

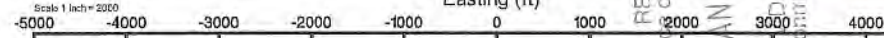
# HG ENERGY

Location: Marshall County, WV  
 Field: Marshall (NAD27 SP Northern Zone 4701)  
 Facility: SHL27 Pad

Slot: Slot #01  
 Well: SHL27 EHS  
 Wellbore: SHL27 EHS PWB

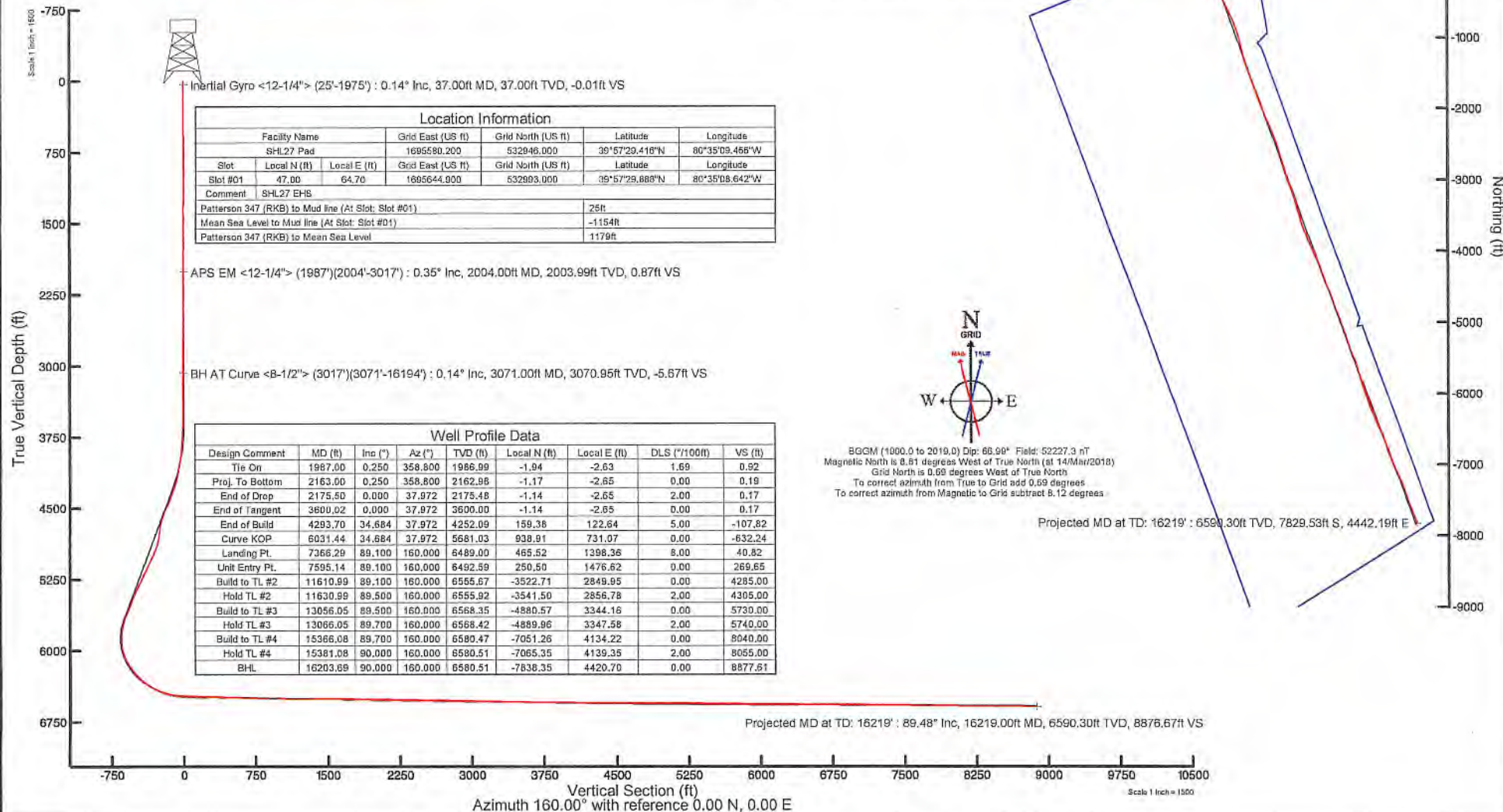
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Plot reference wellbore is SHL27 EHS PWB Rev-A-0	Grid System: NAD27 / Lambert West Virginia SP, Northern Zone (4701), US feet
True vertical depths are referenced to Patterson 347 (RKB)	North Reference: Grid north
Measured depths are referenced to Patterson 347 (RKB)	Scale: True distance
Patterson 347 (RKB) to Mean Sea Level: 1179 feet	Deaths are in feet
Mean Sea Level to Mud line (At Slot: Slot #01): -1154 feet	Created by: edcarver on 2018-04-09
Coordinates are in feet referenced to Slot	Database: WA_MPL_EASTERNUS_Defn



API: 47-051-01939-0000  
 BH Job #: 9071211  
 Rig: Patterson 347  
 Duration: 3/17/2018-3/30/2018

BH AT Curve <B-1/2"> (3017')(3071'-16194') : 3070.95ft TVD, 2.45ft N, 9.83ft W  
 APS EM <12-1/4"> (1987')(2004'-3017') : 2003.99ft TVD, 1.90ft S, 2.68ft W  
 Inertial Gyro <12-1/4"> (25'-1975') : 37.00ft TVD, 0.01ft N, 0.01ft E



Inertial Gyro <12-1/4"> (25'-1975') : 0.14° Inc, 37.00ft MD, 37.00ft TVD, -0.01ft VS

Location Information					
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	
SHL27 Pad	1695680.200	532946.000	39°57'29.416"N	80°35'09.466"W	
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude
Slot #01	47.00	64.70	1695644.000	532909.000	39°57'29.889"N
Comment	SHL27 EHS				
Patterson 347 (RKB) to Mud line (At Slot: Slot #01)	25ft				
Mean Sea Level to Mud line (At Slot: Slot #01)	-1154ft				
Patterson 347 (RKB) to Mean Sea Level	1179ft				

APS EM <12-1/4"> (1987')(2004'-3017') : 0.35° Inc, 2004.00ft MD, 2003.99ft TVD, 0.87ft VS

BH AT Curve <B-1/2"> (3017')(3071'-16194') : 0.14° Inc, 3071.00ft MD, 3070.95ft TVD, -5.67ft VS

Well Profile Data								
Design Comment	MD (ft)	Inc (")	Az (")	TVD (ft)	Local N (ft)	Local E (ft)	DLS ("/100ft)	VS (ft)
Tie On	1987.00	0.250	358.800	1986.99	-1.94	-2.63	1.69	0.92
Proj. To Bottom	2163.00	0.250	358.800	2162.96	-1.17	-2.65	0.00	0.19
End of Drop	2175.50	0.000	37.972	2175.48	-1.14	-2.65	2.00	0.17
End of Tangent	3600.02	0.000	37.972	3600.00	-1.14	-2.65	0.00	0.17
End of Build	4293.70	34.684	37.972	4252.09	159.36	122.64	5.00	-107.82
Curve KOP	6031.44	34.684	37.972	5681.03	938.91	731.07	0.00	-632.24
Landing Pt.	7266.29	89.100	160.000	6489.00	465.52	1398.36	8.00	40.82
Unit Entry Pt.	7595.14	89.100	160.000	6492.59	250.50	1476.62	0.00	269.65
Build to TL #2	11610.99	89.100	160.000	6555.67	-3522.71	2849.95	0.00	4285.00
Hold TL #2	11630.99	89.500	160.000	6555.92	-3541.50	2856.78	2.00	4305.00
Build to TL #3	13056.05	89.500	160.000	6568.35	-4880.57	3344.16	0.00	5730.00
Hold TL #3	13066.05	89.700	160.000	6568.42	-4889.96	3347.58	2.00	5740.00
Build to TL #4	15366.08	89.700	160.000	6580.47	-7051.26	4134.22	0.00	8040.00
Hold TL #4	15381.08	90.000	160.000	6580.51	-7065.35	4139.35	2.00	8055.00
BHL	16203.89	90.000	160.000	6580.51	-7836.35	4420.70	0.00	8877.61



