

Actual Wellpath Report
 Long 408 S-2H AWP Prof: 13541'
 Page 1 of 9



Received
 Office of Oil & Gas
 JUL 05 2016

07/08/2016

REFERENCE WELLPATH IDENTIFICATION			
Operator	HG ENERGY	Slot	Slot #02
Area	Wetzel County, WV	Well	Long 408 S-2H
Field	Wetzel (UTM 17N NAD 27)	Wellbore	Long 408 S-2H AWP
Facility	Long 408 Pad		

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 4.0.1
North Reference	Grid	User	Stewardt
Scale	0.99961	Report Generated	5/16/2014 at 9:51:36 AM
Convergence at slot	0.21° East	Database/Source file	WA_PA/Long_408_S-2H_AWP.xml

WELLPATH LOCATION						
Slot Location	Local coordinates		Grid coordinates		Geographic coordinates	
	North [ft]	East [ft]	Easting [US ft]	Northing [US ft]	Latitude	Longitude
Facility Reference Pt	-3.10	-14.61	1731565.10	14374538.50	39°35'00.466"N	80°40'35.382"W
Field Reference Pt			1731579.70	14374541.60	39°35'00.496"N	80°40'35.195"W
			1731860.70	14374712.90	39°35'02.180"N	80°40'31.597"W

WELLPATH DATUM			
Calculation method	Minimum curvature	HAD 105 (RT) to Facility Vertical Datum	17.00ft
Horizontal Reference Pt	Slot	HAD 105 (RT) to Mean Sea Level	1358.50ft
Vertical Reference Pt	HAD 105 (RT)	HAD 105 (RT) to Mud Line at Slot (Slot #02)	17.00ft
MID Reference Pt	HAD 105 (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	125.00°

Actual Wellpath Report

Long 408 S-2H AWP Proj: 135411
Page 2 of 9



JUL 05 2016

07/08/2016

OPERATOR		WELLBORE		SLOT #02	
Operator	HG ENERGY	Well	Wellbore	Long 408 S-2H	Long 408 S-2H AWP
Area	Wetzel County, WV				
Field	Wetzel (UTM 17N NAD 27)				
Facility	Long 408 Pad				

WELLPATH DATA (210 stations) † = interpolated/extrapolated station															
MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DIS	Build Rate	Turn Rate
ft	°	°	ft	ft	ft	ft	ft	ft	°	°	ft	°	°/100ft	°/100ft	°/100ft
0.00†	0.000	348.230	0.00	0.00	0.00	0.00	1731565.10	14374538.50	39°35'00.466"N	80°40'35.382"W	0.00	0.000	0.00	0.00	0.00
17.00	0.000	348.230	17.00	0.00	0.00	0.00	1731565.10	14374538.50	39°35'00.466"N	80°40'35.382"W	0.00	0.000	0.00	0.00	0.00
100.00	0.510	348.230	100.00	-0.27	0.36	-0.08	1731565.02	14374538.86	39°35'00.469"N	80°40'35.383"W	0.37	348.230	0.61	0.61	0.00
200.00	0.430	342.980	200.00	-0.89	1.16	-0.28	1731564.82	14374539.66	39°35'00.477"N	80°40'35.385"W	1.19	346.575	0.09	-0.08	-5.25
300.00	0.680	346.870	299.99	-1.63	2.09	-0.52	1731564.58	14374540.99	39°35'00.487"N	80°40'35.388"W	2.16	346.031	0.25	0.25	3.89
400.00	0.390	351.900	399.99	-2.30	3.01	-0.70	1731564.40	14374541.51	39°35'00.496"N	80°40'35.391"W	3.09	346.838	0.29	-0.29	5.03
500.00	0.420	355.970	499.98	-2.76	3.71	-0.78	1731564.32	14374542.21	39°35'00.502"N	80°40'35.392"W	3.79	348.171	0.04	0.03	4.07
600.00	0.570	7.700	599.98	-3.22	4.57	-0.74	1731564.36	14374543.07	39°35'00.511"N	80°40'35.391"W	4.63	350.856	0.18	0.15	11.82
