

# SWN PRODUCTION COMPANY, LLC

Location: Wetzel County, WV  
 Field: Wetzel  
 Facility: William Ritchea WTZ Pad

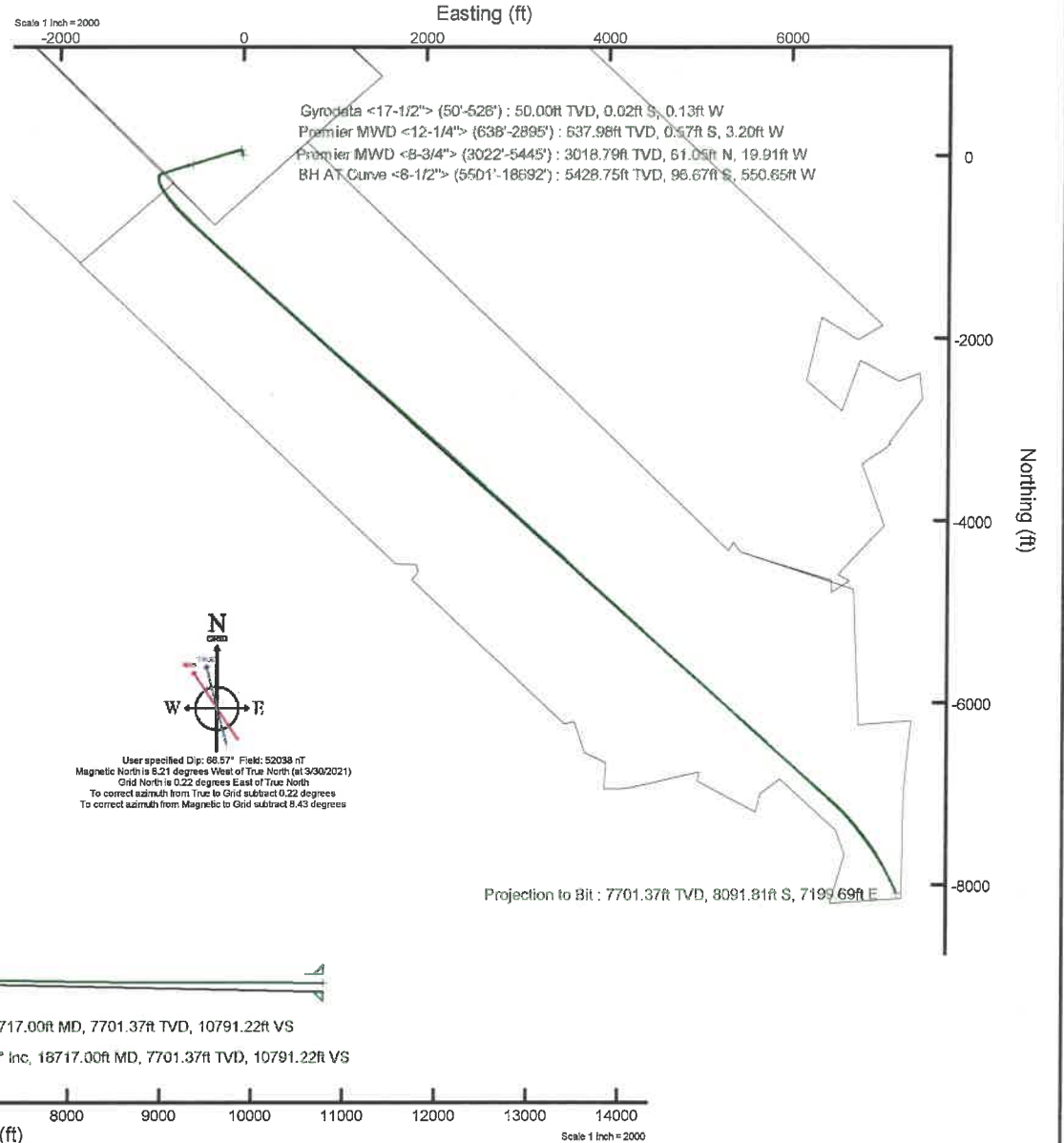
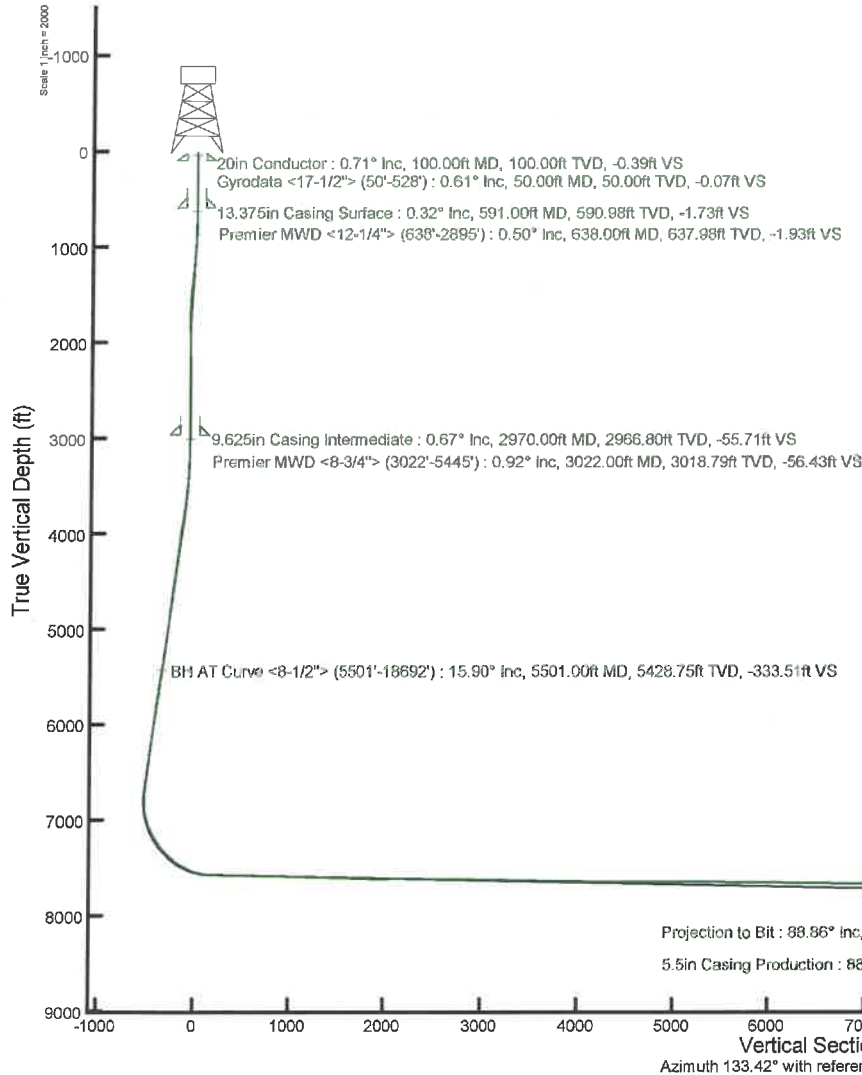
Slot: Slot 8H  
 Well: William Ritchea WTZ 8H  
 Wellbore: William Ritchea WTZ 8H PWB



## Location Information

Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
William Ritchea WTZ Pad			1736263.630	14406607.520	39°40'10.5672"N	80°39'33.7968"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Slot 8H	-3.17	37.67	1736301.290	14406604.350	39°40'10.5345"N	80°39'33.3152"W
SDC 41 (RKB) to Ground level (At Slot: Slot 8H)					26ft	
Mean Sea Level to Ground level (At Slot: Slot 8H)					-1562.7ft	
SDC 41 (RKB) to Mean Sea Level					1588.7ft	

