

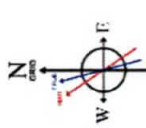
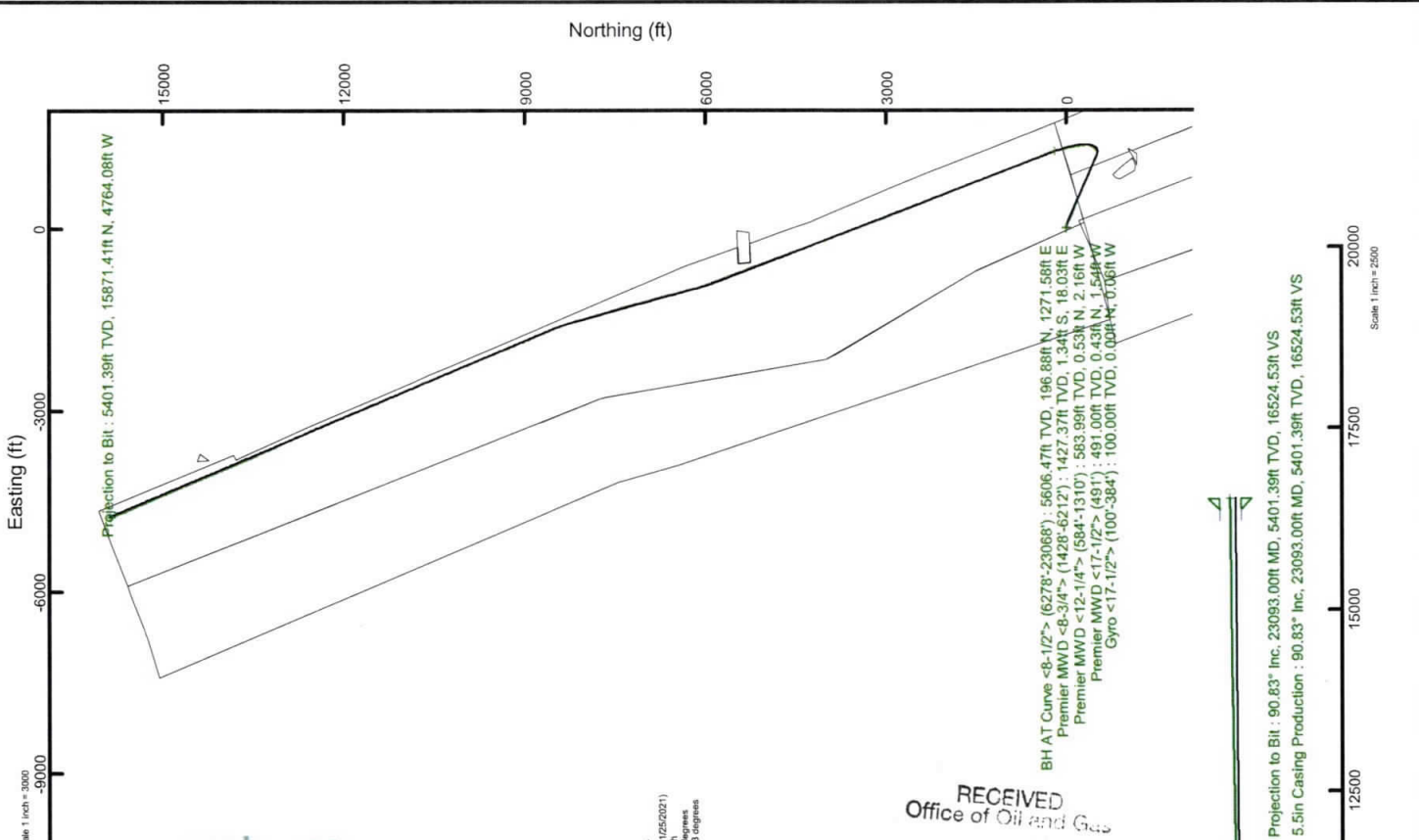
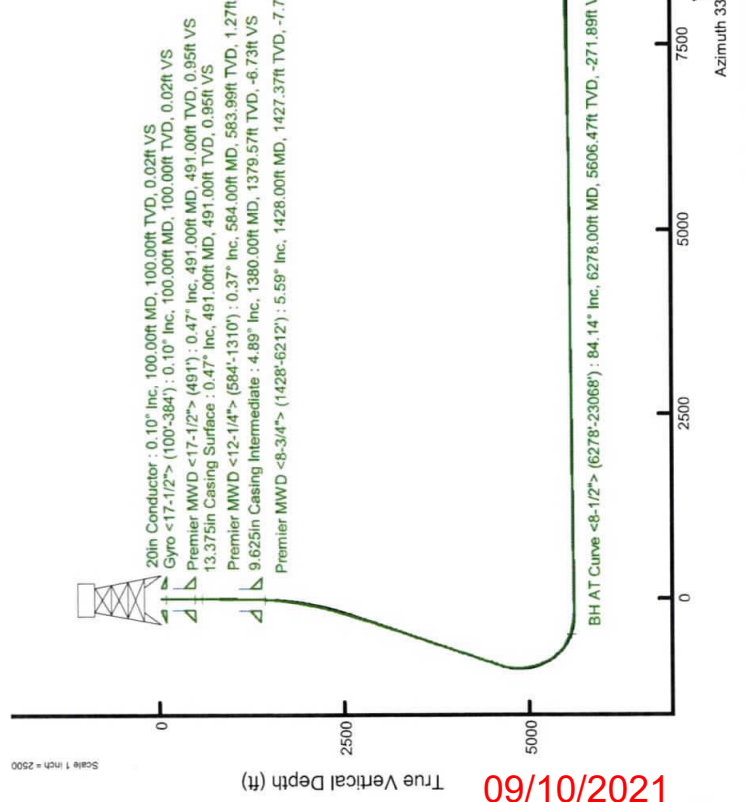
SWN PRODUCTION COMPANY, LLC

Location: Brooke County, WV
 Field: Brooke
 Facility: State of WV DNR C BRK Pad
 Slot: Slot 5H
 Well: State of WV DNR C BRK 5H
 Wellbore: State of WV DNR C BRK 5H PWB

P10 reference wellpath is State of WV DNR C BRK 5H PWB Rev-A-0
 North Reference: Grid north
 Scale: True distance
 Coordinates are in feet referenced to Slot
 Mean Sea Level to Ground level (At Slot: Slot 5H): -988.8 feet
 Other wellpath MDs are referenced to each path's initial MD datum

Location Information			
Facility Name	Grid East (US ft)	Grid North (US ft)	Longitude
State of WV DNR C BRK Pad	1769295.332	14637176.548	80°32'15.9300"W
Slot	Local E (ft)	Grid North (US ft)	Longitude
Slot 5H	-0.15	14637176.400	80°32'15.9267"W
SDC 40 (KB) to Ground level (At Slot: Slot 5H)	26ft		
Mean Sea Level to Ground level (At Slot: Slot 5H)	-988.8ft		
SDC 40 (KB) to Mean Sea Level	1014.8ft		

API: 47-009-00326-0000
 BH Job #: 110725952
 Rig: SDC 40
 Duration: 02/05/2021 - 02/11/2021



User specified Dip: 67.46° Field: 52308 nT
 Magnetic North is 8.63 degrees West of True North (at 1/25/2021)
 The declination is 8.63 degrees West of True North
 To correct azimuth from True to Grid subtract 8.63 degrees
 To correct azimuth from Magnetic to Grid subtract 8.63 degrees

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Projection to Bit : 90.83° Inc, 23093.00ft MD, 5401.39ft TVD, 16524.53ft VS
 5.5in Casing Production : 90.83° Inc, 23093.00ft MD, 5401.39ft TVD, 16524.53ft VS

12/02/2021

REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	State of WV DNR C BRK 5H
Field	Brooke	API	4700900257
Facility	State of WV DNR C BRK Pad	Wellbore	State of WV DNR C BRK 5H AWB
Slot	Slot 5H		

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	2/16/2021 at 8:47:54 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	-0.15	0.26	1769295.59	14637176.40	40°18'8.5185"N	80°32'15.9267"W
Facility Reference Pt			1769295.33	14637176.55	40°18'8.5200"N	80°32'15.9300"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	1014.80ft
Horizontal Reference Pt	Slot	SDC 40 (KB) to Mean Sea Level	1014.80ft
Vertical Reference Pt	SDC 40 (KB)	SDC 40 (KB) to Ground Level at Slot (Slot 5H)	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	339.00°

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REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	State of WV DNR C BRK 5H
Field	Brooke	API	4700900257
Facility	State of WV DNR C BRK Pad	Wellbore	State of WV DNR C BRK 5H AWB
Slot	Slot 5H		

