

# SWN PRODUCTION COMPANY, LLC

Location: Marshall County, WV Slot: Slot #210  
 Field: Marshall Well: Shawn Harlan MSH 210H  
 Facility: Shawn Harlan MSH Pad Wellbore: Shawn Harlan MSH 210H PWB

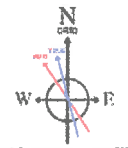


Location Information					
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	
Shawn Harlan MSH Pad	1746333.890	14430025.540	39°44'1.6940"N	80°37'23.7086"W	
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude
Slot #210	35.91	-28.30	1746305.600	14430061.440	39°44'2.0501"N
SDC 46 (RKB) to Mud line (At Slot: Slot #210)					26ft
Mean Sea Level to Mud line (At Slot: Slot #210)					-1391.3ft
SDC 46 (RKB) to Mean Sea Level					1417.3ft

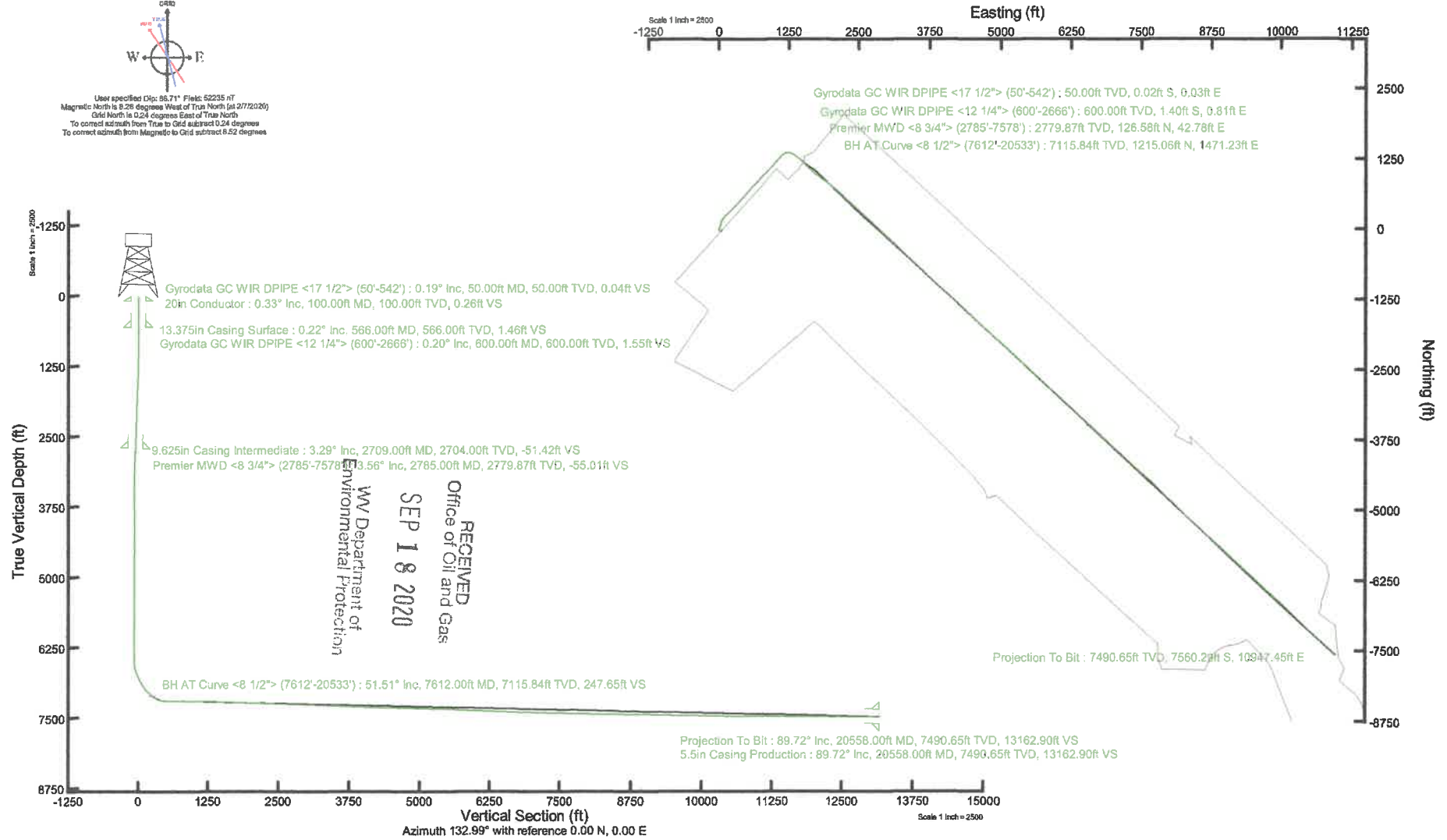
  

Comments
API: 47-051-02274-0000
BH Job #: 110238837A
Rig: SDC 46
Duration: 02/09/2020 - 02/12/2020

Plot reference wellpath is Shawn Harlan MSH 210H PWB Rev A.G	Grid System: NAD83 / UTM Zone 17 North, US feet
True vertical depths are referenced to SDC 46 (RKB)	North Reference: Grid north
Reference wellpath measured depths are referenced to SDC 46 (RKB)	Scale: True distance
SDC 46 (RKB) to Mean Sea Level: 1417.3 feet	Coordinates are in feet referenced to Slot
Mean Sea Level to Mud line (At Slot: Slot #210): -1391.3 feet	Depths are in feet:
Offset wellpath MDs are referenced to each path's default MD datum	Created by: atarjan on 2020-02-16; Database: WA_MPL_EASTERNUS_Data



User specified Dip: 86.71° Field: 52235 nT  
 Magnetic North is 8.26 degrees West of True North (at 2/7/2020)  
 Grid North is 0.24 degrees East of True North  
 To correct azimuth from True to Grid subtract 0.24 degrees  
 To correct azimuth from Magnetic to Grid subtract 6.52 degrees



REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	Shawn Harlan MSH 210H
Field	Marshall	API/Legal	
Facility	Shawn Harlan MSH Pad	Wellbore	Shawn Harlan MSH 210H AWB
Slot	Slot #210		

REPORT SETUP INFORMATION			
Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Atenjen
Scale	0.999613	Report Generated	2/18/2020 at 3:03:20 PM
Convergence at slot	0.24° 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	35.91	-28.30	1746305.60	14430061.44	39°44'2.0501"N	80°37'24.0689"W
Facility Reference Pt			1746333.89	14430025.54	39°44'1.6940"N	80°37'23.7086"W
Field Reference Pt			0.00	0.00	0°00'0.0000"	85°29'19.4780"W

WELLPATH DATUM			
Calculation method	Minimum curvature	SDC 46 (RKB) to Facility Vertical Datum	1417.30ft
Horizontal Reference Pt	Slot	SDC 46 (RKB) to Mean Sea Level	1417.30ft
Vertical Reference Pt	SDC 46 (RKB)	SDC 46 (RKB) to Mud Line at Slot (Slot #210)	26.00ft
MD Reference Pt	SDC 46 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	132.99°

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Field	Marshall	API/Legal	
Facility	Shawn Harlan MSH Pad	Wellbore	Shawn Harlan MSH 210H AWB
Slot	Slot #210		

