



Actual Wellpath Report

Samuel Jones BRK 1H AWP Proj: 14450'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 1H
Area	Brooke County, WV	Well	Samuel Jones BRK 1H
Field	Brooke	Wellbore	Samuel Jones BRK 1H AWP
Facility	Samuel Jones BRK Pad		

REPORT SETUP INFORMATION			
Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Edsaryar
Scale	0.999617	Report Generated	13/Jun/2019 at 18:12
Convergence at slot	0.28° East	Database/Source file	WA_MPL_EASTERNUUS_Defm/Samuel_Jones_BRK_1H_AWP_Proj_14450_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	16.23	-11.64	1762974.14	14596412.23	40°11'25.859"N	80°33'40.151"W
Facility Reference Pt			1762985.78	14596396.00	40°11'25.698"N	80°33'40.002"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.478"W

WELLPATH DATUM			
Calculation method	Minimum curvature	SDC 42 (KB) to Facility Vertical Datum	1230.20ft
Horizontal Reference Pt	Slot	SDC 42 (KB) to Mean Sea Level	1230.20ft
Vertical Reference Pt	SDC 42 (KB)	SDC 42 (KB) to Ground Level at Slot (Slot 1H)	26.00ft
MD Reference Pt	SDC 42 (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	331.94°

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Operator	SOUTHWESTERN ENERGY	Slot	Slot 1H
Area	Brooke County, WV	Well	Samuel Jones BRK 1H
Field	Brooke	Wellbore	Samuel Jones BRK 1H AWP
Facility	Samuel Jones BRK Pad		

WELLPATH DATA (169 stations) + = interpolated/extrapolated station

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
0.00H	0.000	187.080	0.00	0.00	0.00	0.00	1762974.14	14596412.23	40°11'25.859"N	80°33'40.151"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	187.080	26.00	0.00	0.00	0.00	1762974.14	14596412.23	40°11'25.859"N	80°33'40.151"W	0.00	0.000	0.00	0.00	0.00
149.00	0.120	187.080	149.00	-0.11	-0.13	-0.02	1762974.13	14596412.10	40°11'25.858"N	80°33'40.151"W	0.13	187.080	0.10	0.10	-140.59
210.00	0.210	177.550	210.00	-0.26	-0.30	-0.02	1762974.13	14596411.92	40°11'25.858"N	80°33'40.151"W	0.30	183.584	0.15	0.15	-15.62
300.00	0.220	120.310	300.00	-0.55	-0.55	0.14	1762974.28	14596411.67	40°11'25.854"N	80°33'40.149"W	0.57	166.107	0.23	0.01	-63.60
316.00	0.160	135.020	316.00	-0.60	-0.59	0.18	1762974.32	14596411.64	40°11'25.853"N	80°33'40.149"W	0.61	162.969	0.48	-0.37	91.94
429.00	0.230	56.120	429.00	-0.73	-0.57	0.48	1762974.62	14596411.66	40°11'25.853"N	80°33'40.145"W	0.75	140.003	0.22	0.06	-69.82
520.00	0.210	49.740	520.00	-0.68	-0.36	0.76	1762974.90	14596411.87	40°11'25.855"N	80°33'40.141"W	0.84	115.505	0.03	-0.02	-7.01
611.00	0.400	67.480	611.00	-0.67	-0.13	1.18	1762975.32	14596412.09	40°11'25.858"N	80°33'40.136"W	1.19	96.404	0.23	0.21	19.49