API: 47-103-03371-0000  
 BH Job #: 110806975  
 Rig: SDC 41  
 Duration: 04/01/2021 - 04/11/2021



## REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	William Ritchea WTZ 8H
Field	Wetzel	API/Legal	
Facility	William Ritchea WTZ Pad	Wellbore	William Ritchea WTZ 8H AWP
Slot	Slot 8H		

## REPORT SETUP INFORMATION

Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Atenjen
Scale	0.999611	Report Generated	4/13/2021 at 9:11:03 AM
Convergence at slot	0.22° 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	-3.17	37.67	1736301.29	14406604.35	39°40'10.5345"N	80°39'33.3152"W
Facility Reference Pt			1736263.63	14406607.52	39°40'10.5672"N	80°39'33.7968"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 (RKB) to Facility Vertical Datum	1588.70ft
Horizontal Reference Pt	Slot	SDC 41 (RKB) to Mean Sea Level	1588.70ft
Vertical Reference Pt	SDC 41 (RKB)	SDC 41 (RKB) to Ground Level at Slot (Slot 8H)	26.00ft
MD Reference Pt	SDC 41 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	133.42°

## REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	William Ritchea WTZ 8H
Field	Wetzel	API/Legal	
Facility	William Ritchea WTZ Pad	Wellbore	William Ritchea WTZ 8H AWB
Slot	Slot 8H		

## WELLPATH DATA (209 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	259.270	0.00	0.00	0.00	0.00	1736301.29	14406604.35	39°40'10.5345"N	80°39'33.3152"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	259.270	26.00	0.00	0.00	0.00	1736301.29	14406604.35	39°40'10.5345"N	80°39'33.3152"W	0.00	0.000	0.00	0.00	0.00
50.00	0.610	259.270	50.00	-0.07	-0.02	-0.13	1736301.16	14406604.33	39°40'10.5343"N	80°39'33.3168"W	0.13	259.270	2.54	2.54	0.00
150.00	0.810	252.060	149.99	-0.73	-0.34	-1.32	1736299.97	14406604.01	39°40'10.5312"N	80°39'33.3321"W	1.36	255.542	0.22	0.20	-7.2
250.00	0.420	259.070	249.99	-1.28	-0.63	-2.35	1736298.94	14406603.72	39°40'10.5284"N	80°39'33.3453"W	2.44	255.062	0.40	-0.39	7.0
350.00	0.280	228.230	349.98	-1.51	-0.86	-2.90	1736298.40	14406603.49	39°40'10.5261"N	80°39'33.3522"W	3.02	253.456	0.23	-0.14	-30.8
450.00	0.140	226.240	449.98	-1.54	-1.11	-3.17	1736298.13	14406603.24	39°40'10.5237"N	80°39'33.3557"W	3.35	250.721	0.14	-0.14	-1.9
528.00	0.080	348.830	527.98	-1.59	-1.12	-3.25	1736298.05	14406603.23	39°40'10.5235"N	80°39'33.3567"W	3.43	250.962	0.25	-0.08	157.1
638.00	0.500	7.160	637.98	-1.93	-0.57	-3.20	1736298.09	14406603.78	39°40'10.5290"N	80°39'33.3561"W	3.25	259.931	0.39	0.38	16.6
683.00	0.990	6.990	682.98	-2.28	0.01	-3.13	1736298.16	14406604.36	39°40'10.5347"N	80°39'33.3552"W	3.13	270.227	1.09	1.09	-0.3
776.00	1.520	12.260	775.96	-3.40	2.02	-2.77	1736298.52	14406606.36	39°40'10.5545"N	80°39'33.3505"W	3.42	306.047	0.58	0.57	5.6
867.00	2.320	9.420	866.90	-5.05	5.01	-2.21	1736299.08	14406609.36	39°40'10.5841"N	80°39'33.3432"W	5.48	336.193	0.89	0.88	-3.1
960.00	3.580	5.530	959.78	-7.89	9.76	-1.62	1736299.67	14406614.11	39°40'10.6310"N	80°39'33.3354"W	9.89	350.556	1.37	1.35	-4.1
1053.00	4.850	353.170	1052.53	-12.69	16.55	-1.81	1736299.48	14406620.90	39°40'10.6981"N	80°39'33.3375"W	16.65	353.756	1.67	1.37	-13.2
1143.00	5.200	342.450	1142.18	-19.18	24.22	-3.49	1736297.80	14406628.56	39°40'10.7740"N	80°39'33.3586"W	24.47	351.793	1.11	0.39	-11.9
1236.00	5.460	332.090	1234.78	-27.06	32.15	-6.84	1736294.46	14406636.49	39°40'10.8524"N	80°39'33.4010"W	32.87	347.997	1.07	0.28	-11.1
1326.00	6.720	331.000	1324.27	-36.14	40.54	-11.39	1736289.90	14406644.87	39°40'10.9355"N	80°39'33.4589"W	42.11	344.303	1.41	1.40	-1.2
1419.00	6.760	330.910	1416.63	-46.55	50.08	-16.69	1736284.60	14406654.41	39°40'11.0300"N	80°39'33.5262"W	52.79	341.567	0.04	0.04	-0.1
1511.00	4.530	328.060	1508.18	-55.23	57.90	-21.25	1736280.05	14406662.22	39°40'11.1074"N	80°39'33.5840"W	61.67	339.848	2.44	-2.42	-3.1
1603.00	2.670	340.080	1599.99	-60.66	62.99	-23.90	1736277.40	14406667.32	39°40'11.1579"N	80°39'33.6177"W	67.37	339.224	2.17	-2.02	13.0
1694.00	1.420	359.730	1690.94	-63.33	66.11	-24.63	1736276.67	14406670.44	39°40'11.1888"N	80°39'33.6269"W	70.55	339.570	1.56	-1.37	21.5
1787.00	0.340	50.710	1783.92	-64.09	67.44	-24.42	1736276.88	14406671.76	39°40'11.2019"N	80°39'33.6241"W	71.73	340.096	1.33	-1.16	54.8
1880.00	0.970	132.550	1876.92	-63.27	67.08	-23.63	1736277.67	14406671.41	39°40'11.1983"N	80°39'33.6140"W	71.12	340.599	1.06	0.68	88.0
1972.00	1.690	143.880	1968.89	-61.16	65.46	-22.25	1736279.05	14406669.79	39°40'11.1823"N	80°39'33.5965"W	69.14	341.226	0.83	0.78	12.3
2065.00	1.520	141.440	2061.86	-58.59	63.39	-20.67	1736280.62	14406667.71	39°40'11.1617"N	80°39'33.5765"W	66.67	341.936	0.20	-0.18	-2.6
2158.00	0.960	149.280	2154.83	-56.62	61.75	-19.51	1736281.79	14406666.08	39°40'11.1455"N	80°39'33.5616"W	64.76	342.469	0.63	-0.60	8.4
2251.00	0.540	178.480	2247.83	-55.56	60.65	-19.10	1736282.20	14406664.97	39°40'11.1346"N	80°39'33.5564"W	63.58	342.520	0.60	-0.45	31.4
2343.00	1.070	191.330	2339.82	-54.79	59.37	-19.26	1736282.04	14406663.70	39°40'11.1220"N	80°39'33.5585"W	62.42	342.031	0.61	0.58	13.9
2436.00	0.210	218.830	2432.81	-54.32	58.39	-19.53	1736281.76	14406662.71	39°40'11.1122"N	80°39'33.5621"W	61.57	341.503	0.96	-0.92	29.5
2528.00	0.600	3.260	2524.81	-54.62	58.74	-19.61	1736281.69	14406663.06	39°40'11.1157"N	80°39'33.5631"W	61.92	341.537	0.85	0.42	156.9

### REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	William Ritchea Wtz 8H
Field	Wetzel	API/Legal	
Facility	William Ritchea Wtz Pad	Wellbore	William Ritchea Wtz 8H AWB
Slot	Slot 8H		

### WELLPATH DATA (209 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]
2621.00	0.550	20.400	2617.81	-55.10	59.64	-19.43	1736281.87	14406663.97	39°40'11.1246"N	80°39'33.5607"W	62.73	341.957	0.19	-0.05	18.4
2714.00	0.420	189.720	2710.80	-55.09	59.72	-19.33	1736281.97	14406664.05	39°40'11.1254"N	80°39'33.5594"W	62.77	342.066	1.04	-0.14	182.0
2805.00	0.150	52.190	2801.80	-54.89	59.47	-19.29	1736282.01	14406663.79	39°40'11.1229"N	80°39'33.5590"W	62.52	342.026	0.59	-0.30	-151.1
2895.00	0.420	0.940	2891.80	-55.09	59.87	-19.19	1736282.10	14406664.20	39°40'11.1269"N	80°39'33.5577"W	62.87	342.225	0.38	0.30	-56.9
3022.00	0.920	314.390	3018.79	-56.43	61.05	-19.91	1736281.38	14406665.37	39°40'11.1386"N	80°39'33.5669"W	64.21	341.933	0.55	0.39	-36.6
3114.00	2.650	234.820	3110.75	-57.58	60.34	-22.18	1736279.12	14406664.67	39°40'11.1316"N	80°39'33.5959"W	64.29	339.816	2.87	1.88	-86.4
3206.00	4.980	233.170	3202.54	-58.68	56.72	-27.12	1736274.18	14406661.05	39°40'11.0961"N	80°39'33.6592"W	62.87	334.449	2.54	2.53	-1.7
3297.00	7.120	244.110	3293.04	-61.34	51.89	-35.35	1736265.95	14406656.22	39°40'11.0486"N	80°39'33.7647"W	62.79	325.733	2.66	2.35	12.0
3389.00	8.850	251.150	3384.14	-66.65	47.11	-47.18	1736254.13	14406651.44	39°40'11.0019"N	80°39'33.9162"W	66.68	314.959	2.16	1.88	7.6
3482.00	10.760	256.090	3475.78	-74.67	42.71	-62.38	1736238.94	14406647.05	39°40'10.9590"N	80°39'34.1108"W	75.60	304.401	2.24	2.05	5.3
3573.00	11.020	257.550	3565.14	-84.13	38.80	-79.12	1736222.20	14406643.13	39°40'10.9209"N	80°39'34.3250"W	88.12	296.122	0.42	0.29	1.6
3664.00	11.480	254.300	3654.39	-93.66	34.47	-96.33	1736205.00	14406638.81	39°40'10.8788"N	80°39'34.5453"W	102.31	289.690	0.86	0.51	-3.5
3756.00	13.170	255.730	3744.27	-103.96	29.41	-115.30	1736186.03	14406633.75	39°40'10.8295"N	80°39'34.7882"W	118.99	284.309	1.87	1.84	1.5
3849.00	14.720	259.350	3834.53	-116.56	24.61	-137.18	1736164.16	14406628.95	39°40'10.7829"N	80°39'35.0683"W	139.37	280.172	1.91	1.67	3.8
3941.00	16.510	255.180	3923.13	-130.30	19.11	-161.31	1736140.04	14406623.45	39°40'10.7294"N	80°39'35.3771"W	162.44	276.756	2.30	1.95	-4.5
4033.00	15.660	253.240	4011.53	-143.36	12.19	-185.84	1736115.53	14406616.53	39°40'10.6619"N	80°39'35.6911"W	186.24	273.751	1.09	-0.92	-2.1
4124.00	14.170	251.430	4099.46	-154.69	5.10	-208.16	1736093.21	14406609.44	39°40'10.5926"N	80°39'35.9768"W	208.22	271.402	1.72	-1.64	-1.9
4215.00	14.640	250.460	4187.60	-165.15	-2.30	-229.55	1736071.83	14406602.05	39°40'10.5204"N	80°39'36.2508"W	229.56	269.427	0.58	0.52	-1.0
4305.00	16.470	253.360	4274.30	-176.69	-9.76	-252.50	1736048.89	14406594.60	39°40'10.4475"N	80°39'36.5446"W	252.69	267.787	2.21	2.03	3.2
4396.00	16.090	251.950	4361.66	-189.15	-17.36	-276.85	1736024.55	14406587.00	39°40'10.3733"N	80°39'36.8563"W	277.39	266.413	0.60	-0.42	-1.5
4487.00	16.250	254.730	4449.06	-201.79	-24.62	-301.12	1736000.29	14406579.74	39°40'10.3025"N	80°39'37.1671"W	302.12	265.326	0.87	0.18	3.0
4579.00	15.310	252.810	4537.59	-214.44	-31.60	-325.14	1735976.28	14406572.76	39°40'10.2344"N	80°39'37.4746"W	326.67	264.449	1.17	-1.02	-2.0
4668.00	15.590	256.470	4623.37	-226.73	-37.87	-347.99	1735953.43	14406566.50	39°40'10.1733"N	80°39'37.7672"W	350.05	263.790	1.14	0.31	4.1
4760.00	14.010	256.200	4712.32	-239.50	-43.42	-370.83	1735930.60	14406560.95	39°40'10.1193"N	80°39'38.0595"W	373.36	263.322	1.72	-1.72	-0.2
4852.00	11.730	254.610	4802.00	-250.38	-48.56	-390.66	1735910.78	14406555.81	39°40'10.0692"N	80°39'38.3134"W	393.67	262.915	2.51	-2.48	-1.7
4944.00	12.520	249.610	4891.95	-259.62	-54.51	-409.03	1735892.42	14406549.86	39°40'10.0111"N	80°39'38.5485"W	412.65	262.409	1.43	0.86	-5.4
5036.00	13.700	249.730	4981.55	-268.85	-61.76	-428.60	1735872.86	14406542.61	39°40'9.9402"N	80°39'38.7991"W	433.02	261.800	1.28	1.28	0.1
5128.00	15.440	249.800	5070.59	-279.12	-69.77	-450.31	1735851.16	14406534.61	39°40'9.8619"N	80°39'39.0772"W	455.68	261.193	1.89	1.89	0.0
5219.00	15.860	250.800	5158.22	-290.23	-78.04	-473.42	1735828.05	14406526.34	39°40'9.7810"N	80°39'39.3731"W	479.81	260.640	0.55	0.46	1.1
5309.00	16.260	253.480	5244.71	-302.19	-85.66	-497.12	1735804.37	14406518.72	39°40'9.7065"N	80°39'39.6765"W	504.44	260.223	0.94	0.44	2.9

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Operator	SWN PRODUCTION COMPANY, LLC	Well	William Ritchea Wtz 8H
Field	Wetzel	API/Legal	
Facility	William Ritchea Wtz Pad	Wellbore	William Ritchea Wtz 8H AWB
Slot	Slot 8H		

