



Actual Wellpath Report

SHL-22F-HS AWP Proj: 13423'

Page 1 of 9



REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot F
Area	Marshall County, WV	Well	SHL-22F-HS
Field	Marshall	Wellbore	SHL-22F-HS AWB
Facility	SHL-22 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	Gotfbral
Scale	0.999963	Report Generated	24/Jun/2015 at 09:55
Convergence at slot	0.69° West	Database/Source file	WANorthEast/SHL-22F-HS_AWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	70.34	71.09	1698383.93	552128.77	40°00'39.318"N	80°34'36.416"W
Facility Reference Pt			1698312.84	552058.43	40°00'38.614"N	80°34'37.318"W
Field Reference Pt			609601.22	0.00	38°23'48.753"N	84°21'09.765"W

WELLPATH DATUM

Calculation method	Minimum curvature	Precision 584 (RKB) to Facility Vertical Datum	1341.99ft
Horizontal Reference Pt	Slot	Precision 584 (RKB) to Mean Sea Level	1341.99ft
Vertical Reference Pt	Precision 584 (RKB)	Precision 584 (RKB) to Mud Line at Slot (Slot F)	19.40ft
MD Reference Pt	Precision 584 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	145.00°

05/26/2017

24/Jun/2015



Actual Wellpath Report

SHL-22F-HS AWP Proj: 13423'

Page 2 of 9



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Area	Marshall County, WV	Well	SHL-22F-HS
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Facility	SHL-22 Pad		

WELLPATH DATA (142 stations) † = interpolated/extrapolated station

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]
0.00†	0.000	131.210	0.00	0.00	0.00	0.00	1698383.93	552128.77	40°00'39.318"N	80°34'36.416"W	0.00	0.000	0.00
19.40	0.000	131.210	19.40	0.00	0.00	0.00	1698383.93	552128.77	40°00'39.318"N	80°34'36.416"W	0.00	0.000	0.00
107.40	0.070	131.210	107.40	0.05	-0.04	0.04	1698383.97	552128.73	40°00'39.317"N	80°34'36.415"W	0.05	131.210	0.08
207.40	0.530	11.560	207.40	-0.21	0.38	0.18	1698384.11	552129.15	40°00'39.322"N	80°34'36.413"W	0.42	25.381	0.57
307.40	0.680	26.290	307.39	-0.81	1.36	0.53	1698384.46	552130.13	40°00'39.331"N	80°34'36.409"W	1.46	21.421	0.21
407.40	0.440	41.450	407.39	-1.18	2.18	1.05	1698384.98	552130.95	40°00'39.340"N	80°34'36.402"W	2.42	25.727	0.28
