

SOUTHWESTERN ENERGY

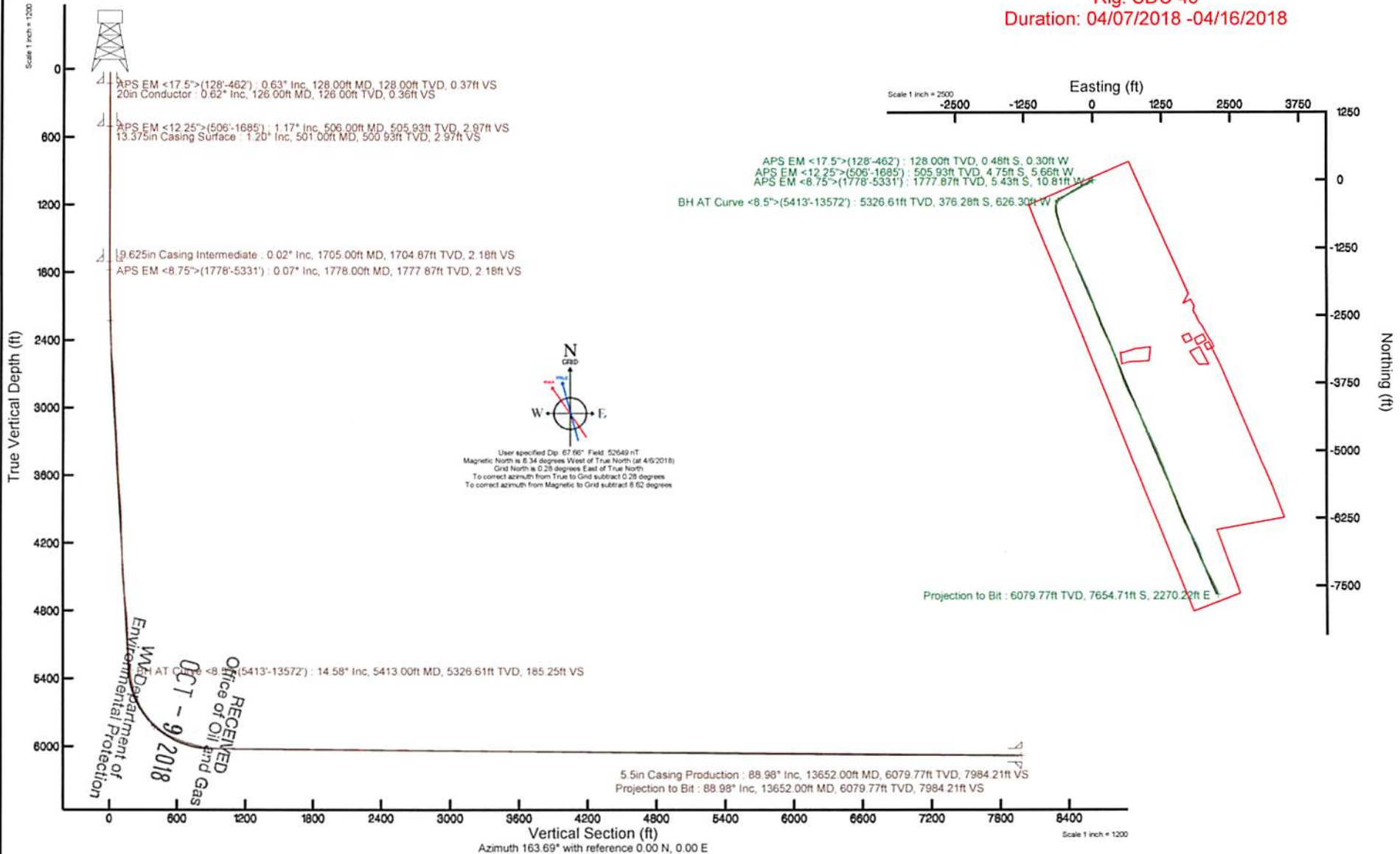
Location: Brooke County, WV Slot: Slot #6H
 Field: Brooke Well: Thomas Parkinson BRK 6H
 Facility: Thomas Parkinson BRK Pad Wellbore: Thomas Parkinson BRK 6H PWB

Plot reference wellpath is Thomas Parkinson BRK 6H PWP Rev-B.0	Grid System: NAD83 / UTM Zone 17 North, US feet
True vertical depths are referenced to SDC 46 (KB)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to SDC 46 (KB)	North Reference: Grid north
SDC 46 (KB) to Mean Sea Level: 1186.7 feet	Scale: True distance
Mean Sea Level to Ground level (At Slot: Slot #6H): -1160.7 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: thomsuzc on 2016-04-25
	Database: WA, Pennsylvania



Location Information						
Facility Name		Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	
Thomas Parkinson BRK Pad		1762113.450	14604537.070	40°12'46.220"N	80°33'50.731"W	
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Slot #6H	-46.93	32.60	1762146.035	14604490.153	40°12'45.755"N	80°33'50.314"W
SDC 46 (KB) to Ground level (At Slot: Slot #6H)				26ft		
Mean Sea Level to Ground level (At Slot: Slot #6H)				-1160.7ft		
SDC 46 (KB) to Mean Sea Level				1186.7ft		

API: 47-009-00243-0000
 Job #: 9083861
 Rig: SDC 46
 Duration: 04/07/2018 -04/16/2018



REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #6H
Area	Brooke County, WV	Well	Thomas Parkinson BRK 6H
Field	Brooke	Wellbore	Thomas Parkinson BRK 6H AWB
Facility	Thomas Parkinson BRK Pad		

REPORT SETUP INFORMATION			
Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Thomsuzc
Scale	0.999617	Report Generated	4/25/2018 at 7:25:38 AM
Convergence at slot	0.29° East	Database/Source file	WA_Pennsylvania/Thomas_Parkinson_BRK_6H_AWP_Proj__13652_MD.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-46.93	32.60	1762146.04	14604490.15	40°12'45.755"N	80°33'50.314"W
Facility Reference Pt			1762113.45	14604537.07	40°12'46.220"N	80°33'50.731"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.478"W

