

SWN PRODUCTION COMPANY, LLC

Location: Brooke County, WV
 Field: Brooke
 Facility: State of WV DNR A BRK Pad

Slot: Slot #205H
 Well: State of WV DNR A BRK 205H
 Wellbore: State of WV DNR A BRK 205H PWB

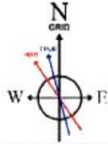


Location Information

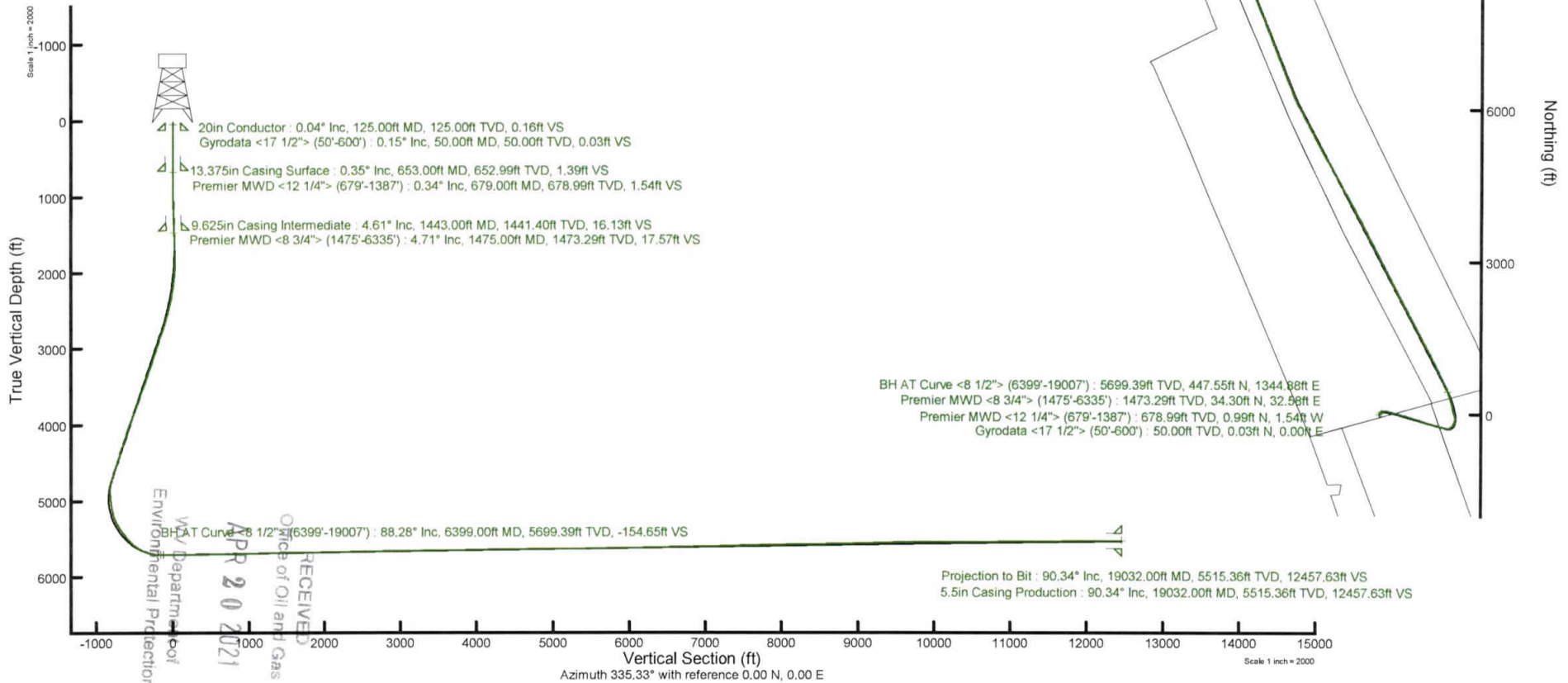
Facility Name		Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	
State of WV DNR A BRK Pad		1769998.690	14644013.310	40°19'16.0680"N	80°32'6.3852"W	
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Slot #205H	6.92	-0.87	1769997.820	14644020.230	40°19'16.1364"N	80°32'6.3960"W
SDC 40 (KB) to Ground level (At Slot: Slot #205H)				26ft		
Mean Sea Level to Ground level (At Slot: Slot #205H)				-1139.9ft		
SDC 40 (KB) to Mean Sea Level				1165.9ft		

API: 47-009-00298-0000
 BH Job #: 110568420
 Rig: SDC 40
 Duration: 09/22/2020 - 09/25/2020

Plot reference wellpath is State of WV DNR A BRK 205H PWB Rev-A.0	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 #205H): -1139.9 feet	Depths are in feet
Offset wellpath MDs are referenced to each path's default MD datum	Created by: atjenjn on 2020-09-29; Database: VA_MPL_EASTERNUS_Defn



User specified Dip: 67.48° Field: 52283 nT
 Magnetic North is 8.94 degrees West of True North (at 9/19/2020)
 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 205H
Field	Brooke	API	047-009-00298
Facility	State of WV DNR A BRK Pad	Wellbore	State of WV DNR A BRK 205H AWB
Slot	Slot #205H		

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	9/29/2020 at 1:52:53 PM
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	6.92	-0.87	1769997.82	14644020.23	40°19'16.1364"N	80°32'6.3960"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 #205H)	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	335.33°

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Field	Brooke	API	047-009-00298
Facility	State of WV DNR A BRK Pad	Wellbore	State of WV DNR A BRK 205H AWB
Slot	Slot #205H		