700.00	0.340	348.160	699.98	-3.67	5.35	-0.73	1731564.37	14374543.85	39°35'00.519"N	80°40'35.391"W	5.40	352.245	0.27	-0.23	-19.63
800.00	0.270	335.860	799.98	-4.09	5.86	-0.89	1731564.21	14374544.35	39°35'00.524"N	80°40'35.393"W	5.92	351.597	0.10	-0.07	-12.30
900.00	0.110	17.440	899.97	-4.32	6.16	-0.95	1731564.15	14374544.66	39°35'00.527"N	80°40'35.394"W	6.24	351.205	0.20	-0.16	-11.58
1000.00	0.296	19.190	999.97	-4.41	6.49	-0.84	1731564.26	14374545.41	39°35'00.530"N	80°40'35.392"W	6.55	352.615	0.18	0.18	1.75
1100.00	0.350	24.500	1099.97	-4.54	7.01	-0.63	1731564.47	14374545.51	39°35'00.538"N	80°40'35.390"W	7.04	354.850	0.07	0.06	5.31
1195.00	0.350	33.650	1194.97	-4.60	7.52	-0.35	1731564.75	14374545.61	39°35'00.540"N	80°40'35.386"W	7.53	357.328	0.06	0.00	9.63
1361.00	0.600	69.530	1360.97	-4.12	8.24	0.74	1731565.84	14374546.74	39°35'00.547"N	80°40'35.372"W	8.28	5.161	0.23	0.15	21.61
1406.00	0.516	104.240	1405.96	-3.80	8.28	1.16	1731566.26	14374546.77	39°35'00.548"N	80°40'35.367"W	8.36	7.974	0.76	-0.20	77.13
1450.00	1.040	128.530	1449.96	-3.22	7.98	1.66	1731566.76	14374546.48	39°35'00.545"N	80°40'35.360"W	8.15	11.762	1.39	1.20	55.70
1492.00	1.240	152.370	1491.95	-2.43	7.34	2.17	1731567.27	14374545.84	39°35'00.538"N	80°40'35.354"W	7.65	16.475	1.21	0.48	56.76
1536.00	1.800	158.400	1535.94	-1.43	6.27	2.65	1731567.74	14374544.77	39°35'00.528"N	80°40'35.348"W	6.81	22.861	1.32	1.27	13.70
1581.00	2.140	164.760	1580.91	-0.20	4.81	3.13	1731568.23	14374543.31	39°35'00.513"N	80°40'35.342"W	5.73	33.041	0.90	0.76	14.13
1624.00	2.900	172.420	1623.87	1.16	2.95	3.48	1731568.58	14374541.45	39°35'00.495"N	80°40'35.337"W	4.57	49.681	1.93	1.77	17.81
1669.00	3.660	172.680	1668.79	2.89	0.40	3.81	1731568.91	14374538.90	39°35'00.470"N	80°40'35.333"W	3.84	83.996	1.69	1.69	0.58
1713.00	4.100	171.980	1712.69	4.91	-2.55	4.21	1731569.31	14374535.95	39°35'00.440"N	80°40'35.328"W	4.92	121.181	1.01	1.00	-1.59
1757.00	4.170	173.160	1756.58	7.05	-5.70	4.62	1731569.72	14374532.81	39°35'00.409"N	80°40'35.323"W	7.34	140.935	0.25	0.16	-2.68
1798.00	4.380	169.820	1797.46	9.16	-8.72	5.08	1731570.17	14374529.79	39°35'00.379"N	80°40'35.317"W	10.09	149.781	0.79	0.51	-8.15
1842.00	4.290	160.420	1841.34	11.69	-11.92	5.93	1731571.05	14374526.49	39°35'00.348"N	80°40'35.307"W	13.31	153.569	1.63	-0.20	-21.36
1885.00	4.590	156.360	1884.21	14.47	-15.01	7.15	1731572.25	14374523.49	39°35'00.317"N	80°40'35.291"W	16.63	154.519	1.01	0.70	-9.44
1926.00	4.750	163.230	1925.07	17.21	-18.14	8.30	1731573.40	14374520.37	39°35'00.286"N	80°40'35.277"W	19.95	155.409	1.42	0.39	16.76
1967.00	4.690	165.100	1965.93	19.82	-21.39	9.22	1731574.32	14374517.12	39°35'00.254"N	80°40'35.265"W	23.29	156.671	0.40	-0.15	4.56
2010.00	5.090	170.020	2008.78	22.51	-24.96	10.01	1731575.10	14374513.55	39°35'00.219"N	80°40'35.255"W	26.89	158.159	1.35	0.93	11.44