507.40	0.230	44.200	507.39	-1.31	2.61	1.45	1698385.38	552131.38	40°00'39.344"N	80°34'36.397"W	2.99	28.944	0.21
607.40	0.220	58.130	607.39	-1.34	2.86	1.75	1698385.68	552131.63	40°00'39.346"N	80°34'36.393"W	3.35	31.448	0.06
707.40	0.090	48.490	707.39	-1.34	3.01	1.97	1698385.90	552131.78	40°00'39.348"N	80°34'36.391"W	3.60	33.187	0.13
807.40	0.060	89.450	807.39	-1.32	3.07	2.08	1698386.01	552131.84	40°00'39.348"N	80°34'36.389"W	3.71	34.181	0.06
907.40	0.160	6.930	907.39	-1.39	3.20	2.15	1698386.08	552131.97	40°00'39.350"N	80°34'36.388"W	3.86	33.870	0.16
1007.40	0.220	359.680	1007.38	-1.65	3.54	2.17	1698386.10	552132.30	40°00'39.353"N	80°34'36.388"W	4.15	31.505	0.06
1107.40	0.130	16.650	1107.38	-1.88	3.84	2.20	1698386.13	552132.61	40°00'39.356"N	80°34'36.388"W	4.42	29.815	0.10
1207.40	0.190	49.940	1207.38	-1.97	4.05	2.36	1698386.29	552132.82	40°00'39.358"N	80°34'36.386"W	4.69	30.197	0.11
1307.40	0.300	67.960	1307.38	-1.92	4.26	2.73	1698386.66	552133.03	40°00'39.360"N	80°34'36.381"W	5.05	32.650	0.13
1407.40	0.500	69.410	1407.38	-1.75	4.51	3.38	1698387.31	552133.28	40°00'39.363"N	80°34'36.373"W	5.63	36.849	0.20
1507.40	0.530	76.170	1507.38	-1.48	4.77	4.24	1698388.17	552133.54	40°00'39.365"N	80°34'36.362"W	6.38	41.595	0.07
1607.40	0.570	58.380	1607.37	-1.28	5.14	5.11	1698389.04	552133.91	40°00'39.369"N	80°34'36.351"W	7.25	44.806	0.17
1707.40	0.880	56.880	1707.36	-1.23	5.82	6.18	1698390.10	552134.59	40°00'39.376"N	80°34'36.337"W	8.49	46.679	0.31
1807.40	0.690	65.750	1807.35	-1.09	6.49	7.37	1698391.30	552135.26	40°00'39.383"N	80°34'36.322"W	9.82	48.621	0.22
1907.40	0.420	98.620	1907.35	-0.73	6.68	8.28	1698392.21	552135.45	40°00'39.385"N	80°34'36.310"W	10.64	51.089	0.41
2007.40	0.390	99.240	2007.35	-0.24	6.57	8.98	1698392.91	552135.34	40°00'39.384"N	80°34'36.301"W	11.13	53.787	0.03
2107.40	0.270	108.110	2107.35	0.19	6.45	9.54	1698393.47	552135.22	40°00'39.383"N	80°34'36.294"W	11.51	55.948	0.13
2207.40	0.100	301.050	2207.35	0.30	6.42	9.69	1698393.62	552135.19	40°00'39.382"N	80°34'36.292"W	11.62	56.475	0.37
2307.40	0.250	254.440	2307.34	0.15	6.40	9.40	1698393.33	552135.17	40°00'39.382"N	80°34'36.296"W	11.37	55.739	0.20



