

SOUTHWESTERN ENERGY

Location: Brooke County, WV

Field: Brooke Well: Samuel Jones BRK 6H
 Facility: Samuel Jones BRK Pad Wellbore: Samuel Jones BRK 6H PWB

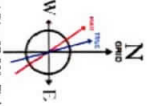
Plot reference wellpath is Samuel Jones BRK 6H PWP Rev-B.0	Grid System: NAD83 / UTM Zone 17 North, US feet
True vertical depths are referenced to SDC 42 (KB)	North Reference: Grid north
Measured depths are referenced to SDC 42 (KB)	Scale: True distance
SDC 42 (KB) to Mean Sea Level: 1230.1 feet	Depths are in feet
Mean Sea Level to Ground level (At Slot: Slot 6H): -1204.1 feet	Created by: atlejen on 2019-07-17
Coordinates are in feet referenced to Slot	Database: WA_MPL_EASTERNUS_Defn



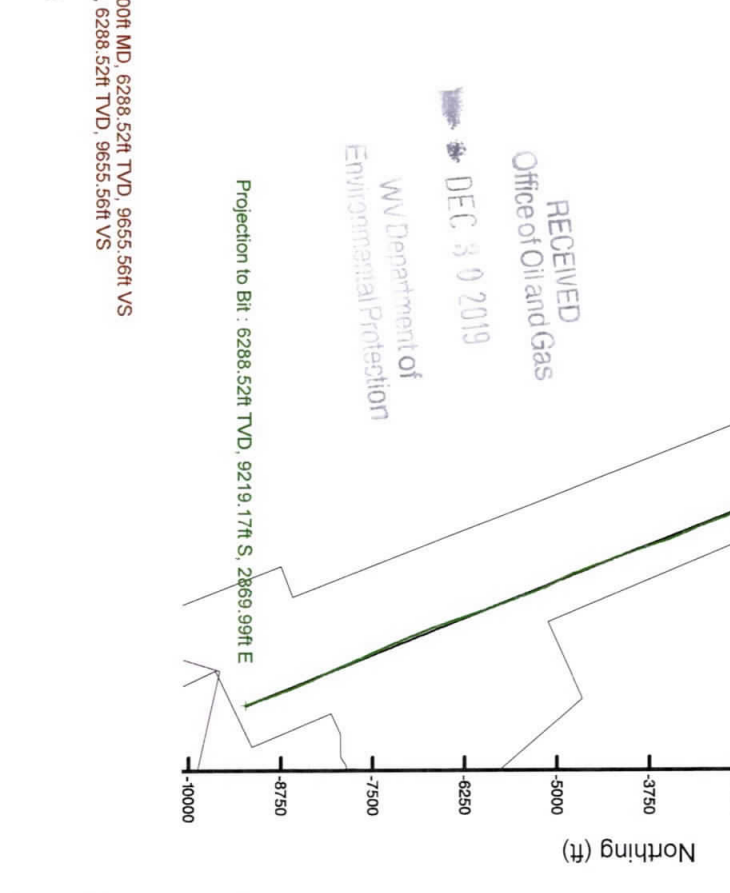
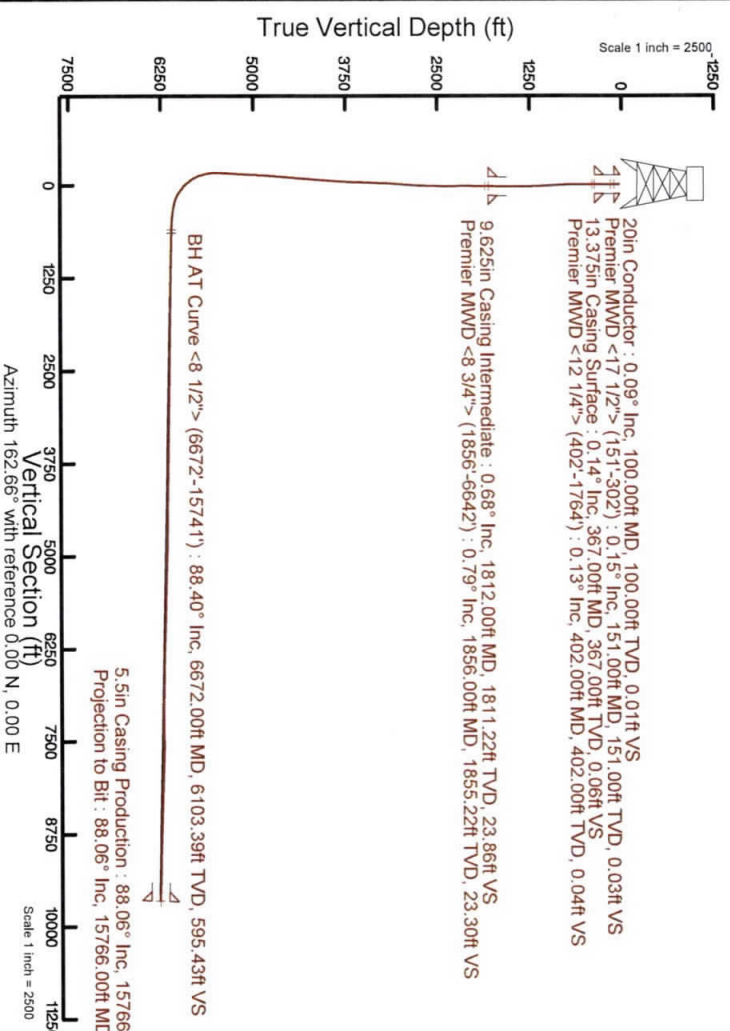
Location Information	
Facility Name	Grid East (US ft) 1762985.776
Samuel Jones BRK Pad	Grid North (US ft) 14596395.998
Slot	Local N (ft) 5.85
Slot 6H	Local E (ft) 1762991.527
SDC 42 (KB) to Ground level (At Slot: Slot 6H)	14596387.833
Mean Sea Level to Ground level (At Slot: Slot 6H)	26ft
SDC 42 (KB) to Mean Sea Level	-1204.1ft
	1230.1ft

Comments

API: 47-009-00280-0000
 BH Job #: 109907936
 Rig: SDC 42
 Duration: 07/12/2019 - 07/16/2019