WELLPATH DATA (238 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	122.510	0.00	0.00	0.00	0.00	1746305.60	14430061.44	39°44'2.0501"N	80°37'24.0689"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	122.510	26.00	0.00	0.00	0.00	1746305.60	14430061.44	39°44'2.0501"N	80°37'24.0689"W	0.00	0.000	0.00	0.00	0.00
50.00	0.190	122.510	50.00	0.04	-0.02	0.03	1746305.63	14430061.42	39°44'2.0499"N	80°37'24.0685"W	0.04	122.510	0.79	0.79	0.00
100.00	0.330	115.670	100.00	0.26	-0.13	0.23	1746305.83	14430061.31	39°44'2.0488"N	80°37'24.0659"W	0.27	118.817	0.29	0.28	-13.68
150.00	0.160	107.890	150.00	0.46	-0.21	0.43	1746306.03	14430061.23	39°44'2.0480"N	80°37'24.0634"W	0.48	116.287	0.35	-0.34	-15.56
200.00	0.100	130.230	200.00	0.57	-0.26	0.53	1746306.13	14430061.18	39°44'2.0475"N	80°37'24.0621"W	0.59	116.318	0.15	-0.12	44.68
250.00	0.120	148.870	250.00	0.66	-0.33	0.59	1746306.19	14430061.11	39°44'2.0467"N	80°37'24.0614"W	0.68	119.587	0.08	0.04	37.28
300.00	0.130	141.700	300.00	0.77	-0.42	0.65	1746306.25	14430061.02	39°44'2.0459"N	80°37'24.0606"W	0.78	123.050	0.04	0.02	-14.34
350.00	0.150	159.830	350.00	0.88	-0.53	0.71	1746306.31	14430060.91	39°44'2.0448"N	80°37'24.0598"W	0.89	126.761	0.10	0.04	36.26
400.00	0.210	166.940	400.00	1.01	-0.68	0.75	1746306.35	14430060.76	39°44'2.0433"N	80°37'24.0593"W	1.01	132.122	0.13	0.12	14.22
450.00	0.160	168.940	450.00	1.15	-0.84	0.79	1746306.39	14430060.60	39°44'2.0418"N	80°37'24.0589"W	1.15	136.819	0.10	-0.10	4.00
500.00	0.240	165.070	500.00	1.29	-1.01	0.83	1746306.43	14430060.43	39°44'2.0401"N	80°37'24.0584"W	1.30	140.630	0.16	0.16	-7.74
542.00	0.260	198.520	542.00	1.41	-1.18	0.82	1746306.42	14430060.26	39°44'2.0383"N	80°37'24.0585"W	1.44	145.296	0.35	0.05	79.64
600.00	0.200	161.170	600.00	1.55	-1.40	0.81	1746306.41	14430060.04	39°44'2.0362"N	80°37'24.0586"W	1.62	150.004	0.27	-0.10	-64.40
650.00	0.290	166.220	650.00	1.73	-1.61	0.87	1746306.47	14430059.83	39°44'2.0341"N	80°37'24.0579"W	1.83	151.641	0.18	0.18	10.10
673.00	0.260	194.660	673.00	1.81	-1.72	0.87	1746306.47	14430059.72	39°44'2.0331"N	80°37'24.0579"W	1.92	153.137	0.60	-0.13	123.65
765.00	0.410	185.120	764.99	2.11	-2.25	0.79	1746306.39	14430059.19	39°44'2.0278"N	80°37'24.0589"W	2.38	160.686	0.17	0.16	-10.37
857.00	0.810	40.450	856.99	2.28	-2.08	1.18	1746306.78	14430059.36	39°44'2.0295"N	80°37'24.0539"W	2.39	150.430	1.27	0.43	-157.25
947.00	3.040	24.430	946.94	1.49	0.58	2.58	1746308.18	14430062.02	39°44'2.0557"N	80°37'24.0358"W	2.64	77.376	2.52	2.48	-17.80
1037.00	4.680	21.250	1036.73	-0.63	6.17	4.90	1746310.50	14430067.61	39°44'2.1109"N	80°37'24.0059"W	7.88	38.429	1.84	1.82	-3.53
1127.00	5.530	19.550	1126.37	-3.71	13.68	7.68	1746313.28	14430075.12	39°44'2.1850"N	80°37'23.9699"W	15.69	29.306	0.96	0.94	-1.89
1218.00	5.420	25.330	1218.96	-6.76	21.70	10.99	1746316.58	14430083.13	39°44'2.2641"N	80°37'23.9271"W	24.32	26.853	0.62	-0.12	6.35
1308.00	5.530	30.950	1306.55	-8.95	29.26	15.03	1746320.63	14430090.69	39°44'2.3386"N	80°37'23.8749"W	32.90	27.196	0.61	0.12	6.24
1399.00	4.940	27.250	1397.17	-10.93	36.50	19.08	1746324.68	14430097.93	39°44'2.4100"N	80°37'23.8227"W	41.19	27.600	0.75	-0.65	-4.07
1488.00	3.600	10.740	1485.92	-13.46	42.66	21.36	1746326.95	14430104.08	39°44'2.4707"N	80°37'23.7932"W	47.70	26.599	2.03	-1.51	-18.55
1579.00	3.680	356.070	1576.74	-17.12	48.38	21.69	1746327.28	14430109.80	39°44'2.5273"N	80°37'23.7886"W	53.02	24.151	1.02	0.09	-16.12
1669.00	4.300	1.520	1666.52	-21.46	54.63	21.58	1746327.17	14430116.05	39°44'2.5891"N	80°37'23.7897"W	58.74	21.557	0.81	0.69	6.06
1778.00	4.990	23.810	1775.17	-25.73	63.05	23.60	1746329.20	14430124.47	39°44'2.6722"N	80°37'23.7634"W	67.33	20.524	1.76	0.63	20.45
1869.00	4.950	29.780	1865.83	-27.93	70.08	27.15	1746332.74	14430131.49	39°44'2.7415"N	80°37'23.7176"W	75.16	21.179	0.57	-0.04	6.56
1959.00	4.170	23.450	1955.54	-29.91	76.45	30.38	1746335.97	14430137.86	39°44'2.8044"N	80°37'23.6759"W	82.27	21.673	1.03	-0.87	-7.03

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Field	Marshall	API/Legal	
Facility	Shawn Harlan MSH Pad	Wellbore	Shawn Harlan MSH 210H AWB
Slot	Slot #210		

