

SWN PRODUCTION COMPANY, LLC

Location: Brooke County, WV

Slot: Slot #6H

Field: Brooke

Well: State of WV DNR A BRK 6H

Facility: State of WV DNR A BRK Pad

Wellbore: State of WV DNR A BRK 6H PWB

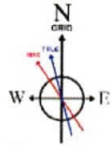
Plot reference wellpath is State of WV DNR A BRK 6H PWP Rev-A.D	Grid System: NAD83 / UTM Zone 17 North, US feet
True vertical depths are referenced to SDC 40 (KB)	North Reference: Grid north
Reference wellpath measured depths are referenced to SDC 40 (KB)	Scale: True distance
SDC 40 (KB) to Mean Sea Level: 1165.9 feet	Coordinates are in feet referenced to Slot
Mean Sea Level to Ground level (At Slot: Slot #6H): -1139.9 feet	Depths are in feet
Offset wellpath MDs are referenced to each path's default MD datum	Created by: atjenen on 2020-10-19; Database: WA_MPL_EASTERNUS_Defn



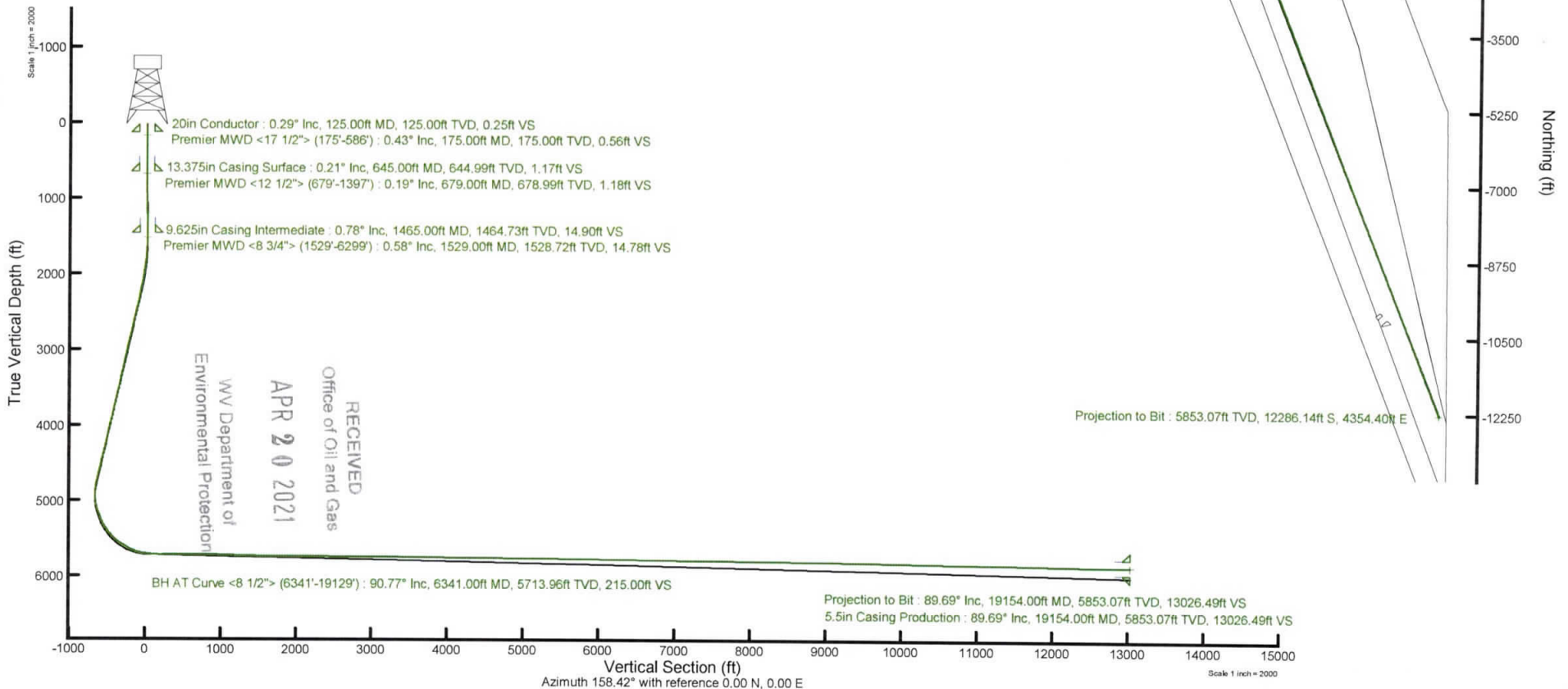
Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude		
State of WV DNR A BRK Pad	1769998.690	14644013.310	40°19'16.0680"N	80°32'6.3852"W		
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Slot #6H	-17.73	22.68	1770021.360	14643995.590	40°19'15.8916"N	80°32'6.0936"W
SDC 40 (KB) to Ground level (At Slot: Slot #6H)			26ft			
Mean Sea Level to Ground level (At Slot: Slot #6H)			-1139.9ft			
SDC 40 (KB) to Mean Sea Level			1165.9ft			

API: 47-009-00297-0000
 BH Job #: 110366890
 Rig: SDC 40
 Duration: 10/15/2020 - 10/17/2020



User specified Dip: 67.47° Field: 52281 nT
 Magnetic North is 8.64 degrees West of True North (at 10/6/2020)
 Grid North is 0.30 degrees East of True North
 To correct azimuth from True to Grid subtract 0.30 degrees
 To correct azimuth from Magnetic to Grid subtract 8.94 degrees



REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	State of WV DNR A BRK 6H
Field	Brooke	API	47-009-00297-0000
Facility	State of WV DNR A BRK Pad	Wellbore	State of WV DNR A BRK 6H AWB
Slot	Slot #6H		

REPORT SETUP INFORMATION

Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Atenjen
Scale	0.999619	Report Generated	10/19/2020 at 8:54:57 AM
Convergence at slot	0.30° East	Database	WA_MPL_EASTERNUS_Defn

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-17.73	22.68	1770021.36	14643995.59	40°19'15.8916"N	80°32'6.0936"W
Facility Reference Pt			1769998.69	14644013.31	40°19'16.0680"N	80°32'6.3852"W
Field Reference Pt			0.00	0.00	0°00'0.0000"	85°29'19.4780"W

WELLPATH DATUM

Calculation method	Minimum curvature	SDC 40 (KB) to Facility Vertical Datum	1165.90ft
Horizontal Reference Pt	Slot	SDC 40 (KB) to Mean Sea Level	1165.90ft
Vertical Reference Pt	SDC 40 (KB)	SDC 40 (KB) to Ground Level at Slot (Slot #6H)	26.00ft
MD Reference Pt	SDC 40 (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	158.42°

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Actual Wellpath Report

State of WV DNR A BRK 6H AWP Proj: 19154'
Page 2 of 11



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Facility	State of WV DNR A BRK Pad	Wellbore	State of WV DNR A BRK 6H AWB
Slot	Slot #6H		