WELLPATH DATA (209 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]
5400.00	17.060	259.130	5331.89	-316.37	-91.80	-522.44	1735779.05	14406512.58	39°40'9.6467"N	80°39'40.0006"W	530.45	260.034	1.98	0.88	6.2
5445.00	16.510	260.780	5374.97	-324.10	-94.07	-535.24	1735766.26	14406510.31	39°40'9.6248"N	80°39'40.1644"W	543.44	260.031	1.62	-1.22	3.6
5501.00	15.900	260.110	5428.75	-333.51	-96.67	-550.65	1735750.86	14406507.72	39°40'9.5997"N	80°39'40.3616"W	559.07	260.043	1.14	-1.09	-1.2
5594.00	15.960	254.930	5518.18	-347.81	-102.18	-575.54	1735725.97	14406502.21	39°40'9.5462"N	80°39'40.6802"W	584.54	259.933	1.53	0.06	-5.5
5685.00	15.450	255.350	5605.78	-360.76	-108.50	-599.35	1735702.17	14406495.89	39°40'9.4846"N	80°39'40.9850"W	609.09	259.739	0.57	-0.56	0.4
5776.00	15.890	250.350	5693.41	-372.81	-115.75	-622.81	1735678.72	14406488.64	39°40'9.4138"N	80°39'41.2853"W	633.48	259.471	1.56	0.48	-5.4
5868.00	16.060	251.400	5781.85	-384.48	-124.05	-646.73	1735654.81	14406480.35	39°40'9.3327"N	80°39'41.5917"W	658.52	259.142	0.36	0.18	1.1
5958.00	15.600	251.630	5868.44	-396.04	-131.83	-670.02	1735631.53	14406472.57	39°40'9.2567"N	80°39'41.8898"W	682.86	258.869	0.52	-0.51	0.2
6049.00	15.490	250.940	5956.11	-407.44	-139.66	-693.12	1735608.45	14406464.75	39°40'9.1802"N	80°39'42.1855"W	707.05	258.608	0.24	-0.12	-0.7
6139.00	15.240	251.990	6042.89	-418.65	-147.24	-715.72	1735585.85	14406457.17	39°40'9.1061"N	80°39'42.4750"W	730.71	258.375	0.42	-0.28	1.1
6230.00	15.430	249.260	6130.66	-429.65	-155.22	-738.42	1735563.16	14406449.19	39°40'9.0280"N	80°39'42.7656"W	754.56	258.129	0.82	0.21	-3.0
6321.00	15.710	251.610	6218.32	-440.75	-163.40	-761.43	1735540.16	14406441.02	39°40'8.9481"N	80°39'43.0603"W	778.77	257.889	0.76	0.31	2.5
6413.00	15.310	251.900	6306.97	-452.42	-171.10	-784.80	1735516.80	14406433.32	39°40'8.8729"N	80°39'43.3595"W	803.23	257.701	0.44	-0.43	0.3
6504.00	14.600	252.380	6394.88	-463.70	-178.30	-807.15	1735494.46	14406426.12	39°40'8.8025"N	80°39'43.6456"W	826.61	257.543	0.79	-0.78	0.5
6596.00	13.640	253.410	6484.10	-474.74	-184.91	-828.60	1735473.02	14406419.51	39°40'8.7380"N	80°39'43.9202"W	848.98	257.420	1.08	-1.04	1.1
6687.00	14.590	253.120	6572.35	-485.78	-191.30	-849.85	1735451.78	14406413.12	39°40'8.6756"N	80°39'44.1923"W	871.11	257.314	1.05	1.04	-0.3
6778.00	14.810	251.290	6660.38	-496.90	-198.36	-871.83	1735429.80	14406406.07	39°40'8.6067"N	80°39'44.4738"W	894.11	257.182	0.56	0.24	-2.0
6869.00	14.970	243.440	6748.33	-506.36	-207.35	-893.36	1735408.28	14406397.08	39°40'8.5187"N	80°39'44.7495"W	917.11	256.933	2.22	0.18	-8.6
6960.00	15.610	213.980	6836.24	-508.38	-222.78	-910.74	1735390.90	14406381.66	39°40'8.3668"N	80°39'44.9726"W	937.60	256.255	8.48	0.70	-32.3
7050.00	16.220	187.240	6922.91	-498.96	-245.32	-919.11	1735382.54	14406359.12	39°40'8.1443"N	80°39'45.0806"W	951.28	255.055	8.11	0.68	-29.7
7142.00	21.180	169.560	7010.09	-477.92	-274.45	-917.71	1735383.94	14406330.00	39°40'7.8564"N	80°39'45.0642"W	957.87	253.350	8.13	5.39	-19.2
7234.00	24.480	160.570	7094.90	-447.52	-308.79	-908.35	1735393.29	14406295.68	39°40'7.5166"N	80°39'44.9462"W	959.41	251.225	5.21	3.59	-9.7
7326.00	30.090	146.920	7176.71	-408.07	-346.16	-889.39	1735412.25	14406258.32	39°40'7.1467"N	80°39'44.7055"W	954.38	248.733	9.10	6.10	-14.8
7416.00	34.000	147.220	7252.98	-361.67	-386.24	-863.44	1735438.18	14406218.26	39°40'6.7496"N	80°39'44.3756"W	945.89	245.900	4.35	4.34	0.3
7507.00	42.630	144.310	7324.32	-306.59	-432.75	-831.63	1735469.99	14406171.77	39°40'6.2888"N	80°39'43.9709"W	937.48	242.509	9.69	9.48	-3.2
7598.00	47.590	140.130	7388.54	-242.92	-483.60	-792.08	1735509.52	14406120.94	39°40'5.7847"N	80°39'43.4677"W	928.04	238.594	6.35	5.45	-4.5
7688.00	54.220	140.810	7445.26	-173.64	-537.46	-747.66	1735553.92	14406067.10	39°40'5.2508"N	80°39'42.9023"W	920.79	234.290	7.39	7.37	0.7
7781.00	61.420	135.680	7494.78	-95.28	-596.02	-695.20	1735606.36	14406008.57	39°40'4.6702"N	80°39'42.2342"W	915.72	229.393	9.04	7.74	-5.5
7871.00	68.810	135.530	7532.63	-13.76	-654.31	-638.12	1735663.42	14405950.30	39°40'4.0919"N	80°39'41.5071"W	913.96	224.282	8.21	8.21	-0.1
7964.00	78.290	134.600	7558.93	75.30	-717.37	-575.18	1735726.33	14405887.26	39°40'3.4664"N	80°39'40.7053"W	919.48	218.723	10.24	10.19	-1.0

**REFERENCE WELLPATH IDENTIFICATION**

Operator	SWN PRODUCTION COMPANY, LLC	Well	William Ritchea WTZ 8H
Field	Wetzel	API/Legal	
Facility	William Ritchea WTZ Pad	Wellbore	William Ritchea WTZ 8H AWB
Slot	Slot 8H		

