

**REFERENCE WELLPATH IDENTIFICATION**

Operator	NOBLE ENERGY	Slot	Slot A
Area	Marshall County, WV	Well	WEB-22A-HS
Field	Marshall	Wellbore	WEB-22A-HS (AWB)
Facility	WEB-22 Pad		

**REPORT SETUP INFORMATION**

Projection System	NAD27 / Lambert West Virginia SP, Northern Zone (4703), US feet	Software System	WellArchitect® 4.0.1
Grid	GriD	User	Krescher
North Reference		Report Generated	17/Jun/2014 at 08:45
Scale	0.999954	Database/Source file	WA_Pennsylvania\WEB-22A-HS_AWB.xml
Convergence at slot	-0.65° West		

**WELLPATH LOCATION**

	Local coordinates		Grid coordinates		Geographic coordinates	
	North(ft)	East(ft)	Northing[US ft]	Latitude	Longitude	
Slot Location	0.00	0.00	519852.54	39°55'22.147"N	80°31'11.977"W	
Facility Reference Pt			1713925.81	39°55'22.147"N	80°31'11.977"W	
Field Reference Pt			609601.22	38°23'48.753"N	84°21'09.765"W	

**WELLPATH DATUM**

Calculation method	Minimum curvature	Precision 542 (RT) to Facility Vertical Datum	18.60ft
Horizontal Reference Pt	Slot	Precision 542 (RT) to Mean Sea Level	1343.60ft
Vertical Reference Pt	Precision 542 (RT)	Precision 542 (RT) to Mud Line at Slot (Slot A)	18.60ft
MD Reference Pt	Precision 542 (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	325.00°

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# Actual Wellpath Report

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Operator	NOBLE ENERGY	Slot	Slot A
Area	Marshall County, WV	Well	WEB-22A-HS
Field	Marshall	Wellbore	WEB-22A-HS (AWB)
Facility	WEB-22 Pad		

REFERENCE WELLPATH DEPENDENT INFORMATION

WEELPATH DATA (197 stations) † = interpolated/extrapolated station

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US B)	Grid North (US B)	Latitude	Longitude	Chambre Dist (ft)	Closeure Dtr (ft)	DLS (1/1000)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	1713925.81	519852.54	39°55'22.147"N	80°31'11.977"W	0.00	0.00	0.00
18.60	0.00	103.280	18.60	0.00	0.00	0.00	1713925.81	519852.54	39°55'22.147"N	80°31'11.977"W	0.00	0.00	0.00
100.00	1.300	103.280	99.99	-0.69	-0.21	2.93	1713926.71	519851.33	39°55'22.145"N	80°31'11.965"W	0.00	103.280	1.60
200.00	1.080	101.030	199.97	-2.21	-0.65	4.69	1713928.74	519851.89	39°55'22.140"N	80°31'11.959"W	0.00	102.573	0.22
300.00	0.970	98.150	299.96	-3.47	-0.95	6.16	1713930.50	519851.59	39°55'22.138"N	80°31'11.917"W	4.79	101.488	0.12
400.00	0.730	100.320	399.94	-4.50	-1.19	6.16	1713931.97	519851.35	39°55'22.135"N	80°31'11.898"W	6.27	100.919	0.24
462.00	0.690	99.870	461.94	-5.05	-1.32	6.91	1713932.72	519851.22	39°55'22.134"N	80°31'11.888"W	7.04	100.830	0.07
495.00	2.120	1.170	494.93	-4.69	-0.75	7.12	1713932.95	519851.79	39°55'22.140"N	80°31'11.886"W	7.16	95.981	7.05
525.00	2.720	337.130	524.90	-3.64	0.52	7.10	1713932.91	519853.06	39°55'22.152"N	80°31'11.886"W	7.11	85.810	2.08
556.00	3.050	354.110	555.87	-2.30	2.07	6.97	1713932.78	519854.61	39°55'22.168"N	80°31'11.886"W	7.26	73.432	1.17
585.00	3.800	348.530	584.81	-0.75	3.78	6.70	1713932.51	519856.32	39°55'22.185"N	80°31'11.892"W	7.70	60.557	2.83
617.00	4.150	347.720	616.74	1.29	5.95	6.25	1713932.06	519858.49	39°55'22.206"N	80°31'11.898"W	8.63	46.371	1.11
648.00	4.100	342.860	647.66	3.38	8.11	5.68	1713931.49	519860.65	39°55'22.227"N	80°31'11.905"W	9.90	35.015	1.14
680.00	3.730	336.730	679.58	5.49	10.16	4.93	1713930.74	519862.70	39°55'22.247"N	80°31'11.915"W	11.29	25.901	1.74
711.00	2.890	329.110	710.53	7.26	11.76	4.13	1713929.94	519864.30	39°55'22.263"N	80°31'11.926"W	12.46	19.372	3.05