WELLPATH DATA (238 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 Dst [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
2050.00	4.330	16.840	2046.30	-32.53	82.78	32.70	1746338.28	14430144.18	39°44'2.8668"N	80°37'23.6459"W	89.00	21.553	0.57	0.18	-7.26
2140.00	3.430	26.820	2136.09	-34.77	88.43	34.89	1746340.48	14430149.84	39°44'2.9226"N	80°37'23.6175"W	95.07	21.534	1.25	-1.00	11.09
2213.00	3.830	22.340	2208.94	-36.24	92.64	36.81	1746342.39	14430154.04	39°44'2.9640"N	80°37'23.5928"W	99.68	21.669	0.67	0.55	-6.14
2312.00	4.030	13.850	2307.71	-39.10	99.07	38.90	1746344.48	14430160.47	39°44'3.0276"N	80°37'23.5657"W	106.43	21.435	0.62	0.20	-8.58
2412.00	3.670	10.890	2407.48	-42.51	105.63	40.34	1746345.93	14430167.03	39°44'3.0923"N	80°37'23.5468"W	113.07	20.903	0.41	-0.36	-2.96
2502.00	3.250	17.940	2497.32	-45.13	110.88	41.67	1746347.26	14430172.28	39°44'3.1442"N	80°37'23.5295"W	118.45	20.597	0.66	-0.47	7.83
2592.00	3.100	12.400	2587.18	-47.44	115.69	42.98	1746348.56	14430177.08	39°44'3.1916"N	80°37'23.5125"W	123.41	20.381	0.38	-0.17	-6.16
2666.00	3.200	3.780	2661.07	-49.77	119.70	43.55	1746349.13	14430181.09	39°44'3.2312"N	80°37'23.5051"W	127.38	19.991	0.65	0.14	-11.65
2785.00	3.560	344.590	2779.87	-55.01	126.58	42.78	1746348.37	14430187.97	39°44'3.2992"N	80°37'23.5145"W	133.61	18.675	0.99	0.30	-16.13
2876.00	4.190	358.290	2870.66	-59.76	132.62	41.93	1746347.52	14430194.01	39°44'3.3590"N	80°37'23.5250"W	139.10	17.546	1.23	0.69	15.05
2967.00	5.650	22.730	2961.33	-63.65	140.08	43.57	1746349.15	14430201.47	39°44'3.4326"N	80°37'23.5037"W	146.70	17.276	2.77	1.60	26.86
3057.00	7.940	31.740	3050.70	-66.40	149.45	48.55	1746354.13	14430210.84	39°44'3.5251"N	80°37'23.4394"W	157.14	17.996	2.80	2.54	10.01
3148.00	10.570	32.830	3140.51	-69.10	161.81	56.38	1746361.96	14430223.19	39°44'3.6469"N	80°37'23.3385"W	171.36	19.210	2.90	2.89	1.20
3238.00	12.980	35.490	3228.61	-71.87	176.98	66.73	1746372.30	14430238.35	39°44'3.7964"N	80°37'23.2053"W	189.14	20.657	2.74	2.68	2.96
3329.00	15.300	36.650	3316.84	-74.53	194.94	79.83	1746385.40	14430256.30	39°44'3.9733"N	80°37'23.0366"W	210.65	22.269	2.57	2.55	1.27
3419.00	16.130	40.670	3403.48	-76.35	213.95	95.06	1746400.63	14430275.31	39°44'4.1605"N	80°37'22.8406"W	234.12	23.957	1.52	0.92	4.47
3510.00	17.100	44.510	3490.68	-76.51	233.08	112.68	1746418.24	14430294.43	39°44'4.3488"N	80°37'22.6140"W	258.89	25.801	1.61	1.07	4.22
3600.00	18.970	46.150	3576.26	-75.35	252.65	132.51	1746438.06	14430313.99	39°44'4.5414"N	80°37'22.3592"W	285.29	27.676	2.15	2.08	1.82
3690.00	21.430	46.270	3660.72	-73.60	274.15	154.94	1746460.48	14430335.49	39°44'4.7530"N	80°37'22.0709"W	314.91	29.474	2.73	2.73	0.13
3781.00	23.550	45.260	3744.79	-71.93	298.44	179.87	1746485.40	14430359.77	39°44'4.9920"N	80°37'21.7505"W	348.46	31.077	2.37	2.33	-1.11
3871.00	26.040	44.550	3826.49	-70.68	325.18	206.50	1746512.02	14430386.50	39°44'5.2552"N	80°37'21.4081"W	385.21	32.417	2.79	2.77	-0.79
3962.00	28.290	44.320	3907.44	-69.64	354.85	235.59	1746541.10	14430416.15	39°44'5.5471"N	80°37'21.0343"W	425.93	33.581	2.48	2.47	-0.25
4052.00	29.470	43.470	3986.25	-68.95	386.17	265.72	1746571.22	14430447.46	39°44'5.8555"N	80°37'20.6469"W	468.76	34.531	1.39	1.31	-0.94
4143.00	29.700	44.210	4065.39	-68.29	418.58	296.84	1746602.32	14430479.86	39°44'6.1744"N	80°37'20.2468"W	513.15	35.343	0.47	0.25	0.81
4233.00	29.570	42.210	4143.62	-68.11	451.01	327.31	1746632.78	14430512.27	39°44'6.4936"N	80°37'19.8551"W	557.26	35.969	1.11	-0.14	-2.22
4323.00	28.910	42.340	4222.15	-68.66	483.54	356.88	1746662.34	14430544.79	39°44'6.8139"N	80°37'19.4748"W	600.98	36.429	0.74	-0.73	0.14
4413.00	27.370	43.460	4301.51	-68.74	514.64	385.76	1746691.21	14430575.88	39°44'7.1200"N	80°37'19.1034"W	643.17	36.855	1.81	-1.71	1.24
4504.00	26.450	43.760	4382.65	-68.30	544.46	414.17	1746719.61	14430605.69	39°44'7.4136"N	80°37'18.7381"W	684.08	37.260	1.02	-1.01	0.33
4594.00	26.550	42.000	4463.20	-68.38	573.88	441.49	1746746.92	14430635.10	39°44'7.7032"N	80°37'18.3868"W	724.06	37.571	0.88	0.11	-1.96
4684.00	26.600	40.320	4543.69	-69.66	604.19	467.99	1746773.41	14430665.40	39°44'8.0017"N	80°37'18.0460"W	764.24	37.760	0.84	0.06	-1.87

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Slot	Slot #210		

WELLPATH DATA (238 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)
4775.00	26.290	40.580	4625.17	-71.46	635.03	494.28	1746799.69	14430696.23	39°44'8.3053"N	80°37'17.7078"W	804.72	37.896	0.36	-0.34	0.29
4865.00	26.860	40.360	4705.66	-73.23	665.66	520.41	1746825.81	14430726.84	39°44'8.6070"N	80°37'17.3717"W	844.95	38.018	0.64	0.63	-0.24
4955.00	26.640	41.830	4786.03	-74.57	696.19	547.04	1746852.42	14430757.36	39°44'8.9075"N	80°37'17.0292"W	885.40	38.159	0.77	-0.24	1.63
5045.00	26.860	43.490	4866.40	-74.80	725.98	574.49	1746879.86	14430787.13	39°44'9.2007"N	80°37'16.6762"W	925.78	38.356	0.87	0.24	1.84
5136.00	27.720	44.120	4947.27	-74.20	756.08	603.37	1746908.73	14430817.23	39°44'9.4971"N	80°37'16.3049"W	967.32	38.590	1.00	0.95	0.69
5226.00	28.680	44.260	5026.59	-73.31	786.58	633.01	1746938.37	14430847.71	39°44'9.7972"N	80°37'15.9238"W	1009.66	38.826	1.07	1.07	0.16
5317.00	28.970	43.210	5106.31	-72.74	818.28	663.34	1746968.68	14430879.40	39°44'10.1092"N	80°37'15.5338"W	1053.38	39.030	0.64	0.32	-1.15
5408.00	27.320	42.090	5186.55	-72.99	849.84	692.43	1746997.76	14430910.95	39°44'10.4199"N	80°37'15.1598"W	1096.22	39.172	1.90	-1.81	-1.23
5498.00	26.550	41.160	5266.78	-73.95	880.31	719.51	1747024.83	14430941.41	39°44'10.7199"N	80°37'14.8115"W	1136.95	39.260	0.98	-0.86	-1.03
5588.00	26.290	41.020	5347.38	-75.28	910.49	745.83	1747051.14	14430971.58	39°44'11.0171"N	80°37'14.4729"W	1176.97	39.323	0.30	-0.29	-0.16
5678.00	26.800	42.910	5427.90	-76.00	940.39	772.73	1747078.03	14431001.47	39°44'11.3115"N	80°37'14.1270"W	1217.15	39.410	1.10	0.57	2.10
5769.00	27.030	46.500	5509.05	-74.76	969.65	801.70	1747106.99	14431030.72	39°44'11.5994"N	80°37'13.7546"W	1258.15	39.584	1.80	0.25	3.95
5860.00	28.250	45.510	5589.66	-72.55	998.98	832.06	1747137.34	14431060.03	39°44'11.8880"N	80°37'13.3644"W	1300.11	39.791	1.43	1.34	-1.09
5950.00	27.350	43.160	5669.27	-71.55	1028.99	861.40	1747166.66	14431090.03	39°44'12.1833"N	80°37'12.9872"W	1341.95	39.934	1.58	-1.00	-2.61
6040.00	27.390	42.650	5749.20	-71.61	1059.30	889.57	1747194.82	14431120.32	39°44'12.4817"N	80°37'12.6250"W	1383.27	40.023	0.26	0.04	-0.57
6131.00	27.520	43.830	5829.95	-71.42	1089.86	918.31	1747223.55	14431150.87	39°44'12.7825"N	80°37'12.2554"W	1425.16	40.117	0.61	0.14	1.30
6221.00	27.250	41.390	5909.87	-71.70	1120.32	946.33	1747251.56	14431181.32	39°44'13.0823"N	80°37'11.8951"W	1466.51	40.188	1.28	-0.30	-2.71
6312.00	26.070	41.850	5991.19	-72.68	1150.84	973.45	1747278.67	14431211.84	39°44'13.3829"N	80°37'11.5463"W	1507.33	40.226	1.32	-1.30	0.51
6403.00	26.100	41.450	6072.92	-73.61	1180.74	1000.04	1747305.25	14431241.72	39°44'13.6772"N	80°37'11.2043"W	1547.33	40.263	0.20	0.03	-0.44
6493.00	25.860	42.470	6153.83	-74.32	1210.06	1026.40	1747331.60	14431271.03	39°44'13.9659"N	80°37'10.8653"W	1586.74	40.305	0.56	-0.27	1.13
6584.00	26.430	41.780	6235.52	-74.93	1239.80	1053.29	1747358.48	14431300.76	39°44'14.2587"N	80°37'10.5194"W	1626.82	40.350	0.71	0.63	-0.76
6674.00	26.410	40.960	6316.12	-76.06	1269.85	1079.76	1747384.94	14431330.80	39°44'14.5545"N	80°37'10.1790"W	1666.85	40.375	0.41	-0.02	-0.91
6765.00	25.430	42.540	6397.96	-76.93	1299.53	1106.24	1747411.41	14431360.47	39°44'14.8468"N	80°37'9.8385"W	1706.62	40.406	1.32	-1.08	1.74
6855.00	22.960	47.030	6480.06	-75.85	1325.74	1132.15	1747437.31	14431386.66	39°44'15.1047"N	80°37'9.5053"W	1743.37	40.497	3.42	-2.74	4.99
6946.00	21.890	63.760	6564.26	-68.57	1345.36	1160.38	1747465.53	14431406.28	39°44'15.2974"N	80°37'9.1429"W	1776.65	40.778	7.09	-1.18	18.38
7036.00	25.570	75.080	6646.68	-52.29	1357.79	1194.23	1747499.36	14431418.70	39°44'15.4188"N	80°37'8.7089"W	1808.25	41.333	6.49	4.09	12.58
7126.00	29.170	91.290	6726.71	-25.55	1362.30	1234.99	1747540.11	14431423.21	39°44'15.4617"N	80°37'8.1869"W	1838.77	42.194	9.16	4.00	18.01
7217.00	28.470	110.540	6806.61	11.13	1354.18	1277.57	1747582.67	14431415.09	39°44'15.3796"N	80°37'7.6423"W	1861.71	43.333	10.19	-0.77	21.15
7307.00	28.130	122.910	6885.92	51.88	1335.11	1315.50	1747620.59	14431396.03	39°44'15.1895"N	80°37'7.1578"W	1874.31	44.576	6.52	-0.38	13.74
7397.00	35.120	126.390	6962.51	98.55	1308.18	1354.20	1747659.28	14431369.11	39°44'14.9218"N	80°37'6.6638"W	1882.87	45.990	8.02	7.77	3.87