708.00	0.300	65.340	707.99	-0.72	0.10	1.72	1762975.87	14596412.33	40°11'25.860"N	80°33'40.129"W	1.73	86.568	0.10	-0.10	-2.21
804.00	0.660	60.120	803.99	-0.72	0.48	2.43	1762976.57	14596412.71	40°11'25.864"N	80°33'40.120"W	2.48	78.746	0.38	0.38	-5.44
900.00	0.950	45.290	899.98	-0.47	1.32	3.48	1762977.62	14596413.55	40°11'25.872"N	80°33'40.106"W	3.72	69.217	0.37	0.30	-15.45
996.00	1.310	47.580	995.96	0.03	2.62	4.85	1762978.99	14596414.84	40°11'25.885"N	80°33'40.088"W	5.51	61.635	0.38	0.38	2.39
1092.00	0.720	21.120	1091.95	0.70	3.92	5.88	1762980.02	14596416.15	40°11'25.897"N	80°33'40.075"W	7.07	56.290	0.77	-0.61	-27.56
1188.00	0.590	5.320	1187.94	1.50	4.98	6.14	1762980.28	14596417.20	40°11'25.908"N	80°33'40.071"W	7.90	50.981	0.23	-0.14	-16.46
1283.00	0.680	6.090	1282.94	2.38	6.02	6.25	1762980.39	14596418.25	40°11'25.918"N	80°33'40.070"W	8.68	46.038	0.10	0.09	0.81
1379.00	0.680	8.890	1378.93	3.30	7.15	6.40	1762980.54	14596419.38	40°11'25.929"N	80°33'40.068"W	9.60	41.796	0.03	0.00	2.92
1474.00	0.570	29.470	1473.92	4.01	8.12	6.71	1762980.86	14596420.35	40°11'25.939"N	80°33'40.064"W	10.54	39.582	0.26	-0.12	21.66
1570.00	0.700	34.010	1569.92	4.54	9.02	7.28	1762981.42	14596421.25	40°11'25.948"N	80°33'40.057"W	11.59	38.886	0.15	0.14	4.73
1665.00	0.290	164.260	1664.92	4.58	9.27	7.67	1762981.81	14596421.50	40°11'25.950"N	80°33'40.052"W	12.03	39.585	0.96	-0.43	137.11
1761.00	0.850	186.530	1760.91	3.75	8.33	7.65	1762981.79	14596420.56	40°11'25.941"N	80°33'40.052"W	11.31	42.565	0.62	0.58	23.20
1852.00	0.940	199.410	1851.90	2.69	6.96	7.33	1762981.47	14596419.18	40°11'25.927"N	80°33'40.056"W	10.10	46.484	0.24	0.10	14.15
1943.00	3.010	196.560	1942.84	0.49	3.96	6.40	1762980.54	14596416.19	40°11'25.898"N	80°33'40.068"W	7.53	58.227	2.28	2.27	-3.13
2038.00	5.150	213.980	2037.60	-3.29	-1.96	3.30	1762977.45	14596410.26	40°11'25.839"N	80°33'40.108"W	3.84	120.731	2.58	2.25	18.34
2134.00	7.760	215.160	2132.98	-8.23	-10.84	-2.84	1762971.31	14596401.39	40°11'25.752"N	80°33'40.188"W	11.20	194.671	2.72	2.72	1.23
2230.00	9.620	209.860	2227.88	-15.41	-23.09	-10.56	1762965.55	14596389.14	40°11'25.631"N	80°33'40.288"W	25.40	204.581	2.11	1.94	-5.52
2326.00	11.200	205.690	2322.29	-25.18	-38.45	-18.60	1762956.58	14596379.79	40°11'25.480"N	80°33'40.393"W	42.72	205.813	1.82	1.65	-4.34
2422.00	12.350	202.340	2416.27	-37.24	-56.35	-26.54	1762947.61	14596355.90	40°11'25.303"N	80°33'40.497"W	62.29	205.223	1.39	1.20	-3.49
2519.00	13.950	204.620	2510.73	-50.94	-76.58	-35.36	1762938.80	14596335.68	40°11'25.104"N	80°33'40.611"W	84.35	204.765	1.73	1.65	2.35
2615.00	15.320	202.460	2603.61	-66.02	-98.82	-45.03	1762929.14	14596313.45	40°11'24.885"N	80°33'40.737"W	108.59	204.466	1.54	1.43	-2.25