743.00	2.330	315.080	742.50	8.70	12.91	3.26	1713929.07	519865.45	39°55'22.274"N	80°31'11.937"W	13.31	14.174	2.64
774.00	2.280	290.640	773.47	9.83	13.57	2.24	1713928.05	519866.11	39°55'22.281"N	80°31'11.950"W	13.76	9.364	3.15
806.00	2.080	277.780	805.45	10.75	13.88	1.07	1713926.88	519866.41	39°55'22.284"N	80°31'11.965"W	13.92	4.397	1.65
837.00	1.880	259.630	836.43	11.35	13.86	0.01	1713925.82	519866.40	39°55'22.283"N	80°31'11.979"W	13.86	0.039	2.11
868.00	1.460	229.500	867.42	11.52	13.51	0.79	1713925.02	519866.05	39°55'22.280"N	80°31'11.989"W	13.54	36.649	3.08
902.00	2.020	205.950	901.40	11.19	12.69	-1.38	1713924.43	519865.23	39°55'22.272"N	80°31'11.997"W	12.77	333.783	2.64
933.00	2.470	186.000	932.38	10.42	11.54	-1.69	1713924.12	519864.08	39°55'22.260"N	80°31'12.000"W	11.66	351.658	2.89
965.00	3.110	179.320	964.34	9.18	9.98	-1.75	1713924.06	519862.52	39°55'22.245"N	80°31'12.001"W	10.14	350.008	2.24
997.00	3.040	178.020	996.30	7.75	8.27	-1.71	1713924.10	519860.81	39°55'22.228"N	80°31'12.000"W	8.44	348.288	0.31
1028.00	2.800	175.400	1027.26	6.41	6.69	-1.62	1713924.19	519859.23	39°55'22.217"N	80°31'11.999"W	6.88	346.351	0.89
1060.00	2.590	163.760	1059.22	5.05	5.22	-1.36	1713924.45	519857.76	39°55'22.198"N	80°31'11.995"W	5.39	345.392	1.83
1091.00	1.960	162.940	1090.20	3.89	4.04	-1.01	1713924.80	519856.58	39°55'22.186"N	80°31'11.991"W	4.16	345.979	2.03
1123.00	1.920	156.090	1122.18	2.84	3.02	-0.63	1713925.18	519855.56	39°55'22.176"N	80°31'11.986"W	3.09	348.225	0.73
1154.00	1.320	140.670	1153.17	1.97	2.27	-0.19	1713925.62	519854.81	39°55'22.169"N	80°31'11.980"W	2.28	355.130	2.38
1186.00	1.320	109.330	1185.16	1.31	1.67	0.39	1713926.20	519854.41	39°55'22.165"N	80°31'11.972"W	1.91	11.794	2.23
1199.00	1.020	102.680	1198.15	1.10	1.79	0.64	1713926.45	519854.33	39°55'22.164"N	80°31'11.969"W	1.90	19.712	2.53
1326.00	1.200	85.040	1325.13	-0.40	1.66	3.07	1713928.88	519854.20	39°55'22.163"N	80°31'11.938"W	3.49	61.619	0.30
1421.00	2.290	25.340	1420.09	0.04	3.46	4.87	1713930.68	519856.00	39°55'22.181"N	80°31'11.915"W	5.98	54.625	2.08
1515.00	4.260	4.690	1513.94	3.66	8.64	5.96	1713931.77	519861.18	39°55'22.233"N	80°31'11.902"W	10.30	34.617	2.41
1609.00	6.340	343.580	1607.54	11.26	17.10	4.78	1713930.59	519869.64	39°55'22.310"N	80°31'11.918"W	15.622	17.75	5.06
1704.00	7.200	330.750	1701.88	22.16	27.32	0.39	1713926.20	519879.86	39°55'22.417"N	80°31'11.976"W	27.33	0.815	1.83
1799.00	6.910	327.720	1796.16	33.79	37.35	-5.57	1713920.24	519889.89	39°55'22.515"N	80°31'12.054"W	37.76	351.514	0.50
1888.00	4.260	326.990	1884.73	42.44	44.63	-10.23	1713915.58	519897.19	39°55'22.587"N	80°31'12.115"W	45.81	347.091	2.98
1978.00	3.820	325.890	1974.51	48.78	49.93	13.74	1713912.08	519902.47	39°55'22.638"N	80°31'12.161"W	51.79	344.620	0.50
2068.00	1.880	304.440	2064.39	53.16	53.25	-16.63	1713909.18	519905.79	39°55'22.671"N	80°31'12.198"W	55.79	342.652	2.42
2157.00	1.040	283.180	2153.00	55.13	54.26	-18.63	1713907.19	519906.80	39°55'22.681"N	80°31'12.224"W	57.37	341.055	1.11
2247.00	1.050	278.960	2243.35	56.31	54.58	-20.23	1713905.58	519907.11	39°55'22.684"N	80°31'12.245"W	58.21	339.657	0.09
2336.00	0.920	266.740	2332.34	57.25	54.66	-21.75	1713904.06	519907.20	39°55'22.684"N	80°31'12.264"W	58.83	338.299	0.28
2426.00	0.930	300.720	2422.33	58.30	54.99	-23.10	1713902.71	519907.53	39°55'22.687"N	80°31'12.282"W	59.65	337.213	0.60
2515.00	1.200	288.210	2511.31	59.71	55.66	-24.61	1713901.20	519908.19	39°55'22.694"N	80°31'12.301"W	60.85	336.116	0.46