WELLPATH DATUM			
Calculation method	Minimum curvature	SDC 46 (KB) to Facility Vertical Datum	1186.70ft
Horizontal Reference Pt	Slot	SDC 46 (KB) to Mean Sea Level	1186.70ft
Vertical Reference Pt	SDC 46 (KB)	SDC 46 (KB) to Ground Level at Slot (Slot #6H)	26.00ft
MD Reference Pt	SDC 46 (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	163.69°

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #6H
Area	Brooke County, WV	Well	Thomas Parkinson BRK 6H
Field	Brooke	Wellbore	Thomas Parkinson BRK 6H AWB
Facility	Thomas Parkinson BRK Pad		

WELLPATH DATA (162 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	211.910	0.00	0.00	0.00	0.00	1762146.04	14604490.15	40°12'45.755"N	80°33'50.314"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	211.910	26.00	0.00	0.00	0.00	1762146.04	14604490.15	40°12'45.755"N	80°33'50.314"W	0.00	0.000	0.00	0.00	0.00
128.00	0.630	211.910	128.00	0.37	-0.48	-0.30	1762145.74	14604489.68	40°12'45.750"N	80°33'50.318"W	0.56	211.910	0.62	0.62	-145.19
219.00	0.810	227.790	218.99	0.99	-1.33	-1.04	1762145.00	14604488.82	40°12'45.742"N	80°33'50.327"W	1.69	217.892	0.29	0.20	17.45
309.00	1.060	230.960	308.98	1.59	-2.28	-2.16	1762143.88	14604487.87	40°12'45.733"N	80°33'50.342"W	3.14	223.329	0.28	0.28	3.52
405.00	1.270	225.920	404.96	2.43	-3.58	-3.61	1762142.43	14604486.57	40°12'45.720"N	80°33'50.361"W	5.09	225.199	0.24	0.22	-5.25
462.00	1.490	243.070	461.94	2.86	-4.36	-4.72	1762141.31	14604485.80	40°12'45.712"N	80°33'50.375"W	6.43	227.298	0.82	0.39	30.09
506.00	1.170	252.920	505.93	2.97	-4.75	-5.66	1762140.37	14604485.41	40°12'45.708"N	80°33'50.387"W	7.39	230.010	0.89	-0.73	22.39
601.00	1.250	251.500	600.91	3.02	-5.36	-7.57	1762138.47	14604484.79	40°12'45.702"N	80°33'50.412"W	9.28	234.690	0.09	0.08	-1.49
695.00	1.280	254.010	694.89	3.05	-5.98	-9.55	1762136.48	14604484.18	40°12'45.696"N	80°33'50.438"W	11.27	237.965	0.07	0.03	2.67
788.00	0.760	247.620	787.87	3.11	-6.50	-11.12	1762134.92	14604483.66	40°12'45.691"N	80°33'50.458"W	12.88	239.702	0.57	-0.56	-6.87
881.00	0.060	270.470	880.87	3.17	-6.73	-11.74	1762134.30	14604483.42	40°12'45.689"N	80°33'50.466"W	13.54	240.167	0.76	-0.75	24.57
973.00	0.170	82.780	972.87	3.17	-6.72	-11.65	1762134.38	14604483.44	40°12'45.689"N	80°33'50.465"W	13.45	240.047	0.25	0.12	187.29
1066.00	0.220	24.270	1065.87	3.06	-6.54	-11.44	1762134.59	14604483.62	40°12'45.691"N	80°33'50.462"W	13.18	240.269	0.21	0.05	-62.91
1159.00	0.120	89.690	1158.87	2.95	-6.37	-11.27	1762134.77	14604483.78	40°12'45.693"N	80°33'50.460"W	12.95	240.522	0.22	-0.11	70.34
1251.00	0.170	45.610	1250.87	2.91	-6.28	-11.08	1762134.96	14604483.88	40°12'45.694"N	80°33'50.457"W	12.73	240.469	0.13	0.05	-47.91
1344.00	0.160	34.260	1343.87	2.77	-6.07	-10.91	1762135.13	14604484.08	40°12'45.696"N	80°33'50.455"W	12.48	240.894	0.04	-0.01	-12.20
1437.00	0.280	19.140	1436.87	2.50	-5.75	-10.76	1762135.28	14604484.40	40°12'45.699"N	80°33'50.453"W	12.20	241.878	0.14	0.13	-16.26
1530.00	0.130	315.460	1529.87	2.22	-5.46	-10.76	1762135.28	14604484.69	40°12'45.702"N	80°33'50.453"W	12.07	243.091	0.27	-0.16	-68.47
1622.00	0.040	113.360	1621.87	2.15	-5.40	-10.80	1762135.24	14604484.76	40°12'45.702"N	80°33'50.454"W	12.08	243.446	0.18	-0.10	171.63
1685.00	0.030	133.280	1684.87	2.18	-5.42	-10.77	1762135.27	14604484.74	40°12'45.702"N	80°33'50.453"W	12.06	243.292	0.02	-0.02	31.62
1778.00	0.070	273.560	1777.87	2.18	-5.43	-10.81	1762135.23	14604484.72	40°12'45.702"N	80°33'50.454"W	12.10	243.320	0.10	0.04	150.84
1807.00	0.920	276.320	1806.86	2.08	-5.41	-11.06	1762134.98	14604484.75	40°12'45.702"N	80°33'50.457"W	12.31	243.951	2.93	2.93	9.52
1899.00	1.500	251.300	1898.84	1.85	-5.71	-12.93	1762133.11	14604484.44	40°12'45.699"N	80°33'50.481"W	14.14	246.178	0.84	0.63	-27.20
1992.00	3.150	240.090	1991.76	2.50	-7.38	-16.30	1762129.74	14604482.78	40°12'45.683"N	80°33'50.525"W	17.89	245.659	1.83	1.77	-12.05
2085.00	2.110	218.320	2084.67	4.09	-9.99	-19.58	1762126.46	14604480.16	40°12'45.657"N	80°33'50.567"W	21.98	242.962	1.53	-1.12	-23.41
2178.00	1.780	148.990	2177.63	6.48	-12.57	-19.90	1762126.15	14604477.58	40°12'45.632"N	80°33'50.571"W	23.54	237.709	2.40	-0.35	-74.55
2270.00	1.420	150.720	2269.59	8.97	-14.79	-18.60	1762127.44	14604475.37	40°12'45.610"N	80°33'50.555"W	23.77	231.509	0.39	-0.39	1.88
2363.00	1.980	207.230	2362.55	11.26	-17.23	-18.77	1762127.27	14604472.93	40°12'45.586"N	80°33'50.557"W	25.48	227.462	1.81	0.60	60.76
2456.00	8.300	229.830	2455.14	15.15	-22.99	-24.65	1762121.40	14604467.17	40°12'45.529"N	80°33'50.633"W	33.70	226.988	7.01	6.80	24.30