WELLPATH DATA (217 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	155.280	0.00	0.00	0.00	0.00	1770021.36	14643995.59	40°19'15.8916"N	80°32'6.0936"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	155.280	26.00	0.00	0.00	0.00	1770021.36	14643995.59	40°19'15.8916"N	80°32'6.0936"W	0.00	0.000	0.00	0.00	0.00
175.00	0.430	155.280	175.00	0.56	-0.51	0.23	1770021.59	14643995.08	40°19'15.8866"N	80°32'6.0906"W	0.56	155.280	0.29	0.29	0.00
223.00	0.560	185.860	223.00	0.95	-0.90	0.29	1770021.65	14643994.69	40°19'15.8827"N	80°32'6.0900"W	0.95	162.506	0.60	0.27	63.71
313.00	0.250	210.590	312.99	1.46	-1.51	0.14	1770021.50	14643994.08	40°19'15.8767"N	80°32'6.0919"W	1.52	174.694	0.39	-0.34	27.48
404.00	0.110	255.500	403.99	1.57	-1.70	-0.05	1770021.31	14643993.89	40°19'15.8748"N	80°32'6.0943"W	1.70	181.521	0.21	-0.15	49.35
494.00	0.220	296.140	493.99	1.43	-1.65	-0.28	1770021.08	14643993.94	40°19'15.8754"N	80°32'6.0974"W	1.67	189.768	0.17	0.12	45.16
586.00	0.270	269.680	585.99	1.22	-1.57	-0.66	1770020.70	14643994.02	40°19'15.8761"N	80°32'6.1022"W	1.71	202.740	0.13	0.05	-28.76
679.00	0.190	234.030	678.99	1.18	-1.66	-1.00	1770020.36	14643993.93	40°19'15.8752"N	80°32'6.1067"W	1.94	211.073	0.17	-0.09	-38.33
770.00	0.440	134.480	769.99	1.54	-2.00	-0.88	1770020.48	14643993.59	40°19'15.8719"N	80°32'6.1051"W	2.18	203.673	0.56	0.27	-109.40
862.00	1.130	145.110	861.98	2.74	-2.99	-0.11	1770021.25	14643992.60	40°19'15.8621"N	80°32'6.0952"W	2.99	182.013	0.76	0.75	11.55
952.00	1.460	132.120	951.96	4.63	-4.49	1.25	1770022.61	14643991.10	40°19'15.8472"N	80°32'6.0778"W	4.66	164.397	0.49	0.37	-14.43
1044.00	1.760	120.330	1043.92	6.80	-5.99	3.34	1770024.70	14643989.61	40°19'15.8323"N	80°32'6.0509"W	6.86	150.828	0.48	0.33	-12.82
1135.00	1.960	115.200	1134.88	9.03	-7.35	5.96	1770027.31	14643988.24	40°19'15.8187"N	80°32'6.0172"W	9.46	140.998	0.29	0.22	-5.64
1225.00	2.090	114.990	1224.82	11.34	-8.70	8.84	1770030.19	14643986.89	40°19'15.8052"N	80°32'5.9801"W	12.40	134.566	0.14	0.14	-0.23
1317.00	1.870	105.980	1316.76	13.48	-9.83	11.80	1770033.16	14643985.77	40°19'15.7939"N	80°32'5.9420"W	15.35	129.783	0.41	-0.24	-9.79
1397.00	1.150	91.550	1396.74	14.59	-10.21	13.86	1770035.21	14643985.39	40°19'15.7901"N	80°32'5.9154"W	17.21	126.373	1.01	-0.90	-18.04
1529.00	0.580	39.070	1528.72	14.78	-9.72	15.60	1770036.96	14643985.87	40°19'15.7947"N	80°32'5.8929"W	18.38	121.931	0.70	-0.43	-39.76
1620.00	2.590	315.820	1619.69	12.66	-7.89	14.46	1770035.81	14643987.70	40°19'15.8129"N	80°32'5.9075"W	16.47	118.622	2.84	2.21	-91.48
1710.00	5.070	320.300	1709.48	7.00	-3.37	10.50	1770031.86	14643992.22	40°19'15.8578"N	80°32'5.9583"W	11.03	107.803	2.77	2.76	4.98
1802.00	6.670	318.470	1801.00	-1.89	3.76	4.36	1770025.72	14643999.34	40°19'15.9285"N	80°32'6.0371"W	5.76	49.271	1.75	1.74	-1.99
1893.00	8.650	314.300	1891.18	-13.10	12.49	-4.04	1770017.32	14644008.08	40°19'16.0153"N	80°32'6.1449"W	13.13	342.077	2.26	2.18	-4.58
1983.00	8.950	310.750	1980.12	-25.48	21.79	-14.19	1770007.18	14644017.37	40°19'16.1077"N	80°32'6.2753"W	26.00	326.930	0.69	0.33	-3.94
2075.00	10.370	314.130	2070.81	-39.37	32.23	-25.55	1769995.82	14644027.80	40°19'16.2114"N	80°32'6.4213"W	41.13	321.588	1.66	1.54	3.67
2167.00	12.440	316.640	2160.99	-56.12	45.20	-38.30	1769983.07	14644040.77	40°19'16.3403"N	80°32'6.5850"W	59.24	319.722	2.31	2.25	2.73
2259.00	12.700	313.940	2250.79	-74.52	59.42	-52.39	1769968.99	14644054.99	40°19'16.4815"N	80°32'6.7659"W	79.22	318.599	0.70	0.28	-2.93
2350.00	12.560	311.620	2339.59	-92.46	72.93	-66.99	1769954.40	14644068.50	40°19'16.6158"N	80°32'6.9535"W	99.03	317.434	0.58	-0.15	-2.55
2441.00	14.500	311.840	2428.06	-111.48	87.11	-82.87	1769938.52	14644082.66	40°19'16.7567"N	80°32'7.1576"W	120.23	316.427	2.13	2.13	0.24
2531.00	14.510	308.800	2515.19	-131.36	101.69	-100.05	1769921.34	14644097.24	40°19'16.9017"N	80°32'7.3784"W	142.66	315.464	0.85	0.01	-3.38
2622.00	14.210	315.420	2603.35	-151.55	116.79	-116.78	1769904.63	14644112.33	40°19'17.0517"N	80°32'7.5933"W	165.16	315.002	1.83	-0.33	7.27

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Page 3 of 11



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Facility	State of WV DNR A BRK Pad	Wellbore	State of WV DNR A BRK 6H AWB
Slot	Slot #6H		