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Field	Marshall	Wellbore	WEB-22A-HS (AWB)
Facility	WEB-22 Pad		

WELLPATH DATA (197 stations)

MD [ft]	Inclination [°]	Admuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Chore Met [ft]	Chore Dir [°]	DLS [1/100ft]
2604.00	0.980	297.360	2600.29	61.13	56.30	-26.17	1713899.64	519908.83	39°55'22.700"N	80°31'12.321"W	62.08	335.068	0.31
2694.00	0.960	266.170	2690.28	62.20	56.60	-27.61	1713898.21	519909.14	39°55'22.703"N	80°31'12.340"W	62.97	333.999	0.58
2784.00	0.900	308.560	2780.27	63.48	56.99	-28.91	1713896.90	519909.53	39°55'22.706"N	80°31'12.356"W	63.90	333.101	0.75
2873.00	0.980	280.720	2869.26	64.48	57.57	-30.21	1713895.61	519910.10	39°55'22.712"N	80°31'12.373"W	65.01	332.314	0.52
2962.00	1.030	285.790	2958.25	65.65	57.93	-31.72	1713894.09	519910.46	39°55'22.715"N	80°31'12.393"W	66.04	331.293	0.11
3052.00	0.780	277.490	3048.23	66.69	58.23	-33.11	1713892.70	519910.76	39°55'22.718"N	80°31'12.410"W	66.98	330.376	0.31
3141.00	0.800	306.190	3137.23	67.68	58.67	-34.21	1713891.60	519911.21	39°55'22.722"N	80°31'12.425"W	67.92	329.754	0.44
3231.00	0.990	323.110	3227.22	68.74	59.41	-35.00	1713890.82	519911.95	39°55'22.730"N	80°31'12.435"W	68.95	329.501	0.32
3321.00	0.710	310.410	3317.21	69.74	60.15	-35.70	1713890.11	519912.68	39°55'22.737"N	80°31'12.444"W	69.94	329.309	0.21
3411.00	0.660	309.710	3357.21	70.21	60.45	-36.06	1713889.75	519912.99	39°55'22.740"N	80°31'12.449"W	70.99	329.181	0.13
3490.00	0.830	298.880	3486.20	71.76	61.38	-37.45	1713888.36	519913.92	39°55'22.749"N	80°31'12.467"W	71.90	328.608	0.17
3580.00	1.270	301.920	3576.19	73.27	62.22	-38.87	1713886.94	519914.76	39°55'22.757"N	80°31'12.485"W	73.37	328.006	0.49
3625.00	2.360	313.520	3621.16	74.63	63.12	-39.97	1713885.84	519915.66	39°55'22.766"N	80°31'12.499"W	74.71	327.660	2.54
3669.00	2.090	310.950	3665.13	76.30	64.27	-41.23	1713884.58	519916.81	39°55'22.777"N	80°31'12.516"W	76.36	327.321	0.65
3714.00	0.860	270.750	3710.11	77.29	64.82	-42.19	1713883.62	519917.35	39°55'22.782"N	80°31'12.528"W	77.34	326.940	3.42
3759.00	0.800	225.680	3755.11	77.44	64.60	-42.75	1713883.06	519917.14	39°55'22.780"N	80°31'12.535"W	77.46	326.505	1.42
3804.00	0.810	172.890	3800.11	77.11	64.07	-42.94	1713882.88	519916.60	39°55'22.775"N	80°31'12.537"W	77.12	326.171	1.59
3849.00	0.820	170.140	3845.10	76.53	63.43	-42.84	1713882.97	519915.97	39°55'22.769"N	80°31'12.536"W	76.54	325.966	0.09
3938.00	1.410	141.750	3934.08	74.86	61.94	-42.05	1713883.76	519914.48	39°55'22.754"N	80°31'12.526"W	74.87	325.828	0.89
4028.00	2.680	130.780	4024.03	71.72	59.70	-39.78	1713886.04	519912.24	39°55'22.737"N	80°31'12.496"W	71.74	326.327	1.47
4117.00	2.460	116.310	4112.94	68.03	57.50	-36.49	1713889.32	519910.03	39°55'22.711"N	80°31'12.454"W	68.10	327.600	0.77
4207.00	2.210	91.550	4202.86	65.30	56.39	-33.02	1713892.79	519909.13	39°55'22.702"N	80°31'12.409"W	65.52	329.737	1.14
4297.00	2.240	80.050	4292.80	63.52	56.85	-29.55	1713896.26	519909.39	39°55'22.705"N	80°31'12.365"W	64.07	332.532	0.50
4387.00	0.520	46.970	4382.77	62.83	57.43	-27.52	1713898.29	519909.97	39°55'22.711"N	80°31'12.339"W	63.69	334.395	2.03
4476.00	0.540	0.050	4471.77	63.23	58.13	-27.23	1713898.58	519910.66	39°55'22.718"N	80°31'12.335"W	64.15	334.901	0.47
4566.00	0.670	355.340	4561.76	64.03	59.08	-27.27	1713898.54	519911.61	39°55'22.727"N	80°31'12.336"W	65.07	335.222	0.15
4655.00	0.790	343.030	4650.75	65.07	60.18	-27.49	1713898.32	519912.72	39°55'22.738"N	80°31'12.339"W	66.16	335.449	0.22
4745.00	0.650	330.470	4740.75	66.16	61.22	-27.92	1713897.89	519913.76	39°55'22.748"N	80°31'12.344"W	67.29	335.481	0.23
4834.00	0.760	319.660	4829.74	67.25	62.11	-28.55	1713897.26	519914.64	39°55'22.757"N	80°31'12.353"W	68.36	335.309	0.19
4924.00	0.610	320.820	4919.73	68.33	62.93	-29.24	1713896.57	519915.47	39°55'22.765"N	80°31'12.361"W	69.40	335.077	0.17
5013.00	1.220	33.270	5008.72	69.15	64.09	-29.02	1713896.79	519916.63	39°55'22.777"N	80°31'12.359"W	70.36	335.638	1.33
5103.00	1.100	39.890	5098.70	69.73	65.56	-27.94	1713897.87	519918.09	39°55'22.791"N	80°31'12.345"W	71.26	336.914	0.20
5193.00	0.870	21.910	5188.69	70.33	66.85	-27.13	1713898.68	519919.39	39°55'22.804"N	80°31'12.335"W	72.15	337.909	0.43
5283.00	0.660	18.580	5278.68	71.01	67.98	-26.71	1713899.10	519920.52	39°55'22.815"N	80°31'12.330"W	73.04	338.546	0.24
5372.00	0.540	191.450	5367.68	71.02	68.05	-26.63	1713899.18	519920.99	39°55'22.816"N	80°31'12.329"W	73.06	338.690	1.35
5462.00	1.510	153.770	5457.67	69.36	66.57	-26.19	1713899.62	519919.11	39°55'22.801"N	80°31'12.323"W	71.54	338.522	1.26
5551.00	1.660	161.270	5546.63	67.13	64.30	-25.26	1713900.55	519918.84	39°55'22.779"N	80°31'12.311"W	69.09	338.552	0.29
5641.00	1.000	174.410	5636.61	65.23	62.29	-24.77	1713901.04	519914.82	39°55'22.739"N	80°31'12.304"W	67.03	338.315	0.80
5721.00	0.940	165.850	5716.60	64.01	60.95	-24.54	1713901.27	519913.49	39°55'22.746"N	80°31'12.301"W	65.71	338.072	0.20
5766.00	1.820	205.650	5761.58	63.31	59.95	-24.76	1713901.05	519912.49	39°55'22.736"N	80°31'12.303"W	64.86	337.561	2.78
5856.00	0.090	225.950	5851.21	61.61	54.26	-29.93	1713895.88	519906.79	39°55'22.679"N	80°31'12.369"W	61.96	331.114	7.19
5945.00	13.930	218.730	5938.54	57.62	41.53	-41.15	1713884.66	519894.07	39°55'22.592"N	80°31'12.511"W	36.46	315.267	6.73
6035.00	22.700	212.090	6023.90	47.81	18.32	-57.18	1713868.63	519870.86	39°55'22.321"N	80°31'12.714"W	60.05	287.765	10.00
6080.00	27.500	211.130	6064.64	40.22	2.06	-67.17	1713658.64	519854.60	39°55'22.199"N	80°31'12.839"W	67.20	271.758	10.70
6124.00	28.050	211.640	6103.57	32.01	-15.44	-77.85	1713847.96	519837.10	39°55'21.985"N	80°31'12.974"W	69.37	258.781	1.36

