



SWN PRODUCTION COMPANY, LLC



Location: Marshall County, WV
 Field: Marshall WV
 Facility: Charles Jamison MSH Pad

Slot: 610H
 Well: Charles Jamison MSH 610H
 Wellbore: Charles Jamison MSH 610H AWB

Plot reference wellpath is Charles Jamison MSH 610H AWB_ awp 50' - 29567' Proj: 29592'	Grid System: NAD83 / UTM Zone 17 North, US feet
True vertical depths are referenced to SDC 41 (KB)	North Reference: Grid north
Reference wellpath measured depths are referenced to SDC 41 (KB)	Scale: True distance
SDC 41 (KB) to Mean Sea Level: 1362 feet	Coordinates are in feet referenced to Slot
Mean Sea Level to Ground level (At Slot: 610H): -1336 feet	Depths are in feet
Offset wellpath MDs are referenced to each path's default MD datum	Created by: tranlam on 2022-05-10; Database: WA_MPL_EASTERNUS_Defn

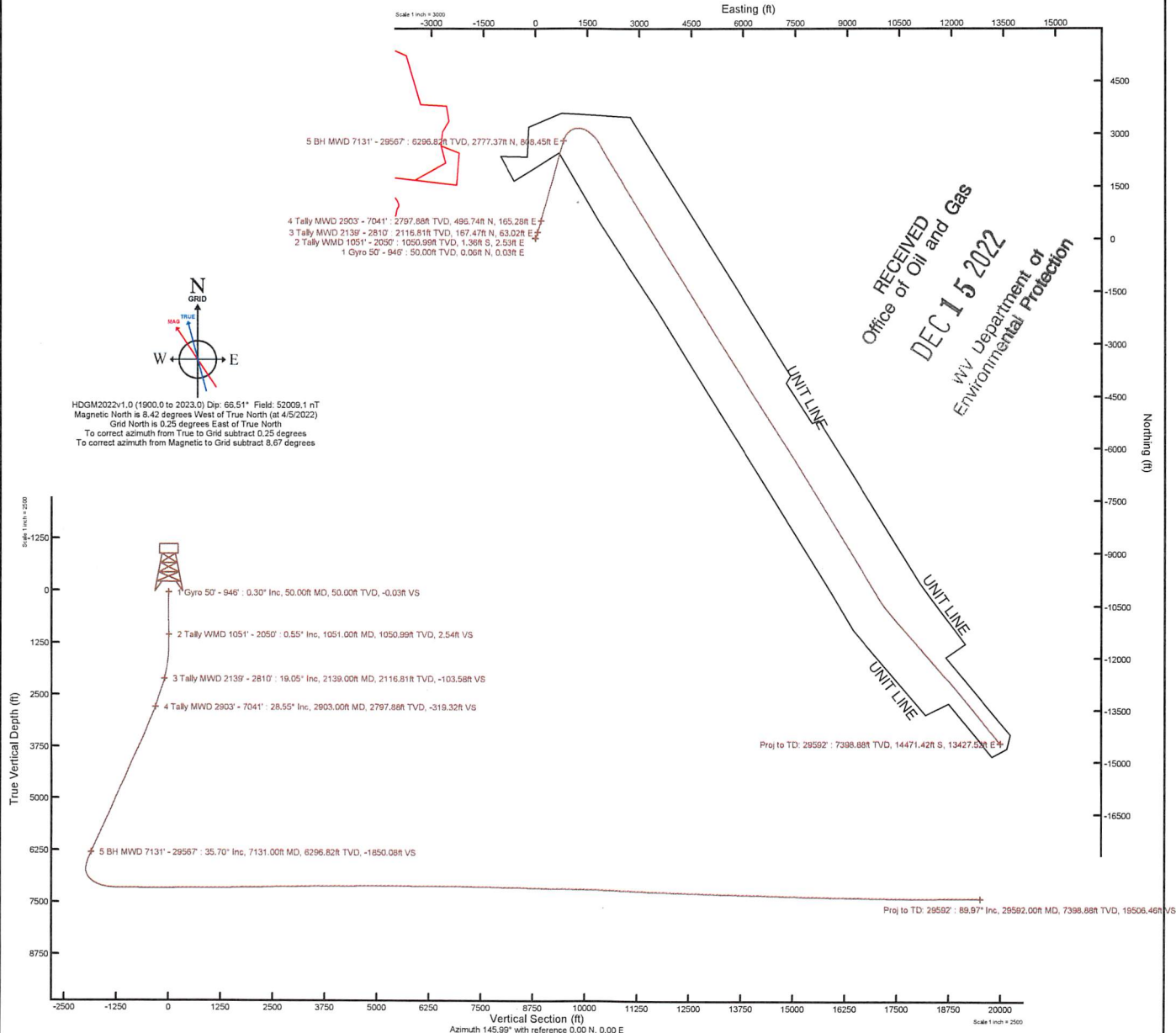
Location Information

Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Charles Jamison MSH Pad			1750638.500	14451211.924	39°47'30.9700"N	80°36'27.4000"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
610H	-28.59	41.54	1750680.020	14451183.350	39°47'30.6857"N	80°36'26.8695"W
SDC 41 (KB) to Ground level (At Slot: 610H)					26ft	
Mean Sea Level to Ground level (At Slot: 610H)					-1336ft	
SDC 41 (KB) to Mean Sea Level					1362ft	

Bottom Hole Location

MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
29592.00	89.970	141.060	7398.88	-14471.42	13427.52	1764102.33	14436717.54	39°45'7.0538"N	80°33'35.7652"W

API:47051024260000
BH JOB: 111260151
DURATION: 04-20-2022 to 05-01-2022
RIG: SDC 41





Actual Wellpath Report

Charles Jamison MSH 610H AWB_awp 50' - 29567' Proj: 29592'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	Charles Jamison MSH 610H
Field	Marshall WV	API	47051024260000
Facility	Charles Jamison MSH Pad	Wellbore	Charles Jamison MSH 610H AWB
Slot	610H		

REPORT SETUP INFORMATION			
Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Tranlam
Scale	0.999614	Report Generated	5/10/2022 at 2:35:54 PM
Convergence at slot	0.25° 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	-28.59	41.54	1750680.02	14451183.35	39°47'30.6857"N	80°36'26.8695"W
Facility Reference Pt			1750638.50	14451211.92	39°47'30.9700"N	80°36'27.4000"W
Field Reference Pt			0.00	0.00	0°00'0.0000"	85°29'19.4780"W

WELLPATH DATUM			
Calculation method	Minimum curvature	SDC 41 (KB) to Facility Vertical Datum	1362.00ft
Horizontal Reference Pt	Slot	SDC 41 (KB) to Mean Sea Level	1362.00ft
Vertical Reference Pt	SDC 41 (KB)	SDC 41 (KB) to Ground Level at Slot (610H)	26.00ft
MD Reference Pt	SDC 41 (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	145.99°

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Operator	SWN PRODUCTION COMPANY, LLC	Well	Charles Jamison MSH 610H
Field	Marshall WV	API	47051024260000
Facility	Charles Jamison MSH Pad	Wellbore	Charles Jamison MSH 610H AWB
Slot	610H		