WELLPATH DATA (224 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	0.930	0.00	0.00	0.00	0.00	1769997.82	14644020.23	40°19'16.1364"N	80°32'6.3960"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	0.930	26.00	0.00	0.00	0.00	1769997.82	14644020.23	40°19'16.1364"N	80°32'6.3960"W	0.00	0.000	0.00	0.00	0.00
50.00	0.150	0.930	50.00	0.03	0.03	0.00	1769997.82	14644020.26	40°19'16.1368"N	80°32'6.3960"W	0.03	0.930	0.62	0.63	0.00
100.00	0.120	343.170	100.00	0.14	0.15	-0.01	1769997.81	14644020.38	40°19'16.1379"N	80°32'6.3961"W	0.15	354.718	0.10	-0.06	-35.52
150.00	0.170	189.290	150.00	0.13	0.12	-0.04	1769997.78	14644020.35	40°19'16.1377"N	80°32'6.3965"W	0.13	341.804	0.57	0.10	-307.76
200.00	0.190	176.190	200.00	-0.01	-0.03	-0.05	1769997.77	14644020.20	40°19'16.1361"N	80°32'6.3966"W	0.06	235.824	0.09	0.04	-26.20
250.00	0.340	223.250	250.00	-0.14	-0.22	-0.14	1769997.68	14644020.01	40°19'16.1342"N	80°32'6.3978"W	0.26	212.751	0.50	0.30	94.12
300.00	0.260	220.070	300.00	-0.25	-0.42	-0.32	1769997.50	14644019.81	40°19'16.1323"N	80°32'6.4001"W	0.52	217.284	0.16	-0.16	-6.36
350.00	0.250	303.750	350.00	-0.20	-0.44	-0.48	1769997.34	14644019.79	40°19'16.1321"N	80°32'6.4022"W	0.66	227.341	0.68	-0.02	167.36
400.00	0.220	324.080	400.00	-0.02	-0.31	-0.63	1769997.19	14644019.92	40°19'16.1335"N	80°32'6.4041"W	0.70	244.081	0.18	-0.06	40.66
450.00	0.290	330.830	450.00	0.21	-0.12	-0.75	1769997.07	14644020.11	40°19'16.1353"N	80°32'6.4056"W	0.76	261.070	0.15	0.14	13.50
500.00	0.400	314.000	500.00	0.49	0.11	-0.93	1769996.89	14644020.34	40°19'16.1376"N	80°32'6.4080"W	0.94	276.983	0.30	0.22	-33.66
550.00	0.290	341.040	550.00	0.78	0.36	-1.10	1769996.72	14644020.59	40°19'16.1400"N	80°32'6.4102"W	1.16	287.892	0.39	-0.22	54.08
600.00	0.370	322.620	599.99	1.07	0.60	-1.24	1769996.58	14644020.83	40°19'16.1425"N	80°32'6.4119"W	1.38	295.948	0.26	0.16	-36.84
679.00	0.340	320.450	678.99	1.54	0.99	-1.54	1769996.28	14644021.22	40°19'16.1463"N	80°32'6.4158"W	1.83	302.583	0.04	-0.04	-2.75
748.00	1.090	42.640	747.99	1.99	1.63	-1.23	1769996.59	14644021.86	40°19'16.1526"N	80°32'6.4117"W	2.04	322.925	1.59	1.09	119.12
817.00	1.740	55.030	816.97	2.43	2.71	0.07	1769997.89	14644022.94	40°19'16.1632"N	80°32'6.3948"W	2.71	1.551	1.04	0.94	17.96
863.00	2.240	60.720	862.94	2.63	3.55	1.43	1769999.25	14644023.78	40°19'16.1715"N	80°32'6.3773"W	3.83	21.935	1.17	1.09	12.37
954.00	3.240	54.990	953.83	3.23	5.90	5.09	1770002.91	14644026.12	40°19'16.1944"N	80°32'6.3299"W	7.79	40.790	1.14	1.10	-6.30
1044.00	3.770	51.360	1043.67	4.40	9.20	9.48	1770007.30	14644029.43	40°19'16.2269"N	80°32'6.2729"W	13.21	45.856	0.64	0.59	-4.03
1135.00	4.330	49.100	1134.44	6.09	13.32	14.41	1770012.23	14644033.54	40°19'16.2673"N	80°32'6.2090"W	19.63	47.261	0.64	0.62	-2.48
1227.00	5.000	44.900	1226.13	8.46	18.43	19.87	1770017.68	14644038.66	40°19'16.3176"N	80°32'6.1382"W	27.10	47.148	0.82	0.73	-4.57
1318.00	4.810	40.980	1316.80	11.41	24.12	25.17	1770022.98	14644044.34	40°19'16.3735"N	80°32'6.0694"W	34.86	46.218	0.42	-0.21	-4.31
1387.00	4.460	36.920	1385.57	13.88	28.45	28.68	1770026.49	14644048.67	40°19'16.4161"N	80°32'6.0238"W	40.40	45.229	0.69	-0.51	-5.88
1475.00	4.710	30.660	1473.29	17.57	34.30	32.58	1770030.39	14644054.51	40°19'16.4736"N	80°32'5.9731"W	47.30	43.529	0.64	0.28	-7.11
1540.00	5.100	35.740	1538.06	20.51	38.94	35.63	1770033.43	14644059.15	40°19'16.5193"N	80°32'5.9334"W	52.78	42.459	0.90	0.60	7.82
1631.00	6.790	47.140	1628.57	24.19	45.88	41.93	1770039.74	14644066.09	40°19'16.5876"N	80°32'5.8515"W	62.15	42.427	2.26	1.86	12.53
1721.00	8.350	51.920	1717.78	27.37	53.53	50.98	1770048.78	14644073.74	40°19'16.6627"N	80°32'5.7342"W	73.92	43.601	1.87	1.73	5.31
1812.00	9.680	59.990	1807.66	29.61	61.43	62.80	1770060.60	14644081.64	40°19'16.7402"N	80°32'5.5810"W	87.85	45.633	2.01	1.46	8.87
1903.00	10.270	74.460	1897.29	29.46	67.84	77.12	1770074.91	14644088.04	40°19'16.8028"N	80°32'5.3957"W	102.71	48.665	2.27	0.65	12.60

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Actual Wellpath Report

State of WV DNR A BRK 205H AWP Proj: 19032'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	State of WV DNR A BRK 205H
Field	Brooke	API	047-009-00298
Facility	State of WV DNR A BRK Pad	Wellbore	State of WV DNR A BRK 205H AWB
Slot	Slot #205H		