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	Shawn Harlan MSH 210H
Field	Marshall	API/Legal	
Facility	Shawn Harlan MSH Pad	Wellbore	Shawn Harlan MSH 210H AWB
Slot	Slot #210		

WELLPATH DATA (238 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]	
7488.00	44.560	125.290	7032.31	156.32	1274.13	1401.44	1747706.50	14431335.08	39°44'14.5833"N	80°37'6.0610"W	1894.06	47.724	10.40	10.37	-1.21	
7578.00	48.830	132.030	7094.06	221.55	1233.17	1452.43	1747757.47	14431294.13	39°44'14.1764"N	80°37'5.4106"W	1905.32	49.667	7.22	4.74	7.49	
7612.00	51.510	135.770	7115.84	247.65	1215.06	1471.23	1747776.25	14431276.03	39°44'13.9966"N	80°37'5.1710"W	1908.11	50.447	11.55	7.88	11.00	
7653.00	55.490	137.720	7140.22	280.52	1191.05	1493.79	1747798.81	14431252.03	39°44'13.7584"N	80°37'4.8834"W	1910.50	51.433	10.43	9.71	4.76	
7743.00	69.910	135.510	7181.40	360.13	1133.16	1548.65	1747853.65	14431194.16	39°44'13.1839"N	80°37'4.1844"W	1918.95	53.807	16.17	16.02	-2.46	
7833.00	83.960	131.230	7201.70	447.56	1073.19	1612.27	1747917.24	14431134.21	39°44'12.5886"N	80°37'3.3733"W	1936.79	56.351	16.28	15.61	-4.76	
7923.00	90.490	128.130	7206.06	537.24	1015.83	1681.41	1747986.36	14431076.88	39°44'12.0189"N	80°37'2.4913"W	1964.45	58.862	8.03	7.26	-3.44	
8014.00	90.370	128.440	7205.37	627.93	959.45	1752.84	1748057.76	14431020.52	39°44'11.4587"N	80°37'1.5801"W	1998.25	61.305	0.37	-0.13	0.34	
8104.00	89.380	126.430	7205.57	717.50	904.75	1824.30	1748129.19	14430965.84	39°44'10.9150"N	80°37'0.6684"W	2036.33	63.621	2.49	-1.10	-2.23	
8194.00	88.770	125.410	7207.02	806.81	851.96	1897.17	1748202.04	14430913.07	39°44'10.3902"N	80°36'59.7385"W	2079.69	65.817	1.32	-0.68	-1.13	
8284.00	89.350	127.110	7208.50	896.17	798.74	1969.73	1748274.57	14430859.87	39°44'9.8612"N	80°36'58.8126"W	2125.52	67.927	2.00	0.64	1.89	
8375.00	90.150	129.720	7208.90	986.87	742.20	2041.03	1748345.83	14430803.35	39°44'9.2994"N	80°36'57.9031"W	2171.78	70.017	3.00	0.88	2.87	
8465.00	89.910	131.050	7208.85	1076.78	683.89	2109.58	1748414.36	14430745.06	39°44'8.7202"N	80°36'57.0288"W	2217.66	72.038	1.50	-0.27	1.48	
8556.00	89.020	132.540	7209.70	1167.75	623.25	2177.42	1748482.17	14430684.44	39°44'8.1181"N	80°36'56.1638"W	2264.86	74.027	1.91	-0.98	1.64	
8646.00	89.170	133.570	7211.12	1257.74	561.81	2243.17	1748547.90	14430623.03	39°44'7.5081"N	80°36'55.3255"W	2312.45	75.939	1.16	0.17	1.14	
8737.00	88.550	130.700	7212.93	1348.70	500.78	2310.63	1748615.33	14430562.02	39°44'6.9021"N	80°36'54.4654"W	2364.28	77.772	3.23	-0.68	-3.15	
8827.00	88.060	132.020	7215.59	1438.62	441.34	2378.15	1748682.83	14430502.60	39°44'6.3118"N	80°36'53.6044"W	2418.76	79.487	1.56	-0.54	1.47	
8917.00	88.610	131.160	7218.21	1528.55	381.62	2445.43	1748750.08	14430442.91	39°44'5.7188"N	80°36'52.7464"W	2475.03	81.130	1.13	0.61	-0.96	
9008.00	87.970	133.500	7220.93	1619.50	320.37	2512.67	1748817.30	14430381.69	39°44'5.1106"N	80°36'51.8891"W	2533.02	82.734	2.66	-0.70	2.57	
9098.00	87.850	133.500	7224.21	1709.44	258.46	2577.91	1748882.51	14430319.80	39°44'4.4960"N	80°36'51.0574"W	2590.84	84.275	0.13	-0.13	0.00	
9189.00	88.490	133.730	7227.11	1800.38	195.72	2643.76	1748948.34	14430257.09	39°44'3.8732"N	80°36'50.2180"W	2651.00	85.766	0.75	0.70	0.25	
9279.00	87.480	133.770	7230.28	1890.32	133.53	2708.74	1749013.28	14430194.91	39°44'3.2557"N	80°36'49.3898"W	2712.02	87.178	1.12	-1.12	0.04	
9370.00	88.030	133.210	7233.84	1981.25	70.95	2774.70	1749079.22	14430132.36	39°44'2.6345"N	80°36'48.5489"W	2775.61	88.535	0.86	0.60	-0.62	
9460.00	88.400	133.490	7236.65	2071.20	9.19	2840.12	1749144.61	14430070.63	39°44'2.0214"N	80°36'47.7150"W	2840.13	89.815	0.52	0.41	0.31	
9550.00	88.000	133.380	7239.47	2161.15	-52.65	2905.44	1749209.91	14430008.81	39°44'1.4074"N	80°36'46.8823"W	2905.92	91.038	0.46	-0.44	-0.12	
9640.00	87.970	133.980	7242.64	2251.09	-114.77	2970.49	1749274.93	14429946.71	39°44'0.7907"N	80°36'46.0531"W	2972.70	92.213	0.67	-0.03	0.67	
9731.00	88.370	134.540	7245.54	2342.02	-178.25	3035.63	1749340.05	14429883.26	39°44'0.1606"N	80°36'45.2228"W	3040.86	93.360	0.76	0.44	0.62	
9821.00	87.440	132.470	7248.83	2431.95	-240.16	3100.86	1749405.25	14429821.37	39°43'59.5460"N	80°36'44.3913"W	3110.14	94.429	2.52	-1.03	-2.30	
9911.00	88.430	132.890	7252.08	2521.89	-301.13	3166.98	1749471.34	14429760.43	39°43'58.9406"N	80°36'43.5484"W	3181.26	95.432	1.19	1.10	0.47	
10001.00	87.750	134.410	7255.08	2611.83	-363.22	3232.06	1749536.40	14429698.36	39°43'58.3242"N	80°36'42.7188"W	3252.40	96.412	1.85	-0.76	1.69	