WELLPATH DATA (333 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	DLS ["/100ft]	Comments
0.00†	0.000	28.750	0.00	0.00	0.00	0.00	1750680.02	14451183.35	39°47'30.6857"N	80°36'26.8695"W	0.00	
26.00	0.000	28.750	26.00	0.00	0.00	0.00	1750680.02	14451183.35	39°47'30.6857"N	80°36'26.8695"W	0.00	
50.00	0.300	28.750	50.00	-0.03	0.06	0.03	1750680.05	14451183.41	39°47'30.6862"N	80°36'26.8691"W	1.25	1 Gyro 50' - 946'
100.00	0.400	11.500	100.00	-0.21	0.34	0.13	1750680.15	14451183.69	39°47'30.6891"N	80°36'26.8678"W	0.29	
150.00	0.220	42.400	150.00	-0.36	0.58	0.23	1750680.25	14451183.93	39°47'30.6915"N	80°36'26.8666"W	0.48	
200.00	0.250	47.080	200.00	-0.40	0.73	0.37	1750680.39	14451184.08	39°47'30.6929"N	80°36'26.8647"W	0.07	
250.00	0.320	81.880	250.00	-0.35	0.82	0.59	1750680.61	14451184.17	39°47'30.6938"N	80°36'26.8619"W	0.37	
300.00	0.170	44.020	300.00	-0.31	0.90	0.78	1750680.80	14451184.24	39°47'30.6945"N	80°36'26.8595"W	0.43	
350.00	0.020	357.150	350.00	-0.33	0.96	0.83	1750680.85	14451184.31	39°47'30.6951"N	80°36'26.8588"W	0.31	
400.00	0.090	173.510	400.00	-0.30	0.93	0.84	1750680.85	14451184.28	39°47'30.6948"N	80°36'26.8587"W	0.22	
450.00	0.220	35.530	450.00	-0.30	0.97	0.90	1750680.91	14451184.32	39°47'30.6952"N	80°36'26.8580"W	0.59	
500.00	0.160	125.450	500.00	-0.27	1.00	1.01	1750681.03	14451184.35	39°47'30.6956"N	80°36'26.8565"W	0.54	
550.00	0.230	100.560	550.00	-0.13	0.94	1.16	1750681.18	14451184.29	39°47'30.6950"N	80°36'26.8545"W	0.22	
600.00	0.150	146.680	600.00	0.00	0.87	1.30	1750681.32	14451184.22	39°47'30.6943"N	80°36'26.8528"W	0.33	
650.00	0.260	136.640	650.00	0.18	0.73	1.41	1750681.43	14451184.08	39°47'30.6929"N	80°36'26.8514"W	0.23	
700.00	0.220	167.790	700.00	0.38	0.56	1.51	1750681.53	14451183.91	39°47'30.6912"N	80°36'26.8501"W	0.27	
750.00	0.290	145.780	749.99	0.60	0.36	1.60	1750681.62	14451183.71	39°47'30.6892"N	80°36'26.8490"W	0.24	
800.00	0.290	176.350	799.99	0.83	0.13	1.68	1750681.70	14451183.48	39°47'30.6869"N	80°36'26.8480"W	0.31	
850.00	0.300	149.740	849.99	1.07	-0.11	1.75	1750681.77	14451183.24	39°47'30.6845"N	80°36'26.8470"W	0.27	
900.00	0.250	164.780	899.99	1.31	-0.33	1.85	1750681.87	14451183.02	39°47'30.6824"N	80°36'26.8458"W	0.17	
946.00	0.510	157.630	945.99	1.60	-0.62	1.95	1750681.97	14451182.74	39°47'30.6795"N	80°36'26.8445"W	0.57	
1051.00	0.550	128.450	1050.99	2.54	-1.36	2.53	1750682.55	14451181.99	39°47'30.6722"N	80°36'26.8372"W	0.26	2 Tally WMD 1051' - 2050'
1142.00	1.290	83.960	1141.98	3.44	-1.52	3.89	1750683.91	14451181.83	39°47'30.6705"N	80°36'26.8198"W	1.07	
1232.00	2.390	64.890	1231.93	4.20	-0.62	6.59	1750686.61	14451182.73	39°47'30.6793"N	80°36'26.7851"W	1.38	
1324.00	3.710	47.680	1323.80	4.07	2.20	10.53	1750690.55	14451185.55	39°47'30.7070"N	80°36'26.7345"W	1.73	
1414.00	5.470	39.770	1413.51	2.45	7.45	15.43	1750695.44	14451190.80	39°47'30.7587"N	80°36'26.6714"W	2.07	
1506.00	7.280	28.700	1504.94	-1.45	15.94	21.03	1750701.05	14451199.28	39°47'30.8423"N	80°36'26.5991"W	2.37	
1596.00	9.460	20.710	1593.98	-8.33	27.86	26.39	1750706.40	14451211.20	39°47'30.9599"N	80°36'26.5299"W	2.74	
1688.00	12.120	18.520	1684.34	-18.58	44.09	32.13	1750712.14	14451227.43	39°47'31.1201"N	80°36'26.4554"W	2.92	
1779.00	14.770	15.940	1772.84	-31.86	64.31	38.35	1750718.36	14451247.63	39°47'31.3196"N	80°36'26.3746"W	2.99	



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Actual Wellpath Report

Jamison MSH 610H AWB_ awp 50' - 29567' Proj: 29592'

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REFERENCE WELLPATH IDENTIFICATION

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Field	Marshall WV	API	47051024260000
Facility	Charles Jamison MSH Pad	Wellbore	Charles Jamison MSH 610H AWB
Slot	610H		

WELLPATH DATA (333 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
1868.00	17.390	13.050	1858.35	-48.22	88.18	44.47	1750724.48	14451271.50	39°47'31.5552"N	80°36'26.2948"W	3.08	
1959.00	17.400	10.720	1945.19	-67.15	114.80	50.07	1750730.07	14451298.10	39°47'31.8180"N	80°36'26.2216"W	0.77	
2050.00	16.890	13.660	2032.15	-85.72	141.01	55.73	1750735.73	14451324.31	39°47'32.0768"N	80°36'26.1477"W	1.10	
2139.00	19.050	16.950	2116.81	-103.58	167.47	63.02	1750743.01	14451350.76	39°47'32.3380"N	80°36'26.0528"W	2.68	3 Tally MWD 2139' - 2810'
2231.00	25.980	17.520	2201.74	-125.60	201.09	73.47	1750753.46	14451384.36	39°47'32.6698"N	80°36'25.9170"W	7.54	
2323.00	29.350	18.450	2283.21	-151.88	241.71	86.68	1750766.66	14451424.96	39°47'33.0706"N	80°36'25.7455"W	3.69	
2414.00	28.970	18.680	2362.68	-178.82	283.74	100.79	1750780.77	14451466.98	39°47'33.4854"N	80°36'25.5623"W	0.44	
2505.00	29.530	18.050	2442.08	-205.97	325.94	114.80	1750794.78	14451509.16	39°47'33.9018"N	80°36'25.3805"W	0.70	
2597.00	27.170	16.990	2523.04	-233.13	367.59	127.97	1750807.94	14451550.80	39°47'34.3129"N	80°36'25.2095"W	2.62	
2690.00	24.820	16.010	2606.62	-259.04	406.66	139.56	1750819.52	14451589.86	39°47'34.6985"N	80°36'25.0588"W	2.57	
2738.00	25.190	15.700	2650.12	-272.12	426.18	145.10	1750825.06	14451609.37	39°47'34.8912"N	80°36'24.9867"W	0.82	
2810.00	25.740	16.210	2715.13	-292.03	455.95	153.61	1750833.57	14451639.12	39°47'35.1850"N	80°36'24.8760"W	0.82	
2903.00	28.550	15.740	2797.88	-319.32	496.74	165.28	1750845.23	14451679.89	39°47'35.5876"N	80°36'24.7242"W	3.03	4 Tally MWD 2903' - 7041'
2998.00	30.460	14.630	2880.55	-349.90	541.89	177.52	1750857.47	14451725.03	39°47'36.0333"N	80°36'24.5649"W	2.09	
3091.00	32.140	12.700	2960.02	-382.44	588.83	188.91	1750868.86	14451771.96	39°47'36.4967"N	80°36'24.4163"W	2.10	
3184.00	32.210	13.060	3038.74	-416.29	637.11	199.95	1750879.89	14451820.21	39°47'36.9733"N	80°36'24.2721"W	0.22	
3276.00	32.130	15.120	3116.61	-449.00	684.61	211.87	1750891.81	14451867.70	39°47'37.4423"N	80°36'24.1167"W	1.20	
3369.00	30.870	17.200	3195.91	-480.13	731.28	225.38	1750905.31	14451914.35	39°47'37.9029"N	80°36'23.9410"W	1.79	
3461.00	31.230	15.980	3274.73	-510.25	776.76	238.93	1750918.85	14451959.81	39°47'38.3517"N	80°36'23.7650"W	0.79	
3553.00	32.280	17.640	3352.96	-540.82	823.10	252.94	1750932.86	14452006.13	39°47'38.8091"N	80°36'23.5828"W	1.48	
3646.00	33.390	17.790	3431.10	-572.06	871.14	268.28	1750948.20	14452054.15	39°47'39.2831"N	80°36'23.3836"W	1.20	
3739.00	34.740	17.760	3508.14	-604.28	920.74	284.18	1750964.09	14452103.73	39°47'39.7727"N	80°36'23.1770"W	1.45	
3831.00	35.270	16.880	3583.49	-637.26	971.12	299.89	1750979.80	14452154.10	39°47'40.2699"N	80°36'22.9730"W	0.80	
3924.00	35.430	13.790	3659.35	-672.31	1023.00	314.12	1750994.01	14452205.95	39°47'40.7820"N	80°36'22.7878"W	1.93	
4015.00	34.480	14.570	3733.94	-707.07	1073.55	326.88	1751006.78	14452256.48	39°47'41.2809"N	80°36'22.6214"W	1.15	
4111.00	35.120	16.450	3812.77	-742.63	1126.33	341.54	1751021.43	14452309.25	39°47'41.8020"N	80°36'22.4307"W	1.30	
4204.00	36.010	16.410	3888.42	-777.08	1178.22	356.84	1751036.72	14452361.11	39°47'42.3140"N	80°36'22.2317"W	0.96	
4295.00	36.390	14.210	3961.86	-812.11	1230.05	371.02	1751050.90	14452412.92	39°47'42.8256"N	80°36'22.0471"W	1.49	
4387.00	35.300	14.780	4036.43	-847.80	1282.21	384.50	1751064.37	14452465.06	39°47'43.3405"N	80°36'21.8715"W	1.24	
4479.00	34.950	15.970	4111.68	-882.26	1333.24	398.54	1751078.40	14452516.08	39°47'43.8443"N	80°36'21.6888"W	0.84	