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Actual Wellpath Report

Thomas Parkinson BRK 6H AWP Proj: 13652'MD
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #6H
Area	Brooke County, WV	Well	Thomas Parkinson BRK 6H
Field	Brooke	Wellbore	Thomas Parkinson BRK 6H AWB
Facility	Thomas Parkinson BRK Pad		

WELLPATH DATA (162 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]	
2549.00	13.100	228.920	2546.50	22.28	-34.25	-37.73	1762108.32	14604455.91	40°12'45.418"N	80°33'50.802"W	50.96	227.762	5.16	5.16	-0.98	
2641.00	14.480	232.190	2635.84	30.86	-48.16	-54.67	1762091.38	14604442.02	40°12'45.282"N	80°33'51.022"W	72.86	228.626	1.72	1.50	3.55	
2734.00	15.580	237.800	2725.66	38.55	-61.94	-74.43	1762071.63	14604428.24	40°12'45.147"N	80°33'51.277"W	96.83	230.233	1.96	1.18	6.03	
2827.00	16.180	246.400	2815.13	43.61	-73.79	-96.88	1762049.20	14604416.40	40°12'45.031"N	80°33'51.567"W	121.77	232.705	2.61	0.65	9.25	
2919.00	16.450	246.610	2903.42	46.84	-84.09	-120.58	1762025.50	14604406.10	40°12'44.930"N	80°33'51.874"W	147.00	235.109	0.30	0.29	0.23	
3012.00	17.040	245.280	2992.48	50.46	-95.01	-145.04	1762001.05	14604395.18	40°12'44.823"N	80°33'52.190"W	173.39	236.772	0.76	0.63	-1.43	
3101.00	15.660	241.460	3077.88	54.91	-106.21	-167.44	1761978.66	14604383.99	40°12'44.714"N	80°33'52.479"W	198.28	237.613	1.96	-1.55	-4.29	
3194.00	13.380	239.260	3167.91	60.25	-117.71	-187.72	1761958.39	14604372.49	40°12'44.601"N	80°33'52.741"W	221.57	237.911	2.52	-2.45	-2.37	
3287.00	12.380	236.100	3258.57	65.95	-128.77	-205.24	1761940.87	14604361.44	40°12'44.493"N	80°33'52.968"W	242.29	237.896	1.31	-1.08	-3.40	
3380.00	12.520	240.150	3349.38	71.32	-139.34	-222.26	1761923.86	14604350.86	40°12'44.389"N	80°33'53.188"W	262.33	237.915	0.95	0.15	4.35	
3472.00	14.320	245.150	3438.87	75.34	-149.09	-241.23	1761904.89	14604341.12	40°12'44.293"N	80°33'53.433"W	283.59	238.283	2.33	1.96	5.43	
3565.00	15.920	247.320	3528.65	78.47	-158.84	-263.44	1761882.70	14604331.37	40°12'44.198"N	80°33'53.720"W	307.62	238.912	1.82	1.72	2.33	
3658.00	14.390	239.580	3618.42	82.70	-169.61	-285.18	1761860.97	14604320.61	40°12'44.093"N	80°33'54.001"W	331.81	239.257	2.72	-1.65	-8.32	
3751.00	14.010	233.380	3708.58	89.42	-182.18	-304.18	1761841.97	14604308.04	40°12'43.969"N	80°33'54.246"W	354.56	239.082	1.68	-0.41	-6.67	
3843.00	12.150	230.350	3798.19	97.13	-195.00	-320.57	1761825.58	14604295.23	40°12'43.844"N	80°33'54.458"W	375.23	238.688	2.15	-2.02	-3.29	
3936.00	10.710	235.730	3889.35	103.67	-206.11	-335.25	1761810.91	14604284.12	40°12'43.734"N	80°33'54.648"W	393.54	238.417	1.93	-1.55	5.78	
4029.00	10.600	242.360	3980.75	108.01	-214.95	-349.97	1761796.20	14604275.29	40°12'43.648"N	80°33'54.839"W	410.71	238.442	1.32	-0.12	7.13	
4125.00	12.510	252.170	4074.81	110.03	-222.23	-367.69	1761778.48	14604268.01	40°12'43.577"N	80°33'55.067"W	429.63	238.852	2.85	1.99	10.22	
4218.00	12.650	247.180	4165.58	111.45	-229.26	-386.67	1761759.51	14604260.98	40°12'43.508"N	80°33'55.312"W	449.53	239.336	1.18	0.15	-5.37	
4311.00	13.340	246.460	4256.19	113.95	-237.50	-405.89	1761740.30	14604252.75	40°12'43.428"N	80°33'55.561"W	470.27	239.667	0.76	0.74	-0.77	
4403.00	14.810	244.540	4345.43	117.16	-246.79	-426.24	1761719.96	14604243.46	40°12'43.337"N	80°33'55.824"W	492.53	239.929	1.68	1.60	-2.09	
4496.00	13.730	246.010	4435.56	120.52	-256.39	-447.06	1761699.15	14604233.86	40°12'43.243"N	80°33'56.093"W	515.36	240.165	1.22	-1.16	1.58	
4589.00	13.110	235.360	4526.03	125.32	-266.87	-465.82	1761680.39	14604223.38	40°12'43.140"N	80°33'56.335"W	536.85	240.191	2.74	-0.67	-11.45	
4682.00	14.080	232.370	4616.43	132.75	-279.78	-483.46	1761662.76	14604210.48	40°12'43.014"N	80°33'56.563"W	558.58	239.942	1.29	1.04	-3.22	
4774.00	13.880	229.510	4705.70	141.33	-293.77	-500.71	1761645.52	14604196.49	40°12'42.876"N	80°33'56.786"W	580.53	239.599	0.78	-0.22	-3.11	
4867.00	13.250	227.410	4796.11	150.62	-308.23	-517.04	1761629.19	14604182.04	40°12'42.734"N	80°33'56.998"W	601.95	239.199	0.86	-0.68	-2.26	
4960.00	13.830	238.920	4886.54	158.18	-321.18	-534.41	1761611.83	14604169.09	40°12'42.607"N	80°33'57.223"W	623.50	238.994	2.96	0.62	12.38	
5053.00	14.590	245.130	4976.70	162.75	-331.85	-554.56	1761591.69	14604158.43	40°12'42.503"N	80°33'57.483"W	646.27	239.104	1.83	0.82	6.68	
5145.00	13.070	242.190	5066.03	166.55	-341.58	-574.28	1761571.98	14604148.71	40°12'42.407"N	80°33'57.738"W	668.18	239.256	1.82	-1.65	-3.20	
5238.00	13.030	235.650	5156.64	171.90	-352.40	-592.23	1761554.03	14604137.89	40°12'42.301"N	80°33'57.970"W	689.15	239.246	1.59	-0.04	-7.03	