WELLPATH DATA (224 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]
1995.00	9.370	86.510	1987.96	25.87	70.90	92.38	1770090.16	14644091.10	40°19'16.8323"N	80°32'5.1986"W	116.45	52.492	2.95	-0.98	16.36
2085.00	10.750	98.190	2076.58	18.67	70.15	108.00	1770105.78	14644090.36	40°19'16.8241"N	80°32'4.9969"W	128.78	56.994	2.73	1.53	12.98
2178.00	13.060	100.990	2167.57	7.84	66.91	126.90	1770124.67	14644087.12	40°19'16.7911"N	80°32'4.7531"W	143.46	62.198	2.56	2.48	3.01
2270.00	16.020	100.740	2256.62	-5.58	62.56	149.58	1770147.35	14644082.77	40°19'16.7469"N	80°32'4.4606"W	162.14	67.302	3.22	3.22	-0.27
2361.00	17.910	103.790	2343.66	-21.56	56.89	175.51	1770173.26	14644077.10	40°19'16.6895"N	80°32'4.1262"W	184.50	72.041	2.29	2.08	3.35
2454.00	19.530	105.990	2431.73	-40.58	49.20	204.34	1770202.09	14644069.41	40°19'16.6120"N	80°32'3.7545"W	210.18	76.463	1.90	1.74	2.37
2547.00	21.440	106.440	2518.85	-61.89	40.10	235.59	1770233.32	14644060.32	40°19'16.5205"N	80°32'3.3517"W	238.98	80.339	2.06	2.05	0.48
2639.00	23.980	106.030	2603.71	-85.14	30.18	269.69	1770267.41	14644050.40	40°19'16.4207"N	80°32'2.9121"W	271.38	83.615	2.77	2.76	-0.45
2732.00	26.360	105.790	2687.87	-110.87	19.34	307.73	1770305.43	14644039.57	40°19'16.3116"N	80°32'2.4218"W	308.34	86.403	2.56	2.56	-0.26
2824.00	26.320	107.410	2770.32	-137.79	7.68	346.85	1770344.53	14644027.91	40°19'16.1943"N	80°32'1.9176"W	346.93	88.731	0.78	-0.04	1.76
2916.00	26.840	106.190	2852.60	-165.05	-4.21	386.25	1770383.93	14644016.02	40°19'16.0748"N	80°32'1.4097"W	386.28	90.625	0.82	0.57	-1.33
3009.00	27.220	103.260	2935.44	-191.86	-14.94	427.12	1770424.78	14644005.29	40°19'15.9666"N	80°32'0.8828"W	427.38	92.004	1.49	0.41	-3.15
3101.00	27.430	104.250	3017.18	-218.10	-24.99	468.14	1770465.78	14643995.25	40°19'15.8652"N	80°32'0.3539"W	468.81	93.055	0.54	0.23	1.08
3194.00	26.780	105.550	3099.97	-245.09	-35.88	509.09	1770506.71	14643984.37	40°19'15.7555"N	80°31'59.8261"W	510.35	94.031	0.95	-0.70	1.40
3286.00	26.440	106.400	3182.22	-271.93	-47.22	548.70	1770546.31	14643973.03	40°19'15.6413"N	80°31'59.3154"W	550.73	94.918	0.55	-0.37	0.92
3379.00	26.820	107.380	3265.36	-299.58	-59.33	588.59	1770586.18	14643960.92	40°19'15.5196"N	80°31'58.8013"W	591.57	95.756	0.62	0.41	1.05
3470.00	27.450	108.130	3346.34	-327.59	-71.99	628.11	1770625.69	14643948.27	40°19'15.3924"N	80°31'58.2919"W	632.22	96.538	0.79	0.69	0.82
3562.00	28.800	105.260	3427.48	-356.22	-84.42	669.65	1770667.21	14643935.84	40°19'15.2674"N	80°31'57.7565"W	674.95	97.185	2.08	1.47	-3.12
3653.00	28.830	106.600	3507.21	-384.76	-96.46	711.82	1770709.37	14643923.81	40°19'15.1463"N	80°31'57.2128"W	718.33	97.717	0.71	0.03	1.47
3743.00	27.010	108.180	3586.73	-412.98	-109.03	752.04	1770749.57	14643911.24	40°19'15.0199"N	80°31'56.6945"W	759.90	98.250	2.18	-2.02	1.76
3834.00	26.570	108.220	3667.97	-440.88	-121.84	791.00	1770788.52	14643898.43	40°19'14.8913"N	80°31'56.1924"W	800.33	98.757	0.48	-0.48	0.04
3925.00	26.710	107.550	3749.30	-468.47	-134.37	829.83	1770827.33	14643885.91	40°19'14.7654"N	80°31'55.6919"W	840.64	99.198	0.36	0.15	-0.74
4015.00	28.400	108.600	3829.09	-496.74	-147.30	869.40	1770866.89	14643872.99	40°19'14.6356"N	80°31'55.1819"W	881.79	99.616	1.95	1.88	1.17
4106.00	30.660	109.090	3908.27	-527.62	-161.79	911.85	1770909.32	14643858.50	40°19'14.4902"N	80°31'54.6350"W	926.09	100.062	2.50	2.48	0.54
4196.00	32.240	105.630	3985.05	-559.03	-175.77	956.66	1770954.11	14643844.53	40°19'14.3497"N	80°31'54.0574"W	972.67	100.411	2.67	1.76	-3.84
4287.00	29.310	103.770	4063.23	-588.58	-187.61	1001.68	1770999.11	14643832.69	40°19'14.2303"N	80°31'53.4770"W	1019.10	100.609	3.39	-3.22	-2.04
4378.00	27.110	104.510	4143.42	-615.53	-198.11	1043.39	1771040.81	14643822.19	40°19'14.1244"N	80°31'52.9392"W	1062.03	100.751	2.45	-2.42	0.81
4468.00	26.240	105.550	4223.84	-641.33	-208.58	1082.41	1771079.82	14643811.73	40°19'14.0189"N	80°31'52.4362"W	1102.32	100.907	1.10	-0.97	1.16
4559.00	26.500	106.220	4305.37	-667.61	-219.65	1121.28	1771118.68	14643800.67	40°19'13.9075"N	80°31'51.9351"W	1142.60	101.083	0.43	0.29	0.74
4650.00	26.960	104.440	4386.64	-693.92	-230.46	1160.76	1771158.13	14643789.86	40°19'13.7986"N	80°31'51.4262"W	1183.41	101.230	1.01	0.51	-1.96

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Actual Wellpath Report

State of WV DNR A BRK 205H AWP Proj: 19032'
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Field	Brooke	API	047-009-00298
Facility	State of WV DNR A BRK Pad	Wellbore	State of WV DNR A BRK 205H AWB
Slot	Slot #205H		

WELLPATH DATA (224 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]
4740.00	25.760	105.310	4467.28	-719.35	-240.71	1199.38	1771196.74	14643779.61	40°19'13.6953"N	80°31'50.9283"W	1223.29	101.348	1.40	-1.33	0.97
4832.00	26.090	106.670	4550.03	-745.56	-251.80	1238.04	1771235.39	14643768.53	40°19'13.5837"N	80°31'50.4299"W	1263.39	101.496	0.74	0.36	1.48
4923.00	27.770	105.920	4631.16	-772.57	-263.35	1277.60	1771274.93	14643756.98	40°19'13.4675"N	80°31'49.9200"W	1304.46	101.647	1.88	1.85	-0.82
5013.00	26.920	101.170	4711.11	-798.15	-273.05	1317.75	1771315.07	14643747.28	40°19'13.3695"N	80°31'49.4023"W	1345.75	101.707	2.60	-0.94	-5.28
5104.00	22.670	83.400	4793.82	-815.68	-275.03	1355.45	1771352.76	14643745.31	40°19'13.3480"N	80°31'48.9157"W	1383.08	101.470	9.38	-4.67	-19.53
5196.00	20.490	63.770	4879.47	-820.75	-265.86	1387.56	1771384.84	14643754.47	40°19'13.4369"N	80°31'48.5007"W	1412.80	100.847	8.16	-2.37	-21.34
5287.00	19.890	47.550	4964.95	-815.58	-248.36	1413.29	1771410.56	14643771.96	40°19'13.6085"N	80°31'48.1673"W	1434.94	99.967	6.17	-0.66	-17.82
5378.00	19.990	41.400	5050.50	-804.55	-226.24	1435.00	1771432.27	14643794.07	40°19'13.8259"N	80°31'47.8855"W	1452.72	98.960	2.31	0.11	-6.76
5470.00	23.480	33.060	5135.97	-788.37	-199.07	1455.41	1771452.67	14643821.24	40°19'14.0934"N	80°31'47.6201"W	1468.96	97.789	5.06	3.79	-9.07
5561.00	28.080	21.430	5217.94	-763.82	-163.90	1473.14	1771470.40	14643856.39	40°19'14.4400"N	80°31'47.3888"W	1482.23	96.349	7.49	5.05	-12.78
5653.00	32.830	6.900	5297.34	-727.48	-118.90	1484.07	1771481.32	14643901.38	40°19'14.8841"N	80°31'47.2446"W	1488.82	94.581	9.49	5.16	-15.79
5745.00	36.290	353.770	5373.20	-680.33	-66.99	1484.11	1771481.36	14643953.27	40°19'15.3971"N	80°31'47.2405"W	1485.62	92.584	8.91	3.76	-14.27
5835.00	39.520	345.560	5444.24	-626.83	-12.73	1474.07	1771471.33	14644007.51	40°19'15.9337"N	80°31'47.3664"W	1474.12	90.495	6.65	3.59	-9.12
5926.00	42.370	344.100	5512.98	-568.02	44.81	1458.45	1771455.71	14644065.03	40°19'16.5032"N	80°31'47.5642"W	1459.13	88.240	3.30	3.13	-1.60
5972.00	45.700	346.590	5546.04	-536.55	75.74	1450.38	1771447.64	14644095.94	40°19'16.8092"N	80°31'47.6662"W	1452.36	87.011	8.16	7.24	5.41
6018.00	50.020	347.780	5576.90	-503.18	109.00	1442.83	1771440.09	14644129.18	40°19'17.1382"N	80°31'47.7614"W	1446.94	85.680	9.58	9.39	2.59
6063.00	55.020	346.950	5604.27	-468.26	143.83	1435.01	1771432.28	14644164.00	40°19'17.4828"N	80°31'47.8599"W	1442.20	84.276	11.21	11.11	-1.84
6108.00	60.110	345.440	5628.40	-430.97	180.69	1425.94	1771423.21	14644200.86	40°19'17.8476"N	80°31'47.9746"W	1437.34	82.778	11.66	11.31	-3.36
6153.00	65.030	345.960	5649.13	-391.70	219.39	1416.08	1771413.36	14644239.53	40°19'18.2305"N	80°31'48.0992"W	1432.97	81.193	10.98	10.93	1.16
6199.00	70.940	344.480	5666.36	-349.70	260.60	1405.19	1771402.48	14644280.73	40°19'18.6383"N	80°31'48.2369"W	1429.15	79.494	13.19	12.85	-3.22
6244.00	76.070	343.160	5679.13	-307.04	302.02	1393.17	1771390.45	14644322.14	40°19'19.0482"N	80°31'48.3893"W	1425.53	77.768	11.74	11.40	-2.93
6289.00	79.670	342.620	5688.59	-263.44	344.06	1380.23	1771377.52	14644364.16	40°19'19.4643"N	80°31'48.5535"W	1422.46	76.003	8.09	8.00	-1.20
6335.00	84.040	341.460	5695.11	-218.22	387.37	1366.19	1771363.48	14644407.45	40°19'19.8930"N	80°31'48.7318"W	1420.04	74.170	9.82	9.50	-2.52
6399.00	88.280	339.560	5699.39	-154.65	447.55	1344.88	1771342.19	14644467.61	40°19'20.4888"N	80°31'49.0027"W	1417.40	71.594	7.26	6.62	-2.97
6489.00	90.710	336.870	5700.18	-64.78	531.10	1311.49	1771308.81	14644551.13	40°19'21.3162"N	80°31'49.4281"W	1414.95	67.954	4.03	2.70	-2.99
6580.00	90.340	334.270	5699.35	26.21	613.94	1273.86	1771271.19	14644633.94	40°19'22.1368"N	80°31'49.9083"W	1414.09	64.268	2.89	-0.41	-2.86
6670.00	90.310	334.010	5698.84	116.19	694.93	1234.60	1771231.95	14644714.89	40°19'22.9391"N	80°31'50.4095"W	1416.75	60.626	0.29	-0.03	-0.29
6762.00	90.180	334.150	5698.45	208.17	777.67	1194.39	1771191.75	14644797.61	40°19'23.7589"N	80°31'50.9231"W	1425.25	56.932	0.21	-0.14	0.15
6853.00	90.310	333.750	5698.06	299.14	859.43	1154.43	1771151.80	14644879.33	40°19'24.5688"N	80°31'51.4334"W	1439.21	53.334	0.46	0.14	-0.44
6943.00	91.170	333.970	5696.89	389.10	940.22	1114.78	1771112.17	14644960.09	40°19'25.3692"N	80°31'51.9398"W	1458.33	49.855	0.99	0.96	0.24