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Actual Wellpath Report

Charles Jamison MSH 610H AWB_ awp 50' - 29567' Proj: 29592'

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Field	Marshall WV	API	47051024260000
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Slot	610H		

WELLPATH DATA (333 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4571.00	33.790	16.640	4187.62	-915.43	1383.09	413.11	1751092.97	14452565.91	39°47'44.3363"N	80°36'21.4993"W	1.33	
4661.00	31.950	18.310	4263.21	-945.86	1429.68	427.76	1751107.62	14452612.48	39°47'44.7961"N	80°36'21.3089"W	2.28	
4754.00	32.200	16.490	4342.01	-976.66	1476.80	442.53	1751122.37	14452659.58	39°47'45.2611"N	80°36'21.1171"W	1.07	
4847.00	32.470	17.510	4420.59	-1007.96	1524.37	457.07	1751136.91	14452707.13	39°47'45.7306"N	80°36'20.9281"W	0.65	
4939.00	34.850	17.300	4497.16	-1039.76	1573.03	472.32	1751152.16	14452755.77	39°47'46.2108"N	80°36'20.7300"W	2.59	
5026.00	36.960	15.970	4567.63	-1072.12	1621.91	486.91	1751166.74	14452804.63	39°47'46.6932"N	80°36'20.5403"W	2.59	
5121.00	36.690	15.700	4643.67	-1108.84	1676.69	502.45	1751182.27	14452859.39	39°47'47.2339"N	80°36'20.3382"W	0.33	
5213.00	35.320	15.830	4718.09	-1143.76	1728.74	517.14	1751196.96	14452911.42	39°47'47.7476"N	80°36'20.1470"W	1.49	
5302.00	35.380	14.040	4790.69	-1177.58	1778.49	530.41	1751210.22	14452961.15	39°47'48.2387"N	80°36'19.9742"W	1.17	
5392.00	34.760	15.210	4864.35	-1211.76	1828.52	543.46	1751223.27	14453011.16	39°47'48.7326"N	80°36'19.8042"W	1.02	
5485.00	33.820	14.220	4941.19	-1246.31	1879.19	556.77	1751236.58	14453061.82	39°47'49.2328"N	80°36'19.6307"W	1.18	
5578.00	33.240	15.960	5018.71	-1279.95	1928.79	570.14	1751249.94	14453111.39	39°47'49.7224"N	80°36'19.4567"W	1.21	
5670.00	31.950	16.720	5096.22	-1311.58	1976.35	584.08	1751263.87	14453158.93	39°47'50.1917"N	80°36'19.2754"W	1.47	
5763.00	32.640	15.820	5174.83	-1343.33	2024.05	597.99	1751277.78	14453206.61	39°47'50.6625"N	80°36'19.0944"W	0.90	
5853.00	32.710	13.760	5250.59	-1375.33	2071.02	610.40	1751290.18	14453253.57	39°47'51.1262"N	80°36'18.9329"W	1.24	
5944.00	33.810	13.940	5326.69	-1408.82	2119.47	622.34	1751302.12	14453302.00	39°47'51.6045"N	80°36'18.7771"W	1.21	
6037.00	35.280	13.930	5403.29	-1444.14	2170.66	635.04	1751314.82	14453353.17	39°47'52.1098"N	80°36'18.6115"W	1.58	
6129.00	35.760	15.920	5478.17	-1479.25	2222.30	648.81	1751328.58	14453404.78	39°47'52.6195"N	80°36'18.4322"W	1.36	
6218.00	35.070	15.810	5550.70	-1512.48	2271.91	662.91	1751342.68	14453454.38	39°47'53.1092"N	80°36'18.2487"W	0.78	
6311.00	35.600	13.900	5626.57	-1547.87	2323.89	676.69	1751356.45	14453506.34	39°47'53.6223"N	80°36'18.0692"W	1.32	
6403.00	35.010	14.250	5701.65	-1583.39	2375.47	689.62	1751369.38	14453557.89	39°47'54.1314"N	80°36'17.9006"W	0.68	
6494.00	35.020	17.540	5776.19	-1617.00	2425.67	703.92	1751383.67	14453608.08	39°47'54.6270"N	80°36'17.7146"W	2.07	
6587.00	34.970	17.280	5852.37	-1650.26	2476.56	719.88	1751399.62	14453658.95	39°47'55.1292"N	80°36'17.5073"W	0.17	
6677.00	34.710	15.510	5926.24	-1683.03	2525.88	734.39	1751414.13	14453708.25	39°47'55.6160"N	80°36'17.3186"W	1.16	
6768.00	35.420	15.820	6000.72	-1716.86	2576.22	748.51	1751428.24	14453758.57	39°47'56.1128"N	80°36'17.1349"W	0.80	
6859.00	34.240	15.740	6075.42	-1750.41	2626.23	762.64	1751442.37	14453808.56	39°47'56.6065"N	80°36'16.9509"W	1.30	
6950.00	35.120	14.990	6150.25	-1784.13	2676.16	776.36	1751456.08	14453858.47	39°47'57.0993"N	80°36'16.7724"W	1.07	
7041.00	36.450	18.600	6224.08	-1817.72	2727.07	791.75	1751471.47	14453909.36	39°47'57.6018"N	80°36'16.5723"W	2.74	
7131.00	35.700	18.120	6296.82	-1850.08	2777.37	808.45	1751488.16	14453959.64	39°47'58.0981"N	80°36'16.3555"W	0.89	5 BH MWD 7131' - 29567'
7222.00	36.350	20.610	6370.42	-1881.99	2827.85	826.20	1751505.90	14454010.10	39°47'58.5962"N	80°36'16.1252"W	1.76	



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Actual Wellpath Report

DEC 15 2022 Charles Jamison MSH 610H AWP_ awp 50' - 29567' Proj: 29592'
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REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	Charles Jamison MSH 610H
Field	Marshall WV	API	47051024260000
Facility	Charles Jamison MSH Pad	Wellbore	Charles Jamison MSH 610H AWB
Slot	610H		

WELLPATH DATA (333 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7312.00	36.380	21.890	6442.90	-1912.40	2877.58	845.54	1751525.23	14454059.82	39°47'59.0868"N	80°36'15.8746"W	0.84	
7402.00	39.370	32.590	6514.01	-1938.74	2926.46	870.90	1751550.58	14454108.68	39°47'59.5688"N	80°36'15.5469"W	8.01	
7493.00	43.050	40.740	6582.51	-1958.39	2974.37	906.76	1751586.42	14454156.56	39°48'0.0406"N	80°36'15.0848"W	7.15	
7580.00	47.390	46.660	6643.80	-1971.40	3018.88	949.46	1751629.11	14454201.06	39°48'0.4787"N	80°36'14.5352"W	6.94	
7671.00	49.460	53.950	6704.23	-1978.07	3062.25	1001.82	1751681.45	14454244.41	39°48'0.9050"N	80°36'13.8619"W	6.41	
7762.00	49.390	63.160	6763.49	-1974.98	3098.24	1060.67	1751740.27	14454280.39	39°48'1.2581"N	80°36'13.1059"W	7.68	
7854.00	50.170	75.820	6823.04	-1958.60	3122.72	1126.23	1751805.81	14454304.85	39°48'1.4971"N	80°36'12.2645"W	10.53	
7945.00	52.240	84.340	6880.12	-1929.63	3134.84	1195.99	1751875.54	14454316.97	39°48'1.6139"N	80°36'11.3700"W	7.64	
8038.00	55.480	94.290	6935.05	-1888.35	3135.60	1270.92	1751950.45	14454317.73	39°48'1.6181"N	80°36'10.4099"W	9.31	
8130.00	58.730	103.160	6985.08	-1835.94	3123.79	1347.13	1752026.62	14454305.93	39°48'1.4981"N	80°36'9.4342"W	8.83	
8220.00	62.660	111.880	7029.18	-1774.52	3100.10	1421.81	1752101.28	14454282.24	39°48'1.2606"N	80°36'8.4787"W	9.51	
8310.00	67.380	121.560	7067.25	-1703.43	3063.37	1494.48	1752173.92	14454245.53	39°48'0.8944"N	80°36'7.5497"W	11.06	
8401.00	71.770	128.090	7099.03	-1623.95	3014.65	1564.39	1752243.80	14454196.83	39°48'0.4100"N	80°36'6.6569"W	8.27	
8493.00	77.150	128.530	7123.67	-1539.53	2959.72	1633.91	1752313.29	14454141.92	39°47'59.8640"N	80°36'5.7693"W	5.87	
8584.00	81.470	134.550	7140.56	-1452.99	2900.44	1700.77	1752380.13	14454082.67	39°47'59.2753"N	80°36'4.9160"W	8.05	
8676.00	84.950	143.990	7151.46	-1362.38	2831.29	1760.28	1752439.61	14454013.54	39°47'58.5892"N	80°36'4.1575"W	10.87	
8767.00	89.230	150.630	7156.09	-1271.59	2754.86	1809.31	1752488.63	14453937.14	39°47'57.8317"N	80°36'3.5336"W	8.67	
8857.00	89.230	150.100	7157.30	-1181.86	2676.64	1853.81	1752533.11	14453858.95	39°47'57.0567"N	80°36'2.9680"W	0.59	
8948.00	89.020	150.160	7158.69	-1091.11	2597.73	1899.13	1752578.41	14453780.08	39°47'56.2750"N	80°36'2.3919"W	0.24	
9040.00	89.820	150.700	7159.62	-999.39	2517.72	1944.53	1752623.79	14453700.09	39°47'55.4823"N	80°36'1.8148"W	1.05	
9132.00	89.260	149.350	7160.36	-907.63	2438.03	1990.49	1752669.74	14453620.44	39°47'54.6927"N	80°36'1.2305"W	1.59	
9224.00	89.630	148.610	7161.25	-815.76	2359.19	2037.90	1752717.13	14453541.63	39°47'53.9115"N	80°36'0.6276"W	0.90	
9314.00	89.110	148.470	7162.24	-725.85	2282.43	2084.87	1752764.08	14453464.89	39°47'53.1508"N	80°36'0.0303"W	0.60	
9406.00	89.780	148.050	7163.13	-633.93	2204.19	2133.26	1752812.45	14453386.69	39°47'52.3754"N	80°35'59.4147"W	0.86	
9497.00	90.000	148.100	7163.30	-542.99	2126.96	2181.38	1752860.56	14453309.48	39°47'51.6100"N	80°35'58.8026"W	0.25	
9588.00	89.910	149.060	7163.38	-452.08	2049.30	2228.82	1752907.98	14453231.85	39°47'50.8405"N	80°35'58.1993"W	1.06	
9680.00	89.660	148.140	7163.72	-360.18	1970.78	2276.75	1752955.89	14453153.36	39°47'50.0624"N	80°35'57.5897"W	1.04	
9770.00	90.000	147.990	7163.99	-270.24	1894.40	2324.36	1753003.48	14453077.01	39°47'49.3054"N	80°35'56.9842"W	0.41	
9860.00	89.750	148.130	7164.18	-180.30	1818.02	2371.97	1753051.07	14453000.67	39°47'48.5486"N	80°35'56.3786"W	0.32	
9952.00	90.340	148.310	7164.11	-88.37	1739.82	2420.42	1753099.60	14452922.49	39°47'47.7735"N	80°35'55.7623"W	0.67	