Actual Wellpath Report

Long 408 S-2H AWP Proj: 13541'
Page 3 of 9



Office of Oil & Gas

JUL 05 2016

07/08/2016

REFERENCE WELL IDENTIFICATION		Operator	Area	Field	Facility	Slot	Slot #02
		HIG ENERGY	Wetzel County, WV	Wetzel (UTM 17N NAD 27)	Long 408 Pad	Well	Long 408 S-2H
						Wellbore	Long 408 S-2H AWP

WELLPATH DATA (210 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]
2096.00	4.860	176.220	2094.45	27.49	-32.36	10.91	1731576.00	14374506.16	39°35'00.146"N	80°40'35.244"W	34.14	161.372	0.68	-0.27	7.21
2137.00	4.620	172.080	2135.31	29.70	-35.72	11.25	1731576.34	14374502.79	39°35'00.112"N	80°40'35.240"W	37.45	162.522	1.02	-0.59	-10.10
2181.00	4.270	164.130	2179.18	32.18	-39.05	11.94	1731577.04	14374499.46	39°35'00.079"N	80°40'35.231"W	40.84	162.999	1.61	-0.80	-18.07
2226.00	3.270	156.350	2224.08	34.58	-41.84	12.91	1731578.01	14374496.67	39°35'00.052"N	80°40'35.219"W	43.79	162.848	2.49	-2.22	-17.29
2271.00	2.720	154.480	2269.02	36.60	-43.98	13.89	1731578.98	14374494.54	39°35'00.031"N	80°40'35.207"W	46.12	162.475	1.24	-1.22	-4.16
2314.00	2.040	156.340	2311.99	38.15	-45.60	14.64	1731579.73	14374492.92	39°35'00.015"N	80°40'35.197"W	47.89	162.207	1.59	-1.58	4.33
2358.00	1.670	153.280	2355.96	39.38	-46.89	15.24	1731580.33	14374491.63	39°35'00.002"N	80°40'35.189"W	49.31	161.998	0.87	-0.84	-6.95
2402.00	1.830	146.320	2399.94	40.60	-48.05	15.92	1731581.01	14374490.47	39°34'59.990"N	80°40'35.181"W	50.62	161.673	0.60	-0.36	-15.82
2444.00	1.960	144.420	2441.92	41.90	-49.19	16.71	1731581.80	14374489.33	39°34'59.979"N	80°40'35.171"W	51.95	161.243	0.34	0.31	-4.52
2488.00	1.430	138.250	2485.90	43.14	-50.21	17.51	1731582.60	14374488.31	39°34'59.969"N	80°40'35.161"W	53.18	160.777	1.27	-1.20	-14.02
2576.00	0.480	125.780	2573.89	44.58	-51.25	18.54	1731583.63	14374487.27	39°34'59.959"N	80°40'35.143"W	54.50	160.112	1.10	-1.08	-14.17
2660.00	0.530	11.040	2657.89	44.78	-51.07	18.90	1731583.98	14374487.45	39°34'59.960"N	80°40'35.143"W	54.46	159.693	1.01	0.06	-136.60
2751.00	1.220	354.590	2748.87	43.98	-49.70	18.89	1731583.98	14374488.82	39°34'59.974"N	80°40'35.143"W	53.16	159.189	0.80	0.76	-18.08
2839.00	1.880	331.480	2836.84	42.08	-47.49	18.11	1731583.20	14374491.02	39°35'00.000"N	80°40'35.153"W	50.83	159.127	1.02	0.75	-26.26
2924.00	1.840	323.470	2921.80	39.53	-45.17	16.63	1731581.73	14374493.34	39°35'00.019"N	80°40'35.172"W	48.14	159.786	0.31	-0.05	-9.42
3009.00	1.040	277.820	3006.77	37.55	-43.97	15.06	1731580.15	14374494.55	39°35'00.031"N	80°40'35.192"W	46.48	161.098	1.57	-0.94	-53.71
3096.00	1.290	265.340	3093.75	36.10	-43.94	13.30	1731578.39	14374494.63	39°35'00.032"N	80°40'35.214"W	45.91	163.163	0.41	0.29	-14.34
3185.00	0.910	281.580	3182.74	34.68	-43.88	11.61	1731575.72	14374494.78	39°35'00.033"N	80°40'35.236"W	45.39	165.185	0.55	-0.43	18.23
3271.00	0.420	271.560	3268.73	33.79	-43.74	10.62	1731575.72	14374494.69	39°35'00.032"N	80°40'35.254"W	45.01	166.348	0.58	-0.57	-11.65
3364.00	0.200	229.880	3357.73	33.18	-43.83	10.18	1731575.11	14374494.55	39°35'00.031"N	80°40'35.256"W	44.99	166.926	0.34	0.34	-46.83
3402.00	0.390	229.760	3399.73	33.42	-43.97	10.01	1731575.11	14374494.69	39°35'00.027"N	80°40'35.263"W	45.09	167.171	0.45	0.45	-0.29
3498.00	0.450	235.080	3495.73	33.21	-44.39	9.47	1731574.56	14374494.13	39°35'00.027"N	80°40'35.263"W	45.38	167.958	0.06	0.04	5.54
3540.00	0.290	252.900	3537.73	33.09	-44.51	9.24	1731574.32	14374494.01	39°35'00.026"N	80°40'35.266"W	45.46	168.275	0.42	-0.33	-42.43
3625.00	0.330	215.200	3622.73	32.96	-44.76	8.89	1731573.99	14374493.75	39°35'00.023"N	80°40'35.270"W	46.61	168.761	0.23	0.04	-44.35
3713.00	0.310	200.420	3710.72	33.02	-45.19	8.67	1731573.99	14374492.94	39°35'00.019"N	80°40'35.273"W	46.01	169.139	0.09	-0.01	-16.80
3799.00	0.240	193.220	3796.72	33.15	-45.58	8.55	1731573.64	14374492.50	39°35'00.011"N	80°40'35.277"W	46.38	169.379	0.09	-0.08	-8.37
3886.00	0.400	210.290	3883.72	33.24	-46.02	8.35	1731573.45	14374492.09	39°35'00.007"N	80°40'35.281"W	47.13	170.109	0.19	0.18	19.62
3973.00	0.240	214.680	3970.72	33.26	-46.43	8.10	1731573.19	14374492.09	39°35'00.004"N	80°40'35.284"W	47.32	170.504	0.16	0.03	5.05
4060.00	0.270	245.160	4057.72	33.16	-46.67	7.81	1731572.90	14374491.85	39°35'00.004"N	80°40'35.290"W	47.32	171.056	0.15	0.12	-16.53
4149.00	0.380	230.450	4146.72	32.98	-46.94	7.39	1731572.49	14374491.57	39°35'00.002"N	80°40'35.290"W	47.52	171.056	0.15	0.12	-16.53