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	State of WV DNR A BRK 205H
Field	Brooke	API	047-009-00298
Facility	State of WV DNR A BRK Pad	Wellbore	State of WV DNR A BRK 205H AWB
Slot	Slot #205H		

WELLPATH DATA (224 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]
7034.00	91.320	333.920	5694.92	480.05	1021.95	1074.82	1771072.23	14645041.79	40°19'26.1790"N	80°31'52.4501"W	1483.11	46.444	0.17	0.16	-0.05
7125.00	90.890	332.020	5693.16	570.95	1102.99	1033.47	1771030.90	14645122.80	40°19'26.9819"N	80°31'52.9784"W	1511.51	43.136	2.14	-0.47	-2.09
7217.00	91.050	331.990	5691.60	662.79	1184.21	990.29	1770987.73	14645203.99	40°19'27.7868"N	80°31'53.5303"W	1543.71	39.904	0.18	0.17	-0.03
7307.00	91.080	331.860	5689.93	752.61	1263.61	947.94	1770945.40	14645283.36	40°19'28.5736"N	80°31'54.0716"W	1579.65	36.877	0.15	0.03	-0.14
7398.00	91.110	331.690	5688.19	843.42	1343.77	904.92	1770902.39	14645363.49	40°19'29.3680"N	80°31'54.6217"W	1620.06	33.957	0.19	0.03	-0.19
7489.00	91.390	332.610	5686.21	934.26	1424.21	862.41	1770859.90	14645443.90	40°19'30.1651"N	80°31'55.1649"W	1664.98	31.196	1.06	0.31	1.01
7580.00	91.320	332.020	5684.06	1025.11	1504.77	820.15	1770817.65	14645524.43	40°19'30.9634"N	80°31'55.7051"W	1713.76	28.592	0.65	-0.08	-0.65
7673.00	91.600	332.320	5681.69	1117.93	1586.99	776.74	1770774.27	14645606.61	40°19'31.7781"N	80°31'56.2599"W	1766.88	26.079	0.44	0.30	0.32
7763.00	91.660	332.860	5679.13	1207.79	1666.85	735.33	1770732.87	14645686.44	40°19'32.5694"N	80°31'56.7891"W	1821.84	23.805	0.60	0.07	0.60
7854.00	90.550	332.550	5677.37	1298.68	1747.70	693.61	1770691.16	14645767.27	40°19'33.3705"N	80°31'57.3223"W	1880.31	21.647	1.27	-1.22	-0.34
7946.00	90.460	331.850	5676.56	1390.54	1829.08	650.70	1770648.27	14645848.61	40°19'34.1769"N	80°31'57.8707"W	1941.38	19.583	0.77	-0.10	-0.76
8036.00	91.290	331.660	5675.19	1480.35	1908.36	608.12	1770605.70	14645927.86	40°19'34.9625"N	80°31'58.4151"W	2002.90	17.675	0.95	0.92	-0.21
8127.00	90.950	332.740	5673.41	1571.20	1988.84	565.68	1770563.29	14646008.30	40°19'35.7600"N	80°31'58.9575"W	2067.72	15.877	1.24	-0.37	1.19
8217.00	91.020	332.640	5671.86	1661.09	2068.79	524.40	1770522.02	14646088.23	40°19'36.5522"N	80°31'59.4851"W	2134.22	14.224	0.14	0.08	-0.11
8308.00	90.800	332.660	5670.41	1751.98	2149.61	482.59	1770480.23	14646169.02	40°19'37.3530"N	80°32'0.0193"W	2203.12	12.653	0.24	-0.24	0.02
8399.00	90.680	332.550	5669.24	1842.87	2230.40	440.73	1770438.38	14646249.77	40°19'38.1535"N	80°32'0.5544"W	2273.52	11.178	0.18	-0.13	-0.12
8489.00	90.550	332.510	5668.27	1932.75	2310.25	399.21	1770396.88	14646329.59	40°19'38.9447"N	80°32'1.0850"W	2344.48	9.804	0.15	-0.14	-0.04
8580.00	91.200	332.970	5666.88	2023.65	2391.13	357.54	1770355.22	14646410.44	40°19'39.7461"N	80°32'1.6176"W	2417.71	8.504	0.88	0.71	0.51
8671.00	90.830	332.610	5665.27	2114.55	2472.05	315.93	1770313.63	14646491.33	40°19'40.5479"N	80°32'2.1492"W	2492.15	7.283	0.57	-0.41	-0.40
8761.00	90.890	332.360	5663.92	2204.43	2551.86	274.36	1770272.08	14646571.11	40°19'41.3387"N	80°32'2.6806"W	2566.56	6.137	0.29	0.07	-0.28
8853.00	91.020	332.650	5662.39	2296.30	2633.45	231.89	1770229.62	14646652.68	40°19'42.1472"N	80°32'3.2233"W	2643.64	5.032	0.35	0.14	0.32
8944.00	90.980	332.970	5660.80	2387.20	2714.39	190.32	1770188.07	14646733.58	40°19'42.9491"N	80°32'3.7547"W	2721.05	4.011	0.35	-0.04	0.35
9034.00	90.890	332.650	5659.33	2477.10	2794.43	149.20	1770146.96	14646813.59	40°19'43.7422"N	80°32'4.2801"W	2798.41	3.056	0.37	-0.10	-0.36
9126.00	90.860	331.900	5657.93	2568.96	2875.86	106.40	1770104.18	14646894.99	40°19'44.5491"N	80°32'4.8272"W	2877.83	2.119	0.82	-0.03	-0.82
9218.00	90.830	332.790	5656.57	2660.82	2957.34	63.71	1770061.50	14646976.44	40°19'45.3564"N	80°32'5.3729"W	2958.02	1.234	0.97	-0.03	0.97
9310.00	91.140	333.110	5654.99	2752.73	3039.26	21.87	1770019.69	14647058.33	40°19'46.1682"N	80°32'5.9075"W	3039.34	0.412	0.48	0.34	0.35
9401.00	90.800	332.840	5653.45	2843.64	3120.31	-19.47	1769978.36	14647139.35	40°19'46.9712"N	80°32'6.4358"W	3120.37	359.643	0.48	-0.37	-0.30
9492.00	90.800	332.930	5652.18	2934.55	3201.30	-60.94	1769936.90	14647220.31	40°19'47.7737"N	80°32'6.9658"W	3201.88	358.909	0.10	0.00	0.10
9582.00	90.800	332.830	5650.92	3024.46	3281.40	-101.96	1769895.90	14647300.37	40°19'48.5673"N	80°32'7.4900"W	3282.98	358.220	0.11	0.00	-0.11
9673.00	90.430	331.900	5649.94	3115.33	3362.01	-144.17	1769853.71	14647380.96	40°19'49.3661"N	80°32'8.0295"W	3365.10	357.545	1.10	-0.41	-1.02