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Actual Wellpath Report

Charles Jamison MSH 610H AWB_ awp 50' - 29567' Proj: 29592'
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REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	Charles Jamison MSH 610H
Field	Marshall WV	API	47051024260000
Facility	Charles Jamison MSH Pad	Wellbore	Charles Jamison MSH 610H AWB
Slot	610H		

WELLPATH DATA (333 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
10044.00	90.150	147.920	7163.72	3.57	1661.70	2469.02	1753148.08	14452844.40	39°47'46.9994"N	80°35'55.1442"W	0.47	
10134.00	90.620	148.890	7163.11	93.48	1585.04	2516.17	1753195.21	14452767.78	39°47'46.2397"N	80°35'54.5446"W	1.20	
10226.00	90.460	148.700	7162.25	185.37	1506.36	2563.83	1753242.86	14452689.12	39°47'45.4600"N	80°35'53.9384"W	0.27	
10318.00	90.220	148.150	7161.70	277.28	1427.98	2612.00	1753291.01	14452610.77	39°47'44.6833"N	80°35'53.3258"W	0.65	
10409.00	90.180	148.610	7161.38	368.20	1350.49	2659.71	1753338.70	14452533.31	39°47'43.9154"N	80°35'52.7190"W	0.51	
10501.00	90.460	148.350	7160.87	460.11	1272.06	2707.81	1753386.78	14452454.92	39°47'43.1382"N	80°35'52.1074"W	0.42	
10593.00	90.030	148.650	7160.48	552.03	1193.62	2755.88	1753434.83	14452376.51	39°47'42.3608"N	80°35'51.4961"W	0.57	
10684.00	90.150	148.440	7160.33	642.93	1115.99	2803.37	1753482.30	14452298.91	39°47'41.5916"N	80°35'50.8922"W	0.27	
10776.00	90.460	148.700	7159.84	734.84	1037.49	2851.34	1753530.25	14452220.44	39°47'40.8137"N	80°35'50.2821"W	0.44	
10868.00	90.280	148.510	7159.25	826.74	958.97	2899.26	1753578.16	14452141.94	39°47'40.0355"N	80°35'49.6726"W	0.28	
10960.00	90.520	148.500	7158.61	918.65	880.52	2947.33	1753626.20	14452063.53	39°47'39.2581"N	80°35'49.0614"W	0.26	
11050.00	90.430	148.370	7157.86	1008.57	803.84	2994.44	1753673.29	14451986.88	39°47'38.4982"N	80°35'48.4623"W	0.18	
11140.00	90.650	148.210	7157.01	1098.49	727.28	3041.74	1753720.58	14451910.35	39°47'37.7395"N	80°35'47.8607"W	0.30	
11231.00	90.400	148.570	7156.18	1189.41	649.78	3089.43	1753768.25	14451832.88	39°47'36.9715"N	80°35'47.2542"W	0.48	
11323.00	90.150	148.100	7155.74	1281.33	571.48	3137.73	1753816.53	14451754.61	39°47'36.1955"N	80°35'46.6400"W	0.58	
11413.00	90.340	148.610	7155.35	1371.25	494.86	3184.95	1753863.73	14451678.02	39°47'35.4362"N	80°35'46.0395"W	0.60	
11505.00	90.620	147.910	7154.58	1463.17	416.62	3233.34	1753912.11	14451599.81	39°47'34.6609"N	80°35'45.4241"W	0.82	
11596.00	91.320	148.250	7153.04	1554.10	339.40	3281.45	1753960.20	14451522.61	39°47'33.8955"N	80°35'44.8122"W	0.86	
11687.00	90.950	148.260	7151.24	1645.01	262.03	3329.32	1754008.05	14451445.27	39°47'33.1287"N	80°35'44.2035"W	0.41	
11777.00	90.860	148.350	7149.82	1734.93	185.46	3376.60	1754055.31	14451368.74	39°47'32.3699"N	80°35'43.6022"W	0.14	
11868.00	91.050	148.500	7148.30	1825.83	107.94	3424.24	1754102.93	14451291.25	39°47'31.6018"N	80°35'42.9964"W	0.27	
11959.00	90.620	148.290	7146.97	1916.74	30.45	3471.93	1754150.60	14451213.78	39°47'30.8338"N	80°35'42.3900"W	0.53	
12050.00	91.080	148.780	7145.62	2007.64	-47.16	3519.42	1754198.07	14451136.20	39°47'30.0647"N	80°35'41.7860"W	0.74	
12141.00	90.770	148.380	7144.15	2098.54	-124.81	3566.85	1754245.49	14451058.59	39°47'29.2952"N	80°35'41.1829"W	0.56	
12232.00	90.740	147.960	7142.96	2189.46	-202.12	3614.84	1754293.46	14450981.31	39°47'28.5290"N	80°35'40.5726"W	0.46	
12322.00	90.980	148.270	7141.60	2279.39	-278.53	3662.38	1754340.97	14450904.93	39°47'27.7718"N	80°35'39.9681"W	0.44	
12415.00	91.170	148.100	7139.86	2372.30	-357.54	3711.40	1754389.97	14450825.95	39°47'26.9887"N	80°35'39.3447"W	0.27	
12505.00	90.890	147.900	7138.24	2462.23	-433.85	3759.08	1754437.64	14450749.66	39°47'26.2324"N	80°35'38.7383"W	0.38	
12596.00	90.890	148.010	7136.83	2553.17	-510.98	3807.36	1754485.90	14450672.57	39°47'25.4681"N	80°35'38.1243"W	0.12	
12689.00	90.580	147.550	7135.64	2646.12	-589.65	3856.94	1754535.46	14450593.93	39°47'24.6884"N	80°35'37.4938"W	0.60	

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Actual Wellpath Report

Charles Jamison MSH 610H AWB_ awp 50' - 29567' Proj: 29592'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	Charles Jamison MSH 610H
Field	Marshall WV	API	47051024260000
Facility	Charles Jamison MSH Pad	Wellbore	Charles Jamison MSH 610H AWB
Slot	610H		

