	1.63	-3.48	-7.81	1637164.85	482528.02	39°49'03.529"N	80°47'30.252"W	8.55	245.965	0.23
1945.00	1.130	84.880	1944.71	0.58	-3.33	-5.76	1637166.90	482528.17	39°49'03.531"N	80°47'30.226"W	6.65	240.003	0.23
1983.00	1.000	86.040	1982.71	0.22	-3.27	-5.06	1637167.66	482528.23	39°49'03.531"N	80°47'30.217"W	5.02	237.118	0.35



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Area	Marshall County, WV	Well	MND-6A-HS
Field	Marshall	Wellbore	MND-6A-HS AWB
Facility	MND-6 Pad		

WELLPATH DATA (225 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DIS [°/1000ft]
2041.00	0.950	83.680	2040.70	-0.27	3.18	-4.08	1637168.58	482528.32	39°49'03.532"N	80°47'30.204"W	5.17	232.018	0.11
2135.00	0.650	74.230	2134.69	-0.82	-2.95	-2.79	1637169.87	482528.55	39°49'03.535"N	80°47'30.188"W	4.06	223.371	0.35
2230.00	0.290	43.380	2229.69	-0.95	-2.63	-2.11	1637170.55	482528.87	39°49'03.538"N	80°47'30.179"W	3.37	218.665	0.45
2270.00	0.220	24.570	2269.69	-0.89	-2.49	-2.00	1637170.66	482529.01	39°49'03.540"N	80°47'30.178"W	3.19	218.851	0.27
2324.00	0.890	57.610	2323.68	-0.85	-2.17	-1.81	1637171.05	482529.33	39°49'03.543"N	80°47'30.172"W	2.70	216.330	1.33
2374.00	3.650	61.650	2373.64	-1.06	-1.20	0.12	1637172.78	482530.30	39°49'03.533"N	80°47'30.151"W	1.21	174.197	5.53
2419.00	3.820	58.830	2418.54	-1.32	0.25	2.67	1637173.33	482531.75	39°49'03.567"N	80°47'30.118"W	2.68	84.613	0.56
2466.00	4.560	48.080	2465.42	-1.20	2.31	5.40	1637178.06	482533.81	39°49'03.588"N	80°47'30.084"W	5.87	66.823	2.29
2514.00	4.580	45.750	2513.26	-0.66	4.92	8.19	1637180.85	482536.42	39°49'03.614"N	80°47'30.048"W	9.55	58.989	0.39
2547.00	5.850	48.370	2546.13	-0.26	6.96	10.39	1637183.05	482538.46	39°49'03.635"N	80°47'30.021"W	12.50	56.185	1.91
2608.00	6.490	50.390	2606.77	0.38	11.22	15.37	1637188.03	482542.72	39°49'03.678"N	80°47'29.957"W	19.03	53.864	1.11
2642.00	7.430	52.640	2640.52	0.62	13.78	18.60	1637191.26	482545.28	39°49'03.703"N	80°47'29.917"W	23.15	53.459	2.88
2703.00	7.490	51.010	2701.01	1.06	18.68	24.82	1637197.48	482550.17	39°49'03.733"N	80°47'29.838"W	37.64	53.042	3.20
2749.00	8.960	50.810	2746.53	1.53	22.83	29.93	1637202.59	482554.32	39°49'03.794"N	80°47'29.773"W	31.06	52.668	3.20
2798.00	8.330	49.310	2794.98	2.16	27.55	35.58	1637208.24	482559.05	39°49'03.842"N	80°47'29.702"W	55.00	52.245	1.37
2892.00	13.310	58.840	2887.28	2.11	37.60	73.67	1637246.32	482569.09	39°49'03.943"N	80°47'29.518"W	62.57	53.065	5.61
2988.00	19.600	61.700	2979.31	-0.51	50.96	73.67	1637246.32	482582.46	39°49'04.078"N	80°47'29.218"W	89.58	55.325	6.60
3082.00	22.560	61.520	3067.01	4.40	67.04	103.40	1637276.06	482598.53	39°49'04.242"N	80°47'28.840"W	123.23	57.044	3.15
3177.00	19.520	55.830	3155.67	-6.70	84.65	132.56	1637305.22	482616.14	39°49'04.420"N	80°47'28.469"W	157.29	57.440	3.85
3271.00	17.450	52.510	3244.82	-6.31	102.05	156.74	1637329.44	482633.54	39°49'04.595"N	80°47'28.163"W	187.04	56.934	2.47
3366.00	21.540	54.700	3334.29	-5.91	121.22	182.21	1637354.86	482652.71	39°49'04.788"N	80°47'27.840"W	218.85	56.365	4.56
3418.00	21.540	54.700	3382.62	-4.90	132.48	197.75	1637383.71	482663.97	39°49'04.902"N	80°47'27.643"W	228.02	56.180	3.00
3461.00	22.250	57.590	3422.52	-5.23	141.41	211.06	1637383.71	482672.90	39°49'05.204"N	80°47'27.474"W	254.05	56.179	1.00
3556.00	26.160	57.170	3509.15	-6.83	162.41	243.86	1637416.50	482693.90	39°49'05.004"N	80°47'27.058"W	292.99	56.336	4.12
3598.00	26.290	55.750	3546.83	-7.29	172.66	259.32	1637431.97	482704.14	39°49'04.907"N	80°47'26.861"W	311.55	56.344	1.53
3651.00	22.480	54.020	3595.09	-7.29	185.23	277.23	1637449.88	482716.72	39°49'05.424"N	80°47'26.647"W	333.42	56.252	7.31
3746.00	25.200	51.650	3681.98	-5.79	208.45	307.80	1637480.44	482739.94	39°49'05.668"N	80°47'26.247"W	371.74	55.893	3.03
3841.00	24.880	51.360	3768.05	-3.34	233.48	339.27	1637511.91	482764.96	39°49'05.920"N	80°47'25.848"W	411.84	55.465	0.36
3953.00	24.590	49.620	3853.43	-0.25	258.50	369.61	1637542.25	482789.98	39°49'06.171"N	80°47'25.464"W	451.03	55.032	0.83
4030.00	22.490	48.390	3940.52	3.65	283.37	398.26	1637570.89	482814.85	39°49'06.421"N	80°47'25.101"W	488.78	54.567	2.27

