

SOUTHWESTERN ENERGY

Location: Ohio County, WV
 Facility: Timmy Minch OHI Pad
 Slot: Slot 201H
 Well: Timmy Minch OHI 201H PWB
 Wellbore: Timmy Minch OHI 201H PWB

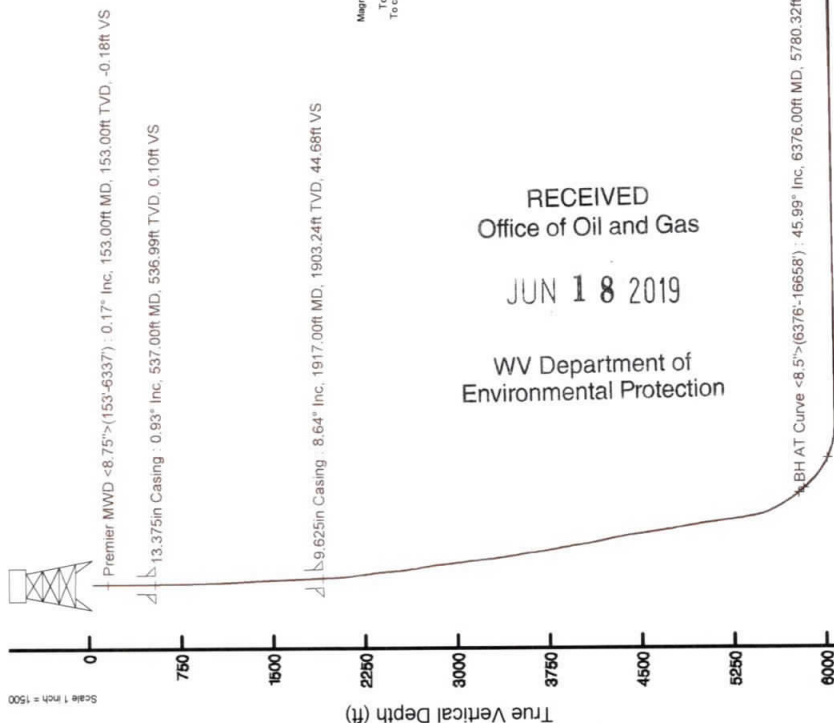
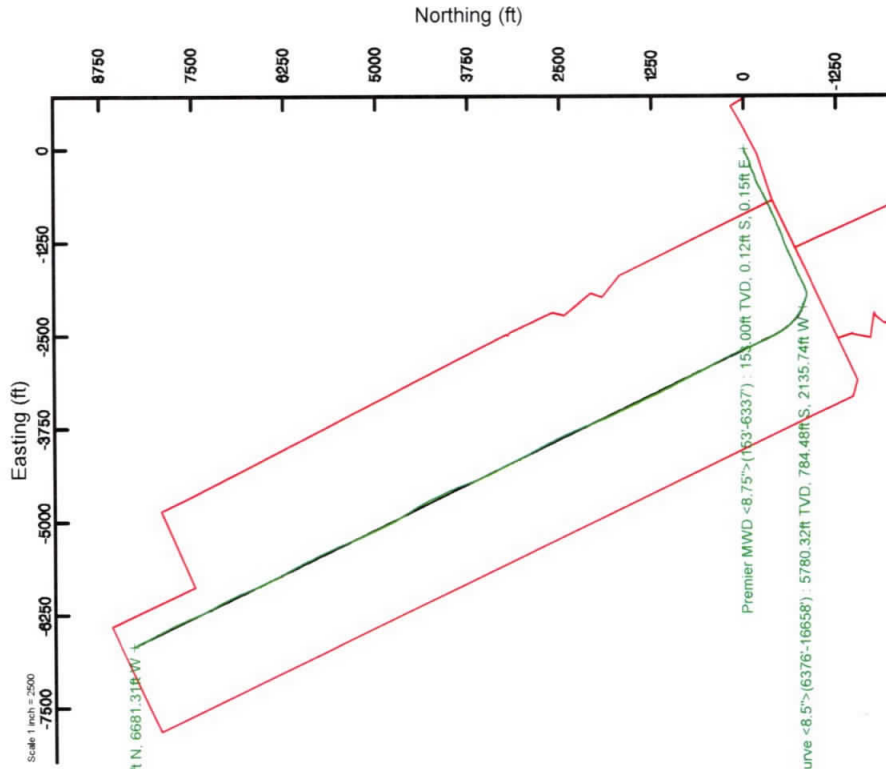
Plg reference wellpath is Timmy Minch OHI 201H PWP Rev-B-0	Grid System: NAD83 / UTM Zone 17 North, US feet
True vertical depths are referenced to SDC 42 (KB)	* - Wellpath was transformed from a different geodetic datum
Measured depths are referenced to SDC 42 (KB)	North Reference: Grid north
SDC 42 (KB) to Mean Sea Level: 1234.1 feet	Scale: True distance
Mean Sea Level to Ground level (At Slot: Slot 201H): -1208.1 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: thomsauz on 2018-08-30
	Database: WVA_Pennsylvania