8GGM (1000.0 to 2019.0) Dip: 66.96° Field: 52227.3 nT  
 Magnetic North is 8.51 degrees West of True North (at 14/Mar/2018)  
 Grid North is 0.93 degrees West of True North  
 To correct azimuth from True to Grid add 0.69 degrees  
 To correct azimuth from Magnetic to Grid subtract 8.12 degrees

Projected MD at TD: 16219' : 6590.30ft TVD, 7829.53ft S, 4442.19ft E

Projected MD at TD: 16219' : 89.48° Inc, 16219.00ft MD, 6590.30ft TVD, 8876.67ft VS



# Actual Wellpath Report

SHL27 EHS AWP Proj: 16219'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	HG ENERGY	Slot	Slot #01
Area	Marshall County, WV	Well	SHL27 EHS
Field	Marshall (NAD27 SP Northern Zone 4701)	Wellbore	SHL27 EHS AWB
Facility	SHL27 Pad		

## REPORT SETUP INFORMATION

Projection System	NAD27 / Lambert West Virginia SP, Northern Zone (4701), US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Edsaryar
Scale	0.999958	Report Generated	09/Apr/2018 at 20:13
Convergence at slot	0.69° West	Database/Source file	WA_MPL_EASTERNUS_Defn/SHL27_EHS_AWP_Proj_16219_.xml

## WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	47.00	64.70	1695644.90	532993.00	39°57'29.888"N	80°35'08.642"W
Facility Reference Pt			1695580.20	532946.00	39°57'29.416"N	80°35'09.466"W
Field Reference Pt			1695580.20	532946.00	39°57'29.416"N	80°35'09.466"W

## WELLPATH DATUM

Calculation method	Minimum curvature	Patterson 347 (RKB) to Facility Vertical Datum	25.00ft
Horizontal Reference Pt	Slot	Patterson 347 (RKB) to Mean Sea Level	1179.00ft
Vertical Reference Pt	Patterson 347 (RKB)	Patterson 347 (RKB) to Mud Line at Slot (Slot #01)	25.00ft
MD Reference Pt	Patterson 347 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	160.00°



# Actual Wellpath Report

SHL27 EHS AWP Proj: 16219'

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REFERENCE WELLPATH IDENTIFICATION				
Operator	HG ENERGY		Slot	Slot #01
Area	Marshall County, WV		Well	SHL27 EHS
Field	Marshall (NAD27 SP Northern Zone 4701)		Wellbore	SHL27 EHS AWB
Facility	SHL27 Pad			

WELLPATH DATA (206 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]	Build Rate [°/100ft]	Turn Rate [°/100ft]
0.00†	0.000	22.100	0.00	0.00	0.00	0.00	1695644.90	532993.00	39°57'29.888"N	80°35'08.642"W	0.00	0.000	0.00	0.00	0.00
25.00	0.000	22.100	25.00	0.00	0.00	0.00	1695644.90	532993.00	39°57'29.888"N	80°35'08.642"W	0.00	0.000	0.00	0.00	0.00
37.00	0.140	22.100	37.00	-0.01	0.01	0.01	1695644.91	532993.01	39°57'29.888"N	80°35'08.642"W	0.01	22.100	1.17	1.17	184.17
62.00	0.220	235.400	62.00	-0.02	0.01	-0.02	1695644.88	532993.01	39°57'29.888"N	80°35'08.643"W	0.03	303.029	1.38	0.32	-586.80
87.00	0.430	140.100	87.00	0.08	-0.08	0.00	1695644.90	532992.92	39°57'29.887"N	80°35'08.642"W	0.08	181.242	2.00	0.84	-381.20
112.00	0.230	62.400	112.00	0.16	-0.13	0.10	1695645.00	532992.87	39°57'29.887"N	80°35'08.641"W	0.17	142.362	1.77	-0.80	-310.80
137.00	0.370	157.900	137.00	0.23	-0.18	0.18	1695645.08	532992.82	39°57'29.886"N	80°35'08.640"W	0.26	136.140	1.82	0.56	382.00
162.00	0.180	24.100	162.00	0.29	-0.22	0.22	1695645.12	532992.78	39°57'29.886"N	80°35'08.639"W	0.32	134.968	2.05	-0.76	-535.20
187.00	0.310	182.100	187.00	0.32	-0.26	0.24	1695645.14	532992.74	39°57'29.886"N	80°35'08.639"W	0.35	137.083	1.93	0.52	632.00
212.00	0.280	68.100	212.00	0.38	-0.30	0.29	1695645.19	532992.70	39°57'29.885"N	80°35'08.639"W	0.42	135.826	1.98	-0.12	-456.00
237.00	0.310	190.800	237.00	0.44	-0.34	0.34	1695645.24	532992.66	39°57'29.885"N	80°35'08.638"W	0.48	135.689	2.07	0.12	490.80
262.00	0.200	48.300	262.00	0.48	-0.38	0.36	1695645.26	532992.62	39°57'29.884"N	80°35'08.638"W	0.52	136.995	1.94	-0.44	-570.00
287.00	0.350	148.800	287.00	0.54	-0.42	0.43	1695645.33	532992.58	39°57'29.884"N	80°35'08.637"W	0.60	134.311	1.73	0.60	402.00
312.00	0.120	289.000	312.00	0.60	-0.47	0.44	1695645.34	532992.53	39°57'29.884"N	80°35'08.637"W	0.65	136.987	1.80	-0.92	560.80
337.00	0.470	121.100	337.00	0.66	-0.52	0.51	1695645.41	532992.48	39°57'29.883"N	80°35'08.636"W	0.72	135.739	2.35	1.40	-671.60
362.00	0.240	202.400	362.00	0.78	-0.62	0.57	1695645.47	532992.38	39°57'29.882"N	80°35'08.635"W	0.84	137.242	1.98	-0.92	325.20
387.00	0.250	63.400	387.00	0.81	-0.64	0.60	1695645.50	532992.36	39°57'29.882"N	80°35'08.635"W	0.88	136.926	1.84	0.04	-556.00
412.00	0.400	159.200	412.00	0.89	-0.70	0.68	1695645.58	532992.30	39°57'29.881"N	80°35'08.634"W	0.98	135.800	1.97	0.60	383.20
437.00	0.110	259.800	437.00	0.98	-0.79	0.69	1695645.59	532992.21	39°57'29.880"N	80°35'08.633"W	1.05	138.788	1.74	-1.16	402.40
462.00	0.300	90.900	462.00	0.99	-0.79	0.73	1695645.63	532992.21	39°57'29.880"N	80°35'08.633"W	1.08	137.301	1.63	0.76	-675.60
487.00	0.360	192.200	487.00	1.08	-0.87	0.78	1695645.68	532992.13	39°57'29.880"N	80°35'08.632"W	1.17	138.127	2.05	0.24	405.20
512.00	0.280	115.200	512.00	1.19	-0.97	0.82	1695645.72	532992.03	39°57'29.879"N	80°35'08.632"W	1.27	139.921	1.61	-0.32	-308.00
537.00	0.170	297.900	537.00	1.21	-0.98	0.84	1695645.74	532992.02	39°57'29.879"N	80°35'08.631"W	1.29	139.405	1.80	-0.44	-709.20
562.00	0.380	163.800	562.00	1.27	-1.04	0.83	1695645.73	532991.96	39°57'29.878"N	80°35'08.632"W	1.33	141.459	2.05	0.84	-536.40
587.00	0.100	289.200	587.00	1.33	-1.12	0.83	1695645.73	532991.88	39°57'29.877"N	80°35'08.632"W	1.39	143.233	1.78	-1.12	501.60
612.00	0.300	203.000	612.00	1.37	-1.17	0.79	1695645.69	532991.83	39°57'29.877"N	80°35'08.632"W	1.41	146.028	1.24	0.80	-344.80
662.00	0.220	169.100	662.00	1.56	-1.38	0.76	1695645.66	532991.62	39°57'29.875"N	80°35'08.633"W	1.58	151.390	0.34	-0.16	-67.80
712.00	0.200	313.300	712.00	1.58	-1.42	0.71	1695645.61	532991.58	39°57'29.874"N	80°35'08.633"W	1.59	153.424	0.80	-0.04	288.40
762.00	0.160	127.200	762.00	1.56	-1.40	0.70	1695645.60	532991.60	39°57'29.874"N	80°35'08.633"W	1.57	153.394	0.72	-0.08	347.80
812.00	0.210	284.300	811.99	1.56	-1.42	0.67	1695645.57	532991.58	39°57'29.874"N	80°35'08.634"W	1.57	154.797	0.73	0.10	314.20