# Actual Wellpath Report

Shawn Harlan MSH 210H AWP Proj: 20558'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	Shawn Harlan MSH 210H
Field	Marshall	API/Legal	
Facility	Shawn Harlan MSH Pad	Wellbore	Shawn Harlan MSH 210H AWB
Slot	Slot #210		

WELLPATH DATA (238 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]	Buidl Rate [°/100ft]	Turn Rate [°/100ft]	
10092.00	88.180	132.590	7258.31	2702.77	-425.82	3298.02	1749602.34	14429635.79	39°43'57.7028"N	80°36'41.8779"W	3325.40	97.357	2.05	0.47	-2.00	
10182.00	88.800	134.580	7260.68	2792.72	-487.84	3363.19	1749667.48	14429573.79	39°43'57.0870"N	80°36'41.0473"W	3398.39	98.253	2.32	0.69	2.21	
10273.00	87.010	133.210	7264.01	2883.65	-550.89	3428.72	1749732.98	14429510.77	39°43'56.4611"N	80°36'40.2120"W	3472.69	99.128	2.48	-1.97	-1.51	
10363.00	88.150	131.280	7267.81	2973.55	-611.34	3495.28	1749799.52	14429450.34	39°43'55.8609"N	80°36'39.3634"W	3548.34	99.921	2.49	1.27	-2.14	
10454.00	88.180	134.140	7270.72	3064.50	-673.02	3562.10	1749866.32	14429388.68	39°43'55.2484"N	80°36'38.5115"W	3625.13	100.699	3.14	0.03	3.14	
10544.00	87.910	133.490	7273.79	3154.43	-735.30	3627.01	1749931.20	14429326.43	39°43'54.6302"N	80°36'37.6842"W	3700.79	101.460	0.78	-0.30	-0.72	
10634.00	88.370	133.930	7276.71	3244.38	-797.45	3692.03	1749996.19	14429264.30	39°43'54.0131"N	80°36'36.8555"W	3777.17	102.188	0.71	0.51	0.49	
10725.00	87.480	134.040	7280.01	3335.30	-860.61	3757.46	1750061.60	14429201.17	39°43'53.3862"N	80°36'36.0215"W	3854.76	102.900	0.99	-0.98	0.12	
10815.00	87.410	133.200	7284.02	3425.21	-922.63	3822.55	1750126.66	14429139.16	39°43'52.7704"N	80°36'35.1918"W	3932.32	103.570	0.94	-0.08	-0.93	
10906.00	88.090	132.780	7287.59	3516.14	-984.64	3889.06	1750193.15	14429077.19	39°43'52.1548"N	80°36'34.3439"W	4011.77	104.208	0.88	0.75	-0.46	
10996.00	88.090	134.220	7290.59	3606.08	-1046.55	3954.31	1750258.37	14429015.30	39°43'51.5401"N	80°36'33.5123"W	4090.46	104.824	1.60	0.00	1.60	
11086.00	87.320	130.220	7294.20	3695.98	-1106.97	4020.89	1750324.93	14428954.90	39°43'50.9401"N	80°36'32.6634"W	4170.49	105.392	4.52	-0.86	-4.44	
11177.00	87.690	133.760	7298.16	3786.87	-1167.78	4088.45	1750392.46	14428894.11	39°43'50.3362"N	80°36'31.8021"W	4251.96	105.941	3.91	0.41	3.89	
11267.00	88.030	132.620	7301.52	3876.80	-1229.33	4154.02	1750458.01	14428832.58	39°43'49.7251"N	80°36'30.9663"W	4332.11	106.486	1.32	0.38	-1.27	
11357.00	88.060	133.710	7304.59	3966.75	-1290.87	4219.63	1750523.59	14428771.08	39°43'49.1141"N	80°36'30.1300"W	4412.66	107.010	1.21	0.03	1.21	
11448.00	88.060	133.140	7307.67	4057.69	-1353.38	4285.68	1750589.61	14428708.58	39°43'48.4934"N	80°36'29.2881"W	4494.30	107.526	0.63	0.00	-0.63	
11538.00	88.250	135.560	7310.57	4147.61	-1416.26	4350.00	1750653.91	14428645.73	39°43'47.8693"N	80°36'28.4683"W	4574.75	108.034	2.70	0.21	2.69	
11629.00	89.380	131.950	7312.45	4238.57	-1479.17	4415.71	1750719.59	14428582.85	39°43'47.2447"N	80°36'27.6309"W	4656.87	108.520	4.16	1.24	-3.97	
11719.00	87.810	133.860	7314.66	4328.54	-1540.42	4481.60	1750785.46	14428521.62	39°43'46.6366"N	80°36'26.7909"W	4738.95	108.969	2.75	-1.74	2.12	
11809.00	88.220	132.710	7317.78	4418.48	-1602.08	4547.08	1750850.91	14428459.98	39°43'46.0243"N	80°36'25.9563"W	4821.06	109.409	1.36	0.46	-1.28	
11899.00	88.370	133.820	7320.46	4508.44	-1663.74	4612.59	1750916.39	14428398.35	39°43'45.4122"N	80°36'25.1213"W	4903.47	109.834	1.24	0.17	1.23	
11990.00	87.970	132.530	7323.36	4599.39	-1725.97	4678.91	1750982.69	14428336.14	39°43'44.7943"N	80°36'24.2759"W	4987.11	110.248	1.48	-0.44	-1.42	
12080.00	88.580	132.330	7326.07	4689.34	-1786.67	4745.31	1751049.07	14428275.47	39°43'44.1916"N	80°36'23.4295"W	5070.52	110.632	0.71	0.68	-0.22	
12170.00	88.250	133.210	7328.56	4779.31	-1847.76	4811.36	1751115.08	14428214.40	39°43'43.5850"N	80°36'22.5876"W	5153.96	111.009	1.04	-0.37	0.98	
12260.00	88.400	134.130	7331.19	4869.26	-1909.87	4876.43	1751180.13	14428152.31	39°43'42.9682"N	80°36'21.7583"W	5237.09	111.388	1.04	0.17	1.02	
12350.00	88.400	133.690	7333.71	4959.22	-1971.53	4941.94	1751245.62	14428090.68	39°43'42.3561"N	80°36'20.9232"W	5320.69	111.749	1.93	0.00	-1.93	
12441.00	88.280	132.630	7336.34	5050.18	-2032.99	5008.99	1751312.64	14428029.24	39°43'41.7458"N	80°36'20.0685"W	5405.84	112.091	0.29	-0.13	0.26	
12530.00	87.910	133.590	7339.30	5139.13	-2093.78	5073.93	1751377.56	14427968.48	39°43'41.1422"N	80°36'19.2408"W	5488.96	112.424	1.16	-0.42	1.08	
12621.00	89.350	132.410	7341.48	5230.10	-2155.82	5140.46	1751444.06	14427906.46	39°43'40.5262"N	80°36'18.3928"W	5574.22	112.752	2.05	1.58	-1.30	
12711.00	87.410	131.870	7344.02	5320.05	-2216.18	5207.17	1751510.74	14427846.12	39°43'39.9267"N	80°36'17.5424"W	5659.16	113.055	2.24	-2.16	-0.60	