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Operator	SOUTHWESTERN ENERGY	Slot	Slot #6H
Area	Brooke County, WV	Well	Thomas Parkinson BRK 6H
Field	Brooke	Wellbore	Thomas Parkinson BRK 6H AWB
Facility	Thomas Parkinson BRK Pad		

WELLPATH DATA (162 stations)																
MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate	
[ft]	[°]	[°]	[ft]	[ft]	[ft]	[ft]	[US ft]	[US ft]			[ft]	[°]	[°/100ft]	[°/100ft]	[°/100ft]	
5331.00	13.750	235.070	5247.11	178.67	-364.64	-609.95	1761536.32	14604125.65	40°12'42.181"N	80°33'58.199"W	710.64	239.128	0.79	0.77	-0.62	
5413.00	14.580	234.080	5326.61	185.25	-376.28	-626.30	1761519.98	14604114.02	40°12'42.067"N	80°33'58.410"W	730.64	239.003	1.05	1.01	-1.21	
5460.00	15.160	223.830	5372.05	190.29	-384.18	-635.35	1761510.93	14604106.12	40°12'41.989"N	80°33'58.528"W	742.47	238.839	5.72	1.23	-21.81	
5506.00	15.520	214.490	5416.41	197.18	-393.60	-643.00	1761503.28	14604096.71	40°12'41.897"N	80°33'58.627"W	753.90	238.528	5.42	0.78	-20.30	
5599.00	20.030	199.010	5505.00	218.06	-418.94	-655.25	1761491.04	14604071.38	40°12'41.647"N	80°33'58.786"W	777.72	237.407	6.99	4.85	-16.65	
5645.00	22.530	193.260	5547.87	232.16	-434.97	-659.83	1761486.45	14604055.35	40°12'41.489"N	80°33'58.846"W	790.30	236.607	7.07	5.43	-12.50	
5692.00	25.620	189.150	5590.78	249.17	-453.77	-663.52	1761482.77	14604036.56	40°12'41.303"N	80°33'58.895"W	803.84	235.632	7.48	6.57	-8.74	
5738.00	29.410	185.900	5631.57	268.61	-474.83	-666.26	1761480.03	14604015.51	40°12'41.095"N	80°33'58.932"W	818.15	234.523	8.86	8.24	-7.07	
5785.00	33.330	184.130	5671.69	291.41	-499.20	-668.38	1761477.92	14603991.15	40°12'40.854"N	80°33'58.961"W	834.22	233.245	8.57	8.34	-3.77	
5831.00	36.390	181.500	5709.43	316.25	-525.45	-669.65	1761476.65	14603964.90	40°12'40.595"N	80°33'58.979"W	851.19	231.880	7.41	6.65	-5.72	
5877.00	40.210	177.760	5745.53	343.65	-553.94	-669.42	1761476.87	14603936.42	40°12'40.313"N	80°33'58.977"W	868.90	230.392	9.71	8.30	-8.13	
5923.00	43.350	171.230	5779.85	373.73	-584.41	-666.43	1761479.86	14603905.97	40°12'40.012"N	80°33'58.941"W	886.38	228.752	11.66	6.83	-14.20	
5970.00	46.790	167.110	5813.04	406.84	-617.06	-660.15	1761486.14	14603873.33	40°12'39.689"N	80°33'58.862"W	903.64	226.932	9.59	7.32	-8.77	
6016.00	50.960	165.100	5843.29	441.45	-650.68	-651.81	1761494.48	14603839.72	40°12'39.357"N	80°33'58.757"W	921.00	225.050	9.64	9.07	-4.37	
6063.00	54.820	164.580	5871.64	478.91	-686.85	-642.01	1761504.28	14603803.56	40°12'38.999"N	80°33'58.632"W	940.18	223.067	8.26	8.21	-1.11	
6109.00	59.830	164.050	5896.47	517.62	-724.12	-631.54	1761514.74	14603766.31	40°12'38.630"N	80°33'58.500"W	960.83	221.093	10.93	10.89	-1.15	
6155.00	64.460	163.390	5917.96	558.28	-763.15	-620.13	1761526.14	14603727.30	40°12'38.244"N	80°33'58.355"W	983.34	219.097	10.14	10.07	-1.43	
6202.00	67.990	162.460	5936.90	601.28	-804.25	-607.50	1761538.77	14603686.21	40°12'37.837"N	80°33'58.195"W	1007.91	217.066	7.73	7.51	-1.98	
6248.00	70.390	162.120	5953.24	644.26	-845.21	-594.42	1761551.84	14603645.27	40°12'37.432"N	80°33'58.029"W	1033.31	215.118	5.26	5.22	-0.74	
6295.00	73.260	161.150	5967.90	688.88	-887.59	-580.35	1761565.91	14603602.91	40°12'37.012"N	80°33'57.850"W	1060.48	213.179	6.41	6.11	-2.06	
6341.00	74.580	160.100	5980.64	733.02	-929.28	-565.69	1761580.56	14603561.23	40°12'36.599"N	80°33'57.664"W	1087.92	211.330	3.61	2.87	-2.28	
6387.00	75.950	159.340	5992.34	777.40	-971.01	-550.27	1761595.98	14603519.52	40°12'36.186"N	80°33'57.468"W	1116.09	209.540	3.38	2.98	-1.65	
6434.00	78.040	158.570	6002.92	823.03	-1013.74	-533.82	1761612.42	14603476.80	40°12'35.763"N	80°33'57.259"W	1145.71	207.771	4.72	4.45	-1.64	
6480.00	82.000	155.870	6010.89	868.03	-1055.50	-516.28	1761629.95	14603435.06	40°12'35.350"N	80°33'57.035"W	1175.00	206.065	10.37	8.61	-5.87	
6527.00	86.860	155.900	6015.45	914.36	-1098.18	-497.17	1761649.05	14603392.39	40°12'34.927"N	80°33'56.792"W	1205.48	204.357	10.34	10.34	0.06	
6619.00	88.740	155.640	6018.98	1005.42	-1182.01	-459.45	1761686.76	14603308.60	40°12'34.097"N	80°33'56.311"W	1268.17	201.241	2.06	2.04	-0.28	
6712.00	88.740	156.460	6021.03	1097.57	-1266.98	-421.70	1761724.49	14603223.66	40°12'33.255"N	80°33'55.830"W	1335.32	198.410	0.88	0.00	0.88	
6805.00	88.800	157.320	6023.02	1189.89	-1352.50	-385.21	1761760.97	14603138.17	40°12'32.408"N	80°33'55.365"W	1406.29	195.898	0.93	0.06	0.92	
6897.00	88.800	156.150	6024.95	1281.19	-1437.00	-348.88	1761797.29	14603053.71	40°12'31.572"N	80°33'54.902"W	1478.74	193.646	1.27	0.00	-1.27	
6990.00	89.720	156.730	6026.15	1373.44	-1522.24	-311.71	1761834.44	14602968.50	40°12'30.728"N	80°33'54.428"W	1553.83	191.573	1.17	0.99	0.62	

