

**REFERENCE WELLPATH IDENTIFICATION**

Operator	SOUTHWESTERN ENERGY	Slot	Slot 03
Area	Wetzel County, WV	Well	SWN A WTZ 3H
Field	Wetzel	Wellbore	SWN A WTZ 3H AWB
Facility	SWN A WTZ Pad		

**REPORT SETUP INFORMATION**

Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Atenjen
Scale	0.999612	Report Generated	5/8/2019 at 2:51:44 PM
Convergence at slot	0.23° East	Database/Source file	WA_MPL_EASTERNUS_Defn\SWN_A_WTZ_3H_AWP_Proj_18720_.xml

**WELLPATH LOCATION**

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-33.59	121.99	1741806.72	14411357.96	39°40'57.319"N	80°38'22.639"W
Facility Reference Pt			1741684.77	14411391.54	39°40'57.656"N	80°38'24.198"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.478"W

**WELLPATH DATUM**

Calculation method	Minimum curvature	SDC 46 (KB) to Facility Vertical Datum	1368.10ft
Horizontal Reference Pt	Slot	SDC 46 (KB) to Mean Sea Level	1368.10ft
Vertical Reference Pt	SDC 46 (KB)	SDC 46 (KB) to Ground Level at Slot (Slot 03)	26.00ft
MD Reference Pt	SDC 46 (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	309.56°



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Field	Wetzel	Wellbore	SWN A WTZ 3H AWB
Facility	SWN A WTZ Pad		

## WELLPATH DATA (228 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	VertSect [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	296.010	0.00	0.00	0.00	0.00	1741806.72	14411357.96	39°40'57.319"N	80°38'22.639"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	296.010	26.00	0.00	0.00	0.00	1741806.72	14411357.96	39°40'57.319"N	80°38'22.639"W	0.00	0.000	0.00	0.00	0.00
50.00	0.290	296.010	50.00	0.06	0.03	-0.05	1741806.67	14411357.99	39°40'57.319"N	80°38'22.640"W	0.06	296.010	1.21	1.21	-266.62
100.00	0.180	271.200	100.00	0.24	0.08	-0.25	1741806.47	14411358.04	39°40'57.320"N	80°38'22.643"W	0.26	288.746	0.29	-0.22	-49.62
150.00	0.500	278.450	150.00	0.49	0.12	-0.54	1741806.18	14411358.08	39°40'57.320"N	80°38'22.646"W	0.55	282.248	0.64	0.64	14.50
200.00	0.360	313.490	200.00	0.84	0.26	-0.87	1741805.85	14411358.22	39°40'57.322"N	80°38'22.650"W	0.91	286.480	0.58	-0.28	70.08
250.00	0.190	254.730	250.00	1.04	0.34	-1.06	1741805.66	14411358.30	39°40'57.323"N	80°38'22.653"W	1.12	287.899	0.62	-0.34	-117.52
300.00	0.520	306.700	300.00	1.31	0.46	-1.33	1741805.39	14411358.42	39°40'57.324"N	80°38'22.656"W	1.40	289.032	0.86	0.66	103.94
350.00	0.280	0.030	349.99	1.62	0.72	-1.51	1741805.21	14411358.68	39°40'57.326"N	80°38'22.659"W	1.67	295.372	0.84	-0.48	106.66
399.00	0.460	326.760	398.99	1.88	1.00	-1.62	1741805.10	14411358.96	39°40'57.329"N	80°38'22.660"W	1.90	301.736	0.56	0.37	-67.90
435.00	0.210	354.600	434.99	2.07	1.19	-1.70	1741805.02	14411359.15	39°40'57.331"N	80°38'22.661"W	2.07	304.879	0.81	-0.69	77.33
525.00	0.200	35.040	524.99	2.20	1.48	-1.63	1741805.09	14411359.44	39°40'57.334"N	80°38'22.660"W	2.20	312.271	0.16	-0.01	44.93
615.00	0.320	80.320	614.99	2.04	1.65	-1.29	1741805.43	14411359.61	39°40'57.336"N	80°38'22.656"W	2.09	321.998	0.25	0.13	50.31
706.00	0.420	90.900	705.99	1.62	1.69	-0.71	1741806.02	14411359.65	39°40'57.336"N	80°38'22.648"W	1.83	337.320	0.13	0.11	11.63
796.00	0.560	85.520	795.99	1.04	1.72	0.06	1741806.78	14411359.68	39°40'57.336"N	80°38'22.638"W	1.72	2.106	0.16	0.16	-5.98
886.00	0.700	88.990	885.98	0.31	1.76	1.05	1741807.77	14411359.72	39°40'57.337"N	80°38'22.626"W	2.05	30.842	0.16	0.16	3.86
977.00	1.760	139.970	976.96	-1.49	0.70	2.51	1741809.22	14411358.66	39°40'57.326"N	80°38'22.607"W	2.60	74.386	1.57	1.16	56.02
1067.00	3.810	157.510	1066.85	-5.49	-3.12	4.54	1741811.26	14411354.84	39°40'57.288"N	80°38'22.581"W	5.51	124.514	2.44	2.28	19.49
1157.00	5.450	158.010	1156.55	-11.89	-9.85	7.28	1741814.00	14411348.12	39°40'57.222"N	80°38'22.547"W	12.25	143.513	1.82	1.82	0.56
1248.00	5.240	162.660	1247.16	-19.17	-17.82	10.14	1741816.86	14411340.15	39°40'57.143"N	80°38'22.511"W	20.50	150.361	0.53	-0.23	5.11
1338.00	4.280	171.270	1336.85	-25.12	-25.06	11.87	1741818.59	14411332.91	39°40'57.071"N	80°38'22.489"W	27.73	154.650	1.33	-1.07	9.57
1429.00	4.420	175.040	1427.59	-30.11	-31.91	12.69	1741819.41	14411326.06	39°40'57.003"N	80°38'22.479"W	34.35	158.310	0.35	0.15	4.14
1519.00	5.000	172.270	1517.28	-35.42	-39.26	13.52	1741820.24	14411318.72	39°40'56.931"N	80°38'22.468"W	41.52	160.995	0.69	0.64	-3.08
1610.00	4.080	172.690	1608.00	-40.70	-46.40	14.47	1741821.18	14411311.58	39°40'56.860"N	80°38'22.457"W	48.60	162.883	1.01	-1.01	0.46
1700.00	3.580	174.460	1697.79	-45.03	-52.37	15.14	1741822.86	14411309.61	39°40'56.801"N	80°38'22.448"W	54.51	163.870	0.57	-0.56	1.97
1790.00	4.100	172.510	1787.59	-49.37	-58.35	15.84	1741822.55	14411299.63	39°40'56.742"N	80°38'22.440"W	60.47	164.818	0.60	0.58	-2.17
1881.00	5.010	169.540	1878.30	-54.80	-65.49	16.98	1741823.69	14411292.50	39°40'56.671"N	80°38'22.426"W	67.65	165.464	1.03	1.00	-3.26
1971.00	5.620	169.160	1967.92	-61.21	-73.68	18.52	1741825.24	14411284.31	39°40'56.590"N	80°38'22.406"W	75.97	165.889	0.68	0.68	-0.42
2062.00	3.160	176.660	2058.64	-66.35	-80.56	19.51	1741826.22	14411277.43	39°40'56.522"N	80°38'22.394"W	82.89	166.388	2.77	-2.70	8.24
2152.00	2.500	183.460	2148.53	-69.19	-85.00	19.53	1741826.25	14411273.00	39°40'56.478"N	80°38'22.394"W	87.21	167.058	0.82	-0.73	7.56
2243.00	2.850	173.470	2239.43	-71.99	-89.23	19.67	1741826.38	14411268.77	39°40'56.437"N	80°38'22.392"W	91.37	167.568	0.64	0.38	-10.98
2333.00	3.370	181.530	2329.30	-75.23	-94.09	19.85	1741826.57	14411263.90	39°40'56.389"N	80°38'22.390"W	96.17	168.085	0.75	0.58	8.96