WELLPATH DATA (217 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]	
2713.00	13.990	312.780	2691.61	-171.75	132.21	-132.69	1769888.72	14644127.75	40°19'17.2050"N	80°32'7.7977"W	187.32	314.896	0.75	-0.24	-2.90	
2803.00	14.910	313.700	2778.77	-192.07	147.60	-149.05	1769872.37	14644143.13	40°19'17.3579"N	80°32'8.0079"W	209.77	314.721	1.05	1.02	1.02	
2894.00	14.330	309.870	2866.82	-212.60	162.91	-166.16	1769855.27	14644158.44	40°19'17.5101"N	80°32'8.2277"W	232.70	314.435	1.24	-0.64	-4.21	
2984.00	14.200	313.910	2954.05	-232.43	177.70	-182.66	1769838.77	14644173.23	40°19'17.6571"N	80°32'8.4397"W	254.84	314.213	1.12	-0.14	4.49	
3075.00	13.900	316.260	3042.33	-252.71	193.34	-198.26	1769823.18	14644188.86	40°19'17.8125"N	80°32'8.6400"W	276.92	314.281	0.71	-0.33	2.58	
3166.00	13.120	312.170	3130.81	-272.10	208.17	-213.47	1769807.97	14644203.68	40°19'17.9598"N	80°32'8.8354"W	298.17	314.281	1.35	-0.86	-4.49	
3256.00	13.580	311.750	3218.38	-290.70	222.07	-228.92	1769792.53	14644217.57	40°19'18.0979"N	80°32'9.0340"W	318.93	314.129	0.52	0.51	-0.47	
3347.00	14.170	314.630	3306.72	-310.44	237.01	-244.82	1769776.63	14644232.51	40°19'18.2463"N	80°32'9.2382"W	340.75	314.071	1.00	0.65	3.16	
3437.00	13.350	310.450	3394.14	-329.70	251.49	-260.57	1769760.89	14644246.98	40°19'18.3903"N	80°32'9.4406"W	362.13	313.984	1.43	-0.91	-4.64	
3528.00	13.730	312.080	3482.61	-348.65	265.54	-276.58	1769744.89	14644261.03	40°19'18.5300"N	80°32'9.6463"W	383.41	313.834	0.59	0.42	1.79	
3619.00	14.160	315.890	3570.93	-368.61	280.77	-292.34	1769729.13	14644276.25	40°19'18.6813"N	80°32'9.8488"W	405.33	313.844	1.11	0.47	4.19	
3710.00	13.310	312.360	3659.33	-388.30	295.82	-307.83	1769713.65	14644291.30	40°19'18.8308"N	80°32'10.0477"W	426.93	313.861	1.31	-0.93	-3.88	
3801.00	13.880	314.410	3747.78	-407.69	310.52	-323.37	1769698.12	14644305.99	40°19'18.9768"N	80°32'10.2473"W	448.31	313.839	0.82	0.63	2.25	
3892.00	15.110	316.190	3835.88	-428.64	326.72	-339.37	1769682.12	14644322.18	40°19'19.1377"N	80°32'10.4529"W	471.08	313.911	1.44	1.35	1.96	
3984.00	14.580	312.670	3924.81	-450.17	343.22	-356.19	1769665.31	14644338.68	40°19'19.3016"N	80°32'10.6689"W	494.64	313.937	1.14	-0.58	-3.83	
4076.00	14.110	316.080	4013.95	-470.97	359.14	-372.48	1769649.02	14644354.60	40°19'19.4599"N	80°32'10.8781"W	517.42	313.955	1.05	-0.51	3.71	
4168.00	13.480	312.470	4103.29	-490.98	374.46	-388.17	1769633.34	14644369.91	40°19'19.6121"N	80°32'11.0797"W	539.35	313.970	1.16	-0.68	-3.92	
4258.00	14.480	312.240	4190.63	-510.51	389.11	-404.24	1769617.28	14644384.55	40°19'19.7576"N	80°32'11.2861"W	561.08	313.907	1.11	1.11	-0.26	
4349.00	14.040	318.410	4278.83	-531.10	405.01	-419.99	1769601.53	14644400.45	40°19'19.9156"N	80°32'11.4884"W	583.46	313.960	1.74	-0.48	6.78	
4440.00	13.440	316.260	4367.22	-551.26	420.91	-434.63	1769586.90	14644416.34	40°19'20.0734"N	80°32'11.6763"W	605.04	314.081	0.87	-0.66	-2.36	
4530.00	14.740	316.640	4454.51	-571.58	436.79	-449.72	1769571.81	14644432.21	40°19'20.2312"N	80°32'11.8701"W	626.93	314.164	1.45	1.44	0.42	
4621.00	14.290	313.800	4542.61	-592.54	452.98	-465.78	1769555.76	14644448.40	40°19'20.3920"N	80°32'12.0763"W	649.72	314.202	0.93	-0.49	-3.12	
4712.00	14.670	315.880	4630.72	-613.40	469.03	-481.91	1769539.64	14644464.44	40°19'20.5514"N	80°32'12.2834"W	672.47	314.224	0.71	0.42	2.29	
4802.00	13.950	313.820	4717.93	-633.79	484.72	-497.67	1769523.88	14644480.13	40°19'20.7073"N	80°32'12.4858"W	694.71	314.245	0.98	-0.80	-2.29	
4893.00	11.430	289.870	4806.76	-649.74	495.39	-514.07	1769507.48	14644490.79	40°19'20.8135"N	80°32'12.6969"W	713.92	313.940	6.35	-2.77	-26.32	
4983.00	10.500	261.000	4895.18	-657.44	497.14	-530.57	1769490.99	14644492.54	40°19'20.8317"N	80°32'12.9098"W	727.09	313.137	6.12	-1.03	-32.08	
5074.00	12.930	224.610	4984.40	-655.13	488.58	-545.94	1769475.63	14644483.98	40°19'20.7479"N	80°32'13.1087"W	732.64	311.827	8.38	2.67	-39.99	
5165.00	17.160	198.790	5072.36	-640.77	468.59	-557.43	1769464.15	14644464.00	40°19'20.5510"N	80°32'13.2585"W	728.22	310.052	8.60	4.65	-28.37	
5257.00	20.160	181.730	5159.57	-615.84	439.87	-562.28	1769459.29	14644435.29	40°19'20.2674"N	80°32'13.3231"W	713.90	308.036	6.74	3.26	-18.54	
5347.00	23.660	170.730	5243.10	-583.93	406.52	-559.84	1769461.73	14644401.96	40°19'19.9377"N	80°32'13.2938"W	691.87	305.985	5.98	3.89	-12.22	

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Facility	State of WV DNR A BRK Pad	Wellbore	State of WV DNR A BRK 6H AWB
Slot	Slot #6H		