Office of Oil and Gas
 JAN 12
 WV Department of Environmental Protection



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 MND-6A-HS AWP Proj: 18674
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02/03/2017

REFERENCE WELLPATH IDENTIFICATION

Operator:	NOBLE ENERGY	Slot:	Slot A
Area:	Marshall County, WV	Well:	MND-6A-HS
Field:	Marshall	Wellbore:	MND-6A-HS AWB
Facility:	MND-6 Pad		

WELLPATH DATA (225 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]
4125.00	21.110	47.940	4028.72	7.89	306.90	424.54	1637597.18	482838.38	39°49'06.657"N	80°47'24.769"W	523.85	54.137	1.46
4169.00	21.920	49.070	4069.65	9.71	317.59	436.63	1637609.27	482849.07	39°49'06.765"N	80°47'24.616"W	539.91	53.970	2.07
4191.00	21.130	48.780	4090.12	10.36	322.89	442.72	1637615.35	482854.37	39°49'06.818"N	80°47'24.539"W	547.96	53.895	3.62
4286.00	21.000	50.070	4178.77	13.88	345.10	468.65	1637641.28	482876.58	39°49'07.041"N	80°47'24.211"W	582.00	53.633	0.51
4379.00	20.610	51.160	4265.71	16.41	366.06	494.18	1637666.81	482891.54	39°49'07.252"N	80°47'23.887"W	614.99	53.471	0.59
4474.00	20.880	52.030	4354.55	18.41	386.96	520.55	1637693.18	482918.44	39°49'07.462"N	80°47'23.553"W	648.62	53.374	0.43
4569.00	20.800	53.670	4443.33	19.68	407.37	547.48	1637720.11	482928.85	39°49'07.668"N	80°47'23.212"W	682.41	53.348	0.62
4663.00	20.890	56.080	4531.18	19.75	426.61	574.84	1637747.46	482958.09	39°49'07.862"N	80°47'22.865"W	715.84	53.419	0.92
4758.00	20.400	55.300	4620.08	19.34	445.49	602.50	1637775.13	482976.96	39°49'08.052"N	80°47'22.514"W	749.31	53.521	0.59
4852.00	20.430	55.060	4708.18	19.24	464.21	629.42	1637802.05	482995.68	39°49'08.241"N	80°47'22.172"W	782.09	53.590	0.09
4947.00	21.260	56.750	4796.96	18.69	483.15	657.42	1637830.04	483014.62	39°49'08.432"N	80°47'21.817"W	815.86	53.687	1.08
5042.00	19.960	56.930	4885.88	17.62	501.44	685.41	1637858.03	483032.91	39°49'08.617"N	80°47'21.462"W	849.25	53.811	1.37
5136.00	20.830	56.470	4973.98	16.65	519.43	712.79	1637885.41	483050.90	39°49'08.799"N	80°47'21.114"W	881.97	53.918	0.94
5231.00	20.720	55.370	5062.81	16.11	538.31	740.70	1637913.32	483069.78	39°49'08.989"N	80°47'20.760"W	915.65	53.992	0.43
5325.00	20.930	56.550	5150.67	15.55	557.01	768.39	1637941.01	483088.48	39°49'09.178"N	80°47'20.409"W	949.04	54.061	0.50
5420.00	21.920	57.490	5239.10	14.32	575.90	797.50	1637970.12	483107.37	39°49'09.369"N	80°47'20.039"W	983.70	54.166	1.10
5515.00	23.840	50.220	5326.64	15.15	597.72	827.22	1637999.83	483129.19	39°49'09.588"N	80°47'19.662"W	1020.57	54.149	3.59
5609.00	27.040	40.140	5411.55	22.22	626.23	855.61	1638028.22	483157.69	39°49'09.874"N	80°47'19.304"W	1060.30	53.799	5.72
5658.00	28.560	32.960	5454.91	29.47	644.58	869.17	1638041.78	483176.04	39°49'10.057"N	80°47'19.133"W	1082.10	53.439	7.50
5705.00	29.410	23.640	5496.04	39.70	664.59	879.91	1638052.53	483196.05	39°49'10.257"N	80°47'18.999"W	1102.66	52.937	9.77
5751.00	29.910	13.260	5536.04	53.22	686.11	887.08	1638069.69	483217.57	39°49'10.470"N	80°47'18.911"W	1121.45	52.280	11.21
5800.00	30.330	359.720	5578.48	71.55	710.40	889.82	1638082.43	483241.86	39°49'10.711"N	80°47'18.881"W	1138.62	51.917	13.87
5846.00	32.620	351.490	5617.72	92.20	734.29	887.93	1638096.54	483265.75	39°49'10.944"N	80°47'18.909"W	1152.22	50.410	10.58
5894.00	37.370	346.550	5657.04	117.35	761.28	882.62	1638055.23	483292.73	39°49'11.212"N	80°47'18.982"W	1165.58	49.222	11.52
5941.00	42.120	344.680	5693.17	145.47	790.37	875.14	1638047.75	483321.82	39°49'11.499"N	80°47'19.084"W	1179.21	47.914	10.42
5989.00	48.200	345.910	5727.00	177.40	823.26	866.46	1638030.07	483353.94	39°49'11.823"N	80°47'19.201"W	1195.20	46.464	12.76
6035.00	53.570	344.910	5756.01	210.86	857.77	857.40	1638030.01	483389.22	39°49'12.162"N	80°47'19.323"W	1212.80	44.988	11.75
6083.00	57.460	338.890	5783.20	248.69	895.32	845.07	1638017.68	483426.77	39°49'12.522"N	80°47'19.488"W	1231.16	43.346	11.13
6130.00	58.670	331.950	5808.08	287.89	931.51	828.48	1638001.10	483463.00	39°49'12.887"N	80°47'19.707"W	1246.67	41.648	12.79
6178.00	61.780	330.050	5831.92	329.31	967.98	808.28	1637987.89	483499.44	39°49'13.245"N	80°47'19.973"W	1261.07	39.862	7.33