**WELLPATH DATA (209 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]
8055.00	86.310	134.090	7571.12	165.39	-780.35	-510.74	1735790.75	14405824.31	39°40'2.8416"N	80°39'39.8843"W	932.63	213.205	8.83	8.81	-0.51
8148.00	88.800	133.600	7575.08	258.30	-844.70	-443.74	1735857.73	14405759.98	39°40'2.2030"N	80°39'39.0305"W	954.16	207.714	2.73	2.68	-0.51
8240.00	89.320	131.910	7576.59	350.28	-907.15	-376.20	1735925.24	14405697.56	39°40'1.5834"N	80°39'38.1699"W	982.06	202.524	1.92	0.57	-1.81
8332.00	88.890	130.620	7578.03	442.20	-967.82	-307.05	1735994.36	14405636.91	39°40'0.9812"N	80°39'37.2886"W	1015.36	197.602	1.48	-0.47	-1.41
8424.00	88.550	131.330	7580.09	534.09	-1028.13	-237.61	1736063.77	14405576.62	39°40'0.3826"N	80°39'36.4035"W	1055.23	193.013	0.86	-0.37	0.71
8517.00	89.290	132.150	7581.84	627.03	-1090.03	-168.23	1736133.13	14405514.75	39°39'59.7682"N	80°39'35.5193"W	1102.94	188.774	1.19	0.80	0.81
8608.00	88.890	131.310	7583.28	717.98	-1150.59	-100.33	1736201.00	14405454.21	39°39'59.1671"N	80°39'34.6540"W	1154.96	184.983	1.02	-0.44	-0.91
8701.00	88.310	132.450	7585.56	810.92	-1212.66	-31.11	1736270.20	14405392.17	39°39'58.5512"N	80°39'33.7718"W	1213.06	181.469	1.38	-0.62	1.21
8793.00	89.200	132.410	7587.56	902.88	-1274.72	36.78	1736338.06	14405330.13	39°39'57.9353"N	80°39'32.9067"W	1275.25	178.347	0.97	0.97	-0.01
8885.00	88.120	130.770	7589.71	994.80	-1335.76	105.57	1736406.82	14405269.11	39°39'57.3294"N	80°39'32.0301"W	1339.93	175.481	2.13	-1.17	-1.71
8978.00	87.750	131.780	7593.06	1087.68	-1397.07	175.42	1736476.64	14405207.82	39°39'56.7209"N	80°39'31.1399"W	1408.04	172.843	1.16	-0.40	1.01
9069.00	89.290	132.280	7595.41	1178.62	-1457.98	242.98	1736544.18	14405146.94	39°39'56.1164"N	80°39'30.2788"W	1478.09	170.538	1.78	1.69	0.51
9160.00	88.520	130.930	7597.15	1269.55	-1518.39	311.01	1736612.18	14405086.56	39°39'55.5168"N	80°39'29.4118"W	1549.91	168.424	1.71	-0.85	-1.41
9250.00	88.090	132.210	7599.81	1359.46	-1578.08	378.32	1736679.46	14405026.89	39°39'54.9244"N	80°39'28.5541"W	1622.79	166.519	1.50	-0.48	1.41
9343.00	89.020	131.410	7602.15	1452.39	-1640.06	447.61	1736748.73	14404964.93	39°39'54.3093"N	80°39'27.6710"W	1700.04	164.734	1.32	1.00	-0.81
9431.00	87.690	130.110	7604.68	1540.26	-1697.49	514.24	1736815.33	14404907.53	39°39'53.7392"N	80°39'26.8219"W	1773.67	163.146	2.11	-1.51	-1.41
9524.00	87.850	131.890	7608.30	1633.10	-1758.45	584.37	1736885.43	14404846.59	39°39'53.1340"N	80°39'25.9281"W	1853.01	161.617	1.92	0.17	1.91
9615.00	87.010	131.770	7612.38	1723.98	-1819.08	652.11	1736953.14	14404785.98	39°39'52.5323"N	80°39'25.0648"W	1932.43	160.278	0.93	-0.92	-0.11
9706.00	89.780	133.290	7614.93	1814.92	-1880.56	719.13	1737020.14	14404724.52	39°39'51.9222"N	80°39'24.2108"W	2013.37	159.073	3.47	3.04	1.61
9795.00	88.550	130.290	7616.23	1903.86	-1939.86	785.47	1737086.46	14404665.25	39°39'51.3336"N	80°39'23.3654"W	2092.85	157.956	3.64	-1.38	-3.31
9884.00	90.250	133.930	7617.16	1992.81	-1999.52	851.48	1737152.44	14404605.61	39°39'50.7415"N	80°39'22.5242"W	2173.27	156.934	4.51	1.91	4.01
9974.00	93.020	131.370	7614.59	2082.75	-2060.46	917.64	1737218.57	14404544.69	39°39'50.1367"N	80°39'21.6813"W	2255.56	155.994	4.19	3.08	-2.81
10062.00	90.030	130.570	7612.25	2170.63	-2118.13	984.05	1737284.95	14404487.04	39°39'49.5642"N	80°39'20.8349"W	2335.56	155.081	3.52	-3.40	-0.91
10151.00	88.370	131.640	7613.49	2259.54	-2176.64	1051.10	1737351.98	14404428.56	39°39'48.9835"N	80°39'19.9804"W	2417.14	154.224	2.22	-1.87	1.21
10241.00	89.910	131.470	7614.84	2349.48	-2236.33	1118.44	1737419.29	14404368.90	39°39'48.3910"N	80°39'19.1222"W	2500.42	153.429	1.72	1.71	-0.11
10332.00	88.740	131.430	7615.91	2440.42	-2296.56	1186.64	1737487.47	14404308.69	39°39'47.7932"N	80°39'18.2531"W	2585.02	152.674	1.29	-1.29	-0.01
10423.00	89.050	130.990	7617.67	2531.34	-2356.50	1255.09	1737555.89	14404248.77	39°39'47.1982"N	80°39'17.3808"W	2669.90	151.960	0.59	0.34	-0.41
10515.00	89.910	132.100	7618.50	2623.28	-2417.52	1323.94	1737624.71	14404187.78	39°39'46.5926"N	80°39'16.5034"W	2756.30	151.293	1.53	0.93	1.21
10607.00	89.230	130.150	7619.19	2715.20	-2478.02	1393.24	1737693.98	14404127.30	39°39'45.9920"N	80°39'15.6203"W	2842.83	150.654	2.24	-0.74	-2.11
10699.00	89.420	131.770	7620.28	2807.11	-2538.32	1462.70	1737763.42	14404067.02	39°39'45.3934"N	80°39'14.7350"W	2929.61	150.047	1.77	0.21	1.71

### REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	William Ritchea WTZ 8H
Field	Wetzel	API/Legal	
Facility	William Ritchea WTZ Pad	Wellbore	William Ritchea WTZ 8H AWP
Slot	Slot 8H		