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5438.00	30.310	166.260	5324.15	-543.30	366.14	-551.43	1769470.14	14644361.59	40°19'19.5383"N	80°32'13.1880"W	661.92	303.584	7.64	7.31	-4.91	
5529.00	36.520	166.060	5400.07	-493.66	317.51	-539.45	1769482.12	14644312.98	40°19'19.0571"N	80°32'13.0365"W	625.95	300.481	6.83	6.82	-0.22	
5619.00	43.840	167.860	5468.79	-436.29	260.97	-526.42	1769495.14	14644256.46	40°19'18.4977"N	80°32'12.8722"W	587.56	296.370	8.23	8.13	2.00	
5710.00	49.410	169.380	5531.26	-371.23	196.15	-513.41	1769508.14	14644191.66	40°19'17.8565"N	80°32'12.7086"W	549.61	290.909	6.24	6.12	1.67	
5749.00	54.200	167.100	5555.37	-341.04	166.15	-507.15	1769514.40	14644161.68	40°19'17.5598"N	80°32'12.6298"W	533.68	288.140	13.11	12.28	-5.85	
5801.00	59.330	165.360	5583.87	-297.96	123.93	-496.78	1769524.77	14644119.47	40°19'17.1420"N	80°32'12.4988"W	512.01	284.008	10.25	9.87	-3.35	
5846.00	60.850	167.020	5606.30	-259.32	86.05	-487.48	1769534.07	14644081.61	40°19'16.7673"N	80°32'12.3812"W	495.01	280.011	4.65	3.38	3.69	
5891.00	62.090	167.020	5627.80	-220.23	47.53	-478.60	1769542.95	14644043.10	40°19'16.3861"N	80°32'12.2692"W	480.95	275.672	2.76	2.76	0.00	
5937.00	65.210	165.870	5648.21	-179.42	7.47	-468.93	1769552.61	14644003.05	40°19'15.9897"N	80°32'12.1471"W	468.99	270.912	7.14	6.78	-2.50	
5982.00	67.980	164.270	5666.09	-138.40	-32.43	-458.29	1769563.25	14643963.17	40°19'15.5949"N	80°32'12.0124"W	459.43	265.952	6.97	6.16	-3.56	
6027.00	73.680	162.240	5680.86	-96.07	-73.11	-446.04	1769575.50	14643922.51	40°19'15.1923"N	80°32'11.8569"W	451.99	260.691	13.36	12.67	-4.51	
6073.00	79.010	160.630	5691.72	-51.45	-115.46	-431.80	1769589.72	14643880.17	40°19'14.7730"N	80°32'11.6761"W	446.97	255.029	12.08	11.59	-3.50	
6118.00	82.150	160.520	5699.08	-7.09	-157.33	-417.04	1769604.48	14643838.32	40°19'14.3586"N	80°32'11.4883"W	445.73	249.331	6.98	6.98	-0.24	
6163.00	84.710	160.660	5704.23	37.58	-199.49	-402.19	1769619.33	14643796.18	40°19'13.9412"N	80°32'11.2994"W	448.94	243.618	5.70	5.69	0.31	
6208.00	85.460	159.960	5708.08	82.39	-241.70	-387.08	1769634.43	14643753.98	40°19'13.5233"N	80°32'11.1072"W	456.34	238.019	2.28	1.67	-1.56	
6254.00	85.750	160.050	5711.61	128.24	-284.80	-371.40	1769650.11	14643710.90	40°19'13.0966"N	80°32'10.9077"W	468.02	232.518	0.66	0.63	0.20	
6299.00	88.730	162.130	5713.78	173.13	-327.31	-356.83	1769664.66	14643668.40	40°19'12.6757"N	80°32'10.7225"W	484.21	227.471	8.07	6.62	4.62	
6341.00	90.770	163.350	5713.96	215.00	-367.42	-344.37	1769677.12	14643628.31	40°19'12.2788"N	80°32'10.5644"W	503.58	223.145	5.66	4.86	2.90	
6361.00	90.800	163.010	5713.68	234.93	-386.56	-338.59	1769682.90	14643609.18	40°19'12.0893"N	80°32'10.4909"W	513.88	221.215	1.71	0.15	-1.70	
6452.00	89.970	160.240	5713.07	325.78	-472.91	-309.90	1769711.58	14643522.86	40°19'11.2346"N	80°32'10.1265"W	565.41	213.237	3.18	-0.91	-3.04	
6542.00	90.250	158.650	5712.90	415.76	-557.18	-278.30	1769743.16	14643438.63	40°19'10.4002"N	80°32'9.7243"W	622.82	206.542	1.79	0.31	-1.77	
6633.00	89.880	157.690	5712.80	506.76	-641.65	-244.47	1769776.99	14643354.18	40°19'9.5638"N	80°32'9.2931"W	686.64	200.857	1.13	-0.41	-1.05	
6723.00	90.220	158.250	5712.72	596.76	-725.08	-210.71	1769810.73	14643270.79	40°19'8.7376"N	80°32'8.8630"W	755.08	196.204	0.73	0.38	0.62	
6814.00	90.000	158.320	5712.54	687.76	-809.62	-177.04	1769844.39	14643186.28	40°19'7.9004"N	80°32'8.4340"W	828.75	192.335	0.25	-0.24	0.08	
6905.00	89.970	157.530	5712.57	778.75	-893.95	-142.84	1769878.58	14643101.98	40°19'7.0654"N	80°32'7.9982"W	905.29	189.078	0.87	-0.03	-0.87	
6996.00	89.940	157.950	5712.64	869.75	-978.17	-108.37	1769913.03	14643017.80	40°19'6.2314"N	80°32'7.5589"W	984.15	186.322	0.46	-0.03	0.46	
7086.00	88.400	157.770	5713.94	959.73	-1061.52	-74.45	1769946.93	14642934.48	40°19'5.4059"N	80°32'7.1268"W	1064.13	184.012	1.72	-1.71	-0.20	
7177.00	87.970	157.630	5716.82	1050.68	-1145.67	-39.94	1769981.43	14642850.36	40°19'4.5726"N	80°32'6.6869"W	1146.37	181.997	0.50	-0.47	-0.15	
7267.00	88.580	157.720	5719.53	1140.63	-1228.89	-5.77	1770015.59	14642767.17	40°19'3.7485"N	80°32'6.2514"W	1228.90	180.269	0.69	0.68	0.10	
7358.00	88.610	157.880	5721.77	1231.59	-1313.12	28.60	1770049.95	14642682.98	40°19'2.9144"N	80°32'5.8134"W	1313.43	178.752	0.18	0.03	0.18	

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Actual Wellpath Report

State of WV DNR A BRK 6H AWP Proj: 19154'
Page 5 of 11



REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	State of WV DNR A BRK 6H
Field	Brooke	API	47-009-00297-0000
Facility	State of WV DNR A BRK Pad	Wellbore	State of WV DNR A BRK 6H AWB
Slot	Slot #6H		