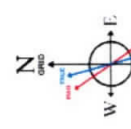
Location Information			
Facility Name	Grid East (US ft)	Grid North (US ft)	Longitude
Timmy Minch OHI Pad	1739330.759	14558022.602	80°38'46.893"W
Local N (ft)	Local E (ft)	Grid North (US ft)	Latitude
-12.12	1739337.720	14558010.490	40°05'07.266"N
Slot 201H	6.96		80°38'46.804"W
SDC 42 (KB) to Ground level (At Slot: Slot 201H)			26ft
Mean Sea Level to Ground level (At Slot: Slot 201H)			-1208.1ft
SDC 42 (KB) to Mean Sea Level			1234.1ft

Comments

API: 47-069-00221-0000
 BH Job #: 109325633
 Rig: SDC 42
 Duration: 08/21/2018 - 08/25/2018



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User specified Dir: 67.42° East: 25053.17
 Magnetic North is 0.23 degrees East of True North
 Grid North is 0.23 degrees East of True North
 To correct azimuth from True to Grid subtract 0.23 degrees
 To correct azimuth from Magnetic to Grid subtract 0.23 degrees

Projection to Bit: 5985.97ft TVD, 8308.20ft N, 6681.31ft W

BH AT Curve <8.5> (6376-16658): 45.99° Inc, 6376.00ft MD, 5780.32ft TVD, 728.02ft VS



Azimuth: 321.17° with reference 0.00 N, 0.00 E

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 201H
Area	Ohio County, WV	Well	Timmy Minch OHI 201H
Field	Ohio	Wellbore	Timmy Minch OHI 201H AWB
Facility	Timmy Minch OHI Pad		

REPORT SETUP INFORMATION

Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Thomsuzc
Scale	0.999611	Report Generated	8/30/2018 at 8:08:58 AM
Convergence at slot	0.23° East	Database/Source file	WA_Pennsylvania/Timmy_Minch_OHI_201H_AWP_Proj_16683_MD.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-12.12	6.96	1739337.72	14558010.49	40°05'07.268"N	80°38'46.804"W
Facility Reference Pt			1739330.76	14558022.60	40°05'07.388"N	80°38'46.893"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.478"W

WELLPATH DATUM

Calculation method	Minimum curvature	SDC 42 (KB) to Facility Vertical Datum	1234.10ft
Horizontal Reference Pt	Slot	SDC 42 (KB) to Mean Sea Level	1234.10ft
Vertical Reference Pt	SDC 42 (KB)	SDC 42 (KB) to Ground Level at Slot (Slot 201H)	26.00ft
MD Reference Pt	SDC 42 (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	321.17°

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Actual Wellpath Report

Timmy Minch OHI 201H AWP Proj: 16683'MD
Page 2 of 10



REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot 201H
SOUTHWESTERN ENERGY	Well	Timmy Minch OHI 201H
Area	Wellbore	Timmy Minch OHI 201H AWB
Field		
Facility		