### WELLPATH DATA (209 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]
10787.00	89.140	130.770	7621.38	2895.04	-2596.36	1528.84	1737829.53	14404009.00	39°39'44.8173"N	80°39'13.8922"W	3013.05	149.509	1.18	-0.32	-1.1
10879.00	89.170	131.430	7622.74	2986.95	-2656.83	1598.16	1737898.82	14403948.56	39°39'44.2170"N	80°39'13.0088"W	3100.47	148.972	0.72	0.03	0.7
10971.00	89.050	130.490	7624.17	3078.85	-2717.14	1667.63	1737968.26	14403888.28	39°39'43.6184"N	80°39'12.1235"W	3188.07	148.461	1.03	-0.13	-1.0
11061.00	88.220	132.710	7626.31	3168.78	-2776.87	1734.90	1738035.52	14403828.57	39°39'43.0255"N	80°39'11.2662"W	3274.28	148.004	2.63	-0.92	2.4
11151.00	89.350	133.240	7628.22	3258.75	-2838.20	1800.74	1738101.32	14403767.26	39°39'42.4168"N	80°39'10.4275"W	3361.26	147.606	1.39	1.26	0.5
11242.00	89.020	132.410	7629.52	3349.74	-2900.05	1867.47	1738168.03	14403705.43	39°39'41.8030"N	80°39'9.5772"W	3449.31	147.221	0.98	-0.36	-0.9
11332.00	89.540	132.540	7630.65	3439.72	-2960.82	1933.85	1738234.38	14403644.69	39°39'41.1999"N	80°39'8.7315"W	3536.42	146.850	0.60	0.58	0.1
11423.00	87.540	131.330	7632.97	3530.65	-3021.61	2001.52	1738302.02	14403583.92	39°39'40.5965"N	80°39'7.8693"W	3624.39	146.480	2.57	-2.20	-1.3
11513.00	86.340	132.000	7637.77	3620.48	-3081.36	2068.65	1738369.13	14403524.20	39°39'40.0035"N	80°39'7.0138"W	3711.35	146.125	1.53	-1.33	0.7
11605.00	91.720	133.080	7639.33	3712.42	-3143.53	2136.40	1738436.86	14403462.05	39°39'39.3865"N	80°39'6.1506"W	3800.79	145.799	5.96	5.85	1.1
11694.00	89.230	129.980	7638.59	3801.35	-3202.52	2203.01	1738503.44	14403403.08	39°39'38.8010"N	80°39'5.3018"W	3887.08	145.476	4.47	-2.80	-3.4
11786.00	89.450	132.150	7639.65	3893.26	-3262.95	2272.37	1738572.77	14403342.68	39°39'38.2011"N	80°39'4.4180"W	3976.24	145.146	2.37	0.24	2.3
11878.00	89.230	132.070	7640.71	3985.23	-3324.64	2340.62	1738640.99	14403281.02	39°39'37.5888"N	80°39'3.5484"W	4065.92	144.854	0.25	-0.24	-0.0
11968.00	89.260	132.290	7641.90	4075.20	-3385.06	2407.30	1738707.65	14403220.61	39°39'36.9891"N	80°39'2.6987"W	4153.76	144.531	0.25	0.03	0.2
12059.00	89.420	132.050	7642.94	4166.17	-3446.15	2474.74	1738775.07	14403159.55	39°39'36.3828"N	80°39'1.8394"W	4242.68	144.317	0.32	0.18	-0.2
12149.00	89.420	131.880	7643.85	4256.14	-3506.33	2541.66	1738841.96	14403099.40	39°39'35.7855"N	80°39'0.9868"W	4330.63	144.062	0.19	0.00	-0.1
12241.00	89.940	132.680	7644.37	4348.12	-3568.22	2609.73	1738909.99	14403037.53	39°39'35.1712"N	80°39'0.1196"W	4420.73	143.819	1.04	0.57	0.8
12332.00	90.060	133.230	7644.37	4439.12	-3630.23	2676.33	1738976.57	14402975.54	39°39'34.5558"N	80°38'59.2711"W	4510.13	143.601	0.62	0.13	0.6
12425.00	88.490	131.510	7645.55	4532.09	-3692.89	2745.03	1739045.24	14402912.90	39°39'33.9338"N	80°38'58.3958"W	4601.37	143.376	2.50	-1.69	-1.8
12517.00	90.620	133.420	7646.26	4624.06	-3755.00	2812.89	1739113.07	14402850.82	39°39'33.3175"N	80°38'57.5313"W	4691.73	143.163	3.11	2.32	2.0
12608.00	89.170	131.610	7646.43	4715.04	-3816.49	2879.96	1739180.12	14402789.35	39°39'32.7071"N	80°38'56.6767"W	4781.19	142.961	2.55	-1.59	-1.9
12699.00	90.830	132.920	7646.43	4806.02	-3877.69	2947.30	1739247.43	14402728.18	39°39'32.0997"N	80°38'55.8188"W	4870.63	142.763	2.32	1.82	1.4
12790.00	90.150	132.650	7645.65	4897.01	-3939.50	3014.08	1739314.19	14402666.39	39°39'31.4863"N	80°38'54.9680"W	4960.27	142.581	0.80	-0.75	-0.3
12883.00	90.120	132.650	7645.43	4990.00	-4002.51	3082.48	1739382.56	14402603.41	39°39'30.8609"N	80°38'54.0965"W	5051.91	142.399	0.03	-0.03	0.0
12976.00	89.850	131.740	7645.45	5082.98	-4064.97	3151.38	1739451.44	14402540.97	39°39'30.2410"N	80°38'53.2187"W	5143.46	142.215	1.02	-0.29	-0.9
13067.00	89.350	131.430	7646.09	5173.93	-4125.37	3219.44	1739519.47	14402480.60	39°39'29.6414"N	80°38'52.3515"W	5232.92	142.031	0.65	-0.55	-0.3
13160.00	90.180	132.240	7646.47	5266.89	-4187.40	3288.73	1739588.74	14402418.59	39°39'29.0257"N	80°38'51.4687"W	5324.48	141.854	1.25	0.89	0.8
13253.00	89.820	132.550	7646.47	5359.88	-4250.10	3357.42	1739657.39	14402355.91	39°39'28.4034"N	80°38'50.5937"W	5416.23	141.693	0.51	-0.39	0.3
13344.00	89.350	132.160	7647.13	5450.86	-4311.41	3424.66	1739724.61	14402294.63	39°39'27.7949"N	80°38'49.7369"W	5506.05	141.539	0.67	-0.52	-0.4
13434.00	89.080	132.040	7648.36	5540.83	-4371.74	3491.43	1739791.36	14402234.32	39°39'27.1960"N	80°38'48.8862"W	5594.84	141.388	0.33	-0.30	-0.1

REFERENCE WELLPATH IDENTIFICATION			
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Slot	Slot 8H		