WELLPATH DATA (217 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]
7449.00	88.210	157.570	5724.29	1322.55	-1397.29	63.08	1770084.42	14642598.83	40°19'2.0808"N	80°32'5.3740"W	1398.72	177.415	0.56	-0.44	-0.34
7539.00	89.170	157.850	5726.35	1412.52	-1480.55	97.21	1770118.53	14642515.61	40°19'1.2564"N	80°32'4.9391"W	1483.73	176.243	1.11	1.07	0.31
7630.00	89.170	158.020	5727.67	1503.51	-1564.87	131.39	1770152.70	14642431.32	40°19'0.4213"N	80°32'4.5035"W	1570.38	175.200	0.19	0.00	0.19
7721.00	89.320	160.050	5728.87	1594.49	-1649.84	163.95	1770185.24	14642346.39	40°18'59.5801"N	80°32'4.0890"W	1657.96	174.325	2.24	0.16	2.23
7811.00	89.880	158.380	5729.49	1684.48	-1733.97	195.88	1770217.17	14642262.28	40°18'58.7470"N	80°32'3.6825"W	1745.00	173.555	1.96	0.62	-1.86
7903.00	89.600	157.610	5729.91	1776.47	-1819.27	230.35	1770251.63	14642177.02	40°18'57.9023"N	80°32'3.2433"W	1833.79	172.784	0.89	-0.30	-0.84
7995.00	89.630	157.550	5730.53	1868.46	-1904.31	265.44	1770286.70	14642092.01	40°18'57.0601"N	80°32'2.7961"W	1922.72	172.065	0.07	0.03	-0.07
8085.00	89.780	157.690	5730.99	1958.45	-1987.53	299.71	1770320.95	14642008.82	40°18'56.2360"N	80°32'2.3594"W	2010.00	171.425	0.23	0.17	0.16
8177.00	89.780	157.770	5731.35	2050.44	-2072.67	334.57	1770355.81	14641923.71	40°18'55.3929"N	80°32'1.9151"W	2099.50	170.830	0.09	0.00	0.09
8268.00	89.630	157.750	5731.81	2141.43	-2156.90	369.02	1770390.23	14641839.52	40°18'54.5588"N	80°32'1.4762"W	2188.24	170.291	0.17	-0.16	-0.02
8360.00	89.510	157.780	5732.50	2233.43	-2242.06	403.83	1770425.03	14641754.39	40°18'53.7155"N	80°32'1.0326"W	2278.13	169.790	0.13	-0.13	0.03
8452.00	89.720	157.830	5733.12	2325.42	-2327.24	438.58	1770459.77	14641669.24	40°18'52.8719"N	80°32'0.5898"W	2368.20	169.327	0.23	0.23	0.05
8544.00	89.630	157.650	5733.64	2417.41	-2412.38	473.43	1770494.61	14641584.13	40°18'52.0288"N	80°32'0.1457"W	2458.40	168.897	0.22	-0.10	-0.20
8636.00	89.820	157.510	5734.09	2509.40	-2497.42	508.52	1770529.68	14641499.12	40°18'51.1866"N	80°31'59.6985"W	2548.67	168.491	0.26	0.21	-0.15
8728.00	89.720	157.680	5734.46	2601.39	-2582.48	543.58	1770564.74	14641414.10	40°18'50.3443"N	80°31'59.2517"W	2639.07	168.113	0.21	-0.11	0.18
8820.00	89.450	157.410	5735.12	2693.38	-2667.50	578.72	1770599.86	14641329.11	40°18'49.5023"N	80°31'58.8039"W	2729.56	167.759	0.42	-0.29	-0.29
8912.00	89.750	158.680	5735.76	2785.37	-2752.82	613.12	1770634.24	14641243.82	40°18'48.6573"N	80°31'58.3657"W	2820.28	167.444	1.42	0.33	1.38
9003.00	89.570	158.680	5736.30	2876.37	-2837.60	646.20	1770667.32	14641159.08	40°18'47.8179"N	80°31'57.9444"W	2910.24	167.171	0.20	-0.20	0.00
9094.00	89.480	158.550	5737.06	2967.36	-2922.33	679.38	1770700.48	14641074.38	40°18'46.9789"N	80°31'57.5218"W	3000.26	166.912	0.17	-0.10	-0.14
9184.00	89.660	158.730	5737.73	3057.36	-3006.14	712.16	1770733.25	14640990.60	40°18'46.1490"N	80°31'57.1044"W	3089.35	166.672	0.28	0.20	0.20
9275.00	89.140	157.900	5738.69	3148.35	-3090.70	745.79	1770766.86	14640906.08	40°18'45.3117"N	80°31'56.6761"W	3179.40	166.434	1.08	-0.57	-0.91
9366.00	89.880	159.050	5739.47	3239.35	-3175.35	779.17	1770800.23	14640821.46	40°18'44.4735"N	80°31'56.2509"W	3269.55	166.213	1.50	0.81	1.26
9456.00	89.200	157.240	5740.19	3329.34	-3258.87	812.67	1770833.72	14640737.97	40°18'43.6464"N	80°31'55.8242"W	3358.67	165.998	2.15	-0.76	-2.01
9548.00	89.660	158.820	5741.10	3421.33	-3344.18	847.09	1770868.12	14640652.69	40°18'42.8015"N	80°31'55.3858"W	3449.80	165.786	1.79	0.50	1.72
9640.00	89.510	158.570	5741.77	3513.33	-3429.89	880.51	1770901.54	14640567.01	40°18'41.9528"N	80°31'54.9601"W	3541.11	165.602	0.32	-0.16	-0.27
9731.00	89.540	158.640	5742.52	3604.32	-3514.62	913.71	1770934.72	14640482.32	40°18'41.1139"N	80°31'54.5374"W	3631.45	165.427	0.08	0.03	0.08
9830.00	89.420	158.360	5743.42	3703.32	-3606.73	949.99	1770970.99	14640390.24	40°18'40.2018"N	80°31'54.0754"W	3729.74	165.244	0.31	-0.12	-0.28
9925.00	88.710	159.150	5744.97	3798.30	-3695.26	984.41	1771005.39	14640301.75	40°18'39.3252"N	80°31'53.6371"W	3824.13	165.083	1.12	-0.75	0.83
10020.00	89.450	158.840	5746.50	3893.29	-3783.93	1018.46	1771039.43	14640213.11	40°18'38.4471"N	80°31'53.2037"W	3918.60	164.936	0.84	0.78	-0.33
10115.00	89.570	158.890	5747.31	3988.28	-3872.54	1052.71	1771073.67	14640124.53	40°18'37.5698"N	80°31'52.7676"W	4013.07	164.792	0.14	0.13	0.05

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	State of WV DNR A BRK 6H
Field	Brooke	API	47-009-00297-0000
Facility	State of WV DNR A BRK Pad	Wellbore	State of WV DNR A BRK 6H AWB
Slot	Slot #6H		

WELLPATH DATA (217 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]	
10209.00	89.780	159.010	5747.84	4082.27	-3960.26	1086.47	1771107.42	14640036.84	40°18'36.7011"N	80°31'52.3378"W	4106.59	164.659	0.26	0.22	0.13	
10304.00	89.480	158.520	5748.46	4177.27	-4048.81	1120.88	1771141.81	14639948.33	40°18'35.8243"N	80°31'51.8997"W	4201.10	164.526	0.60	-0.32	-0.52	
10398.00	89.510	158.620	5749.29	4271.27	-4136.31	1155.22	1771176.14	14639860.86	40°18'34.9579"N	80°31'51.4624"W	4294.60	164.396	0.11	0.03	0.11	
10493.00	89.320	158.200	5750.26	4366.26	-4224.64	1190.18	1771211.08	14639772.57	40°18'34.0832"N	80°31'51.0172"W	4389.09	164.266	0.49	-0.20	-0.44	
10588.00	89.480	158.110	5751.25	4461.25	-4312.81	1225.53	1771246.42	14639684.43	40°18'33.2101"N	80°31'50.5670"W	4483.56	164.137	0.19	0.17	-0.09	
10683.00	89.540	158.530	5752.06	4556.25	-4401.09	1260.62	1771281.50	14639596.19	40°18'32.3359"N	80°31'50.1201"W	4578.07	164.017	0.45	0.06	0.44	
10777.00	89.450	158.630	5752.89	4650.25	-4488.59	1294.95	1771315.81	14639508.72	40°18'31.4695"N	80°31'49.6829"W	4671.65	163.907	0.14	-0.10	0.11	
10872.00	89.420	158.700	5753.83	4745.24	-4577.08	1329.51	1771350.36	14639420.26	40°18'30.5933"N	80°31'49.2429"W	4766.26	163.803	0.08	-0.03	0.07	
10967.00	89.570	158.720	5754.67	4840.24	-4665.59	1364.00	1771384.84	14639331.78	40°18'29.7168"N	80°31'48.8037"W	4860.89	163.704	0.16	0.16	0.02	
11062.00	89.540	159.290	5755.40	4935.23	-4754.28	1398.04	1771418.86	14639243.13	40°18'28.8386"N	80°31'48.3705"W	4955.57	163.614	0.60	-0.03	0.60	
11156.00	89.720	158.440	5756.01	5029.22	-4841.96	1431.93	1771452.74	14639155.49	40°18'27.9705"N	80°31'47.9390"W	5049.25	163.525	0.92	0.19	-0.90	
11251.00	89.780	158.410	5756.43	5124.22	-4930.30	1466.86	1771487.66	14639067.18	40°18'27.0957"N	80°31'47.4942"W	5143.88	163.431	0.07	0.06	-0.03	
11346.00	89.290	158.790	5757.20	5219.22	-5018.75	1501.52	1771522.31	14638978.77	40°18'26.2198"N	80°31'47.0528"W	5238.55	163.344	0.65	-0.52	0.40	
11441.00	89.200	158.310	5758.45	5314.21	-5107.16	1536.26	1771557.03	14638890.39	40°18'25.3444"N	80°31'46.6105"W	5333.21	163.258	0.51	-0.09	-0.51	
11536.00	89.320	158.300	5759.67	5409.20	-5195.42	1571.38	1771592.14	14638802.16	40°18'24.4703"N	80°31'46.1633"W	5427.86	163.172	0.13	0.13	-0.01	
11630.00	89.570	159.030	5760.59	5503.19	-5282.97	1605.57	1771626.32	14638714.64	40°18'23.6034"N	80°31'45.7279"W	5521.57	163.095	0.82	0.27	0.78	
11724.00	89.170	158.650	5761.62	5597.19	-5370.63	1639.50	1771660.24	14638627.01	40°18'22.7354"N	80°31'45.2960"W	5615.30	163.024	0.59	-0.43	-0.40	
11819.00	89.080	158.510	5763.07	5692.17	-5459.06	1674.19	1771694.91	14638538.62	40°18'21.8597"N	80°31'44.8543"W	5710.01	162.950	0.18	-0.09	-0.15	
11914.00	89.290	158.890	5764.42	5787.16	-5547.56	1708.70	1771729.40	14638450.15	40°18'20.9834"N	80°31'44.4150"W	5804.75	162.881	0.46	0.22	0.40	
12008.00	89.320	158.810	5765.56	5881.15	-5635.22	1742.61	1771763.31	14638362.53	40°18'20.1154"N	80°31'43.9833"W	5898.51	162.817	0.09	0.03	-0.09	
12103.00	89.350	158.780	5766.66	5976.15	-5723.78	1776.97	1771797.65	14638274.00	40°18'19.2384"N	80°31'43.5459"W	5993.27	162.753	0.04	0.03	-0.03	
12198.00	89.420	158.890	5767.68	6071.14	-5812.37	1811.27	1771831.94	14638185.44	40°18'18.3612"N	80°31'43.1093"W	6088.05	162.692	0.14	0.07	0.12	
12293.00	89.170	158.750	5768.85	6166.13	-5900.95	1845.59	1771866.24	14638096.90	40°18'17.4842"N	80°31'42.6724"W	6182.83	162.632	0.30	-0.26	-0.15	
12388.00	88.950	158.150	5770.41	6261.11	-5989.29	1880.48	1771901.12	14638008.59	40°18'16.6093"N	80°31'42.2282"W	6277.57	162.569	0.67	-0.23	-0.63	
12482.00	89.350	158.880	5771.81	6355.10	-6076.75	1914.91	1771935.53	14637921.16	40°18'15.7433"N	80°31'41.7899"W	6371.32	162.509	0.89	0.43	0.78	
12577.00	89.260	158.280	5772.96	6450.10	-6165.18	1949.60	1771970.21	14637832.77	40°18'14.8676"N	80°31'41.3482"W	6466.10	162.452	0.64	-0.09	-0.63	
12672.00	89.320	158.990	5774.13	6545.09	-6253.65	1984.20	1772004.80	14637744.34	40°18'13.9916"N	80°31'40.9076"W	6560.88	162.396	0.75	0.06	0.75	
12767.00	89.850	159.360	5774.82	6640.08	-6342.44	2017.98	1772038.56	14637655.58	40°18'13.1124"N	80°31'40.4778"W	6655.73	162.350	0.68	0.56	0.39	
12861.00	88.950	158.450	5775.81	6734.06	-6430.13	2051.81	1772072.38	14637567.92	40°18'12.2441"N	80°31'40.0472"W	6749.56	162.303	1.36	-0.96	-0.97	
12956.00	89.380	158.980	5777.19	6829.05	-6518.64	2086.29	1772106.85	14637479.44	40°18'11.3676"N	80°31'39.6083"W	6844.36	162.253	0.72	0.45	0.56	