# Actual Wellpath Report

SHL27 EHS AWP Proj: 16219'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	HG ENERGY	Slot	Slot #01
Area	Marshall County, WV	Well	SHL27 EHS
Field	Marshall (NAD27 SP Northern Zone 4701)	Wellbore	SHL27 EHS AWB
Facility	SHL27 Pad		

WELLPATH DATA (206 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]	Build Rate [°/100ft]	Turn Rate [°/100ft]	
862.00	0.320	227.600	861.99	1.57	-1.49	0.48	1695645.38	532991.51	39°57'29.873"N	80°35'08.636"W	1.57	162.283	0.54	0.22	-113.40	
912.00	0.150	347.900	911.99	1.55	-1.52	0.36	1695645.26	532991.48	39°57'29.873"N	80°35'08.638"W	1.56	166.700	0.83	-0.34	240.60	
962.00	0.090	338.200	961.99	1.45	-1.42	0.33	1695645.23	532991.58	39°57'29.874"N	80°35'08.638"W	1.46	166.874	0.13	-0.12	-19.40	
1012.00	0.200	175.200	1011.99	1.49	-1.47	0.32	1695645.22	532991.53	39°57'29.874"N	80°35'08.638"W	1.51	167.579	0.57	0.22	-326.00	
1062.00	0.240	216.500	1061.99	1.64	-1.64	0.27	1695645.17	532991.36	39°57'29.872"N	80°35'08.639"W	1.67	170.694	0.32	0.08	82.60	
1112.00	0.370	263.900	1111.99	1.66	-1.74	0.05	1695644.95	532991.26	39°57'29.871"N	80°35'08.642"W	1.75	178.474	0.55	0.26	94.80	
1162.00	0.220	287.400	1161.99	1.56	-1.73	-0.21	1695644.69	532991.27	39°57'29.871"N	80°35'08.645"W	1.75	186.766	0.38	-0.30	47.00	
1212.00	0.250	293.200	1211.99	1.43	-1.66	-0.40	1695644.50	532991.34	39°57'29.872"N	80°35'08.647"W	1.71	193.454	0.08	0.06	11.60	
1262.00	0.390	248.100	1261.99	1.36	-1.68	-0.66	1695644.24	532991.32	39°57'29.871"N	80°35'08.651"W	1.81	201.295	0.55	0.28	-90.20	
1312.00	0.310	275.900	1311.99	1.30	-1.73	-0.95	1695643.95	532991.27	39°57'29.871"N	80°35'08.654"W	1.97	208.701	0.37	-0.16	55.60	
1362.00	0.370	242.800	1361.99	1.26	-1.79	-1.23	1695643.67	532991.21	39°57'29.870"N	80°35'08.658"W	2.17	214.390	0.40	0.12	-66.20	
1412.00	0.260	224.700	1411.99	1.33	-1.95	-1.45	1695643.45	532991.05	39°57'29.869"N	80°35'08.661"W	2.43	216.683	0.29	-0.22	-36.20	
1462.00	0.140	144.800	1461.99	1.44	-2.08	-1.49	1695643.41	532990.92	39°57'29.867"N	80°35'08.661"W	2.56	215.737	0.55	-0.24	-159.80	
1512.00	0.190	349.900	1511.99	1.42	-2.04	-1.47	1695643.43	532990.96	39°57'29.868"N	80°35'08.661"W	2.52	215.777	0.64	0.10	-309.80	
1562.00	0.090	176.700	1561.99	1.37	-2.00	-1.49	1695643.41	532991.00	39°57'29.868"N	80°35'08.661"W	2.49	216.576	0.56	-0.20	-346.40	
1612.00	0.260	218.300	1611.99	1.47	-2.13	-1.55	1695643.35	532990.87	39°57'29.867"N	80°35'08.662"W	2.64	216.103	0.40	0.34	83.20	
1662.00	0.220	313.100	1661.99	1.44	-2.15	-1.69	1695643.21	532990.85	39°57'29.867"N	80°35'08.664"W	2.74	218.186	0.71	-0.08	189.60	
1712.00	0.300	235.000	1711.99	1.39	-2.16	-1.87	1695643.03	532990.84	39°57'29.867"N	80°35'08.666"W	2.86	220.861	0.67	0.16	-156.20	
1762.00	0.270	303.800	1761.99	1.33	-2.17	-2.08	1695642.82	532990.83	39°57'29.866"N	80°35'08.669"W	3.01	223.700	0.65	-0.06	137.60	
1812.00	0.230	219.200	1811.99	1.29	-2.19	-2.24	1695642.66	532990.81	39°57'29.866"N	80°35'08.671"W	3.13	225.682	0.68	-0.08	-169.20	
1862.00	0.300	330.100	1861.99	1.21	-2.15	-2.37	1695642.53	532990.85	39°57'29.867"N	80°35'08.672"W	3.20	227.751	0.88	0.14	221.80	
1912.00	0.250	315.000	1911.99	0.98	-1.96	-2.51	1695642.39	532991.04	39°57'29.868"N	80°35'08.674"W	3.18	232.018	0.18	-0.10	-30.20	
1962.00	0.180	201.200	1961.99	0.94	-1.96	-2.61	1695642.29	532991.04	39°57'29.869"N	80°35'08.676"W	3.26	233.212	0.72	-0.14	-227.60	
1987.00	0.250	358.800	1986.99	0.92	-1.94	-2.63	1695642.27	532991.06	39°57'29.869"N	80°35'08.676"W	3.27	233.625	1.69	0.28	630.40	
2004.00	0.350	271.140	2003.99	0.87	-1.90	-2.68	1695642.22	532991.10	39°57'29.869"N	80°35'08.677"W	3.29	234.705	2.48	0.59	-515.65	
2099.00	0.240	323.680	2098.98	0.57	-1.73	-3.09	1695641.81	532991.27	39°57'29.871"N	80°35'08.682"W	3.54	240.719	0.29	-0.12	55.31	
2195.00	0.450	271.850	2194.98	0.24	-1.56	-3.59	1695641.31	532991.44	39°57'29.872"N	80°35'08.688"W	3.91	246.508	0.37	0.22	-53.99	
2290.00	0.360	352.340	2289.98	-0.19	-1.25	-4.00	1695640.90	532991.75	39°57'29.875"N	80°35'08.694"W	4.19	252.629	0.56	-0.09	84.73	
2385.00	0.500	339.880	2384.98	-0.90	-0.57	-4.18	1695640.72	532992.43	39°57'29.882"N	80°35'08.696"W	4.22	262.291	0.18	0.15	-13.12	
2481.00	0.720	295.100	2480.97	-1.74	0.08	-4.87	1695640.03	532993.08	39°57'29.888"N	80°35'08.705"W	4.87	270.978	0.53	0.23	-46.65	