WELLPATH DATA (263 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	267.390	0.00	0.00	0.00	0.00	1769295.59	14637176.40	40°18'8.5185"N	80°32'15.9267"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	267.390	26.00	0.00	0.00	0.00	1769295.59	14637176.40	40°18'8.5185"N	80°32'15.9267"W	0.00	0.000	0.00	0.00	0.00
100.00	0.100	267.390	100.00	0.02	0.00	-0.06	1769295.53	14637176.40	40°18'8.5185"N	80°32'15.9275"W	0.06	267.390	0.14	0.14	0.00
150.00	0.180	237.200	150.00	0.02	-0.05	-0.17	1769295.42	14637176.35	40°18'8.5181"N	80°32'15.9289"W	0.18	254.749	0.21	0.16	-60.38
200.00	0.150	295.990	200.00	0.05	-0.06	-0.30	1769295.29	14637176.34	40°18'8.5179"N	80°32'15.9305"W	0.31	258.406	0.33	-0.06	117.58
250.00	0.240	259.120	250.00	0.12	-0.05	-0.46	1769295.13	14637176.35	40°18'8.5180"N	80°32'15.9326"W	0.46	263.507	0.30	0.18	-73.74
300.00	0.190	269.960	300.00	0.16	-0.07	-0.65	1769294.94	14637176.33	40°18'8.5178"N	80°32'15.9350"W	0.65	263.622	0.13	-0.10	21.68
350.00	0.250	285.050	350.00	0.26	-0.04	-0.83	1769294.76	14637176.36	40°18'8.5181"N	80°32'15.9375"W	0.84	266.984	0.17	0.12	30.18
384.00	0.280	312.130	384.00	0.38	0.03	-0.97	1769294.62	14637176.43	40°18'8.5189"N	80°32'15.9392"W	0.97	271.835	0.37	0.09	79.65
491.00	0.470	299.900	491.00	0.95	0.43	-1.54	1769294.05	14637176.82	40°18'8.5228"N	80°32'15.9466"W	1.60	285.413	0.19	0.18	-11.43
584.00	0.370	253.850	583.99	1.27	0.53	-2.16	1769293.43	14637176.93	40°18'8.5239"N	80°32'15.9545"W	2.23	283.823	0.37	-0.11	-49.52
682.00	0.440	169.200	681.99	0.93	0.07	-2.39	1769293.20	14637176.47	40°18'8.5194"N	80°32'15.9576"W	2.40	271.773	0.56	0.07	-86.38
766.00	0.560	163.750	765.99	0.20	-0.64	-2.22	1769293.37	14637175.76	40°18'8.5123"N	80°32'15.9554"W	2.31	253.991	0.15	0.14	-6.49
856.00	0.620	183.690	855.98	-0.68	-1.54	-2.13	1769293.46	14637174.86	40°18'8.5034"N	80°32'15.9542"W	2.63	234.016	0.24	0.07	22.16
947.00	0.920	164.260	946.98	-1.85	-2.74	-1.96	1769293.63	14637173.66	40°18'8.4916"N	80°32'15.9522"W	3.37	215.599	0.43	0.33	-21.35
1038.00	1.030	93.450	1037.97	-2.92	-3.49	-0.95	1769294.64	14637172.91	40°18'8.4841"N	80°32'15.9391"W	3.62	195.167	1.25	0.12	-77.81
1128.00	1.340	89.200	1127.95	-3.62	-3.53	0.91	1769296.50	14637172.88	40°18'8.4836"N	80°32'15.9151"W	3.64	165.481	0.36	0.34	-4.72
1219.00	2.140	83.950	1218.90	-4.42	-3.33	3.67	1769299.26	14637173.07	40°18'8.4854"N	80°32'15.8796"W	4.95	132.262	0.90	0.88	-5.77
1310.00	3.870	81.750	1309.78	-5.54	-2.71	8.40	1769303.98	14637173.69	40°18'8.4913"N	80°32'15.8185"W	8.82	107.902	1.90	1.90	-2.42
1428.00	5.590	81.970	1427.37	-7.71	-1.34	18.03	1769313.61	14637175.06	40°18'8.5044"N	80°32'15.6941"W	18.08	94.244	1.46	1.46	0.19
1519.00	8.360	97.340	1517.69	-11.85	-1.56	28.98	1769324.56	14637174.84	40°18'8.5016"N	80°32'15.5527"W	29.02	93.089	3.64	3.04	16.89
1609.00	9.880	111.020	1606.56	-20.12	-5.17	42.68	1769338.25	14637171.23	40°18'8.4652"N	80°32'15.3762"W	42.99	96.907	2.93	1.69	15.20
1700.00	9.710	109.180	1696.24	-30.30	-10.49	57.22	1769352.78	14637165.91	40°18'8.4119"N	80°32'15.1889"W	58.17	100.391	0.39	-0.19	-2.02
1791.00	11.670	108.870	1785.65	-41.15	-15.99	73.17	1769368.74	14637160.42	40°18'8.3567"N	80°32'14.9833"W	74.90	102.326	2.15	2.15	-0.34
1882.00	12.130	114.360	1874.70	-53.85	-22.91	90.59	1769386.15	14637153.50	40°18'8.2875"N	80°32'14.7590"W	93.45	104.192	1.34	0.51	6.03
1973.00	13.910	114.060	1963.36	-68.40	-31.31	109.29	1769404.84	14637145.10	40°18'8.2034"N	80°32'14.5182"W	113.69	105.988	1.96	1.96	-0.33
2064.00	15.620	113.060	2051.35	-84.66	-40.57	130.55	1769426.09	14637135.80	40°18'8.1109"N	80°32'14.2444"W	136.71	107.264	1.90	1.88	-1.10
2155.00	17.110	114.070	2138.66	-102.66	-50.83	154.05	1769449.68	14637125.59	40°18'8.0083"N	80°32'13.9419"W	162.22	108.261	1.67	1.64	1.11
2246.00	18.680	115.180	2225.26	-122.66	-62.49	179.46	1769474.98	14637113.93	40°18'7.8917"N	80°32'13.6147"W	190.03	109.199	1.77	1.73	1.22
2337.00	20.770	113.530	2309.97	-144.25	-75.00	207.14	1769502.65	14637101.43	40°18'7.7667"N	80°32'13.2583"W	220.30	109.903	2.40	2.32	-1.83

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09-10-2021

REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	State of WV DNR C BRK 5H
Field	Brooke	API	4700900257
Facility	State of WV DNR C BRK Pad	Wellbore	State of WV DNR C BRK 5H AWB
Slot	Slot 5H		