User specified Dip: 67.50° Field: 52552 nT
 Magnetic North is 8.33 degrees West of True North (at 11/14/2019)
 True North is 0.28 degrees West of Grid North
 To correct azimuth from Grid to Magnetic: 8.61 degrees



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Projection to Bit: 6288.52ft TVD, 9219.17ft S, 2869.99ft E

5.5in Casing Production: 88.06° Inc, 15766.00ft MD, 6288.52ft TVD, 9655.56ft VS
 Projection to Bit: 88.06° Inc, 15766.00ft MD, 6288.52ft TVD, 9655.56ft VS



Actual Wellpath Report

Samuel Jones BRK 6H AWP Proj: 15766'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 6H
Area	Brooke County, WV	Well	Samuel Jones BRK 6H
Field	Brooke	Wellbore	Samuel Jones BRK 6H AWB
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	Atenjen
Scale	0.999617	Report Generated	7/16/2019 at 4:11:57 PM
Convergence at slot	0.28° East	Database/Source file	WA_MPL_EASTERNUS_Defn/Samuel_Jones_BRK_6H_AWP_Proj_15766_.xml

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-8.17	5.85	1762991.63	14596387.83	40°11'25.617"N	80°33'39.927"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	1230.10ft
Horizontal Reference Pt	Slot	SDC 42 (KB) to Mean Sea Level	1230.10ft
Vertical Reference Pt	SDC 42 (KB)	SDC 42 (KB) to Ground Level at Slot (Slot 6H)	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	162.66°

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 6H
Area	Brooke County, WV	Well	Samuel Jones BRK 6H
Field	Brooke	Wellbore	Samuel Jones BRK 6H AWB
Facility	Samuel Jones BRK Pad		

WELLPATH DATA (172 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 [ft/100ft]	Build Rate [ft/100ft]	Turn Rate [ft/100ft]
0.00†	0.000	242.000	0.00	0.00	0.00	0.00	1762991.63	14566387.83	40°11'25.617"N	80°33'39.927"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	242.000	26.00	0.00	0.00	0.00	1762991.63	14566387.83	40°11'25.617"N	80°33'39.927"W	0.00	0.000	0.00	0.00	0.00
151.00	0.150	242.000	151.00	0.03	-0.08	-0.14	1762991.48	14566387.76	40°11'25.616"N	80°33'39.929"W	0.16	242.000	0.12	0.12	-94.40
212.00	0.120	268.030	212.00	0.03	-0.12	-0.28	1762991.35	14566387.72	40°11'25.616"N	80°33'39.931"W	0.30	247.323	0.11	-0.05	42.67
302.00	0.190	238.060	302.00	0.04	-0.20	-0.50	1762991.13	14566387.63	40°11'25.615"N	80°33'39.934"W	0.54	248.315	0.12	0.08	-33.30
402.00	0.130	276.670	402.00	0.04	-0.27	-0.75	1762990.87	14566387.56	40°11'25.614"N	80°33'39.937"W	0.80	250.057	0.12	-0.06	38.61
432.00	0.190	349.380	432.00	-0.03	-0.22	-0.80	1762990.83	14566387.61	40°11'25.615"N	80°33'39.937"W	0.83	254.525	0.65	0.20	242.37
523.00	0.400	258.900	523.00	-0.21	-0.13	-1.14	1762990.49	14566387.70	40°11'25.616"N	80°33'39.942"W	1.14	263.308	0.49	0.23	-99.43
618.00	1.040	216.340	617.99	0.26	-0.89	-1.97	1762989.66	14566386.94	40°11'25.608"N	80°33'39.953"W	2.16	245.670	0.83	0.67	-44.80
713.00	2.460	209.420	712.94	2.17	-3.36	-3.48	1762988.14	14566384.47	40°11'25.584"N	80°33'39.972"W	4.84	226.023	1.51	1.49	-7.28
808.00	3.450	194.600	807.82	5.99	-7.90	-5.21	1762986.42	14566379.93	40°11'25.539"N	80°33'39.995"W	9.46	213.372	1.31	1.04	-15.60
903.00	3.880	190.000	902.62	11.27	-13.84	-6.48	1762985.14	14566374.00	40°11'25.481"N	80°33'40.012"W	15.28	205.113	0.55	0.45	-4.84
999.00	3.340	184.970	998.43	16.75	-19.82	-7.29	1762984.34	14566368.02	40°11'25.421"N	80°33'40.022"W	21.12	200.197	0.65	-0.56	-5.24
1094.00	2.450	183.110	1093.31	21.21	-24.61	-7.64	1762983.99	14566363.24	40°11'25.374"N	80°33'40.027"W	25.76	197.252	0.94	-0.94	-1.96
1190.00	1.440	166.480	1189.25	24.34	-27.83	-7.47	1762984.16	14566360.02	40°11'25.342"N	80°33'40.025"W	28.81	195.027	1.19	-1.05	-17.32
1286.00	0.670	138.980	1285.24	26.05	-29.42	-6.82	1762984.81	14566358.42	40°11'25.327"N	80°33'40.017"W	30.20	193.050	0.94	-0.80	-28.65
1381.00	0.440	47.860	1380.24	26.41	-29.60	-6.19	1762985.44	14566358.25	40°11'25.325"N	80°33'40.009"W	30.24	191.803	0.85	-0.24	-95.92
1477.00	0.340	43.940	1476.23	26.12	-29.15	-5.71	1762985.91	14566358.70	40°11'25.329"N	80°33'40.003"W	29.70	191.093	0.11	-0.10	-4.08
1572.00	0.420	27.780	1571.23	25.74	-28.63	-5.36	1762986.27	14566359.21	40°11'25.334"N	80°33'39.998"W	29.13	190.595	0.14	0.08	-17.01
1668.00	0.470	17.220	1667.23	25.16	-27.95	-5.08	1762986.55	14566359.90	40°11'25.341"N	80°33'39.994"W	28.40	190.294	0.10	0.05	-11.00
1764.00	0.560	349.880	1763.22	24.37	-27.11	-5.04	1762986.59	14566360.73	40°11'25.349"N	80°33'39.994"W	27.57	190.535	0.27	0.09	-28.48
1856.00	0.790	336.520	1855.22	23.30	-26.08	-5.37	1762986.26	14566361.76	40°11'25.359"N	80°33'39.998"W	26.63	191.640	0.30	0.25	-14.52
1947.00	0.930	325.500	1946.21	21.97	-24.90	-6.04	1762985.59	14566362.94	40°11'25.371"N	80°33'40.007"W	25.62	193.638	0.24	0.15	-12.11
2043.00	0.950	327.840	2042.19	20.45	-23.58	-6.91	1762984.72	14566364.26	40°11'25.384"N	80°33'40.018"W	24.58	196.322	0.05	0.02	2.44
2138.00	0.390	156.010	2137.19	20.01	-23.21	-7.19	1762984.44	14566364.63	40°11'25.388"N	80°33'40.021"W	24.30	197.219	1.41	-0.59	-180.87
2235.00	0.320	159.340	2234.19	20.61	-23.77	-6.96	1762984.67	14566364.07	40°11'25.382"N	80°33'40.018"W	24.77	196.331	0.08	-0.07	3.43
2331.00	0.210	123.730	2330.19	21.02	-24.12	-6.72	1762984.91	14566363.73	40°11'25.379"N	80°33'40.015"W	25.04	195.578	0.20	-0.11	-37.09
2426.00	0.280	39.430	2425.19	21.03	-24.03	-6.43	1762985.20	14566363.81	40°11'25.380"N	80°33'40.011"W	24.88	194.980	0.35	0.07	-88.74
2522.00	2.210	275.630	2521.17	20.17	-23.67	-8.12	1762983.51	14566364.17	40°11'25.383"N	80°33'40.033"W	25.03	198.943	2.48	2.01	-128.96
2616.00	4.380	271.390	2615.00	18.31	-23.41	-13.52	1762978.11	14566364.44	40°11'25.386"N	80°33'40.103"W	27.03	210.006	2.32	2.31	-4.51