Actual Wellpath Report

Long 408 S-2H AWP Proj: 13541'
Page 4 of 9



JUL 05 2016

07/08/2016

REFERENCE WELLPATH INFORMATION		Operator	Slot	Slot #02
HG ENERGY		Well	Long 408 S-2H	
Area		Well	Long 408 S-2H	
Field		Wellbore	Long 408 S-2H AWP	
Facility		Long 408 Pad		

WELLPATH DATA (210 stations)

MD	Inclination	Azimuth	IVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Bond Rate	Turn Rate
[ft]	[°]	[°]	[ft]	[ft]	[ft]	[ft]	[ft]	[ft]			[ft]	[°]	[%/100ft]	[%/100ft]	[°/100ft]
4236.00	0.550	215.610	4233.72	32.90	-17.47	6.92	1731572.02	14374491.05	39°35'00.000"N	80°40'35.296"W	47.97	171.702	0.24	0.20	-17.06
4324.00	0.330	211.110	4321.71	32.91	-18.04	6.54	1731571.64	14374490.48	39°34'59.991"N	80°40'35.301"W	48.48	172.250	0.23	-0.23	-5.11
4414.00	0.160	227.220	4411.71	32.90	-18.36	6.30	1731571.60	14374490.16	39°34'59.988"N	80°40'35.304"W	48.77	172.573	0.22	-0.21	-17.90
4502.00	0.380	77.340	4499.71	33.07	-18.38	6.50	1731571.60	14374490.14	39°34'59.987"N	80°40'35.301"W	48.82	172.350	0.60	0.25	-170.32
4591.00	0.660	45.820	4588.71	33.37	-17.96	7.15	1731572.25	14374490.56	39°34'59.992"N	80°40'35.293"W	48.49	171.516	0.44	0.31	-35.42
4678.00	1.130	47.870	4675.70	33.65	-17.04	8.15	1731573.25	14374491.48	39°35'00.001"N	80°40'35.280"W	47.71	170.170	0.54	0.54	2.36
4768.00	1.760	42.540	4765.67	34.03	-15.42	9.74	1731574.84	14374493.10	39°35'00.017"N	80°40'35.260"W	46.45	167.894	0.72	0.70	-5.92
4853.00	3.850	19.630	4850.56	33.45	-11.77	11.58	1731576.68	14374496.74	39°35'00.053"N	80°40'35.236"W	43.35	164.501	2.74	2.46	-26.95
4943.00	7.090	358.200	4940.15	29.32	-33.37	12.42	1731577.52	14374505.14	39°35'00.136"N	80°40'35.225"W	35.61	159.579	4.20	3.60	-23.81
4986.00	8.200	354.930	4982.77	25.75	-27.66	12.07	1731577.17	14374510.85	39°35'00.192"N	80°40'35.229"W	30.18	156.428	2.77	2.58	-7.60
5029.00	10.130	342.190	5025.22	20.77	-21.01	10.64	1731575.74	14374517.50	39°35'00.258"N	80°40'35.247"W	23.55	153.134	6.49	4.49	-29.03
5120.00	7.860	335.070	5115.10	9.01	-7.74	5.57	1731570.67	14374530.76	39°35'00.389"N	80°40'35.311"W	9.54	144.269	2.77	-2.49	-7.82
5209.00	2.000	287.010	5203.75	2.25	-1.76	1.52	1731566.62	14374536.74	39°35'00.448"N	80°40'35.363"W	2.33	139.328	7.52	-6.58	-54.00
5297.00	0.770	191.210	5291.73	1.03	-1.90	-0.07	1731565.03	14374536.61	39°35'00.447"N	80°40'35.383"W	1.90	182.035	2.52	-1.40	-108.86
5383.00	0.660	162.760	5377.73	1.66	-2.94	-0.03	1731565.07	14374535.57	39°35'00.437"N	80°40'35.382"W	2.94	180.642	0.43	-0.13	-33.08
5470.00	1.760	140.830	5464.71	3.34	-4.45	0.96	1731566.06	14374534.05	39°35'00.422"N	80°40'35.370"W	4.55	167.831	1.35	1.26	-25.21
5556.00	1.890	138.000	5550.66	5.90	-6.53	2.74	1731567.84	14374531.98	39°35'00.401"N	80°40'35.347"W	7.08	157.209	0.18	0.54	-3.29
5645.00	2.370	127.520	5639.60	9.26	-8.74	5.18	1731570.28	14374529.76	39°35'00.379"N	80°40'35.316"W	10.16	149.322	0.69	0.54	-11.78
5818.00	2.910	161.270	5812.43	16.37	-15.08	9.43	1731574.53	14374523.43	39°35'00.316"N	80°40'35.262"W	17.78	147.971	0.93	0.31	19.51
5905.00	4.400	158.250	5899.23	20.95	-20.27	11.38	1731576.47	14374518.24	39°35'00.265"N	80°40'35.203"W	23.24	150.692	1.73	1.71	-3.47
5994.00	4.090	152.850	5988.01	26.61	-26.26	14.09	1731579.19	14374512.25	39°35'00.206"N	80°40'35.177"W	29.80	151.785	0.57	-0.35	-6.07
6082.00	2.410	161.140	6075.86	30.88	-30.81	16.12	1731581.21	14374507.71	39°35'00.111"N	80°40'35.172"W	34.77	152.377	1.98	-1.91	9.42
6167.00	4.520	181.860	6160.70	34.15	-35.85	16.59	1731581.68	14374502.67	39°35'00.079"N	80°40'35.178"W	39.50	155.164	2.85	2.48	24.38
6203.00	7.140	191.490	6196.52	35.82	-39.46	16.10	1731581.19	14374499.06	39°35'00.013"N	80°40'35.178"W	42.61	157.805	7.74	7.28	26.75
6248.00	9.530	195.910	6241.04	38.15	-45.78	14.52	1731579.61	14374492.74	39°35'00.019"N	80°40'35.190"W	48.03	162.403	5.49	5.31	9.82
6292.00	11.290	194.420	6284.31	40.86	-53.46	12.45	1731577.54	14374485.06	39°34'59.937"N	80°40'35.225"W	54.89	166.891	4.05	4.00	-3.39
6336.00	13.300	192.470	6327.30	44.31	-62.57	10.28	1731575.38	14374475.95	39°34'59.847"N	80°40'35.251"W	63.41	170.667	4.66	4.57	-4.43
6380.00	16.110	190.820	6369.86	48.75	-73.51	8.04	1731573.14	14374465.02	39°34'59.739"N	80°40'35.283"W	73.95	173.755	6.46	6.39	-3.75
6424.00	19.730	188.930	6411.71	54.52	-86.85	5.74	1731570.84	14374451.69	39°34'59.607"N	80°40'35.313"W	87.04	176.216	8.33	8.23	-4.30
6467.00	23.850	187.190	6451.63	61.77	-102.65	3.53	1731568.63	14374435.89	39°34'59.451"N	80°40'35.342"W	102.71	178.031	9.70	9.58	-4.05