WELLPATH DATA (209 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]
13523.00	89.480	132.380	7649.48	5629.80	-4431.53	3557.35	1739857.25	14402174.55	39°39'26.6026"N	80°38'48.0465"W	5682.71	141.245	0.59	0.45	0.3
13612.00	90.220	132.650	7649.71	5718.79	-4491.67	3622.95	1739922.82	14402114.43	39°39'26.0056"N	80°38'47.2107"W	5770.69	141.111	0.89	0.83	0.3
13701.00	89.170	132.460	7650.19	5807.77	-4551.86	3688.51	1739988.35	14402054.27	39°39'25.4082"N	80°38'46.3755"W	5858.71	140.981	1.20	-1.18	-0.2
13789.00	89.480	132.360	7651.22	5895.75	-4611.21	3753.48	1740053.30	14401994.95	39°39'24.8192"N	80°38'45.5478"W	5945.74	140.855	0.37	0.35	-0.1
13878.00	89.140	132.670	7652.30	5984.74	-4671.35	3819.07	1740118.87	14401934.83	39°39'24.2223"N	80°38'44.7122"W	6033.81	140.732	0.52	-0.38	0.3
13966.00	89.140	132.830	7653.62	6072.72	-4731.08	3883.69	1740183.46	14401875.13	39°39'23.6295"N	80°38'43.8891"W	6120.96	140.618	0.18	0.00	0.1
14056.00	88.680	131.280	7655.33	6162.68	-4791.35	3950.50	1740250.24	14401814.88	39°39'23.0312"N	80°38'43.0379"W	6209.95	140.494	1.80	-0.51	-1.7
14144.00	89.570	132.760	7656.67	6250.64	-4850.25	4015.86	1740315.58	14401756.00	39°39'22.4466"N	80°38'42.2051"W	6296.99	140.376	1.96	1.01	1.6
14233.00	88.980	131.820	7657.80	6339.61	-4910.13	4081.69	1740381.39	14401696.14	39°39'21.8522"N	80°38'41.3664"W	6385.11	140.264	1.25	-0.66	-1.0
14325.00	89.380	131.920	7659.12	6431.57	-4971.53	4150.20	1740449.86	14401634.77	39°39'21.2427"N	80°38'40.4937"W	6476.13	140.145	0.45	0.43	0.1
14415.00	89.510	132.460	7659.99	6521.54	-5031.97	4216.88	1740516.51	14401574.35	39°39'20.6428"N	80°38'39.6442"W	6565.27	140.036	0.62	0.14	0.6
14508.00	89.050	131.840	7661.16	6614.51	-5094.37	4285.82	1740585.43	14401511.97	39°39'20.0234"N	80°38'38.7659"W	6657.39	139.927	0.83	-0.49	-0.6
14598.00	89.600	132.170	7662.22	6704.48	-5154.59	4352.69	1740652.28	14401451.77	39°39'19.4256"N	80°38'37.9140"W	6746.54	139.821	0.71	0.61	0.3
14687.00	89.540	132.710	7662.88	6793.46	-5214.65	4418.37	1740717.93	14401391.74	39°39'18.8295"N	80°38'37.0773"W	6834.81	139.725	0.61	-0.07	0.6
14776.00	88.370	131.460	7664.51	6882.42	-5274.29	4484.41	1740783.94	14401332.13	39°39'18.2375"N	80°38'36.2360"W	6923.01	139.628	1.92	-1.31	-1.4
14866.00	89.690	131.980	7666.03	6972.36	-5334.17	4551.57	1740851.08	14401272.26	39°39'17.6430"N	80°38'35.3803"W	7012.15	139.526	1.58	1.47	0.5
14957.00	89.170	131.840	7666.94	7063.33	-5394.95	4619.29	1740918.77	14401211.51	39°39'17.0397"N	80°38'34.5176"W	7102.35	139.429	0.59	-0.57	-0.1
15046.00	89.380	131.850	7668.06	7152.29	-5454.32	4685.59	1740985.04	14401152.16	39°39'16.4503"N	80°38'33.6730"W	7190.58	139.335	0.24	0.24	0.0
15139.00	88.860	131.960	7669.49	7245.24	-5516.43	4754.79	1741054.22	14401090.08	39°39'15.8338"N	80°38'32.7913"W	7282.79	139.241	0.57	-0.56	0.1
15228.00	89.420	132.670	7670.83	7334.21	-5576.34	4820.60	1741120.00	14401030.19	39°39'15.2392"N	80°38'31.9531"W	7371.14	139.157	1.02	0.63	0.8
15318.00	88.770	132.420	7672.25	7424.19	-5637.19	4886.90	1741186.27	14400969.37	39°39'14.6352"N	80°38'31.1085"W	7460.54	139.078	0.77	-0.72	-0.2
15410.00	89.200	132.650	7673.88	7516.17	-5699.37	4954.68	1741254.03	14400907.21	39°39'14.0180"N	80°38'30.2451"W	7551.93	138.998	0.53	0.47	0.2
15500.00	89.010	131.380	7675.28	7606.13	-5759.60	5021.53	1741320.86	14400847.00	39°39'13.4201"N	80°38'29.3934"W	7641.26	138.916	1.43	-0.21	-1.4
15591.00	87.940	131.190	7677.71	7697.03	-5819.62	5089.89	1741389.19	14400787.01	39°39'12.8242"N	80°38'28.5225"W	7731.43	138.827	1.19	-1.18	-0.2
15682.00	89.690	132.820	7679.59	7787.98	-5880.50	5157.49	1741456.76	14400726.15	39°39'12.2199"N	80°38'27.6613"W	7821.77	138.748	2.63	1.92	1.7
15773.00	88.980	132.840	7680.64	7878.96	-5942.36	5224.22	1741523.47	14400664.31	39°39'11.6059"N	80°38'26.8113"W	7912.28	138.680	0.78	-0.78	0.0
15864.00	89.290	132.070	7682.02	7969.94	-6003.78	5291.36	1741590.57	14400602.92	39°39'10.9963"N	80°38'25.9562"W	8002.74	138.609	0.91	0.34	-0.8
15957.00	89.630	133.230	7682.89	8062.93	-6066.79	5359.75	1741658.95	14400539.94	39°39'10.3709"N	80°38'25.0849"W	8095.24	138.541	1.30	0.37	1.2
16048.00	89.200	132.570	7683.82	8153.92	-6128.73	5426.41	1741725.58	14400478.02	39°39'9.7561"N	80°38'24.2359"W	8185.79	138.478	0.87	-0.47	-0.7
16140.00	89.020	132.330	7685.25	8245.89	-6190.81	5494.29	1741793.43	14400415.96	39°39'9.1398"N	80°38'23.3713"W	8277.28	138.411	0.33	-0.20	-0.2



REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	William Ritchea WTZ 8H
Field	Wetzel	API/Legal	
Facility	William Ritchea WTZ Pad	Wellbore	William Ritchea WTZ 8H AWB
Slot	Slot 8H		