Actual Wellpath Report
MND-6A-HS AWP Proj: 18674
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REC'D
Office of
JAN 11 2017
WV Department
Environmental Protection

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot A
Area	Marshall County, WV	Well	MND-6A-HS
Field	Marshall	Wellbore	MND-6A-HS AWB
Facility	MND-6 Pad		

WELLPATH DATA (225 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [p/100ft]
6225.00	65.730	332.720	5852.70	371.19	1004.98	788.11	1637960.73	483356.43	39°49'13.607"N	80°47'20.238"W	1277.15	38.104	9.83
6273.00	69.770	334.020	5870.87	415.13	1044.69	768.21	1637940.83	483576.13	39°49'13.997"N	80°47'20.501"W	1296.74	36.329	8.78
6319.00	74.490	332.910	5884.99	458.43	1083.85	748.65	1637921.27	483615.28	39°49'14.381"N	80°47'20.758"W	1317.27	34.634	10.51
6368.00	78.950	330.550	5896.24	505.77	1125.83	726.06	1637898.68	483657.27	39°49'14.793"N	80°47'21.056"W	1339.65	32.819	10.24
6462.00	85.100	327.140	5909.28	598.60	1205.43	677.91	1637850.54	483736.86	39°49'15.572"N	80°47'21.687"W	1382.98	25.353	7.46
6557.00	90.830	325.590	5912.65	693.47	1284.44	625.35	1637797.97	483815.87	39°49'16.346"N	80°47'22.375"W	1428.58	25.960	6.25
6652.00	90.740	326.750	5911.35	788.44	1363.35	572.46	1637744.09	483894.77	39°49'17.118"N	80°47'23.068"W	1478.66	22.777	1.22
6747.00	90.860	328.520	5910.02	883.32	1443.58	521.62	1637694.25	483975.00	39°49'17.904"N	80°47'23.734"W	1534.93	19.867	1.87
6842.00	90.770	326.730	5908.67	978.21	1523.80	470.76	1637643.39	484055.22	39°49'18.689"N	80°47'24.401"W	1594.86	17.168	1.89
6936.00	90.920	323.030	5907.29	1072.18	1600.67	416.69	1637589.33	484132.08	39°49'19.441"N	80°47'25.107"W	1654.02	14.592	3.94
7031.00	90.740	319.690	5905.91	1166.97	1674.85	357.39	1637530.03	484206.26	39°49'20.166"N	80°47'25.881"W	1712.56	12.045	3.52
7125.00	90.770	319.570	5904.67	1260.55	1746.46	296.51	1637469.15	484277.86	39°49'20.865"N	80°47'26.674"W	1771.45	9.636	0.13
7220.00	90.800	323.500	5903.37	1355.35	1820.82	237.43	1637410.08	484352.22	39°49'21.591"N	80°47'27.445"W	1836.24	7.429	4.14
7315.00	90.830	326.990	5902.02	1450.32	1898.86	183.29	1637355.94	484430.25	39°49'22.355"N	80°47'28.153"W	1907.68	5.513	3.67
7410.00	90.860	328.010	5900.62	1545.22	1978.97	132.25	1637304.90	484510.76	39°49'23.139"N	80°47'28.822"W	1983.38	3.823	1.07
7505.00	90.860	328.210	5899.19	1640.07	2059.62	82.07	1637254.73	484591.01	39°49'23.929"N	80°47'29.480"W	2061.25	2.282	0.21
7599.00	90.860	326.470	5897.78	1733.98	2138.75	31.35	1637204.01	484670.13	39°49'24.704"N	80°47'30.145"W	2138.97	0.840	1.85
7695.00	90.740	324.160	5896.44	1829.96	2217.67	-23.27	1637149.39	484749.05	39°49'25.476"N	80°47'30.859"W	2217.79	3.59	3.99
7789.00	90.830	323.010	5895.15	1923.92	2293.31	-79.07	1637093.60	484824.68	39°49'26.215"N	80°47'31.588"W	2294.67	3.58	0.25
7883.00	90.890	323.150	5893.74	2017.86	2368.45	-135.53	1637037.14	484899.82	39°49'26.950"N	80°47'32.326"W	2372.33	3.56	7.25
7978.00	90.740	322.970	5892.39	2112.79	2444.37	-192.61	1636980.06	484975.74	39°49'27.692"N	80°47'33.071"W	2451.95	3.55	4.94
8073.00	90.800	323.400	5891.11	2207.72	2520.42	-249.53	1636923.17	485051.78	39°49'28.435"N	80°47'33.815"W	2532.74	2.532	0.46
8168.00	90.710	326.310	5889.86	2302.02	2598.09	-304.21	1636868.47	485129.44	39°49'29.195"N	80°47'34.530"W	2611.84	3.53	3.32
8263.00	90.620	328.030	5888.76	2397.64	2677.91	-355.71	1636816.97	485209.26	39°49'29.976"N	80°47'35.204"W	2701.43	3.52	4.34
8358.00	90.340	328.120	5887.96	2492.92	2756.33	-405.94	1636766.74	485289.88	39°49'30.766"N	80°47'35.863"W	2788.24	3.51	6.28
8453.00	90.180	328.160	5887.53	2587.35	2839.22	-456.09	1636716.60	485370.36	39°49'31.556"N	80°47'36.521"W	2875.92	3.50	8.74
8548.00	89.820	326.400	5887.55	2682.28	2919.14	-507.44	1636665.25	485450.48	39°49'32.339"N	80°47'37.193"W	2962.92	3.50	1.39
8642.00	89.880	325.920	5887.78	2776.26	2997.22	-559.78	1636612.91	485528.55	39°49'33.103"N	80°47'37.879"W	3049.04	3.49	4.21
8737.00	90.550	324.380	5887.42	2871.25	3075.18	-614.07	1636558.63	485606.51	39°49'33.865"N	80°47'38.589"W	3135.89	3.48	7.07
8832.00	90.550	321.990	5886.51	2966.19	3151.22	-670.99	1636501.71	485682.55	39°49'34.600"N	80°47'39.332"W	3221.87	3.47	9.80