Actual Wellpath Report

Long 408 S-2H AWP Proj: 13541'
Page 5 of 9



JUL 05 2016

WELLPATH IDENTIFICATION

Operator	HG ENERGY	Slot	Slot #02
Area	Wetzel County, WV	Well	Long 408 S-2H
Field	Wetzel (UTM 17N NAD 27)	Wellbore	Long 408 S-2H AWP
Facility	Long 408 Pad		

WELLPATH DATA (210 stations)

MDI	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	D/S	Build Rate	Turn Rate
ft	°	°	ft	ft	ft	ft	ft	ft			ft	°	°/100ft	°/100ft	°/100ft
6510.00	28.770	185.830	6490.17	70.877	-121.58	1.39	1731566.49	14374416.97	39°34'59.264"N	80°40'35.370"W	121.59	179.346	11.53	11.44	-3.16
6554.00	34.500	185.520	6527.61	82.18	-144.54	-0.89	1731561.67	14374367.68	39°34'58.777"N	80°40'35.434"W	144.54	180.352	13.03	13.02	-0.70
6598.00	39.500	185.500	6562.74	95.21	-170.89	-3.43	1731558.95	14374339.63	39°34'58.500"N	80°40'35.470"W	170.92	181.150	11.36	11.36	-0.05
6640.00	44.880	185.580	6593.85	109.07	-198.95	-6.15	1731555.58	14374308.24	39°34'57.857"N	80°40'35.572"W	199.05	181.771	12.81	12.81	0.19
6683.00	49.670	186.630	6623.02	124.32	-230.35	-9.52	1731551.14	14374274.57	39°34'57.236"N	80°40'35.638"W	230.55	182.367	11.28	11.14	2.04
6728.00	48.380	188.420	6652.53	140.00	-264.03	-13.97	1731546.12	14374242.83	39°34'56.923"N	80°40'35.712"W	264.40	183.028	4.15	-2.87	3.98
6771.00	48.420	189.540	6681.07	154.11	-295.79	-18.99	1731540.40	14374180.04	39°34'56.613"N	80°40'35.917"W	296.40	183.672	1.95	0.09	2.60
6813.00	49.190	191.310	6708.74	167.25	-326.87	-24.71	1731533.27	14374148.72	39°34'56.320"N	80°40'36.040"W	327.80	184.322	3.66	1.83	4.21
6856.00	49.120	194.040	6736.86	179.60	-358.60	-31.84	1731529.60	14374118.96	39°34'55.716"N	80°40'36.177"W	360.01	185.074	4.81	-0.16	6.35
6899.00	49.160	196.910	6765.00	190.47	-389.93	-40.52	1731524.73	14374088.32	39°34'55.408"N	80°40'36.329"W	392.03	185.932	5.05	0.09	6.67
6940.00	50.140	198.470	6791.54	199.76	-419.70	-50.01	1731515.10	14374056.58	39°34'55.111"N	80°40'36.496"W	422.67	186.796	3.76	2.39	3.80
6982.00	51.020	199.720	6818.22	208.65	-450.36	-60.63	1731492.73	14374026.51	39°34'54.794"N	80°40'36.696"W	454.42	187.667	3.11	0.21	2.98
7024.00	51.110	202.530	6844.61	216.48	-480.83	-72.40	1731478.84	14373996.43	39°34'54.495"N	80°40'37.083"W	486.25	188.563	5.21	0.16	6.69
7068.00	51.080	205.530	6872.25	223.06	-512.12	-86.29	1731464.20	14373964.43	39°34'54.173"N	80°40'37.247"W	519.34	189.564	4.95	-0.07	6.36
7111.00	51.110	206.590	6899.26	228.31	-542.20	-100.94	1731448.33	14373934.13	39°34'53.835"N	80°40'37.358"W	551.52	190.545	2.28	0.07	2.93
7157.00	51.100	206.070	6928.14	233.71	-574.29	-116.82	1731421.44	14373901.51	39°34'53.501"N	80°40'37.400"W	586.05	191.498	3.71	-0.02	-1.13
7200.00	51.120	204.020	6955.14	239.50	-604.61	-130.98	1731412.86	14373883.49	39°34'53.107"N	80°40'37.381"W	618.64	192.224	9.35	0.16	-4.77
7245.00	51.190	198.620	6983.37	247.78	-637.24	-143.72	1731409.68	14373853.49	39°34'52.783"N	80°40'37.323"W	653.24	192.709	9.35	0.16	-12.00
7290.00	52.160	189.620	7011.31	260.36	-671.42	-152.29	1731411.35	14373823.66	39°34'52.431"N	80°40'37.236"W	688.47	192.780	15.83	2.16	-20.00
7333.00	52.670	181.150	7037.57	277.18	-705.29	-155.48	1731415.95	14373792.63	39°34'51.092"N	80°40'36.641"W	722.22	192.432	15.65	1.19	-19.70
7333.00	53.410	174.100	7067.66	301.41	-745.16	-153.81	1731451.82	14373752.36	39°34'51.430"N	80°40'36.835"W	760.87	191.663	11.36	1.48	-14.10
7333.00	53.970	169.880	7091.94	323.94	-777.87	-149.21	1731441.61	14373725.46	39°34'51.092"N	80°40'36.641"W	792.05	190.858	8.41	1.37	-10.29
7469.00	53.410	168.000	7118.58	330.06	-813.46	-142.25	1731431.34	14373690.88	39°34'50.777"N	80°40'36.433"W	825.80	189.919	7.51	-1.18	-4.18
7513.00	54.200	164.530	7144.56	376.75	-847.95	-133.82	1731451.82	14373654.21	39°34'50.441"N	80°40'36.184"W	858.44	188.966	6.60	1.73	-7.89
7556.00	54.990	160.690	7169.48	404.51	-881.38	-123.34	1731469.95	14373590.07	39°34'50.109"N	80°40'36.413"W	889.97	187.966	8.29	1.84	-8.93
7599.00	57.070	157.200	7216.61	434.04	-914.65	-110.52	1731486.32	14373558.27	39°34'50.777"N	80°40'36.433"W	921.30	186.890	7.78	1.85	-6.16
7643.00	59.600	154.490	7236.62	466.24	-948.81	-95.19	1731506.01	14373524.37	39°34'50.441"N	80°40'35.917"W	953.57	185.729	9.33	7.78	-5.75
7684.00	62.000	151.080	7256.57	497.90	-980.62	-78.81	1731526.99	14373491.29	39°34'50.113"N	80°40'35.917"W	983.78	184.595	9.33	5.85	-8.32
7728.00	64.070	148.640	7256.57	533.48	-1014.52	-59.12					1016.24	183.335	6.82	4.70	-5.55
7771.00	67.430	146.610	7274.23	569.66	-1047.62	-38.12					1048.32	182.084	8.92	7.81	-4.72