WELLPATH DATA (209 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]
16231.00	89.380	132.190	7686.52	8336.86	-6252.01	5561.63	1741860.74	14400354.79	39°39'8.5324"N	80°38'22.5135"W	8367.75	138.345	0.42	0.40	-0.17
16322.00	88.340	131.450	7688.33	8427.81	-6312.67	5629.43	1741928.52	14400294.15	39°39'7.9302"N	80°38'21.6497"W	8458.15	138.274	1.40	-1.14	-0.8
16415.00	89.140	132.330	7690.38	8520.75	-6374.75	5698.64	1741997.70	14400232.09	39°39'7.3139"N	80°38'20.7680"W	8550.56	138.205	1.28	0.86	0.9
16505.00	89.320	131.500	7691.59	8610.71	-6434.87	5765.61	1742064.64	14400172.00	39°39'6.7171"N	80°38'19.9150"W	8640.01	138.140	0.94	0.20	-0.9
16597.00	90.430	131.710	7691.79	8702.66	-6495.95	5834.40	1742133.41	14400110.94	39°39'6.1107"N	80°38'19.0386"W	8731.42	138.071	1.23	1.21	0.2
16688.00	90.580	132.370	7690.99	8793.63	-6556.89	5901.98	1742200.96	14400050.03	39°39'5.5058"N	80°38'18.1778"W	8821.91	138.009	0.74	0.16	0.7
16780.00	89.630	132.900	7690.82	8885.62	-6619.20	5969.66	1742268.62	14399987.74	39°39'4.8872"N	80°38'17.3157"W	8913.51	137.954	1.18	-1.03	0.5
16870.00	90.000	131.920	7691.11	8975.61	-6679.90	6036.11	1742335.04	14399927.07	39°39'4.2847"N	80°38'16.4693"W	9003.09	137.898	1.16	0.41	-1.0
16961.00	89.690	131.890	7691.35	9066.58	-6740.68	6103.84	1742402.74	14399866.31	39°39'3.6814"N	80°38'15.6066"W	9093.60	137.838	0.34	-0.34	-0.0
17052.00	90.460	133.410	7691.24	9157.56	-6802.33	6170.77	1742469.64	14399804.68	39°39'3.0694"N	80°38'14.7541"W	9184.23	137.787	1.87	0.85	1.6
17142.00	90.770	133.210	7690.27	9247.56	-6864.06	6236.25	1742535.10	14399742.98	39°39'2.4567"N	80°38'13.9201"W	9273.95	137.744	0.41	0.34	-0.2
17234.00	87.480	132.570	7691.67	9339.53	-6926.66	6303.64	1742602.46	14399680.40	39°39'1.8354"N	80°38'13.0618"W	9365.60	137.696	3.64	-3.58	-0.7
17325.00	89.350	130.900	7694.19	9430.45	-6987.21	6371.52	1742670.31	14399619.88	39°39'1.2342"N	80°38'12.1972"W	9456.07	137.639	2.75	2.05	-1.8
17418.00	90.920	132.840	7693.97	9523.41	-7049.28	6440.76	1742739.53	14399557.83	39°39'0.6181"N	80°38'11.3151"W	9548.60	137.583	2.68	1.69	2.0
17510.00	89.630	132.440	7693.53	9615.40	-7111.59	6508.44	1742807.18	14399495.54	39°38'59.9995"N	80°38'10.4531"W	9640.26	137.536	1.47	-1.40	-0.4
17601.00	90.890	135.430	7693.12	9706.38	-7174.72	6573.96	1742872.68	14399432.44	39°38'59.3730"N	80°38'9.6187"W	9731.06	137.502	3.57	1.38	3.2
17691.00	90.430	137.880	7692.08	9796.22	-7240.17	6635.73	1742934.42	14399367.02	39°38'58.7237"N	80°38'8.8324"W	9821.04	137.494	2.77	-0.51	2.7
17782.00	89.820	138.910	7691.88	9886.88	-7308.21	6696.15	1742994.82	14399299.00	39°38'58.0489"N	80°38'8.0635"W	9912.03	137.503	1.32	-0.67	1.1
17873.00	89.200	140.830	7692.66	9977.29	-7377.78	6754.80	1743053.44	14399229.46	39°38'57.3590"N	80°38'7.3174"W	10002.94	137.524	2.22	-0.68	2.1
17963.00	90.650	142.720	7692.78	10066.33	-7448.48	6810.48	1743109.10	14399158.79	39°38'56.6580"N	80°38'6.6092"W	10092.69	137.562	2.65	1.61	2.1
18055.00	89.420	144.030	7692.72	10156.94	-7522.31	6865.36	1743163.96	14399084.99	39°38'55.9261"N	80°38'5.9114"W	10184.22	137.614	1.95	-1.34	1.4
18145.00	89.480	145.080	7693.59	10245.24	-7595.63	6917.55	1743216.13	14399011.70	39°38'55.1995"N	80°38'5.2480"W	10273.56	137.675	1.17	0.07	1.1
18236.00	89.540	145.750	7694.36	10334.25	-7670.54	6969.20	1743267.77	14398936.81	39°38'54.4570"N	80°38'4.5915"W	10363.73	137.743	0.74	0.07	0.7
18329.00	89.780	147.940	7694.92	10424.70	-7748.39	7020.06	1743318.60	14398858.99	39°38'53.6856"N	80°38'3.9454"W	10455.57	137.823	2.37	0.26	2.3
18420.00	88.400	149.980	7696.36	10512.36	-7826.35	7066.98	1743365.50	14398781.07	39°38'52.9133"N	80°38'3.3497"W	10544.85	137.919	2.71	-1.52	2.2
18511.00	89.260	152.150	7698.22	10599.05	-7905.97	7110.99	1743409.50	14398701.48	39°38'52.1247"N	80°38'2.7912"W	10633.46	138.030	2.56	0.95	2.3
18601.00	89.260	154.400	7699.38	10683.69	-7986.34	7151.46	1743449.95	14398621.14	39°38'51.3287"N	80°38'2.2780"W	10720.31	138.157	2.50	0.00	2.5
18692.00	88.860	156.090	7700.88	10768.16	-8068.96	7189.56	1743488.03	14398538.55	39°38'50.5106"N	80°38'1.7953"W	10807.31	138.299	1.91	-0.44	1.8
18717.00	88.860	156.090	7701.37	10791.22	-8091.81	7199.69	1743498.16	14398515.70	39°38'50.2844"N	80°38'1.6670"W	10831.11	138.339	0.00	0.00	0.0

HOLE & CASING SECTIONS - Ref Wellbore: William Ritchea WTZ 8H AWB Ref Wellpath: William Ritchea WTZ 8H AWP Proj: 18717'									
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]
9in Conductor	26.00	100.00	74.00	26.00	100.00	0.00	0.00	-0.15	-0.6

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]
7.5in Open Hole	100.00	591.00	491.00	100.00	590.98	-0.15	-0.69	-0.90	-3.24
3.375in Casing Surface	26.00	591.00	565.00	26.00	590.98	0.00	0.00	-0.90	-3.24
2.25in Open Hole	591.00	2970.00	2379.00	590.98	2966.80	-0.90	-3.24	60.51	-19.44
0.625in Casing Intermediate	26.00	2970.00	2944.00	26.00	2966.80	0.00	0.00	60.51	-19.44
3.75in Open Hole	2970.00	5510.00	2540.00	2966.80	5437.40	60.51	-19.44	-97.10	-553.07
3.5in Open Hole	5510.00	18717.00	13207.00	5437.40	7701.37	-97.10	-553.07	-8091.81	7199.68
3.5in Casing Production	26.00	18717.00	18691.00	26.00	7701.37	0.00	0.00	-8091.81	7199.68

## TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
William Ritchea WTZ 8H LP Rev-3	7572.00	-792.85	-511.67	1735789.82	14405811.81	39°40'2.7180"N	80°39'39.8968"W	point
William Ritchea WTZ 8H BHL Rev-4	7795.56	-8088.42	7198.03	1743496.50	14398519.10	39°38'50.3180"N	80°38'1.6880"W	point

## WELLPATH COMPOSITION - Ref Wellbore: William Ritchea WTZ 8H AWB Ref Wellpath: William Ritchea WTZ 8H AWP Proj: 18717'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
26.00	528.00	Gyrodata 2015 - GC+WIR+DPIPE	01_Gyrodata <17-1/2"> (50'-528')	William Ritchea WTZ 8H AWB	4/5/2021
528.00	2895.00	OWSG MWD rev2 + HRGM	02_Premier MWD <12-1/4"> (638'-2895')	William Ritchea WTZ 8H AWB	4/5/2021
2895.00	5445.00	OWSG MWD rev2 + HRGM	03_Premier MWD <8-3/4"> (3022'-5445')	William Ritchea WTZ 8H AWB	4/5/2021
5445.00	18717.00	BH AutoTrak Curve/eXpress (2019) (HRGM, Short spacing)	04_BH AT Curve <8-1/2"> (5501'-18692')	William Ritchea WTZ 8H AWB	4/5/2021

## REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	William Ritchea WTZ 8H
Field	Wetzel	API/Legal	
Facility	William Ritchea WTZ Pad	Wellbore	William Ritchea WTZ 8H AWP
Slot	Slot 8H		

## COMMENTS

**Wellpath general comments**  
 API: 47-103-03371-0000  
 3H Job #: 110806975  
 Rig: SDC 41  
 Duration: 04/01/2021 - 04/11/2021