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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	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2424.00	3.420	181.720	2420.14	-78.55	-99.48	19.70	1741826.41	14411258.52	39°40'56.335"N	80°38'22.392"W	101.41	168.798	0.06	0.05	0.21
2515.00	3.090	185.610	2511.00	-81.58	-104.63	19.38	1741826.09	14411253.37	39°40'56.284"N	80°38'22.397"W	106.41	169.507	0.44	-0.36	4.27
2605.00	2.440	188.760	2600.89	-83.92	-108.94	18.86	1741825.56	14411249.06	39°40'56.242"N	80°38'22.404"W	110.56	170.183	0.74	-0.72	3.50
2695.00	1.870	188.620	2690.83	-85.65	-112.29	18.34	1741825.05	14411245.72	39°40'56.209"N	80°38'22.411"W	113.78	170.724	0.63	-0.63	-0.16
2785.00	0.990	195.840	2780.80	-86.72	-114.49	17.91	1741824.62	14411243.52	39°40'56.187"N	80°38'22.416"W	115.88	171.110	1.00	-0.98	8.02
2815.00	0.930	198.750	2810.79	-86.91	-114.97	17.76	1741824.47	14411243.04	39°40'56.182"N	80°38'22.418"W	116.33	171.219	0.26	-0.20	9.70
2879.00	0.740	212.340	2874.79	-87.15	-115.81	17.37	1741824.08	14411242.20	39°40'56.174"N	80°38'22.423"W	117.10	171.470	0.43	-0.30	21.23
2970.00	1.600	200.640	2965.77	-87.83	-117.49	16.81	1741823.32	14411240.51	39°40'56.157"N	80°38'22.433"W	118.66	171.954	0.98	0.95	-12.86
3060.00	3.220	191.910	3055.68	-89.21	-121.14	15.64	1741822.36	14411236.86	39°40'56.121"N	80°38'22.445"W	122.15	172.642	1.84	1.80	-9.70
3151.00	5.670	183.850	3146.41	-93.03	-128.13	14.81	1741821.53	14411229.88	39°40'56.052"N	80°38'22.456"W	128.98	173.405	2.77	2.69	-8.86
3241.00	5.830	180.190	3235.95	-98.52	-137.14	14.50	1741821.21	14411220.88	39°40'55.963"N	80°38'22.461"W	137.90	173.964	0.44	0.18	-4.07
3331.00	6.170	187.970	3325.46	-103.95	-146.50	13.81	1741820.53	14411211.52	39°40'55.871"N	80°38'22.470"W	147.15	174.613	0.98	0.38	8.64
3422.00	7.340	190.510	3415.83	-109.34	-157.06	12.08	1741818.79	14411200.96	39°40'55.767"N	80°38'22.483"W	157.52	175.603	1.33	1.29	2.79



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Field	Wetzel	Wellbore	SWN A WTZ 3H AWB
Facility	SWN A WTZ Pad		