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Actual Wellpath Report

Thomas Parkinson BRK 6H AWP Proj: 13652'MD
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #6H
Area	Brooke County, WV	Well	Thomas Parkinson BRK 6H
Field	Brooke	Wellbore	Thomas Parkinson BRK 6H AWB
Facility	Thomas Parkinson BRK Pad		

WELLPATH DATA (162 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]
7083.00	89.720	156.320	6026.61	1465.71	-1607.54	-274.67	1761871.48	14602883.23	40°12'29.883"N	80°33'53.956"W	1630.84	189.696	0.44	0.00	-0.44
7176.00	89.880	155.340	6026.93	1557.84	-1692.39	-236.59	1761909.54	14602798.42	40°12'29.043"N	80°33'53.470"W	1708.84	187.958	1.07	0.17	-1.05
7268.00	89.510	156.140	6027.42	1648.95	-1776.26	-198.79	1761947.32	14602714.58	40°12'28.212"N	80°33'52.989"W	1787.35	186.386	0.96	-0.40	0.87
7361.00	89.480	155.990	6028.24	1741.12	-1861.26	-161.06	1761985.04	14602629.61	40°12'27.370"N	80°33'52.508"W	1868.21	184.946	0.16	-0.03	-0.16
7454.00	89.540	156.880	6029.04	1833.38	-1946.50	-123.88	1762022.20	14602544.40	40°12'26.526"N	80°33'52.034"W	1950.44	183.642	0.96	0.06	0.96
7547.00	89.510	158.030	6029.81	1925.82	-2032.39	-88.23	1762057.84	14602458.55	40°12'25.676"N	80°33'51.580"W	2034.30	182.486	1.24	-0.03	1.24
7639.00	89.600	159.170	6030.52	2017.45	-2118.04	-54.66	1762091.40	14602372.93	40°12'24.828"N	80°33'51.153"W	2118.75	181.478	1.24	0.10	1.24
7732.00	89.510	160.120	6031.24	2110.22	-2205.23	-22.31	1762123.73	14602285.77	40°12'23.964"N	80°33'50.741"W	2205.34	180.580	1.03	-0.10	1.02
7825.00	89.510	161.490	6032.04	2203.09	-2293.05	8.26	1762154.30	14602197.98	40°12'23.095"N	80°33'50.353"W	2293.07	179.794	1.47	0.00	1.47
7917.00	89.540	160.840	6032.80	2295.00	-2380.12	37.96	1762183.99	14602110.95	40°12'22.233"N	80°33'49.975"W	2380.43	179.086	0.71	0.03	-0.71
8010.00	89.510	159.940	6033.57	2387.84	-2467.73	69.18	1762215.18	14602023.38	40°12'21.366"N	80°33'49.579"W	2468.70	178.394	0.97	-0.03	-0.97
8103.00	89.540	159.690	6034.34	2480.63	-2555.01	101.26	1762247.26	14601936.13	40°12'20.502"N	80°33'49.171"W	2557.02	177.730	0.27	0.03	-0.27
8195.00	89.540	159.970	6035.08	2572.42	-2641.37	132.99	1762278.97	14601849.80	40°12'19.647"N	80°33'48.767"W	2644.71	177.118	0.30	0.00	0.30
8288.00	89.660	155.880	6035.73	2664.92	-2727.53	167.93	1762313.90	14601763.67	40°12'18.794"N	80°33'48.322"W	2732.69	176.477	4.40	0.13	-4.40
8381.00	89.510	153.810	6036.41	2756.81	-2811.70	207.46	1762353.41	14601679.53	40°12'17.960"N	80°33'47.818"W	2819.35	175.780	2.23	-0.16	-2.23