06/12/2015

Operator	NOBLE ENERGY	Slot	Slot A
Area	Marshall County, WV	Well	WEB-22A-FIS
Field	Marshall	Wellbore	WEB-22A-FIS (AWB)
Facility	WEB-22 Pad		

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closeout Dist [ft]	Closeout Dir [°]	DLS [1/100ft]
6214.00	27.420	219.780	6183.26	18.17	-49.40	-102.22	1713823.59	519803.15	39°55'21.64"N	80°31'13.282"W	113.53	244.209	4.26
6304.00	27.620	221.420	6263.08	7.83	-80.97	-129.28	1713796.53	519771.58	39°55'21.332"N	80°31'13.624"W	152.54	237.942	0.87
6393.00	28.170	228.270	6341.86	4.18	-107.53	-160.85	1713764.97	519745.02	39°55'21.065"N	80°31'14.026"W	193.48	236.238	8.85
6483.00	27.540	256.420	6421.58	13.01	-123.61	-199.21	1713726.61	519728.93	39°55'20.903"N	80°31'14.516"W	234.45	238.180	9.42
6572.00	28.210	270.540	6500.34	32.77	-128.25	-240.29	1713685.53	519724.29	39°55'20.852"N	80°31'15.042"W	272.38	241.910	7.44
6617.00	29.100	277.180	6539.83	46.30	-126.78	-261.79	1713664.03	519725.76	39°55'20.864"N	80°31'15.318"W	290.88	244.159	7.34
6662.00	32.060	281.440	6578.58	62.31	-123.05	-284.36	1713641.46	519729.50	39°55'20.899"N	80°31'15.609"W	309.84	246.601	8.15
6706.00	37.120	286.080	6614.79	81.12	-117.05	-308.58	1713617.24	519735.50	39°55'20.955"N	80°31'15.920"W	330.04	249.228	12.96
6751.00	41.640	288.710	6649.57	103.75	-108.49	-335.81	1713590.02	519744.06	39°55'21.037"N	80°31'16.271"W	352.90	252.097	10.71
6796.00	46.300	290.850	6681.95	129.27	-97.89	-365.19	1713560.64	519754.65	39°55'21.138"N	80°31'16.650"W	378.08	254.994	10.87
6841.00	51.260	292.930	6711.59	157.63	-85.26	-396.57	1713529.26	519767.29	39°55'21.259"N	80°31'17.054"W	405.63	257.867	11.56
6886.00	55.980	295.840	6738.28	188.81	-70.28	-429.54	1713496.29	519782.26	39°55'21.404"N	80°31'17.480"W	435.26	260.708	11.71
6931.00	59.010	299.290	6762.47	222.48	-52.71	-463.17	1713462.67	519799.83	39°55'21.574"N	80°31'17.914"W	466.16	263.508	9.33
6976.00	61.910	304.830	6784.65	258.07	-32.91	-496.93	1713428.90	519819.63	39°55'21.765"N	80°31'18.350"W	498.02	266.211	7.67
7020.00	64.860	304.830	6804.37	294.57	-11.40	-529.86	1713395.98	519841.14	39°55'21.974"N	80°31'18.776"W	529.98	268.767	9.61
7065.00	67.220	308.790	6822.64	333.63	13.24	-562.76	1713363.08	519865.78	39°55'22.214"N	80°31'19.201"W	562.92	271.347	9.60
7110.00	69.150	313.490	6839.37	374.18	40.72	-594.20	1713331.64	519893.26	39°55'22.482"N	80°31'19.609"W	595.60	273.920	10.60
7155.00	72.210	317.930	6854.27	416.07	71.12	-623.83	1713302.01	519923.65	39°55'22.795"N	80°31'19.994"W	627.87	276.503	11.53
7199.00	75.130	320.930	6866.64	458.09	103.19	-651.28	1713274.56	519955.72	39°55'23.093"N	80°31'20.351"W	659.41	279.003	9.32
7244.00	80.450	321.740	6876.15	501.96	171.52	-678.75	1713247.09	519990.00	39°55'23.429"N	80°31'20.708"W	692.54	281.451	11.95
7289.00	83.490	322.570	6882.44	546.46	172.70	-706.08	1713219.76	520025.23	39°55'23.774"N	80°31'21.064"W	726.90	283.744	7.00
7334.00	84.890	323.590	6886.99	591.20	208.49	-732.97	1713192.87	520061.02	39°55'24.128"N	80°31'21.414"W	762.05	285.878	3.84
7378.00	89.350	324.310	6889.21	635.13	244.01	-758.83	1713167.02	520096.54	39°55'24.473"N	80°31'21.751"W	797.10	287.826	10.27
7468.00	91.450	325.660	6888.58	725.12	317.72	-810.46	1713141.59	520170.24	39°55'25.195"N	80°31'22.425"W	870.51	291.406	2.77
7558.00	90.770	324.270	6886.83	815.10	391.39	-862.12	1713063.73	520243.91	39°55'25.917"N	80°31'23.095"W	946.80	294.417	1.72
7647.00	90.770	324.500	6885.64	904.09	463.74	-913.94	1713011.91	520316.25	39°55'26.626"N	80°31'23.774"W	1024.86	296.903	0.26
7737.00	90.650	324.100	6884.52	994.07	536.82	-966.46	1712959.40	520389.33	39°55'27.343"N	80°31'24.459"W	1105.54	299.050	0.46
7827.00	90.380	323.150	6883.56	1084.04	609.28	-1019.83	1712906.03	520461.79	39°55'28.083"N	80°31'25.155"W	1187.97	300.855	1.06
7924.00	90.650	324.330	6882.51	1181.01	687.50	-1077.18	1712848.68	520540.00	39°55'28.819"N	80°31'25.902"W	1277.88	302.548	1.24
8006.00	90.580	325.840	6881.63	1263.00	754.74	-1124.10	1712801.76	520607.24	39°55'29.478"N	80°31'26.514"W	1353.97	303.878	1.82
8095.00	90.580	327.870	6880.73	1351.95	829.25	-1172.76	1712753.11	520681.75	39°55'30.209"N	80°31'27.150"W	1436.32	305.264	2.28
8185.00	90.520	327.320	6879.87	1441.85	905.23	-1220.98	1712704.88	520757.73	39°55'30.955"N	80°31'27.780"W	1519.95	306.553	0.61
8274.00	90.580	324.090	6879.02	1530.83	978.75	-1271.12	1712654.75	520831.24	39°55'31.676"N	80°31'28.434"W	1604.27	307.596	3.63
8364.00	90.580	322.690	6878.10	1620.79	1050.98	-1324.79	1712601.08	520903.47	39°55'32.383"N	80°31'29.133"W	1691.05	308.426	1.56
8454.00	90.280	323.620	6877.43	1710.74	1123.00	-1378.76	1712547.12	520975.49	39°55'33.089"N	80°31'29.836"W	1778.23	309.163	1.09
8543.00	90.550	325.760	6876.78	1799.73	1195.63	-1430.20	1712495.68	521048.11	39°55'33.801"N	80°31'30.507"W	1864.13	309.895	2.42
8633.00	90.620	327.470	6875.86	1889.68	1270.77	-1479.72	1712446.17	521123.25	39°55'34.538"N	80°31'31.154"W	1950.49	310.656	1.90
8723.00	91.020	327.570	6874.58	1979.59	1346.60	-1528.17	1712397.71	521199.07	39°55'35.282"N	80°31'31.787"W	2036.92	311.386	0.46
8812.00	90.680	325.200	6873.26	2068.56	1420.62	-1577.57	1712348.32	521273.09	39°55'36.008"N	80°31'32.432"W	2122.84	312.003	2.47
8902.00	90.680	324.320	6872.19	2158.55	1494.12	-1629.49	1712296.40	521346.59	39°55'36.728"N	80°31'33.109"W	2210.80	312.518	3.56
8991.00	90.890	322.550	6870.97	2247.50	1565.59	-1682.50	1712243.39	521418.06	39°55'37.428"N	80°31'33.800"W	2298.24	312.939	2.00
9081.00	90.520	323.570	6869.86	2337.38	1636.56	-1737.83	1712188.06	521489.03	39°55'38.123"N	80°31'34.520"W	2387.13	313.281	1.16
9170.00	90.340	323.880	6869.19	2426.30	1707.38	-1791.73	1712134.16	521559.84	39°55'38.817"N	80°31'35.223"W	2474.96	313.619	5.81
9260.00	90.460	329.110	6868.56	2516.23	1782.39	-1841.39	1712084.50	521634.85	39°55'39.533"N	80°31'35.871"W	2562.75	314.067	5.81
9349.00	91.750	330.540	6866.85	2604.90	1859.32	-1896.12	1712039.78	521711.77	39°55'40.308"N	80°31'36.456"W	2648.49	314.590	2.16