## WELLPATH DATA (228 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]
3512.00	6.770	189.350	3505.15	-114.80	-167.94	10.17	1741816.88	1441190.08	39°40'55.659"N	80°38'22.518"W	168.25	176.536	0.65	-0.63	-1.29
3602.00	5.570	186.330	3594.62	-119.86	-177.52	8.82	1741815.54	1441180.51	39°40'55.564"N	80°38'22.536"W	177.74	177.155	1.38	-1.33	-3.36
3693.00	6.630	200.050	3685.11	-124.04	-186.84	6.53	1741813.25	1441171.19	39°40'55.472"N	80°38'22.565"W	186.96	177.997	1.97	-1.16	15.08
3783.00	6.470	203.020	3774.52	-127.22	-196.39	2.77	1741809.49	1441161.64	39°40'55.378"N	80°38'22.614"W	196.41	179.192	0.42	-0.18	3.30
3874.00	5.720	202.890	3865.01	-129.98	-205.29	-1.00	1741805.72	1441152.75	39°40'55.290"N	80°38'22.663"W	205.29	180.279	0.82	-0.82	-0.14
3964.00	7.330	205.250	3954.42	-132.68	-214.61	-5.19	1741801.53	1441143.43	39°40'55.198"N	80°38'22.717"W	214.68	181.386	1.81	-1.79	2.62
4055.00	7.240	201.370	4044.69	-135.91	-225.20	-9.76	1741796.97	1441132.84	39°40'55.094"N	80°38'22.776"W	225.42	182.481	0.55	-0.10	-4.26
4145.00	5.770	200.080	4134.11	-139.19	-234.74	-13.38	1741793.35	1441123.32	39°40'55.000"N	80°38'22.823"W	235.12	183.262	1.64	-1.63	-1.43
4235.00	7.370	198.860	4223.51	-142.73	-244.45	-16.80	1741789.93	1441113.61	39°40'54.904"N	80°38'22.867"W	245.02	183.931	1.78	-1.78	-1.36
4325.00	7.150	196.170	4312.79	-147.00	-255.29	-20.22	1741786.50	1441102.77	39°40'54.797"N	80°38'22.911"W	256.09	184.529	0.45	-0.24	-2.99
4416.00	5.870	192.800	4403.20	-151.34	-265.27	-22.83	1741783.91	1441092.80	39°40'54.699"N	80°38'22.945"W	266.25	184.919	1.47	-1.41	-3.70
4506.00	7.090	194.300	4492.63	-155.78	-275.14	-25.22	1741781.51	1441082.93	39°40'54.601"N	80°38'22.976"W	276.29	185.238	1.37	-1.36	1.67
4597.00	7.030	193.690	4582.94	-160.61	-285.99	-27.93	1741778.80	1441072.08	39°40'54.494"N	80°38'23.011"W	287.35	185.578	0.11	-0.07	-0.67
4687.00	6.610	190.100	4672.30	-165.56	-296.44	-30.14	1741776.59	1441061.63	39°40'54.391"N	80°38'23.040"W	297.97	185.806	0.66	-0.47	-3.99
4778.00	9.030	195.670	4762.45	-171.03	-308.48	-32.99	1741773.74	1441049.61	39°40'54.272"N	80°38'23.077"W	310.23	186.104	2.78	2.66	6.12
4868.00	9.750	195.700	4851.24	-176.97	-322.61	-36.96	1741769.78	1441035.47	39°40'54.132"N	80°38'23.129"W	324.72	186.535	0.80	0.80	0.03
4958.00	10.060	191.210	4939.90	-183.79	-337.66	-40.55	1741766.19	1441020.43	39°40'53.984"N	80°38'23.175"W	340.09	186.848	0.92	0.34	-4.99
5048.00	8.540	193.850	5028.72	-190.42	-351.86	-43.68	1741763.06	1441006.24	39°40'53.844"N	80°38'23.216"W	354.56	187.076	1.75	-1.69	2.93
5138.00	6.690	202.490	5117.92	-194.86	-363.19	-47.28	1741759.46	14410994.91	39°40'53.732"N	80°38'23.263"W	366.26	187.417	2.41	-2.06	9.60
5229.00	6.910	205.130	5208.28	-197.78	-373.05	-51.63	1741755.11	14410985.06	39°40'53.635"N	80°38'23.319"W	376.60	187.880	0.42	0.24	2.90
5319.00	6.940	188.780	5297.63	-201.91	-383.32	-54.76	1741751.98	14410974.79	39°40'53.533"N	80°38'23.359"W	387.21	188.131	2.18	0.03	-18.17
5409.00	5.900	181.050	5387.07	-207.57	-393.32	-55.68	1741751.06	14410964.79	39°40'53.434"N	80°38'23.372"W	397.24	188.057	1.50	-1.16	-8.59
5500.00	6.390	176.400	5477.55	-213.95	-403.05	-55.45	1741751.30	14410955.07	39°40'53.338"N	80°38'23.369"W	406.85	187.833	0.77	0.54	-5.11
5590.00	6.940	190.910	5566.95	-219.98	-413.39	-56.16	1741750.58	14410944.73	39°40'53.236"N	80°38'23.379"W	417.19	187.737	1.96	0.61	16.12
5681.00	6.740	200.550	5657.30	-224.36	-423.79	-59.08	1741747.67	14410934.34	39°40'53.133"N	80°38'23.417"W	427.89	187.936	1.28	-0.22	10.59
5771.00	5.060	206.590	5746.82	-226.97	-432.28	-62.71	1741744.04	14410925.84	39°40'53.050"N	80°38'23.464"W	436.81	188.254	1.99	-1.87	6.71
5861.00	5.740	211.940	5836.42	-228.46	-439.65	-66.86	1741739.88	14410918.48	39°40'52.977"N	80°38'23.517"W	444.71	188.648	0.94	0.76	5.94
5952.00	6.860	215.890	5926.87	-229.41	-447.92	-72.46	1741734.29	14410910.22	39°40'52.895"N	80°38'23.589"W	453.74	189.189	1.32	1.23	4.34
6042.00	5.510	198.640	6016.35	-231.30	-456.37	-76.99	1741729.76	14410901.77	39°40'52.812"N	80°38'23.648"W	462.82	189.576	2.54	-1.50	-19.17
6132.00	6.240	183.070	6105.89	-235.75	-465.35	-78.63	1741728.12	14410892.80	39°40'52.723"N	80°38'23.669"W	471.94	189.591	1.94	0.81	-17.30
6222.00	5.610	189.580	6195.41	-240.86	-474.57	-79.63	1741727.12	14410883.58	39°40'52.632"N	80°38'23.682"W	481.20	189.525	1.02	-0.70	7.23
6312.00	7.080	197.000	6284.85	-245.18	-484.21	-81.98	1741724.77	14410873.94	39°40'52.537"N	80°38'23.713"W	491.10	189.610	1.87	1.63	8.24

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6402.00	7.340	191.250	6374.14	-250.04	-495.15	-84.73	1741722.03	14410863.00	39°40'52.429"N	80°38'23.748"W	502.35	189.710	0.85	0.29	-6.39
6493.00	9.800	182.060	6484.12	-257.51	-508.60	-86.14	1741720.62	14410849.56	39°40'52.296"N	80°38'23.767"W	515.84	189.613	3.09	2.70	-10.10
6583.00	10.130	184.940	6552.77	-266.67	-524.14	-87.09	1741719.66	14410834.03	39°40'52.143"N	80°38'23.760"W	531.32	189.435	0.66	0.37	3.20
6635.00	9.640	190.660	6604.00	-271.37	-532.97	-88.29	1741718.46	14410825.20	39°40'52.055"N	80°38'23.796"W	540.24	189.406	2.11	-0.94	11.00
6680.00	8.030	201.770	6648.46	-274.15	-539.59	-90.16	1741716.60	14410818.58	39°40'51.990"N	80°38'23.820"W	547.07	189.486	5.20	-3.58	24.69
6725.00	8.120	219.450	6693.03	-275.12	-544.97	-93.34	1741713.41	14410813.20	39°40'51.937"N	80°38'23.861"W	552.90	189.719	5.50	0.20	39.29
6770.00	8.050	234.340	6737.58	-274.32	-549.27	-97.93	1741708.83	14410808.91	39°40'51.895"N	80°38'23.920"W	557.93	190.109	4.65	-0.09	33.09
6816.00	9.000	253.800	6783.08	-271.47	-552.16	-104.01	1741702.75	14410800.02	39°40'51.866"N	80°38'23.998"W	561.87	190.668	6.56	2.00	42.30
6860.00	10.220	273.710	6826.47	-266.37	-552.86	-111.22	1741695.55	14410805.31	39°40'51.860"N	80°38'24.090"W	563.94	191.374	8.00	2.77	45.25
6906.00	11.900	288.080	6871.63	-258.64	-551.13	-119.80	1741696.97	14410807.05	39°40'51.877"N	80°38'24.200"W	564.00	192.264	6.99	3.65	31.24
6951.00	13.960	297.240	6915.49	-249.02	-547.20	-129.04	1741677.73	14410810.97	39°40'51.916"N	80°38'24.318"W	562.21	193.269	6.44	4.58	20.36
6996.00	16.360	303.090	6958.92	-237.42	-541.26	-139.18	1741667.60	14410816.92	39°40'51.976"N	80°38'24.447"W	558.86	194.420	6.32	5.33	13.00
7042.00	19.420	306.190	7002.69	-223.34	-533.20	-150.78	1741658.00	14410824.97	39°40'52.056"N	80°38'24.566"W	554.11	195.790	6.96	6.65	6.74



# Actual Wellpath Report

SWN A WTZ 3H AWP Proj: 18720'

Page 4 of 8



## REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 03
Area	Wetzel County, WV	Well	SWN A WTZ 3H
Field	Wetzel	Wellbore	SWN A WTZ 3H AWB
Facility	SWN A WTZ Pad		