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Samuel Jones BRK 6H AWP Proj: 15766'
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Operator	SOUTHWESTERN ENERGY		Slot	Slot 6H
Area	Brooke County, WV		Well	Samuel Jones BRK 6H
Field	Brooke		Wellbore	Samuel Jones BRK 6H AWP
Facility	Samuel Jones BRK Pad			

WELLPATH DATA (172 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]
271.00	6.140	276.560	2709.60	15.09	-22.74	-22.19	1762969.44	14596365.10	40°11'25.393"N	80°33'40.214"W	31.77	224.303	1.92	1.85	5.44
2806.00	7.080	274.870	2803.97	10.82	-21.66	-33.07	1762958.57	14596366.18	40°11'25.405"N	80°33'40.355"W	39.53	236.778	1.01	0.99	-1.78
2902.00	8.470	282.660	2899.09	5.05	-19.61	-45.87	1762945.78	14596368.23	40°11'25.425"N	80°33'40.519"W	49.88	246.853	1.81	1.45	8.11
2998.00	10.240	280.080	2993.81	-2.42	-16.57	-61.17	1762930.48	14596371.27	40°11'25.456"N	80°33'40.716"W	63.37	254.947	1.89	1.84	-2.69
3093.00	11.750	274.270	3087.06	-9.87	-14.37	-79.13	1762912.53	14596374.47	40°11'25.479"N	80°33'41.948"W	80.42	259.709	1.97	1.59	-6.12
3189.00	11.170	273.120	3181.15	-16.72	-13.13	-98.16	1762893.50	14596374.71	40°11'25.492"N	80°33'41.193"W	99.04	262.380	0.65	-0.60	-1.20
3285.00	12.600	267.450	3275.09	-22.64	-13.09	-117.91	1762873.76	14596374.75	40°11'25.493"N	80°33'41.447"W	118.63	263.664	1.92	1.49	-5.91
3380.00	11.600	264.570	3367.98	-27.26	-14.46	-137.77	1762853.91	14596373.38	40°11'25.481"N	80°33'41.703"W	138.53	264.009	1.23	-1.05	-3.03
3475.00	12.120	264.010	3460.95	-31.19	-16.40	-157.20	1762834.49	14596371.44	40°11'25.463"N	80°33'41.954"W	158.05	264.043	0.56	0.55	-0.59
3571.00	10.760	260.590	3555.04	-34.41	-18.92	-176.06	1762815.63	14596368.92	40°11'25.439"N	80°33'42.197"W	177.07	263.867	1.58	-1.42	-3.56
3668.00	11.550	261.400	3650.21	-37.14	-21.85	-194.60	1762797.11	14596365.99	40°11'25.411"N	80°33'42.436"W	195.82	263.593	0.83	0.81	0.84
3764.00	12.180	270.940	3744.17	-41.78	-23.12	-214.23	1762777.48	14596364.72	40°11'25.399"N	80°33'42.689"W	215.47	263.839	2.14	0.66	9.94
3860.00	10.680	268.440	3838.26	-47.37	-23.20	-233.25	1762758.47	14596364.64	40°11'25.399"N	80°33'42.934"W	234.40	264.320	1.65	-1.56	-2.60
3956.00	11.850	274.360	3932.41	-53.44	-22.69	-251.97	1762739.76	14596365.15	40°11'25.405"N	80°33'43.175"W	252.99	264.854	1.71	1.22	6.17
4052.00	13.210	274.730	4026.13	-61.20	-21.04	-272.73	1762719.00	14596366.80	40°11'25.422"N	80°33'43.443"W	273.54	265.589	1.42	1.42	0.39
4147.00	11.730	270.640	4118.88	-68.26	-20.04	-293.20	1762698.54	14596367.81	40°11'25.433"N	80°33'43.706"W	293.89	266.091	1.81	-1.56	-4.31
4243.00	13.290	273.710	4212.60	-75.24	-19.21	-313.97	1762677.77	14596368.63	40°11'25.442"N	80°33'43.974"W	314.56	266.498	1.77	1.62	3.20
4338.00	11.470	270.270	4305.39	-82.02	-18.46	-334.32	1762657.44	14596369.38	40°11'25.451"N	80°33'44.236"W	334.83	266.839	2.07	-1.92	-3.62
4434.00	12.430	273.060	4399.31	-88.51	-17.86	-354.18	1762637.58	14596369.98	40°11'25.458"N	80°33'44.492"W	354.63	267.113	1.17	1.00	2.91
4530.00	12.690	277.650	4493.02	-96.56	-15.91	-374.95	1762616.82	14596371.93	40°11'25.478"N	80°33'44.759"W	375.29	267.570	1.07	0.27	4.78
4626.00	10.370	274.400	4587.07	-104.22	-13.84	-394.02	1762597.76	14596374.00	40°11'25.499"N	80°33'45.005"W	394.26	267.988	2.51	-2.42	-3.39
4721.00	12.500	275.880	4680.18	-111.44	-12.13	-412.77	1762579.01	14596375.71	40°11'25.517"N	80°33'45.247"W	412.95	268.316	2.26	2.24	1.56
4817.00	13.090	273.880	4773.80	-119.47	-10.33	-433.95	1762557.84	14596377.50	40°11'25.536"N	80°33'45.519"W	434.08	268.636	0.77	0.61	-2.08
4913.00	12.840	274.550	4867.35	-127.38	-8.75	-455.43	1762536.37	14596379.09	40°11'25.553"N	80°33'45.796"W	455.52	268.899	0.30	-0.26	0.70
5009.00	12.620	272.910	4960.99	-134.99	-7.37	-476.54	1762515.27	14596380.46	40°11'25.567"N	80°33'46.068"W	476.60	269.114	0.44	-0.23	-1.71
5106.00	10.680	270.500	5055.99	-141.41	-6.76	-496.11	1762495.71	14596381.08	40°11'25.574"N	80°33'46.320"W	496.16	269.120	2.06	-2.00	-2.48
5202.00	12.010	266.850	5150.11	-146.59	-7.23	-514.98	1762476.84	14596380.61	40°11'25.563"N	80°33'46.563"W	515.03	269.196	1.57	1.39	-3.80
5298.00	11.930	268.260	5244.03	-151.70	-8.08	-534.87	1762456.96	14596379.76	40°11'25.553"N	80°33'46.820"W	534.93	269.135	0.32	-0.08	1.47
5394.00	11.860	267.010	5337.96	-156.82	-8.89	-554.64	1762437.20	14596378.94	40°11'25.556"N	80°33'47.074"W	554.71	269.081	0.28	-0.07	-1.30
5490.00	12.790	268.790	5431.75	-162.21	-9.63	-575.12	1762416.73	14596378.20	40°11'25.550"N	80°33'47.338"W	575.20	269.040	1.05	0.97	1.85