WELLPATH DATA (204 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	127.880	0.00	0.00	0.00	0.00	1739337.72	14558010.49	40°05'07.268"N	80°38'46.804"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	127.880	26.00	0.00	0.00	0.00	1739337.72	14558010.49	40°05'07.268"N	80°38'46.804"W	0.00	0.000	0.00	0.00	0.00
153.00	0.170	127.880	153.00	-0.18	-0.12	0.15	1739337.87	14558010.37	40°05'07.267"N	80°38'46.802"W	0.19	127.880	0.13	0.13	100.69
213.00	0.160	168.260	213.00	-0.34	-0.25	0.24	1739337.96	14558010.24	40°05'07.265"N	80°38'46.801"W	0.35	136.917	0.19	-0.02	67.30
305.00	0.180	186.550	305.00	-0.56	-0.52	0.25	1739337.97	14558009.97	40°05'07.263"N	80°38'46.801"W	0.58	154.785	0.06	0.02	19.88
396.00	0.100	39.140	396.00	-0.64	-0.60	0.28	1739338.00	14558009.89	40°05'07.262"N	80°38'46.800"W	0.66	155.101	0.30	-0.09	-161.99
497.00	0.690	7.590	497.00	-0.21	0.07	0.42	1739338.14	14558010.56	40°05'07.269"N	80°38'46.799"W	0.42	80.561	0.60	0.58	-31.24
508.00	0.550	24.630	508.00	-0.14	0.18	0.45	1739338.17	14558010.67	40°05'07.270"N	80°38'46.798"W	0.48	67.732	2.09	-1.27	154.91
556.00	1.210	356.780	555.99	0.38	0.90	0.51	1739338.23	14558011.39	40°05'07.277"N	80°38'46.797"W	1.03	29.770	1.60	1.37	-58.02
617.00	0.970	354.090	616.98	1.33	2.05	0.42	1739338.14	14558012.54	40°05'07.288"N	80°38'46.798"W	2.10	11.670	0.40	-0.39	-4.41
708.00	0.840	258.850	707.97	2.29	2.69	-0.31	1739337.41	14558013.18	40°05'07.295"N	80°38'46.808"W	2.71	353.444	1.47	-0.14	-104.66
749.00	1.570	238.520	748.96	2.50	2.34	-1.08	1739336.64	14558012.83	40°05'07.291"N	80°38'46.818"W	2.58	335.164	2.04	1.78	-49.59
799.00	2.400	242.170	798.93	2.79	1.49	-2.59	1739335.13	14558011.98	40°05'07.283"N	80°38'46.837"W	2.99	299.949	1.68	1.66	7.30
889.00	4.940	242.830	888.74	3.93	-1.16	-7.71	1739330.02	14558009.33	40°05'07.257"N	80°38'46.903"W	7.79	261.474	2.82	2.82	0.73
979.00	8.300	244.230	978.13	6.18	-5.75	-17.01	1739320.72	14558004.74	40°05'07.212"N	80°38'47.023"W	17.95	251.319	3.74	3.73	1.56
1070.00	9.500	247.710	1068.03	9.81	-11.45	-29.87	1739307.86	14557999.04	40°05'07.156"N	80°38'47.189"W	31.99	249.020	1.44	1.32	3.82
1160.00	9.230	246.120	1156.83	13.78	-17.19	-43.34	1739294.39	14557993.30	40°05'07.100"N	80°38'47.363"W	46.63	248.363	0.42	-0.30	-1.77
1251.00	9.620	245.960	1246.60	17.61	-23.25	-56.96	1739280.78	14557987.25	40°05'07.041"N	80°38'47.538"W	61.52	247.800	0.43	0.43	-0.18
1341.00	10.350	248.890	1335.24	21.99	-29.22	-71.37	1739266.38	14557981.28	40°05'06.982"N	80°38'47.724"W	77.12	247.735	0.99	0.81	3.26
1431.00	10.310	244.980	1423.78	26.37	-35.54	-86.21	1739251.54	14557974.96	40°05'06.920"N	80°38'47.915"W	93.25	247.597	0.78	-0.04	-4.34
1521.00	9.950	241.140	1512.38	29.64	-42.70	-100.32	1739237.44	14557967.81	40°05'06.850"N	80°38'48.097"W	109.03	246.944	0.85	-0.40	-4.27
1611.00	9.630	245.140	1601.07	32.80	-49.62	-113.96	1739223.80	14557960.89	40°05'06.782"N	80°38'48.273"W	124.29	246.473	0.83	-0.36	4.44
1701.00	9.310	242.430	1689.84	36.04	-56.15	-127.24	1739210.53	14557954.36	40°05'06.718"N	80°38'48.444"W	139.08	246.189	0.61	-0.36	-3.01
1792.00	8.910	247.510	1779.70	39.46	-62.25	-140.28	1739197.49	14557948.26	40°05'06.658"N	80°38'48.612"W	153.47	246.070	0.99	-0.44	5.58
1874.00	8.690	246.880	1860.73	42.93	-67.11	-151.85	1739185.93	14557943.40	40°05'06.611"N	80°38'48.761"W	166.02	246.155	0.29	-0.27	-0.77
1950.00	8.610	246.710	1935.87	46.00	-71.62	-162.35	1739175.43	14557938.90	40°05'06.567"N	80°38'48.896"W	177.45	246.196	0.11	-0.11	-0.22
1998.00	8.660	243.230	1983.32	47.72	-74.67	-168.88	1739168.91	14557935.85	40°05'06.537"N	80°38'48.981"W	184.65	246.148	1.09	0.10	-7.25
2089.00	12.690	253.510	2072.74	52.96	-80.59	-184.59	1739153.21	14557929.93	40°05'06.479"N	80°38'49.183"W	201.41	246.413	4.88	4.43	11.30
2178.00	16.330	258.530	2158.89	62.42	-85.86	-206.23	1739131.57	14557924.67	40°05'06.428"N	80°38'49.462"W	223.39	247.397	4.32	4.09	5.64
2269.00	19.300	256.780	2245.52	74.81	-91.84	-233.41	1739104.40	14557918.68	40°05'06.370"N	80°38'49.812"W	250.83	248.522	3.32	3.26	-1.92

REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot 201H
SOUTHWESTERN ENERGY	Well	Timmy Minch OHI 201H
Area	Wellbore	Timmy Minch OHI 201H AWB
Field		
Facility		