Actual Wellpath Report
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REFERENCE WELL PATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot A
Area	Marshall County, WV	Well	MND-6A-HS
Field	Marshall	Wellbore	MND-6A-HS AWB
Facility	MND-6 Pad		

WELL PATH DATA (225 stations)

MID	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS
[ft]	[°]	[°]	[ft]	[ft]	[ft]	[ft]	[US ft]	[US ft]			[ft]	[°]	[p/100ft]
8926.00	90.280	322.700	5885.83	3060.09	3225.64	-728.41	1636444.29	485756.96	39°49'35.336"N	80°47'40.082"W	3306.86	347.275	0.81
9021.00	90.710	323.340	5885.01	3155.03	3301.53	-785.55	1636387.15	485832.84	39°49'36.078"N	80°47'40.828"W	3393.70	346.616	0.81
9116.00	90.710	324.950	5883.83	3250.01	3378.52	-841.19	1636331.51	485909.83	39°49'36.830"N	80°47'41.555"W	3481.66	346.019	1.69
9210.00	90.580	324.970	5882.77	3344.00	3455.47	-895.16	1636277.55	485986.78	39°49'37.583"N	80°47'42.261"W	3569.54	345.476	0.14
9305.00	91.050	325.930	5881.42	3438.99	3533.71	-949.03	1636223.68	486065.01	39°49'38.349"N	80°47'42.966"W	3658.93	344.967	1.13
9400.00	91.290	330.080	5879.48	3533.82	3614.24	-999.34	1636173.37	486145.54	39°49'39.137"N	80°47'43.626"W	3749.66	344.544	4.37
9494.00	91.230	328.130	5877.41	3627.55	3694.88	-1047.60	1636125.12	486226.18	39°49'39.927"N	80°47'44.259"W	3840.52	344.171	2.07
9589.00	91.050	326.220	5875.52	3722.46	3774.69	-1099.08	1636073.64	486305.98	39°49'40.709"N	80°47'44.934"W	3931.45	343.766	2.02
9684.00	91.200	325.390	5873.66	3817.43	3853.26	-1152.46	1636020.26	486384.54	39°49'41.477"N	80°47'45.632"W	4021.91	343.349	0.89
9778.00	91.170	323.320	5871.71	3911.40	3929.62	-1207.23	1635965.50	486460.91	39°49'42.224"N	80°47'46.348"W	4110.88	342.922	2.20
9873.00	91.170	321.900	5869.77	4006.29	4005.09	-1264.90	1635907.83	486536.36	39°49'42.962"N	80°47'47.101"W	4200.08	342.473	1.49
9968.00	91.200	322.530	5867.81	4101.12	4079.70	-1323.67	1635849.06	486610.97	39°49'43.691"N	80°47'47.868"W	4289.06	342.024	0.28
10063.00	91.200	322.810	5863.73	4290.87	4230.15	-1439.63	1635790.70	486685.89	39°49'44.423"N	80°47'48.630"W	4378.46	341.600	0.94
10158.00	91.440	323.140	5861.81	4384.79	4305.18	-1496.22	1635733.11	486761.41	39°49'45.161"N	80°47'49.382"W	4468.41	341.205	0.30
10252.00	91.110	326.180	5859.94	4479.76	4382.65	-1551.16	1635671.59	486836.44	39°49'45.894"N	80°47'50.122"W	4557.77	340.836	0.36
10347.00	91.050	324.230	5858.17	4573.74	4459.82	-1604.79	1635621.96	486913.91	39°49'46.652"N	80°47'50.840"W	4649.05	340.510	3.20
10441.00	91.230	326.720	5856.28	4668.71	4538.07	-1658.61	1635514.14	486991.08	39°49'47.407"N	80°47'51.542"W	4739.77	340.210	2.08
10536.00	91.230	326.720	5854.32	4764.55	4619.48	-1709.44	1635463.31	487069.32	39°49'48.172"N	80°47'52.246"W	4831.68	339.923	2.63
10632.00	91.110	329.320	5852.64	4859.20	4701.55	-1757.25	1635415.51	487142.79	39°49'48.970"N	80°47'52.912"W	4923.62	339.693	2.71
10727.00	90.920	330.240	5850.96	4953.96	4782.94	-1808.21	1635366.55	487214.17	39°49'49.774"N	80°47'53.540"W	5019.22	339.506	0.99
10822.00	90.950	327.380	5849.48	5048.90	4862.18	-1858.58	1635318.19	487293.41	39°49'50.517"N	80°47'54.183"W	5112.62	339.312	2.67
10917.00	90.990	325.800	5848.05	5143.88	4940.64	-1912.12	1635260.65	487371.87	39°49'51.347"N	80°47'54.869"W	5205.30	339.081	2.44
11012.00	90.740	326.000	5846.05	5238.87	5018.53	-1966.50	1635206.27	487454.75	39°49'52.114"N	80°47'55.569"W	5297.75	338.843	0.70
11107.00	90.580	324.160	5844.95	5328.87	5094.39	-2023.66	1635151.91	487549.75	39°49'52.876"N	80°47'56.281"W	5390.06	338.602	1.94
11202.00	90.740	321.840	5843.86	5427.69	5168.81	-2081.07	1635091.71	487655.60	39°49'53.645"N	80°47'57.028"W	5481.60	338.335	2.45
11296.00	90.710	322.870	5842.67	5522.65	5245.06	-2137.72	1635035.06	487760.02	39°49'54.318"N	80°47'57.777"W	5572.02	338.069	1.10
11391.00	90.860	323.910	5843.37	5622.65	5322.01	-2191.67	1634981.11	487876.27	39°49'55.090"N	80°47'58.517"W	5663.96	337.826	1.11
11485.00	90.920	326.020	5841.91	5712.61	5401.07	-2246.11	1634926.67	487992.27	39°49'55.843"N	80°47'59.223"W	5755.63	337.618	2.25
11581.00	90.680	324.870	5840.56	5806.60	5471.61	-2300.67	1634872.12	488108.86	39°49'56.616"N	80°47'59.935"W	5849.49	337.419	1.22
11675.00	90.620	324.170	5839.50	5906.60	5547.61	-2355.15	1634817.12	488225.27	39°49'57.365"N	80°48'00.649"W	5941.15	337.217	0.75