Actual Wellpath Report

SHL-22F-HS AWP Proj: 13423'

Page 3 of 9



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Field	Marshall	Wellbore	SHL-22F-HS AWB
Facility	SHL-22 Pad		

WELLPATH DATA (142 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]
2407.40	0.450	266.440	2407.34	-0.13	6.32	8.80	1698392.73	552135.09	40°00'39.381"N	80°34'36.303"W	10.83	54.309	0.21
2507.40	0.350	271.710	2507.34	-0.52	6.31	8.10	1698392.03	552135.08	40°00'39.381"N	80°34'36.312"W	10.27	52.107	0.11
2607.40	0.340	279.520	2607.34	-0.91	6.36	7.50	1698391.43	552135.13	40°00'39.382"N	80°34'36.320"W	9.84	49.701	0.05
2707.40	0.310	254.620	2707.34	-1.21	6.34	6.95	1698390.88	552135.11	40°00'39.381"N	80°34'36.327"W	9.41	47.626	0.14
2807.40	0.210	251.420	2807.34	-1.35	6.21	6.52	1698390.45	552134.98	40°00'39.380"N	80°34'36.333"W	9.00	46.373	0.10
2907.40	0.380	245.800	2907.33	-1.46	6.02	6.04	1698389.97	552134.79	40°00'39.378"N	80°34'36.339"W	8.52	45.110	0.17
3007.40	0.370	256.700	3007.33	-1.65	5.81	5.42	1698389.35	552134.58	40°00'39.376"N	80°34'36.347"W	7.94	43.045	0.07
3034.40	0.340	249.990	3034.33	-1.70	5.76	5.26	1698389.19	552134.53	40°00'39.375"N	80°34'36.349"W	7.80	42.424	0.19
3375.40	0.240	211.710	3375.33	-1.68	4.80	3.94	1698387.87	552133.57	40°00'39.366"N	80°34'36.366"W	6.21	39.328	0.06
3527.40	0.520	253.680	3527.32	-1.77	4.34	3.11	1698387.04	552133.11	40°00'39.361"N	80°34'36.376"W	5.34	35.601	0.25
3678.40	0.470	245.760	3678.32	-2.11	3.89	1.89	1698385.82	552132.66	40°00'39.357"N	80°34'36.392"W	4.33	25.836	0.06
3829.40	0.340	259.810	3829.32	-2.41	3.56	0.88	1698384.81	552132.33	40°00'39.353"N	80°34'36.405"W	3.67	13.877	0.11
3995.40	0.240	210.460	3995.31	-2.47	3.17	0.22	1698384.15	552131.94	40°00'39.349"N	80°34'36.413"W	3.18	3.939	0.16
4132.40	0.540	197.240	4132.31	-1.96	2.31	-0.12	1698383.81	552131.08	40°00'39.341"N	80°34'36.417"W	2.31	357.067	0.23
4283.40	0.530	153.310	4283.30	-0.83	1.01	-0.02	1698383.91	552129.78	40°00'39.328"N	80°34'36.416"W	1.01	359.116	0.27
4435.40	0.460	122.250	4435.30	0.43	0.05	0.82	1698384.75	552128.82	40°00'39.318"N	80°34'36.405"W	0.82	86.358	0.18
4587.40	0.220	184.940	4587.30	1.21	-0.56	1.31	1698385.24	552128.21	40°00'39.312"N	80°34'36.399"W	1.42	113.352	0.27
4723.00	0.250	174.780	4722.90	1.67	-1.12	1.31	1698385.24	552127.65	40°00'39.307"N	80°34'36.398"W	1.72	130.451	0.04
4783.00	0.770	311.810	4782.89	1.39	-0.98	1.02	1698384.95	552127.79	40°00'39.308"N	80°34'36.402"W	1.42	133.766	1.61
4872.00	7.930	332.050	4871.58	-5.29	4.85	-2.30	1698381.63	552133.62	40°00'39.365"N	80°34'36.446"W	5.37	334.583	8.10
4962.00	8.330	338.170	4960.68	-17.80	16.39	-7.64	1698376.29	552145.16	40°00'39.479"N	80°34'36.516"W	18.08	335.006	1.06
5051.00	8.310	336.920	5048.74	-30.37	28.29	-12.56	1698371.37	552157.06	40°00'39.596"N	80°34'36.581"W	30.95	336.063	0.20
5141.00	8.180	335.110	5137.81	-43.04	40.08	-17.80	1698366.13	552168.85	40°00'39.712"N	80°34'36.650"W	43.85	336.051	0.32
5230.00	8.170	333.260	5225.91	-55.53	51.47	-23.31	1698360.62	552180.24	40°00'39.824"N	80°34'36.723"W	56.50	335.633	0.30
5320.00	8.240	331.440	5314.99	-68.27	62.85	-29.27	1698354.66	552191.61	40°00'39.935"N	80°34'36.801"W	69.33	335.024	0.30