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Area	Brooke County, WV	Wellbore	Samuel Jones BRK 1H AWP
Field	Brooke		
Facility	Samuel Jones BRK Pad		

WELLPATH DATA (169 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)	(ft)	(ft)	(°)	(ft/100ft)	(ft/100ft)	(°/100ft)
2711.00	14.420	198.650	2696.40	-82.28	-121.86	-53.69	1762920.47	14566290.41	40°11'24.657"N	80°33'40.851"W	133.17	203.778	1.38	-0.94	-3.97
2807.00	15.580	202.800	2789.13	-88.62	-145.08	-62.51	1762911.66	14566267.21	40°11'24.428"N	80°33'40.966"W	157.97	203.311	1.65	1.21	4.32
2903.00	16.540	201.100	2881.38	-115.69	-169.71	-72.43	1762901.74	14566242.58	40°11'24.185"N	80°33'41.095"W	184.52	203.111	1.11	1.00	-1.77
2999.00	16.840	201.630	2973.34	-133.62	-195.39	-82.47	1762891.70	14566216.92	40°11'23.932"N	80°33'41.226"W	212.08	202.885	0.35	0.31	0.55
3094.00	17.580	201.650	3064.08	-151.80	-221.51	-92.84	1762881.34	14566190.80	40°11'23.675"N	80°33'41.367"W	240.18	202.739	0.78	0.78	0.02
3190.00	17.320	203.120	3155.66	-170.14	-248.13	-103.80	1762870.39	14566164.19	40°11'23.412"N	80°33'41.504"W	268.97	202.701	0.53	-0.27	1.53
3286.00	17.680	199.490	3247.22	-188.94	-275.02	-114.27	1762859.92	14566137.32	40°11'23.147"N	80°33'41.641"W	297.81	202.564	1.20	0.38	-3.78
3381.00	17.110	200.510	3337.88	-207.92	-301.70	-123.98	1762850.21	14566110.64	40°11'22.884"N	80°33'41.768"W	326.19	202.340	0.68	-0.60	1.07
3477.00	16.860	199.260	3429.69	-226.70	-328.07	-133.52	1762840.67	14566084.28	40°11'22.624"N	80°33'41.892"W	354.20	202.146	0.46	-0.26	-1.30
3573.00	16.840	199.940	3521.57	-245.44	-354.29	-142.86	1762831.34	14566058.08	40°11'22.365"N	80°33'42.014"W	382.01	201.960	0.21	-0.02	0.71
3669.00	16.930	201.280	3613.43	-263.86	-380.38	-152.67	1762821.53	14566031.99	40°11'22.108"N	80°33'42.142"W	409.88	201.869	0.42	0.05	1.40
3765.00	17.400	202.090	3705.16	-282.16	-406.71	-163.14	1762811.06	14566005.67	40°11'21.848"N	80°33'42.279"W	438.21	201.857	0.55	0.45	0.84
3862.00	17.290	200.630	3797.75	-300.97	-433.64	-173.68	1762800.53	14565978.75	40°11'21.582"N	80°33'42.416"W	467.13	201.827	0.46	-0.11	-1.51
3958.00	16.810	201.640	3889.53	-319.37	-459.89	-183.82	1762790.39	14565952.51	40°11'21.323"N	80°33'42.549"W	495.27	201.787	0.59	-0.50	1.05
4054.00	17.030	201.790	3981.37	-337.41	-485.85	-194.16	1762780.06	14565926.56	40°11'21.067"N	80°33'42.684"W	523.21	201.783	0.23	0.23	0.16
4150.00	17.860	202.200	4072.95	-355.89	-512.53	-204.94	1762769.28	14565899.89	40°11'20.804"N	80°33'42.824"W	551.99	201.794	0.87	0.86	0.43
4246.00	18.500	203.750	4164.16	-374.71	-540.11	-216.64	1762757.59	14565872.33	40°11'20.532"N	80°33'42.977"W	581.93	201.856	0.84	0.67	1.61
4343.00	16.970	202.780	4256.55	-393.17	-567.24	-228.32	1762745.92	14565845.20	40°11'20.265"N	80°33'43.129"W	611.47	201.925	1.61	-1.58	-1.00
4438.00	17.070	203.660	4347.39	-410.56	-592.80	-239.28	1762734.96	14565819.66	40°11'20.013"N	80°33'43.272"W	639.27	201.981	0.29	0.11	0.93
4533.00	17.050	200.540	4438.21	-428.41	-618.61	-249.76	1762724.48	14565793.85	40°11'19.758"N	80°33'43.408"W	667.13	201.986	0.96	-0.02	-3.28
4628.00	16.700	200.320	4529.12	-446.69	-644.45	-259.39	1762714.86	14565768.02	40°11'19.503"N	80°33'43.534"W	694.70	201.924	0.37	-0.37	-0.23
4724.00	17.080	202.070	4620.98	-464.89	-670.45	-269.48	1762704.77	14565742.03	40°11'19.247"N	80°33'43.666"W	722.58	201.897	0.66	0.40	1.82
4819.00	18.400	202.980	4711.46	-483.26	-697.19	-280.57	1762693.68	14565715.31	40°11'18.983"N	80°33'43.810"W	751.53	201.922	1.42	1.39	0.96
4914.00	16.440	199.960	4802.10	-501.68	-723.63	-291.02	1762683.24	14565688.88	40°11'18.722"N	80°33'44.047"W	779.96	201.908	2.27	-2.06	-3.18
5011.00	15.900	205.660	4885.27	-518.72	-748.51	-301.46	1762672.61	14565664.01	40°11'18.477"N	80°33'44.216"W	806.93	201.937	1.73	-0.56	5.88
5107.00	14.250	202.380	4967.96	-534.03	-771.29	-311.65	1762662.61	14565641.23	40°11'18.252"N	80°33'44.335"W	831.87	202.002	1.93	-1.72	-3.42
5204.00	13.520	203.890	5052.13	-548.62	-792.70	-320.79	1762653.48	14565619.83	40°11'18.041"N	80°33'44.452"W	855.14	202.032	0.84	-0.75	1.56
5300.00	12.640	232.450	5175.73	-557.28	-809.38	-333.67	1762640.60	14565603.16	40°11'17.877"N	80°33'44.502"W	875.46	202.404	6.73	-0.92	29.75
5348.00	13.870	245.110	5222.46	-557.83	-815.00	-343.06	1762631.22	14565587.54	40°11'17.822"N	80°33'44.623"W	884.26	202.828	6.55	2.56	26.38
5396.00	13.250	257.080	5259.14	-556.07	-818.65	-353.64	1762620.64	14565573.89	40°11'17.786"N	80°33'44.760"W	891.77	203.363	5.98	-1.29	24.94

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Facility	Samuel Jones BRK Pad		