## WELLPATH DATA (228 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]
7087.00	21.890	308.620	7044.80	-207.49	-523.55	-1763.37	1741643.41	14410834.62	39°40'52.152"N	80°38'24.756"W	548.45	197.331	5.81	5.49	5.40
7131.00	25.710	311.420	7085.05	-189.74	-512.11	-176.94	1741629.85	14410846.05	39°40'52.265"N	80°38'24.929"W	541.82	199.061	9.05	8.68	6.36
7178.00	30.870	314.060	7126.42	-167.51	-496.97	-193.27	1741613.53	14410861.19	39°40'52.415"N	80°38'25.137"W	533.23	201.250	11.29	10.98	5.62
7223.00	37.070	315.720	7163.73	-142.49	-479.21	-211.05	1741595.75	14410878.93	39°40'52.592"N	80°38'25.363"W	523.63	203.769	13.93	13.78	3.69
7269.00	43.230	316.320	7198.87	-113.04	-457.87	-231.63	1741575.18	14410900.27	39°40'52.803"N	80°38'25.625"W	513.13	206.834	13.42	13.39	1.30
7314.00	48.020	315.420	7230.33	-81.08	-434.80	-254.02	1741552.80	14410923.33	39°40'53.032"N	80°38'25.911"W	503.57	210.295	10.74	10.64	-2.00
7359.00	52.680	314.360	7259.04	-46.59	-410.36	-278.57	1741528.26	14410947.76	39°40'53.275"N	80°38'26.223"W	495.98	214.170	10.51	10.36	-2.36
7404.00	57.490	312.690	7284.79	-9.79	-384.97	-305.33	1741501.51	14410973.14	39°40'53.527"N	80°38'26.564"W	491.35	218.419	11.11	10.69	-3.71
7449.00	62.720	311.580	7307.21	29.17	-358.82	-334.25	1741472.60	14410999.28	39°40'53.786"N	80°38'26.933"W	490.38	222.970	11.82	11.62	-2.47
7495.00	67.100	311.690	7326.71	70.79	-331.14	-365.38	1741441.48	14411026.95	39°40'54.061"N	80°38'27.330"W	493.11	227.814	9.52	9.52	0.24
7540.00	70.820	312.100	7342.86	112.75	-303.10	-396.64	1741410.24	14411054.98	39°40'54.339"N	80°38'27.728"W	499.19	232.614	8.31	8.27	0.91
7585.00	74.750	313.240	7356.18	155.66	-273.97	-428.23	1741378.65	14411084.10	39°40'54.629"N	80°38'28.131"W	508.37	237.390	9.06	8.73	2.53
7630.00	79.080	314.120	7366.37	199.37	-243.70	-459.92	1741346.98	14411114.35	39°40'54.929"N	80°38'28.534"W	520.50	242.082	9.81	9.62	1.96
7675.00	84.460	315.450	7372.81	243.70	-212.34	-491.52	1741315.39	14411145.70	39°40'55.240"N	80°38'28.937"W	535.42	246.635	12.31	11.96	2.96
7720.00	90.550	316.120	7374.76	288.37	-180.13	-522.85	1741284.07	14411177.90	39°40'55.560"N	80°38'29.336"W	553.01	250.990	13.61	13.53	1.49
7811.00	91.810	316.290	7372.89	378.74	-114.46	-585.82	1741221.13	14411243.54	39°40'56.211"N	80°38'30.138"W	596.90	258.944	1.40	1.38	0.19
7901.00	92.000	315.840	7369.90	468.11	-49.69	-648.23	1741158.74	14411308.29	39°40'56.854"N	80°38'30.933"W	650.13	265.617	0.54	0.21	-0.50
7992.00	91.910	314.740	7366.79	558.60	14.95	-712.21	1741094.79	14411372.90	39°40'57.495"N	80°38'31.748"W	712.37	271.202	1.21	-0.10	-1.21
8082.00	91.970	312.610	7363.75	648.31	77.06	-777.26	1741029.76	14411434.99	39°40'58.111"N	80°38'32.577"W	781.07	275.662	2.37	0.07	-2.37
8173.00	91.970	310.210	7360.62	739.21	137.21	-845.47	1740961.58	14411495.11	39°40'58.709"N	80°38'33.446"W	866.53	279.218	2.64	0.00	-2.64
8262.00	91.200	308.340	7358.16	828.17	193.52	-914.34	1740892.74	14411551.41	39°40'59.268"N	80°38'34.324"W	934.59	281.951	2.27	-0.87	-2.10
8353.00	91.420	307.380	7356.07	919.10	249.36	-986.16	1740820.94	14411607.22	39°40'59.823"N	80°38'35.240"W	1017.20	284.190	1.08	0.24	-1.05
8444.00	91.380	306.800	7353.85	1009.99	304.22	-1058.73	1740748.40	14411662.06	39°41'00.368"N	80°38'36.166"W	1101.57	286.032	0.64	-0.04	-0.64
8534.00	91.420	307.290	7351.65	1099.88	358.43	-1130.54	1740676.62	14411716.25	39°41'00.906"N	80°38'37.081"W	1186.00	287.591	0.55	0.04	0.54
8625.00	91.450	308.720	7349.37	1190.81	414.44	-1202.22	1740604.97	14411772.24	39°41'01.462"N	80°38'37.995"W	1271.65	289.020	1.57	0.03	1.57
8715.00	91.350	310.540	7347.17	1280.78	471.82	-1271.51	1740535.70	14411829.60	39°41'02.032"N	80°38'38.879"W	1356.23	290.358	2.02	-0.11	2.02
8806.00	91.450	313.500	7344.95	1371.66	532.71	-1339.09	1740468.15	14411890.46	39°41'02.637"N	80°38'39.740"W	1441.16	291.693	3.25	0.11	3.25
8896.00	91.660	314.150	7342.51	1461.38	595.01	-1404.00	1740403.27	14411952.74	39°41'03.255"N	80°38'40.567"W	1524.88	292.967	0.76	0.23	0.72
8987.00	91.540	314.580	7339.97	1552.02	658.61	-1469.03	1740338.26	14412016.32	39°41'03.886"N	80°38'41.396"W	1609.91	294.148	0.49	-0.13	0.47
9077.00	91.910	311.580	7337.26	1641.80	720.05	-1534.73	1740272.59	14412077.73	39°41'04.496"N	80°38'42.233"W	1695.25	295.135	3.36	0.41	-3.33
9167.00	92.090	311.420	7334.12	1731.69	779.65	-1602.09	1740205.25	14412137.31	39°41'05.087"N	80°38'43.092"W	1781.73	295.950	0.27	0.20	-0.18
9258.00	92.430	313.990	7330.53	1822.48	841.32	-1668.91	1740138.46	14412198.95	39°41'05.699"N	80°38'43.943"W	1868.97	296.753	2.85	0.37	2.82