# Actual Wellpath Report

SHL27 EHS AWP Proj: 16219'

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REFERENCE WELLPATH IDENTIFICATION				
Operator	HG ENERGY		Slot	Slot #01
Area	Marshall County, WV		Well	SHL27 EHS
Field	Marshall (NAD27 SP Northern Zone 4701)		Wellbore	SHL27 EHS AWB
Facility	SHL27 Pad			

WELLPATH DATA (206 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]	Build Rate [°/100ft]	Turn Rate [°/100ft]
2577.00	0.530	308.070	2576.97	-2.55	0.61	-5.77	1695639.13	532993.61	39°57'29.894"N	80°35'08.717"W	5.80	276.065	0.25	-0.20	13.51
2671.00	0.450	301.310	2670.96	-3.21	1.07	-6.43	1695638.48	532994.07	39°57'29.898"N	80°35'08.725"W	6.51	279.478	0.10	-0.09	-7.19
2767.00	0.660	292.790	2766.96	-3.88	1.48	-7.26	1695637.64	532994.48	39°57'29.902"N	80°35'08.736"W	7.41	281.548	0.23	0.22	-8.87
2862.00	0.470	287.420	2861.95	-4.48	1.81	-8.13	1695636.77	532994.81	39°57'29.905"N	80°35'08.747"W	8.33	282.556	0.21	-0.20	-5.85
2957.00	0.640	292.730	2956.95	-5.08	2.13	-8.99	1695635.91	532995.13	39°57'29.908"N	80°35'08.758"W	9.24	283.341	0.19	0.18	5.59
3017.00	0.500	287.010	3016.95	-5.47	2.34	-9.55	1695635.35	532995.34	39°57'29.910"N	80°35'08.765"W	9.84	283.757	0.25	-0.23	-9.53
3071.00	0.140	312.680	3070.95	-5.67	2.45	-9.83	1695635.07	532995.45	39°57'29.911"N	80°35'08.769"W	10.13	284.013	0.70	-0.67	47.54
3167.00	0.150	152.620	3166.95	-5.65	2.42	-9.86	1695635.04	532995.42	39°57'29.911"N	80°35'08.769"W	10.15	283.799	0.30	0.01	-166.73
3262.00	0.130	328.100	3261.95	-5.63	2.40	-9.86	1695635.04	532995.40	39°57'29.911"N	80°35'08.769"W	10.14	283.695	0.29	-0.02	184.72
3357.00	0.220	267.890	3356.95	-5.79	2.49	-10.10	1695634.81	532995.49	39°57'29.912"N	80°35'08.772"W	10.40	283.837	0.20	0.09	-63.38
3453.00	0.190	257.300	3452.95	-5.87	2.44	-10.43	1695634.47	532995.44	39°57'29.911"N	80°35'08.777"W	10.72	283.186	0.05	-0.03	-11.03
3548.00	0.200	353.400	3547.94	-6.05	2.57	-10.61	1695634.29	532995.57	39°57'29.912"N	80°35'08.779"W	10.92	283.644	0.31	0.01	101.16
3644.00	6.620	30.620	3643.73	-9.73	7.51	-7.80	1695637.10	533000.51	39°57'29.961"N	80°35'08.744"W	10.83	313.891	6.73	6.69	38.77
3739.00	8.510	50.550	3737.91	-15.54	16.69	0.41	1695645.31	533009.69	39°57'30.053"N	80°35'08.640"W	16.69	1.421	3.38	1.99	20.98
3834.00	9.790	52.220	3831.70	-20.35	26.10	12.23	1695657.13	533019.10	39°57'30.148"N	80°35'08.489"W	28.83	25.096	1.38	1.35	1.76
3930.00	12.410	36.990	3925.92	-28.46	39.35	24.89	1695669.79	533032.35	39°57'30.280"N	80°35'08.329"W	46.56	32.313	4.07	2.73	-15.86
4025.00	16.010	35.240	4018.00	-41.50	58.21	38.59	1695683.49	533051.21	39°57'30.468"N	80°35'08.156"W	69.84	33.545	3.82	3.79	-1.84
4120.00	17.120	36.350	4109.05	-56.72	80.17	54.44	1695699.34	533073.17	39°57'30.687"N	80°35'07.956"W	96.91	34.179	1.21	1.17	1.17
4216.00	25.050	38.170	4198.55	-75.29	107.57	75.41	1695720.31	533100.57	39°57'30.960"N	80°35'07.691"W	131.37	35.031	8.29	8.26	1.90
4311.00	32.180	37.780	4281.90	-99.42	143.43	103.37	1695748.27	533136.42	39°57'31.318"N	80°35'07.337"W	176.80	35.782	7.51	7.51	-0.41
4406.00	33.990	36.140	4361.49	-127.71	184.87	134.54	1695779.43	533177.86	39°57'31.731"N	80°35'06.944"W	228.64	36.045	2.13	1.91	-1.73
4501.00	37.690	35.470	4438.49	-158.98	229.98	167.06	1695811.95	533222.97	39°57'32.181"N	80°35'06.533"W	284.26	35.995	3.92	3.89	-0.71
4597.00	37.250	32.560	4514.69	-193.28	278.37	199.73	1695844.62	533271.36	39°57'32.663"N	80°35'06.121"W	342.61	35.659	1.90	-0.46	-3.03
4692.00	35.060	42.880	4591.46	-223.22	322.65	233.80	1695878.69	533315.63	39°57'33.104"N	80°35'05.690"W	398.46	35.929	6.80	-2.31	10.86
4787.00	37.760	54.610	4668.00	-243.41	359.54	276.14	1695921.03	533352.52	39°57'33.474"N	80°35'05.152"W	453.35	37.526	7.85	2.84	12.35
4882.00	37.820	62.080	4743.12	-255.15	390.04	325.62	1695970.50	533383.02	39°57'33.781"N	80°35'04.522"W	508.09	39.856	4.82	0.06	7.86
4978.00	37.740	57.520	4819.01	-265.56	419.60	376.42	1696021.30	533412.59	39°57'34.080"N	80°35'03.874"W	563.70	41.895	2.91	-0.08	-4.75
5073.00	37.690	47.090	4894.24	-283.16	455.03	422.26	1696067.14	533448.01	39°57'34.435"N	80°35'03.291"W	620.77	42.861	6.71	-0.05	-10.98
5168.00	37.730	37.100	4969.46	-310.28	498.02	461.10	1696105.98	533491.00	39°57'34.865"N	80°35'02.799"W	678.71	42.796	6.43	0.04	-10.52
5264.00	36.670	30.940	5045.96	-344.31	546.06	493.57	1696138.45	533539.03	39°57'35.343"N	80°35'02.389"W	736.06	42.110	4.03	-1.10	-6.42



# Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION				
Operator	HG ENERGY		Slot	Slot #01
Area	Marshall County, WV		Well	SHL27 EHS
Field	Marshall (NAD27 SP Northern Zone 4701)		Wellbore	SHL27 EHS AWB
Facility	SHL27 Pad			