WELLPATH DATA (169 stations)															
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ft	°	°	ft	ft	ft	ft	US ft	US ft			ft	°	Ft/100ft	Ft/100ft	Ft/100ft
5444.00	13.720	272.150	5315.83	-551.77	-819.67	-364.69	1762609.59	14595592.87	40°11'17.777"N	80°33'44.902"W	897.14	203.986	7.37	0.98	31.40
5492.00	15.740	283.800	5362.26	-544.56	-817.90	-376.71	1762597.58	14595594.64	40°11'17.795"N	80°33'45.057"W	900.48	204.730	7.45	4.21	24.27
5540.00	17.450	291.640	5408.26	-534.72	-813.69	-389.72	1762584.57	14595598.85	40°11'17.837"N	80°33'45.224"W	902.21	205.592	5.86	3.56	16.33
5589.00	19.290	297.740	5454.77	-522.42	-807.22	-403.72	1762570.58	14595605.32	40°11'17.902"N	80°33'45.404"W	902.54	206.571	5.43	3.76	12.45
5636.00	20.700	304.180	5498.94	-508.65	-798.93	-417.46	1762556.84	14595613.63	40°11'17.984"N	80°33'45.581"W	901.43	207.588	5.56	3.00	13.70
5685.00	23.150	309.010	5544.40	-492.11	-788.00	-432.12	1762542.19	14595624.50	40°11'18.093"N	80°33'45.769"W	898.71	208.739	6.20	5.00	9.86
5732.00	26.170	314.120	5587.11	-473.73	-774.97	-446.74	1762527.58	14595637.66	40°11'18.223"N	80°33'45.956"W	894.51	209.962	7.86	6.43	10.87
5780.00	27.450	316.020	5629.95	-453.01	-759.64	-462.02	1762512.30	14595652.88	40°11'18.375"N	80°33'46.152"W	889.11	211.309	3.21	2.67	3.96
5827.00	29.370	318.380	5671.29	-431.39	-743.22	-477.20	1762497.13	14595665.29	40°11'18.538"N	80°33'46.347"W	883.24	212.703	4.73	4.09	5.02
5876.00	32.460	320.490	5713.32	-406.81	-724.09	-493.55	1762480.78	14595688.41	40°11'18.728"N	80°33'46.556"W	876.30	214.279	6.68	6.31	4.31
5923.00	35.290	322.200	5752.34	-381.07	-703.63	-509.90	1762464.44	14595708.87	40°11'18.931"N	80°33'46.766"W	868.96	215.930	6.35	6.02	3.64
5972.00	37.800	324.100	5791.71	-352.23	-680.28	-527.39	1762446.96	14595732.21	40°11'19.162"N	80°33'46.990"W	860.76	217.785	5.62	5.12	3.88
6019.00	40.680	326.040	5828.11	-322.72	-655.90	-544.39	1762429.96	14595756.58	40°11'19.404"N	80°33'47.207"W	852.39	219.693	6.66	6.13	4.13
6068.00	44.090	327.570	5864.29	-289.83	-628.25	-562.46	1762411.90	14595784.21	40°11'19.678"N	80°33'47.438"W	843.25	221.837	7.27	6.96	3.12
6115.00	47.810	329.340	5896.97	-256.12	-599.46	-580.12	1762394.25	14595812.99	40°11'19.963"N	80°33'47.664"W	834.20	224.060	8.36	7.91	3.77
6164.00	53.350	330.810	5928.07	-218.30	-566.66	-598.97	1762375.40	14595845.78	40°11'20.288"N	80°33'47.905"W	824.55	226.588	11.54	11.31	3.00
6211.00	56.070	332.060	5965.22	-179.94	-532.97	-617.31	1762357.07	14595879.46	40°11'20.622"N	80°33'48.139"W	815.55	229.193	6.18	5.79	2.66
6260.00	56.590	333.520	5982.39	-139.17	-496.70	-635.95	1762338.44	14595915.71	40°11'20.982"N	80°33'48.377"W	806.94	232.009	2.70	1.06	2.98
6308.00	59.050	335.410	6007.95	-98.59	-460.05	-653.46	1762320.94	14595952.36	40°11'21.345"N	80°33'48.600"W	799.15	234.854	6.11	5.12	3.94
6356.00	62.210	337.020	6031.49	-56.88	-421.77	-670.31	1762304.09	14595990.62	40°11'21.724"N	80°33'48.815"W	791.97	237.821	7.20	6.58	3.35
6403.00	66.670	338.170	6051.77	-14.70	-382.58	-686.46	1762287.94	14596029.79	40°11'22.112"N	80°33'49.020"W	785.88	240.868	9.74	9.49	2.45
6453.00	73.070	337.740	6068.97	31.96	-339.09	-704.08	1762270.34	14596073.27	40°11'22.542"N	80°33'49.245"W	781.48	244.284	12.83	12.80	-0.86
6501.00	80.050	337.690	6080.11	78.38	-295.92	-721.77	1762252.65	14596116.42	40°11'22.970"N	80°33'49.470"W	780.08	247.707	14.54	14.54	-0.10
6549.00	85.250	337.800	6086.25	125.73	-251.88	-739.79	1762234.63	14596160.45	40°11'23.406"N	80°33'49.699"W	781.50	251.198	10.84	10.83	0.23
6597.00	88.050	337.720	6089.06	173.39	-207.53	-757.93	1762216.51	14596204.78	40°11'23.845"N	80°33'49.930"W	785.83	254.687	5.84	5.83	-0.17
6643.00	89.800	337.180	6089.91	219.17	-165.05	-775.57	1762198.88	14596247.24	40°11'24.266"N	80°33'50.155"W	792.93	257.986	3.98	3.80	-1.17
6680.00	90.850	339.250	6089.71	255.95	-130.70	-789.30	1762185.15	14596281.58	40°11'24.606"N	80°33'50.330"W	800.04	260.598	6.27	2.84	5.59
6794.00	91.250	341.820	6087.62	388.64	-23.24	-827.28	1762147.19	14596338.99	40°11'25.670"N	80°33'50.812"W	827.60	268.391	2.28	0.35	2.25
6889.00	90.180	338.460	6086.44	482.64	66.09	-859.54	1762114.93	14596478.29	40°11'26.554"N	80°33'51.222"W	862.08	274.397	3.71	-1.13	-3.54
6883.00	90.410	337.510	6085.95	556.12	153.23	-894.78	1762079.71	14596565.40	40°11'27.417"N	80°33'51.671"W	907.80	279.718	1.04	0.24	-1.01

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Actual Wellpath Report

Samuel Jones BRK 1H AWP Proj: 14450'

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 1H
Area	Brooke County, WV	Well	Samuel Jones BRK 1H
Field	Brooke	Wellbore	Samuel Jones BRK 1H AWB
Facility	Samuel Jones BRK Pad		