**WELLPATH DATA (228 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]	Solid Rate [°/100ft]	Turn Rate [°/100ft]
9349.00	92.460	309.870	7326.64	1913.30	902.06	-1736.53	1740070.87	14412259.66	39°41'06.302"N	80°38'44.805"W	1956.85	297.450	4.52	0.03	-4.53
9439.00	92.370	306.350	7322.85	2003.18	957.54	-1807.27	1740000.15	14412315.13	39°41'06.853"N	80°38'45.707"W	2045.27	297.916	3.91	-0.10	-3.91
9530.00	92.550	308.790	7318.94	2094.03	1012.97	-1879.33	1739928.13	14412370.54	39°41'07.404"N	80°38'46.628"W	2134.94	298.325	2.99	0.20	2.99
9620.00	92.490	311.980	7314.99	2183.92	1071.22	-1947.81	1739859.68	14412428.76	39°41'07.982"N	80°38'47.499"W	2222.94	298.809	3.54	-0.07	3.54
9710.00	92.460	311.860	7311.10	2273.76	1131.29	-2014.71	1739792.80	14412488.81	39°41'08.579"N	80°38'48.352"W	2310.60	299.315	0.14	-0.03	-0.13
9801.00	92.590	308.620	7307.09	2364.65	1190.01	-2084.10	1739723.44	14412547.51	39°41'09.162"N	80°38'49.236"W	2399.92	299.726	3.56	0.14	-3.56
9892.00	92.460	311.440	7303.08	2455.55	1248.48	-2153.70	1739653.86	14412605.95	39°41'09.742"N	80°38'50.124"W	2489.41	300.100	3.10	-0.14	3.10
9982.00	92.490	313.640	7299.19	2545.34	1309.27	-2219.95	1739587.64	14412666.72	39°41'10.346"N	80°38'50.968"W	2577.28	300.551	2.44	0.03	2.44
10073.00	92.430	315.160	7295.29	2635.93	1372.88	-2284.90	1739522.71	14412730.30	39°41'10.977"N	80°38'51.796"W	2665.63	300.999	1.67	-0.07	1.67
10163.00	92.460	314.540	7291.45	2725.47	1436.29	-2348.65	1739458.99	14412793.69	39°41'11.606"N	80°38'52.608"W	2753.02	301.447	0.69	0.03	-0.69
10254.00	92.490	313.240	7287.52	2816.12	1499.32	-2414.17	1739393.49	14412856.70	39°41'12.231"N	80°38'53.443"W	2841.86	301.842	1.43	0.03	-1.43
10344.00	91.820	312.570	7284.13	2905.90	1560.55	-2480.05	1739327.64	14412917.90	39°41'12.839"N	80°38'54.282"W	2930.18	302.180	1.05	-0.74	-0.74
10434.00	91.720	311.750	7281.35	2996.77	1620.93	-2546.73	1739260.99	14412978.26	39°41'13.438"N	80°38'55.132"W	3018.81	302.476	0.92	-0.11	-0.91





## REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 03
Area	Wetzel County, WV	Well	SWN A WTZ 3H
Field	Wetzel	Wellbore	SWN A WTZ 3H AWB
Facility	SWN A WTZ Pad		

## WELLPATH DATA (228 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]
10524.00	91.660	311.850	7278.70	3085.66	1680.89	-2613.79	1739193.95	14413038.19	39°41'14.033"N	80°38'55.987"W	3107.62	302.744	0.13	-0.07	0.11
10615.00	91.260	315.260	7276.38	3176.39	1743.56	-2679.71	1739128.06	14413100.84	39°41'14.655"N	80°38'56.827"W	3197.01	303.050	3.77	-0.44	3.75
10706.00	91.290	313.440	7274.35	3267.05	1807.16	-2744.41	1739063.03	14413164.41	39°41'15.286"N	80°38'57.656"W	3286.27	303.361	2.00	0.03	-2.00
10796.00	91.320	312.770	7272.30	3356.85	1868.64	-2810.45	1738997.36	14413225.87	39°41'15.897"N	80°38'58.493"W	3374.98	303.620	0.74	0.03	-0.74
10886.00	91.260	313.520	7270.28	3446.65	1930.17	-2876.10	1738931.74	14413287.38	39°41'16.507"N	80°38'59.330"W	3463.75	303.866	0.84	-0.07	0.83
10976.00	91.140	315.720	7268.39	3536.28	1993.37	-2940.15	1738867.72	14413350.55	39°41'17.134"N	80°39'00.146"W	3552.18	304.137	2.45	-0.13	2.44
11067.00	91.080	314.100	7266.63	3626.86	2057.60	-3004.58	1738803.31	14413414.76	39°41'17.772"N	80°39'00.967"W	3641.60	304.404	1.78	-0.07	-1.78
11157.00	91.110	313.670	7264.91	3716.59	2119.98	-3069.43	1738738.48	14413477.11	39°41'18.391"N	80°39'01.793"W	3730.38	304.632	0.48	0.03	-0.48
11247.00	91.010	313.610	7263.25	3806.35	2182.08	-3134.55	1738673.39	14413539.19	39°41'19.007"N	80°39'02.623"W	3819.28	304.843	0.13	-0.11	-0.07
11337.00	91.050	314.190	7261.63	3896.07	2244.48	-3199.39	1738608.58	14413601.56	39°41'19.626"N	80°39'03.450"W	3908.17	305.051	0.65	0.04	0.64
11428.00	91.140	315.920	7259.89	3986.63	2308.87	-3263.66	1738544.33	14413665.93	39°41'20.265"N	80°39'04.269"W	3997.80	305.277	1.90	0.10	1.90
11516.00	91.140	315.660	7258.14	4074.10	2371.93	-3325.01	1738483.00	14413728.97	39°41'20.890"N	80°39'05.050"W	4084.33	305.503	0.30	0.00	-0.30
11607.00	91.170	316.020	7256.30	4164.53	2437.20	-3388.40	1738419.65	14413794.21	39°41'21.538"N	80°39'05.858"W	4173.87	305.727	0.40	0.03	0.40
11697.00	91.080	312.460	7254.54	4254.20	2499.97	-3452.85	1738355.22	14413856.96	39°41'22.161"N	80°39'06.679"W	4262.87	305.906	3.96	-0.10	-3.96
11787.00	91.050	312.890	7252.86	4344.05	2560.97	-3519.01	1738289.08	14413917.93	39°41'22.766"N	80°39'07.522"W	4352.24	306.045	0.48	-0.03	0.48
11878.00	90.680	313.540	7251.49	4434.86	2623.27	-3585.32	1738222.80	14413980.21	39°41'23.384"N	80°39'08.367"W	4442.53	306.192	0.82	-0.41	0.71
11968.00	90.620	311.480	7250.47	4524.73	2684.08	-3651.66	1738156.49	14414040.99	39°41'23.988"N	80°39'09.213"W	4531.98	306.317	2.29	-0.07	-2.29
12059.00	90.710	307.990	7249.41	4615.71	2742.24	-3721.62	1738086.55	14414099.13	39°41'24.565"N	80°39'10.105"W	4622.81	306.384	3.84	0.10	-3.84
12149.00	90.580	308.140	7248.40	4705.67	2797.72	-3792.48	1738015.72	14414154.59	39°41'25.116"N	80°39'11.009"W	4712.76	306.416	0.22	-0.14	0.17
12239.00	91.260	310.890	7246.95	4795.65	2854.97	-3861.89	1737946.34	14414211.82	39°41'25.685"N	80°39'11.894"W	4802.61	306.474	3.15	0.76	3.06
12329.00	91.110	309.520	7245.09	4885.62	2913.06	-3930.61	1737877.64	14414269.88	39°41'26.261"N	80°39'12.770"W	4892.40	306.543	1.53	-0.17	-1.52
12420.00	91.050	308.590	7243.38	4976.60	2970.38	-4001.26	1737807.02	14414327.18	39°41'26.831"N	80°39'13.671"W	4983.30	306.589	1.02	-0.07	-1.02
12510.00	91.110	307.700	7241.68	5066.56	3025.96	-4072.03	1737736.28	14414382.74	39°41'27.383"N	80°39'14.574"W	5073.25	306.616	0.99	0.07	-0.99
12600.00	91.020	307.290	7240.01	5156.48	3080.73	-4143.42	1737664.91	14414437.49	39°41'27.927"N	80°39'15.484"W	5163.22	306.632	0.47	-0.10	-0.46
12691.00	91.050	309.130	7238.36	5247.44	3137.01	-4214.91	1737593.45	14414493.75	39°41'28.485"N	80°39'16.396"W	5254.17	306.659	2.02	0.03	2.02
12781.00	91.010	310.520	7236.75	5337.42	3194.64	-4284.02	1737524.37	14414551.35	39°41'29.058"N	80°39'17.277"W	5344.02	306.712	1.54	-0.04	1.54
12871.00	91.020	314.100	7235.15	5427.29	3255.20	-4350.56	1737457.86	14414611.89	39°41'29.659"N	80°39'18.125"W	5433.57	306.805	3.98	0.01	3.98
12962.00	91.110	317.360	7233.46	5517.73	3320.34	-4414.06	1737394.38	14414677.01	39°41'30.305"N	80°39'18.934"W	5523.46	306.951	3.58	0.10	3.58
13052.00	91.140	317.500	7231.69	5606.87	3386.61	-4474.93	1737333.54	14414743.25	39°41'30.962"N	80°39'19.710"W	5611.96	307.118	0.16	0.03	0.16
13142.00	91.260	314.880	7229.81	5696.24	3451.54	-4537.22	1737271.28	14414808.15	39°41'31.606"N	80°39'20.503"W	5700.83	307.261	2.91	0.13	-2.91
13233.00	91.350	311.240	7227.73	5787.03	3513.64	-4603.67	1737204.84	14414870.23	39°41'32.222"N	80°39'21.350"W	5791.33	307.352	4.00	0.10	-4.00
13323.00	90.710	307.420	7226.11	5877.00	3570.66	-4673.27	1737135.28	14414927.23	39°41'32.789"N	80°39'22.238"W	5881.25	307.382	4.30	-0.71	-4.24