WELLPATH DATA (206 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]	Build Rate [°/100ft]	Turn Rate [°/100ft]	
5359.00	36.690	32.030	5122.15	-379.65	594.45	523.21	1696168.09	533587.42	39°57'35.825"N	80°35'02.016"W	791.91	41.353	0.69	0.02	1.15	
5454.00	36.780	30.900	5198.28	-415.05	642.91	552.87	1696197.74	533635.88	39°57'36.307"N	80°35'01.643"W	847.94	40.694	0.72	0.09	-1.19	
5549.00	36.610	28.960	5274.46	-451.58	692.10	581.19	1696226.06	533685.07	39°57'36.797"N	80°35'01.287"W	903.76	40.022	1.23	-0.18	-2.04	
5645.00	35.640	29.440	5352.00	-488.57	741.51	608.80	1696253.67	533734.47	39°57'37.288"N	80°35'00.940"W	959.41	39.367	1.05	-1.01	0.50	
5740.00	35.190	32.930	5429.43	-523.07	788.59	637.29	1696282.16	533781.56	39°57'37.757"N	80°35'00.581"W	1013.91	38.943	2.18	-0.47	3.67	
5835.00	35.130	36.870	5507.11	-554.51	833.44	668.57	1696313.44	533826.40	39°57'38.204"N	80°35'00.187"W	1068.46	38.736	2.39	-0.06	4.15	
5931.00	35.250	37.590	5585.56	-584.46	877.49	702.04	1696346.91	533870.45	39°57'38.643"N	80°34'59.764"W	1123.77	38.662	0.45	0.12	0.75	
6026.00	35.270	35.340	5663.14	-614.75	921.59	734.63	1696379.50	533914.55	39°57'39.083"N	80°34'59.352"W	1178.56	38.560	1.37	0.02	-2.37	
6122.00	30.840	51.410	5743.74	-638.41	959.64	769.98	1696414.85	533952.60	39°57'39.463"N	80°34'58.904"W	1230.36	38.742	10.20	-4.61	16.74	
6217.00	31.770	62.360	5824.97	-649.51	986.45	811.21	1696456.07	533979.41	39°57'39.733"N	80°34'58.379"W	1277.16	39.432	6.06	0.98	11.53	
6312.00	31.810	71.300	5905.76	-652.27	1006.09	857.10	1696501.97	533999.05	39°57'39.932"N	80°34'57.792"W	1321.68	40.428	4.95	0.04	9.41	
6408.00	32.380	88.690	5987.27	-643.44	1014.81	906.88	1696551.73	534007.76	39°57'40.025"N	80°34'57.155"W	1360.98	41.785	9.62	0.59	18.11	
6503.00	35.630	104.320	6066.16	-619.63	1008.53	959.23	1696604.09	534001.49	39°57'39.969"N	80°34'56.481"W	1391.86	43.565	9.79	3.42	16.45	
6598.00	39.240	117.820	6141.71	-581.69	987.62	1012.73	1696657.58	533980.58	39°57'39.768"N	80°34'55.791"W	1414.57	45.719	9.42	3.80	14.21	
6694.00	41.930	129.410	6214.72	-531.50	953.03	1064.45	1696709.30	533945.99	39°57'39.433"N	80°34'55.122"W	1428.75	48.161	8.33	2.80	12.07	
6789.00	47.190	134.080	6282.40	-472.78	908.60	1114.05	1696758.90	533901.56	39°57'39.000"N	80°34'54.478"W	1437.59	50.800	6.52	5.54	4.92	
6884.00	54.660	135.960	6342.25	-405.95	856.43	1166.10	1696810.94	533849.39	39°57'38.490"N	80°34'53.801"W	1446.81	53.705	8.01	7.86	1.98	
6979.00	60.740	136.970	6392.99	-331.80	797.25	1220.29	1696865.14	533790.21	39°57'37.912"N	80°34'53.096"W	1457.64	56.842	6.94	6.40	3.17	
7074.00	69.900	145.080	6432.65	-249.78	729.21	1273.19	1696918.03	533722.18	39°57'37.246"N	80°34'52.407"W	1467.23	60.198	11.27	9.64	6.43	
7170.00	77.250	152.040	6459.81	-159.63	650.70	1321.06	1696965.90	533643.68	39°57'36.476"N	80°34'51.780"W	1472.62	63.777	10.34	7.66	7.25	
7265.00	84.850	159.980	6474.60	-66.16	565.07	1359.09	1697003.93	533558.05	39°57'35.634"N	80°34'51.278"W	1471.88	67.424	11.49	8.00	8.36	
7360.00	88.180	161.580	6480.37	28.64	475.55	1390.30	1697035.14	533468.53	39°57'34.753"N	80°34'50.864"W	1469.38	71.117	3.89	3.51	1.68	
7456.00	87.510	161.060	6483.98	124.54	384.67	1421.02	1697065.86	533377.66	39°57'33.859"N	80°34'50.455"W	1472.17	74.853	0.88	-0.70	-0.54	
7551.00	88.120	160.250	6487.60	219.47	295.10	1452.47	1697097.31	533288.09	39°57'32.977"N	80°34'50.037"W	1482.15	78.515	1.07	0.64	-0.85	
7646.00	88.120	159.550	6490.72	314.42	205.94	1485.10	1697129.93	533198.93	39°57'32.100"N	80°34'49.605"W	1499.31	82.105	0.74	0.00	-0.74	
7741.00	88.250	159.770	6493.73	409.37	116.91	1518.10	1697162.94	533109.90	39°57'31.224"N	80°34'49.167"W	1522.60	85.596	0.27	0.14	0.23	
7836.00	88.950	159.700	6496.05	504.34	27.81	1551.00	1697195.83	533020.81	39°57'30.348"N	80°34'48.731"W	1551.25	88.973	0.74	0.74	-0.07	
7931.00	87.940	158.830	6498.63	599.29	-61.00	1584.62	1697229.45	532932.00	39°57'29.474"N	80°34'48.286"W	1585.79	92.204	1.40	-1.06	-0.92	
8026.00	87.940	158.190	6502.04	694.20	-149.34	1619.40	1697264.23	532843.67	39°57'28.605"N	80°34'47.825"W	1626.27	95.269	0.67	0.00	-0.67	
8121.00	89.080	158.240	6504.51	789.12	-237.52	1654.64	1697299.47	532755.49	39°57'27.738"N	80°34'47.359"W	1671.61	98.169	1.20	1.20	0.05	



# Actual Wellpath Report

SHL27 EHS AWP Proj: 16219'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	HG ENERGY	Slot	Slot #01
Area	Marshall County, WV	Well	SHL27 EHS
Field	Marshall (NAD27 SP Northern Zone 4701)	Wellbore	SHL27 EHS AWB
Facility	SHL27 Pad		