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Slot	Slot #210		

### WELLPATH DATA (238 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]
12801.00	88.680	133.100	7347.09	5409.99	-2276.93	5273.50	1751577.05	14427785.40	39°43'39.3235"N	80°36'16.6969"W	5744.06	113.353	1.96	1.41	1.37
12892.00	88.490	133.180	7349.34	5500.96	-2339.13	5339.88	1751643.40	14427723.22	39°43'38.7059"N	80°36'15.8508"W	5829.74	113.656	0.23	-0.21	0.09
12982.00	86.060	130.810	7353.62	5590.83	-2399.27	5406.68	1751710.18	14427663.10	39°43'38.1086"N	80°36'14.9992"W	5915.12	113.930	3.77	-2.70	-2.63
13073.00	87.970	132.610	7358.36	5681.68	-2459.73	5474.51	1751777.98	14427602.66	39°43'37.5081"N	80°36'14.1345"W	6001.72	114.195	2.88	2.10	1.98
13163.00	88.740	133.360	7360.94	5771.64	-2521.07	5540.32	1751843.77	14427541.35	39°43'36.8991"N	80°36'13.2957"W	6086.95	114.467	1.19	0.86	0.83
13253.00	87.690	133.910	7363.74	5861.59	-2583.14	5605.43	1751908.85	14427479.30	39°43'36.2828"N	80°36'12.4659"W	6171.99	114.742	1.32	-1.17	0.61
13344.00	87.690	131.820	7367.41	5952.51	-2645.00	5672.07	1751975.46	14427417.47	39°43'35.6686"N	80°36'11.6165"W	6258.46	115.001	2.29	0.00	-2.30
13434.00	88.370	133.160	7370.50	6042.45	-2705.75	5738.39	1752041.76	14427356.74	39°43'35.0653"N	80°36'10.7711"W	6344.31	115.245	1.67	0.76	1.49
13524.00	87.410	133.730	7373.82	6132.39	-2767.60	5803.69	1752107.03	14427294.92	39°43'34.4512"N	80°36'9.9389"W	6429.81	115.495	1.24	-1.07	0.63
13615.00	88.490	132.010	7377.07	6223.32	-2829.46	5870.34	1752173.66	14427233.08	39°43'33.8369"N	80°36'9.0894"W	6516.65	115.734	2.23	1.19	-1.89
13705.00	86.920	131.530	7380.68	6313.23	-2889.37	5937.41	1752240.70	14427173.20	39°43'33.2419"N	80°36'8.2344"W	6603.12	115.949	1.82	-1.74	-0.53
13795.00	87.940	132.940	7384.71	6403.12	-2949.80	6003.97	1752307.24	14427112.79	39°43'32.6418"N	80°36'7.3859"W	6689.47	116.165	1.93	1.13	1.57
13886.00	88.520	133.300	7387.52	6494.08	-3011.97	6070.37	1752373.60	14427050.64	39°43'32.0245"N	80°36'6.5398"W	6776.53	116.390	0.75	0.64	0.40
13976.00	87.450	133.280	7390.69	6584.02	-3073.64	6135.83	1752439.05	14426988.99	39°43'31.4121"N	80°36'5.7054"W	6862.63	116.608	1.19	-1.19	-0.02
14067.00	87.200	133.020	7394.94	6674.92	-3135.81	6202.15	1752505.34	14426926.85	39°43'30.7948"N	80°36'4.8601"W	6949.82	116.821	0.40	-0.27	-0.29
14157.00	87.660	132.160	7398.97	6764.83	-3196.66	6268.34	1752571.50	14426866.03	39°43'30.1906"N	80°36'4.0165"W	7036.39	117.020	1.08	0.51	-0.96
14248.00	88.310	133.870	7402.17	6855.77	-3258.69	6334.84	1752637.97	14426804.01	39°43'29.5745"N	80°36'3.1690"W	7123.85	117.222	2.01	0.71	1.88
14338.00	88.180	133.940	7404.93	6945.71	-3321.08	6399.65	1752702.76	14426741.66	39°43'28.9552"N	80°36'2.3431"W	7210.07	117.427	0.16	-0.14	0.08
14429.00	87.850	132.390	7408.08	7036.66	-3383.29	6465.98	1752769.07	14426679.47	39°43'28.3374"N	80°36'1.4977"W	7297.64	117.621	1.74	-0.36	-1.70
14519.00	88.490	132.030	7410.95	7126.60	-3443.73	6532.61	1752835.67	14426619.05	39°43'27.7372"N	80°36'0.6484"W	7384.73	117.796	0.82	0.71	-0.40
14609.00	88.150	134.020	7413.59	7216.56	-3505.11	6598.37	1752901.41	14426557.70	39°43'27.1277"N	80°35'59.8103"W	7471.57	117.978	2.24	-0.38	2.21
14699.00	88.830	132.880	7415.96	7306.52	-3566.98	6663.69	1752966.69	14426495.85	39°43'26.5134"N	80°35'58.9779"W	7558.31	118.160	1.47	0.76	-1.27
14789.00	88.680	132.950	7417.92	7396.50	-3628.24	6729.58	1753032.57	14426434.61	39°43'25.9050"N	80°35'58.1380"W	7645.36	118.331	0.18	-0.17	0.08
14880.00	88.830	132.670	7419.90	7487.48	-3690.07	6796.33	1753099.28	14426372.81	39°43'25.2910"N	80°35'57.2874"W	7733.48	118.500	0.35	0.16	-0.31
14970.00	88.520	132.660	7421.98	7577.45	-3751.05	6862.49	1753165.42	14426311.85	39°43'24.6855"N	80°35'56.4441"W	7820.75	118.661	0.34	-0.34	-0.01
15060.00	88.520	132.790	7424.30	7667.42	-3812.09	6928.58	1753231.49	14426250.83	39°43'24.0793"N	80°35'55.6018"W	7908.05	118.819	0.14	0.00	0.14
15150.00	89.200	132.520	7426.09	7757.40	-3873.06	6994.76	1753297.64	14426189.89	39°43'23.4738"N	80°35'54.7583"W	7995.45	118.974	0.81	0.76	-0.30
15241.00	88.580	131.780	7427.86	7848.37	-3934.12	7062.21	1753365.06	14426128.85	39°43'22.8674"N	80°35'53.8986"W	8084.07	119.121	1.06	-0.68	-0.81
15331.00	88.770	132.840	7429.94	7938.34	-3994.68	7128.75	1753431.58	14426068.31	39°43'22.2659"N	80°35'53.0505"W	8171.69	119.265	1.20	0.21	1.18
15421.00	88.770	134.550	7431.87	8028.31	-4056.84	7193.80	1753496.61	14426006.18	39°43'21.6488"N	80°35'52.2215"W	8258.86	119.420	1.90	0.00	1.90

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# Actual Wellpath Report

Shawn Harlan MSH 210H AWP Proj: 20558'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	Shawn Harlan MSH 210H
Field	Marshall	API/Legal	
Facility	Shawn Harlan MSH Pad	Wellbore	Shawn Harlan MSH 210H AWB
Slot	Slot #210		