**WELL PATH DATA (228 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]	Bulid Rate [°/100ft]	Turn Rate [°/100ft]
13413.00	90.710	306.460	7225.00	5966.90	3624.75	-4745.19	1737063.38	14414981.29	39°41'33.326"N	80°39'23.155"W	5971.24	307.375	1.07	0.00	-1.07
13504.00	90.680	306.670	7223.90	6057.77	3678.96	-4818.28	1736990.32	14415035.48	39°41'33.864"N	80°39'24.088"W	6062.22	307.363	0.23	-0.03	0.23
13594.00	90.710	309.200	7222.80	6147.72	3734.28	-4899.25	1736919.36	14415090.78	39°41'34.414"N	80°39'24.963"W	6152.20	307.372	2.81	0.03	2.81
13685.00	90.710	310.080	7221.68	6238.71	3792.33	-4959.32	1736849.33	14415148.81	39°41'34.990"N	80°39'25.886"W	6243.12	307.405	0.97	0.00	0.97
13776.00	90.650	311.140	7220.60	6329.68	3851.55	-5028.40	1736780.28	14415208.01	39°41'35.578"N	80°39'26.767"W	6333.98	307.451	1.17	-0.07	1.16
13866.00	90.520	312.120	7219.68	6419.62	3911.34	-5095.66	1736713.04	14415267.77	39°41'36.171"N	80°39'27.625"W	6423.73	307.509	1.10	-0.14	1.09
13956.00	89.940	310.440	7219.32	6509.57	3970.71	-5163.30	1736645.44	14415327.12	39°41'36.761"N	80°39'28.487"W	6513.54	307.561	1.97	-0.64	-1.87
14047.00	90.490	309.800	7218.97	6600.57	4029.23	-5232.98	1736575.78	14415385.92	39°41'37.342"N	80°39'29.376"W	6604.45	307.595	1.10	0.60	-0.92
14138.00	90.430	312.030	7218.24	6691.54	4088.70	-5301.85	1736506.94	14415445.07	39°41'37.932"N	80°39'30.254"W	6695.30	307.639	2.67	-0.07	2.67
14229.00	90.520	316.220	7217.49	6782.23	4152.04	-5367.15	1736441.66	14415508.38	39°41'38.560"N	80°39'31.086"W	6785.70	307.726	4.61	0.10	4.60
14319.00	90.520	315.810	7216.67	6871.65	4216.80	-5429.65	1736379.19	14415573.11	39°41'39.203"N	80°39'31.882"W	6874.77	307.834	0.46	0.00	-0.46
14410.00	90.580	314.530	7215.80	6962.21	4281.33	-5493.80	1736315.06	14415637.62	39°41'39.843"N	80°39'32.700"W	6965.03	307.929	1.41	0.07	-1.41
14500.00	90.620	311.730	7214.86	7052.02	4342.85	-5559.48	1736249.41	14415699.11	39°41'40.463"N	80°39'33.537"W	7054.65	307.996	3.11	0.04	-3.11



## REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 03
Area	Wetzel County, WV	Well	SWN A WTZ 3H
Field	Wetzel	Wellbore	SWN A WTZ 3H AWB
Facility	SWN A WTZ Pad		