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Area	Brooke County, WV	Well	Samuel Jones BRK 6H
Field	Brooke	Wellbore	Samuel Jones BRK 6H AWP
Facility	Samuel Jones BRK Pad		

WELLPATH DATA (172 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)
5586.00	12.130	245.470	5525.55	-163.91	-14.05	-594.93	1762396.93	14596373.79	40°11'25.507"N	80°33'47.594"W	595.10	268.647	5.25	-0.69	-24.29
5582.00	16.250	211.030	5618.76	-153.70	-29.78	-611.06	1762380.80	14596358.07	40°11'25.353"N	80°33'47.803"W	611.79	267.210	9.59	4.29	-35.88
5773.00	22.080	190.090	5709.51	-128.71	-59.11	-621.17	1762370.70	14596328.74	40°11'25.063"N	80°33'47.935"W	623.98	264.564	9.30	6.07	-21.81
5873.00	29.430	179.360	5795.06	-90.43	-100.11	-624.04	1762367.82	14596285.76	40°11'24.658"N	80°33'47.974"W	632.02	260.886	9.13	7.74	-11.29
5668.00	38.220	174.330	5873.91	-39.19	-152.80	-620.87	1762370.99	14596237.09	40°11'24.137"N	80°33'47.937"W	639.40	256.174	9.70	9.25	-5.29
6064.00	49.050	170.960	5943.30	25.97	-218.36	-612.21	1762379.65	14596169.56	40°11'23.489"N	80°33'47.830"W	649.99	250.370	11.54	11.28	-3.51
6160.00	57.370	169.890	6000.74	102.08	-294.10	-599.40	1762392.46	14596093.85	40°11'22.740"N	80°33'47.669"W	667.66	243.865	8.71	8.67	-1.11
6266.00	67.900	168.230	6044.81	166.69	-377.67	-583.18	1762408.67	14596010.31	40°11'21.913"N	80°33'47.466"W	694.79	237.073	11.08	10.97	-1.73
6304.00	72.910	167.710	6060.90	231.70	-421.88	-573.76	1762418.09	14595966.11	40°11'21.476"N	80°33'47.347"W	712.17	233.673	10.49	10.44	-1.08
6353.00	76.460	168.190	6073.84	278.76	-468.09	-563.90	1762427.95	14595919.92	40°11'21.019"N	80°33'47.223"W	732.87	230.304	7.31	7.24	0.98
6401.00	81.990	166.490	6082.82	325.73	-514.08	-553.56	1762438.28	14595873.95	40°11'20.564"N	80°33'47.093"W	755.45	227.118	12.03	11.52	-3.54
6449.00	83.710	165.570	6088.79	373.27	-560.30	-542.06	1762449.77	14595827.75	40°11'20.107"N	80°33'46.947"W	779.59	224.052	4.06	3.58	-1.92
6497.00	84.960	162.660	6093.53	421.02	-606.23	-528.99	1762462.84	14595781.84	40°11'19.652"N	80°33'46.782"W	804.58	221.108	6.57	2.60	-6.06
6545.00	85.750	160.110	6097.42	468.84	-651.57	-513.72	1762478.11	14595736.52	40°11'19.203"N	80°33'46.588"W	829.73	218.254	5.54	1.65	-5.31
6642.00	88.230	158.140	6102.51	565.51	-742.06	-479.20	1762512.61	14595646.06	40°11'18.307"N	80°33'46.149"W	883.34	212.853	3.26	2.56	-2.03
6672.00	88.400	159.140	6103.39	595.43	-769.99	-468.28	1762523.52	14595618.14	40°11'18.031"N	80°33'46.010"W	901.21	211.307	3.38	0.57	3.33
6728.00	88.610	159.270	6104.85	651.31	-822.32	-448.41	1762543.39	14595565.83	40°11'17.513"N	80°33'45.757"W	936.63	208.603	0.44	0.37	0.23
6825.00	88.710	158.660	6107.12	748.08	-912.83	-413.60	1762578.18	14595475.35	40°11'16.617"N	80°33'45.314"W	1002.16	204.375	0.64	0.10	-0.63
6921.00	88.650	159.190	6109.33	843.85	-1002.39	-379.09	1762612.68	14595385.83	40°11'15.730"N	80°33'44.875"W	1071.68	200.716	0.56	-0.06	0.55
7018.00	89.050	159.210	6111.28	940.65	-1093.05	-344.65	1762647.11	14595295.21	40°11'14.832"N	80°33'44.437"W	1146.10	197.501	0.41	0.41	0.02
7113.00	89.020	158.990	6112.88	1035.45	-1181.78	-310.77	1762660.98	14595206.50	40°11'13.954"N	80°33'44.007"W	1221.96	194.733	0.23	-0.03	-0.23
7210.00	88.860	157.320	6114.67	1132.14	-1271.80	-274.68	1762717.05	14595116.52	40°11'13.063"N	80°33'43.547"W	1301.12	192.187	1.73	0.16	-1.72
7305.00	88.980	157.900	6116.47	1226.75	-1359.62	-238.50	1762753.22	14595028.73	40°11'11.301"N	80°33'43.087"W	1380.38	189.949	0.62	0.13	0.61
7402.00	88.920	158.550	6118.24	1323.44	-1449.69	-202.52	1762789.18	14594938.71	40°11'11.301"N	80°33'42.629"W	1463.76	187.953	0.67	-0.06	0.67
7497.00	89.600	160.550	6119.47	1418.29	-1538.69	-169.34	1762824.36	14594849.74	40°11'10.420"N	80°33'42.207"W	1547.98	186.280	2.22	0.72	2.11
7593.00	89.140	160.770	6120.53	1514.22	-1629.27	-137.55	1762858.23	14594759.29	40°11'10.524"N	80°33'41.803"W	1635.06	184.826	0.53	-0.48	0.23
7689.00	89.110	161.390	6121.99	1610.18	-1720.06	-106.42	1762885.15	14594668.43	40°11'10.625"N	80°33'41.408"W	1723.35	183.540	0.65	-0.03	0.65
7786.00	89.170	161.620	6123.45	1707.15	-1812.05	-75.65	1762916.00	14594576.49	40°11'10.714"N	80°33'41.017"W	1813.62	182.391	0.25	0.06	0.24
7881.00	89.080	159.200	6124.90	1802.05	-1901.53	-43.81	1762947.84	14594487.04	40°11'10.628"N	80°33'40.613"W	1902.03	181.320	2.55	-0.09	-2.55
7977.00	89.050	156.390	6126.47	1897.69	-1990.39	-7.54	1762984.09	14594398.21	40°11'10.549"N	80°33'40.151"W	1990.40	180.217	2.93	-0.03	-2.93