8474.00	89.480	153.930	6037.23	2848.44	-2895.19	248.41	1762394.35	14601596.07	40°12'17.133"N	80°33'47.296"W	2905.83	175.096	0.13	-0.03	0.13
8566.00	89.480	154.860	6038.06	2939.23	-2978.15	288.17	1762434.09	14601513.15	40°12'16.311"N	80°33'46.789"W	2992.06	174.473	1.01	0.00	1.01
8659.00	89.540	156.420	6038.86	3031.31	-3062.87	326.53	1762472.44	14601428.46	40°12'15.472"N	80°33'46.300"W	3080.23	173.915	1.68	0.06	1.68
8751.00	89.540	157.910	6039.59	3122.71	-3147.65	362.23	1762508.12	14601343.71	40°12'14.633"N	80°33'45.845"W	3168.43	173.435	1.62	0.00	1.62
8844.00	89.480	158.520	6040.39	3215.28	-3234.01	396.74	1762542.62	14601257.39	40°12'13.778"N	80°33'45.406"W	3258.25	173.006	0.66	-0.06	0.66
8937.00	89.480	159.520	6041.23	3307.96	-3320.84	430.04	1762575.91	14601170.59	40°12'12.918"N	80°33'44.982"W	3348.57	172.621	1.08	0.00	1.08
9030.00	89.540	160.440	6042.03	3400.77	-3408.21	461.87	1762607.73	14601083.25	40°12'12.053"N	80°33'44.577"W	3439.37	172.282	0.99	0.06	0.99
9122.00	89.600	161.250	6042.72	3492.65	-3495.12	492.06	1762637.91	14600996.38	40°12'11.193"N	80°33'44.194"W	3529.59	171.986	0.88	0.07	0.88
9215.00	89.540	160.440	6043.42	3585.53	-3582.97	522.58	1762668.41	14600908.57	40°12'10.323"N	80°33'43.806"W	3620.87	171.702	0.87	-0.06	-0.87
9308.00	89.570	160.530	6044.14	3678.38	-3670.62	553.64	1762699.46	14600820.95	40°12'09.456"N	80°33'43.411"W	3712.14	171.423	0.10	0.03	0.10
9400.00	89.720	159.550	6044.71	3770.19	-3757.09	585.05	1762730.86	14600734.51	40°12'08.600"N	80°33'43.012"W	3802.37	171.149	1.08	0.16	-1.07
9493.00	90.120	156.200	6044.84	3862.70	-3843.23	620.07	1762765.86	14600648.40	40°12'07.747"N	80°33'42.566"W	3892.93	170.835	3.63	0.43	-3.60
9586.00	89.480	152.140	6045.17	3954.40	-3926.92	660.58	1762806.36	14600564.74	40°12'06.918"N	80°33'42.049"W	3982.09	170.451	4.42	-0.69	-4.37
9679.00	89.540	153.480	6045.96	4045.72	-4009.64	703.07	1762848.84	14600482.06	40°12'06.098"N	80°33'41.507"W	4070.81	170.055	1.44	0.06	1.44
9771.00	90.030	154.160	6046.31	4136.36	-4092.20	743.66	1762889.41	14600399.53	40°12'05.280"N	80°33'40.989"W	4159.22	169.700	0.91	0.53	0.74

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Actual Wellpath Report

Thomas Parkinson BRK 6H AWP Proj: 13652'MD
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #6H
Area	Brooke County, WV	Well	Thomas Parkinson BRK 6H
Field	Brooke	Wellbore	Thomas Parkinson BRK 6H AWB
Facility	Thomas Parkinson BRK Pad		