WELLPATH DATA (206 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]	Build Rate [°/100ft]	Turn Rate [°/100ft]	
8216.00	88.980	160.100	6506.12	884.09	-326.30	1688.42	1697333.24	532666.72	39°57'26.865"N	80°34'46.912"W	1719.66	100.938	1.96	-0.11	1.96	
8312.00	89.050	159.520	6507.77	980.08	-416.38	1721.55	1697366.37	532576.64	39°57'25.979"N	80°34'46.473"W	1771.19	103.597	0.61	0.07	-0.60	
8407.00	89.230	155.720	6509.20	1074.97	-504.20	1757.71	1697402.53	532488.82	39°57'25.115"N	80°34'45.995"W	1828.59	106.006	4.00	0.19	-4.00	
8502.00	89.020	153.200	6510.65	1169.50	-589.90	1798.66	1697443.48	532403.13	39°57'24.273"N	80°34'45.456"W	1892.92	108.158	2.66	-0.22	-2.65	
8597.00	89.510	153.000	6511.87	1263.81	-674.61	1841.64	1697486.45	532318.42	39°57'23.441"N	80°34'44.891"W	1961.31	110.118	0.56	0.52	-0.21	
8693.00	89.690	158.230	6512.54	1359.49	-762.02	1881.26	1697526.07	532231.02	39°57'22.582"N	80°34'44.368"W	2029.73	112.051	5.45	0.19	5.45	
8788.00	90.150	158.380	6512.67	1454.45	-850.29	1916.37	1697561.19	532142.75	39°57'21.714"N	80°34'43.904"W	2096.54	113.927	0.51	0.48	0.16	
8883.00	89.820	160.530	6512.70	1549.44	-939.24	1949.71	1697594.53	532053.80	39°57'20.839"N	80°34'43.462"W	2164.15	115.722	2.29	-0.35	2.26	
8978.00	89.750	165.830	6513.05	1644.26	-1030.14	1977.19	1697622.00	531962.90	39°57'19.944"N	80°34'43.095"W	2229.46	117.520	5.58	-0.07	5.58	
9073.00	89.480	167.270	6513.69	1738.63	-1122.53	1999.29	1697644.10	531870.52	39°57'19.033"N	80°34'42.797"W	2292.87	119.313	1.54	-0.28	1.52	
9168.00	89.350	166.150	6514.66	1832.98	-1214.98	2021.12	1697665.93	531778.07	39°57'18.122"N	80°34'42.503"W	2358.20	121.012	1.19	-0.14	-1.18	
9263.00	89.320	164.240	6515.76	1927.57	-1306.82	2045.40	1697690.21	531686.24	39°57'17.218"N	80°34'42.177"W	2427.23	122.575	2.01	-0.03	-2.01	
9359.00	89.450	160.830	6516.80	2023.46	-1398.37	2074.20	1697719.01	531594.69	39°57'16.317"N	80°34'41.793"W	2501.55	123.987	3.55	0.14	-3.55	
9454.00	88.830	159.730	6518.22	2118.45	-1487.79	2106.25	1697751.06	531505.28	39°57'15.437"N	80°34'41.368"W	2578.73	125.236	1.33	-0.65	-1.16	
9549.00	88.920	159.920	6520.09	2213.43	-1576.94	2139.01	1697783.82	531416.13	39°57'14.560"N	80°34'40.933"W	2657.47	126.399	0.22	0.09	0.20	
9644.00	89.110	160.010	6521.72	2308.41	-1666.18	2171.55	1697816.36	531326.89	39°57'13.682"N	80°34'40.502"W	2737.12	127.498	0.22	0.20	0.09	
9739.00	89.080	161.130	6523.22	2403.40	-1755.76	2203.15	1697847.95	531237.32	39°57'12.800"N	80°34'40.082"W	2817.19	128.552	1.18	-0.03	1.18	
9834.00	89.050	159.690	6524.77	2498.38	-1845.25	2235.00	1697879.80	531147.84	39°57'11.920"N	80°34'39.660"W	2898.30	129.544	1.52	-0.03	-1.52	
9930.00	89.080	158.870	6526.34	2594.36	-1935.02	2268.96	1697913.76	531058.06	39°57'11.036"N	80°34'39.210"W	2982.03	130.458	0.85	0.03	-0.85	
10025.00	89.140	157.770	6527.81	2689.30	-2023.29	2304.05	1697948.85	530969.80	39°57'10.168"N	80°34'38.746"W	3066.33	131.288	1.16	0.06	-1.16	
10121.00	88.920	157.450	6529.44	2785.21	-2112.04	2340.61	1697985.41	530881.05	39°57'09.296"N	80°34'38.262"W	3152.65	132.061	0.40	-0.23	-0.33	
10216.00	88.830	156.000	6531.30	2880.03	-2199.29	2378.14	1698022.94	530793.81	39°57'08.438"N	80°34'37.767"W	3239.20	132.762	1.53	-0.09	-1.53	
10311.00	89.050	155.260	6533.06	2974.74	-2285.81	2417.33	1698062.13	530707.29	39°57'07.588"N	80°34'37.251"W	3326.93	133.398	0.81	0.23	-0.78	
10406.00	89.080	158.750	6534.61	3069.58	-2373.24	2454.44	1698099.23	530619.87	39°57'06.728"N	80°34'36.761"W	3414.16	134.036	3.67	0.03	3.67	
10502.00	88.860	160.560	6536.34	3165.56	-2463.23	2487.80	1698132.59	530529.88	39°57'05.843"N	80°34'36.318"W	3500.95	134.716	1.90	-0.23	1.89	
10597.00	89.110	161.440	6538.02	3260.53	-2553.04	2518.73	1698163.52	530440.07	39°57'04.959"N	80°34'35.908"W	3586.36	135.388	0.96	0.26	0.93	
10692.00	88.920	163.760	6539.65	3355.41	-2643.67	2547.13	1698191.92	530349.44	39°57'04.067"N	80°34'35.529"W	3671.09	136.065	2.45	-0.20	2.44	
10787.00	89.020	165.290	6541.36	3450.10	-2735.21	2572.47	1698217.26	530257.91	39°57'03.165"N	80°34'35.190"W	3754.86	136.756	1.61	0.11	1.61	
10882.00	89.080	165.790	6542.94	3544.64	-2827.19	2596.19	1698240.98	530165.94	39°57'02.259"N	80°34'34.871"W	3838.39	137.439	0.53	0.06	0.53	
10977.00	89.170	162.470	6544.39	3639.37	-2918.54	2622.16	1698266.95	530074.59	39°57'01.359"N	80°34'34.523"W	3923.47	138.062	3.50	0.09	-3.49	



# Actual Wellpath Report

SHL27 EHS AWP Proj: 16219'

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REFERENCE WELLPATH IDENTIFICATION				
Operator	HG ENERGY		Slot	Slot #01
Area	Marshall County, WV		Well	SHL27 EHS
Field	Marshall (NAD27 SP Northern Zone 4701)		Wellbore	SHL27 EHS AWB
Facility	SHL27 Pad			