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WV Department of [unclear]



Southwestern Energy

Actual Wellpath Report

Samuel Jones BRK 6H AWP Proj: 15766'

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY		Slot	Slot 6H
Area	Brooke County, WV		Well	Samuel Jones BRK 6H
Field	Brooke		Wellbore	Samuel Jones BRK 6H AWB
Facility	Samuel Jones BRK Pad			

WELLPATH DATA (172 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)
8074.00	89.110	154.450	6128.02	1993.90	-2078.58	32.81	1763024.42	14594310.05	40°11'05.075"N	80°33'39.637"W	2078.84	179.096	2.00		-2.00
8170.00	89.140	154.570	6129.49	2088.91	-2165.23	74.11	1763065.71	14594223.44	40°11'04.217"N	80°33'39.110"W	2166.50	178.040	0.13		0.13
8266.00	89.110	154.880	6130.95	2183.98	-2252.03	115.10	1763106.68	14594136.67	40°11'03.357"N	80°33'38.588"W	2254.97	177.074	0.32		0.32
8360.00	89.080	155.290	6132.44	2277.15	-2337.27	154.69	1763146.26	14594051.46	40°11'02.513"N	80°33'38.083"W	2342.38	176.213	0.44		0.44
8455.00	89.110	155.330	6133.94	2371.36	-2423.57	194.37	1763185.92	14593965.19	40°11'01.658"N	80°33'37.577"W	2431.36	175.415	0.05		0.03
8550.00	89.080	156.030	6135.44	2465.64	-2510.13	233.49	1763225.03	14593878.67	40°11'00.801"N	80°33'37.079"W	2520.97	174.686	0.74		0.74
8645.00	89.140	156.380	6136.92	2559.93	-2596.71	272.57	1763264.09	14593792.12	40°10'59.943"N	80°33'36.581"W	2610.97	174.008	0.69		0.69
8739.00	89.050	155.220	6138.40	2653.15	-2682.10	311.84	1763303.35	14593706.77	40°10'59.098"N	80°33'36.080"W	2700.16	173.368	0.20		-0.10
8834.00	89.200	159.460	6139.85	2747.70	-2769.73	348.43	1763339.92	14593619.17	40°10'58.230"N	80°33'35.614"W	2791.56	172.830	4.47		4.46
8930.00	89.110	160.490	6141.27	2843.59	-2859.92	381.30	1763372.78	14593529.02	40°10'57.337"N	80°33'35.197"W	2885.23	172.406	1.08		-0.09
9026.00	89.080	159.100	6142.78	2939.45	-2950.00	414.45	1763405.92	14593438.97	40°10'56.445"N	80°33'34.775"W	2978.97	172.003	1.45		-1.45
9123.00	89.020	156.760	6144.39	3036.10	-3039.87	450.89	1763442.35	14593349.13	40°10'55.555"N	80°33'34.312"W	3073.13	171.563	2.41		-2.41
9219.00	89.010	156.360	6146.04	3131.54	-3127.94	489.07	1763480.51	14593261.10	40°10'54.683"N	80°33'33.825"W	3165.94	171.113	0.42		-0.42
9316.00	89.080	156.320	6147.66	3227.94	-3216.77	528.00	1763519.42	14593172.30	40°10'53.803"N	80°33'33.329"W	3259.81	170.679	0.08		-0.04
9412.00	89.050	155.310	6149.23	3323.24	-3304.33	567.32	1763558.73	14593084.77	40°10'52.936"N	80°33'32.828"W	3352.68	170.258	1.05		-1.05
9508.00	89.110	158.070	6150.77	3418.70	-3392.48	605.30	1763596.69	14592996.66	40°10'52.063"N	80°33'32.345"W	3446.05	169.884	2.88		2.88
9604.00	89.050	161.230	6152.31	3514.54	-3482.46	638.67	1763630.06	14592906.71	40°10'51.172"N	80°33'31.920"W	3540.54	169.608	3.29		3.29
9699.00	89.050	161.500	6153.88	3609.51	-3572.47	669.03	1763660.40	14592816.74	40°10'50.282"N	80°33'31.535"W	3634.57	169.393	0.28		0.28
9796.00	89.170	161.950	6155.39	3706.48	-3664.56	699.44	1763690.80	14592724.68	40°10'49.370"N	80°33'31.149"W	3730.72	169.194	0.48		0.46
9891.00	89.020	161.460	6156.89	3801.46	-3754.75	729.26	1763720.60	14592634.53	40°10'48.477"N	80°33'30.771"W	3824.91	169.009	0.54		-0.52
9988.00	89.110	160.610	6158.48	3898.40	-3846.47	760.78	1763752.11	14592542.84	40°10'47.569"N	80°33'30.371"W	3920.99	168.812	0.88		-0.88
10084.00	89.020	160.710	6160.04	3994.33	-3937.04	792.57	1763783.89	14592452.31	40°10'46.673"N	80°33'29.967"W	4016.03	168.618	0.14		0.10
10181.00	89.170	159.630	6161.57	4091.23	-4028.28	825.47	1763816.78	14592361.11	40°10'45.770"N	80°33'29.549"W	4111.98	168.419	1.12		-1.11
10276.00	88.980	159.640	6163.11	4186.08	-4117.33	856.52	1763849.82	14592272.09	40°10'44.888"N	80°33'29.129"W	4205.88	168.222	0.20		0.01
10371.00	89.080	158.880	6164.72	4280.90	-4206.16	892.16	1763883.44	14592183.25	40°10'44.008"N	80°33'28.701"W	4299.73	168.025	0.81		-0.80
10467.00	89.110	159.340	6166.23	4376.70	-4296.84	926.39	1763917.66	14592093.65	40°10'43.121"N	80°33'28.266"W	4394.59	167.831	0.48		0.48
10563.00	89.050	159.610	6167.77	4472.54	-4385.73	960.04	1763951.30	14592003.79	40°10'42.231"N	80°33'27.838"W	4489.58	167.653	0.29		0.28
10659.00	88.550	159.070	6169.78	4568.36	-4475.54	993.90	1763985.15	14591914.02	40°10'41.342"N	80°33'27.408"W	4584.57	167.479	0.77		-0.56
10754.00	88.710	160.360	6172.06	4663.21	-4564.62	1026.83	1764018.06	14591824.97	40°10'40.460"N	80°33'26.989"W	4678.69	167.322	1.37		1.36
10850.00	89.850	160.210	6173.26	4759.11	-4654.98	1059.21	1764050.43	14591734.64	40°10'39.565"N	80°33'26.578"W	4773.97	167.181	1.20		-0.16



Southwestern Energy

Actual Wellpath Report

Samuel Jones BRK 6H AWP Proj: 15766

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY		Slot	Slot 6H
Area	Brooke County, WV		Well	Samuel Jones BRK 6H
Field	Brooke		Wellbore	Samuel Jones BRK 6H AWP
Facility	Samuel Jones BRK Pad			