WELLPATH DATA (263 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]
2427.00	22.550	112.860	2394.54	-167.66	-88.22	238.01	1769533.51	14637088.22	40°18'7.6345"N	80°32'12.8607"W	253.84	110.337	1.97	1.96	-0.74
2519.00	23.510	113.820	2479.21	-192.81	-102.48	271.06	1769566.54	14637073.96	40°18'7.4918"N	80°32'12.4352"W	289.78	110.711	1.12	1.04	1.04
2611.00	25.030	111.600	2563.08	-218.92	-117.06	305.94	1769601.41	14637059.39	40°18'7.3460"N	80°32'11.9859"W	327.57	110.938	1.93	1.65	-2.41
2701.00	25.080	113.130	2644.61	-245.09	-131.56	341.19	1769636.65	14637044.89	40°18'7.2009"N	80°32'11.5320"W	365.67	111.087	0.72	0.06	1.70
2792.00	24.960	108.810	2727.08	-270.82	-145.33	377.10	1769672.55	14637031.13	40°18'7.0630"N	80°32'11.0694"W	404.13	111.076	2.01	-0.13	-4.75
2883.00	24.910	109.990	2809.60	-295.68	-158.07	413.28	1769708.72	14637018.39	40°18'6.9352"N	80°32'10.6033"W	442.48	110.931	0.55	-0.05	1.30
2973.00	25.630	113.570	2890.99	-321.77	-172.34	448.94	1769744.36	14637004.13	40°18'6.7924"N	80°32'10.1440"W	480.88	111.000	1.88	0.80	3.98
3064.00	25.670	114.760	2973.02	-349.71	-188.46	484.88	1769780.28	14636988.01	40°18'6.6312"N	80°32'9.6813"W	520.22	111.240	0.57	0.04	1.31
3156.00	24.490	111.160	3056.35	-376.78	-203.69	520.76	1769816.15	14636972.79	40°18'6.4788"N	80°32'9.2192"W	559.18	111.363	2.10	-1.28	-3.91
3247.00	24.730	112.680	3139.08	-402.59	-217.84	555.91	1769851.29	14636958.64	40°18'6.3372"N	80°32'8.7665"W	597.07	111.398	0.74	0.26	1.67
3338.00	24.760	114.170	3221.73	-429.25	-232.98	590.86	1769886.22	14636943.51	40°18'6.1857"N	80°32'8.3165"W	635.13	111.520	0.69	0.03	1.64
3428.00	24.970	112.290	3303.39	-455.64	-247.90	625.63	1769920.98	14636928.59	40°18'6.0365"N	80°32'7.8687"W	672.96	111.616	0.91	0.23	-2.09
3519.00	25.860	114.020	3385.58	-482.85	-263.27	661.53	1769956.87	14636913.23	40°18'5.8828"N	80°32'7.4064"W	711.99	111.701	1.27	0.98	1.90
3610.00	25.880	115.240	3467.46	-511.24	-279.81	697.63	1769992.95	14636896.69	40°18'5.7174"N	80°32'6.9417"W	751.65	111.855	0.59	0.02	1.34
3701.00	25.340	115.940	3549.52	-539.81	-296.80	733.10	1770028.41	14636879.71	40°18'5.5477"N	80°32'6.4850"W	790.90	112.041	0.68	-0.59	0.77
3791.00	25.600	113.350	3630.78	-567.47	-312.93	768.27	1770063.57	14636863.59	40°18'5.3865"N	80°32'6.0321"W	829.56	112.162	1.27	0.29	-2.88
3882.00	25.700	113.000	3712.81	-594.92	-328.43	804.49	1770099.77	14636848.09	40°18'5.2314"N	80°32'5.5658"W	868.95	112.208	0.20	0.11	-0.38
3972.00	26.220	111.760	3793.73	-621.98	-343.43	840.91	1770136.18	14636833.10	40°18'5.0813"N	80°32'5.0966"W	908.34	112.215	0.84	0.58	-1.38
4063.00	26.310	112.470	3875.33	-649.50	-358.59	878.22	1770173.47	14636817.95	40°18'4.9296"N	80°32'4.6162"W	948.61	112.211	0.36	0.10	0.78
4154.00	24.440	114.910	3957.55	-676.90	-374.23	913.94	1770209.17	14636802.31	40°18'4.7732"N	80°32'4.1563"W	987.59	112.268	2.35	-2.05	2.68
4244.00	24.370	114.550	4039.51	-703.53	-389.79	947.71	1770242.94	14636786.76	40°18'4.6177"N	80°32'3.7214"W	1024.74	112.357	0.18	-0.08	-0.40
4335.00	25.240	114.810	4122.12	-730.84	-405.73	982.40	1770277.61	14636770.83	40°18'4.4584"N	80°32'3.2748"W	1062.89	112.440	0.96	0.96	0.29
4427.00	26.510	115.380	4204.89	-759.77	-422.76	1018.76	1770313.96	14636753.80	40°18'4.2882"N	80°32'2.8067"W	1102.99	112.537	1.41	1.38	0.62
4518.00	27.490	115.530	4285.97	-789.72	-440.52	1056.06	1770351.24	14636736.05	40°18'4.1108"N	80°32'2.3265"W	1144.25	112.643	1.08	1.08	0.16
4608.00	25.330	109.920	4366.59	-817.41	-456.03	1092.91	1770388.08	14636720.54	40°18'3.9556"N	80°32'1.8519"W	1184.24	112.649	3.66	-2.40	-6.23
4699.00	25.410	111.230	4447.91	-843.00	-469.59	1129.01	1770424.17	14636706.99	40°18'3.8198"N	80°32'1.3869"W	1222.77	112.584	0.63	0.09	1.46
4789.00	25.780	116.500	4528.18	-870.10	-485.19	1164.14	1770459.28	14636691.45	40°18'3.6643"N	80°32'0.9347"W	1261.18	112.623	2.59	0.42	5.92
4879.00	25.030	117.320	4612.19	-899.71	-503.93	1199.11	1770494.85	14636673.40	40°18'3.4840"N	80°32'0.4767"W	1300.97	112.754	0.89	-0.81	0.88
4969.00	19.790	98.510	4698.25	-922.20	-512.83	1232.83	1770527.95	14636662.02	40°18'3.3698"N	80°32'0.0501"W	1335.91	112.655	9.49	-5.63	-20.23
5060.00	17.610	80.810	4785.46	-932.73	-526.00	1262.00	1770557.10	14636661.94	40°18'3.3675"N	80°31'59.6736"W	1362.90	112.186	6.58	-2.37	-19.24

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REFERENCE WELLPATH IDENTIFICATION	
Operator	SWN PRODUCTION COMPANY, LLC
Field	Brooke
Facility	State of WV DNR C BRK Pad
Slot	Slot 5H
Well	State of WV DNR C BRK 5H
API	4700900257
Wellbore	State of WV DNR C BRK 5H AWB

WELLPATH DATA (263 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]
5153.00	18.870	66.160	4869.08	-934.75	-506.77	1288.17	1770583.27	14636669.82	40°18'3.4440"N	80°31'59.3353"W	1384.27	111.475	5.39	1.43	-16.65
5245.00	19.360	49.910	4956.07	-929.02	-490.93	1313.46	1770608.55	14636685.66	40°18'3.5993"N	80°31'59.0078"W	1402.21	110.494	5.79	0.53	-17.66
5338.00	21.720	36.660	5043.20	-914.77	-467.18	1335.54	1770630.62	14636709.40	40°18'3.8328"N	80°31'58.7212"W	1414.90	109.280	5.59	2.54	-14.25
5431.00	26.080	24.910	5128.25	-891.31	-434.80	1354.45	1770649.52	14636741.77	40°18'4.1518"N	80°31'58.4750"W	1422.53	107.797	6.92	4.69	-12.63
5523.00	29.840	13.580	5209.55	-858.36	-394.17	1368.36	1770663.42	14636782.38	40°18'4.5526"N	80°31'58.2927"W	1424.00	106.069	7.06	4.09	-12.32
5616.00	33.210	1.390	5288.90	-815.71	-346.15	1374.42	1770669.48	14636830.38	40°18'5.0267"N	80°31'58.2113"W	1417.33	104.136	7.74	3.62	-13.11
5709.00	39.760	354.250	5363.66	-763.38	-291.02	1372.05	1770667.11	14636885.50	40°18'5.5717"N	80°31'58.2380"W	1402.57	101.975	8.38	7.04	-7.68
5801.00	47.220	354.660	5430.36	-702.41	-228.04	1365.95	1770661.02	14636948.45	40°18'6.1943"N	80°31'58.3125"W	1384.86	99.478	8.11	8.11	0.45
5891.00	59.230	352.130	5484.15	-632.69	-156.58	1357.55	1770652.62	14637019.88	40°18'6.9008"N	80°31'58.4160"W	1366.55	96.580	13.53	13.34	-2.81
5937.00	63.300	348.640	5506.27	-593.16	-116.84	1350.79	1770645.87	14637059.61	40°18'7.2940"N	80°31'58.5005"W	1355.84	94.943	11.07	8.85	-7.59
5981.00	63.950	348.150	5525.81	-554.27	-78.22	1342.86	1770637.94	14637098.21	40°18'7.6760"N	80°31'58.6003"W	1345.14	93.334	1.78	1.48	-1.11
6027.00	67.070	346.770	5544.88	-512.87	-37.37	1333.77	1770628.85	14637139.05	40°18'8.0801"N	80°31'58.7148"W	1334.29	91.605	7.31	6.78	-3.00
6073.00	70.580	345.540	5561.49	-470.31	4.27	1323.50	1770618.59	14637180.67	40°18'8.4921"N	80°31'58.8445"W	1323.51	89.815	8.03	7.63	-2.67
6120.00	74.050	346.350	5575.77	-425.87	47.70	1312.63	1770607.72	14637224.09	40°18'8.9219"N	80°31'58.9819"W	1313.50	87.919	7.56	7.38	1.72
6166.00	76.050	345.850	5587.64	-381.77	90.84	1301.96	1770597.05	14637267.21	40°18'9.3487"N	80°31'59.1167"W	1305.12	86.009	4.47	4.35	-1.09
6212.00	79.810	344.110	5597.25	-337.04	134.28	1290.30	1770585.39	14637310.63	40°18'9.7785"N	80°31'59.2643"W	1297.26	84.059	8.97	8.17	-3.78
6278.00	84.140	342.610	5606.47	-271.89	196.88	1271.58	1770566.68	14637373.20	40°18'10.3981"N	80°31'59.5015"W	1286.73	81.199	6.94	6.56	-2.27
6371.00	89.600	340.970	5611.54	-179.18	285.05	1242.57	1770537.69	14637461.34	40°18'11.2709"N	80°31'59.8700"W	1274.85	77.080	6.13	5.87	-1.76
6463.00	90.310	338.220	5611.62	-87.19	371.27	1210.50	1770505.62	14637547.53	40°18'12.1246"N	80°32'0.2781"W	1266.15	72.949	3.09	0.77	-2.99
6554.00	90.370	338.800	5611.08	3.80	455.94	1177.16	1770472.30	14637632.17	40°18'12.9630"N	80°32'0.7026"W	1262.38	68.828	0.64	0.07	0.64
6646.00	90.620	338.430	5610.28	95.79	541.60	1143.62	1770438.77	14637717.80	40°18'13.8112"N	80°32'1.1297"W	1265.38	64.658	0.49	0.27	-0.40
6738.00	90.680	338.400	5609.24	187.78	627.15	1109.77	1770404.94	14637803.31	40°18'14.6583"N	80°32'1.5607"W	1274.72	60.529	0.07	0.07	-0.03
6830.00	90.890	338.840	5607.98	279.77	712.81	1076.24	1770371.42	14637888.93	40°18'15.5065"N	80°32'1.9877"W	1290.88	56.483	0.53	0.23	0.48
6921.00	90.650	338.320	5606.75	370.76	797.51	1043.01	1770338.20	14637973.61	40°18'16.3453"N	80°32'2.4109"W	1312.97	52.597	0.63	-0.26	-0.57
7011.00	90.680	338.720	5605.71	460.75	881.26	1010.06	1770305.26	14638057.32	40°18'17.1745"N	80°32'2.8305"W	1340.46	48.896	0.45	0.03	0.44
7100.00	90.740	339.000	5604.58	551.75	966.13	977.24	1770272.45	14638142.16	40°18'18.0149"N	80°32'3.2483"W	1374.19	45.328	0.31	0.07	0.31
7190.00	90.800	338.720	5603.36	642.74	1050.99	944.42	1770239.65	14638226.99	40°18'18.8552"N	80°32'3.6661"W	1412.98	41.943	0.31	0.07	-0.31
7280.00	90.520	338.080	5602.32	732.73	1134.67	911.29	1770206.53	14638310.63	40°18'19.6838"N	80°32'4.0880"W	1455.31	38.769	0.78	-0.31	-0.71
7370.00	90.830	339.330	5601.27	821.72	1217.58	878.97	1770174.23	14638393.52	40°18'20.5048"N	80°32'4.4996"W	1501.70	35.826	1.45	0.35	1.40
7460.00	90.550	339.240	5600.23	908.71	1298.95	848.20	1770143.47	14638474.86	40°18'21.3105"N	80°32'4.8912"W	1551.36	33.144	0.34	-0.32	-0.10