WELLPATH DATA (206 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]	Build Rate [°/100ft]	Turn Rate [°/100ft]	
11072.00	89.290	159.490	6545.66	3734.33	-3008.34	2653.12	1698297.90	529984.79	39°57'00.476"N	80°34'34.112"W	4011.13	138.590	3.14	0.13	-3.14	
11167.00	89.600	159.300	6546.58	3829.32	-3097.26	2686.55	1698331.33	529895.88	39°56'59.601"N	80°34'33.669"W	4100.07	139.062	0.38	0.33	-0.20	
11263.00	89.450	159.100	6547.38	3925.31	-3187.00	2720.64	1698365.42	529806.14	39°56'58.718"N	80°34'33.218"W	4190.33	139.514	0.26	-0.16	-0.21	
11358.00	89.350	161.780	6548.38	4020.30	-3276.50	2752.44	1698397.22	529716.64	39°56'57.837"N	80°34'32.796"W	4279.18	139.968	2.82	-0.11	2.82	
11453.00	89.230	162.450	6549.55	4115.22	-3366.90	2781.61	1698426.39	529626.25	39°56'56.948"N	80°34'32.407"W	4367.31	140.438	0.72	-0.13	0.71	
11549.00	89.230	162.350	6550.84	4211.13	-3458.40	2810.64	1698455.41	529534.75	39°56'56.047"N	80°34'32.021"W	4456.48	140.899	0.10	0.00	-0.10	
11644.00	89.420	164.860	6551.96	4305.93	-3549.53	2837.45	1698482.22	529443.63	39°56'55.149"N	80°34'31.662"W	4544.25	141.362	2.65	0.20	2.64	
11739.00	89.540	163.480	6552.82	4400.67	-3640.92	2863.36	1698508.13	529352.24	39°56'54.249"N	80°34'31.316"W	4631.97	141.817	1.46	0.13	-1.45	
11834.00	89.630	155.810	6553.51	4495.59	-3729.92	2896.38	1698541.15	529263.25	39°56'53.374"N	80°34'30.878"W	4722.42	142.170	8.07	0.09	-8.07	
11929.00	89.690	155.620	6554.08	4590.33	-3816.51	2935.45	1698580.22	529176.66	39°56'52.523"N	80°34'30.363"W	4814.83	142.434	0.21	0.06	-0.20	
12025.00	89.690	157.240	6554.60	4686.14	-3904.49	2973.84	1698618.60	529088.68	39°56'51.658"N	80°34'29.857"W	4908.03	142.706	1.69	0.00	1.69	
12120.00	89.880	158.000	6554.95	4781.05	-3992.34	3010.01	1698654.77	529000.84	39°56'50.794"N	80°34'29.379"W	4999.89	142.986	0.82	0.20	0.80	
12215.00	89.850	157.510	6555.18	4875.98	-4080.27	3045.97	1698690.73	528912.91	39°56'49.929"N	80°34'28.904"W	5091.81	143.258	0.52	-0.03	-0.52	
12310.00	89.540	156.190	6555.68	4970.83	-4167.61	3083.32	1698728.08	528825.57	39°56'49.071"N	80°34'28.411"W	5184.19	143.505	1.43	-0.33	-1.39	
12405.00	89.510	159.200	6556.47	5065.74	-4255.49	3119.37	1698764.13	528737.70	39°56'48.207"N	80°34'27.934"W	5276.33	143.758	3.17	-0.03	3.17	
12499.00	89.600	162.020	6557.20	5159.72	-4344.15	3150.57	1698795.33	528649.04	39°56'47.334"N	80°34'27.520"W	5366.35	144.049	3.00	0.10	3.00	
12594.00	89.660	158.970	6557.81	5254.71	-4433.69	3182.29	1698827.04	528559.51	39°56'46.453"N	80°34'27.099"W	5457.52	144.331	3.21	0.06	-3.21	
12689.00	89.480	157.500	6558.53	5349.66	-4521.91	3217.51	1698862.27	528471.29	39°56'45.585"N	80°34'26.634"W	5549.78	144.567	1.56	-0.19	-1.55	
12785.00	89.290	159.110	6559.56	5445.61	-4611.10	3252.99	1698897.75	528382.11	39°56'44.708"N	80°34'26.164"W	5643.07	144.798	1.69	-0.20	1.68	
12880.00	89.320	160.580	6560.71	5540.60	-4700.27	3285.72	1698930.48	528292.94	39°56'43.831"N	80°34'25.730"W	5734.85	145.045	1.55	0.03	1.55	
12975.00	89.230	159.410	6561.91	5635.59	-4789.53	3318.22	1698962.97	528203.68	39°56'42.953"N	80°34'25.299"W	5826.68	145.286	1.24	-0.09	-1.23	
13070.00	89.230	159.050	6563.19	5730.57	-4878.35	3351.91	1698996.66	528114.87	39°56'42.079"N	80°34'24.853"W	5918.92	145.507	0.38	0.00	-0.38	
13165.00	89.320	159.440	6564.39	5825.55	-4967.18	3385.57	1699030.32	528026.04	39°56'41.205"N	80°34'24.408"W	6011.23	145.722	0.42	0.09	0.41	
13261.00	89.480	159.830	6565.40	5921.55	-5057.17	3418.98	1699063.72	527936.05	39°56'40.320"N	80°34'23.965"W	6104.46	145.939	0.44	0.17	0.41	
13355.00	89.510	162.620	6566.22	6015.51	-5146.16	3449.23	1699093.97	527847.07	39°56'39.444"N	80°34'23.563"W	6195.17	146.168	2.97	0.03	2.97	
13451.00	89.480	161.750	6567.07	6111.44	-5237.55	3478.59	1699123.34	527755.68	39°56'38.544"N	80°34'23.172"W	6287.49	146.409	0.91	-0.03	-0.91	
13546.00	89.630	159.410	6567.81	6206.42	-5327.14	3510.18	1699154.92	527666.10	39°56'37.663"N	80°34'22.753"W	6379.63	146.618	2.47	0.16	-2.46	
13640.00	89.570	157.890	6568.47	6300.39	-5414.68	3544.40	1699189.14	527578.56	39°56'36.802"N	80°34'22.300"W	6471.59	146.792	1.62	-0.06	-1.62	
13735.00	89.630	158.470	6569.13	6395.34	-5502.87	3579.71	1699224.45	527490.37	39°56'35.934"N	80°34'21.833"W	6564.75	146.955	0.61	0.06	0.61	
13831.00	89.630	160.940	6569.75	6491.33	-5592.90	3613.00	1699257.74	527400.34	39°56'35.049"N	80°34'21.392"W	6658.41	147.138	2.57	0.00	2.57	



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REFERENCE WELLPATH IDENTIFICATION				
Operator	HG ENERGY		Slot	Slot #01
Area	Marshall County, WV		Well	SHL27 EHS
Field	Marshall (NAD27 SP Northern Zone 4701)		Wellbore	SHL27 EHS AWB
Facility	SHL27 Pad			