WELLPATH DATA (172 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]
10945.00	88.340	159.320	6174.76	4853.98	-4744.10	1092.06	1764083.27	14591645.56	40°10'38.683"N	80°33'26.160"W	4868.17	167.037	1.84	-1.59	-0.94
11041.00	88.620	156.670	6177.31	4949.62	-4833.07	1128.02	1764119.21	14591556.62	40°10'37.802"N	80°33'25.703"W	4962.96	166.863	2.77	0.29	-2.76
11138.00	88.250	152.970	6179.96	5045.66	-4920.81	1169.26	1764160.44	14591468.92	40°10'36.933"N	80°33'25.177"W	5057.82	166.633	3.83	-0.38	-3.81
11234.00	88.370	153.330	6182.79	5140.30	-5006.42	1212.60	1764203.76	14591383.34	40°10'36.085"N	80°33'24.624"W	5151.18	166.385	0.40	0.13	0.38
11330.00	88.340	153.450	6185.55	5235.01	-5092.21	1255.59	1764246.73	14591297.58	40°10'35.235"N	80°33'24.076"W	5244.73	166.149	0.13	-0.03	0.12
11426.00	88.370	156.660	6188.30	5330.11	-5179.21	1296.05	1764287.18	14591121.61	40°10'34.373"N	80°33'23.560"W	5338.91	165.951	3.34	0.03	3.34
11522.00	88.400	159.290	6191.01	5425.74	-5268.16	1332.04	1764323.15	14591121.70	40°10'33.492"N	80°33'23.102"W	5433.95	165.810	2.74	0.03	2.74
11618.00	88.950	161.300	6193.23	5521.63	-5358.51	1364.39	1764355.50	14591031.38	40°10'32.598"N	80°33'22.691"W	5529.49	165.715	2.17	0.57	2.09
11714.00	88.740	159.790	6195.16	5617.54	-5449.01	1396.36	1764387.45	14590940.92	40°10'31.702"N	80°33'22.285"W	5625.08	165.627	1.59	-0.22	-1.57
11810.00	88.740	159.210	6197.27	5713.37	-5538.91	1429.97	1764421.05	14590851.06	40°10'30.812"N	80°33'21.858"W	5720.52	165.524	0.60	0.00	-0.60
11905.00	88.550	158.670	6199.52	5808.14	-5627.54	1464.10	1764455.16	14590762.46	40°10'29.934"N	80°33'21.424"W	5814.87	165.417	0.60	-0.20	-0.57
12001.00	88.370	159.680	6202.10	5903.93	-5717.23	1498.22	1764489.27	14590672.80	40°10'29.046"N	80°33'20.991"W	5910.28	165.316	1.07	-0.19	1.05
12098.00	88.030	158.970	6205.15	6000.72	-5807.94	1532.45	1764523.48	14590582.13	40°10'28.148"N	80°33'20.555"W	6006.71	165.219	0.81	-0.35	-0.73
12194.00	87.970	160.230	6208.50	6096.52	-5897.86	1566.89	1764556.91	14590492.24	40°10'27.258"N	80°33'20.130"W	6102.19	165.131	1.31	-0.06	1.31
12291.00	87.880	160.860	6212.01	6193.39	-5989.26	1598.18	1764589.19	14590400.88	40°10'26.353"N	80°33'19.720"W	6198.83	165.059	0.66	-0.09	0.65
12387.00	88.250	160.620	6215.25	6289.28	-6079.84	1629.82	1764620.82	14590310.33	40°10'25.457"N	80°33'19.319"W	6294.50	164.994	0.46	0.39	-0.25
12483.00	89.290	162.810	6217.31	6385.24	-6170.96	1669.93	1764650.92	14590219.24	40°10'24.555"N	80°33'18.937"W	6390.32	164.944	2.52	1.08	2.28
12580.00	88.920	161.650	6218.83	6482.22	-6263.32	1699.53	1764680.51	14590126.92	40°10'23.640"N	80°33'18.561"W	6487.20	164.904	1.26	-0.38	-1.20
12676.00	88.710	160.290	6220.81	6578.16	-6354.05	1720.83	1764711.79	14590036.22	40°10'22.742"N	80°33'18.164"W	6582.95	164.846	1.43	-0.22	-1.42
12772.00	89.660	162.150	6222.18	6674.11	-6444.93	1751.73	1764742.68	14589945.38	40°10'21.843"N	80°33'17.772"W	6678.75	164.794	2.18	0.99	1.94
12869.00	88.710	161.260	6223.56	6771.09	-6537.01	1782.17	1764773.12	14589853.33	40°10'20.931"N	80°33'17.385"W	6775.60	164.750	1.34	-0.98	-0.92
12966.00	88.430	160.280	6225.98	6868.00	-6628.57	1814.11	1764805.04	14589761.81	40°10'20.025"N	80°33'16.980"W	6872.33	164.694	1.05	-0.29	-1.01
13062.00	88.680	158.900	6228.40	6963.83	-6718.58	1847.58	1764838.49	14589671.90	40°10'19.134"N	80°33'16.555"W	6967.93	164.624	1.46	0.26	-1.44
13157.00	89.630	158.810	6229.80	7058.61	-6807.11	1881.84	1764872.75	14589583.34	40°10'18.257"N	80°33'16.119"W	7062.44	164.546	1.00	1.00	-0.09
13253.00	90.030	158.240	6230.09	7154.36	-6886.44	1916.99	1764907.88	14589494.04	40°10'17.373"N	80°33'15.672"W	7157.92	164.466	0.73	0.42	-0.59
13350.00	90.490	157.810	6229.65	7251.04	-6966.39	1953.29	1764944.16	14589404.13	40°10'16.482"N	80°33'15.210"W	7254.31	164.380	0.65	0.47	-0.44
13446.00	90.740	157.390	6228.62	7346.66	-7075.14	1989.87	1764980.73	14589315.41	40°10'15.603"N	80°33'14.745"W	7349.64	164.291	0.51	0.26	-0.44
13543.00	90.980	157.900	6227.16	7443.28	-7164.84	2026.76	1765017.60	14589225.75	40°10'14.715"N	80°33'14.275"W	7445.99	164.205	0.58	0.25	-0.53
13639.00	90.250	157.780	6226.13	7538.93	-7253.75	2062.96	1765053.80	14589136.88	40°10'13.835"N	80°33'13.815"W	7541.40	164.124	0.77	-0.76	-0.13
13735.00	88.920	156.520	6226.83	7634.48	-7342.21	2100.24	1765091.06	14589048.45	40°10'12.959"N	80°33'13.340"W	7636.69	164.037	1.91	-1.39	-1.31



Actual Wellpath Report

Samuel Jones BRK 6H AWP Proj: 15766'
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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 6H
Area	Brooke County, WV	Well	Samuel Jones BRK 6H
Field	Brooke	Wellbore	Samuel Jones BRK 6H AWB
Facility	Samuel Jones BRK Pad		