## WELLPATH DATA (228 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]
14591.00	90.580	310.430	7213.90	7142.98	4402.64	-5628.07	1736180.85	14415758.88	39°41'41.047"N	80°39'34.412"W	7145.51	308.035	1.43	-0.04	-1.43
14681.00	90.460	314.370	7213.09	7232.85	4463.31	-5694.51	1736114.43	14415819.53	39°41'41.649"N	80°39'35.259"W	7235.23	308.089	4.38	-0.13	4.38
14771.00	90.520	315.920	7212.32	7322.42	4527.11	-5757.98	1736050.98	14415883.30	39°41'42.282"N	80°39'36.068"W	7324.56	308.176	1.72	0.07	1.72
14861.00	90.550	316.750	7211.48	7411.78	4592.21	-5820.12	1735988.87	14415948.38	39°41'42.927"N	80°39'36.859"W	7413.65	308.274	0.92	0.03	0.92
14951.00	90.580	318.360	7210.59	7500.90	4658.62	-5880.86	1735928.16	14416014.76	39°41'43.586"N	80°39'37.633"W	7502.48	308.385	1.79	0.03	1.79
15042.00	90.620	318.250	7209.64	7590.84	4726.57	-5941.38	1735867.66	14416082.68	39°41'44.260"N	80°39'38.404"W	7592.13	308.503	0.13	0.04	-0.12
15131.00	90.580	316.730	7208.70	7678.98	4792.17	-6001.52	1735807.55	14416148.26	39°41'44.910"N	80°39'39.170"W	7680.04	308.607	1.71	-0.04	-1.71
15222.00	90.650	314.080	7207.73	7769.49	4856.96	-6065.40	1735743.69	14416213.02	39°41'45.553"N	80°39'39.984"W	7770.40	308.687	2.91	0.08	-2.91
15312.00	90.950	309.700	7206.47	7859.39	4917.03	-6132.37	1735676.74	14416273.07	39°41'46.149"N	80°39'40.838"W	7860.23	308.723	4.88	0.33	-4.87
15403.00	90.580	308.680	7205.25	7950.38	4974.53	-6202.90	1735606.25	14416330.55	39°41'46.720"N	80°39'41.738"W	7951.22	308.729	1.19	-0.41	-1.12
15493.00	90.860	309.540	7204.12	8040.37	5031.29	-6272.72	1735536.44	14416387.29	39°41'47.284"N	80°39'42.628"W	8041.21	308.733	1.00	0.31	0.96
15584.00	90.490	311.830	7203.05	8131.34	5090.61	-6341.72	1735467.48	14416446.58	39°41'47.873"N	80°39'43.508"W	8132.14	308.755	2.55	-0.41	2.52
15674.00	90.550	313.890	7202.23	8221.18	5151.82	-6407.68	1735401.54	14416507.77	39°41'48.480"N	80°39'44.349"W	8221.90	308.800	2.29	0.07	2.29
15764.00	91.080	309.480	7200.95	8311.09	5211.65	-6474.87	1735334.37	14416567.58	39°41'49.074"N	80°39'45.206"W	8311.76	308.831	4.93	0.59	-4.90
15854.00	90.580	307.110	7199.65	8401.05	5267.42	-6545.50	1735263.78	14416623.32	39°41'49.627"N	80°39'46.107"W	8401.74	308.825	2.69	-0.56	-2.63
15944.00	90.490	308.500	7198.81	8491.00	5322.58	-6616.60	1735192.70	14416678.47	39°41'50.175"N	80°39'47.014"W	8491.72	308.814	1.55	-0.10	1.54
16035.00	90.550	310.200	7197.98	8581.99	5380.28	-6686.96	1735122.37	14416736.14	39°41'50.748"N	80°39'47.911"W	8582.71	308.820	1.87	0.07	1.87
16125.00	90.580	311.830	7197.10	8671.96	5439.33	-6754.87	1735054.49	14416795.17	39°41'51.334"N	80°39'48.777"W	8672.63	308.843	1.81	0.03	1.81
16216.00	91.080	309.710	7195.78	8762.92	5498.75	-6823.77	1734985.61	14416854.56	39°41'51.924"N	80°39'49.655"W	8763.57	308.863	2.39	0.55	-2.33
16306.00	90.620	308.730	7194.44	8852.91	5555.65	-6893.49	1734915.92	14416911.44	39°41'52.489"N	80°39'50.545"W	8853.56	308.866	1.20	-0.51	-1.09
16396.00	90.520	307.310	7193.55	8942.87	5611.08	-6964.39	1734845.05	14416966.85	39°41'53.039"N	80°39'51.449"W	8943.54	308.858	1.58	-0.11	-1.58
16487.00	90.490	309.260	7192.74	9033.84	5667.46	-7035.81	1734773.66	14417023.21	39°41'53.599"N	80°39'52.360"W	9034.53	308.852	2.14	-0.03	2.14
16577.00	90.250	313.490	7192.16	9123.77	5726.93	-7103.33	1734706.16	14417082.66	39°41'54.189"N	80°39'53.221"W	9124.42	308.877	4.71	-0.27	4.70
16667.00	90.650	315.250	7191.46	9213.45	5789.86	-7167.66	1734641.86	14417145.56	39°41'54.814"N	80°39'54.041"W	9214.00	308.930	2.01	0.44	1.96
16757.00	91.420	314.050	7189.83	9303.07	5853.10	-7231.67	1734577.87	14417208.78	39°41'55.441"N	80°39'54.857"W	9303.54	308.986	1.58	0.86	-1.33
16848.00	92.460	312.580	7186.75	9393.82	5915.49	-7297.84	1734511.72	14417271.14	39°41'56.060"N	80°39'55.701"W	9394.23	309.028	1.98	1.14	-1.62
16938.00	92.400	315.380	7182.93	9483.47	5977.92	-7362.54	1734447.05	14417333.55	39°41'56.679"N	80°39'56.525"W	9483.81	309.074	3.11	-0.07	3.11
17029.00	92.520	315.260	7179.03	9573.92	6042.57	-7426.47	1734383.15	14417398.17	39°41'57.321"N	80°39'57.340"W	9574.19	309.134	0.19	0.13	-0.13
17119.00	91.510	309.410	7175.86	9663.72	6103.11	-7492.93	1734316.71	14417458.69	39°41'57.921"N	80°39'58.187"W	9663.95	309.163	6.59	-1.12	-6.50
17209.00	91.570	311.980	7173.44	9753.66	6161.77	-7561.14	1734248.53	14417517.33	39°41'58.504"N	80°39'59.057"W	9753.88	309.178	2.86	0.07	2.86
17300.00	90.460	310.930	7171.83	9844.60	6222.00	-7629.33	1734180.37	14417577.54	39°41'59.101"N	80°39'59.927"W	9844.79	309.199	1.68	-1.22	-1.15
17390.00	90.340	310.410	7171.20	9934.58	6280.66	-7697.59	1734112.14	14417636.17	39°41'59.684"N	80°40'00.797"W	9934.76	309.212	0.59	-0.13	-0.58