05/26/2017

24/June/2015



Actual Wellpath Report

SHL-22F-HS AWP Proj: 13423'
Page 4 of 9



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Area	Marshall County, WV	Well	SHL-22F-HS
Field	Marshall	Wellbore	SHL-22F-HS AWB
Facility	SHL-22 Pad		

WELLPATH DATA (142 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]
5410.00	8.230	331.220	5404.06	-81.08	74.16	-35.46	1698348.47	552202.92	40°00'40.046"N	80°34'36.883"W	82.20	334.445	0.04
5499.00	8.130	333.070	5492.15	-93.65	85.35	-41.37	1698342.56	552214.12	40°00'40.156"N	80°34'36.960"W	94.85	334.138	0.32
5589.00	10.080	331.500	5581.01	-107.77	97.95	-48.02	1698335.92	552226.71	40°00'40.280"N	80°34'37.048"W	109.08	333.885	2.18
5678.00	10.010	327.460	5668.65	-123.24	111.31	-55.89	1698328.04	552240.08	40°00'40.411"N	80°34'37.151"W	124.56	333.338	0.80
5768.00	10.120	329.560	5757.27	-138.94	124.72	-64.11	1698319.83	552253.49	40°00'40.543"N	80°34'37.259"W	140.23	332.798	0.43
5857.00	10.030	332.570	5844.89	-154.41	138.34	-71.64	1698312.30	552267.11	40°00'40.676"N	80°34'37.357"W	155.79	332.624	0.60
5947.00	5.570	321.220	5934.04	-166.55	148.71	-77.99	1698305.95	552277.47	40°00'40.778"N	80°34'37.441"W	167.92	332.327	5.22
6036.00	2.570	158.120	6022.94	-168.92	150.23	-79.95	1698303.98	552278.99	40°00'40.793"N	80°34'37.466"W	170.18	331.978	9.06
6126.00	9.350	134.880	6112.41	-159.74	143.19	-74.01	1698309.92	552271.95	40°00'40.724"N	80°34'37.389"W	161.19	332.666	7.85
6216.00	14.710	126.690	6200.40	-141.68	131.19	-59.66	1698324.27	552259.96	40°00'40.607"N	80°34'37.202"W	144.12	335.547	6.24
6305.00	21.940	133.900	6284.85	-114.60	112.89	-38.59	1698345.35	552241.65	40°00'40.429"N	80°34'36.929"W	119.30	341.129	8.50
6395.00	31.230	138.310	6365.25	-74.84	83.74	-10.89	1698373.04	552212.50	40°00'40.144"N	80°34'36.568"W	84.44	352.591	10.55
6484.00	42.420	140.440	6436.38	-21.83	43.24	23.69	1698407.61	552172.00	40°00'39.748"N	80°34'36.118"W	49.30	28.715	12.65
6574.00	50.470	142.520	6498.35	43.21	-7.80	64.21	1698448.13	552120.97	40°00'39.248"N	80°34'35.589"W	64.68	96.924	9.10
6664.00	58.850	142.960	6550.36	116.51	-66.19	108.60	1698492.53	552062.59	40°00'38.677"N	80°34'35.010"W	127.18	121.359	9.32
6753.00	69.300	144.030	6589.22	196.41	-130.45	156.13	1698540.05	551998.32	40°00'38.047"N	80°34'34.389"W	203.46	129.881	11.79
6843.00	78.850	144.960	6613.88	282.85	-200.84	206.32	1698590.24	551927.94	40°00'37.358"N	80°34'33.733"W	287.93	134.228	10.66
6932.00	86.640	147.160	6625.12	371.05	-274.03	255.56	1698639.48	551854.75	40°00'36.640"N	80°34'33.089"W	374.70	136.997	9.09
7022.00	89.200	147.460	6628.38	460.91	-349.72	304.13	1698688.05	551779.07	40°00'35.898"N	80°34'32.454"W	463.46	138.988	2.86
7112.00	89.290	147.310	6629.57	550.83	-425.52	352.64	1698736.55	551703.27	40°00'35.155"N	80°34'31.819"W	552.65	140.351	0.19
7201.00	89.230	146.470	6630.72	639.77	-500.06	401.25	1698785.16	551628.73	40°00'34.424"N	80°34'31.182"W	641.14	141.256	0.95
7291.00	89.110	143.350	6632.02	729.75	-573.68	452.97	1698836.89	551555.11	40°00'33.702"N	80°34'30.506"W	730.96	141.706	3.47
7380.00	89.690	142.540	6632.95	818.69	-644.71	506.60	1698890.51	551484.09	40°00'33.007"N	80°34'29.806"W	819.93	141.840	1.12
7470.00	89.540	144.340	6633.56	908.65	-716.99	560.21	1698944.11	551411.80	40°00'32.299"N	80°34'29.106"W	909.90	141.999	2.01
7560.00	89.480	147.710	6634.33	998.62	-791.62	610.49	1698994.40	551337.19	40°00'31.568"N	80°34'28.449"W	999.68	142.361	3.74