WELLPATH DATA (172 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)
13831.00	88.250	155.570	6229.20	7729.81	-7429.91	2139.21	1765130.01	14588960.78	40°10'12.090"N	80°33'12.844"W	7731.74	163.938	1.21	-0.70	-0.99
13927.00	88.090	155.610	6232.26	7825.04	-7517.28	2178.86	1765169.65	14588873.44	40°10'11.225"N	80°33'12.339"W	7826.68	163.836	0.17	-0.17	0.04
14023.00	88.210	154.920	6235.36	7920.19	-7604.43	2219.01	1765209.78	14588766.33	40°10'10.362"N	80°33'11.827"W	7921.58	163.733	0.73	0.12	-0.72
14119.00	88.060	156.550	6238.49	8015.43	-7691.90	2258.44	1765249.19	14588668.89	40°10'09.495"N	80°33'11.325"W	8016.60	163.637	1.70	-0.16	1.70
14213.00	88.210	156.860	6241.54	8108.88	-7778.19	2295.59	1765286.33	14588612.56	40°10'08.641"N	80°33'10.852"W	8109.87	163.557	0.37	0.16	0.33
14310.00	88.460	156.720	6244.36	8205.33	-7867.30	2333.80	1765324.53	14588523.63	40°10'07.758"N	80°33'10.366"W	8206.16	163.477	0.30	0.26	-0.14
14407.00	88.280	157.300	6247.12	8301.82	-7956.56	2371.67	1765362.39	14588434.33	40°10'06.874"N	80°33'09.884"W	8302.51	163.402	0.63	-0.19	0.60
14503.00	88.250	156.860	6250.03	8397.32	-8044.94	2409.04	1765399.74	14588345.99	40°10'05.999"N	80°33'09.408"W	8397.89	163.330	0.46	-0.03	-0.46
14598.00	88.280	155.950	6252.91	8491.71	-8131.96	2447.05	1765437.73	14588259.00	40°10'05.137"N	80°33'08.924"W	8492.16	163.253	0.96	0.03	-0.96
14694.00	88.340	154.740	6255.74	8586.88	-8219.17	2487.08	1765477.75	14588171.83	40°10'04.273"N	80°33'08.414"W	8587.22	163.164	1.26	0.06	-1.26
14791.00	88.340	155.370	6258.55	8682.99	-8307.08	2527.97	1765518.62	14588083.95	40°10'03.403"N	80°33'07.893"W	8683.22	163.074	0.65	0.00	0.65
14886.00	88.340	156.360	6261.30	8777.28	-8393.74	2566.80	1765557.44	14587997.32	40°10'02.544"N	80°33'07.399"W	8777.43	162.996	1.04	0.00	1.04
14982.00	88.370	157.630	6264.05	8872.77	-8482.07	2604.30	1765594.92	14587909.03	40°10'01.670"N	80°33'06.921"W	8872.87	162.932	1.32	0.03	1.32
15078.00	88.280	158.850	6266.86	8968.44	-8571.19	2639.87	1765630.48	14587819.94	40°10'00.787"N	80°33'06.469"W	8968.51	162.881	1.27	-0.09	1.27
15175.00	88.220	160.020	6269.82	9065.24	-8661.96	2673.93	1765664.53	14587729.21	40°09'59.888"N	80°33'06.036"W	9065.29	162.845	1.21	-0.06	1.21
15270.00	88.250	160.380	6272.75	9160.11	-8751.30	2706.09	1765696.68	14587639.90	40°09'59.004"N	80°33'05.628"W	9160.14	162.817	0.38	0.03	0.38
15366.00	88.400	160.490	6275.56	9256.00	-8841.72	2738.23	1765728.80	14587549.51	40°09'58.109"N	80°33'05.220"W	9256.02	162.793	0.19	0.16	0.11
15462.00	88.030	160.780	6278.55	9351.89	-8932.25	2770.04	1765760.60	14587459.02	40°09'57.213"N	80°33'04.816"W	9351.91	162.770	0.49	-0.39	0.30
15558.00	88.180	161.090	6281.72	9447.79	-9022.93	2801.38	1765791.93	14587368.38	40°09'56.315"N	80°33'04.418"W	9447.81	162.752	0.36	0.16	0.32
15654.00	88.150	161.040	6284.79	9543.71	-9113.69	2832.52	1765823.06	14587277.65	40°09'55.417"N	80°33'04.023"W	9543.71	162.735	0.06	-0.03	-0.05