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Actual Wellpath Report

State of WV DNR A BRK 205H AWP Proj: 19032'
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REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	State of WV DNR A BRK 205H
Field	Brooke	API	047-009-00298
Facility	State of WV DNR A BRK Pad	Wellbore	State of WV DNR A BRK 205H AWB
Slot	Slot #205H		

WELLPATH DATA (224 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]
9764.00	90.740	332.260	5649.01	3206.18	3442.42	-186.78	1769811.11	14647461.33	40°19'50.1628"N	80°32'8.5742"W	3447.48	356.894	0.52	0.34	0.40
9854.00	90.710	333.220	5647.88	3296.08	3522.41	-228.00	1769769.91	14647541.30	40°19'50.9554"N	80°32'9.1010"W	3529.79	356.297	1.07	-0.03	1.07
9945.00	90.490	333.570	5646.92	3387.02	3603.77	-268.75	1769729.18	14647622.62	40°19'51.7615"N	80°32'9.6217"W	3613.78	355.735	0.45	-0.24	0.38
10035.00	90.580	332.460	5646.08	3476.94	3683.97	-309.58	1769688.36	14647702.79	40°19'52.5561"N	80°32'10.1436"W	3696.96	355.196	1.24	0.10	-1.23
10126.00	90.550	333.050	5645.18	3567.84	3764.87	-351.24	1769646.72	14647783.66	40°19'53.3577"N	80°32'10.6760"W	3781.22	354.670	0.65	-0.03	0.65
10217.00	90.430	331.680	5644.41	3658.72	3845.48	-393.45	1769604.52	14647864.24	40°19'54.1565"N	80°32'11.2155"W	3865.56	354.158	1.51	-0.13	-1.51
10307.00	90.370	331.640	5643.78	3748.53	3924.70	-436.17	1769561.82	14647943.42	40°19'54.9414"N	80°32'11.7618"W	3948.86	353.658	0.08	-0.07	-0.04
10398.00	91.820	332.880	5642.04	3839.38	4005.22	-478.52	1769519.49	14648023.92	40°19'55.7393"N	80°32'12.3031"W	4033.70	353.187	2.10	1.59	1.36
10489.00	91.320	331.750	5639.55	3930.22	4085.77	-520.78	1769477.24	14648104.43	40°19'56.5375"N	80°32'12.8434"W	4118.82	352.736	1.36	-0.55	-1.24
10579.00	91.290	331.990	5637.50	4020.03	4165.12	-563.20	1769434.84	14648183.75	40°19'57.3237"N	80°32'13.3858"W	4203.02	352.299	0.27	-0.03	0.27
10670.00	91.230	331.090	5635.49	4110.81	4245.10	-606.55	1769391.50	14648263.70	40°19'58.1163"N	80°32'13.9402"W	4288.21	351.868	0.99	-0.07	-0.99
10762.00	90.650	330.260	5633.99	4202.49	4325.30	-651.61	1769346.46	14648343.87	40°19'58.9112"N	80°32'14.5165"W	4374.11	351.433	1.10	-0.63	-0.90
10852.00	90.890	330.130	5632.78	4292.12	4403.39	-696.34	1769301.75	14648421.93	40°19'59.6851"N	80°32'15.0888"W	4458.10	351.014	0.30	0.27	-0.14
10943.00	90.830	331.180	5631.41	4382.81	4482.70	-740.93	1769257.18	14648501.21	40°20'0.4711"N	80°32'15.6593"W	4543.52	350.615	1.16	-0.07	1.15
11036.00	90.370	331.550	5630.44	4475.58	4564.32	-785.49	1769212.63	14648582.80	40°20'1.2800"N	80°32'16.2292"W	4631.42	350.235	0.63	-0.49	0.40
11127.00	90.890	331.630	5629.44	4566.38	4644.36	-828.79	1769169.35	14648662.81	40°20'2.0731"N	80°32'16.7828"W	4717.72	349.882	0.58	0.57	0.09
11219.00	90.710	331.580	5628.15	4658.17	4725.28	-872.53	1769125.62	14648743.70	40°20'2.8750"N	80°32'17.3423"W	4805.16	349.538	0.20	-0.20	-0.05
11311.00	90.250	330.840	5627.38	4749.93	4805.90	-916.84	1769081.33	14648824.29	40°20'3.6740"N	80°32'17.9089"W	4892.58	349.199	0.95	-0.50	-0.80
11402.00	90.370	330.120	5626.89	4840.61	4885.09	-961.67	1769036.51	14648903.45	40°20'4.4588"N	80°32'18.4826"W	4978.85	348.863	0.80	0.13	-0.79
11493.00	90.430	330.540	5626.25	4931.26	4964.15	-1006.72	1768991.49	14648982.48	40°20'5.2424"N	80°32'19.0589"W	5065.21	348.536	0.47	0.07	0.46
11584.00	90.220	330.190	5625.74	5021.91	5043.25	-1051.71	1768946.51	14649061.55	40°20'6.0263"N	80°32'19.6346"W	5151.74	348.220	0.45	-0.23	-0.38
11675.00	90.250	329.860	5625.36	5112.52	5122.08	-1097.18	1768901.06	14649140.35	40°20'6.8076"N	80°32'20.2164"W	5238.27	347.910	0.36	0.03	-0.36
11765.00	90.370	330.680	5624.88	5202.17	5200.23	-1141.81	1768856.45	14649218.47	40°20'7.5822"N	80°32'20.7874"W	5324.11	347.616	0.92	0.13	0.91
11857.00	91.020	332.510	5623.76	5293.96	5281.14	-1185.57	1768812.70	14649299.35	40°20'8.3840"N	80°32'21.3470"W	5412.58	347.347	2.11	0.71	1.99
11948.00	91.050	331.930	5622.12	5384.81	5361.64	-1227.98	1768770.31	14649379.82	40°20'9.1816"N	80°32'21.8892"W	5500.47	347.100	0.64	0.03	-0.64
12038.00	91.660	333.160	5619.99	5474.68	5441.48	-1269.46	1768728.85	14649459.63	40°20'9.9727"N	80°32'22.4195"W	5587.60	346.868	1.53	0.68	1.37
12126.00	91.260	333.100	5617.75	5562.59	5519.95	-1309.22	1768689.10	14649538.07	40°20'10.7502"N	80°32'22.9277"W	5673.09	346.657	0.46	-0.45	-0.07
12218.00	91.290	332.840	5615.70	5654.49	5601.88	-1351.02	1768647.32	14649619.97	40°20'11.5619"N	80°32'23.4619"W	5762.50	346.441	0.28	0.03	-0.28
12309.00	90.980	332.930	5613.90	5745.39	5682.87	-1392.49	1768605.87	14649700.92	40°20'12.3643"N	80°32'23.9920"W	5850.98	346.232	0.35	-0.34	0.10
12399.00	90.740	332.010	5612.55	5835.26	5762.67	-1434.08	1768564.29	14649780.69	40°20'13.1550"N	80°32'24.5237"W	5938.43	346.025	1.06	-0.27	-1.02