Actual Wellpath Report

SHL-22F-HS AWP Proj: 13423'
Page 5 of 9



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Field	Marshall	Wellbore	SHL-22F-HS AWB
Facility	SHL-22 Pad		

WELLPATH DATA (142 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]
7649.00	89.600	148.770	6635.04	1087.47	-867.28	657.34	1699041.24	551261.52	40°00'30.825"N	80°34'27.835"W	1088.24	142.841	1.20
7739.00	89.540	148.750	6635.72	1177.27	-944.23	704.01	1699087.91	551184.57	40°00'30.070"N	80°34'27.224"W	1177.80	143.292	0.07
7828.00	89.570	147.150	6636.41	1266.15	-1019.66	751.24	1699135.14	551109.15	40°00'29.331"N	80°34'26.605"W	1266.52	143.619	1.80
7918.00	89.510	144.280	6637.13	1356.13	-1094.02	801.93	1699185.83	551034.80	40°00'28.602"N	80°34'25.942"W	1356.45	143.758	3.19
8008.00	89.480	144.570	6637.93	1446.12	-1167.21	854.28	1699238.18	550961.60	40°00'27.885"N	80°34'25.258"W	1446.44	143.800	0.32
8097.00	89.480	142.760	6638.73	1535.09	-1238.90	907.01	1699290.91	550889.91	40°00'27.183"N	80°34'24.570"W	1535.43	143.792	2.03
8187.00	89.540	139.120	6639.50	1624.85	-1308.77	963.71	1699347.61	550820.05	40°00'26.499"N	80°34'23.830"W	1625.31	143.634	4.04
8276.00	89.290	139.350	6640.41	1713.39	-1376.18	1021.82	1699405.71	550752.65	40°00'25.840"N	80°34'23.073"W	1714.06	143.406	0.38
8366.00	89.260	142.980	6641.55	1803.17	-1446.27	1078.25	1699462.13	550682.56	40°00'25.154"N	80°34'22.338"W	1803.97	143.294	4.03
8456.00	89.380	146.780	6642.62	1893.15	-1519.86	1130.01	1699513.90	550608.97	40°00'24.432"N	80°34'21.661"W	1893.91	143.369	4.22
8545.00	89.290	151.810	6643.65	1981.86	-1596.36	1175.44	1699559.32	550532.48	40°00'23.682"N	80°34'21.066"W	1982.42	143.635	5.65
8635.00	89.260	148.210	6644.79	2071.50	-1674.29	1220.41	1699604.29	550454.55	40°00'22.917"N	80°34'20.476"W	2071.87	143.911	4.00
8725.00	89.290	142.070	6645.93	2161.44	-1748.10	1271.82	1699655.71	550380.74	40°00'22.194"N	80°34'19.804"W	2161.80	143.962	6.82
8814.00	89.290	141.160	6647.04	2250.28	-1817.85	1327.08	1699710.96	550310.99	40°00'21.511"N	80°34'19.083"W	2250.72	143.869	1.02
8904.00	89.200	142.940	6648.22	2340.15	-1888.81	1382.42	1699766.30	550240.03	40°00'20.816"N	80°34'18.361"W	2340.66	143.800	1.98
8994.00	89.170	144.630	6649.50	2430.12	-1961.42	1435.59	1699819.47	550167.43	40°00'20.105"N	80°34'17.667"W	2430.65	143.799	1.88
9083.00	89.480	144.380	6650.55	2519.11	-2033.87	1487.26	1699871.14	550094.98	40°00'19.395"N	80°34'16.992"W	2519.64	143.824	0.45
9173.00	89.720	143.200	6651.18	2609.08	-2106.49	1540.43	1699924.30	550022.37	40°00'18.684"N	80°34'16.298"W	2609.64	143.823	1.34
9262.00	89.750	144.600	6651.59	2698.07	-2178.39	1592.86	1699976.73	549950.46	40°00'17.980"N	80°34'15.613"W	2698.63	143.825	1.57
9352.00	89.780	144.670	6651.96	2788.06	-2251.79	1644.95	1700028.82	549877.07	40°00'17.260"N	80°34'14.932"W	2788.62	143.851	0.08
9442.00	89.690	144.270	6652.38	2878.06	-2325.03	1697.26	1700081.12	549803.83	40°00'16.543"N	80°34'14.249"W	2878.62	143.871	0.46
9531.00	89.570	145.950	6652.95	2967.05	-2398.03	1748.16	1700132.02	549730.84	40°00'15.828"N	80°34'13.584"W	2967.59	143.908	1.89
9621.00	89.570	147.140	6653.63	3057.02	-2473.11	1797.77	1700181.63	549655.75	40°00'15.091"N	80°34'12.935"W	3057.49	143.986	1.32
9710.00	89.750	145.770	6654.15	3145.98	-2547.29	1846.95	1700230.81	549581.58	40°00'14.364"N	80°34'12.291"W	3146.41	144.055	1.55
9800.00	89.660	146.400	6654.62	3235.97	-2621.97	1897.17	1700281.03	549506.90	40°00'13.632"N	80°34'11.635"W	3236.35	144.112	0.71



Actual Wellpath Report

SHL-22F-HS AWP Proj: 13423'
Page 6 of 9



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY	Slot	Slot F
Area	Marshall County, WV	Well	SHL-22F-HS
Field	Marshall	Wellbore	SHL-22F-HS AWB
Facility	SHL-22 Pad		