### WELLPATH DATA (238 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]
15511.00	88.550	131.710	7433.97	8118.28	-4118.35	7259.46	1753562.24	14425944.70	39°43'21.0380"N	80°35'51.3848"W	8346.29	119.567	3.16	-0.24	-3.16
15602.00	88.830	133.830	7436.06	8209.25	-4180.12	7326.24	1753628.99	14425882.95	39°43'20.4246"N	80°35'50.5337"W	8434.88	119.708	2.35	0.31	2.33
15692.00	89.140	132.030	7437.65	8299.23	-4241.41	7392.13	1753694.85	14425821.68	39°43'19.8160"N	80°35'49.6940"W	8522.50	119.846	2.03	0.34	-2.00
15783.00	89.850	132.260	7438.45	8390.22	-4302.47	7459.60	1753762.29	14425760.65	39°43'19.2095"N	80°35'48.8341"W	8611.43	119.975	0.82	0.78	0.25
15873.00	89.970	130.680	7438.59	8480.18	-4362.06	7527.03	1753829.70	14425701.07	39°43'18.6175"N	80°35'47.9745"W	8699.64	120.093	1.76	0.13	-1.76
15964.00	89.320	128.940	7439.16	8571.04	-4420.32	7596.93	1753899.57	14425642.84	39°43'18.0387"N	80°35'47.0833"W	8789.35	120.193	2.04	-0.71	-1.91
16054.00	89.110	132.690	7440.39	8660.95	-4479.13	7665.03	1753967.64	14425584.05	39°43'17.4545"N	80°35'46.2153"W	8877.79	120.300	4.17	-0.23	4.17
16145.00	88.890	137.050	7441.98	8751.86	-4543.31	7729.49	1754032.08	14425519.90	39°43'16.8174"N	80°35'45.3939"W	8965.86	120.447	4.80	-0.24	4.79
16235.00	89.110	132.140	7443.55	8841.78	-4606.47	7793.55	1754096.12	14425456.77	39°43'16.1903"N	80°35'44.5778"W	9053.12	120.586	5.46	0.24	-5.46
16325.00	87.910	136.150	7445.89	8931.72	-4669.11	7858.10	1754160.64	14425394.14	39°43'15.5683"N	80°35'43.7553"W	9140.59	120.718	4.65	-1.33	4.46
16415.00	89.880	136.530	7447.63	9021.54	-4734.21	7920.22	1754222.73	14425329.07	39°43'14.9223"N	80°35'42.9641"W	9227.27	120.868	2.23	2.19	0.42
16505.00	89.110	130.180	7448.42	9111.49	-4795.96	7985.62	1754288.11	14425267.35	39°43'14.3091"N	80°35'42.1307"W	9315.12	120.988	7.11	-0.86	-7.06
16595.00	88.180	131.810	7450.55	9201.41	-4854.98	8053.53	1754355.99	14425208.35	39°43'13.7227"N	80°35'41.2651"W	9403.73	121.083	2.08	-1.03	1.81
16697.00	88.860	135.540	7453.19	9303.35	-4925.38	8127.26	1754429.70	14425137.97	39°43'13.0237"N	80°35'40.3255"W	9503.25	121.217	3.72	0.67	3.66
16776.00	88.550	135.080	7454.97	9382.26	-4981.53	8182.81	1754485.22	14425081.85	39°43'12.4663"N	80°35'39.6180"W	9579.87	121.332	0.70	-0.39	-0.58
16866.00	89.350	135.900	7456.62	9472.16	-5045.70	8245.89	1754548.28	14425017.70	39°43'11.8293"N	80°35'38.8144"W	9667.15	121.463	1.27	0.89	0.91
16957.00	89.020	133.700	7457.91	9563.10	-5109.81	8310.45	1754612.81	14424953.62	39°43'11.1928"N	80°35'37.9919"W	9755.70	121.586	2.44	-0.36	-2.42
17047.00	88.590	130.570	7459.79	9653.06	-5170.17	8377.17	1754679.51	14424893.28	39°43'10.5934"N	80°35'37.1416"W	9844.16	121.682	3.51	-0.48	-3.48
17137.00	89.570	133.790	7461.24	9743.02	-5230.59	8443.84	1754746.15	14424832.89	39°43'9.9933"N	80°35'36.2919"W	9932.65	121.776	3.74	1.09	3.58
17228.00	88.920	130.100	7462.44	9833.98	-5291.40	8511.51	1754813.79	14424772.10	39°43'9.3893"N	80°35'35.4294"W	10022.21	121.868	4.12	-0.71	-4.05
17318.00	88.280	134.620	7464.64	9923.93	-5352.00	8577.97	1754880.24	14424711.52	39°43'8.7874"N	80°35'34.5824"W	10110.67	121.961	5.07	-0.71	5.02
17409.00	90.460	135.000	7465.64	10014.87	-5416.13	8642.53	1754944.76	14424647.42	39°43'8.1507"N	80°35'33.7600"W	10199.40	122.075	2.43	2.40	0.42
17499.00	89.050	128.420	7466.02	10104.80	-5475.98	8709.67	1755011.88	14424587.60	39°43'7.5563"N	80°35'32.9042"W	10288.09	122.159	7.48	-1.57	-7.31
17590.00	87.410	131.930	7468.83	10195.62	-5534.64	8779.16	1755081.34	14424528.95	39°43'6.9734"N	80°35'32.0184"W	10378.14	122.229	4.26	-1.80	3.86
17680.00	89.780	134.590	7471.04	10285.58	-5596.29	8844.67	1755146.83	14424467.33	39°43'6.3612"N	80°35'31.1836"W	10466.45	122.323	3.96	2.63	2.96
17770.00	88.340	130.460	7472.52	10375.55	-5657.10	8910.97	1755213.10	14424406.54	39°43'5.7572"N	80°35'30.3387"W	10555.01	122.409	4.86	-1.60	-4.59
17861.00	89.080	133.740	7474.57	10466.50	-5718.09	8978.47	1755280.57	14424345.58	39°43'5.1515"N	80°35'29.4786"W	10644.69	122.492	3.69	0.81	3.60
17951.00	88.950	133.090	7476.11	10556.48	-5779.93	9043.83	1755345.91	14424283.76	39°43'4.5373"N	80°35'28.6457"W	10733.06	122.583	0.74	-0.14	-0.72
18041.00	89.200	132.870	7477.57	10646.47	-5841.28	9109.67	1755411.72	14424222.43	39°43'3.9281"N	80°35'27.8068"W	10821.58	122.669	0.37	0.28	-0.24
18131.00	89.660	132.670	7478.46	10736.46	-5902.39	9175.73	1755477.76	14424161.34	39°43'3.3212"N	80°35'26.9649"W	10910.19	122.752	0.56	0.51	-0.22

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	Shawn Harlan MSH 210H
Field	Marshall	API/Legal	
Facility	Shawn Harlan MSH Pad	Wellbore	Shawn Harlan MSH 210H AWB
Slot	Slot #210		