Actual Wellpath Report
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Operator: NOBLE ENERGY
Area: Marshall County, WV
Field: Marshall
Facility: MND-6 Pad

Slot: Well
Wellbore: MND-6A-HS AWP

WELLPATH DATA (225 stations)

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)
11770.00	91.020	323.340	5838.14	5901.57	5554.22	-2356.83	1634815.96	488085.41	39°49'58.114"N	80°48'01.383"W	603.57	337.007	0.97
11865.00	90.980	321.340	5836.48	5996.45	5629.41	-2414.86	1634757.93	488160.60	39°49'58.849"N	80°48'02.141"W	612.50	336.782	2.11
11960.00	90.950	322.880	5834.88	6091.31	5704.37	-2473.20	1634699.60	488235.55	39°49'59.581"N	80°48'02.902"W	621.44	336.560	1.62
12054.00	90.980	321.520	5833.30	6185.19	5778.63	-2530.80	1634642.00	488309.81	39°50'00.307"N	80°48'03.654"W	6308.53	336.349	1.45
12149.00	91.020	320.140	5831.64	6279.92	5832.27	-2590.76	1634582.0	488383.44	39°50'01.026"N	80°48'04.437"W	6400.10	336.121	1.45
12244.00	90.950	319.670	5830.01	6374.53	5924.93	-2651.97	1634520.84	488456.10	39°50'01.735"N	80°48'05.234"W	6491.36	335.887	0.50
12339.00	91.080	321.940	5828.32	6469.25	5998.54	-2711.99	1634460.82	488529.71	39°50'02.454"N	80°48'06.017"W	6583.11	335.672	2.39
12433.00	91.020	328.610	5826.60	6563.18	6075.74	-2765.50	1634407.31	488606.90	39°50'03.209"N	80°48'06.718"W	6675.52	335.526	7.09
12528.00	90.770	331.220	5825.11	6657.81	6157.93	-2813.11	1634359.71	488689.08	39°50'04.014"N	80°48'07.343"W	6770.06	335.448	2.76
12623.00	90.860	334.660	5823.76	6751.88	6242.51	-2856.32	1634316.50	488773.66	39°50'04.844"N	80°48'07.913"W	6864.94	335.413	3.62
12717.00	90.800	335.170	5822.40	6844.46	6327.63	-2896.17	1634276.66	488858.78	39°50'05.679"N	80°48'08.439"W	6958.93	335.406	0.55
12811.00	91.320	331.520	5820.66	6937.44	6411.61	-2938.32	1634234.50	488942.76	39°50'06.503"N	80°48'08.995"W	7052.84	335.379	3.92
12906.00	91.110	324.990	5818.65	7032.21	6492.34	-2988.27	1634184.56	489023.48	39°50'07.294"N	80°48'09.650"W	7147.04	335.285	6.88
13001.00	90.980	323.430	5816.91	7127.18	6569.38	-3043.81	1634129.02	489100.52	39°50'08.047"N	80°48'10.376"W	7240.28	335.140	1.65
13095.00	90.770	319.780	5815.48	7220.99	6643.03	-3102.18	1634076.65	489174.16	39°50'08.767"N	80°48'11.138"W	7331.67	334.968	3.89
13190.00	90.800	320.240	5814.17	7315.62	6715.81	-3163.22	1634009.61	489246.94	39°50'09.477"N	80°48'11.934"W	7423.48	334.779	0.49
13285.00	90.620	319.630	5813.00	7410.24	6788.51	-3224.37	1633948.47	489319.63	39°50'10.187"N	80°48'12.731"W	7515.35	334.593	0.67
13380.00	90.620	318.570	5811.97	7504.73	6860.31	-3285.56	1633886.28	489391.43	39°50'10.887"N	80°48'13.542"W	7606.93	334.402	1.12
13474.00	89.940	321.940	5811.51	7598.40	6932.58	-3346.65	1633826.19	489463.69	39°50'11.593"N	80°48'14.326"W	7698.10	334.231	3.66
13570.00	89.600	329.020	5811.90	7684.33	7011.62	-3401.02	1633771.83	489542.73	39°50'12.366"N	80°48'15.037"W	7792.93	334.124	7.38
13664.00	90.800	336.500	5811.57	7774.40	7095.14	-3444.02	1633728.84	489623.24	39°50'13.185"N	80°48'15.604"W	7886.84	334.108	8.06
13759.00	91.720	337.480	5809.46	7860.30	7182.55	-3481.14	1633691.71	489713.66	39°50'14.044"N	80°48'16.096"W	7981.69	334.142	1.41
13854.00	90.710	328.980	5807.46	7947.22	7274.27	-3523.88	1633648.98	489798.37	39°50'14.875"N	80°48'16.660"W	8076.57	334.141	9.01
13949.00	90.710	326.690	5806.28	8039.09	7347.68	-3574.45	1633598.41	489878.77	39°50'15.662"N	80°48'17.323"W	8170.99	334.058	2.41
14043.00	90.680	321.410	5805.14	8163.03	7423.75	-3629.61	1633543.25	489954.85	39°50'16.406"N	80°48'18.044"W	8263.54	333.945	5.62
14138.00	90.650	321.010	5804.04	8257.82	7497.79	-3689.12	1633482.72	490028.87	39°50'17.129"N	80°48'18.820"W	8356.22	333.807	0.42
14232.00	90.710	320.990	5802.92	8351.55	7570.52	-3748.65	1633424.25	490101.60	39°50'17.839"N	80°48'19.597"W	8447.79	333.652	0.66
14327.00	91.170	321.080	5801.37	8445.27	7644.06	-3808.77	1633366.10	490175.14	39°50'18.557"N	80°48'20.381"W	8540.40	333.515	0.87
14422.00	91.080	321.170	5799.50	8541.04	7718.01	-3868.38	1633304.49	490249.08	39°50'19.279"N	80°48'21.159"W	8633.19	333.379	0.13
14516.00	91.110	322.560	5797.70	8634.88	7791.93	-3926.44	1633246.46	490323.00	39°50'20.001"N	80°48'21.917"W	8725.30	333.266	1.48