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	State of WV DNR A BRK 6H
Field	Brooke	API	47-009-00297-0000
Facility	State of WV DNR A BRK Pad	Wellbore	State of WV DNR A BRK 6H AWB
Slot	Slot #6H		

WELLPATH DATA (217 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]
13051.00	88.980	158.180	5778.55	6924.04	-6607.07	2120.98	1772141.53	14637391.05	40°18'10.4920"N	80°31'39.1666"W	6939.16	162.203	0.94	-0.42	-0.84
13146.00	89.020	158.700	5780.21	7019.03	-6695.41	2155.88	1772176.42	14637302.74	40°18'9.6172"N	80°31'38.7222"W	7033.94	162.152	0.55	0.04	0.55
13241.00	89.750	158.740	5781.23	7114.02	-6783.93	2190.36	1772210.88	14637214.26	40°18'8.7407"N	80°31'38.2833"W	7128.77	162.106	0.77	0.77	0.04
13335.00	89.450	158.620	5781.89	7208.02	-6871.49	2224.53	1772245.04	14637126.73	40°18'7.8736"N	80°31'37.8483"W	7222.60	162.061	0.34	-0.32	-0.13
13430.00	89.480	158.250	5782.77	7303.01	-6959.84	2259.45	1772279.94	14637038.42	40°18'6.9988"N	80°31'37.4037"W	7317.41	162.014	0.39	0.03	-0.39
13525.00	89.480	158.530	5783.63	7398.01	-7048.16	2294.43	1772314.92	14636950.13	40°18'6.1242"N	80°31'36.9582"W	7412.21	161.968	0.29	0.00	0.29
13619.00	89.380	158.370	5784.57	7492.00	-7135.58	2328.96	1772349.43	14636862.74	40°18'5.2585"N	80°31'36.5187"W	7506.04	161.924	0.20	-0.11	-0.17
13713.00	89.660	158.730	5785.36	7586.00	-7223.07	2363.33	1772383.79	14636775.29	40°18'4.3921"N	80°31'36.0811"W	7599.87	161.882	0.49	0.30	0.38
13808.00	89.450	158.670	5786.09	7681.00	-7311.57	2397.84	1772418.28	14636686.81	40°18'3.5157"N	80°31'35.6418"W	7694.72	161.843	0.23	-0.22	-0.06
13902.00	89.540	159.770	5786.92	7774.98	-7399.45	2431.19	1772451.62	14636598.97	40°18'2.6455"N	80°31'35.2175"W	7788.62	161.811	1.17	0.10	1.17
13997.00	89.380	158.500	5787.82	7869.97	-7488.22	2465.02	1772485.44	14636510.24	40°18'1.7666"N	80°31'34.7869"W	7883.51	161.779	1.35	-0.17	-1.34
14092.00	89.600	158.470	5788.66	7964.96	-7576.60	2499.86	1772520.27	14636421.89	40°18'0.8915"N	80°31'34.3434"W	7978.35	161.740	0.23	0.23	-0.03
14186.00	89.450	158.440	5789.44	8058.96	-7664.03	2534.38	1772554.77	14636334.50	40°18'0.0257"N	80°31'33.9039"W	8072.20	161.702	0.16	-0.16	-0.03
14281.00	89.450	158.460	5790.36	8153.96	-7752.38	2569.27	1772589.65	14636246.18	40°17'59.1508"N	80°31'33.4597"W	8167.04	161.664	0.02	0.00	0.02
14376.00	89.570	158.480	5791.17	8248.95	-7840.75	2604.14	1772624.50	14636157.84	40°17'58.2757"N	80°31'33.0159"W	8261.89	161.627	0.13	0.13	0.02
14470.00	89.420	158.330	5792.00	8342.95	-7928.15	2638.73	1772659.08	14636070.48	40°17'57.4102"N	80°31'32.5754"W	8355.74	161.591	0.23	-0.16	-0.16
14565.00	89.600	158.690	5792.81	8437.94	-8016.54	2673.53	1772693.87	14635982.12	40°17'56.5349"N	80°31'32.1324"W	8450.60	161.556	0.42	0.19	0.38
14660.00	89.320	158.200	5793.70	8532.94	-8104.89	2708.43	1772728.76	14635893.80	40°17'55.6600"N	80°31'31.6881"W	8545.46	161.522	0.59	-0.29	-0.52
14755.00	89.450	158.450	5794.72	8627.93	-8193.17	2743.52	1772763.83	14635805.56	40°17'54.7858"N	80°31'31.2414"W	8640.31	161.487	0.30	0.14	0.26
14849.00	89.420	158.350	5795.65	8721.93	-8280.56	2778.12	1772798.42	14635718.20	40°17'53.9204"N	80°31'30.8008"W	8734.17	161.453	0.11	-0.03	-0.11
14944.00	89.720	158.610	5796.36	8816.93	-8368.94	2812.97	1772833.25	14635629.85	40°17'53.0452"N	80°31'30.3572"W	8829.04	161.421	0.42	0.32	0.27
15039.00	89.420	158.500	5797.08	8911.92	-8457.36	2847.70	1772867.97	14635541.47	40°17'52.1697"N	80°31'29.9151"W	8923.92	161.391	0.34	-0.32	-0.12
15133.00	89.380	158.520	5798.06	9005.92	-8544.82	2882.13	1772902.39	14635454.04	40°17'51.3036"N	80°31'29.4768"W	9017.80	161.361	0.05	-0.04	0.02
15228.00	89.260	158.330	5799.19	9100.91	-8633.16	2917.06	1772937.31	14635365.74	40°17'50.4288"N	80°31'29.0321"W	9112.67	161.330	0.24	-0.13	-0.20
15323.00	89.420	158.850	5800.28	9195.90	-8721.60	2951.74	1772971.97	14635277.33	40°17'49.5530"N	80°31'28.5907"W	9207.55	161.302	0.57	0.17	0.55
15418.00	89.260	158.490	5801.38	9290.90	-8810.08	2986.29	1773006.51	14635188.88	40°17'48.6768"N	80°31'28.1509"W	9302.45	161.275	0.41	-0.17	-0.38
15513.00	89.420	158.190	5802.47	9385.89	-8898.37	3021.36	1773041.56	14635100.63	40°17'47.8025"N	80°31'27.7045"W	9397.32	161.246	0.36	0.17	-0.32
15607.00	89.290	158.560	5803.53	9479.88	-8985.75	3056.00	1773076.19	14635013.28	40°17'46.9373"N	80°31'27.2635"W	9491.19	161.217	0.42	-0.14	0.39
15702.00	89.170	158.540	5804.81	9574.88	-9074.16	3090.73	1773110.91	14634924.91	40°17'46.0618"N	80°31'26.8214"W	9586.08	161.191	0.13	-0.13	-0.02
15796.00	89.080	158.390	5806.24	9668.86	-9161.59	3125.23	1773145.40	14634837.51	40°17'45.1960"N	80°31'26.3822"W	9679.97	161.164	0.19	-0.10	-0.16