WELLPATH DATA (162 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]
9864.00	89.480	154.670	6046.70	4228.14	-4176.08	783.82	1762929.56	14600315.68	40°12'04.449"N	80°33'40.477"W	4249.00	169.370	0.81	-0.59	0.55
9957.00	89.540	155.540	6047.50	4320.10	-4260.43	822.97	1762968.69	14600231.36	40°12'03.614"N	80°33'39.978"W	4339.19	169.067	0.94	0.06	0.94
10050.00	89.540	156.150	6048.25	4412.22	-4345.29	861.02	1763006.73	14600146.54	40°12'02.774"N	80°33'39.493"W	4429.77	168.792	0.66	0.00	0.66
10143.00	89.540	155.870	6048.99	4504.38	-4430.25	898.83	1763044.52	14600061.61	40°12'01.932"N	80°33'39.011"W	4520.51	168.531	0.30	0.00	-0.30
10235.00	89.690	156.190	6049.61	4595.56	-4514.31	936.21	1763081.88	14599977.58	40°12'01.100"N	80°33'38.535"W	4610.37	168.284	0.38	0.16	0.35
10328.00	89.540	155.890	6050.24	4687.73	-4599.30	973.98	1763119.64	14599892.63	40°12'00.258"N	80°33'38.053"W	4701.30	168.043	0.36	-0.16	-0.32
10421.00	89.600	154.070	6050.93	4779.65	-4683.57	1013.31	1763158.95	14599808.39	40°11'59.423"N	80°33'37.552"W	4791.93	167.792	1.96	0.06	-1.96
10514.00	89.690	154.300	6051.51	4871.37	-4767.28	1053.80	1763199.43	14599724.71	40°11'58.594"N	80°33'37.035"W	4882.37	167.535	0.27	0.10	0.25
10606.00	89.750	154.700	6051.96	4962.19	-4850.32	1093.41	1763239.02	14599641.70	40°11'57.772"N	80°33'36.530"W	4972.04	167.296	0.44	0.07	0.43
10699.00	89.780	155.850	6052.34	5054.19	-4934.79	1132.31	1763277.91	14599557.26	40°11'56.935"N	80°33'36.034"W	5063.03	167.077	1.24	0.03	1.24
10792.00	89.820	158.080	6052.66	5146.54	-5020.37	1168.70	1763314.28	14599471.72	40°11'56.087"N	80°33'35.571"W	5154.61	166.895	2.40	0.04	2.40
10884.00	89.940	160.300	6052.86	5238.25	-5106.36	1201.38	1763346.95	14599385.76	40°11'55.236"N	80°33'35.155"W	5245.78	166.761	2.42	0.13	2.41
10977.00	89.540	157.870	6053.28	5330.94	-5193.23	1234.57	1763380.13	14599298.92	40°11'54.376"N	80°33'34.733"W	5337.96	166.627	2.65	-0.43	-2.61
11070.00	89.540	160.040	6054.03	5423.62	-5280.02	1267.97	1763413.51	14599212.17	40°11'53.517"N	80°33'34.308"W	5430.13	166.496	2.33	0.00	2.33
11163.00	89.540	159.790	6054.77	5516.41	-5367.36	1299.90	1763445.44	14599124.86	40°11'52.652"N	80°33'33.902"W	5522.53	166.386	0.27	0.00	-0.27
11255.00	89.480	159.590	6055.56	5608.19	-5453.64	1331.84	1763477.36	14599038.62	40°11'51.798"N	80°33'33.496"W	5613.90	166.276	0.23	-0.07	-0.22
11348.00	89.510	159.350	6056.38	5700.93	-5540.73	1364.45	1763509.96	14598951.56	40°11'50.936"N	80°33'33.082"W	5706.26	166.166	0.26	0.03	-0.26
11441.00	89.510	159.170	6057.17	5793.65	-5627.70	1397.38	1763542.88	14598864.62	40°11'50.075"N	80°33'32.663"W	5798.59	166.055	0.19	0.00	-0.19
11533.00	89.540	159.900	6057.94	5885.40	-5713.89	1429.55	1763575.03	14598778.47	40°11'49.221"N	80°33'32.254"W	5890.00	165.954	0.79	0.03	0.79
11626.00	89.570	159.610	6058.66	5978.18	-5801.14	1461.73	1763607.20	14598691.25	40°11'48.358"N	80°33'31.845"W	5982.46	165.857	0.31	0.03	-0.31
11719.00	89.510	157.850	6059.41	6070.83	-5887.80	1495.46	1763640.92	14598604.62	40°11'47.500"N	80°33'31.415"W	6074.75	165.749	1.89	-0.06	-1.89
11811.00	89.480	160.210	6060.22	6162.51	-5973.69	1528.38	1763673.83	14598518.76	40°11'46.649"N	80°33'30.997"W	6166.11	165.649	2.57	-0.03	2.57
11904.00	89.540	160.570	6061.01	6255.35	-6061.30	1559.59	1763705.03	14598431.19	40°11'45.782"N	80°33'30.600"W	6258.73	165.571	0.39	0.06	0.39
11997.00	89.510	159.430	6061.78	6348.16	-6148.68	1591.40	1763736.82	14598343.84	40°11'44.917"N	80°33'30.196"W	6351.29	165.489	1.23	-0.03	-1.23
12090.00	89.600	157.500	6062.51	6440.76	-6235.18	1625.54	1763770.94	14598257.37	40°11'44.060"N	80°33'29.762"W	6443.59	165.388	2.08	0.10	-2.08
12183.00	89.660	155.790	6063.11	6533.06	-6320.56	1662.40	1763807.80	14598172.03	40°11'43.215"N	80°33'29.292"W	6535.52	165.264	1.84	0.06	-1.84
12275.00	89.540	152.510	6063.75	6623.77	-6403.34	1702.51	1763847.89	14598089.28	40°11'42.395"N	80°33'28.780"W	6625.81	165.111	3.57	-0.13	-3.57
12368.00	89.510	150.920	6064.52	6714.74	-6485.23	1746.57	1763891.94	14598007.42	40°11'41.584"N	80°33'28.218"W	6716.30	164.927	1.71	-0.03	-1.71
12461.00	89.450	151.010	6065.36	6805.45	-6566.54	1791.71	1763937.05	14597926.14	40°11'40.778"N	80°33'27.641"W	6806.59	164.738	0.12	-0.06	0.10
12553.00	89.290	152.560	6066.38	6895.46	-6647.60	1835.20	1763980.53	14597845.11	40°11'39.975"N	80°33'27.086"W	6896.27	164.567	1.69	-0.17	1.68

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot #6H
Area	Brooke County, WV	Well	Thomas Parkinson BRK 6H
Field	Brooke	Wellbore	Thomas Parkinson BRK 6H AWB
Facility	Thomas Parkinson BRK Pad		