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WV Department of
 Environmental Protection

02/03/2017

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot A
Area	Marshall County, WV	Well	MND-6A-HS
Field	Marshall	Wellbore	MND-6A-HS AWB
Facility	MND-6 Pad		

WELLPATH DATA (225 stations)

MD (ft)	Inclination (°)	Azimuth (°)	TYD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (p/100ft)
14611.00	91.140	323.520	5795.84	8729.80	7867.82	-3983.53	1633189.36	490398.89	39°50'20.743"N	80°48'22.663"W	8818.80	333.147	1.01
14705.00	91.110	322.610	5793.99	8823.73	7942.95	-4040.00	1633132.89	490474.00	39°50'21.477"N	80°48'23.401"W	8911.34	333.041	0.97
14800.00	91.110	321.050	5792.15	8918.56	8017.62	-4098.70	1633074.19	490548.67	39°50'22.207"N	80°48'24.167"W	9004.53	332.923	1.64
14895.00	91.110	322.150	5790.31	9013.38	8092.05	-4157.69	1633015.20	490623.10	39°50'22.934"N	80°48'24.937"W	9097.68	332.806	1.16
14989.00	91.050	325.870	5788.54	9107.33	8168.08	-4212.91	1632959.98	490699.13	39°50'23.677"N	80°48'25.659"W	9190.35	332.716	3.96
15084.00	90.920	328.000	5786.91	9202.26	8247.68	-4264.73	1632908.16	490778.72	39°50'24.456"N	80°48'26.338"W	9285.05	332.657	2.25
15178.00	91.020	326.620	5785.31	9296.16	8326.78	-4315.49	1632857.41	490857.82	39°50'25.231"N	80°48'27.004"W	9378.63	332.604	1.47
15273.00	90.950	325.760	5783.68	9391.13	8405.70	-4368.35	1632804.56	490936.73	39°50'26.003"N	80°48'27.696"W	9473.03	332.540	0.91
15368.00	90.950	324.070	5782.11	9486.11	8483.43	-4422.94	1632751.96	491014.45	39°50'26.763"N	80°48'28.410"W	9567.18	332.464	1.78
15463.00	91.020	324.430	5780.47	9581.09	8560.51	-4478.44	1632699.47	491091.50	39°50'27.517"N	80°48'29.136"W	9661.20	332.384	0.39
15558.00	90.920	325.030	5778.87	9676.07	8638.06	-4533.29	1632649.63	491169.08	39°50'28.275"N	80°48'29.854"W	9755.35	332.309	0.64
15653.00	90.890	325.890	5777.36	9771.06	8716.31	-4587.14	1632595.77	491247.32	39°50'29.041"N	80°48'30.559"W	9849.66	332.243	0.91
15748.00	90.860	329.700	5775.91	9865.92	8796.67	-4637.76	1632543.16	491327.68	39°50'29.828"N	80°48'31.222"W	9944.35	332.201	4.01
15842.00	90.620	330.980	5774.70	9959.50	8878.34	-4684.27	1632488.65	491409.35	39°50'30.628"N	80°48'31.834"W	10038.29	332.184	1.39
15937.00	90.620	327.830	5773.67	10054.20	8960.10	-4732.61	1632440.31	491491.10	39°50'31.429"N	80°48'32.469"W	10133.17	332.158	3.32
16031.00	90.620	326.240	5772.65	10148.13	9038.96	-4783.75	1632389.17	491569.96	39°50'32.201"N	80°48'33.139"W	10226.79	332.111	1.69
16125.00	90.550	325.740	5771.69	10242.11	9116.88	-4836.33	1632336.60	491647.87	39°50'32.963"N	80°48'33.828"W	10320.25	332.055	0.54
16220.00	90.710	326.040	5770.65	10337.10	9195.53	-4889.60	1632283.33	491726.52	39°50'33.733"N	80°48'34.525"W	10414.70	331.999	0.36
16315.00	90.710	324.400	5769.47	10432.08	9273.55	-4943.78	1632229.15	491804.53	39°50'34.496"N	80°48'35.234"W	10509.03	331.938	1.73
16410.00	90.680	325.180	5768.32	10527.08	9351.16	-4998.55	1632174.38	491882.14	39°50'35.255"N	80°48'35.951"W	10605.29	331.874	0.82
16505.00	91.080	324.580	5766.86	10622.06	9428.86	-5053.20	1632119.74	491959.83	39°50'36.015"N	80°48'36.666"W	10697.58	331.812	0.76
16600.00	91.200	327.410	5764.97	10717.02	9507.59	-5106.31	1632066.63	492038.56	39°50'36.785"N	80°48'37.361"W	10792.07	331.761	2.98
16695.00	91.450	330.060	5762.72	10811.79	9587.76	-5155.60	1632013.34	492119.73	39°50'37.580"N	80°48'38.008"W	10886.90	331.734	2.80
16789.00	91.450	326.500	5760.39	10905.59	9668.68	-5205.00	1631967.95	492199.64	39°50'38.363"N	80°48'38.657"W	10980.69	331.705	3.79
16884.00	91.450	321.770	5757.99	11000.52	9745.62	-5260.63	1631914.33	492276.38	39°50'39.151"N	80°48'39.384"W	11074.81	331.640	4.98
16979.00	91.450	322.720	5755.38	11095.38	9820.71	-5318.42	1631864.18	492351.66	39°50'39.949"N	80°48'40.143"W	11168.51	331.561	1.00
17074.00	91.510	322.500	5753.13	11190.26	9896.18	-5376.47	1631816.54	492427.13	39°50'40.846"N	80°48'40.896"W	11262.94	331.486	0.20
17168.00	91.230	320.570	5750.88	11284.06	9969.78	-5434.84	1631768.12	492502.73	39°50'41.305"N	80°48'41.659"W	11354.91	331.404	2.12
17263.00	91.200	319.760	5748.87	11378.70	10042.71	-5495.68	1631722.28	492573.65	39°50'42.017"N	80°48'42.453"W	11448.08	331.311	0.85
17357.00	91.230	320.960	5746.88	11472.37	10115.08	-5555.64	1631677.33	492646.02	39°50'42.723"N	80°48'43.235"W	11540.36	331.223	1.28