Actual Wellpath Report

Long 408 S-21H AWP Proj: 13541'
Page 6 of 9



JUL 05 2016

07/08/2016

Operator	IG ENERGY	Slot	Slot #02
Area	Wetzel County, WV	Well	Long 408 S-21H
Field	Wetzel (UTM 17N NAD 27)	Wellbore	Long 408 S-21H AWP
Facility	Long 408 Pad		

WELLPATH DATA (210 stations)															
MDI	Inclination	Azimuth	TVD	Vert Sec	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate
ft	°	°	ft	ft	ft	ft	ft	ft	°	°	ft	°	ft/100ft	ft/100ft	ft/100ft
7815.00	73.360	145.290	7288.99	608.36	-1081.94	-14.92	1731550.19	14373456.98	39°34'49.773"N	80°40'35.622"W	1082.05	180.790	13.77	13.48	-3.00
7860.00	79.440	145.190	7299.56	649.38	-1117.86	10.01	1731575.10	14373421.08	39°34'49.417"N	80°40'35.305"W	1117.91	179.487	13.51	13.51	-0.22
7903.00	86.670	145.150	7304.76	689.42	-1152.87	34.37	1731599.46	14373386.08	39°34'49.071"N	80°40'34.996"W	1153.39	178.292	16.81	16.81	-0.09
7948.00	92.590	144.190	7305.05	731.77	-1189.57	60.38	1731625.46	14373349.40	39°34'48.707"N	80°40'34.665"W	1191.10	177.094	13.33	13.16	-2.13
7990.00	92.860	143.810	7303.05	771.44	-1223.51	85.04	1731650.11	14373315.47	39°34'48.371"N	80°40'34.352"W	1226.46	176.024	11.11	0.64	-0.90
8032.00	90.280	140.220	7301.90	811.57	-1256.59	110.87	1731675.93	14373282.40	39°34'48.043"N	80°40'34.024"W	1261.47	174.958	10.52	-6.14	-8.55
8073.00	90.150	134.740	7301.75	851.59	-1286.80	138.57	1731703.62	14373252.21	39°34'47.743"N	80°40'33.671"W	1294.24	173.854	13.37	-0.32	-13.37
8115.00	89.290	129.280	7301.95	893.26	-1314.90	169.77	1731734.80	14373224.12	39°34'47.464"N	80°40'33.274"W	1325.81	172.643	13.16	-2.05	-13.00
8202.00	88.860	117.670	7303.36	980.07	-1362.80	242.20	1731807.21	14373176.24	39°34'46.988"N	80°40'32.351"W	1384.15	169.922	13.35	-0.49	-13.34
8287.00	89.380	113.700	7304.67	1063.92	-1399.62	318.78	1731883.75	14373139.42	39°34'46.622"N	80°40'31.375"W	1435.47	167.169	4.71	0.61	-4.67
8372.00	89.070	113.140	7305.86	1147.18	-1433.41	396.77	1731961.71	14373105.66	39°34'46.285"N	80°40'30.381"W	1487.31	164.528	0.79	-0.44	-0.66
8459.00	89.050	115.360	7307.33	1232.64	-1469.13	476.08	1732040.99	14373060.95	39°34'45.920"N	80°40'29.369"W	1544.34	162.045	2.55	0.05	2.55
8546.00	89.140	118.980	7308.71	1318.80	-1508.85	553.45	1732118.34	14373020.25	39°34'45.534"N	80°40'28.383"W	1607.15	159.857	4.16	0.10	4.16
8632.00	89.680	124.200	7309.66	1404.61	-1553.88	626.68	1732191.53	14372985.23	39°34'44.842"N	80°40'27.450"W	1675.49	158.036	6.09	0.53	6.07
8675.00	89.660	125.390	7309.93	1447.61	-1578.41	661.99	1732226.83	14372960.70	39°34'44.582"N	80°40'27.000"W	1711.61	157.247	2.77	0.14	2.77
8720.00	89.540	125.810	7310.25	1492.61	-1604.61	698.58	1732263.40	14372934.52	39°34'44.056"N	80°40'26.534"W	1750.08	156.474	0.97	-0.27	0.93
8807.00	90.550	129.340	7310.18	1579.51	-1657.65	767.52	1732332.32	14372881.50	39°34'43.536"N	80°40'24.787"W	1826.72	155.155	4.22	1.16	4.06
8893.00	90.620	125.570	7309.30	1665.41	-1709.94	835.77	1732400.54	14372829.23	39°34'43.013"N	80°40'24.334"W	1903.26	153.952	4.38	0.08	-4.38
8973.00	90.800	126.540	7308.76	1709.40	-1735.84	871.34	1732436.10	14372803.35	39°34'43.279"N	80°40'24.000"W	1942.26	153.345	2.24	0.41	2.20
8982.00	90.550	126.540	7308.23	1754.38	-1762.63	907.49	1732472.24	14372776.57	39°34'43.013"N	80°40'23.873"W	1982.52	152.758	0.56	-0.56	0.00
9022.00	90.400	126.540	7307.89	1794.36	-1786.44	939.63	1732504.36	14372752.76	39°34'42.777"N	80°40'23.464"W	2018.48	152.257	0.37	-0.37	0.00
9065.00	89.480	125.350	7307.94	1837.35	-1811.68	974.44	1732539.16	14372727.53	39°34'42.526"N	80°40'23.020"W	2057.12	151.726	3.50	-2.14	-2.77
9109.00	89.540	124.680	7308.31	1881.35	-1836.93	1010.48	1732575.18	14372702.29	39°34'42.275"N	80°40'22.561"W	2096.51	151.185	1.53	0.14	-1.52
9152.00	89.510	123.770	7308.57	1924.35	-1861.11	1046.03	1732610.72	14372678.12	39°34'42.035"N	80°40'22.109"W	2134.93	150.662	2.12	-0.07	-2.12
9197.00	89.600	123.800	7309.08	1969.33	-1886.13	1083.43	1732646.18	14372653.11	39°34'41.786"N	80°40'21.632"W	2175.16	150.126	0.21	0.20	0.07
9247.00	89.230	121.830	7309.42	2014.31	-1910.85	1121.03	1732685.69	14372628.40	39°34'41.540"N	80°40'21.153"W	2215.41	149.601	2.31	-0.82	-2.16
9283.00	89.350	121.260	7309.99	2055.25	-1932.60	1155.78	1732720.43	14372606.66	39°34'41.324"N	80°40'20.710"W	2251.84	149.119	3.84	0.29	-3.83
9329.00	89.200	120.400	7310.57	2101.13	-1956.17	1195.28	1732759.91	14372583.10	39°34'41.090"N	80°40'20.207"W	2292.44	148.574	1.90	-0.33	-1.87
9371.00	89.140	119.510	7311.18	2142.96	-1977.14	1231.66	1732796.28	14372562.14	39°34'40.881"N	80°40'19.743"W	2329.39	148.079	2.12	-0.14	-2.12
9414.00	89.110	120.090	7311.84	2185.78	-1998.51	1268.97	1732833.57	14372540.78	39°34'40.669"N	80°40'19.268"W	2367.34	147.586	1.35	-0.07	1.35

Actual Wellpath Report

Long 408 S-2H AWP Proj: 13541'
Page 7 of 9



Received
Office of Oil & Gas

JUL 05 2016

07/08/2016

OPERATOR		HG ENERGY	
AREA		Wetzel County, WV	
FIELD		Wetzel (UTM 17N NAD 27)	
FACILITY		Long 408 Pad	

SLOT		Slot #02	
WELL		Long 408 S-2H	
WELLBORE		Long 408 S-2H AWP	

WELLPATH DATA (210 stations)