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Office of Oil and Gas  
WV Dept. of Environmental Protection

06/12/2015

Well Path Data (197 stations)

Operator	NOBLE ENERGY	Slot	Slot A
Area	Marshall County, WV	Well	WEB-22A-EIS
Field	Marshall	Wellbore	WEB-22A-EIS (A WB)
Facility	WEB-22 Pad		

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]	Change Dir [ft]	DLS [1/1000]
9439.00	91.390	327.460	6864.38	2694.63	1936.42	-1932.45	1711993.45	521788.87	39°55'41.065"N	80°31'37.062"W	2735.71	315.059	3.44
9529.00	90.740	325.100	6862.71	2784.59	2011.26	-1982.40	1711943.51	521863.71	39°55'41.799"N	80°31'37.714"W	2824.02	315.414	2.72
9618.00	91.140	324.630	6861.25	2873.58	2084.04	-2033.61	1711892.30	521936.48	39°55'42.512"N	80°31'38.382"W	2911.84	315.702	0.69
9708.00	91.200	322.600	6859.41	2963.53	2156.47	-2086.90	1711838.92	522008.91	39°55'43.222"N	80°31'39.078"W	3000.98	315.938	2.26
9797.00	90.220	323.960	6858.31	3052.48	2227.80	-2140.19	1711785.72	522080.24	39°55'43.921"N	80°31'39.771"W	3089.26	316.149	1.88
9887.00	89.660	328.230	6858.40	3142.44	2302.48	-2190.39	1711735.53	522154.91	39°55'44.653"N	80°31'40.427"W	3177.93	316.429	4.79
9976.00	91.260	331.790	6857.69	3231.08	2375.55	-2234.86	1711691.05	522231.98	39°55'45.409"N	80°31'41.009"W	3264.49	316.796	4.39
10066.00	91.260	329.010	6855.71	3320.65	2457.78	-2279.30	1711646.62	522310.20	39°55'46.177"N	80°31'41.591"W	3352.00	317.158	3.09
10156.00	91.140	325.680	6853.82	3410.54	2533.52	-2327.85	1711598.07	522385.94	39°55'46.920"N	80°31'42.225"W	3440.38	317.423	3.70
10245.00	91.110	321.660	6852.07	3499.48	2605.20	-2380.55	1711545.37	522457.61	39°55'47.623"N	80°31'42.912"W	3529.05	317.860	4.52
10335.00	90.650	319.990	6850.69	3589.23	2674.95	-2437.40	1711488.53	522527.37	39°55'48.306"N	80°31'43.652"W	3618.88	317.660	1.92
10425.00	90.890	321.490	6849.48	3678.97	2744.63	-2494.35	1711431.38	522597.04	39°55'48.988"N	80°31'44.393"W	3708.74	317.335	1.60
10514.00	90.340	320.840	6848.53	3767.76	2813.95	-2550.15	1711375.78	522666.36	39°55'49.667"N	80°31'45.119"W	3797.58	317.815	0.96
10604.00	89.370	324.160	6848.60	3857.66	2883.35	-2604.93	1711321.00	522737.75	39°55'50.366"N	80°31'45.833"W	3887.27	317.924	3.79
10693.00	90.340	329.670	6848.67	3946.58	2959.89	-2653.50	1711272.44	522812.28	39°55'51.087"N	80°31'46.467"W	3975.17	318.124	6.25
10783.00	90.150	329.330	6848.28	4036.30	3037.44	-2699.16	1711226.78	522889.83	39°55'51.858"N	80°31'47.065"W	4063.44	318.375	0.41
10873.00	90.120	329.090	6848.07	4126.06	3114.76	-2745.22	1711180.72	522967.15	39°55'52.617"N	80°31'47.667"W	4151.86	318.608	0.29
10963.00	90.580	327.600	6847.52	4215.90	3191.37	-2792.45	1711133.50	523045.76	39°55'53.369"N	80°31'48.285"W	4240.59	318.814	1.73
11052.00	89.720	324.660	6847.29	4304.87	3265.26	-2842.04	1711083.90	523117.64	39°55'54.093"N	80°31'48.932"W	4328.87	318.964	3.44
11142.00	89.690	322.140	6847.75	4394.83	3337.50	-2895.70	1711030.25	523189.88	39°55'54.801"N	80°31'49.632"W	4418.60	319.054	2.80
11232.00	89.690	321.100	6848.24	4484.67	3408.05	-2951.57	1710974.38	523260.43	39°55'55.492"N	80°31'50.359"W	4508.50	319.106	1.16
11321.00	89.690	320.110	6848.72	4573.40	3476.83	-3008.06	1710917.90	523329.20	39°55'56.165"N	80°31'51.095"W	4597.47	319.135	1.11