WELLPATH DATA (169 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)
7079.00	90.270	336.890	6085.38	651.71	241.73	-931.98	1762042.53	14596653.86	40°11'28.293"N	80°33'52.144"W	962.82	284.540	0.66	-0.15	-0.65
7174.00	90.240	339.630	6084.96	746.12	329.96	-967.16	1762007.36	14566742.06	40°11'29.167"N	80°33'52.592"W	1021.90	288.838	2.88	-0.03	2.88
7268.00	90.180	338.420	6084.61	839.40	417.73	-1000.81	1761973.72	14566829.80	40°11'30.036"N	80°33'53.020"W	1084.49	292.655	1.29	-0.06	-1.29
7363.00	90.270	337.100	6084.24	933.91	505.66	-1036.76	1761937.78	14566917.69	40°11'30.906"N	80°33'53.478"W	1153.50	296.000	1.39	0.09	-1.39
7458.00	90.290	337.310	6083.78	1028.51	593.24	-1073.57	1761900.99	14567005.24	40°11'31.774"N	80°33'53.947"W	1226.57	298.924	0.22	0.02	0.22
7544.00	89.630	337.250	6083.84	1114.14	672.57	-1106.78	1761867.79	14567084.54	40°11'32.559"N	80°33'54.370"W	1295.11	301.286	0.77	-0.77	-0.07
7586.00	89.910	337.310	6084.01	1155.95	711.31	-1123.01	1761851.57	14567123.26	40°11'32.943"N	80°33'54.576"W	1329.32	302.350	0.68	0.67	0.14
7683.00	89.820	337.390	6084.23	1252.52	800.82	-1160.36	1761814.23	14567212.74	40°11'33.829"N	80°33'55.052"W	1409.88	304.612	0.12	-0.09	0.08
7780.00	90.490	336.720	6083.97	1349.13	890.15	-1198.18	1761776.43	14567302.03	40°11'34.714"N	80°33'55.534"W	1492.65	306.609	0.98	0.69	-0.69
7876.00	90.770	336.770	6082.92	1444.79	978.34	-1236.08	1761738.54	14567390.19	40°11'35.587"N	80°33'56.017"W	1576.40	308.361	0.30	0.29	0.05
7973.00	90.400	336.120	6081.93	1541.48	1067.26	-1274.84	1761699.80	14567497.07	40°11'36.467"N	80°33'56.510"W	1662.50	309.935	0.77	-0.38	-0.67
8069.00	90.550	335.240	6081.13	1637.28	1154.73	-1314.37	1761660.28	14567566.52	40°11'37.334"N	80°33'57.014"W	1749.57	311.301	0.93	0.16	-0.92
8164.00	90.460	335.460	6080.29	1732.10	1241.07	-1353.99	1761620.67	14567652.82	40°11'38.189"N	80°33'57.519"W	1836.72	312.508	0.25	-0.09	0.23
8260.00	90.400	336.140	6079.57	1827.88	1328.63	-1393.34	1761581.34	14567740.35	40°11'39.056"N	80°33'58.021"W	1925.27	313.638	0.71	-0.06	0.71
8356.00	90.400	337.290	6078.90	1923.55	1416.81	-1431.29	1761543.40	14567828.49	40°11'39.929"N	80°33'58.504"W	2013.94	314.709	1.20	0.00	1.20
8452.00	90.490	338.780	6078.16	2019.00	1505.84	-1467.20	1761507.51	14567917.48	40°11'40.811"N	80°33'58.962"W	2102.43	315.745	1.55	0.09	1.55
8548.00	90.490	339.680	6077.34	2114.22	1595.59	-1501.24	1761473.48	14568007.21	40°11'41.699"N	80°33'59.395"W	2190.81	316.745	0.94	0.00	0.94
8644.00	90.460	338.390	6076.54	2209.48	1685.23	-1535.59	1761439.15	14568096.81	40°11'42.587"N	80°33'59.831"W	2279.92	317.660	1.34	-0.03	-1.34
8741.00	90.770	338.220	6075.50	2305.87	1775.36	-1571.44	1761403.31	14568186.90	40°11'43.479"N	80°34'00.288"W	2370.93	318.487	0.36	0.32	-0.18
8836.00	90.740	337.130	6074.25	2400.39	1863.23	-1607.72	1761367.24	14568274.74	40°11'44.349"N	80°34'00.747"W	2460.84	319.214	1.15	-0.03	-1.15
8932.00	90.680	338.550	6073.06	2495.87	1952.13	-1643.73	1761331.05	14568363.60	40°11'45.229"N	80°34'01.208"W	2551.99	319.902	1.48	-0.06	1.48
9027.00	90.770	338.530	6071.86	2590.23	2040.53	-1678.48	1761296.31	14568451.98	40°11'46.105"N	80°34'01.651"W	2642.18	320.560	0.10	0.09	-0.02
9124.00	90.770	339.250	6070.55	2686.51	2131.02	-1713.42	1761261.39	14568542.42	40°11'47.001"N	80°34'02.095"W	2734.41	321.199	0.74	0.00	0.74
9219.00	90.800	339.640	6069.25	2780.69	2219.96	-1746.77	1761228.05	14568631.33	40°11'47.881"N	80°34'02.519"W	2824.79	321.803	0.41	0.03	0.41
9315.00	90.680	338.420	6068.07	2875.94	2309.59	-1781.12	1761193.71	14568720.93	40°11'48.766"N	80°34'02.956"W	2916.61	322.361	1.28	-0.12	-1.27
9411.00	90.680	337.900	6066.87	2971.37	2398.69	-1816.82	1761158.01	14568810.00	40°11'49.651"N	80°34'03.411"W	3009.09	322.859	0.54	0.00	-0.54
9506.00	90.710	336.560	6065.72	3065.96	2486.28	-1853.60	1761121.26	14568897.55	40°11'50.518"N	80°34'03.879"W	3101.20	323.294	1.41	0.03	-1.41
9602.00	90.650	335.720	6064.58	3161.69	2574.07	-1892.43	1761082.45	14568985.31	40°11'51.387"N	80°34'04.374"W	3194.86	323.677	0.88	-0.06	-0.87
9698.00	90.740	334.390	6063.41	3257.54	2661.11	-1932.91	1761041.98	14569072.31	40°11'52.249"N	80°34'04.890"W	3289.02	324.007	1.39	0.09	-1.39
9794.00	90.650	334.190	6062.25	3353.45	2747.60	-1974.55	1761000.35	14569158.77	40°11'53.106"N	80°34'05.422"W	3383.51	324.297	0.23	-0.09	-0.21