WELLPATH DATA (238 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]	
18221.00	89.320	131.540	7479.26	10826.45	-5962.73	9242.50	1755544.50	14424101.03	39°43'2.7218"N	80°35'26.1140"W	10999.00	122.828	1.31	-0.38	-1.26	
18311.00	90.250	133.080	7479.60	10916.44	-6023.31	9309.05	1755611.03	14424040.47	39°43'2.1201"N	80°35'25.2659"W	11087.77	122.904	2.00	1.03	1.71	
18402.00	90.710	131.930	7478.84	11007.43	-6084.79	9376.13	1755678.09	14423979.01	39°43'1.5095"N	80°35'24.4110"W	11177.51	122.982	1.36	0.51	-1.26	
18492.00	90.980	132.940	7477.51	11097.41	-6145.51	9442.55	1755744.48	14423918.32	39°43'0.9064"N	80°35'23.5647"W	11266.28	123.057	1.16	0.30	1.12	
18582.00	90.800	133.480	7476.11	11187.40	-6207.13	9508.14	1755810.04	14423856.73	39°43'0.2945"N	80°35'22.7290"W	11354.87	123.137	0.63	-0.20	0.60	
18673.00	88.770	132.420	7476.46	11278.40	-6269.13	9574.74	1755876.61	14423794.75	39°42'59.6788"N	80°35'21.8803"W	11444.55	123.215	2.52	-2.23	-1.16	
18763.00	89.750	132.230	7477.62	11368.38	-6329.72	9641.28	1755943.12	14423734.18	39°42'59.0770"N	80°35'21.0324"W	11533.41	123.286	1.11	1.09	-0.21	
18853.00	89.970	133.290	7477.84	11458.38	-6390.82	9707.35	1756009.17	14423673.10	39°42'58.4701"N	80°35'20.1905"W	11622.19	123.359	1.20	0.24	1.18	
18944.00	90.090	132.570	7477.79	11549.38	-6452.80	9773.98	1756075.78	14423611.15	39°42'57.8546"N	80°35'19.3415"W	11711.93	123.433	0.80	0.13	-0.79	
19035.00	90.280	134.920	7477.50	11640.36	-6515.72	9839.72	1756141.49	14423548.25	39°42'57.2298"N	80°35'18.5040"W	11801.47	123.512	2.59	0.21	2.58	
19125.00	90.950	131.020	7476.53	11730.34	-6577.05	9905.55	1756207.30	14423486.95	39°42'56.6207"N	80°35'17.6651"W	11890.23	123.583	4.40	0.74	-4.33	
19216.00	87.690	130.610	7477.61	11821.26	-6636.52	9974.41	1756276.13	14423427.50	39°42'56.0299"N	80°35'16.7875"W	11980.49	123.638	3.61	-3.58	-0.45	
19306.00	89.510	133.390	7479.81	11911.20	-6696.71	10041.26	1756342.96	14423367.33	39°42'55.4319"N	80°35'15.9355"W	12069.50	123.700	3.69	2.02	3.09	
19397.00	89.780	134.740	7480.37	12002.18	-6760.00	10106.65	1756408.32	14423304.07	39°42'54.8035"N	80°35'15.1025"W	12159.03	123.777	1.51	0.30	1.48	
19488.00	89.880	134.710	7480.64	12093.14	-6824.04	10171.30	1756472.94	14423240.06	39°42'54.1678"N	80°35'14.2790"W	12248.38	123.858	0.11	0.11	-0.03	
19578.00	89.780	135.110	7480.91	12183.09	-6887.58	10235.04	1756536.66	14423176.55	39°42'53.5369"N	80°35'13.4671"W	12336.72	123.938	0.46	-0.11	0.44	
19669.00	89.020	133.090	7481.86	12274.06	-6950.90	10300.38	1756601.98	14423113.25	39°42'52.9082"N	80°35'12.6347"W	12426.30	124.012	2.37	-0.84	-2.22	
19760.00	90.830	133.670	7481.98	12365.06	-7013.40	10366.52	1756668.09	14423050.77	39°42'52.2875"N	80°35'11.7920"W	12516.09	124.080	2.09	1.99	0.64	
19850.00	89.510	135.720	7481.72	12455.01	-7076.69	10430.49	1756732.03	14422987.50	39°42'51.6591"N	80°35'10.9772"W	12604.55	124.155	2.71	-1.47	2.28	
19941.00	89.570	132.580	7482.45	12545.98	-7140.07	10495.78	1756797.29	14422924.15	39°42'51.0298"N	80°35'10.1455"W	12694.17	124.227	3.45	0.07	-3.45	
20031.00	89.200	133.340	7483.41	12635.97	-7201.40	10561.64	1756863.13	14422862.85	39°42'50.4207"N	80°35'9.3064"W	12783.12	124.288	0.94	-0.41	0.84	
20122.00	88.950	132.040	7484.88	12726.95	-7263.09	10628.52	1756929.98	14422801.18	39°42'49.8079"N	80°35'8.4542"W	12873.14	124.347	1.45	-0.27	-1.43	
20213.00	88.860	132.620	7486.62	12817.93	-7324.35	10695.78	1756997.21	14422739.94	39°42'49.1994"N	80°35'7.5972"W	12963.25	124.403	0.64	-0.10	0.64	
20303.00	89.320	133.260	7488.05	12907.92	-7385.66	10761.65	1757063.07	14422678.66	39°42'48.5905"N	80°35'6.7578"W	13052.25	124.462	0.88	0.51	0.71	
20394.00	89.230	133.710	7489.20	12998.91	-7448.27	10827.67	1757129.06	14422616.06	39°42'47.9687"N	80°35'5.9167"W	13142.12	124.524	0.50	-0.10	0.49	
20485.00	89.510	132.940	7490.20	13089.90	-7510.71	10893.87	1757195.23	14422553.65	39°42'47.3486"N	80°35'5.0734"W	13232.05	124.584	0.90	0.31	-0.85	
20533.00	89.720	132.700	7490.52	13137.90	-7543.33	10929.08	1757230.42	14422521.04	39°42'47.0246"N	80°35'4.6248"W	13279.56	124.614	0.66	0.44	-0.50	
20558.00†	89.720	132.700	7490.65	13162.90	-7560.29	10947.45	1757248.79	14422504.09	39°42'46.8562"N	80°35'4.3907"W	13304.31	124.629	0.00	0.00	0.00	

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# Actual Wellpath Report

Shawn Harlan MSH 210H AWP Proj: 20558'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	Shawn Harlan MSH 210H
Field	Marshall	API/Legal	
Facility	Shawn Harlan MSH Pad	Wellbore	Shawn Harlan MSH 210H AWB
Slot	Slot #210		

HOLE & CASING SECTIONS - Ref Wellbore: Shawn Harlan MSH 210H AWB    Ref Wellpath: Shawn Harlan MSH 210H AWP Proj: 20558'									
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	-0.13	0.23
17.5in Open Hole	100.00	566.00	466.00	100.00	566.00	-0.13	0.23	-1.28	0.80
13.375in Casing Surface	26.00	566.00	540.00	26.00	566.00	0.00	0.00	-1.28	0.80
12.25in Open Hole	566.00	2709.00	2143.00	566.00	2704.00	-1.28	0.80	122.13	43.55
9.625in Casing Intermediate	26.00	2709.00	2683.00	26.00	2704.00	0.00	0.00	122.13	43.55
8.75in Open Hole	2709.00	7637.00	4928.00	2704.00	7130.98	122.13	43.55	1200.66	1484.95
8.5in Open Hole	7637.00	20558.00	12921.00	7130.98	7490.65	1200.66	1484.95	-7560.29	10947.45
5.5in Casing Production	26.00	20558.00	20532.00	26.00	7490.65	0.00	0.00	-7560.29	10947.45

TARGETS									
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape	
Shawn Harlan MSH 210H LP Rev-4	7201.00	1027.98	1722.66	1748027.59	14431089.02	39°44'12.1372"N	80°37'1.9627"W	point	
Shawn Harlan MSH 210H BHL Rev-6	7486.00	-7565.40	10942.45	1757243.79	14422498.98	39°42'46.8059"N	80°35'4.4550"W	point	

WELLPATH COMPOSITION - Ref Wellbore: Shawn Harlan MSH 210H AWB    Ref Wellpath: Shawn Harlan MSH 210H AWP Proj: 20558'					
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
26.00	542.00	Gyrodata 2015 - GC+WIR+DPIPE	01 Gyrodata GC WIR DPIPE <17 1/2"> (50'-542')	Shawn Harlan MSH 210H AWB	2/8/2020
542.00	2666.00	Gyrodata 2015 - GC+WIR+DPIPE	02 Gyrodata GC WIR DPIPE <12 1/4"> (600'-2666')	Shawn Harlan MSH 210H AWB	2/8/2020
2666.00	7578.00	OWSG MWD rev2 + HRGM	03 Premier MWD <8 3/4"> (2785'-7578')	Shawn Harlan MSH 210H AWB	2/8/2020
7578.00	20558.00	BH AutoTrak Curve (2019) (Short spacing)	04 BH AT Curve <8 1/2"> (7612'-20533')	Shawn Harlan MSH 210H AWB	2/8/2020

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	Shawn Harlan MSH 210H
Field	Marshall	API/Legal	
Facility	Shawn Harlan MSH Pad	Wellbore	Shawn Harlan MSH 210H AWB
Slot	Slot #210		

COMMENTS
<p><b>Wellpath general comments</b>            API: 47-051-02274-0000            BH Job #: 110238837A            Rig: SDC 46            Duration: 02/09/2020 - 02/12/2020</p>

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