11411.00	90.180	323.180	6848.82	4663.24	3547.40	-3063.90	1710862.06	523399.77	39°55'56.856"N	80°31'51.822"W	4687.38	319.183	3.45
11500.00	90.460	323.990	6848.33	4752.21	3619.02	-3116.73	1710809.23	523471.38	39°55'57.558"N	80°31'52.510"W	4776.12	319.265	0.96
11590.00	90.400	324.390	6847.65	4842.20	3692.00	-3169.39	1710756.57	523544.36	39°55'58.273"N	80°31'53.197"W	4865.79	319.356	0.45
11680.00	90.460	323.630	6846.97	4932.18	3764.82	-3222.27	1710703.69	523617.18	39°55'58.987"N	80°31'53.887"W	4955.49	319.440	0.85
11769.00	90.490	324.420	6846.24	5021.16	3836.84	-3274.55	1710651.41	523689.20	39°55'59.693"N	80°31'54.568"W	5044.21	319.521	0.89
11859.00	90.280	325.490	6845.63	5111.16	3910.52	-3326.23	1710599.74	523762.87	39°56'00.415"N	80°31'55.242"W	5133.81	319.616	1.21
11949.00	89.940	329.350	6845.46	5201.06	3986.34	-3374.68	1710551.29	523838.69	39°56'01.159"N	80°31'55.876"W	5222.97	319.750	4.31
12038.00	90.580	328.750	6845.06	5289.84	4062.67	-3420.46	1710505.52	523915.02	39°56'01.908"N	80°31'56.474"W	5310.82	319.905	0.95
12128.00	90.430	325.990	6844.26	5379.75	4138.46	-3468.98	1710457.80	523990.80	39°56'02.651"N	80°31'57.108"W	5400.06	320.029	3.07
12217.00	90.520	324.630	6843.52	5468.74	4211.63	-3519.63	1710406.35	524063.97	39°56'03.368"N	80°31'57.769"W	5488.68	320.115	1.53
12307.00	90.460	322.300	6842.75	5558.70	4283.94	-3573.20	1710352.78	524136.27	39°56'04.077"N	80°31'58.468"W	5578.52	320.169	2.99
12396.00	90.370	325.360	6842.11	5647.67	4355.77	-3625.72	1710300.26	524208.11	39°56'04.781"N	80°31'59.152"W	5667.33	320.226	3.44
12486.00	90.620	327.440	6841.33	5737.63	4430.73	-3675.52	1710250.47	524283.06	39°56'05.516"N	80°31'59.803"W	5756.81	320.343	2.33
12575.00	90.530	326.700	6840.42	5826.57	4505.43	-3723.90	1710202.09	524357.75	39°56'06.248"N	80°32'00.435"W	5845.19	320.425	0.84
12665.00	91.020	324.000	6839.19	5916.55	4579.45	-3773.06	1710150.93	524431.77	39°56'06.974"N	80°32'01.102"W	5934.85	320.500	3.04
12755.00	90.530	322.940	6837.96	6006.51	4651.76	-3828.63	1710097.37	524504.08	39°56'07.683"N	80°32'01.801"W	6024.72	320.544	1.29
12844.00	90.580	324.120	6837.08	6095.47	4723.33	-3881.52	1710044.47	524575.64	39°56'08.390"N	80°32'02.490"W	6113.60	320.587	1.33
12934.00	90.620	326.600	6836.14	6185.46	4797.37	-3932.67	1709993.32	524649.68	39°56'09.110"N	80°32'03.158"W	6203.28	320.657	2.76
13023.00	90.650	327.110	6835.15	6274.41	4871.88	-3984.33	1709944.67	524724.19	39°56'09.840"N	80°32'03.793"W	6291.76	320.744	0.37
13113.00	90.710	325.420	6834.08	6364.38	4946.72	-4031.31	1709894.69	524799.07	39°56'10.574"N	80°32'04.446"W	6381.34	320.822	1.88
13202.00	90.490	323.540	6833.15	6453.37	5019.24	-4082.89	1709843.12	524871.54	39°56'11.285"W	80°32'05.119"W	6470.14	320.873	1.90
13292.00	90.460	321.360	6832.40	6543.29	5090.92	-4137.30	1709788.71	524943.22	39°56'11.987"N	80°32'05.828"W	6560.08	320.900	2.09
13381.00	89.880	320.790	6832.14	6632.14	5160.40	-4192.91	1709733.10	525012.69	39°56'12.647"N	80°32'06.552"W	6649.08	320.916	1.37

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Office of Oil and Gas  
Dept. of Environmental Protection

06/12/2015

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	ISlot	Slot A
Area	Marshall County, WV	Well	WEB-22A-HS
Field	Marshall	Wellbore	WEB-22A-HS (AWE)
Facility	WEB-22 Pad		

WELLPATH DATA (197 stations)