WELLPATH DATA (142 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]
9889.00	89.660	147.170	6655.15	3324.92	-2696.43	1945.92	1700329.77	549432.44	40°00'12.902"N	80°34'10.997"W	3325.26	144.183	0.87
9979.00	89.480	146.390	6655.82	3414.87	-2771.72	1995.23	1700379.08	549357.16	40°00'12.164"N	80°34'10.352"W	3415.16	144.252	0.89
10069.00	89.630	144.280	6656.52	3504.86	-2845.74	2046.41	1700430.26	549283.14	40°00'11.438"N	80°34'09.683"W	3505.14	144.280	2.35
10158.00	89.600	143.560	6657.12	3593.85	-2917.66	2098.82	1700482.67	549211.22	40°00'10.734"N	80°34'08.999"W	3594.14	144.271	0.81
10248.00	89.660	143.340	6657.70	3683.81	-2989.96	2152.42	1700536.27	549138.92	40°00'10.026"N	80°34'08.299"W	3684.13	144.251	0.25
10337.00	89.630	143.840	6658.25	3772.78	-3061.59	2205.24	1700589.09	549067.30	40°00'09.324"N	80°34'07.609"W	3773.12	144.235	0.56
10427.00	89.660	145.450	6658.81	3862.78	-3134.99	2257.32	1700641.16	548993.91	40°00'08.605"N	80°34'06.929"W	3863.11	144.245	1.79
10516.00	89.720	146.830	6659.29	3951.75	-3208.89	2306.90	1700690.75	548920.01	40°00'07.880"N	80°34'06.280"W	3952.06	144.287	1.55
10606.00	89.690	148.020	6659.75	4041.67	-3284.73	2355.36	1700739.20	548844.17	40°00'07.137"N	80°34'05.646"W	4041.93	144.357	1.32
10695.00	89.780	148.330	6660.16	4130.53	-3360.35	2402.29	1700786.13	548768.55	40°00'06.395"N	80°34'05.032"W	4130.73	144.439	0.36
10785.00	89.630	148.310	6660.63	4220.38	-3436.94	2449.56	1700833.39	548691.97	40°00'05.644"N	80°34'04.413"W	4220.53	144.522	0.17
10875.00	89.820	149.260	6661.06	4310.18	-3513.90	2496.20	1700880.03	548615.00	40°00'04.889"N	80°34'03.802"W	4310.28	144.611	1.08
10964.00	90.400	147.330	6660.89	4399.03	-3589.62	2542.97	1700926.80	548539.29	40°00'04.146"N	80°34'03.189"W	4399.10	144.685	2.26
11054.00	91.020	144.550	6659.77	4489.00	-3664.17	2593.37	1700977.19	548464.75	40°00'03.415"N	80°34'02.530"W	4489.06	144.711	3.16
11143.00	90.920	139.970	6658.27	4577.86	-3734.52	2647.82	1701031.65	548394.40	40°00'02.726"N	80°34'01.820"W	4577.94	144.663	5.15
11233.00	89.690	137.180	6657.79	4667.29	-3801.99	2707.36	1701091.18	548326.92	40°00'02.067"N	80°34'01.045"W	4667.43	144.546	3.39
11322.00	89.540	135.850	6658.38	4755.31	-3866.56	2768.60	1701152.42	548262.36	40°00'01.436"N	80°34'00.248"W	4755.57	144.396	1.50
11412.00	89.660	141.000	6659.01	4844.68	-3933.87	2828.30	1701212.12	548195.05	40°00'00.778"N	80°33'59.470"W	4845.06	144.285	5.72
11502.00	89.750	147.480	6659.48	4934.63	-4006.86	2880.87	1701264.69	548122.06	40°00'00.062"N	80°33'58.784"W	4935.01	144.284	7.20
11591.00	90.180	149.410	6659.53	5023.46	-4082.70	2927.44	1701311.26	548046.23	39°59'59.319"N	80°33'58.174"W	5023.78	144.358	2.22
11681.00	90.120	147.190	6659.30	5113.31	-4159.27	2974.73	1701358.55	547969.67	39°59'58.567"N	80°33'57.555"W	5113.56	144.427	2.47
11770.00	89.420	146.370	6659.65	5202.26	-4233.72	3023.49	1701407.30	547895.22	39°59'57.837"N	80°33'56.917"W	5202.49	144.468	1.21
11860.00	89.510	146.960	6660.49	5292.22	-4308.91	3072.95	1701456.76	547820.03	39°59'57.100"N	80°33'56.270"W	5292.42	144.505	0.66
11950.00	89.110	146.780	6661.58	5382.17	-4384.27	3122.13	1701505.94	547744.67	39°59'56.361"N	80°33'55.627"W	5382.34	144.545	0.49
12039.00	89.140	146.260	6662.94	5471.12	-4458.49	3171.22	1701555.03	547670.45	39°59'55.634"N	80°33'54.985"W	5471.27	144.577	0.59



Actual Wellpath Report

SHL-22F-HS AWP Proj: 13423'

Page 7 of 9



REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot F
Area	Marshall County, WV	Well	SHL-22F-HS
Field	Marshall	Wellbore	SHL-22F-HS AWB
Facility	SHL-22 Pad		