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Samuel Jones BRK 1H AWP Proj: 14450

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 1H
Area	Brooke County, WV	Well	Samuel Jones BRK 1H
Field	Brooke	Wellbore	Samuel Jones BRK 1H AWP
Facility	Samuel Jones BRK Pad		

WELLPATH DATA (169 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)	(°)	(ft/100ft)	(ft/100ft)	(°/100ft)
9890.00	90.680	334.650	6061.14	3449.36	2834.18	-2016.00	1760958.92	14599245.32	40°11'53.864"N	80°34'05.950"W	3478.05	324.575	0.48	0.03	0.48
9986.00	90.770	335.970	6059.92	3545.18	2921.40	-2056.10	1760918.84	14599332.50	40°11'54.827"N	80°34'06.461"W	3572.41	324.862	1.38	0.09	1.38
10082.00	90.800	337.470	6058.61	3640.84	3009.57	-2094.03	1760880.92	14599420.64	40°11'55.701"N	80°34'06.945"W	3666.40	325.170	1.56	0.03	1.56
10178.00	90.650	340.370	6057.39	3736.11	3089.13	-2128.55	1760846.41	14599510.16	40°11'56.587"N	80°34'07.384"W	3759.70	325.518	3.02	-0.16	3.02
10274.00	90.740	341.150	6056.23	3830.96	3189.76	-2160.19	1760814.79	14599600.76	40°11'57.484"N	80°34'07.786"W	3852.40	325.893	0.82	0.09	0.81
10370.00	90.680	342.270	6055.04	3925.56	3280.90	-2190.31	1760784.68	14599691.86	40°11'58.386"N	80°34'08.169"W	3944.84	326.273	1.17	-0.06	1.17
10466.00	90.180	341.620	6054.32	4020.10	3372.17	-2220.06	1760754.93	14599783.10	40°11'59.290"N	80°34'08.546"W	4037.35	326.641	0.85	-0.52	-0.68
10561.00	90.740	340.150	6053.55	4113.94	3461.93	-2251.17	1760723.84	14599872.82	40°12'00.178"N	80°34'08.942"W	4129.49	326.965	1.66	0.59	-1.55
10656.00	90.770	339.530	6052.28	4210.01	3552.98	-2284.60	1760690.43	14599963.83	40°12'01.080"N	80°34'09.367"W	4224.10	327.259	0.64	0.03	-0.64
10754.00	90.060	337.580	6051.58	4305.36	3642.82	-2319.69	1760655.34	14600053.15	40°12'01.954"N	80°34'09.813"W	4318.27	327.508	2.16	-0.74	-2.03
10851.00	90.220	337.020	6051.34	4401.94	3731.81	-2357.13	1760617.93	14600142.60	40°12'02.850"N	80°34'10.290"W	4413.89	327.722	0.60	0.16	-0.58
10947.00	90.490	336.290	6050.75	4497.61	3819.95	-2395.17	1760579.90	14600230.70	40°12'03.723"N	80°34'10.775"W	4508.75	327.912	0.81	0.28	-0.76
11043.00	90.180	335.570	6050.19	4593.37	3907.60	-2434.32	1760540.76	14600318.32	40°12'04.591"N	80°34'11.274"W	4603.83	328.078	0.82	-0.32	-0.75
11140.00	90.340	335.050	6049.75	4690.20	3995.73	-2474.84	1760500.26	14600406.42	40°12'05.464"N	80°34'11.791"W	4700.07	328.227	0.56	0.16	-0.54
11236.00	90.250	335.160	6049.25	4786.06	4082.81	-2515.25	1760459.86	14600493.46	40°12'06.326"N	80°34'12.306"W	4795.39	328.364	0.15	-0.09	0.11
11333.00	90.430	335.370	6048.68	4882.89	4170.91	-2555.83	1760419.29	14600581.53	40°12'07.199"N	80°34'12.824"W	4891.70	328.501	0.29	0.19	0.22
11429.00	90.030	335.690	6048.29	4978.70	4258.28	-2595.60	1760379.54	14600668.87	40°12'08.064"N	80°34'13.331"W	4986.99	328.636	0.53	-0.47	0.33
11526.00	90.490	337.530	6047.85	5075.38	4347.31	-2634.10	1760341.05	14600757.86	40°12'08.946"N	80°34'13.821"W	5083.07	328.788	1.96	0.42	1.90
11622.00	90.580	337.820	6046.95	5170.89	4436.11	-2670.57	1760304.60	14600846.63	40°12'09.825"N	80°34'14.286"W	5177.93	328.952	0.32	0.09	0.30
11717.00	90.520	339.570	6046.04	5265.25	4524.61	-2705.08	1760270.10	14600936.09	40°12'10.701"N	80°34'14.725"W	5271.58	329.126	1.84	-0.06	1.84
11814.00	90.800	339.360	6044.93	5361.38	4615.44	-2739.11	1760236.09	14601025.89	40°12'11.600"N	80°34'15.158"W	5367.02	329.312	0.36	0.29	-0.22
11910.00	90.620	340.460	6043.74	5456.44	4705.59	-2772.08	1760203.13	14601116.00	40°12'12.493"N	80°34'15.577"W	5461.41	329.497	1.16	-0.19	1.15
12007.00	89.780	340.010	6043.40	5552.43	4796.87	-2804.88	1760170.34	14601207.25	40°12'13.397"N	80°34'15.994"W	5556.74	329.684	0.98	-0.87	-0.46
12103.00	90.250	339.630	6043.37	5647.52	4886.98	-2838.00	1760137.24	14601297.32	40°12'14.289"N	80°34'16.415"W	5651.26	329.855	0.63	0.49	-0.40
12199.00	90.460	338.390	6042.78	5742.79	4976.60	-2872.38	1760102.87	14601386.91	40°12'15.176"N	80°34'16.853"W	5746.06	330.007	1.31	0.22	-1.29
12295.00	90.490	337.400	6041.98	5838.27	5065.54	-2908.58	1760069.76	14601475.82	40°12'16.056"N	80°34'17.313"W	5841.16	330.137	1.03	0.03	-1.03
12391.00	90.490	336.380	6041.16	5933.90	5153.83	-2946.18	1760029.09	14601564.84	40°12'16.931"N	80°34'17.793"W	5936.50	330.246	1.06	0.00	-1.06
12488.00	90.460	336.330	6040.36	6030.61	5242.69	-2985.09	1759990.21	14601652.90	40°12'17.811"N	80°34'18.289"W	6032.95	330.344	0.16	-0.03	-0.05
12583.00	90.580	336.280	6039.49	6125.33	5329.68	-3023.26	1759952.04	14601739.85	40°12'18.672"N	80°34'18.776"W	6127.44	330.436	0.14	0.13	-0.05
12679.00	90.580	336.700	6038.52	6221.02	5417.70	-3061.56	1759913.77	14601827.84	40°12'19.544"N	80°34'19.264"W	6222.91	330.529	0.44	0.00	0.44