WELLPATH DATA (206 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]	Build Rate [°/100ft]	Turn Rate [°/100ft]
13926.00	89.540	163.600	6570.44	6586.24	-5683.38	3641.93	1699286.67	527309.87	39°56'34.158"N	80°34'21.007"W	6750.15	147.348	2.80	-0.09	2.80
14021.00	89.570	164.420	6571.17	6681.01	-5774.70	3668.10	1699312.84	527218.55	39°56'33.259"N	80°34'20.657"W	6841.21	147.576	0.86	0.03	0.86
14116.00	89.630	165.140	6571.84	6775.68	-5866.37	3693.04	1699337.77	527126.89	39°56'32.356"N	80°34'20.323"W	6932.01	147.808	0.76	0.06	0.76
14211.00	89.570	161.620	6572.50	6870.49	-5957.38	3720.20	1699364.94	527035.88	39°56'31.460"N	80°34'19.960"W	7023.55	148.016	3.71	-0.06	-3.71
14306.00	89.600	160.500	6573.19	6965.47	-6047.23	3751.04	1699395.77	526946.03	39°56'30.575"N	80°34'19.550"W	7116.13	148.189	1.18	0.03	-1.18
14401.00	89.510	161.920	6573.93	7060.45	-6137.17	3781.64	1699426.37	526856.11	39°56'29.690"N	80°34'19.144"W	7208.72	148.359	1.50	-0.09	1.49
14497.00	89.450	160.410	6574.80	7156.42	-6228.02	3812.63	1699457.36	526765.26	39°56'28.796"N	80°34'18.732"W	7302.35	148.526	1.57	-0.06	-1.57
14592.00	89.540	157.890	6575.64	7251.40	-6316.79	3846.44	1699491.16	526676.49	39°56'27.923"N	80°34'18.284"W	7395.73	148.662	2.65	0.09	-2.65
14687.00	89.320	155.890	6576.58	7346.25	-6404.16	3883.72	1699528.45	526589.13	39°56'27.064"N	80°34'17.792"W	7489.76	148.766	2.12	-0.23	-2.11
14782.00	89.420	156.170	6577.63	7441.01	-6490.96	3922.31	1699567.04	526502.33	39°56'26.211"N	80°34'17.284"W	7584.00	148.857	0.31	0.11	0.29
14878.00	89.350	158.320	6578.66	7536.89	-6579.48	3959.44	1699604.16	526413.82	39°56'25.340"N	80°34'16.793"W	7678.97	148.961	2.24	-0.07	2.24
14973.00	89.350	160.060	6579.73	7631.87	-6668.27	3993.19	1699637.91	526325.03	39°56'24.467"N	80°34'16.347"W	7772.47	149.085	1.83	0.00	1.83
15068.00	89.510	162.520	6580.68	7726.84	-6758.24	4023.66	1699668.38	526235.06	39°56'23.581"N	80°34'15.942"W	7865.34	149.232	2.59	0.17	2.59
15163.00	89.510	160.580	6581.49	7821.79	-6848.35	4053.72	1699698.44	526144.96	39°56'22.694"N	80°34'15.542"W	7958.17	149.378	2.04	0.00	-2.04
15258.00	89.380	157.280	6582.41	7916.76	-6936.98	4087.87	1699732.58	526056.33	39°56'21.823"N	80°34'15.090"W	8051.85	149.490	3.48	-0.14	-3.47
15353.00	89.290	155.510	6583.51	8011.56	-7024.02	4125.90	1699770.62	525969.29	39°56'20.967"N	80°34'14.588"W	8146.16	149.570	1.87	-0.09	-1.86
15448.00	89.630	155.520	6584.41	8106.27	-7110.47	4165.27	1699809.99	525882.84	39°56'20.117"N	80°34'14.070"W	8240.65	149.638	0.36	0.36	0.01
15544.00	89.720	155.870	6584.95	8201.99	-7197.96	4204.79	1699849.50	525795.36	39°56'19.257"N	80°34'13.549"W	8336.12	149.708	0.38	0.09	0.36
15639.00	89.600	159.250	6585.52	8296.89	-7285.75	4241.04	1699885.75	525707.57	39°56'18.394"N	80°34'13.070"W	8430.22	149.796	3.56	-0.13	3.56
15734.00	89.480	161.320	6586.28	8391.88	-7375.18	4273.09	1699917.80	525618.15	39°56'17.514"N	80°34'12.645"W	8523.65	149.913	2.18	-0.13	2.18
15829.00	89.290	160.940	6587.30	8486.86	-7465.07	4303.81	1699948.52	525528.26	39°56'16.630"N	80°34'12.237"W	8616.85	150.035	0.45	-0.20	-0.40
15925.00	89.720	159.920	6588.13	8582.85	-7555.52	4335.97	1699980.67	525437.82	39°56'15.739"N	80°34'11.811"W	8711.28	150.149	1.15	0.45	-1.06
16020.00	89.660	157.590	6588.64	8677.82	-7644.05	4370.39	1700015.09	525349.29	39°56'14.869"N	80°34'11.355"W	8805.22	150.242	2.45	-0.06	-2.45
16115.00	89.480	157.150	6589.36	8772.72	-7731.74	4406.94	1700051.64	525261.61	39°56'14.006"N	80°34'10.873"W	8899.49	150.318	0.50	-0.19	-0.46
16194.00	89.480	162.030	6590.07	8851.69	-7805.75	4434.48	1700079.18	525187.60	39°56'13.278"N	80°34'10.508"W	8977.44	150.399	6.18	0.00	6.18
16219.00	89.480	162.030	6590.30	8876.67	-7829.53	4442.19	1700086.90	525163.82	39°56'13.044"N	80°34'10.405"W	9001.92	150.431	0.00	0.00	0.00



# Actual Wellpath Report

SHL27 EHS AWP Proj: 16219'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	HG ENERGY	Slot	Slot #01
Area	Marshall County, WV	Well	SHL27 EHS
Field	Marshall (NAD27 SP Northern Zone 4701)	Wellbore	SHL27 EHS AWB
Facility	SHL27 Pad		

HOLE & CASING SECTIONS - Ref Wellbore: SHL27 EHS AWB Ref Wellpath: SHL27 EHS AWP Proj: 16219'									
String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
30in Open Hole	25.00	60.00	35.00	25.00	60.00	0.00	0.00	0.02	-0.02
30in Conductor	25.00	60.00	35.00	25.00	60.00	0.00	0.00	0.02	-0.02
24in Open Hole	60.00	453.00	393.00	60.00	453.00	0.02	-0.02	-0.79	0.70
20in Casing Surface	25.00	453.00	428.00	25.00	453.00	0.00	0.00	-0.79	0.70
17.5in Open Hole	453.00	1041.00	588.00	453.00	1040.99	-0.79	0.70	-1.57	0.31
13.375in Casing Intermediate	25.00	1041.00	1016.00	25.00	1040.99	0.00	0.00	-1.57	0.31
12.25in Open Hole	1041.00	3084.00	2043.00	1040.99	3083.95	-1.57	0.31	2.47	-9.85
9.625in Casing Intermediate	25.00	3050.00	3025.00	25.00	3049.95	0.00	0.00	2.41	-9.76
8.5in Open Hole	3084.00	16219.00	13135.00	3083.95	6590.30	2.47	-9.85	-7829.53	4442.19
5.5in Casing Production	25.00	16219.00	16194.00	25.00	6590.30	0.00	0.00	-7829.53	4442.19

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SHL27 EHS LP - Rev-1	6489.00	465.52	1398.36	1697043.20	533458.50	39°57'34.655"N	80°34'50.759"W	point
SHL27 EHS EP - Rev-3	6492.59	250.50	1476.62	1697121.46	533243.48	39°57'32.539"N	80°34'49.720"W	point
SHL27 Parcel #3	6500.00	697.91	-2117.13	1693527.87	533690.88	39°57'36.531"N	80°35'35.937"W	polygon
SHL27 Parcel #4	6500.00	697.91	-2117.13	1693527.87	533690.88	39°57'36.531"N	80°35'35.937"W	polygon
SHL27 EHS BHL - Rev-1	6580.50	-7838.35	4420.70	1700065.40	525155.00	39°56'12.955"N	80°34'10.680"W	point



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REFERENCE WELLPATH IDENTIFICATION			
Operator	HG ENERGY	Slot	Slot #01
Area	Marshall County, WV	Well	SHL27 EHS
Field	Marshall (NAD27 SP Northern Zone 4701)	Wellbore	SHL27 EHS AWB
Facility	SHL27 Pad		

WELLPATH COMPOSITION - Ref Wellbore: SHL27 EHS AWB Ref Wellpath: SHL27 EHS AWP Proj: 16219'				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
25.00	1987.00	BHI Generic gyro - northseeking (Standard)	01 Inertial Gyro <12-1/4">(25'-1975')	SHL27 EHS AWB
1987.00	3017.00	BHI NaviTrak (Axial)	02 APS EM <12-1/4"> (1987')(2004'-3017')	SHL27 EHS AWB
3017.00	16194.00	BHI AutoTrak Curve (Short)	03 BH AT Curve <8-1/2"> (3017')(3071'-16194')	SHL27 EHS AWB
16194.00	16219.00	Blind Drilling (std)	Projection to bit	SHL27 EHS AWB



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Area	Marshall County, WV	Well	SHL27 EHS
Field	Marshall (NAD27 SP Northern Zone 4701)	Wellbore	SHL27 EHS AWB
Facility	SHL27 Pad		

COMMENTS
<p><b>Wellpath general comments</b> API: 47-051-01939-0000 BH Job #: 9071211 Rig: Patterson 347 Duration: 3/17/2018-3/30/2018 Inertial Gyro &lt;12-1/4"&gt; (25'-1975') APS EM &lt;12-1/4"&gt; (1987')(2004'-3017') BH AT Curve &lt;8-1/2"&gt; (3017')(3071'-16194') Projected MD at TD: 16219'</p>