WELLPATH DATA (333 stations)												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12779.00	91.140	147.740	7134.28	2736.07	-665.67	3905.10	1754583.60	14450517.94	39°47'23.9350"N	80°35'36.8812"W	0.66	
12870.00	90.770	148.310	7132.77	2827.00	-742.85	3953.28	1754631.76	14450440.79	39°47'23.1700"N	80°35'36.2685"W	0.75	
12960.00	90.830	148.270	7131.51	2916.92	-819.41	4000.58	1754679.05	14450364.26	39°47'22.4113"N	80°35'35.6670"W	0.08	
13051.00	90.680	148.070	7130.31	3007.84	-896.72	4048.57	1754727.02	14450286.98	39°47'21.6452"N	80°35'35.0568"W	0.27	
13141.00	90.950	148.110	7129.03	3097.77	-973.11	4096.14	1754774.57	14450210.62	39°47'20.8881"N	80°35'34.4519"W	0.30	
13234.00	90.710	148.440	7127.69	3190.69	-1052.21	4145.04	1754823.45	14450131.55	39°47'20.1042"N	80°35'33.8301"W	0.44	
13325.00	90.770	148.000	7126.51	3281.61	-1129.56	4192.96	1754871.35	14450054.23	39°47'19.3377"N	80°35'33.2207"W	0.49	
13416.00	90.620	147.900	7125.41	3372.55	-1206.68	4241.24	1754919.62	14449977.14	39°47'18.5733"N	80°35'32.6066"W	0.20	
13506.00	90.340	147.710	7124.65	3462.50	-1282.84	4289.19	1754967.55	14449901.01	39°47'17.8185"N	80°35'31.9968"W	0.38	
13597.00	90.830	148.000	7123.72	3553.45	-1359.88	4337.61	1755015.95	14449823.99	39°47'17.0549"N	80°35'31.3811"W	0.63	
13687.00	90.550	148.030	7122.64	3643.39	-1436.22	4385.28	1755063.60	14449747.69	39°47'16.2984"N	80°35'30.7750"W	0.31	
13777.00	90.520	147.580	7121.80	3733.34	-1512.37	4433.23	1755111.53	14449671.56	39°47'15.5436"N	80°35'30.1652"W	0.50	
13869.00	90.520	148.040	7120.96	3825.29	-1590.23	4482.24	1755160.52	14449593.74	39°47'14.7720"N	80°35'29.5419"W	0.50	
13959.00	90.620	148.290	7120.07	3915.22	-1666.69	4529.71	1755207.97	14449517.31	39°47'14.0143"N	80°35'28.9383"W	0.30	
14051.00	90.550	148.720	7119.13	4007.13	-1745.13	4577.77	1755256.01	14449438.90	39°47'13.2369"N	80°35'28.3272"W	0.47	
14142.00	90.120	148.370	7118.60	4098.03	-1822.76	4625.25	1755303.48	14449361.30	39°47'12.4676"N	80°35'27.7235"W	0.61	
14235.00	90.060	147.920	7118.45	4190.97	-1901.75	4674.34	1755352.54	14449282.34	39°47'11.6847"N	80°35'27.0994"W	0.49	
14326.00	90.280	148.050	7118.18	4281.91	-1978.91	4722.58	1755400.77	14449205.21	39°47'10.9200"N	80°35'26.4859"W	0.28	
14418.00	90.520	148.160	7117.54	4373.85	-2057.01	4771.19	1755449.36	14449127.13	39°47'10.1459"N	80°35'25.8679"W	0.29	
14509.00	90.340	148.290	7116.86	4464.77	-2134.37	4819.11	1755497.25	14449049.80	39°47'9.3792"N	80°35'25.2586"W	0.24	
14600.00	90.550	148.360	7116.15	4555.70	-2211.82	4866.89	1755545.02	14448972.39	39°47'8.6117"N	80°35'24.6510"W	0.24	
14692.00	90.280	147.900	7115.48	4647.63	-2289.94	4915.46	1755593.57	14448894.29	39°47'7.8374"N	80°35'24.0334"W	0.58	
14784.00	90.180	148.100	7115.11	4739.57	-2367.96	4964.21	1755642.31	14448816.30	39°47'7.0642"N	80°35'23.4135"W	0.24	
14875.00	90.000	148.110	7114.97	4830.51	-2445.22	5012.29	1755690.37	14448739.07	39°47'6.2985"N	80°35'22.8022"W	0.20	
14965.00	90.150	148.540	7114.85	4920.43	-2521.82	5059.55	1755737.61	14448662.51	39°47'5.5394"N	80°35'22.2013"W	0.51	
15056.00	89.880	148.030	7114.83	5011.36	-2599.23	5107.39	1755785.43	14448585.13	39°47'4.7722"N	80°35'21.5931"W	0.63	
15146.00	90.030	148.110	7114.90	5101.30	-2675.61	5154.99	1755833.01	14448508.78	39°47'4.0152"N	80°35'20.9878"W	0.19	
15238.00	89.940	148.110	7114.92	5193.24	-2753.73	5203.59	1755881.59	14448430.69	39°47'3.2410"N	80°35'20.3699"W	0.10	
15330.00	89.780	147.640	7115.15	5285.19	-2831.64	5252.32	1755930.50	14448352.81	39°47'2.4688"N	80°35'19.7478"W	0.54	
15420.00	89.970	147.070	7115.34	5375.16	-2907.42	5301.06	1755979.03	14448277.06	39°47'1.7177"N	80°35'19.1304"W	0.67	

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Actual Wellpath Report

Charles Jamison MSH 610H AWB_ awp 50' - 29567' Proj: 29592'
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Field	Marshall WV	API	47051024260000
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Slot	610H		

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MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
15511.00	90.150	147.340	7115.25	5466.14	-2983.92	5350.35	1756028.30	14448200.59	39°47'0.9595"N	80°35'18.5035"W	0.36	
15603.00	89.910	146.910	7115.20	5558.12	-3061.18	5400.29	1756078.22	14448123.35	39°47'0.1936"N	80°35'17.8684"W	0.54	
15695.00	89.570	146.970	7115.62	5650.11	-3138.29	5450.48	1756128.38	14448046.28	39°46'59.4294"N	80°35'17.2301"W	0.38	
15786.00	89.690	147.000	7116.21	5741.09	-3214.59	5500.06	1756177.95	14447970.01	39°46'58.6730"N	80°35'16.5995"W	0.14	
15878.00	89.600	147.420	7116.78	5833.07	-3291.93	5549.88	1756227.75	14447892.70	39°46'57.9064"N	80°35'15.9659"W	0.47	
15969.00	89.200	147.310	7117.73	5924.04	-3368.56	5598.95	1756276.80	14447816.10	39°46'57.1469"N	80°35'15.3419"W	0.46	
16061.00	89.510	147.240	7118.77	6016.01	-3445.95	5648.69	1756326.51	14447738.74	39°46'56.3798"N	80°35'14.7094"W	0.35	
16152.00	89.600	147.320	7119.47	6106.98	-3522.51	5697.87	1756375.68	14447662.21	39°46'55.6210"N	80°35'14.0839"W	0.13	
16243.00	89.600	147.370	7120.11	6197.96	-3599.12	5746.97	1756424.76	14447585.62	39°46'54.8616"N	80°35'13.4595"W	0.05	
16335.00	89.880	147.440	7120.52	6289.93	-3676.63	5796.53	1756474.30	14447508.14	39°46'54.0934"N	80°35'12.8293"W	0.31	
16425.00	89.600	147.470	7120.93	6379.90	-3752.50	5844.95	1756522.70	14447432.31	39°46'53.3414"N	80°35'12.2136"W	0.31	
16516.00	89.660	147.120	7121.52	6470.87	-3829.07	5894.12	1756571.85	14447355.76	39°46'52.5824"N	80°35'11.5884"W	0.39	
16608.00	89.600	147.200	7122.11	6562.85	-3906.37	5944.01	1756621.72	14447278.50	39°46'51.8163"N	80°35'10.9539"W	0.11	
16699.00	89.780	147.550	7122.61	6653.82	-3983.01	5993.07	1756670.76	14447201.89	39°46'51.0566"N	80°35'10.3300"W	0.43	
16789.00	89.600	147.360	7123.09	6743.79	-4058.87	6041.48	1756719.16	14447126.05	39°46'50.3047"N	80°35'9.7144"W	0.29	
16881.00	89.750	147.520	7123.62	6835.76	-4136.41	6091.00	1756768.65	14447048.54	39°46'49.5361"N	80°35'9.0848"W	0.24	
16972.00	89.570	147.240	7124.16	6926.73	-4213.06	6140.05	1756817.69	14446971.93	39°46'48.7764"N	80°35'8.4610"W	0.37	
17062.00	89.320	147.310	7125.03	7016.71	-4288.77	6188.70	1756866.32	14446896.25	39°46'48.0260"N	80°35'7.8424"W	0.29	
17153.00	89.230	147.700	7126.18	7107.67	-4365.51	6237.59	1756915.19	14446819.53	39°46'47.2653"N	80°35'7.2208"W	0.44	
17244.00	89.080	147.510	7127.52	7198.62	-4442.34	6286.33	1756963.91	14446742.73	39°46'46.5038"N	80°35'6.6010"W	0.27	
17335.00	88.830	147.130	7129.18	7289.58	-4518.93	6335.46	1757013.02	14446666.18	39°46'45.7447"N	80°35'5.9763"W	0.50	
17426.00	89.380	147.560	7130.60	7380.54	-4595.53	6384.56	1757062.10	14446589.60	39°46'44.9854"N	80°35'5.3520"W	0.77	
17518.00	88.650	147.070	7132.18	7472.50	-4672.95	6434.23	1757111.75	14446512.21	39°46'44.2180"N	80°35'4.7204"W	0.96	
17609.00	89.170	147.120	7133.91	7563.47	-4749.34	6483.66	1757161.16	14446435.85	39°46'43.4608"N	80°35'4.0918"W	0.57	
17697.00	88.920	147.400	7135.38	7651.44	-4823.35	6531.24	1757208.73	14446361.87	39°46'42.7273"N	80°35'3.4867"W	0.43	
17788.00	88.740	147.120	7137.24	7742.39	-4899.88	6580.45	1757257.91	14446285.38	39°46'41.9687"N	80°35'2.8611"W	0.37	
17880.00	88.830	147.380	7139.19	7834.35	-4977.23	6630.21	1757307.65	14446208.05	39°46'41.2019"N	80°35'2.2284"W	0.30	
17970.00	89.200	147.870	7140.74	7924.30	-5053.23	6678.39	1757355.82	14446132.08	39°46'40.4487"N	80°35'1.6157"W	0.68	
18063.00	88.770	147.310	7142.39	8017.25	-5131.73	6728.23	1757405.64	14446053.61	39°46'39.6706"N	80°35'0.9821"W	0.76	
18156.00	89.260	148.170	7143.98	8110.19	-5210.37	6777.86	1757455.25	14445975.01	39°46'38.8912"N	80°35'0.3511"W	1.06	