**WELL PATH DATA (228 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)	Skid Rate (°/100ft)	Turn Rate (°/100ft)
17480.00	89.380	309.770	7171.42	10024.57	6338.61	-7766.44	1734043.31	14417694.10	39°42'00.259"N	80°40'01.675"W	10024.75	309.220	1.28	-1.07	-0.71
17571.00	89.260	310.250	7172.50	10115.56	6397.12	-7836.13	1733973.64	14417762.58	39°42'00.840"N	80°40'02.564"W	10115.73	309.227	0.54	-0.13	0.53
17661.00	88.430	310.590	7174.31	10205.53	6455.46	-7904.64	1733905.17	14417810.90	39°42'01.418"N	80°40'03.436"W	10205.70	309.237	1.00	-0.92	0.39
17751.00	88.310	311.350	7176.87	10295.47	6514.44	-7972.56	1733837.27	14417869.86	39°42'02.004"N	80°40'04.304"W	10295.62	309.253	0.85	-0.13	0.84
17842.00	88.280	312.800	7179.58	10386.34	6575.39	-8040.08	1733769.78	14417930.79	39°42'02.609"N	80°40'05.165"W	10386.47	309.277	1.59	-0.03	1.59
17933.00	88.920	314.460	7181.81	10477.08	6638.16	-8105.92	1733703.96	14417993.53	39°42'03.232"N	80°40'06.005"W	10477.17	309.315	1.95	0.70	1.82
18023.00	89.970	315.590	7182.68	10566.66	6701.83	-8169.53	1733640.38	14418057.17	39°42'03.863"N	80°40'06.815"W	10566.72	309.364	1.71	1.17	1.26
18114.00	90.400	315.240	7182.38	10657.19	6766.64	-8233.41	1733576.53	14418121.98	39°42'04.508"N	80°40'07.630"W	10657.22	309.415	0.61	0.47	-0.38
18204.00	90.710	312.720	7181.51	10746.91	6829.12	-8298.16	1733511.80	14418184.42	39°42'05.126"N	80°40'08.455"W	10746.93	309.453	2.82	0.34	-2.80
18294.00	90.520	309.060	7180.55	10836.86	6888.03	-8366.18	1733443.80	14418243.30	39°42'05.711"N	80°40'09.323"W	10836.88	309.465	4.07	-0.21	-4.07
18384.00	90.400	307.530	7179.82	10926.84	6943.80	-8436.81	1733373.20	14418299.05	39°42'06.264"N	80°40'10.224"W	10926.85	309.456	1.71	-0.13	-1.70
18475.00	90.490	307.740	7179.12	11017.78	6998.36	-8508.88	1733301.16	14418354.59	39°42'06.816"N	80°40'11.145"W	11017.81	309.441	0.25	0.10	0.23
18566.00	90.370	310.590	7178.44	11107.77	7066.19	-8578.65	1733231.42	14418411.40	39°42'07.380"N	80°40'12.033"W	11107.79	309.438	3.17	-0.13	3.17

### REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY		Slot	Slot 03
Area	Wetzel County, WV		Well	SWN A WTZ 3H
Field	Wetzel		Wellbore	SWN A WTZ 3H AWB
Facility	SWN A WTZ Pad			

### WELLPATH DATA (228 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]	Buld Rate ["/100ft]	Turn Rate ["/100ft]
18656.00	90.430	311.180	7177.81	11198.74	-8647.44	1733162.65	14418470.94	39°42'07.971"N	80°40'12.910"W	11198.76	309.450	0.65	0.07	0.65
18695.00	90.710	313.010	7177.42	11237.70	-8676.38	1733133.73	14418497.07	39°42'08.231"N	80°40'13.279"W	11237.72	309.459	4.75	0.72	4.69
18720.00	90.710	313.010	7177.11	11262.65	-8694.66	1733115.45	14418514.12	39°42'08.400"N	80°40'13.512"W	11262.67	309.467	0.00	0.00	0.00

### HOLE & CASING SECTIONS - Ref Wellbore: SWN A WTZ 3H AWB Ref Wellpath: SWN A WTZ 3H AWP Proj: 18720'

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	End N/S [ft]	Start E/W [ft]	End E/W [ft]	End N/S [ft]	End E/W [ft]
20in Conductor	26.00	100.00	74.00	26.00	100.00	0.00	0.00	0.00	0.00	0.08	-0.25
17.5in Open Hole	100.00	400.00	300.00	100.00	399.99	0.08	0.08	-0.25	1.01	1.01	-1.62
13.375in Casing Surface	26.00	400.00	374.00	26.00	399.99	0.00	0.00	0.00	1.01	1.01	-1.62
12.25in Open Hole	400.00	2863.00	2463.00	399.99	2858.79	1.01	1.01	-1.62	-115.62	-115.62	17.48
9.625in Casing Intermediate	26.00	2863.00	2837.00	26.00	2858.79	0.00	0.00	0.00	-115.62	-115.62	17.48
8.75in Open Hole	2863.00	6649.00	3786.00	2858.79	6617.81	-115.62	-115.62	17.48	-535.20	-535.20	-88.77
8.5in Open Hole	6649.00	18720.00	12071.00	6617.81	7177.11	-535.20	-535.20	-88.77	7158.95	7158.95	-8694.66
5.5in Casing Production	26.00	18720.00	18694.00	26.00	7177.11	0.00	0.00	0.00	7158.95	7158.95	-8694.66

### TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SWN A WTZ 3H BHL Rev-3	7161.00	7173.63	-8682.68	1733127.43	14418528.79	39°42'08.545"N	80°40'13.358"W	point
SWN A WTZ 3H LP Rev-3	7413.00	-127.17	-573.52	1741233.42	14411230.84	39°40'56.085"N	80°38'29.982"W	point

### WELLPATH COMPOSITION - Ref Wellbore: SWN A WTZ 3H AWB Ref Wellpath: SWN A WTZ 3H AWP Proj: 18720'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	399.00	VESSI GyroFlex v4	01_VESSI Gyroflex <17 1/2"> (50'-399')	SWN A WTZ 3H AWB



**WELLPATH COMPOSITION - Ref Wellbore: SWN A WTZ 3H AWB Ref Wellpath: SWN A WTZ 3H AWP Proj: 18720'**

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
399.00	2815.00	OWSG MWD rev2 + HRGM	02_Premier MWD <12 1/4"> (435-2815')	SWN A WTZ 3H AWB
2815.00	6583.00	OWSG MWD rev2 + HRGM	03_Premier MWD <8 3/4"> (2879-6583')	SWN A WTZ 3H AWB
6583.00	18695.00	BHI AutoTrak Curve (Short)	04_BH AT Curve <8 1/2"> (6635-18695')	SWN A WTZ 3H AWB
18695.00	18720.00	Blind Drilling (std)	Projection to bit	SWN A WTZ 3H AWB

# Actual Wellpath Report

SWN A WTZ 3H AWP Proj: 18720'

Page 8 of 8

**REFERENCE WELLPATH IDENTIFICATION**

Operator	Area	Field	Facility	Slot	Well	Wellbore	Slot 03
SOUTHWESTERN ENERGY	Wetzel County, WV	Wetzel	SWN A WTZ Pad	Well	Wellbore		SWN A WTZ 3H
							SWN A WTZ 3H AWB

**COMMENTS**

Wellpath general comments  
 API: 47-103-03232-0000  
 BH Job #: 109767282  
 Rig: SDC 46  
 Duration: 04/22/2019 - 04/26/2019