Actual Wellpath Report
 MND-6A-HS AWP Proj: 18674
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REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot A
Area	Marshall County, WV	Well	MND-6A-HS
Field	Marshall	Wellbore	MND-6A-HS AWB
Facility	MND-6 Pad		

WELLPATH DATA (225 stations)

MD (ft)	Inclination (°)	Azimuth (°)	TYD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)
17452.00	90.800	322.080	5745.19	11567.18	10189.44	-5614.74	1631538.23	492720.37	39°50'43.450"N	80°48'44.006"W	11634.00	331.144	1.26
17547.00	90.800	323.070	5743.87	11662.08	10264.87	-5672.47	1631500.51	492795.80	39°50'44.187"N	80°48'44.761"W	11727.94	331.075	1.04
17642.00	90.830	325.510	5742.51	11757.06	10342.00	-5727.91	1631445.07	492872.92	39°50'44.941"N	80°48'45.486"W	11822.26	331.020	2.57
17736.00	90.920	326.880	5741.08	11851.03	10420.09	-5780.20	1631392.78	492951.01	39°50'45.705"N	80°48'46.171"W	11915.92	330.982	1.46
17831.00	90.770	327.800	5739.68	11945.94	10500.06	-5831.46	1631341.53	493030.98	39°50'46.488"N	80°48'46.843"W	12010.71	330.952	0.98
17926.00	90.830	329.070	5738.35	12040.75	10581.00	-5881.18	1631291.81	493111.91	39°50'47.281"N	80°48'47.495"W	12105.61	330.934	1.34
18021.00	90.770	328.960	5737.03	12135.51	10662.44	-5930.08	1631242.91	493193.34	39°50'48.078"N	80°48'48.137"W	12200.55	330.919	0.13
18116.00	90.950	329.260	5735.60	12230.26	10743.95	-5978.85	1631194.14	493274.85	39°50'48.877"N	80°48'48.778"W	12295.49	330.905	0.37
18211.00	90.800	327.780	5734.15	12325.06	10824.96	-6028.45	1631144.54	493355.85	39°50'49.670"N	80°48'49.429"W	12390.40	330.886	1.57
18305.00	90.740	324.710	5732.89	12419.92	10903.09	-6080.67	1631092.33	493433.99	39°50'50.435"N	80°48'50.133"W	12484.07	330.852	3.27
18400.00	90.710	322.330	5731.68	12513.98	10979.47	-6137.14	1631035.86	493510.36	39°50'51.181"N	80°48'50.851"W	12578.29	330.796	2.51
18495.00	90.710	321.170	5730.51	12608.81	11054.07	-6195.95	1630977.05	493584.95	39°50'51.910"N	80°48'51.619"W	12672.10	330.729	1.22
18588.00	90.740	322.010	5729.33	12701.64	11126.93	-6253.73	1630919.28	493657.81	39°50'52.621"N	80°48'52.373"W	12763.92	330.662	0.90
18648.00	90.740	324.980	5728.55	12761.61	11175.15	-6289.41	1630883.60	493706.03	39°50'53.093"N	80°48'52.840"W	12823.45	330.629	4.95
18674.00	90.740	324.980	5728.22	12787.61	11196.44	-6304.33	1630868.68	493727.32	39°50'53.301"N	80°48'53.035"W	12849.32	330.618	0.00



Actual Wellpath Report
 MND-6A-HS AWP Proj: 18674'
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REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot A
Area	Marshall County, WV	Well	MND-6A-HS
Field	Marshall	Wellbore	MND-6A-HS AWB
Facility	MND-6 Pad		

Name	MD (ft)	TYD (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Shape
MND-6A-HS BHL Rev-1		5726.53	11191.86	-6310.47	1630862.54	493722.74	39°50'53.255"N	80°48'53.113"W	point
MND-6A-HS LP Rev-1		5917.00	1260.05	643.86	1637816.48	483791.48	39°49'16.107"N	80°47'22.134"W	point
MND-6 Pad LL		6500.00	0.00	0.00	1637172.66	482531.50	39°49'03.564"N	80°47'30.152"W	polygon

Start MD (ft)	End MD (ft)	Positional Uncertainty Model	Ret Wellbore	MND-6A-HS AWP Proj	18674'	Log Name/Comment	Wellbore
26.00	275.00	Generic gyro - northseeking (Standard)				01 Gyro <14-3/4"> (50'-275')	MND-6A-HS AWB
275.00	622.00	ISCWSA MWD, Rev. 2 (Standard)				02 APS EM <14-3/4"> (275')(309'-622')	MND-6A-HS AWB
622.00	1983.00	ISCWSA MWD, Rev. 2 (Standard)				03 APS EM <12-1/4"> (622')(704'-1983') Proj: 2040'	MND-6A-HS AWB
1983.00	4125.00	NavITrak (MagCor)				04 BHI LCP MWD <8-1/2"> (1983')(2041'-4125')	MND-6A-HS AWB
4125.00	18648.00	NavITrak (AT Curve Short Spaced)				05 BHI AT Curve <8-1/2"> (4125')(4169'-18648')	MND-6A-HS AWB
18648.00	18674.00	Blind Drilling (std)				Projection to bit	MND-6A-HS AWB



Actual Wellpath Report
MND-6A-HS AWP Proji: 18674'
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REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot A
Area	Marshall County, WV	Well	MND-6A-HS
Field	Marshall	Wellbore	MND-6A-HS AWP
Facility	MND-6 Pad		

COMMENTS

Wellpath general comments
 API: 47-051-01746-0000
 BHI Job #: 6650341A
 Rig: Nomatic 79
 Duration: 09/21/2014 - 09/29/2014
 Gyro <14-3/4" > (50'-275')
 APS EM <14-3/4" > (275')(309'-622')
 APS EM <12-1/4" > (622')(704'-1983')
 BHI MWD <8-1/2" > (1983')(2041'-4125')
 BHI AT Curve <8-1/2" > (4125')(4169'-18648')
 Projected MD at TD: 18674'