MDI	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sec [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	D1S [°/100ft]	Built Rate [°/100ft]	Turn Rate [°/100ft]
9459.00	89.290	121.220	7312.46	2230.64	-2021.45	1307.68	1732872.26	14372517.84	39°34'40.441"N	80°40'18.774"W	2407.55	147.101	2.51	0.40	2.51
9504.00	89.660	123.930	7312.88	2275.60	-2045.67	1345.59	1732946.50	14372468.84	39°34'39.954"N	80°40'17.828"W	2448.55	146.664	6.08	0.82	6.02
9548.00	89.550	124.670	7313.26	2319.59	-2070.47	1381.94	1732946.50	14372468.84	39°34'39.701"N	80°40'17.387"W	2489.30	146.279	1.82	-0.70	1.68
9591.00	89.660	127.890	7313.63	2362.57	-2095.91	1416.60	1732981.14	14372443.41	39°34'39.161"N	80°40'16.950"W	2529.74	145.946	7.52	0.72	7.49
9635.00	89.630	129.480	7313.90	2406.48	-2123.41	1450.94	1733015.47	14372415.92	39°34'38.872"N	80°40'16.539"W	2571.79	145.655	3.61	-0.07	3.61
9677.00	89.720	130.090	7314.14	2448.33	-2150.28	1483.22	1733047.73	14372389.06	39°34'37.780"N	80°40'16.102"W	2612.21	145.403	1.47	0.21	1.45
9722.00	89.720	130.550	7314.36	2493.14	-2179.40	1517.53	1733082.00	14372359.95	39°34'37.523"N	80°40'15.676"W	2655.69	145.150	1.02	0.00	1.02
9766.00	89.426	130.310	7314.69	2536.94	-2207.94	1551.01	1733115.50	14372331.42	39°34'38.304"N	80°40'15.234"W	2698.27	144.913	0.83	-0.68	-0.48
9811.00	89.380	128.790	7315.16	2581.79	-2236.60	1585.70	1733150.18	14372302.77	39°34'38.041"N	80°40'14.803"W	2741.69	144.664	3.45	-0.09	-3.44
9854.00	89.600	127.260	7315.54	2624.73	-2265.09	1619.57	1733184.03	14372276.30	39°34'37.780"N	80°40'14.353"W	2782.91	144.411	3.59	0.51	-3.50
9898.00	89.350	126.160	7315.95	2668.71	-2289.39	1654.84	1733219.29	14372250.01	39°34'36.782"N	80°40'13.885"W	2824.86	144.139	2.56	-0.57	-2.50
9943.00	89.450	124.140	7316.42	2713.70	-2315.30	1691.63	1733256.07	14372224.11	39°34'37.523"N	80°40'13.411"W	2867.44	143.847	4.49	0.22	-4.49
9988.00	89.570	124.260	7316.80	2758.69	-2340.59	1728.85	1733293.27	14372198.83	39°34'36.310"N	80°40'12.972"W	2909.86	143.549	0.38	0.27	0.27
10030.00	89.570	125.570	7317.12	2800.69	-2364.63	1763.29	1733327.69	14372174.80	39°34'35.033"N	80°40'12.533"W	2949.68	143.288	3.12	0.00	3.12
10074.00	89.510	124.440	7317.47	2844.69	-2389.87	1799.32	1733363.72	14372149.57	39°34'36.544"N	80°40'12.088"W	2991.49	143.024	2.57	-0.14	-2.57
10117.00	89.380	123.230	7317.89	2887.68	-2413.81	1835.04	1733399.42	14372125.64	39°34'36.544"N	80°40'11.600"W	3032.13	142.757	2.83	-0.30	-2.81
10160.00	89.200	123.190	7318.42	2930.65	-2437.36	1871.01	1733435.38	14372102.10	39°34'36.310"N	80°40'11.118"W	3072.69	142.489	0.43	-0.42	-0.09
10205.00	89.260	122.490	7319.03	2975.62	-2461.76	1908.82	1733473.17	14372077.71	39°34'36.067"N	80°40'10.669"W	3115.10	142.210	1.56	0.13	-1.56
10247.00	89.970	123.550	7319.31	3017.59	-2484.64	1944.03	1733508.37	14372054.83	39°34'35.840"N	80°40'10.213"W	3154.79	141.960	3.04	1.69	2.52
10290.00	89.850	123.750	7319.37	3060.58	-2508.47	1979.85	1733544.15	14372031.01	39°34'35.603"N	80°40'09.762"W	3195.64	141.717	0.54	-0.28	0.47
10333.00	89.970	125.180	7319.44	3103.58	-2532.80	2015.28	1733579.59	14372006.60	39°34'35.361"N	80°40'09.306"W	3236.73	141.492	3.34	0.28	3.33
10377.00	90.000	126.130	7319.45	3147.57	-2558.45	2051.03	1733615.33	14371981.05	39°34'34.606"N	80°40'08.849"W	3279.08	141.282	2.16	0.07	2.16
10463.00	89.470	125.630	7319.89	3233.56	-2608.85	2120.71	1733684.98	14371930.67	39°34'34.606"N	80°40'08.419"W	3362.07	140.993	0.89	-0.67	-0.58
10553.00	89.110	126.000	7321.04	3323.54	-2664.51	2193.69	1733757.97	14371878.03	39°34'34.083"N	80°40'07.989"W	3449.05	140.501	0.54	-0.34	0.41
10641.00	89.170	127.340	7322.36	3411.59	-2714.06	2264.26	1733828.47	14371825.50	39°34'33.561"N	80°40'07.591"W	3534.54	140.163	1.52	0.07	1.52
10730.00	88.920	127.960	7323.85	3500.39	-2768.42	2335.72	1733898.90	14371771.17	39°34'33.021"N	80°40'07.189"W	3621.47	139.858	0.75	-0.28	0.70
10819.00	89.540	126.170	7325.04	3589.32	-2822.05	2406.84	1733969.88	14371717.55	39°34'32.488"N	80°40'06.789"W	3708.30	139.553	2.13	0.70	-2.01
10903.00	89.080	126.480	7326.06	3673.29	-2871.81	2473.40	1734037.52	14371667.82	39°34'31.994"N	80°40'06.392"W	3790.11	139.263	0.66	-0.55	0.37
10989.00	89.940	127.640	7326.79	3759.23	-2923.63	2542.02	1734106.12	14371616.01	39°34'31.479"N	80°40'05.953"W	3874.21	138.994	1.68	1.00	1.35
11077.00	89.660	127.270	7327.10	3847.15	-2977.15	2611.88	1734175.95	14371562.52	39°34'30.948"N	80°40'05.514"W	3960.47	138.739	0.53	-0.32	-0.42

Actual Wellpath Report

Long 408 S-2H AWP Proj: 13541'
Page 8 of 9



JUL 05 2016

07/08/2016

REFERENCE WELL PATH IDENTIFICATION

Operator	Area	Field	Facility	Slot	Slot #02
HG ENERGY	Wetzel County, WV	Wetzel (UTM 17N NAD 27)	Long 408 Pad	Well	Long 408 S-2H
				Wellbore	Long 408 S-2H AWP

WELL PATH DATA (210 stations)