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Actual Wellpath Report

Charles Jamison MSH 610H AWB_awp 50' - 29567' Proj: 29592'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	Charles Jamison MSH 610H
Field	Marshall WV	API	47051024260000
Facility	Charles Jamison MSH Pad	Wellbore	Charles Jamison MSH 610H AWB
Slot	610H		

WELLPATH DATA (333 stations)												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
18248.00	88.400	147.000	7145.86	8202.13	-5288.01	6827.16	1757504.54	14445897.39	39°46'38.1216"N	80°34'59.7242"W	1.58	
18341.00	89.230	147.340	7147.79	8295.09	-5366.14	6877.57	1757554.92	14445819.29	39°46'37.3472"N	80°34'59.0833"W	0.96	
18432.00	89.510	147.470	7148.79	8386.06	-5442.80	6926.59	1757603.92	14445742.66	39°46'36.5873"N	80°34'58.4600"W	0.34	
18524.00	88.800	147.290	7150.14	8478.02	-5520.28	6976.18	1757653.49	14445665.21	39°46'35.8193"N	80°34'57.8295"W	0.80	
18617.00	88.210	146.730	7152.57	8570.98	-5598.26	7026.80	1757704.09	14445587.26	39°46'35.0463"N	80°34'57.1858"W	0.87	
18709.00	88.920	148.510	7154.87	8662.91	-5675.93	7076.05	1757753.32	14445509.62	39°46'34.2765"N	80°34'56.5597"W	2.08	
18798.00	88.090	146.960	7157.20	8751.83	-5751.16	7123.54	1757800.80	14445434.42	39°46'33.5309"N	80°34'55.9559"W	1.98	
18889.00	88.610	146.710	7159.82	8842.78	-5827.30	7173.30	1757850.54	14445358.31	39°46'32.7761"N	80°34'55.3231"W	0.63	
18981.00	88.340	147.280	7162.26	8934.73	-5904.43	7223.40	1757900.62	14445281.21	39°46'32.0116"N	80°34'54.6861"W	0.69	
19074.00	88.460	146.750	7164.86	9027.68	-5982.41	7274.01	1757951.21	14445203.27	39°46'31.2386"N	80°34'54.0426"W	0.58	
19163.00	89.290	147.730	7166.61	9116.64	-6057.23	7322.16	1757999.34	14445128.47	39°46'30.4969"N	80°34'53.4304"W	1.44	
19255.00	88.680	148.650	7168.24	9208.56	-6135.40	7370.65	1758047.81	14445050.33	39°46'29.7221"N	80°34'52.8141"W	1.20	
19347.00	88.920	147.150	7170.16	9300.49	-6213.32	7419.52	1758096.66	14444972.44	39°46'28.9499"N	80°34'52.1928"W	1.65	
19439.00	89.020	148.870	7171.82	9392.41	-6291.33	7468.25	1758145.37	14444894.46	39°46'28.1766"N	80°34'51.5733"W	1.87	
19529.00	89.020	148.240	7173.36	9482.31	-6368.10	7515.20	1758192.30	14444817.72	39°46'27.4158"N	80°34'50.9767"W	0.70	
19622.00	88.210	148.450	7175.61	9575.20	-6447.24	7563.99	1758241.07	14444738.61	39°46'26.6314"N	80°34'50.3565"W	0.90	
19713.00	88.400	148.240	7178.30	9666.08	-6524.67	7611.72	1758288.79	14444661.21	39°46'25.8640"N	80°34'49.7498"W	0.31	
19804.00	88.340	148.540	7180.89	9756.97	-6602.14	7659.40	1758336.45	14444583.77	39°46'25.0962"N	80°34'49.1439"W	0.34	
19894.00	88.430	148.640	7183.42	9846.84	-6678.92	7706.29	1758383.32	14444507.02	39°46'24.3353"N	80°34'48.5480"W	0.15	
19986.00	88.490	148.330	7185.90	9938.72	-6757.32	7754.36	1758431.37	14444428.65	39°46'23.5582"N	80°34'47.9370"W	0.34	
20076.00	88.550	148.390	7188.22	10028.61	-6833.92	7801.56	1758478.55	14444352.09	39°46'22.7991"N	80°34'47.3372"W	0.09	
20174.00	88.650	148.560	7190.61	10126.49	-6917.43	7852.78	1758529.75	14444268.61	39°46'21.9714"N	80°34'46.6861"W	0.20	
20268.00	88.490	148.520	7192.96	10220.37	-6997.59	7901.83	1758578.78	14444188.48	39°46'21.1769"N	80°34'46.0628"W	0.18	
20363.00	88.180	148.300	7195.72	10315.24	-7078.47	7951.57	1758628.50	14444107.62	39°46'20.3752"N	80°34'45.4306"W	0.40	
20457.00	87.970	148.250	7198.88	10409.11	-7158.38	8000.97	1758677.89	14444027.74	39°46'19.5832"N	80°34'44.8028"W	0.23	
20552.00	87.810	148.260	7202.38	10503.98	-7239.12	8050.92	1758727.82	14443947.04	39°46'18.7831"N	80°34'44.1679"W	0.17	
20644.00	88.580	148.830	7205.27	10595.84	-7317.56	8098.90	1758775.78	14443868.63	39°46'18.0056"N	80°34'43.5581"W	1.04	
20739.00	88.120	148.240	7208.01	10690.70	-7398.55	8148.47	1758825.33	14443787.67	39°46'17.2029"N	80°34'42.9282"W	0.79	
20834.00	88.280	148.550	7210.99	10785.57	-7479.42	8198.23	1758875.07	14443706.83	39°46'16.4014"N	80°34'42.2958"W	0.37	
20928.00	88.220	147.990	7213.86	10879.45	-7559.34	8247.64	1758924.46	14443626.95	39°46'15.6093"N	80°34'41.6678"W	0.60	

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Actual Wellpath Report

Charles Jamison MSH 610H AWB_ awp 50' - 29567' Proj: 29592'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	Charles Jamison MSH 610H
Field	Marshall WV	API	47051024260000
Facility	Charles Jamison MSH Pad	Wellbore	Charles Jamison MSH 610H AWB
Slot	610H		