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Samuel Jones BRK 1H AWP Proj: 14450'

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 1H
Area	Brooke County, WV	Well	Samuel Jones BRK 1H
Field	Brooke	Wellbore	Samuel Jones BRK 1H AWB
Facility	Samuel Jones BRK Pad		

WELLPATH DATA (169 stations)

MD (ft)	Inclination I°	Azimuth A°	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir T°	DLS F°/100ft	Build Rate F°/100ft	Turn Rate F°/100ft
12775.00	90.520	336.790	6037.60	6316.68	5605.90	-3099.46	1759875.88	14601916.01	40°12'20.417"N	80°34'19.747"W	6318.35	330.623	0.11	-0.06	0.09
12871.00	90.520	336.830	6036.73	6412.33	5594.14	-3137.26	1759838.09	14602004.21	40°12'21.291"N	80°34'20.228"W	6413.80	330.716	0.04	0.00	0.04
12967.00	90.400	337.010	6035.96	6507.97	5682.45	-3174.89	1759800.47	14602092.49	40°12'22.165"N	80°34'20.708"W	6509.24	330.807	0.23	-0.12	0.19
13063.00	90.460	337.360	6035.24	6603.56	5770.94	-3212.11	1759763.27	14602180.94	40°12'23.042"N	80°34'21.182"W	6604.65	330.900	0.37	0.06	0.36
13159.00	90.580	337.410	6034.37	6699.12	5859.55	-3249.03	1759726.37	14602269.52	40°12'23.919"N	80°34'21.652"W	6700.04	330.992	0.14	0.13	0.05
13255.00	90.490	338.030	6033.47	6794.63	5948.38	-3285.42	1759689.98	14602358.32	40°12'24.798"N	80°34'22.116"W	6795.38	331.087	0.65	-0.09	0.65
13351.00	90.620	337.060	6032.54	6890.17	6037.10	-3322.09	1759653.33	14602447.00	40°12'25.677"N	80°34'22.583"W	6890.78	331.177	1.02	0.14	-1.01
13447.00	90.520	335.880	6031.59	6985.86	6125.11	-3360.41	1759615.02	14602534.98	40°12'26.548"N	80°34'23.072"W	6986.37	331.250	1.23	-0.10	-1.23
13542.00	90.430	335.520	6030.80	7080.65	6211.69	-3399.51	1759575.95	14602621.53	40°12'27.406"N	80°34'23.570"W	7081.08	331.309	0.39	-0.09	-0.38
13638.00	90.490	336.240	6030.03	7176.42	6299.30	-3438.73	1759536.73	14602709.11	40°12'28.274"N	80°34'24.070"W	7176.78	331.370	0.75	0.06	0.75
13735.00	90.590	336.950	6029.11	7273.10	6388.32	-3477.26	1759498.22	14602798.09	40°12'29.155"N	80°34'24.561"W	7273.37	331.440	0.74	0.10	0.73
13831.00	90.620	337.380	6028.10	7368.69	6476.79	-3514.52	1759460.98	14602886.52	40°12'30.031"N	80°34'25.036"W	7368.90	331.514	0.45	0.03	0.45
13927.00	90.520	338.860	6027.14	7464.13	6565.87	-3550.29	1759425.22	14602975.57	40°12'30.913"N	80°34'25.491"W	7464.26	331.599	1.55	-0.10	1.54
14023.00	90.460	337.990	6026.32	7559.51	6655.14	-3585.59	1759389.93	14603064.80	40°12'31.797"N	80°34'25.941"W	7559.58	331.686	0.91	-0.06	-0.91
14119.00	90.550	336.270	6025.48	7655.11	6743.58	-3622.90	1759352.64	14603153.22	40°12'32.673"N	80°34'26.416"W	7655.15	331.754	1.79	0.09	-1.79
14214.00	90.370	336.000	6024.71	7749.85	6830.46	-3661.33	1759314.22	14603240.06	40°12'33.533"N	80°34'26.906"W	7749.87	331.807	0.34	-0.19	-0.28
14311.00	90.520	335.330	6023.96	7846.64	6918.84	-3701.30	1759274.27	14603328.40	40°12'34.408"N	80°34'27.416"W	7846.65	331.855	0.71	0.15	-0.69
14407.00	90.560	334.240	6023.06	7942.52	7005.68	-3742.19	1759233.39	14603415.22	40°12'35.268"N	80°34'27.938"W	7942.52	331.890	1.14	0.03	-1.14
14450.00	90.550	334.240	6022.65	7985.48	7044.41	-3760.88	1759214.71	14603453.93	40°12'35.652"N	80°34'28.176"W	7985.48	331.903	0.00	0.00	0.00