8/10/2021

REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	State of WV DNR C BRK 5H
Field	Brooke	API	4700900257
Facility	State of WV DNR C BRK Pad	Wellbore	State of WV DNR C BRK 5H AWB
Slot	Slot 5H		

WELLPATH DATA (263 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]
7547.00	90.650	339.160	5599.30	996.70	1381.21	816.96	1770112.23	14638557.08	40°18'22.1249"N	80°32'5.2890"W	1604.73	30.603	0.15	0.11	-0.09
7637.00	90.490	339.290	5598.41	1086.70	1465.36	785.03	1770080.32	14638641.20	40°18'22.9581"N	80°32'5.6953"W	1662.39	28.179	0.23	-0.18	0.14
7728.00	90.220	338.600	5597.84	1177.70	1550.28	752.34	1770047.64	14638726.09	40°18'23.7989"N	80°32'6.1115"W	1723.19	25.887	0.81	-0.30	-0.76
7819.00	90.370	339.320	5597.38	1268.69	1635.21	719.67	1770014.99	14638810.98	40°18'24.6399"N	80°32'6.5274"W	1786.57	23.755	0.81	0.16	-0.79
7910.00	90.120	338.150	5596.99	1359.69	1720.01	686.67	1769982.00	14638895.75	40°18'25.4796"N	80°32'6.9477"W	1852.01	21.763	1.31	-0.27	-1.29
8000.00	90.550	339.210	5596.46	1449.69	1803.85	653.95	1769949.29	14638979.56	40°18'26.3098"N	80°32'7.3643"W	1918.73	19.927	1.27	0.48	1.18
8091.00	90.340	338.750	5595.75	1540.68	1888.79	621.31	1769916.66	14639064.47	40°18'27.1508"N	80°32'7.7799"W	1988.36	18.208	0.56	-0.23	-0.51
8181.00	90.490	338.790	5595.10	1630.68	1972.68	588.72	1769884.08	14639148.33	40°18'27.9815"N	80°32'8.1949"W	2058.66	16.617	0.17	0.17	0.04
8272.00	90.180	338.250	5594.57	1721.67	2057.36	555.40	1769850.77	14639232.97	40°18'28.8200"N	80°32'8.6192"W	2131.01	15.107	0.68	-0.34	-0.59
8364.00	90.280	338.340	5594.20	1813.67	2142.84	521.37	1769816.76	14639318.42	40°18'29.6664"N	80°32'9.0526"W	2205.35	13.675	0.15	0.11	0.10
8454.00	90.460	338.710	5593.62	1903.66	2226.59	488.43	1769783.83	14639402.13	40°18'30.4957"N	80°32'9.4722"W	2279.53	12.372	0.46	0.20	0.41
8545.00	90.370	338.220	5592.96	1994.65	2311.23	455.02	1769750.44	14639486.75	40°18'31.3338"N	80°32'9.8977"W	2355.60	11.138	0.55	-0.10	-0.54
8636.00	90.580	338.520	5592.21	2085.65	2395.82	421.48	1769716.91	14639571.30	40°18'32.1714"N	80°32'10.3249"W	2432.61	9.978	0.40	0.23	0.33
8726.00	90.550	338.680	5591.32	2175.64	2479.61	388.64	1769684.08	14639655.06	40°18'33.0011"N	80°32'11.1678"W	2509.88	8.908	0.18	-0.03	0.18
8817.00	90.180	338.330	5590.74	2266.63	2564.28	355.30	1769650.75	14639739.70	40°18'33.8395"N	80°32'11.5872"W	2588.78	7.889	0.56	-0.41	-0.38
8907.00	90.340	338.740	5590.33	2356.63	2648.04	322.37	1769617.83	14639823.42	40°18'34.6689"N	80°32'11.5872"W	2667.59	6.941	0.49	0.18	0.46
8998.00	90.250	338.830	5589.86	2447.63	2732.87	289.44	1769584.92	14639908.22	40°18'35.5089"N	80°32'12.0065"W	2748.15	6.046	0.14	-0.10	0.10
9089.00	90.150	338.440	5589.54	2538.63	2817.61	256.29	1769551.78	14639992.94	40°18'36.3480"N	80°32'12.4287"W	2829.25	5.197	0.44	-0.11	-0.43
9179.00	90.370	338.760	5589.14	2628.62	2901.41	223.45	1769518.95	14640076.70	40°18'37.1777"N	80°32'12.8470"W	2910.00	4.404	0.43	0.24	0.36
9270.00	90.400	339.110	5588.52	2719.62	2986.33	190.74	1769486.26	14640161.58	40°18'38.0185"N	80°32'13.2634"W	2992.41	3.655	0.39	0.03	0.38
9363.00	90.340	339.420	5587.92	2812.62	3073.30	157.81	1769453.34	14640248.52	40°18'38.8797"N	80°32'13.6826"W	3077.35	2.940	0.34	-0.06	0.33
9455.00	90.220	339.610	5587.47	2904.61	3159.48	125.62	1769421.16	14640334.67	40°18'39.7330"N	80°32'14.0923"W	3161.98	2.277	0.24	-0.13	0.21
9546.00	90.580	339.890	5586.84	2995.60	3244.85	94.12	1769389.68	14640420.01	40°18'40.5782"N	80°32'14.4931"W	3246.22	1.661	0.50	0.40	0.31
9637.00	90.180	338.670	5586.24	3086.60	3329.96	61.93	1769357.49	14640505.09	40°18'41.4209"N	80°32'14.9030"W	3330.54	1.065	1.41	-0.44	-1.34
9728.00	90.520	339.410	5585.68	3177.59	3414.94	29.38	1769324.96	14640590.02	40°18'42.2623"N	80°32'15.3174"W	3415.07	0.493	0.89	0.37	0.81
9819.00	90.220	338.830	5585.05	3268.59	3499.95	0.06	1769292.53	14640675.02	40°18'43.1041"N	80°32'15.7303"W	3499.96	359.950	0.72	-0.33	-0.64
9910.00	90.180	338.110	5584.77	3359.56	3584.67	56.45	1769259.15	14640759.64	40°18'43.9423"N	80°32'16.1557"W	3584.80	359.417	0.79	-0.04	-0.79
10000.00	90.520	339.520	5584.22	3449.58	3668.53	23.97	1769226.64	14640843.52	40°18'44.7732"N	80°32'16.5699"W	3669.17	358.923	1.61	0.38	1.57
10091.00	90.310	339.580	5583.57	3540.58	3753.79	190.77	1769194.86	14640928.75	40°18'45.6174"N	80°32'16.9746"W	3755.14	358.462	0.24	-0.23	0.07
10182.00	90.490	339.420	5582.93	3631.57	3839.02	162.64	1769163.00	14641013.95	40°18'46.4613"N	80°32'17.3802"W	3841.31	358.021	0.26	0.20	-0.18

Gas

2021

REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	State of WV DNR C BRK 5H
Field	Brooke	API	4700900257
Facility	State of WV DNR C BRK Pad	Wellbore	State of WV DNR C BRK 5H AWB
Slot	Slot 5H		