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State of WV DNR A BRK 205H AWP Proj: 19032'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	State of WV DNR A BRK 205H
Field	Brooke	API	047-009-00298
Facility	State of WV DNR A BRK Pad	Wellbore	State of WV DNR A BRK 205H AWB
Slot	Slot #205H		

WELLPATH DATA (224 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]
12490.00	90.890	332.430	5611.25	5926.12	5843.17	-1476.49	1768521.90	14649861.16	40°20'13.9526"N	80°32'25.0660"W	6026.83	345.819	0.49	0.16	0.46
12581.00	90.860	333.170	5609.86	6017.02	5924.10	-1518.08	1768480.32	14649942.06	40°20'14.7545"N	80°32'25.5976"W	6115.51	345.627	0.81	-0.03	0.81
12671.00	90.550	331.860	5608.75	6106.90	6003.93	-1559.61	1768438.81	14650021.86	40°20'15.5455"N	80°32'26.1286"W	6203.19	345.438	1.50	-0.34	-1.46
12762.00	90.620	331.950	5607.83	6197.73	6084.20	-1602.46	1768395.97	14650102.10	40°20'16.3409"N	80°32'26.6766"W	6291.69	345.244	0.13	0.08	0.10
12853.00	91.110	334.990	5606.45	6288.66	6165.60	-1643.10	1768355.35	14650183.47	40°20'17.1473"N	80°32'27.1959"W	6380.79	345.078	3.38	0.54	3.34
12944.00	91.020	336.740	5604.76	6379.64	6248.63	-1680.30	1768318.16	14650266.47	40°20'17.9697"N	80°32'27.6707"W	6470.61	344.949	1.93	-0.10	1.92
13034.00	91.320	338.590	5602.92	6469.54	6331.86	-1714.50	1768283.98	14650349.66	40°20'18.7939"N	80°32'28.1067"W	6559.87	344.849	2.08	0.33	2.06
13125.00	91.480	338.800	5600.70	6560.36	6416.61	-1747.55	1768250.94	14650434.39	40°20'19.6331"N	80°32'28.5278"W	6650.33	344.765	0.29	0.18	0.23
13216.00	91.200	338.370	5598.57	6651.19	6501.31	-1780.77	1768217.74	14650519.05	40°20'20.4717"N	80°32'28.9511"W	6740.78	344.682	0.56	-0.31	-0.47
13306.00	91.020	338.520	5596.83	6741.04	6585.00	-1813.83	1768184.69	14650602.71	40°20'21.3004"N	80°32'29.3724"W	6830.24	344.600	0.26	-0.20	0.17
13397.00	91.230	338.360	5595.04	6831.89	6669.61	-1847.26	1768151.27	14650687.29	40°20'22.1382"N	80°32'29.7985"W	6920.70	344.519	0.29	0.23	-0.18
13487.00	91.260	338.610	5593.08	6921.73	6753.32	-1880.26	1768118.28	14650770.97	40°20'22.9671"N	80°32'30.2191"W	7010.19	344.442	0.28	0.03	0.28
13578.00	90.920	338.420	5591.35	7012.57	6837.98	-1913.58	1768084.97	14650855.60	40°20'23.8054"N	80°32'30.6437"W	7100.69	344.366	0.43	-0.37	-0.21
13669.00	91.230	338.530	5589.65	7103.42	6922.62	-1946.96	1768051.60	14650940.20	40°20'24.6435"N	80°32'31.0692"W	7191.20	344.292	0.36	0.34	0.12
13759.00	91.320	338.480	5587.64	7193.26	7006.34	-1979.93	1768018.64	14651023.89	40°20'25.4724"N	80°32'31.4893"W	7280.73	344.220	0.11	0.10	-0.06
13850.00	91.350	338.690	5585.52	7284.09	7091.04	-2013.15	1767985.44	14651108.55	40°20'26.3111"N	80°32'31.9126"W	7371.27	344.151	0.23	0.03	0.23
13940.00	91.320	338.740	5583.43	7373.90	7174.87	-2045.81	1767952.79	14651192.36	40°20'27.1412"N	80°32'32.3288"W	7460.84	344.085	0.06	-0.03	0.06
14031.00	91.480	338.700	5581.20	7464.72	7259.64	-2078.83	1767919.79	14651277.09	40°20'27.9805"N	80°32'32.7496"W	7551.42	344.021	0.18	0.18	-0.04
14122.00	91.290	338.520	5579.00	7555.54	7344.35	-2112.01	1767886.62	14651361.77	40°20'28.8193"N	80°32'33.1724"W	7641.99	343.956	0.29	-0.21	-0.20
14212.00	91.570	338.850	5576.76	7645.36	7428.17	-2144.71	1767853.93	14651445.55	40°20'29.6492"N	80°32'33.5891"W	7731.59	343.895	0.48	0.31	0.37
14303.00	91.320	338.510	5574.46	7736.18	7512.91	-2177.79	1767820.87	14651530.27	40°20'30.4883"N	80°32'34.0106"W	7822.19	343.835	0.46	-0.27	-0.37
14394.00	91.140	338.380	5572.51	7827.02	7597.53	-2211.21	1767787.45	14651614.85	40°20'31.3262"N	80°32'34.4366"W	7912.77	343.773	0.24	-0.20	-0.14
14484.00	91.380	338.270	5570.53	7916.88	7681.15	-2244.45	1767754.23	14651698.44	40°20'32.1541"N	80°32'34.8602"W	8002.35	343.712	0.29	0.27	-0.12
14575.00	90.860	338.170	5568.75	8007.74	7765.63	-2278.20	1767720.49	14651782.89	40°20'32.9907"N	80°32'35.2905"W	8092.92	343.650	0.58	-0.57	-0.11
14666.00	90.920	339.070	5567.34	8098.58	7850.36	-2311.37	1767687.33	14651867.58	40°20'33.8296"N	80°32'35.7133"W	8183.56	343.594	0.99	0.07	0.99
14756.00	90.550	337.690	5566.18	8188.44	7934.02	-2344.53	1767654.19	14651951.21	40°20'34.6580"N	80°32'36.1359"W	8273.18	343.537	1.59	-0.41	-1.53
14847.00	90.710	338.280	5565.18	8279.34	8018.38	-2378.64	1767620.09	14652035.54	40°20'35.4934"N	80°32'36.5708"W	8363.75	343.477	0.67	0.18	0.65
14938.00	90.550	337.660	5564.18	8370.24	8102.73	-2412.77	1767585.97	14652119.86	40°20'36.3286"N	80°32'37.0059"W	8454.33	343.418	0.70	-0.18	-0.68
15028.00	90.740	338.320	5563.17	8460.13	8186.16	-2446.50	1767552.26	14652203.26	40°20'37.1548"N	80°32'37.4359"W	8543.92	343.361	0.76	0.21	0.73
15119.00	91.020	338.210	5561.77	8551.00	8270.68	-2480.19	1767518.58	14652287.75	40°20'37.9917"N	80°32'37.8654"W	8634.56	343.307	0.33	0.31	-0.12