02/03/2017



NOBLE ENERGY

Location: Marshall County, WV
Field: Marshall
Facility: MND-6 Pad

Slot: Slot A
Well: MND-6A-HS
Wellbore: MND-6A-HS PWB



Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
MND-6 Pad	1637177.780	482512.230	39°49'03.375"N	80°47'30.083"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
Slot A	19.27	-5.12	1637172.660	482531.500
Nomac 79 (RKB) to Mud line (At Slot: Slot A)			39°49'03.564"N	80°47'30.152"W
Mean Sea Level to Mud line (At Slot: Slot A)			26ft	
Nomac 79 (RKB) to Mean Sea Level			-720.98ft	

Well Data

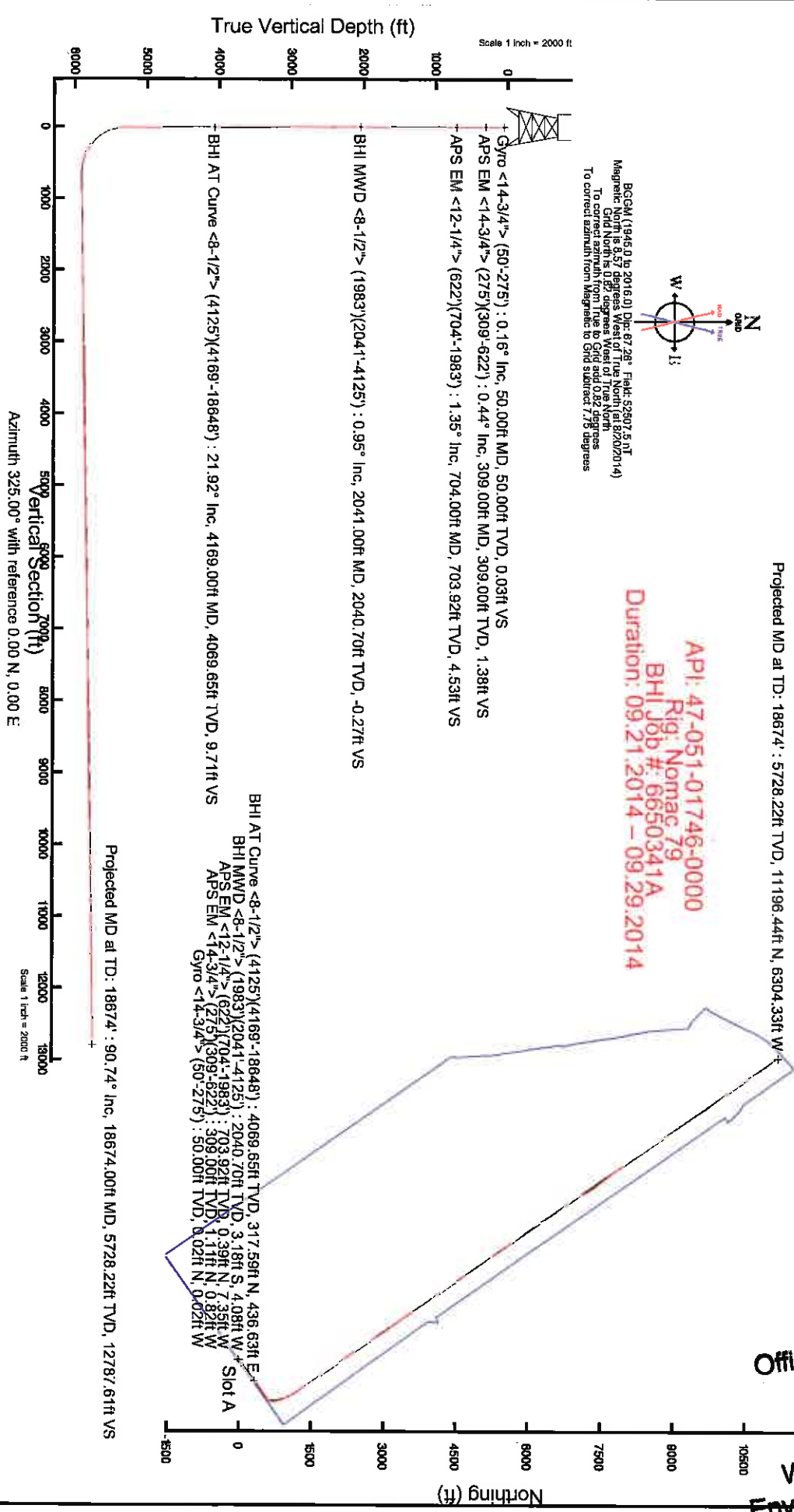
Slot	Well	Wellbore	Wellpath
Slot A	MND-6A-HS	MND-6A-HS AWB	MND-6A-HS AWP Proj: 18674
Slot A	MND-6A-HS	MND-6A-HS PWB	MND-6A-HS PWP Rev-A.0

True vertical depths are referenced to Nomac 79 (RKB)
Measured depths are referenced to Nomac 79 (RKB)
Nomac 79 (RKB) to Mean Sea Level: 746.98 feet
Mean Sea Level to Mud line (At Slot: Slot A): -720.98 feet
Coordinates are in feet referenced to Slot

Grid System: MADDZ / Lambert West Virginia SR, Northern Zone (47203, UTM)
Scale: True distance
Depths are in feet
Created by: jenssch on 10/13/2014

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BCGM (1945.0 to 2016.0) Dip: 87.28° Field: 52807 5.1°
Magnetic North is 8.57 degrees West of True North at (6262030.4)
Grid North is 0.85 degrees West of True North
To correct azimuth from True to Grid add 0.82 degrees
To correct azimuth from Magnetic to Grid subtract 7.75 degrees

API: 47-051-01746-0000
Rig: Nomac 79
BHI Job #: 6650341A
Duration: 09.21.2014 - 09.29.2014