WELLPATH DATA (263 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]
10272.00	90.220	339.140	5582.37	3721.57	3923.20	-164.48	1769131.18	14641098.10	40°18'47.2947"N	80°32'17.7856"W	3926.65	357.599	0.43	-0.30	-0.31
10364.00	90.580	339.850	5581.73	3813.56	4009.37	-196.70	1769098.96	14641184.23	40°18'48.1479"N	80°32'18.1957"W	4014.19	357.191	0.87	0.39	0.77
10456.00	90.180	338.840	5581.12	3905.55	4095.45	-229.15	1769066.52	14641270.28	40°18'49.0002"N	80°32'18.6089"W	4101.86	356.797	1.18	-0.43	-1.10
10546.00	90.550	339.820	5580.55	3995.55	4179.66	-260.92	1769034.77	14641354.45	40°18'49.8339"N	80°32'19.0133"W	4187.79	356.428	1.16	0.41	1.09
10637.00	90.580	339.460	5579.65	4086.54	4264.97	-292.58	1769003.12	14641439.73	40°18'50.6785"N	80°32'19.4162"W	4274.99	356.076	0.40	0.03	-0.40
10728.00	90.520	339.740	5578.78	4177.53	4350.25	-324.30	1768971.42	14641524.99	40°18'51.5230"N	80°32'19.8199"W	4362.33	355.737	0.31	-0.07	0.31
10818.00	90.650	340.070	5577.86	4267.51	4434.77	-355.22	1768940.51	14641609.47	40°18'52.3597"N	80°32'20.2134"W	4448.97	355.420	0.39	0.14	0.37
10909.00	90.490	339.740	5576.95	4358.50	4520.23	-386.48	1768909.25	14641694.90	40°18'53.2058"N	80°32'20.6112"W	4536.72	355.113	0.40	-0.18	-0.36
11000.00	90.520	339.690	5576.15	4449.49	4605.58	-418.03	1768877.72	14641780.22	40°18'54.0508"N	80°32'21.0127"W	4624.51	354.814	0.06	0.03	-0.05
11091.00	90.680	340.010	5575.20	4540.47	4691.01	-449.38	1768846.39	14641865.61	40°18'54.8966"N	80°32'21.4116"W	4712.48	354.528	0.39	0.18	0.35
11182.00	90.490	339.410	5574.27	4631.46	4776.35	-480.93	1768814.84	14641950.92	40°18'55.7416"N	80°32'21.8133"W	4800.51	354.250	0.69	-0.21	-0.66
11272.00	90.430	338.870	5573.54	4721.46	4860.45	-512.98	1768782.81	14642034.99	40°18'56.5743"N	80°32'22.2213"W	4887.45	353.975	0.60	-0.07	-0.60
11363.00	90.550	339.670	5572.77	4812.45	4945.56	-545.19	1768750.61	14642120.06	40°18'57.4169"N	80°32'22.6314"W	4975.52	353.709	0.89	0.13	0.88
11454.00	90.890	339.350	5571.62	4903.44	5030.79	-577.04	1768718.77	14642205.27	40°18'58.2608"N	80°32'23.0368"W	5063.78	353.457	0.51	0.37	-0.35
11544.00	90.220	338.840	5570.75	4993.44	5114.86	-609.15	1768686.67	14642289.30	40°18'59.0932"N	80°32'23.4457"W	5151.01	353.208	0.94	-0.74	-0.57
11635.00	90.830	339.640	5569.92	5084.43	5199.95	-641.40	1768654.43	14642374.36	40°18'59.9357"N	80°32'23.8564"W	5239.36	352.968	1.11	0.67	0.88
11725.00	90.520	338.950	5568.86	5174.42	5284.13	-673.22	1768622.63	14642458.51	40°19'0.7691"N	80°32'24.2615"W	5326.84	352.739	0.84	-0.34	-0.77
11816.00	90.620	339.380	5567.95	5265.42	5369.18	-705.59	1768590.27	14642543.52	40°19'1.6112"N	80°32'24.6736"W	5415.34	352.513	0.49	0.11	0.47
11908.00	90.370	339.390	5567.16	5357.41	5455.28	-737.98	1768557.90	14642629.59	40°19'2.4637"N	80°32'25.0860"W	5504.97	352.296	0.27	-0.27	0.01
11998.00	90.460	339.200	5566.51	5447.41	5539.47	-769.80	1768526.09	14642713.74	40°19'3.2972"N	80°32'25.4911"W	5592.70	352.089	0.23	0.10	-0.21
12089.00	90.520	338.880	5565.73	5538.40	5624.44	-802.35	1768493.55	14642798.69	40°19'4.1386"N	80°32'25.9056"W	5681.38	351.881	0.36	0.07	-0.35
12180.00	90.280	338.810	5565.09	5629.40	5709.31	-835.19	1768460.72	14642883.52	40°19'4.9789"N	80°32'26.3239"W	5770.07	351.677	0.27	-0.26	-0.08
12271.00	90.460	338.800	5564.50	5720.40	5794.15	-868.09	1768427.83	14642968.33	40°19'5.8190"N	80°32'26.7429"W	5858.82	351.479	0.20	0.20	-0.01
12363.00	90.650	338.880	5563.61	5812.39	5879.94	-901.30	1768394.64	14643054.09	40°19'6.6684"N	80°32'27.1659"W	5948.62	351.285	0.22	0.21	0.09
12454.00	90.340	340.370	5562.83	5903.38	5965.24	-932.98	1768362.97	14643139.36	40°19'7.5130"N	80°32'27.5692"W	6037.76	351.111	1.67	-0.34	1.64
12545.00	90.490	342.930	5562.17	5994.28	6050.61	-961.62	1768334.34	14643225.69	40°19'8.3678"N	80°32'27.9332"W	6127.53	350.971	2.82	0.16	2.81
12638.00	91.140	346.230	5560.84	6086.85	6147.24	-986.34	1768309.62	14643315.28	40°19'9.2548"N	80°32'28.2464"W	6219.94	350.876	3.62	0.70	3.55
12729.00	90.980	344.800	5559.16	6177.21	6239.33	-1009.10	1768286.88	14643403.34	40°19'10.1264"N	80°32'28.5343"W	6310.53	350.798	1.58	-0.18	-1.57
12819.00	90.860	345.120	5557.72	6266.71	6330.23	-1032.45	1768263.53	14643490.21	40°19'10.9864"N	80°32'28.8299"W	6400.06	350.717	0.38	-0.13	0.36
12910.00	91.020	344.920	5556.24	6357.19	6431.13	-1055.97	1768240.02	14643578.08	40°19'11.8562"N	80°32'29.1277"W	6490.60	350.637	0.28	0.18	-0.22

09/20/2021

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REFERENCE WELLPATH IDENTIFICATION

Operator	SWM PRODUCTION COMPANY, LLC		Well	State of WV DNR C BRK 5H	
Field	Brooke		API	4700900257	
Facility	State of WV DNR C BRK Pad		Wellbore	State of WV DNR C BRK 5H AWB	
Slot	Slot 5H				