MD [ft]	Inclination [°]	Asimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Change Dist [ft]	Change Dir [°]	DLS [1/100ft]
13471.00	90.460	324.160	6831.87	6722.01	5231.77	-4247.72	1709678.29	525084.06	39°56'13.366"N	80°32'07.266"W	6739.03	320.927	3.80
13561.00	90.650	324.420	6831.00	6812.00	5304.84	-4300.25	1709625.76	525157.13	39°56'14.083"N	80°32'07.951"W	6828.87	320.971	0.36
13651.00	90.620	322.750	6830.00	6901.96	5377.26	-4333.67	1709572.35	525229.54	39°56'14.792"N	80°32'08.648"W	6918.77	321.005	1.86
13740.00	89.780	325.350	6829.69	6990.94	5449.30	-4405.92	1709520.10	525301.58	39°56'15.498"N	80°32'09.329"W	7007.64	321.043	3.07
13830.00	90.860	329.520	6829.19	7040.83	5525.13	-4454.35	1709471.67	525377.41	39°56'16.242"N	80°32'09.962"W	7097.06	321.124	4.79
13919.00	90.580	327.470	6828.07	7169.66	5601.01	-4500.85	1709425.17	525453.28	39°56'16.986"N	80°32'10.570"W	7185.33	321.215	2.32
14009.00	90.550	325.750	6827.18	7259.61	5676.14	-4530.38	1709375.65	525528.41	39°56'17.723"N	80°32'11.217"W	7274.93	321.282	1.91
14188.00	90.520	326.030	6826.34	7349.60	5750.66	-4600.85	1709325.18	525602.92	39°56'18.454"N	80°32'11.876"W	7364.63	321.338	0.31
14278.00	90.650	324.490	6825.43	7438.59	5823.79	-4651.56	1709274.47	525676.05	39°56'19.171"N	80°32'12.538"W	7453.42	321.385	1.74
14368.00	90.650	324.790	6824.41	7528.58	5897.16	-4703.66	1709222.37	525749.42	39°56'19.850"N	80°32'13.218"W	7543.27	321.424	0.29
14457.00	90.550	325.620	6823.47	7618.58	5971.05	-4755.04	1709170.99	525823.30	39°56'20.614"N	80°32'13.888"W	7633.08	321.468	0.97
14547.00	90.580	326.270	6822.59	7707.56	6044.78	-4804.88	1709121.16	525897.03	39°56'21.337"N	80°32'14.539"W	7721.80	321.519	0.75
14637.00	90.620	325.380	6821.73	7797.53	6119.23	-4855.43	1709070.61	525971.48	39°56'22.067"N	80°32'15.199"W	7811.55	321.569	0.90
14726.00	90.680	323.380	6820.83	7887.53	6192.39	-4907.84	1709018.20	526044.63	39°56'22.784"N	80°32'15.882"W	7901.43	321.601	2.22
14816.00	90.650	321.660	6819.82	7976.44	6263.01	-4961.99	1708964.05	526115.25	39°56'23.476"N	80°32'16.586"W	7990.41	321.611	1.93
14904.00	90.650	320.680	6818.92	8031.31	6300.85	-4996.48	1708929.57	526158.09	39°56'23.895"N	80°32'17.037"W	8045.40	321.608	1.78
14804.00	90.650	320.680	6818.92	8054.24	6323.64	-5011.05	1708915.00	526175.88	39°56'24.069"N	80°32'17.227"W	8068.40	321.606	0.00

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
WEB-22A-HS BHL-Rev-1		6888.00	6324.51	-5010.91	1708915.14	526176.75	39°56'24.078"N	80°32'17.225"W	point
WEB-22A-HS LP-Rev-2		6888.00	243.95	-753.25	1713172.60	520066.47	39°55'24.473"N	80°31'21.680"W	point
WEB-22A-HS BHL Plat		6913.00	6324.51	-5010.91	1708915.14	526176.75	39°56'24.078"N	80°32'17.225"W	point
WEB-22A-HS LP-Rev-1		6913.00	243.95	-753.25	1713172.60	520066.47	39°55'24.473"N	80°31'21.680"W	point

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WV Dept. of Environmental Protection

06/12/2015

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot A
Area	Marshall County, WV	Well	WEB-22A-HS
Field	Marshall	Wellbore	WEB-22A-HS (AWB)
Facility	WEB-22 Pad		

Start MD [ft]	End MD [ft]	Wellbore	Ref Wellpath	Log Name/Comment	Wellbore
18.60	462.00	Generic gyro - northseeking (Standard)	WEB-22A-HS (AWB)	01_Gyro Surveys 17 1/2" (100'-462')	WEB-22A-HS (AWB)
462.00	1199.00	NavTrak (MagCorr)	WEB-22A-HS (AWB)	02_BHI AFS Surveys 17 1/2" (462')(495'-1199') Proj:1254'	WEB-22A-HS (AWB)
1199.00	3361.00	ISCWSA MWD, Rev. 2 (Standard)	WEB-22A-HS (AWB)	03_BHI AFS Surveys 12-1/4" (1199')(1326'-3361') Proj:3418'	WEB-22A-HS (AWB)
3361.00	4566.00	NavTrak (MagCorr)	WEB-22A-HS (AWB)	04_BHI MWD MagCorr <-8-3/4"> (3361')(3490'-4566')	WEB-22A-HS (AWB)
4566.00	5641.00	NavTrak (Standard)	WEB-22A-HS (AWB)	05_BHI MWD Sit <-8-3/4"> (4566')(4655'-5641') Proj:5692'	WEB-22A-HS (AWB)
5641.00	14781.00	NavTrak (AT Curve Short Spaced)	WEB-22A-HS (AWB)	06_BHI ATCurve <-8-3/4"> (5721'-14781')	WEB-22A-HS (AWB)
14781.00	14804.00	Blind Drilling (std)	WEB-22A-HS (AWB)	Projection to bit	WEB-22A-HS (AWB)

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REFERENCE WELLPATH IDENTIFICATION

Operator	Area	Field	Facility	Slot	Slot A
NOBLE ENERGY	Marshall County, WV	Marshall	WEB-22 Pad	Well	WEB-22A-HS
				Wellbore	WEB-22A-HS (AWB)

COMMENTS

Wellpath general comments  
 API: 47-051-01687-0000  
 Rig: Precision 542  
 BHL Job #: 6217772  
 Duration: 06/02/2014-06/16/2014  
 Gyro Surveys (100-462)  
 BHL APS Surveys (462)(495-1199)  
 BHL APS Surveys (1199)(1326-3361)  
 BHL MWD MagCorr (3361)(3490-4566)  
 BHL MWD Sit (4566)(4655-5641)  
 BHL ATCurve (5721-14781)  
 TD Projected to MD: 14804'