WELLPATH DATA (142 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]
12129.00	89.660	143.620	6663.88	5561.11	-4532.15	3222.91	1701606.72	547596.79	39°59'54.912"N	80°33'54.309"W	5561.26	144.583	2.99
12218.00	89.820	144.760	6664.28	5650.10	-4604.33	3274.99	1701658.79	547524.62	39°59'54.205"N	80°33'53.629"W	5650.25	144.576	1.29
12308.00	89.540	144.970	6664.79	5740.10	-4677.93	3326.78	1701710.58	547451.02	39°59'53.483"N	80°33'52.952"W	5740.25	144.581	0.39
12397.00	89.750	143.610	6665.34	5829.09	-4750.19	3378.73	1701762.52	547378.76	39°59'52.775"N	80°33'52.274"W	5829.25	144.576	1.55
12487.00	89.780	146.820	6665.71	5919.07	-4824.10	3430.06	1701813.86	547304.86	39°59'52.051"N	80°33'51.603"W	5919.23	144.586	3.57
12577.00	89.780	148.930	6666.05	6008.95	-4900.31	3477.92	1701861.71	547228.65	39°59'51.303"N	80°33'50.977"W	6009.08	144.635	2.34
12666.00	89.630	144.060	6666.51	6097.90	-4974.50	3527.03	1701910.83	547154.46	39°59'50.576"N	80°33'50.334"W	6098.00	144.663	5.47
12756.00	89.570	143.070	6667.14	6187.86	-5046.91	3580.48	1701964.27	547082.06	39°59'49.867"N	80°33'49.637"W	6187.98	144.647	1.10
12845.00	89.600	142.160	6667.78	6276.78	-5117.62	3634.52	1702018.31	547011.35	39°59'49.174"N	80°33'48.932"W	6276.92	144.618	1.02
12935.00	89.540	145.990	6668.46	6366.75	-5190.49	3687.31	1702071.10	546938.49	39°59'48.461"N	80°33'48.242"W	6366.90	144.610	4.26
13024.00	89.690	149.160	6669.06	6455.65	-5265.60	3735.03	1702118.81	546863.38	39°59'47.724"N	80°33'47.618"W	6455.77	144.651	3.57
13114.00	89.600	149.130	6669.62	6545.41	-5342.86	3781.18	1702164.97	546786.12	39°59'46.966"N	80°33'47.013"W	6545.49	144.713	0.11
13204.00	89.660	147.750	6670.20	6635.25	-5419.54	3828.29	1702212.07	546709.44	39°59'46.214"N	80°33'46.396"W	6635.30	144.763	1.53
13293.00	89.750	145.630	6670.65	6724.20	-5493.92	3877.16	1702260.94	546635.07	39°59'45.484"N	80°33'45.757"W	6724.25	144.789	2.38
13383.00	89.750	145.390	6671.05	6814.20	-5568.10	3928.12	1702311.90	546560.89	39°59'44.757"N	80°33'45.091"W	6814.24	144.798	0.27
13398.00	89.600	144.920	6671.13	6829.20	-5580.41	3936.69	1702320.47	546548.58	39°59'44.637"N	80°33'44.979"W	6829.24	144.799	3.29
13423.00	89.600	144.920	6671.31	6854.20	-5600.87	3951.06	1702334.84	546528.12	39°59'44.436"N	80°33'44.791"W	6854.24	144.799	0.00

05/26/2017

24/June/2015



Actual Wellpath Report

SHL-22F-HS AWP Proj: 13423'

Page 8 of 9



REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot F
Area	Marshall County, WV	Well	SHL-22F-HS
Field	Marshall	Wellbore	SHL-22F-HS AWB
Facility	SHL-22 Pad		

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SHL-22F-HS LP Rev-3		6631.00	-355.56	300.96	1698684.88	551773.22	40°00'35.840"N	80°34'32.493"W	point
SHL-22F-HS BHL Rev-3		6675.62	-5590.57	3966.46	1702350.24	546538.42	39°59'44.540"N	80°33'44.595"W	point
SHL-22 Pad LL		7001.99	-70.34	-71.09	1698312.84	552058.43	40°00'38.614"N	80°34'37.318"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: SHL-22F-HS AWB Ref Wellpath: SHL-22F-HS AWP Proj: 13423'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
19.40	3034.40	Generic gyro - northseeking (Standard)	01_MS Gyro <12-1/4"> (100'-3027')	SHL-22F-HS AWB
3034.40	4587.40	ISCWSA MWD, Rev. 2 (Standard)	02_SDI MWD <8-3/4"> (3027')(3368'-4580')	SHL-22F-HS AWB
4587.40	13398.00	NaviTrak (AT Curve Short Spaced)	03_BHI AT Curve <8-1/2"> (4587.4')(4723'-13398')	SHL-22F-HS AWB
13398.00	13423.00	Blind Drilling (std)	Projection to bit	SHL-22F-HS AWB

05/26/2017

24/Jun/2015



Actual Wellpath Report

SHL-22F-HS AWP Proj: 13423'

Page 9 of 9



REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot F
Area	Marshall County, WV	Well	SHL-22F-HS
Field	Marshall	Wellbore	SHL-22F-HS AWB
Facility	SHL-22 Pad		

COMMENTS

Wellpath general comments

API: 47-051-01792-0000

Rig: Precision 584

BHI Job #: 7312196

Duration: 06.17.2015 - 06.24.2015

MS Gyro <12-1/4"> (100'-3027')

SDI MWD <8-3/4"> (3027')(3368'-4580')

BHI AT Curve <8-1/2"> (4587.4')(4723'-13398')

Projected MD at TD: 13423'