Stn ID	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 [°]	D1S [%/100ft]	Build Rate [%/100ft]	Twin Rate [%/100ft]
1164.00	89.600	127.350	7327.66	3934.07	-3029.88	2681.07	1734245.12	14371509.81	39°34'30.424"N	80°40'01.283"W	4045.78	138.495	0.11	-0.07	0.09
11254.00	89.200	125.420	7328.60	4024.04	-3083.26	2753.52	1734317.54	14371456.45	39°34'29.894"N	80°40'00.360"W	4133.81	138.233	2.19	-0.44	-2.14
11341.00	89.940	121.750	7329.26	4110.99	-3131.38	2825.98	1734389.97	14371408.35	39°34'29.416"N	80°39'59.437"W	4218.02	137.935	4.30	0.85	-4.22
11429.00	90.030	120.500	7329.28	4198.79	-3176.87	2901.31	1734465.27	14371362.88	39°34'28.964"N	80°39'58.477"W	4302.33	137.596	1.42	-0.17	-1.42
11515.00	89.630	120.450	7329.53	4284.52	-3220.48	2975.43	1734539.36	14371319.28	39°34'28.530"N	80°39'56.593"W	4384.60	137.265	0.47	-0.47	-0.06
11602.00	89.780	123.550	7329.98	4371.39	-3266.58	3049.20	1734613.10	14371273.20	39°34'28.071"N	80°39'55.686"W	4468.57	136.971	3.57	0.17	3.56
11689.00	89.320	126.560	7330.67	4458.38	-3316.54	3120.41	1734684.28	14371223.26	39°34'27.575"N	80°39'55.689"W	4553.72	136.745	3.50	-0.53	3.46
11774.00	89.510	127.760	7331.12	4503.34	-3343.72	3156.27	1734720.15	14371196.09	39°34'27.305"N	80°39'55.229"W	4598.10	136.652	2.70	0.42	2.67
11777.00	89.510	127.750	7331.49	4546.29	-3370.05	3190.26	1734754.11	14371169.77	39°34'27.044"N	80°39'54.796"W	4640.58	136.570	0.02	0.00	-0.02
11863.00	89.510	125.250	7332.23	4632.25	-3421.20	3259.39	1734823.21	14371118.65	39°34'26.536"N	80°39'53.916"W	4725.27	136.387	2.91	0.00	-2.91
11952.00	89.050	121.650	7333.35	4721.20	-3470.24	3333.63	1734897.42	14371069.62	39°34'26.048"N	80°39'52.970"W	4812.03	136.150	4.08	-0.52	-4.04
12019.00	89.140	124.530	7334.72	4808.13	-3517.73	3406.50	1734970.26	14371022.15	39°34'25.576"N	80°39'52.042"W	4896.80	135.920	3.31	0.10	3.31
12127.00	89.510	127.170	7335.76	4896.11	-3569.26	3477.82	1735041.55	14370970.64	39°34'25.064"N	80°39'51.134"W	4983.46	135.743	3.03	0.42	3.00
12212.00	89.690	128.580	7336.35	4980.99	-3621.44	3544.91	1735108.62	14370918.48	39°34'24.546"N	80°39'50.279"W	5067.67	135.612	1.67	0.21	1.66
12299.00	89.720	127.100	7336.80	5067.88	-3674.81	3613.61	1735177.29	14370865.13	39°34'24.016"N	80°39'49.405"W	5153.88	135.481	1.70	0.03	-1.70
12384.00	89.540	124.460	7337.35	5152.87	-3724.50	3682.56	1735246.22	14370815.46	39°34'23.522"N	80°39'48.526"W	5237.67	135.324	3.11	-0.21	-3.11
12469.00	89.510	122.970	7338.05	5237.84	-3771.68	3751.26	1735316.89	14370768.30	39°34'23.054"N	80°39'47.626"W	5320.95	135.140	1.75	-0.04	-1.75
12559.00	89.450	121.860	7338.87	5327.74	-3819.92	3829.23	1735392.83	14370724.95	39°34'22.574"N	80°39'46.658"W	5408.77	134.930	1.24	-0.07	-1.23
12645.00	89.380	121.470	7339.75	5413.59	-3865.07	3902.43	1735466.00	14370674.95	39°34'22.125"N	80°39'45.725"W	5492.51	134.724	0.46	-0.08	-0.45
12734.00	89.450	124.890	7340.66	5502.55	-3913.76	3976.90	1735540.44	14370626.27	39°34'21.641"N	80°39'44.777"W	5579.72	134.542	3.84	0.08	3.84
12822.00	89.290	123.670	7341.62	5590.52	-3963.32	4049.61	1735613.12	14370576.73	39°34'21.148"N	80°39'43.851"W	5666.33	134.383	1.40	-0.18	-1.39
12911.00	89.450	122.660	7342.60	5679.46	-4012.01	4124.11	1735687.59	14370528.07	39°34'20.665"N	80°39'42.902"W	5753.65	134.211	1.15	0.18	-1.13
13000.00	89.910	121.710	7343.10	5768.35	-4059.41	4199.43	1735762.88	14370480.68	39°34'20.193"N	80°39'41.942"W	5840.72	134.029	1.19	0.52	-1.07
13088.00	89.660	121.910	7343.43	5856.22	-4105.80	4274.21	1735837.63	14370434.31	39°34'19.732"N	80°39'40.989"W	5926.76	133.849	0.36	-0.28	0.23
13175.00	89.720	123.910	7343.90	5943.15	-4153.06	4348.24	1735912.64	14370387.07	39°34'19.262"N	80°39'40.050"W	6012.19	133.691	2.30	0.07	2.30
13262.00	89.630	125.800	7344.42	6030.15	-4202.78	4417.63	1735987.00	14370337.37	39°34'18.768"N	80°39'39.150"W	6098.17	133.566	2.17	-0.10	2.17
13350.00	89.690	126.500	7344.90	6118.13	-4254.69	4489.69	1736053.03	14370285.48	39°34'18.252"N	80°39'38.245"W	6185.44	133.461	0.80	0.07	0.80
13435.00	89.820	129.320	7345.28	6203.01	-4306.91	4556.74	1736120.06	14370233.28	39°34'17.734"N	80°39'37.391"W	6270.04	133.385	3.32	0.15	3.32
13516.00	90.520	128.510	7345.04	6283.82	-4357.79	4619.77	1736183.05	14370182.42	39°34'17.229"N	80°39'36.589"W	6350.79	133.329	1.32	0.86	-1.00
13541.00	90.520	128.510	7344.81	6308.77	-4373.36	4639.33	1736202.61	14370166.86	39°34'17.074"N	80°39'36.340"W	6375.71	133.316	0.00	0.00	0.00

Actual Wellpath Report
 Long 408 S-2H AWP Proj: 13541'
 Page 9 of 9



Received
 Office of Oil & Gas
 JUL 05 2016

WELLBORE WELLPATH IDENTIFICATION			
Operator	HIG ENERGY	Slot	Slot #02
Area	Wetzel County, WV	Well	Long 408 S-2H
Field	Wetzel (UTM 17N NAD 27)	Wellbore	Long 408 S-2H AWB
Facility	Long 408 Pad		

TARGETS									
Name	MID [ft]	TYD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Long 408 S-2H LP		7300.00	-1221.98	133.15	1731698.20	14373317.00	39°34'48.38"N	80°40'33.73"W	point
Long 408 S-2H P-BHLL		7396.00	-1375.52	4636.82	1736200.10	14370164.70	39°34'17.05"N	80°39'36.57"W	point

WELLPATH COMPOSITION - Ref Wellbore: Long 408 S-2H AWB Ref Wellpath: Long 408 S-2H AWP Proj: 13541'							
Start MID [ft]	End MID [ft]	Generic Eyrp - northseeking (Standard)	Positional Uncertainty Model	Log Name/Comment	Wellbore		
17.00	1195.00	Generic Eyrp - northseeking (Standard)		01 Weatherford Gyro 100'-1195'	Long 408 S-2H AWB		
1195.00	6167.00	ISCVSA MWD, Rev. 2 (Standard)		02 Weatherford MWD 1361'-6167'	Long 408 S-2H AWB		
6167.00	13516.00	NavigTrak (AT Curve Short Spaced)		03 BH AT Curve 8.5m Section 6203'-13516'	Long 408 S-2H AWB		
13516.00	13541.00	Blind Drilling (std)		Projection to hit	Long 408 S-2H AWB		