15741.00	88.060	160.060	6287.67	9630.60	-9195.68	2861.47	1765852.00	14587195.69	40°09'54.605"N	80°33'03.655"W	9630.60	162.715	1.13	-0.10	-1.13
15766.00	88.060	160.060	6288.52	9655.56	-9219.17	2869.99	1765880.52	14587122.22	40°09'54.372"N	80°33'03.547"W	9655.56	162.708	0.00	0.00	0.00

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Actual Wellpath Report

Samuel Jones BRK 6H AWP Proj: 15766'
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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 6H
Area	Brooke County, WV	Well	Samuel Jones BRK 6H
Field	Brooke	Wellbore	Samuel Jones BRK 6H AWB
Facility	Samuel Jones BRK Pad		

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HOLE & CASING SECTIONS - Ref Wellbore: Samuel Jones BRK 6H AWB Ref Wellpath: Samuel Jones BRK 6H AWP Proj: 15766'

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	-0.03	-0.05
17.5in Open Hole	100.00	367.00	267.00	100.00	367.00	-0.03	-0.05	-0.27	-0.67
13.375in Casing Surface	26.00	367.00	341.00	26.00	367.00	0.00	0.00	-0.27	-0.67
12.25in Open Hole	367.00	1812.00	1445.00	367.00	1811.22	-0.27	-0.67	-26.61	-5.17
9.625in Casing Intermediate	26.00	1812.00	1786.00	26.00	1811.22	0.00	0.00	-26.61	-5.17
8.75in Open Hole	1812.00	6698.00	4886.00	1811.22	6104.10	-26.61	-5.17	-794.28	-459.04
8.5in Open Hole	6698.00	15766.00	9068.00	6104.10	6288.52	-794.28	-459.04	-9219.17	2669.99
5.5in Casing Production	26.00	15766.00	15740.00	26.00	6288.52	0.00	0.00	-9219.17	2669.99

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [us ft]	Grid North [us ft]	Latitude	Longitude	Shape
Samuel Jones BRK 6H LP Rev-2	6100.00	-612.55	-535.96	1762455.87	14595775.52	40°11'19.590"N	80°33'46.872"W	point
Samuel Jones BRK 6H BHL Rev-2	6289.67	-9216.73	2877.07	1765867.59	14587174.65	40°09'54.396"N	80°33'03.456"W	point

WELLPATH COMPOSITION - Ref Wellbore: Samuel Jones BRK 6H AWB Ref Wellpath: Samuel Jones BRK 6H AWP Proj: 15766'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	302.00	OWSG MWD rev2 + HRGM	01 Premier MWD <17 1/2"> (151-302)	Samuel Jones BRK 6H AWB
302.00	1764.00	OWSG MWD rev2 + HRGM	02 Premier MWD <12 1/4"> (402-1764)	Samuel Jones BRK 6H AWB
1764.00	6642.00	OWSG MWD rev2 + HRGM	03 Premier MWD <8 3/4"> (1856-6642)	Samuel Jones BRK 6H AWB
6642.00	15741.00	BH AutoTrak Curve (Short)	04 BH AT Curve <8 1/2"> (6672-15741)	Samuel Jones BRK 6H AWB
15741.00	15766.00	Blind Drilling (std)	Projection to bit	Samuel Jones BRK 6H AWB



Actual Wellpath Report
 Samuel Jones BRK 6H AWP Proj: 15766'
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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 6H
Area	Brooke County, WV	Well	Samuel Jones BRK 6H
Field	Brooke	Wellbore	Samuel Jones BRK 6H AWP
Facility	Samuel Jones BRK Pad		

COMMENTS

Wellpath general comments
 API: 47-009-00280-0000
 BH Job #: 109907936
 Rig: SDC 42
 Duration: 07/12/2019 - 07/16/2019

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