WELLPATH DATA (333 stations)												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
21022.00	88.210	148.480	7216.79	10973.34	-7639.22	8297.11	1758973.91	14443547.10	39°46'14.8176"N	80°34'41.0392"W	0.52	
21117.00	87.720	148.070	7220.16	11068.20	-7719.97	8347.03	1759023.81	14443466.37	39°46'14.0172"N	80°34'40.4047"W	0.67	
21211.00	87.910	148.270	7223.75	11162.06	-7799.78	8396.57	1759073.33	14443386.60	39°46'13.2262"N	80°34'39.7751"W	0.29	
21305.00	88.120	148.660	7227.00	11255.92	-7879.85	8445.70	1759122.44	14443306.56	39°46'12.4326"N	80°34'39.1507"W	0.47	
21400.00	87.880	148.260	7230.32	11350.77	-7960.76	8495.37	1759172.09	14443225.68	39°46'11.6306"N	80°34'38.5195"W	0.49	
21494.00	87.600	148.200	7234.03	11444.63	-8040.62	8544.82	1759221.52	14443145.85	39°46'10.8392"N	80°34'37.8910"W	0.30	
21589.00	87.940	148.780	7237.72	11539.47	-8121.55	8594.43	1759271.12	14443064.95	39°46'10.0371"N	80°34'37.2605"W	0.71	
21684.00	87.780	148.480	7241.27	11634.30	-8202.60	8643.85	1759320.52	14442983.93	39°46'9.2337"N	80°34'36.6326"W	0.36	
21779.00	87.480	148.650	7245.20	11729.12	-8283.59	8693.35	1759370.00	14442902.97	39°46'8.4310"N	80°34'36.0035"W	0.36	
21873.00	87.260	147.720	7249.51	11822.95	-8363.38	8742.86	1759419.48	14442823.21	39°46'7.6402"N	80°34'35.3744"W	1.02	
21968.00	88.430	149.010	7253.09	11917.80	-8444.21	8792.65	1759469.26	14442742.42	39°46'6.8391"N	80°34'34.7417"W	1.83	
22062.00	87.780	148.370	7256.19	12011.64	-8524.47	8841.47	1759518.06	14442662.18	39°46'6.0436"N	80°34'34.1213"W	0.97	
22157.00	88.830	148.980	7259.00	12106.50	-8605.59	8890.84	1759567.41	14442581.10	39°46'5.2396"N	80°34'33.4940"W	1.28	
22251.00	87.810	148.900	7261.76	12200.33	-8686.08	8939.31	1759615.86	14442500.64	39°46'4.4419"N	80°34'32.8781"W	1.09	
22345.00	88.210	147.730	7265.02	12294.19	-8766.02	8988.66	1759665.19	14442420.74	39°46'3.6496"N	80°34'32.2510"W	1.31	
22439.00	88.180	148.520	7267.98	12388.08	-8845.80	9038.27	1759714.78	14442340.98	39°46'2.8588"N	80°34'31.6205"W	0.84	
22534.00	88.000	148.740	7271.15	12482.93	-8926.87	9087.69	1759764.19	14442259.95	39°46'2.0553"N	80°34'30.9925"W	0.30	
22628.00	88.000	148.550	7274.43	12576.77	-9007.09	9136.58	1759813.05	14442179.75	39°46'1.2602"N	80°34'30.3714"W	0.20	
22723.00	87.970	148.740	7277.77	12671.61	-9088.17	9185.98	1759862.43	14442098.71	39°46'0.4567"N	80°34'29.7437"W	0.20	
22818.00	88.340	148.850	7280.83	12766.44	-9169.38	9235.17	1759911.61	14442017.53	39°45'59.6518"N	80°34'29.1186"W	0.41	
22912.00	88.120	148.670	7283.73	12860.29	-9249.71	9283.90	1759960.32	14441937.23	39°45'58.8556"N	80°34'28.4995"W	0.30	
23007.00	88.210	148.450	7286.78	12955.15	-9330.72	9333.43	1760009.82	14441856.25	39°45'58.0527"N	80°34'27.8702"W	0.25	
23101.00	88.090	148.230	7289.81	13049.02	-9410.69	9382.74	1760059.12	14441776.31	39°45'57.2601"N	80°34'27.2436"W	0.27	
23196.00	88.210	148.210	7292.88	13143.90	-9491.41	9432.75	1760109.11	14441695.63	39°45'56.4600"N	80°34'26.6081"W	0.13	
23290.00	88.280	148.080	7295.76	13237.79	-9571.21	9482.33	1760158.67	14441615.85	39°45'55.6690"N	80°34'25.9780"W	0.16	
23385.00	88.490	148.550	7298.43	13332.67	-9652.02	9532.21	1760208.53	14441535.08	39°45'54.8681"N	80°34'25.3442"W	0.54	
23479.00	88.120	148.370	7301.21	13426.54	-9732.10	9581.36	1760257.66	14441455.03	39°45'54.0744"N	80°34'24.7197"W	0.44	
23573.00	88.250	148.250	7304.19	13520.42	-9812.04	9630.72	1760307.00	14441375.11	39°45'53.2820"N	80°34'24.0925"W	0.19	
23668.00	88.250	148.340	7307.09	13615.30	-9892.83	9680.62	1760356.88	14441294.36	39°45'52.4813"N	80°34'23.4584"W	0.09	
23762.00	88.340	148.130	7309.89	13709.18	-9972.71	9730.08	1760406.33	14441214.51	39°45'51.6895"N	80°34'22.8299"W	0.24	

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Charles Jamison MSH 610H AWB_ awp 50' - 29567' Proj: 29592'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	Charles Jamison MSH 610H
Field	Marshall WV	API	47051024260000
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WELLPATH DATA (333 stations)												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS ["/100ft]	Comments
23857.00	88.520	148.040	7312.49	13804.08	-10053.32	9780.29	1760456.51	14441133.93	39°45'50.8905"N	80°34'22.1919"W	0.21	
23951.00	88.520	148.380	7314.92	13897.98	-10133.19	9829.79	1760506.00	14441054.09	39°45'50.0988"N	80°34'21.5629"W	0.36	
24046.00	87.690	147.670	7318.06	13992.87	-10213.74	9880.07	1760556.25	14440973.58	39°45'49.3005"N	80°34'20.9239"W	1.15	
24140.00	88.400	148.620	7321.27	14086.74	-10293.53	9929.65	1760605.82	14440893.81	39°45'48.5096"N	80°34'20.2939"W	1.26	
24235.00	88.890	146.370	7323.51	14181.68	-10373.62	9980.68	1760656.83	14440813.76	39°45'47.7157"N	80°34'19.6453"W	2.42	
24330.00	88.520	144.030	7325.66	14276.64	-10451.60	10034.88	1760711.01	14440735.80	39°45'46.9425"N	80°34'18.9560"W	2.49	
24425.00	88.250	142.270	7328.34	14371.48	-10527.59	10091.83	1760767.93	14440659.85	39°45'46.1888"N	80°34'18.2315"W	1.87	
24519.00	88.460	140.880	7331.04	14465.16	-10601.20	10150.23	1760826.31	14440586.26	39°45'45.4586"N	80°34'17.4882"W	1.49	
24613.00	88.340	141.070	7333.66	14558.76	-10674.20	10209.39	1760885.45	14440513.30	39°45'44.7344"N	80°34'16.7351"W	0.24	
24707.00	87.970	139.960	7336.69	14652.29	-10746.71	10269.13	1760945.17	14440440.81	39°45'44.0150"N	80°34'15.9745"W	1.24	
24801.00	88.120	139.930	7339.90	14745.71	-10818.61	10329.59	1761005.60	14440368.93	39°45'43.3015"N	80°34'15.2048"W	0.16	
24896.00	88.340	140.710	7342.83	14840.20	-10891.69	10390.21	1761066.20	14440295.88	39°45'42.5764"N	80°34'14.4329"W	0.85	
24990.00	88.280	138.990	7345.60	14933.61	-10963.51	10450.80	1761126.76	14440224.10	39°45'41.8638"N	80°34'13.6616"W	1.83	
25085.00	88.610	139.190	7348.18	15027.89	-11035.28	10512.99	1761188.93	14440152.35	39°45'41.1516"N	80°34'12.8696"W	0.41	
25179.00	88.370	138.470	7350.66	15121.13	-11106.01	10574.84	1761250.76	14440081.65	39°45'40.4496"N	80°34'12.0819"W	0.81	
25274.00	88.370	138.400	7353.36	15215.26	-11177.06	10637.85	1761313.74	14440010.62	39°45'39.7445"N	80°34'11.2795"W	0.07	
25368.00	88.340	138.810	7356.06	15308.44	-11247.55	10699.98	1761375.85	14439940.17	39°45'39.0450"N	80°34'10.4883"W	0.44	
25463.00	88.680	138.870	7358.53	15402.67	-11319.05	10762.48	1761438.33	14439868.69	39°45'38.3354"N	80°34'9.6923"W	0.36	
25557.00	88.800	139.050	7360.60	15495.94	-11389.93	10824.19	1761500.01	14439797.84	39°45'37.6320"N	80°34'8.9065"W	0.23	
25651.00	89.420	138.970	7362.06	15589.24	-11460.88	10885.84	1761561.63	14439726.92	39°45'36.9279"N	80°34'8.1215"W	0.67	
25745.00	89.110	139.120	7363.26	15682.54	-11531.86	10947.45	1761623.22	14439655.97	39°45'36.2235"N	80°34'7.3370"W	0.37	
25840.00	88.920	139.330	7364.90	15776.86	-11603.79	11009.48	1761685.23	14439584.06	39°45'35.5096"N	80°34'6.5471"W	0.30	
25934.00	88.860	138.900	7366.72	15870.17	-11674.84	11071.00	1761746.72	14439513.04	39°45'34.8045"N	80°34'5.7638"W	0.46	
26029.00	88.920	139.390	7368.56	15964.47	-11746.69	11133.13	1761808.83	14439441.22	39°45'34.0916"N	80°34'4.9727"W	0.52	
26123.00	88.490	138.430	7370.68	16057.73	-11817.51	11194.89	1761870.57	14439370.42	39°45'33.3887"N	80°34'4.1862"W	1.12	
26218.00	88.770	138.850	7372.95	16151.92	-11888.80	11257.65	1761933.30	14439299.17	39°45'32.6812"N	80°34'3.3870"W	0.53	
26312.00	88.920	138.910	7374.85	16245.18	-11959.59	11319.45	1761995.08	14439228.40	39°45'31.9786"N	80°34'2.6000"W	0.17	
26407.00	88.180	137.920	7377.25	16339.32	-12030.63	11382.49	1762058.09	14439157.39	39°45'31.2736"N	80°34'1.7973"W	1.30	
26501.00	89.260	139.090	7379.35	16432.49	-12101.02	11444.75	1762120.33	14439087.03	39°45'30.5750"N	80°34'1.0044"W	1.69	
26595.00	88.770	138.770	7380.97	16525.77	-12171.87	11506.50	1762182.05	14439016.20	39°45'29.8718"N	80°34'0.2181"W	0.62	