05/26/2017

24/Jun/2015

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

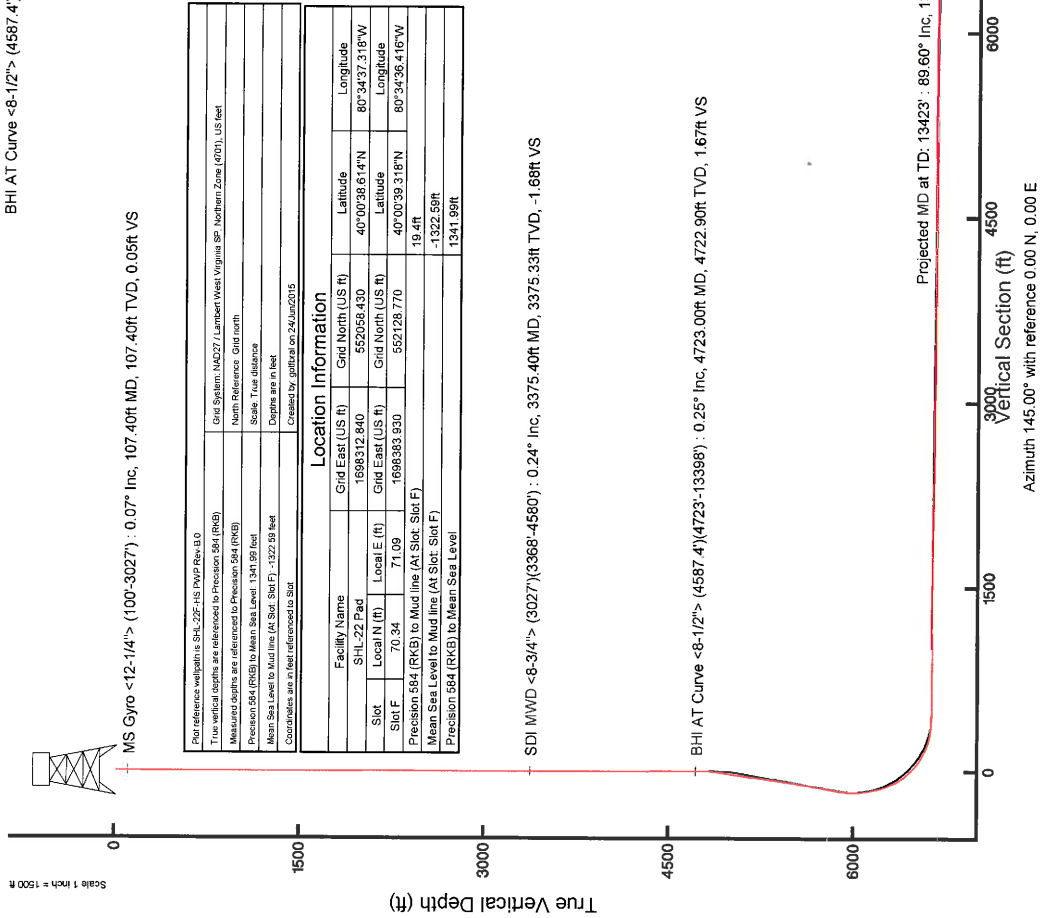
Slot: Slot F
 Well: SHL-22F-HS
 Wellbore: SHL-22F-HS PWB

API: 47-051-01792-0000

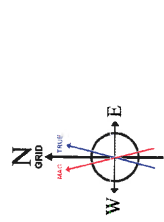
Rig: Precision 584

BHI Job #: 7312196

Duration: 06.17.2015 - 06.24.2015



Location Information	
Facility Name	SHL-22 Pad
Local N (ft)	70.34
Local E (ft)	71.09
Slot	Slot F
Slot F	70.34
Mean Sea Level to Mud line (At Slot, Slot F)	-1322.89 ft
Mean Sea Level to Mud line (At Slot, Slot F)	-1322.89ft
Mean Sea Level to Mud line (At Slot, Slot F)	1341.99ft
Mean Sea Level to Mean Sea Level	1341.99ft
Grid East (US ft)	1698312.840
Grid North (US ft)	552058.430
Local N (ft)	70.34
Local E (ft)	71.09
Slot	Slot F
Slot F	70.34
Mean Sea Level to Mud line (At Slot, Slot F)	-1322.89 ft
Mean Sea Level to Mud line (At Slot, Slot F)	-1322.89ft
Mean Sea Level to Mud line (At Slot, Slot F)	1341.99ft
Mean Sea Level to Mean Sea Level	1341.99ft



User specified (HDOM) Dip: 67.51° Field: 53003.n
 Magnetic: 73.15° (from True North) (30Jun2015)
 Grid North is 0.89 degrees West of True North
 To correct azimuth from True to Grid add 0.89 degrees
 To correct azimuth from Magnetic to Grid subtract 7.64 degrees