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Actual Wellpath Report

State of WV DNR A BRK 6H AWP Proj: 19154'
Page 8 of 11



REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	State of WV DNR A BRK 6H
Field	Brooke	API	47-009-00297-0000
Facility	State of WV DNR A BRK Pad	Wellbore	State of WV DNR A BRK 6H AWB
Slot	Slot #6H		

WELLPATH DATA (217 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]
15891.00	89.230	158.310	5807.64	9763.85	-9249.87	3160.28	1773180.43	14634749.26	40°17'44.3217"N	80°31'25.9360"W	9774.84	161.137	0.18	0.16	-0.08
15986.00	88.610	157.610	5809.43	9858.83	-9337.92	3195.92	1773216.06	14634661.25	40°17'43.4498"N	80°31'25.4822"W	9869.68	161.106	0.98	-0.65	-0.74
16081.00	89.600	158.860	5810.92	9953.82	-9426.13	3231.14	1773251.26	14634573.07	40°17'42.5762"N	80°31'25.0338"W	9964.55	161.079	1.68	1.04	1.32
16176.00	88.800	158.460	5812.24	10048.81	-9514.61	3265.71	1773285.82	14634484.62	40°17'41.7001"N	80°31'24.5938"W	10059.45	161.056	0.94	-0.84	-0.42
16270.00	89.320	158.460	5813.79	10142.79	-9602.03	3300.22	1773320.31	14634397.24	40°17'40.8344"N	80°31'24.1546"W	10153.34	161.032	0.55	0.55	0.00
16365.00	88.680	158.440	5815.44	10237.78	-9690.38	3335.10	1773355.19	14634308.92	40°17'39.9595"N	80°31'23.7105"W	10248.23	161.008	0.67	-0.67	-0.02
16460.00	89.080	158.450	5817.30	10332.76	-9778.71	3370.00	1773390.07	14634220.62	40°17'39.0847"N	80°31'23.2663"W	10343.12	160.985	0.42	0.42	0.01
16554.00	89.260	158.530	5818.66	10426.75	-9866.16	3404.46	1773424.52	14634133.21	40°17'38.2188"N	80°31'22.8276"W	10437.02	160.962	0.21	0.19	0.09
16649.00	89.140	158.470	5819.99	10521.74	-9954.54	3439.28	1773459.32	14634044.86	40°17'37.3436"N	80°31'22.3845"W	10531.93	160.940	0.14	-0.13	-0.06
16744.00	89.140	158.180	5821.41	10616.73	-10042.81	3474.36	1773494.39	14633956.62	40°17'36.4695"N	80°31'21.9379"W	10626.82	160.917	0.31	0.00	-0.31
16838.00	89.200	158.590	5822.78	10710.72	-10130.19	3508.98	1773529.00	14633869.27	40°17'35.6041"N	80°31'21.4971"W	10720.72	160.894	0.44	0.06	0.44
16932.00	89.200	158.420	5824.09	10804.71	-10217.65	3543.42	1773563.43	14633781.85	40°17'34.7381"N	80°31'21.0588"W	10814.63	160.874	0.18	0.00	-0.18
17027.00	89.140	158.620	5825.47	10899.70	-10306.04	3578.21	1773598.20	14633693.50	40°17'33.8628"N	80°31'20.6160"W	10909.54	160.853	0.22	-0.06	0.21
17122.00	89.110	158.650	5826.92	10994.69	-10394.50	3612.81	1773632.79	14633605.07	40°17'32.9868"N	80°31'20.1756"W	11004.46	160.834	0.04	-0.03	0.03
17216.00	89.260	158.590	5828.25	11088.68	-10482.02	3647.08	1773667.04	14633517.58	40°17'32.1201"N	80°31'19.7396"W	11098.38	160.815	0.17	0.16	-0.06
17311.00	89.320	158.580	5829.43	11183.67	-10570.46	3681.76	1773701.71	14633429.18	40°17'31.2444"N	80°31'19.2981"W	11193.30	160.796	0.06	0.06	-0.01
17406.00	89.380	158.730	5830.51	11278.66	-10658.94	3716.34	1773736.27	14633340.74	40°17'30.3682"N	80°31'18.8581"W	11288.23	160.778	0.17	0.06	0.16
17501.00	89.480	159.250	5831.45	11373.65	-10747.61	3750.39	1773770.32	14633252.09	40°17'29.4901"N	80°31'18.4248"W	11383.18	160.763	0.56	0.11	0.55
17595.00	88.980	158.360	5832.72	11467.64	-10835.25	3784.38	1773804.29	14633164.49	40°17'28.6224"N	80°31'17.9924"W	11477.11	160.747	1.09	-0.53	-0.95
17690.00	88.980	158.510	5834.41	11562.63	-10923.58	3819.29	1773839.19	14633076.19	40°17'27.7476"N	80°31'17.5480"W	11572.02	160.728	0.16	0.00	0.16
17784.00	89.170	158.540	5835.92	11656.62	-11011.05	3853.70	1773873.58	14632988.76	40°17'26.8815"N	80°31'17.1101"W	11665.94	160.711	0.20	0.20	0.03
17879.00	89.140	158.550	5837.33	11751.60	-11099.45	3888.44	1773908.31	14632900.39	40°17'26.0060"N	80°31'16.6679"W	11760.86	160.693	0.03	-0.03	0.01
17974.00	89.110	158.650	5838.78	11846.59	-11187.89	3923.10	1773942.96	14632811.98	40°17'25.1302"N	80°31'16.2268"W	11855.79	160.676	0.11	-0.03	0.11
18069.00	88.950	158.470	5840.38	11941.58	-11276.31	3957.82	1773977.67	14632723.60	40°17'24.2547"N	80°31'15.7849"W	11950.71	160.660	0.25	-0.17	-0.19
18163.00	89.080	158.590	5842.00	12035.57	-11363.77	3992.22	1774012.05	14632636.17	40°17'23.3886"N	80°31'15.3471"W	12044.63	160.643	0.19	0.14	0.13
18258.00	89.140	158.580	5843.48	12130.55	-11452.20	4026.90	1774046.72	14632547.77	40°17'22.5129"N	80°31'14.9057"W	12139.56	160.627	0.06	0.06	-0.01
18352.00	88.980	158.260	5845.02	12224.54	-11539.60	4061.47	1774081.28	14632460.41	40°17'21.6474"N	80°31'14.4658"W	12233.48	160.610	0.38	-0.17	-0.34
18446.00	89.170	158.550	5846.54	12318.53	-11626.99	4096.06	1774115.86	14632373.05	40°17'20.7820"N	80°31'14.0255"W	12327.39	160.593	0.37	0.20	0.31
18541.00	89.140	158.580	5847.94	12413.52	-11715.41	4130.78	1774150.56	14632284.66	40°17'19.9064"N	80°31'13.5837"W	12422.33	160.578	0.04	-0.03	0.03
18636.00	89.080	158.670	5849.41	12508.51	-11803.87	4165.40	1774185.16	14632196.24	40°17'19.0304"N	80°31'13.1432"W	12517.26	160.563	0.11	-0.06	0.09