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 WV Dept. of Environmental Protection

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# NOBLE ENERGY

Location: Marshall County, WV  
Field: Marshall  
Facility: WEB-22 Pad

Slot: Slot A  
Well: WEB-22A-HS  
Wellbore: WEB-22A-HS-PWB



### Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
WEB-22 Pad	1719825.810	519852.540	39°52'22.147"N	80°31'11.877"W
Slot	Local E (ft)	Local N (ft)	Local E (ft)	Local N (ft)
Slot A	0.00	0.00	519852.540	519852.540
Precision 542 (RT) to Mud line (At Slot: Slot A)	18.6ft			
Mean Sea Level to Mud line (At Slot: Slot A)	-1325ft			
Precision 542 (RT) to Mean Sea Level	1343.6ft			
Plot reference wellbore is WEB-22A-HS-PWB-EO	Grid System: NAD83 / Lambert West Virginia Sp., Northern Zone (4201), US feet			

This vertical depth is referenced to Precision 542 (RT)  
 Measured depths are referenced to Precision 542 (RT)  
 Precision 542 (RT) to Mean Sea Level: 1343.6 feet  
 Scale: True distance  
 Depths are in feet  
 Coordinates are in feet referenced to Slot  
 Created by: krcsch on 17Jun2014

### Targets

Name	MD (ft)	TVD (ft)	Local E (ft)	Local N (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
WEB-22A-HS-BK-Flow-1	14794.43	8888.00	6284.51	17881.514	52176.75	391824.078"N	80°27'17.328"W	
WEB-22A-HS-LP-Flow-2	7971.48	8888.00	343.85	1713172.61	52088.47	391824.078"N	80°27'17.328"W	
WEB-22A-HS-BK-Flow-1	6813.00	8284.51	-5114.91	170815.14	52176.75	391824.078"N	80°27'17.328"W	
WEB-22A-HS-LP-Flow-1	6813.00	263.95	171072.60	52088.47	391824.078"N	80°27'17.328"W		

### Well Profile Data

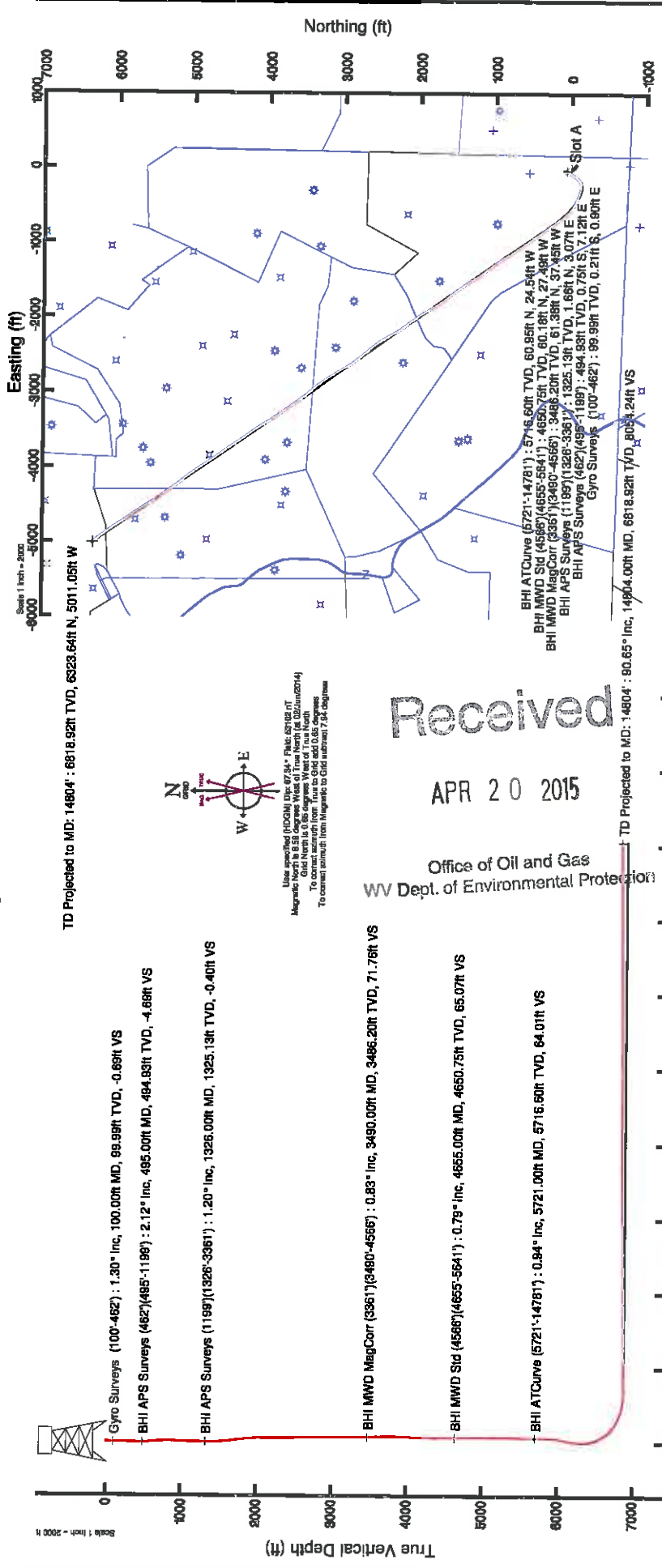
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
The On	6304.00	27.820	221.420	6283.08	-80.87	-128.28	0.00	7.83
Projection	6329.00	27.850	221.420	6285.23	-81.86	-136.95	0.00	5.11
End of 3D Arc	7117.62	71.362	314.419	6842.36	56.16	-591.43	9.50	385.23
End of Tangent	7146.80	71.382	314.419	6851.69	75.51	-611.17	0.00	412.41
LP	7371.42	90.000	325.000	6888.00	243.95	-753.25	9.50	631.67
BHL	14794.43	90.000	325.000	6324.52	-5010.91	0.00	0.00	8054.86

API: 47-051-01687-0000

Rig: Precision 542

BHI Job #: 6217772

Duration: 06/02/2014-06/16/2014



06/12/2015