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Actual Wellpath Report

State of WV DNR A BRK 205H AWP Proj: 19032'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	State of WV DNR A BRK 205H
Field	Brooke	API	047-009-00298
Facility	State of WV DNR A BRK Pad	Wellbore	State of WV DNR A BRK 205H AWB
Slot	Slot #205H		

WELLPATH DATA (224 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]
15210.00	90.740	338.350	5560.37	8641.87	8355.21	-2513.86	1767484.92	14652372.24	40°20'38.8287"N	80°32'38.2947"W	8725.20	343.255	0.34	-0.31	0.15
15300.00	91.050	338.120	5558.97	8731.75	8438.79	-2547.23	1767451.56	14652455.79	40°20'39.6563"N	80°32'38.7201"W	8814.85	343.204	0.43	0.34	-0.26
15391.00	91.110	338.160	5557.25	8822.62	8523.23	-2581.11	1767417.70	14652540.20	40°20'40.4924"N	80°32'39.1519"W	8905.48	343.152	0.08	0.07	0.04
15482.00	91.230	338.280	5555.40	8913.48	8607.72	-2614.87	1767383.95	14652624.65	40°20'41.3290"N	80°32'39.5823"W	8996.13	343.102	0.19	0.13	0.13
15572.00	91.720	338.610	5553.08	9003.32	8691.39	-2647.92	1767350.91	14652708.30	40°20'42.1575"N	80°32'40.0036"W	9085.80	343.056	0.66	0.54	0.37
15663.00	91.510	338.210	5550.51	9094.15	8775.97	-2681.39	1767317.45	14652792.85	40°20'42.9950"N	80°32'40.4303"W	9176.47	343.010	0.50	-0.23	-0.44
15754.00	91.320	338.450	5548.27	9185.00	8860.52	-2714.99	1767283.87	14652877.36	40°20'43.8322"N	80°32'40.8585"W	9267.14	342.964	0.34	-0.21	0.26
15844.00	91.480	338.170	5546.07	9274.85	8944.12	-2748.24	1767250.63	14652960.93	40°20'44.6600"N	80°32'41.2824"W	9356.82	342.920	0.36	0.18	-0.31
15935.00	91.540	338.760	5543.67	9365.68	9028.74	-2781.63	1767217.25	14653045.51	40°20'45.4978"N	80°32'41.7080"W	9447.52	342.877	0.65	0.07	0.65
16025.00	91.450	338.560	5541.32	9455.50	9112.54	-2814.37	1767184.53	14653129.28	40°20'46.3276"N	80°32'42.1253"W	9537.24	342.837	0.24	-0.10	-0.22
16116.00	91.350	338.620	5539.10	9546.33	9197.23	-2847.58	1767151.33	14653213.94	40°20'47.1662"N	80°32'42.5486"W	9627.97	342.797	0.13	-0.11	0.07
16207.00	91.630	338.570	5536.73	9637.15	9281.93	-2880.78	1767118.14	14653298.61	40°20'48.0048"N	80°32'42.9717"W	9718.70	342.758	0.31	0.31	-0.05
16297.00	91.230	338.260	5534.49	9726.99	9365.59	-2913.88	1767085.06	14653382.24	40°20'48.8332"N	80°32'43.3936"W	9808.41	342.718	0.56	-0.44	-0.34
16388.00	91.630	338.870	5532.22	9817.82	9450.27	-2947.12	1767051.83	14653466.88	40°20'49.6717"N	80°32'43.8174"W	9899.15	342.680	0.80	0.44	0.67
16479.00	90.120	338.100	5530.83	9908.66	9534.92	-2980.49	1767018.47	14653551.50	40°20'50.5098"N	80°32'44.2427"W	9989.89	342.641	1.86	-1.66	-0.85
16571.00	90.520	338.730	5530.31	10000.53	9620.46	-3014.34	1766984.64	14653637.01	40°20'51.3568"N	80°32'44.6742"W	10081.64	342.603	0.81	0.43	0.68
16661.00	90.460	338.700	5529.54	10090.37	9704.32	-3047.00	1766951.98	14653720.83	40°20'52.1871"N	80°32'45.0905"W	10171.43	342.569	0.07	-0.07	-0.03
16752.00	89.850	338.740	5529.30	10181.21	9789.11	-3080.03	1766918.97	14653805.60	40°20'53.0267"N	80°32'45.5115"W	10262.23	342.534	0.67	-0.67	0.04
16843.00	89.510	337.950	5529.80	10272.08	9873.69	-3113.61	1766885.40	14653890.14	40°20'53.8642"N	80°32'45.9395"W	10352.99	342.498	0.95	-0.37	-0.87
16934.00	89.880	338.780	5530.29	10362.95	9958.28	-3147.16	1766851.86	14653974.69	40°20'54.7017"N	80°32'46.3673"W	10443.75	342.462	1.00	0.41	0.91
17024.00	89.910	338.570	5530.45	10452.80	10042.11	-3179.89	1766819.15	14654058.50	40°20'55.5318"N	80°32'46.7844"W	10533.55	342.429	0.24	0.03	-0.23
17115.00	90.490	338.630	5530.14	10543.65	10126.84	-3213.09	1766785.96	14654143.19	40°20'56.3707"N	80°32'47.2076"W	10624.35	342.397	0.64	0.64	0.07
17206.00	90.400	338.460	5529.43	10634.50	10211.53	-3246.38	1766752.69	14654227.85	40°20'57.2093"N	80°32'47.6319"W	10715.15	342.364	0.21	-0.10	-0.19
17296.00	90.400	337.770	5528.80	10724.39	10295.04	-3279.92	1766719.15	14654311.33	40°20'58.0362"N	80°32'48.0597"W	10804.90	342.329	0.77	0.00	-0.77
17387.00	90.430	338.670	5528.14	10815.27	10379.54	-3313.69	1766685.40	14654395.80	40°20'58.8730"N	80°32'48.4901"W	10895.66	342.294	0.99	0.03	0.99
17478.00	90.460	338.450	5527.43	10906.13	10464.24	-3346.95	1766652.15	14654480.47	40°20'59.7116"N	80°32'48.9141"W	10986.47	342.263	0.24	0.03	-0.24
17568.00	90.520	338.760	5526.67	10995.98	10548.04	-3379.78	1766619.33	14654564.23	40°21'0.5413"N	80°32'49.3326"W	11076.28	342.234	0.35	0.07	0.34
17659.00	90.580	338.630	5525.79	11086.82	10632.82	-3412.84	1766586.29	14654648.98	40°21'1.3807"N	80°32'49.7540"W	11167.11	342.205	0.16	0.07	-0.14
17750.00	90.430	338.550	5524.99	11177.66	10717.53	-3446.06	1766553.08	14654733.66	40°21'2.2195"N	80°32'50.1775"W	11257.92	342.176	0.19	-0.16	-0.09
17840.00	90.520	338.760	5524.24	11267.51	10801.36	-3478.82	1766520.34	14654817.45	40°21'3.0495"N	80°32'50.5950"W	11347.75	342.148	0.25	0.10	0.23