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	State of WV DNR A BRK 6H
Field	Brooke	API	47-009-00297-0000
Facility	State of WV DNR A BRK Pad	Wellbore	State of WV DNR A BRK 6H AWB
Slot	Slot #6H		

WELLPATH DATA (217 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]	
18731.00	89.630	158.760	5850.48	12603.50	-11892.38	4199.88	1774219.63	14632107.76	40°17'18.1539"N	80°31'12.7044"W	12612.20	160.549	0.59	0.58	0.09	
18825.00	89.660	158.630	5851.06	12697.49	-11979.95	4234.03	1774253.77	14632020.22	40°17'17.2867"N	80°31'12.2698"W	12706.15	160.535	0.14	0.03	-0.14	
18920.00	89.600	158.540	5851.68	12792.49	-12068.39	4268.72	1774288.44	14631931.82	40°17'16.4109"N	80°31'11.8284"W	12801.10	160.521	0.11	-0.06	-0.09	
19015.00	89.660	158.550	5852.29	12887.49	-12156.81	4303.47	1774323.18	14631843.44	40°17'15.5354"N	80°31'11.3862"W	12896.04	160.506	0.06	0.06	0.01	
19110.00	89.690	158.560	5852.83	12982.49	-12245.23	4338.20	1774357.90	14631755.05	40°17'14.6598"N	80°31'10.9442"W	12990.98	160.492	0.03	0.03	0.01	
19129.00	89.690	158.340	5852.93	13001.49	-12262.90	4345.18	1774364.87	14631737.38	40°17'14.4848"N	80°31'10.8554"W	13009.97	160.489	1.16	0.00	-1.16	
19154.00‡	89.690	158.340	5853.07	13026.49	-12286.14	4354.40	1774374.10	14631714.16	40°17'14.2547"N	80°31'10.7380"W	13034.95	160.485	0.00	0.00	0.00	

HOLE & CASING SECTIONS - Ref Wellbore: State of WV DNR A BRK 6H AWB Ref Wellpath: State of WV DNR A BRK 6H AWP Proj: 19154'									
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	125.00	99.00	26.00	125.00	0.00	0.00	-0.22	0.10
17.5in Open Hole	125.00	645.00	520.00	125.00	644.99	-0.22	0.10	-1.61	-0.90
13.375in Casing Surface	26.00	645.00	619.00	26.00	644.99	0.00	0.00	-1.61	-0.90
12.25in Open Hole	645.00	1465.00	820.00	644.99	1464.73	-1.61	-0.90	-10.10	14.98
9.625in Casing Intermediate	26.00	1465.00	1439.00	26.00	1464.73	0.00	0.00	-10.10	14.98
8.75in Open Hole	1465.00	6366.00	4901.00	1464.73	5713.62	-10.10	14.98	-391.34	-337.12
8.5in Open Hole	6366.00	19154.00	12788.00	5713.62	5853.07	-391.34	-337.12	-12286.14	4354.40
5.5in Casing Production	26.00	19154.00	19128.00	26.00	5853.07	0.00	0.00	-12286.14	4354.40

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Actual Wellpath Report

State of WV DNR A BRK 6H AWP Proj: 19154'
Page 10 of 11



REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	State of WV DNR A BRK 6H
Field	Brooke	API	47-009-00297-0000
Facility	State of WV DNR A BRK Pad	Wellbore	State of WV DNR A BRK 6H AWB
Slot	Slot #6H		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
State of WV DNR A BRK 6H LP Rev-2	5711.00	-196.75	-418.92	1769602.60	14643798.92	40°19'13.9692"N	80°32'11.5152"W	point
State of WV DNR A BRK 6H BHL Rev-2	5983.26	-12283.31	4361.20	1774380.89	14631716.98	40°17'14.2822"N	80°31'10.6501"W	point

WELLPATH COMPOSITION - Ref Wellbore: State of WV DNR A BRK 6H AWB Ref Wellpath: State of WV DNR A BRK 6H AWP Proj: 19154'					
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
26.00	586.00	OWSG MWD rev2 + HRGM	01_Premier MWD <17-1/2"> (175'-586')	State of WV DNR A BRK 6H AWB	10/6/2020
586.00	1397.00	OWSG MWD rev2 + HRGM	02_Premier MWD <12-1/4"> (586')(679'-1397')	State of WV DNR A BRK 6H AWB	10/6/2020
1397.00	6299.00	OWSG MWD rev2 + HRGM	03_Premier MWD <8-3/4"> (1397')(1529'-6299')	State of WV DNR A BRK 6H AWB	10/6/2020
6299.00	19154.00	BH AutoTrak Curve (2019) (Short spacing)	04_BH AT Curve <8-1/2"> (6299')(6341'-19129')	State of WV DNR A BRK 6H AWB	10/6/2020

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Actual Wellpath Report
State of WV DNR A BRK 6H AWP Proj: 19154'
Page 11 of 11



REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	State of WV DNR A BRK 6H
Field	Brooke	API	47-009-00297-0000
Facility	State of WV DNR A BRK Pad	Wellbore	State of WV DNR A BRK 6H AWB
Slot	Slot #6H		

COMMENTS
Wellpath general comments API: 47-009-00297-0000 BH Job #: 110366890 Rig: SDC 40 Duration: 10/15/2020 - 10/17/2020

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