WELLPATH DATA (263 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]
13003.00	90.950	345.380	5554.62	6449.65	6494.01	-1079.80	1768216.20	14643667.92	40°19'12.7455"N	80°32'29.4293"W	6583.17	350.559	0.50	-0.08	0.49
13094.00	90.980	344.740	5553.09	6540.12	6581.92	-1103.26	1768192.75	14643755.80	40°19'13.6155"N	80°32'29.7263"W	6673.74	350.485	0.70	0.03	-0.70
13185.00	91.170	345.610	5551.38	6630.58	6669.87	-1126.54	1768169.48	14643843.72	40°19'14.4858"N	80°32'30.0209"W	6764.34	350.413	0.98	0.21	0.96
13276.00	90.950	344.960	5549.70	6721.02	6757.87	-1149.65	1768146.38	14643931.68	40°19'15.3565"N	80°32'30.3134"W	6854.97	350.345	0.75	-0.24	-0.71
13368.00	91.020	345.030	5548.12	6812.50	6846.72	-1173.47	1768122.57	14644020.50	40°19'16.2357"N	80°32'30.6149"W	6946.56	350.275	0.11	0.08	0.08
13459.00	91.020	345.450	5546.50	6902.95	6934.71	-1196.65	1768099.40	14644108.45	40°19'17.1063"N	80°32'30.9083"W	7037.19	350.210	0.46	0.00	0.46
13550.00	91.050	344.900	5544.86	6993.40	7022.66	-1219.93	1768076.13	14644196.37	40°19'17.9767"N	80°32'31.2030"W	7127.83	350.145	0.61	0.03	-0.60
13641.00	91.080	345.140	5543.16	7083.88	7110.55	-1243.44	1768052.62	14644284.23	40°19'18.8464"N	80°32'31.5008"W	7218.46	350.081	0.27	0.03	0.26
13733.00	91.050	345.080	5541.45	7175.35	7199.45	-1267.08	1768028.99	14644373.09	40°19'19.7260"N	80°32'31.8000"W	7310.10	350.018	0.07	-0.03	-0.07
13825.00	91.200	345.300	5539.65	7266.79	7288.38	-1290.59	1768005.49	14644461.98	40°19'20.6060"N	80°32'32.0976"W	7401.76	349.958	0.29	0.16	0.24
13916.00	91.170	343.770	5537.77	7357.35	7376.06	-1314.85	1767981.24	14644549.64	40°19'21.4737"N	80°32'32.4049"W	7492.34	349.893	1.68	-0.03	-1.68
14007.00	91.110	344.490	5535.96	7447.96	7463.57	-1339.73	1767956.37	14644637.12	40°19'22.3397"N	80°32'32.7203"W	7582.86	349.824	0.79	-0.07	0.79
14098.00	90.950	344.310	5534.32	7538.54	7551.21	-1364.20	1767931.91	14644724.72	40°19'23.2069"N	80°32'33.0303"W	7673.45	349.759	0.26	-0.18	-0.20
14188.00	91.080	343.910	5532.73	7628.17	7637.75	-1388.84	1767907.29	14644811.23	40°19'24.0634"N	80°32'33.3427"W	7763.00	349.694	0.47	0.14	-0.44
14280.00	91.020	344.350	5531.04	7719.79	7726.23	-1413.99	1767882.14	14644899.67	40°19'24.9390"N	80°32'33.6615"W	7854.56	349.629	0.48	-0.07	0.48
14371.00	91.080	344.040	5529.37	7810.40	7813.78	-1438.77	1767857.37	14644987.19	40°19'25.8054"N	80°32'33.9756"W	7945.14	349.567	0.35	0.07	-0.34
14461.00	91.170	344.430	5527.60	7900.01	7900.38	-1463.22	1767832.93	14645073.75	40°19'26.6624"N	80°32'34.2855"W	8034.73	349.507	0.44	0.10	0.43
14554.00	90.950	343.920	5525.88	7992.61	7989.83	-1488.58	1767807.58	14645163.17	40°19'27.5477"N	80°32'34.6069"W	8127.32	349.446	0.60	-0.24	-0.55
14645.00	90.990	344.530	5524.34	8083.22	8077.39	-1513.31	1767782.86	14645250.70	40°19'28.4142"N	80°32'34.9204"W	8217.93	349.389	0.67	0.04	0.67
14736.00	90.520	343.770	5523.14	8173.84	8164.93	-1538.16	1767758.02	14645338.20	40°19'29.2804"N	80°32'35.2354"W	8308.55	349.331	0.98	-0.52	-0.84
14827.00	91.080	343.820	5521.87	8264.52	8252.30	-1563.56	1767732.63	14645425.54	40°19'30.1451"N	80°32'35.5574"W	8399.12	349.271	0.62	0.62	0.05
14919.00	90.860	342.280	5520.32	8356.27	8340.29	-1590.37	1767705.83	14645513.50	40°19'31.0159"N	80°32'35.8978"W	8490.57	349.204	1.69	-0.24	-1.67
15009.00	90.520	339.090	5519.23	8446.21	8425.21	-1620.13	1767676.08	14645598.38	40°19'31.8566"N	80°32'36.2764"W	8579.57	349.115	3.56	-0.38	-3.54
15100.00	90.310	338.370	5518.57	8537.21	8510.01	-1653.15	1767643.08	14645683.15	40°19'32.6962"N	80°32'36.6970"W	8669.09	349.007	0.82	-0.23	-0.79
15192.00	90.620	336.330	5517.83	8629.16	8594.90	-1688.57	1767607.67	14645768.01	40°19'33.5369"N	80°32'37.1487"W	8759.20	348.885	2.24	0.34	-2.22
15283.00	91.140	337.400	5516.43	8720.91	8678.57	-1724.32	1767571.93	14645851.65	40°19'34.3655"N	80°32'37.6047"W	8848.22	348.762	1.31	0.57	1.18
15375.00	91.020	337.050	5514.69	8812.93	8753.38	-1759.33	1767536.34	14645936.43	40°19'35.2054"N	80°32'38.0588"W	8938.36	348.644	0.40	-0.13	-0.38
15466.00	91.260	337.290	5512.88	8904.96	8847.24	-1795.23	1767501.05	14646020.25	40°19'36.0358"N	80°32'38.5090"W	9027.54	348.530	0.37	0.26	0.26
15557.00	90.370	336.830	5511.59	8993.90	8931.93	-1830.69	1767465.60	14646104.01	40°19'36.8657"N	80°32'38.9613"W	9116.73	348.416	1.10	-0.98	-0.51
15648.00	90.430	337.570	5510.95	9084.85	9014.92	-1865.96	1767430.35	14646187.87	40°19'37.6964"N	80°32'39.4110"W	9206.01	348.306	0.82	0.07	0.81

RED Gas

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REFERENCE WELLPATH IDENTIFICATION	
Operator	SWN PRODUCTION COMPANY, LLC
Field	Brooke
Facility	State of WV DNR C BRK Pad
Slot	Slot 5H
Well	State of WV DNR C BRK 5H
API	4700900257
Wellbore	State of WV DNR C BRK 5H AWB

WELLPATH DATA (263 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]
15739.00	90.250	336.940	5510.41	9175.81	9098.84	-1901.14	1767395.18	14646271.76	40°19'38.5275"N	80°32'39.8597"W	9295.33	348.198	0.72	-0.20	-0.69
15831.00	90.430	336.970	5509.87	9267.75	9183.50	-1937.15	1767359.18	14646356.38	40°19'39.3658"N	80°32'40.3191"W	9385.58	348.089	0.20	0.20	0.03
15923.00	91.050	337.350	5508.68	9359.69	9268.28	-1972.86	1767323.49	14648441.13	40°19'40.2054"N	80°32'40.7745"W	9475.92	347.983	0.79	0.67	0.41
16014.00	91.140	338.400	5506.94	9450.66	9352.56	-2007.13	1767289.23	14648525.38	40°19'41.0400"N	80°32'41.2113"W	9565.51	347.888	1.16	0.10	1.15
16105.00	91.080	338.060	5505.18	9541.63	9437.05	-2040.87	1767255.50	14648609.84	40°19'41.8767"N	80°32'41.6414"W	9655.21	347.797	0.38	-0.07	-0.37
16196.00	91.080	337.710	5503.46	9632.60	9521.34	-2075.12	1767221.26	14648669.10	40°19'42.7113"N	80°32'42.0780"W	9744.85	347.705	0.38	0.00	-0.38
16286.00	90.950	337.370	5501.87	9722.55	9604.50	-2109.50	1767186.90	14646777.22	40°19'43.5348"N	80°32'42.5164"W	9833.44	347.612	0.40	-0.14	-0.38
16377.00	91.140	337.590	5500.21	9813.51	9688.55	-2144.35	1767152.06	14646861.24	40°19'44.3671"N	80°32'42.9608"W	9923.02	347.520	0.32	0.21	0.24
16468.00	90.830	336.870	5498.64	9904.45	9772.44	-2179.56	1767116.86	14646945.10	40°19'45.1979"N	80°32'43.4099"W	10012.55	347.427	0.86	-0.34	-0.79
16558.00	90.860	337.690	5497.32	9994.40	9855.45	-2214.32	1767082.12	14647028.08	40°19'46.0199"N	80°32'43.8531"W	10101.15	347.337	0.91	0.03	0.91
16649.00	90.950	337.680	5495.88	10085.36	9939.63	-2248.87	1767047.58	14647112.22	40°19'46.8535"N	80°32'44.2936"W	10190.86	347.251	0.10	0.10	-0.01
16740.00	90.950	337.490	5494.37	10176.32	10023.74	-2283.56	1767012.90	14647196.30	40°19'47.6864"N	80°32'44.7360"W	10280.56	347.166	0.21	0.00	-0.21
16830.00	90.860	336.910	5492.95	10266.27	10106.70	-2318.43	1766978.04	14647279.23	40°19'48.5079"N	80°32'45.1808"W	10369.21	347.080	0.65	-0.10	-0.64
16922.00	90.800	336.990	5491.62	10358.20	10191.34	-2354.45	1766942.04	14647363.84	40°19'49.3462"N	80°32'45.6403"W	10459.78	346.991	0.11	-0.07	0.09
17013.00	90.990	337.400	5490.20	10449.14	10275.22	-2389.72	1766906.79	14647447.68	40°19'50.1768"N	80°32'46.0901"W	10549.45	346.907	0.50	0.21	0.45
17105.00	90.990	337.210	5488.61	10541.09	10360.08	-2425.21	1766871.31	14647532.51	40°19'51.0172"N	80°32'46.5427"W	10640.16	346.825	0.21	0.00	-0.21
17196.00	91.050	337.310	5486.99	10632.03	10444.00	-2460.38	1766836.15	14647616.40	40°19'51.8482"N	80°32'46.9913"W	10729.89	346.744	0.13	0.07	0.11
17287.00	91.110	337.170	5485.27	10722.97	10527.89	-2495.58	1766800.97	14647700.26	40°19'52.6790"N	80°32'47.4402"W	10819.63	346.664	0.17	0.07	-0.15
17379.00	91.230	337.830	5483.39	10814.92	10612.87	-2530.78	1766765.78	14647785.21	40°19'53.5205"N	80°32'47.8891"W	10910.45	346.588	0.73	0.13	0.72
17469.00	91.080	337.130	5481.58	10904.87	10695.99	-2565.24	1766731.33	14647868.30	40°19'54.3436"N	80°32'48.3286"W	10999.31	346.513	0.80	-0.17	-0.78
17561.00	90.830	337.820	5480.05	10996.82	10780.96	-2600.48	1766696.11	14647953.23	40°19'55.1850"N	80°32'48.7780"W	11090.16	346.439	0.80	-0.27	0.75
17654.00	91.050	337.090	5478.52	11089.78	10866.84	-2636.13	1766660.47	14648039.08	40°19'56.0355"N	80°32'49.2327"W	11182.01	346.364	0.82	0.24	-0.78
17745.00	91.050	337.300	5476.85	11180.72	10950.71	-2671.40	1766625.22	14648122.92	40°19'56.8661"N	80°32'49.6825"W	11271.85	346.291	0.23	0.00	0.23
17835.00	90.920	337.020	5475.30	11270.66	11033.65	-2706.33	1766590.30	14648205.82	40°19'57.6873"N	80°32'50.1280"W	11360.70	346.219	0.34	-0.14	-0.31
17927.00	90.830	336.800	5473.90	11362.58	11118.27	-2742.40	1766554.24	14648290.41	40°19'58.5253"N	80°32'50.5882"W	11451.49	346.144	0.26	-0.10	-0.24
18019.00	91.170	337.260	5472.29	11454.52	11202.96	-2778.30	1766518.35	14648375.07	40°19'59.3640"N	80°32'51.0462"W	11542.32	346.072	0.62	0.37	0.50
18109.00	91.020	337.200	5470.57	11544.46	11285.93	-2813.13	1766483.54	14648458.01	40°20'01.1857"N	80°32'51.4904"W	11631.25	346.004	0.18	-0.17	-0.07
18201.00	91.170	337.600	5468.82	11636.40	11370.85	-2848.47	1766448.21	14648542.89	40°20'01.0266"N	80°32'51.9412"W	11722.20	345.936	0.46	0.16	0.43
18292.00	90.890	337.290	5467.18	11727.35	11454.87	-2883.37	1766413.32	14648626.89	40°20'01.8587"N	80°32'52.3863"W	11812.20	345.871	0.46	-0.31	-0.34
18383.00	91.050	336.730	5465.64	11818.29	11538.63	-2918.91	1766377.80	14648710.61	40°20'02.6882"N	80°32'52.8397"W	11902.11	345.804	0.64	0.18	-0.62