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	State of WV DNR A BRK 205H
Field	Brooke	API	047-009-00298
Facility	State of WV DNR A BRK Pad	Wellbore	State of WV DNR A BRK 205H AWB
Slot	Slot #205H		

WELLPATH DATA (224 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]
17931.00	90.430	338.660	5523.49	11358.35	10886.14	-3511.86	1766487.31	14654902.21	40°21'3.8890"N	80°32'51.0161"W	11438.59	342.120	0.15	-0.10	-0.11
18022.00	90.430	338.450	5522.81	11449.20	10970.84	-3545.12	1766454.05	14654986.87	40°21'4.7276"N	80°32'51.4403"W	11529.41	342.092	0.23	0.00	-0.23
18112.00	90.340	338.290	5522.20	11539.07	11054.50	-3578.30	1766420.89	14655070.50	40°21'5.5560"N	80°32'51.8632"W	11619.22	342.063	0.20	-0.10	-0.18
18203.00	90.400	338.320	5521.61	11629.95	11139.05	-3611.94	1766387.26	14655155.02	40°21'6.3932"N	80°32'52.2921"W	11710.02	342.034	0.07	0.07	0.03
18293.00	90.460	338.610	5520.94	11719.81	11222.77	-3644.97	1766354.24	14655238.70	40°21'7.2221"N	80°32'52.7133"W	11799.85	342.007	0.33	0.07	0.32
18385.00	90.460	338.490	5520.20	11811.66	11308.39	-3678.62	1766320.61	14655324.29	40°21'8.0699"N	80°32'53.1421"W	11891.68	341.980	0.13	0.00	-0.13
18477.00	90.460	338.520	5519.46	11903.52	11393.99	-3712.33	1766286.92	14655409.86	40°21'8.9175"N	80°32'53.5719"W	11983.51	341.954	0.03	0.00	0.03
18567.00	90.460	338.900	5518.74	11993.36	11477.85	-3745.00	1766254.25	14655493.68	40°21'9.7477"N	80°32'53.9884"W	12073.36	341.929	0.42	0.00	0.42
18659.00	90.580	339.000	5517.90	12085.17	11563.70	-3778.05	1766221.22	14655579.51	40°21'10.5978"N	80°32'54.4096"W	12165.23	341.907	0.17	0.13	0.11
18751.00	90.340	338.490	5517.16	12177.00	11649.44	-3811.40	1766187.88	14655665.21	40°21'11.4467"N	80°32'54.8347"W	12257.09	341.883	0.61	-0.26	-0.55
18842.00	90.370	337.940	5516.60	12267.89	11733.94	-3845.17	1766154.12	14655749.68	40°21'12.2834"N	80°32'55.2653"W	12347.90	341.856	0.61	0.03	-0.60
18934.00	90.400	338.540	5515.98	12359.77	11819.38	-3879.27	1766120.03	14655835.09	40°21'13.1294"N	80°32'55.7002"W	12439.72	341.830	0.65	0.03	0.65
19007.00	90.340	338.210	5515.51	12432.66	11887.24	-3906.18	1766093.14	14655902.92	40°21'13.8014"N	80°32'56.0432"W	12512.58	341.809	0.46	-0.08	-0.45
19032.00‡	90.340	338.210	5515.36	12457.63	11910.46	-3915.45	1766083.86	14655926.13	40°21'14.0312"N	80°32'56.1615"W	12537.54	341.802	0.00	0.00	0.00

HOLE & CASING SECTIONS - Ref Wellbore: State of WV DNR A BRK 205H AWB Ref Wellpath: State of WV DNR A BRK 205H AWP Proj: 19032'									
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	0.17	-0.03
17.5in Open Hole	125.00	653.00	528.00	125.00	652.99	0.17	-0.03	0.87	-1.44
13.375in Casing Surface	26.00	653.00	627.00	26.00	652.99	0.00	0.00	0.87	-1.44
12.25in Open Hole	653.00	1443.00	790.00	652.99	1441.40	0.87	-1.44	32.08	31.21
9.625in Casing Intermediate	26.00	1443.00	1417.00	26.00	1441.40	0.00	0.00	32.08	31.21
8.75in Open Hole	1443.00	6400.00	4957.00	1441.40	5699.42	32.08	31.21	448.48	1344.53
8.5in Open Hole	6400.00	19032.00	12632.00	5699.42	5515.36	448.48	1344.53	11910.46	-3915.45
5.5in Casing Production	26.00	19032.00	19006.00	26.00	5515.36	0.00	0.00	11910.46	-3915.45

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	State of WV DNR A BRK 205H
Field	Brooke	API	047-009-00298
Facility	State of WV DNR A BRK Pad	Wellbore	State of WV DNR A BRK 205H AWB
Slot	Slot #205H		

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 205H BHL Rev-4	5522.94	11909.20	-3918.09	1766081.23	14655924.87	40°21'14.0189"N	80°32'56.1957"W	point
State of WV DNR A BRK 205H LP Rev-4	5701.00	469.72	1336.27	1771333.58	14644489.77	40°19'20.7084"N	80°31'49.1124"W	point

WELLPATH COMPOSITION - Ref Wellbore: State of WV DNR A BRK 205H AWB Ref Wellpath: State of WV DNR A BRK 205H AWP Proj: 19032'					
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
26.00	600.00	Gyrodata 2015 - GC+WIR+DPIPE	01_Gyrodata <17 1/2"> (50'-600')	State of WV DNR A BRK 205H AWB	9/19/2020
600.00	1387.00	OWSG MWD rev2 + HRGM	02_Premier MWD <12 1/4"> (679'-1387')	State of WV DNR A BRK 205H AWB	9/19/2020
1387.00	6335.00	OWSG MWD rev2 + HRGM	03_Premier MWD <8 3/4"> (1475'-6335')	State of WV DNR A BRK 205H AWB	9/19/2020
6335.00	19032.00	BH AutoTrak Curve (2019) (Short spacing)	04_BH AT Curve <8 1/2"> (6399'-19007')	State of WV DNR A BRK 205H AWB	9/19/2020

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	State of WV DNR A BRK 205H
Field	Brooke	API	047-009-00298
Facility	State of WV DNR A BRK Pad	Wellbore	State of WV DNR A BRK 205H AWB
Slot	Slot #205H		

COMMENTS
<p>Wellpath general comments API: 47-009-00298-0000 BH Job #: 110568420 Rig: SDC 40 Duration: 09/22/2020 - 09/25/2020</p>

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