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Actual Wellpath Report

Charles Jamison MSH 610H AWB_awp 50' - 29567' Proj: 29592'
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REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	Charles Jamison MSH 610H
Field	Marshall WV	API	47051024260000
Facility	Charles Jamison MSH Pad	Wellbore	Charles Jamison MSH 610H AWB
Slot	610H		

WELLPATH DATA (333 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
26690.00	88.890	139.850	7382.91	16620.10	-12243.89	11568.42	1762243.95	14438944.21	39°45'29.1572"N	80°33'59.4297"W	1.14	
26784.00	88.830	139.450	7384.78	16713.51	-12315.51	11629.27	1762304.77	14438872.62	39°45'28.4464"N	80°33'58.6550"W	0.43	
26879.00	88.980	139.410	7386.59	16807.87	-12387.66	11691.04	1762366.53	14438800.49	39°45'27.7304"N	80°33'57.8685"W	0.16	
26973.00	89.200	139.220	7388.09	16901.22	-12458.93	11752.31	1762427.77	14438729.25	39°45'27.0231"N	80°33'57.0884"W	0.31	
27067.00	88.830	137.870	7389.70	16994.41	-12529.37	11814.53	1762489.97	14438658.84	39°45'26.3241"N	80°33'56.2961"W	1.49	
27161.00	88.370	137.520	7392.00	17087.40	-12598.87	11877.78	1762553.19	14438589.37	39°45'25.6342"N	80°33'55.4906"W	0.61	
27255.00	88.740	137.760	7394.37	17180.37	-12668.31	11941.10	1762616.48	14438519.96	39°45'24.9449"N	80°33'54.6842"W	0.47	
27350.00	88.830	139.030	7396.38	17274.52	-12739.33	12004.16	1762679.52	14438448.97	39°45'24.2401"N	80°33'53.8811"W	1.34	
27444.00	89.540	139.460	7397.72	17367.86	-12810.52	12065.52	1762740.86	14438377.80	39°45'23.5335"N	80°33'53.0999"W	0.88	
27538.00	90.090	139.320	7398.02	17461.23	-12881.88	12126.71	1762802.02	14438306.46	39°45'22.8253"N	80°33'52.3209"W	0.60	
27633.00	89.350	140.710	7398.49	17555.71	-12954.67	12187.75	1762863.04	14438233.71	39°45'22.1031"N	80°33'51.5438"W	1.66	
27727.00	89.600	140.700	7399.35	17649.31	-13027.41	12247.28	1762922.55	14438160.99	39°45'21.3813"N	80°33'50.7862"W	0.27	
27822.00	89.420	140.680	7400.16	17743.90	-13100.92	12307.46	1762982.70	14438087.52	39°45'20.6521"N	80°33'50.0202"W	0.19	
27918.00	90.030	141.280	7400.62	17839.53	-13175.50	12367.90	1763043.12	14438012.96	39°45'19.9121"N	80°33'49.2510"W	0.89	
28012.00	89.850	140.830	7400.72	17933.18	-13248.61	12426.99	1763102.18	14437939.88	39°45'19.1867"N	80°33'48.4990"W	0.52	
28107.00	90.180	140.690	7400.70	18027.78	-13322.19	12487.08	1763162.25	14437866.33	39°45'18.4567"N	80°33'47.7342"W	0.38	
28201.00	89.850	140.540	7400.67	18121.37	-13394.84	12546.72	1763221.88	14437793.71	39°45'17.7358"N	80°33'46.9750"W	0.39	
28296.00	90.090	140.810	7400.72	18215.96	-13468.33	12606.93	1763282.06	14437720.25	39°45'17.0067"N	80°33'46.2088"W	0.38	
28390.00	90.060	140.310	7400.60	18309.54	-13540.92	12666.64	1763341.75	14437647.68	39°45'16.2864"N	80°33'45.4487"W	0.53	
28485.00	90.310	140.950	7400.29	18404.12	-13614.36	12726.90	1763401.98	14437574.27	39°45'15.5577"N	80°33'44.6818"W	0.72	
28580.00	90.180	140.840	7399.88	18498.75	-13688.08	12786.82	1763461.88	14437500.58	39°45'14.8263"N	80°33'43.9192"W	0.18	
28674.00	90.000	140.450	7399.74	18592.34	-13760.76	12846.43	1763521.47	14437427.93	39°45'14.1051"N	80°33'43.1605"W	0.46	
28769.00	90.030	140.460	7399.71	18686.90	-13834.02	12906.92	1763581.93	14437354.70	39°45'13.3782"N	80°33'42.3907"W	0.03	
28863.00	90.250	140.600	7399.48	18780.47	-13906.58	12966.67	1763641.66	14437282.16	39°45'12.6582"N	80°33'41.6302"W	0.28	
28958.00	89.970	140.380	7399.30	18875.03	-13979.88	13027.11	1763702.07	14437208.90	39°45'11.9309"N	80°33'40.8609"W	0.37	
29052.00	89.820	140.530	7399.47	18968.59	-14052.36	13086.96	1763761.90	14437136.44	39°45'11.2117"N	80°33'40.0992"W	0.23	
29146.00	90.370	140.720	7399.32	19062.18	-14125.03	13146.59	1763821.51	14437063.81	39°45'10.4907"N	80°33'39.3403"W	0.62	
29241.00	90.090	140.980	7398.94	19156.80	-14198.70	13206.57	1763881.46	14436990.16	39°45'9.7597"N	80°33'38.5770"W	0.40	
29336.00	90.090	141.140	7398.79	19251.45	-14272.59	13266.28	1763941.15	14436916.30	39°45'9.0266"N	80°33'37.8172"W	0.17	
29430.00	90.000	141.030	7398.71	19345.10	-14345.73	13325.32	1764000.17	14436843.19	39°45'8.3009"N	80°33'37.0657"W	0.15	

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REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	Charles Jamison MSH 610H
Field	Marshall WV	API	47051024260000
Facility	Charles Jamison MSH Pad	Wellbore	Charles Jamison MSH 610H AWB
Slot	610H		

WELLPATH DATA (333 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	DLS [°/100ft]	Comments
29525.00	89.880	140.670	7398.81	19439.72	-14419.40	13385.30	1764060.13	14436769.55	39°45'7.5699"N	80°33'36.3025"W	0.40	
29567.00	89.970	141.060	7398.87	19481.55	-14451.98	13411.81	1764086.62	14436736.98	39°45'7.2467"N	80°33'35.9651"W	0.95	
29592.00‡	89.970	141.060	7398.88	19506.46	-14471.42	13427.52	1764102.33	14436717.54	39°45'7.0538"N	80°33'35.7652"W	0.00	Proj to TD: 29592'

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Charles Jamison MSH 610H LP Rev 6	7145.00	2801.82	1758.21	1752437.55	14453984.08	39°47'58.2981"N	80°36'4.1857"W	point
Charles Jamison MSH 610H WayPoint #1 Rev 3	7353.30	-10388.90	10005.37	1760681.51	14440798.48	39°45'47.5635"N	80°34'19.3301"W	point
Charles Jamison MSH 610H BHL Rev 5	7429.00	-14477.72	13419.50	1764094.31	14436711.25	39°45'6.9920"N	80°33'35.8683"W	point

WELLPATH COMPOSITION - Ref Wellbore: Charles Jamison MSH 610H AWB Ref Wellpath: Charles Jamison MSH 610H AWB_ awp 50' - 29567' Proj: 29592'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
26.00	946.00	BH Generic gyro - northseeking (Standard)	1 Gyro 50' - 946'	Charles Jamison MSH 610H AWB	4/18/2022
946.00	2050.00	OWSG MWD rev2 + HRGM	2 Tally WMD 1051' - 2050'	Charles Jamison MSH 610H AWB	4/18/2022
2050.00	2810.00	OWSG MWD rev2 + HRGM	3 Tally MWD 2139' - 2810'	Charles Jamison MSH 610H AWB	4/18/2022
2810.00	7041.00	OWSG MWD rev2 + HRGM	4 Tally MWD 2903' - 7041'	Charles Jamison MSH 610H AWB	4/19/2022
7041.00	29592.00	BH AutoTrak Curve/eXpress (2019) (HRGM, Short spacing)	5 BH MWD 7131' - 29567'	Charles Jamison MSH 610H AWB	4/26/2022

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