8/9/2021

REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	State of WV DNR C BRK 5H
Field	Brooke	API	4700900257
Facility	State of WV DNR C BRK Pad	Wellbore	State of WV DNR C BRK 5H AWB
Slot	Slot 5H		

WELLPATH DATA (263 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]
18474.00	90.920	336.860	5464.08	11909.21	11622.26	-2954.76	1766341.96	14648794.21	40°20'3.5163"N	80°32'53.2971"W	11991.98	345.736	0.20	-0.14	0.14
18566.00	91.140	337.500	5462.42	12001.14	11707.04	-2990.44	1766306.30	14648878.96	40°20'4.3559"N	80°32'53.7522"W	12082.95	345.671	0.74	0.24	0.70
18657.00	91.080	337.650	5460.66	12092.10	11791.15	-3025.14	1766227.160	146489063.03	40°20'5.1888"N	80°32'54.1948"W	12173.03	345.611	0.18	-0.07	0.16
18747.00	90.950	337.250	5459.06	12182.05	11874.25	-3059.65	1766237.11	146490463.05	40°20'6.0117"N	80°32'54.6349"W	12262.11	345.551	0.47	-0.14	-0.44
18839.00	90.620	337.380	5457.80	12274.00	11959.13	-3095.13	1766201.64	14649130.95	40°20'6.8522"N	80°32'55.0875"W	12353.16	345.490	0.39	-0.36	0.14
18931.00	90.520	337.440	5456.89	12365.96	12044.06	-3130.47	1766166.32	14649215.85	40°20'7.6933"N	80°32'55.5382"W	12444.25	345.430	0.13	-0.11	0.07
19015.00	90.740	337.540	5455.97	12449.93	12121.66	-3162.63	1766134.18	14649293.42	40°20'8.4617"N	80°32'55.9483"W	12527.44	345.377	0.29	0.26	0.12
19112.00	91.540	337.680	5454.04	12546.88	12211.33	-3199.57	1766097.25	14649383.05	40°20'9.3496"N	80°32'56.4194"W	12623.54	345.318	0.84	0.82	0.14
19204.00	91.230	337.840	5451.81	12638.83	12296.46	-3234.38	1766062.45	14649468.15	40°20'10.1926"N	80°32'56.8633"W	12714.72	345.263	0.38	-0.34	0.17
19295.00	91.020	336.270	5450.02	12729.76	12380.24	-3269.85	1766027.00	14649551.90	40°20'11.0223"N	80°32'57.3158"W	12804.77	345.205	1.74	-0.23	-1.73
19385.00	90.920	336.770	5448.50	12819.66	12462.78	-3305.70	1765991.16	14649634.40	40°20'11.8397"N	80°32'57.7734"W	12893.74	345.145	0.57	-0.11	0.56
19477.00	90.710	335.700	5447.19	12911.54	12546.97	-3342.77	1765954.10	14649718.56	40°20'12.6735"N	80°32'58.2465"W	12984.62	345.082	1.19	-0.23	-1.16
19569.00	91.110	336.710	5445.73	13003.42	12631.13	-3379.88	1765917.00	14649802.70	40°20'13.5071"N	80°32'58.7203"W	13075.52	345.020	1.18	0.43	1.10
19659.00	90.890	335.850	5444.16	13093.30	12713.52	-3416.08	1765880.82	14649885.05	40°20'14.3230"N	80°32'59.1823"W	13164.46	344.960	0.99	-0.24	-0.96
19752.00	91.050	337.050	5442.59	13186.20	12798.76	-3453.23	1765843.68	14649970.26	40°20'15.1671"N	80°32'59.6564"W	13256.43	344.901	1.30	0.17	1.29
19843.00	91.200	336.450	5440.80	13277.11	12882.35	-3489.15	1765807.78	14650053.82	40°20'15.9950"N	80°33'0.1147"W	13346.50	344.845	0.68	0.16	-0.66
19934.00	90.220	336.010	5439.67	13368.00	12965.62	-3525.82	1765771.12	14650137.06	40°20'16.8197"N	80°33'0.5829"W	13436.47	344.787	1.18	-1.08	-0.48
20026.00	90.770	335.990	5438.88	13459.87	13049.67	-3563.24	1765733.71	14650221.07	40°20'17.6521"N	80°33'1.0606"W	13527.40	344.728	0.60	0.60	-0.02
20117.00	90.770	336.160	5437.65	13550.74	13132.84	-3600.14	1765696.83	14650304.21	40°20'18.4758"N	80°33'1.5316"W	13617.36	344.670	0.19	0.00	0.19
20207.00	90.550	336.420	5436.62	13640.63	13215.24	-3636.33	1765660.65	14650386.58	40°20'19.2918"N	80°33'1.9935"W	13706.40	344.615	0.38	-0.24	0.29
20298.00	91.450	336.430	5435.03	13731.52	13298.63	-3672.72	1765624.28	14650469.94	40°20'20.1177"N	80°33'2.4580"W	13796.46	344.561	0.99	0.99	0.01
20389.00	90.710	335.480	5433.31	13822.38	13381.72	-3709.79	1765587.22	14650552.99	40°20'20.9406"N	80°33'2.9312"W	13886.43	344.505	1.32	-0.81	-1.04
20480.00	91.350	335.930	5431.68	13913.21	13464.64	-3747.22	1765549.80	14650635.89	40°20'21.7619"N	80°33'3.4092"W	13976.35	344.448	0.86	0.70	0.49
20571.00	91.390	337.410	5429.57	14004.11	13548.18	-3783.25	1765513.79	14650719.39	40°20'22.5892"N	80°33'3.8690"W	14066.49	344.398	1.63	0.04	1.63
20663.00	91.080	337.260	5427.52	14096.05	13633.05	-3818.69	1765478.36	14650804.23	40°20'23.4297"N	80°33'4.3211"W	14157.77	344.352	0.37	-0.34	-0.16
20755.00	91.230	337.000	5425.67	14187.98	13717.80	-3854.44	1765442.62	14650888.95	40°20'24.2689"N	80°33'4.7722"W	14249.03	344.306	0.33	0.16	-0.28
20848.00	90.520	337.730	5424.24	14280.93	13803.63	-3890.23	1765406.85	14650974.74	40°20'25.1188"N	80°33'5.2338"W	14341.34	344.261	1.09	-0.76	0.78
20939.00	90.650	337.180	5423.32	14374.89	13887.67	-3925.12	1765371.98	14651058.75	40°20'25.9510"N	80°33'5.6788"W	14431.70	344.218	0.62	0.14	-0.60
21030.00	90.740	336.710	5422.19	14466.83	13973.23	-3961.54	1765335.57	14651144.28	40°20'26.7984"N	80°33'6.1435"W	14523.95	344.171	0.51	0.10	-0.51
21123.00	90.650	337.540	5421.01	14559.77	14057.07	-3996.91	1765300.21	14651228.09	40°20'27.6286"N	80°33'6.5948"W	14614.26	344.128	0.92	-0.10	0.91