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 1H
Area	Brooke County, WV	Well	Samuel Jones BRK 1H
Field	Brooke	Wellbore	Samuel Jones BRK 1H AWB
Facility	Samuel Jones BRK Pad		

HOLE & CASING SECTIONS - Ref Wellbore: Samuel Jones BRK 1H AWB Ref Wellpath: Samuel Jones BRK 1H AWP Proj: 14450'											
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	100.00	74.00	26.00	100.00	0.00	0.00	-0.05	-0.01		-0.01
17.5in Open Hole	100.00	359.00	259.00	100.00	359.00	-0.05	-0.01	-0.64	-0.64		0.28
13.375in Casing Surface	26.00	359.00	333.00	26.00	359.00	0.00	0.00	-0.64	-0.64		0.28
12.25in Open Hole	359.00	1822.00	1463.00	359.00	1821.90	-0.64	0.28	7.42	7.42		7.47
9.625in Casing Intermediate	26.00	1822.00	1796.00	26.00	1821.90	0.00	0.00	7.42	7.42		7.47
8.75in Open Hole	1822.00	6740.00	4918.00	1821.90	6088.71	7.42	7.47	-74.35	-74.35		-809.89
8.5in Open Hole	6740.00	14450.00	7710.00	6088.71	6022.65	-74.35	-809.89	7044.41	7044.41		-3760.88
5.5in Casing Production	26.00	14450.00	14424.00	26.00	6022.65	0.00	0.00	7044.41	7044.41		-3760.88

TARGETS											
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape			
Samuel Jones BRK 1H BHL Rev-2	6025.77	7047.15	-3756.39	1759219.20	14603456.66	40°12'35.679"N	80°34'28.118"W	point			
Samuel Jones BRK 1H LP Rev-2	6097.00	-361.95	-676.56	1762297.84	14596050.42	40°11'22.315"N	80°33'48.892"W	point			

WELLPATH COMPOSITION - Ref Wellbore: Samuel Jones BRK 1H AWB Ref Wellpath: Samuel Jones BRK 1H AWP Proj: 14450'											
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore							
26.00	316.00	OWSG MWD rev2 + HRGM	01 MWD + HRGM <17 1/2"> (149'-316')	Samuel Jones BRK 1H AWB							
316.00	1761.00	OWSG MWD rev2 + HRGM	02 MWD + HRGM <12 1/4"> (429'-1761')	Samuel Jones BRK 1H AWB							
1761.00	6680.00	OWSG MWD rev2 + HRGM	03 MWD + HRGM <8 3/4"> (1852'-6680')	Samuel Jones BRK 1H AWB							
6680.00	7458.00	OWSG MWD rev2 + HRGM	04 MWD + HRGM <8 1/2"> (6794'-7458')	Samuel Jones BRK 1H AWB							
7458.00	14407.00	BHL AutoTrak Curve (Short)	05 BH AT Curve <8 1/2"> (7544'-14407')	Samuel Jones BRK 1H AWB							
14407.00	14450.00	Blind Drilling (std)	Projection to bit	Samuel Jones BRK 1H AWB							

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Actual Wellpath Report
 Samuel Jones BRK 1H AWP Proj: 14450'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 1H
Area	Brooke County, WV	Well	Samuel Jones BRK 1H
Field	Brooke	Wellbore	Samuel Jones BRK 1H AWP
Facility	Samuel Jones BRK Pad		

COMMENTS

Wellpath general comments
 API: 47-009-00262-0000
 BH Job #: 109802740
 Rig: SDC 42
 Duration: 5/22/2019-5/23/2019
 Premier MWD <17'-1/2"> (149'-316')
 Premier MWD <12'-1/4"> (316')(429'-1761')
 Premier MWD <8'-3/4"> (1761')(1852'-6680')
 Premier MWD <8'-1/2"> (6680')(6794'-7458')
 BH AT Curve <8'-1/2"> (7458')(7544'-14407')
 Projected MD at TD: 14450'

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