WELLPATH DATA (162 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]
12646.00	89.140	154.580	6067.65	6987.00	-6730.87	1876.59	1764021.90	14597761.88	40°11'39.150"N	80°33'26.558"W	6987.57	164.421	2.18	-0.16	2.17
12738.00	89.290	158.710	6068.91	7078.28	-6815.30	1913.05	1764058.35	14597677.47	40°11'38.314"N	80°33'26.094"W	7078.71	164.321	4.49	0.16	4.49
12831.00	89.420	161.200	6069.96	7171.07	-6902.66	1944.92	1764090.21	14597590.15	40°11'37.449"N	80°33'25.689"W	7171.43	164.264	2.68	0.14	2.68
12924.00	89.480	161.980	6070.85	7264.00	-6990.89	1974.29	1764119.57	14597501.95	40°11'36.575"N	80°33'25.316"W	7264.33	164.230	0.84	0.06	0.84
13016.00	89.450	161.040	6071.71	7355.93	-7078.14	2003.47	1764148.73	14597414.74	40°11'35.712"N	80°33'24.946"W	7356.22	164.196	1.02	-0.03	-1.02
13109.00	89.380	154.560	6072.66	7448.39	-7164.20	2038.58	1764183.83	14597328.72	40°11'34.860"N	80°33'24.499"W	7448.59	164.116	6.97	-0.08	-6.97
13202.00	89.170	152.820	6073.84	7539.96	-7247.55	2079.80	1764225.03	14597245.39	40°11'34.034"N	80°33'23.973"W	7540.06	163.988	1.88	-0.23	-1.87
13294.00	89.420	151.860	6074.97	7630.15	-7329.03	2122.50	1764267.72	14597163.95	40°11'33.227"N	80°33'23.428"W	7630.18	163.849	1.08	0.27	-1.04
13387.00	89.290	153.000	6076.02	7721.36	-7411.46	2165.54	1764310.75	14597081.54	40°11'32.410"N	80°33'22.879"W	7721.36	163.712	1.23	-0.14	1.23
13480.00	89.420	155.650	6077.06	7813.10	-7495.27	2205.83	1764351.02	14596997.77	40°11'31.580"N	80°33'22.365"W	7813.11	163.601	2.85	0.14	2.85
13572.00	88.980	158.870	6078.35	7904.50	-7580.10	2241.39	1764386.56	14596912.97	40°11'30.740"N	80°33'21.912"W	7904.54	163.527	3.53	-0.48	3.50
13652.00	88.980	158.870	6079.77	7984.21	-7654.71	2270.22	1764415.38	14596838.39	40°11'30.001"N	80°33'21.545"W	7984.26	163.481	0.00	0.00	0.00

HOLE & CASING SECTIONS - Ref Wellbore: Thomas Parkinson BRK 6H AWB Ref Wellpath: Thomas Parkinson BRK 6H AWP Proj: 13652'MD

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]
20in Conductor	26.00	126.00	100.00	26.00	126.00	0.00	0.00	-0.46	-0.28
17.5in Open Hole	126.00	505.00	379.00	126.00	504.93	-0.46	-0.28	-4.74	-5.64
13.375in Casing Surface	26.00	501.00	475.00	26.00	500.93	0.00	0.00	-4.72	-5.56
12.25in Open Hole	505.00	1759.00	1254.00	504.93	1758.87	-4.74	-5.64	-5.43	-10.79
9.625in Casing Intermediate	26.00	1705.00	1679.00	26.00	1704.87	0.00	0.00	-5.43	-10.77
8.75in Open Hole	1759.00	5411.00	3652.00	1758.87	5324.68	-5.43	-10.79	-375.98	-625.89
8.5in Open Hole	5411.00	13652.00	8241.00	5324.68	6079.77	-375.98	-625.89	-7654.71	2270.22
5.5in Casing Production	26.00	13652.00	13626.00	26.00	6079.77	0.00	0.00	-7654.71	2270.22

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot #6H
Area	Brooke County, WV	Well	Thomas Parkinson BRK 6H
Field	Brooke	Wellbore	Thomas Parkinson BRK 6H AWB
Facility	Thomas Parkinson BRK Pad		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Hardline	6019.00	0.00	0.00	1762146.04	14604490.15	40°12'45.755"N	80°33'50.314"W	polygon
Thomas Parkinson BRK 6H LP Rev-4	6019.00	-1080.39	-498.66	1761647.57	14603410.18	40°12'35.103"N	80°33'56.810"W	point
Thomas Parkinson BRK 6H BHL Rev-2	6083.00	-7636.07	2234.77	1764379.95	14596857.02	40°11'30.187"N	80°33'22.001"W	point

WELLPATH COMPOSITION - Ref Wellbore: Thomas Parkinson BRK 6H AWB Ref Wellpath: Thomas Parkinson BRK 6H AWP Proj: 13652'MD

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	462.00	BHI NaviTrak (Axial)	01_APS EM <17-1/2"> (128'-462')	Thomas Parkinson BRK 6H AWB
462.00	1685.00	BHI NaviTrak (Axial)	02_APS EM <12-1/4"> (462')(506'-1685')	Thomas Parkinson BRK 6H AWB
1685.00	5331.00	BHI NaviTrak (Axial)	03_APS EM <8-3/4"> (1685')(1778'-5331')	Thomas Parkinson BRK 6H AWB
5331.00	13572.00	BHI AutoTrak Curve (Short)	04_BH AT Curve <8-1/2"> (5331')(5413'-13572')	Thomas Parkinson BRK 6H AWB
13572.00	13652.00	Blind Drilling (std)	Projection to bit	Thomas Parkinson BRK 6H AWB

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot #6H
Area	Brooke County, WV	Well	Thomas Parkinson BRK 6H
Field	Brooke	Wellbore	Thomas Parkinson BRK 6H AWB
Facility	Thomas Parkinson BRK Pad		

COMMENTS

Wellpath general comments
 API: 47-009-00243-0000
 Job #: 9083861
 Rig: SDC 46
 Duration: 04/07/2018 -04/16/2018

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