09/10/2021

REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	State of WV DNR C BRK 5H
Field	Brooke	API	4700900257
Facility	State of WV DNR C BRK Pad	Wellbore	State of WV DNR C BRK 5H AWB
Slot	Slot 5H		

WELLPATH DATA (263 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]
21213.00	90.310	337.000	5420.33	14845.73	14140.08	-4031.68	1765265.45	14651311.06	40°20'28.4506"N	80°33'7.0384"W	14703.61	344.086	0.71	-0.38	-0.60
21305.00	90.620	337.030	5419.58	14737.67	14224.77	-4067.60	1765229.54	14651395.72	40°20'29.2893"N	80°33'7.4968"W	14794.92	344.042	0.34	0.34	0.03
21397.00	90.460	336.970	5418.72	14829.61	14309.45	-4103.55	1765193.61	14651480.37	40°20'30.1279"N	80°33'7.9555"W	14886.22	343.999	0.19	-0.17	-0.07
21490.00	90.580	337.320	5417.87	14922.55	14395.15	-4139.67	1765157.51	14651566.04	40°20'30.9765"N	80°33'8.4163"W	14978.56	343.956	0.40	0.13	0.38
21580.00	90.680	337.200	5416.88	15012.51	14478.15	-4174.46	1765122.73	14651649.00	40°20'31.7984"N	80°33'8.8602"W	15067.94	343.916	0.17	0.11	-0.13
21671.00	90.180	337.270	5416.20	15103.46	14562.06	-4209.67	1765087.53	14651732.88	40°20'32.6293"N	80°33'9.3094"W	15158.32	343.876	0.55	-0.55	0.08
21762.00	89.970	337.330	5416.08	15194.42	14646.01	-4244.79	1765052.43	14651816.80	40°20'33.4606"N	80°33'9.7574"W	15248.73	343.837	0.24	-0.23	0.07
21853.00	90.090	337.040	5416.03	15285.37	14729.89	-4280.07	1765017.16	14651900.65	40°20'34.2912"N	80°33'10.2077"W	15339.12	343.798	0.34	0.13	-0.32
21946.00	90.650	336.890	5415.43	15378.31	14815.47	-4316.46	1764980.78	14651986.20	40°20'35.1388"N	80°33'10.6720"W	15431.46	343.757	0.62	0.60	-0.16
22036.00	90.800	337.160	5414.29	15468.25	14898.32	-4351.59	1764945.67	14652069.02	40°20'35.9592"N	80°33'11.1203"W	15520.84	343.718	0.34	0.17	0.30
22128.00	90.860	337.760	5412.96	15560.21	14983.29	-4386.85	1764910.42	14652153.95	40°20'36.8006"N	80°33'11.5701"W	15612.28	343.681	0.66	0.07	0.65
22220.00	90.680	336.950	5411.72	15652.16	15068.19	-4422.27	1764875.02	14652238.82	40°20'37.6413"N	80°33'12.0220"W	15703.72	343.644	0.90	-0.20	-0.88
22310.00	90.430	336.300	5410.85	15742.08	15150.80	-4457.97	1764839.32	14652321.39	40°20'38.4594"N	80°33'12.4777"W	15793.04	343.604	0.77	-0.28	-0.72
22402.00	90.650	336.880	5409.99	15833.99	15235.22	-4494.52	1764802.79	14652405.78	40°20'39.2954"N	80°33'12.9443"W	15884.35	343.563	0.67	0.24	0.63
22493.00	90.680	337.180	5408.93	15924.93	15319.00	-4530.03	1764767.29	14652489.53	40°20'40.1251"N	80°33'13.3974"W	15974.76	343.526	0.33	0.03	0.33
22584.00	90.580	336.840	5407.93	16015.87	15402.76	-4565.57	1764731.76	14652573.26	40°20'40.9546"N	80°33'13.8509"W	16065.17	343.490	0.39	-0.11	-0.37
22674.00	91.020	336.960	5406.67	16105.80	15485.54	-4600.88	1764696.47	14652656.01	40°20'41.7743"N	80°33'14.3015"W	16154.57	343.453	0.51	0.49	0.13
22765.00	90.430	336.860	5405.52	16196.74	15569.24	-4636.57	1764660.80	14652739.68	40°20'42.6032"N	80°33'14.7569"W	16244.97	343.416	0.66	-0.65	-0.11
22856.00	90.770	337.310	5404.57	16287.68	15653.06	-4672.00	1764625.38	14652823.46	40°20'43.4332"N	80°33'15.2091"W	16335.41	343.381	0.62	0.37	0.49
22946.00	90.740	337.050	5403.38	16377.63	15736.00	-4706.90	1764590.49	14652906.38	40°20'44.2546"N	80°33'15.6544"W	16424.88	343.347	0.29	-0.03	-0.29
23037.00	90.770	337.030	5402.18	16468.57	15819.79	-4742.39	1764555.01	14652990.13	40°20'45.0843"N	80°33'16.1074"W	16515.33	343.313	0.04	0.03	-0.02
23068.00	90.830	337.280	5401.75	16499.55	15848.35	-4754.43	1764542.98	14653018.68	40°20'45.3671"N	80°33'16.2609"W	16546.14	343.301	0.83	0.19	0.81
23093.00†	90.830	337.280	5401.39	16524.53	15871.41	-4764.08	1764533.33	14653041.73	40°20'45.5955"N	80°33'16.3841"W	16571.00	343.292	0.00	0.00	0.00

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REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC		Well	State of WV DNR C BRK 5H
Field	Brooke		API	4700900257
Facility	State of WV DNR C BRK Pad		Wellbore	State of WV DNR C BRK 5H AWB
Slot	Slot 5H			

HOLE & CASING SECTIONS - Ref Wellbore: State of WV DNR C BRK 5H AWB Ref Wellpath: State of WV DNR C BRK 5H AWP Proj: 23093'

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	0.00	-0.06
17.5in Open Hole	100.00	491.00	391.00	100.00	491.00	0.00	-0.06	0.43	-1.54
13.375in Casing Surface	26.00	491.00	465.00	26.00	491.00	0.00	0.00	0.43	-1.54
12.25in Open Hole	491.00	1380.00	889.00	491.00	1379.57	0.43	-1.54	-1.95	13.69
9.625in Casing Intermediate	26.00	1380.00	1354.00	26.00	1379.57	0.00	0.00	-1.95	13.69
8.75in Open Hole	1380.00	6276.00	4896.00	1379.57	5606.26	-1.95	13.69	194.98	1272.18
8.5in Open Hole	6276.00	23093.00	16817.00	5606.26	5401.39	194.98	1272.18	15871.41	-4764.08
5.5in Casing Production	26.00	23093.00	23067.00	26.00	5401.39	0.00	0.00	15871.41	-4764.08

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
State of WV DNR C BRK 5H BHL Rev-4	5471.55	15877.94	-4748.12	1764549.29	14653048.26	40°20'45.6592"N	80°33'16.1775"W	point
State of WV DNR C BRK 5H LP Rev-4	5618.00	220.92	1262.05	1770557.16	14637397.24	40°18'10.6362"N	80°31'59.6229"W	point

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Field	Brooke	API	4700900257
Facility	State of WV DNR C BRK Pad	Wellbore	State of WV DNR C BRK 5H AWB
Slot	Slot 5H		

WELLPATH COMPOSITION - Ref Wellbore: State of WV DNR C BRK 5H AWB Ref Wellpath: State of WV DNR C BRK 5H AWP Proj: 23093'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
26.00	384.00	Gyrodatta 2015 - GC+WIR+DPIPE	01_Gyro <17-1/2"> (100'-384')	State of WV DNR C BRK 5H AWB	1/29/2021
384.00	491.00	OWSG MWD rev2 + HRGM	02_Premier MWD <17 1/2"> (491')	State of WV DNR C BRK 5H AWB	1/29/2021
491.00	1310.00	OWSG MWD rev2 + HRGM	03_Premier MWD <12-1/4"> (584'-1310')	State of WV DNR C BRK 5H AWB	1/29/2021
1310.00	6212.00	OWSG MWD rev2 + HRGM	04_Premier MWD <8-3/4"> (1428'-6212')	State of WV DNR C BRK 5H AWB	1/29/2021
6212.00	23093.00	BH AutoTrak Curve/eXpress (2019) (HRGM, Short spacing)	05_BH AT Curve <8-1/2"> (6278'-23068')	State of WV DNR C BRK 5H AWB	1/29/2021

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Slot	Slot 5H		

COMMENTS

Wellpath general comments
 API: 47-009-00326-0000
 BH Job #: 110725952
 Rig: SDC 40
 Duration: 02/05/2021 - 02/11/2021

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