WELLPATH DATA (204 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]
2359.00	20.520	249.720	2330.15	86.26	-100.71	-262.69	1739075.13	14557909.82	40°05'06.283"N	80°38'50.189"W	281.34	249.024	2.99	1.36	-7.84
2449.00	20.240	243.160	2414.52	94.51	-113.21	-291.39	1739046.45	14557897.32	40°05'06.161"N	80°38'50.559"W	312.61	248.768	2.56	-0.31	-7.29
2540.00	20.760	242.560	2499.76	100.97	-127.75	-319.74	1739018.10	14557882.79	40°05'06.018"N	80°38'50.924"W	344.32	248.221	0.62	0.57	-0.66
2630.00	22.490	249.310	2583.44	109.48	-141.18	-350.01	1738987.85	14557869.36	40°05'05.887"N	80°38'51.314"W	377.41	248.032	3.36	1.92	7.50
2721.00	24.680	253.670	2666.84	122.17	-152.68	-384.53	1738953.34	14557857.87	40°05'05.774"N	80°38'51.759"W	413.73	248.344	3.08	2.41	4.79
2811.00	26.450	251.400	2748.02	136.29	-164.36	-421.56	1738916.32	14557846.20	40°05'05.660"N	80°38'52.236"W	452.47	248.701	2.25	1.97	-2.52
2901.00	27.070	244.790	2828.40	148.05	-179.47	-459.10	1738878.80	14557831.09	40°05'05.512"N	80°38'52.720"W	492.93	248.648	3.38	0.69	-7.34
2992.00	28.940	241.860	2908.75	157.01	-198.68	-497.25	1738840.66	14557811.89	40°05'05.324"N	80°38'53.212"W	535.47	248.220	2.55	2.05	-3.22
3083.00	30.580	242.600	2987.74	165.68	-219.72	-537.22	1738800.71	14557790.86	40°05'05.118"N	80°38'53.727"W	580.41	247.756	1.85	1.80	0.81
3173.00	31.450	243.510	3064.88	175.23	-240.73	-578.56	1738759.39	14557769.86	40°05'04.912"N	80°38'54.260"W	626.64	247.409	1.10	0.97	1.01
3263.00	31.290	242.170	3141.72	184.71	-262.11	-620.24	1738717.72	14557748.48	40°05'04.702"N	80°38'54.797"W	673.35	247.091	0.80	-0.18	-1.49
3354.00	31.570	240.920	3219.37	193.26	-284.72	-661.96	1738676.02	14557725.88	40°05'04.480"N	80°38'55.335"W	720.59	246.727	0.78	0.31	-1.37
3445.00	30.720	242.510	3297.25	201.86	-307.03	-703.40	1738634.60	14557703.58	40°05'04.261"N	80°38'55.869"W	767.49	246.419	1.30	-0.93	1.75
3535.00	30.400	245.940	3374.78	212.19	-326.93	-744.59	1738593.42	14557683.69	40°05'04.066"N	80°38'56.400"W	813.20	246.295	1.97	-0.36	3.81
3625.00	31.630	246.960	3451.89	224.41	-345.45	-787.10	1738550.93	14557665.18	40°05'03.885"N	80°38'56.948"W	859.57	246.304	1.49	1.37	1.13
3716.00	32.330	245.400	3529.08	236.89	-364.92	-831.18	1738506.86	14557645.72	40°05'03.694"N	80°38'57.516"W	907.76	246.297	1.19	0.77	-1.71
3806.00	32.010	243.790	3605.26	248.02	-385.47	-874.47	1738463.60	14557625.17	40°05'03.493"N	80°38'58.074"W	955.66	246.212	1.02	-0.36	-1.79
3896.00	31.020	244.760	3681.99	258.68	-405.89	-916.84	1738421.23	14557604.76	40°05'03.293"N	80°38'58.620"W	1002.67	246.121	1.24	-1.10	1.08
3987.00	31.010	247.390	3759.98	270.74	-424.90	-959.69	1738378.40	14557585.75	40°05'03.107"N	80°38'59.173"W	1049.55	246.119	1.49	-0.01	2.89
4077.00	32.390	247.990	3836.55	284.19	-442.85	-1003.45	1738334.66	14557567.81	40°05'02.931"N	80°38'59.736"W	1096.82	246.187	1.57	1.53	0.67
4167.00	32.660	246.860	3912.44	297.73	-461.43	-1048.13	1738290.00	14557549.24	40°05'02.749"N	80°39'00.312"W	1145.20	246.239	0.74	0.30	-1.26
4258.00	32.620	245.030	3989.07	310.25	-481.43	-1092.94	1738245.21	14557529.26	40°05'02.553"N	80°39'00.890"W	1194.28	246.227	1.09	-0.04	-2.01
4348.00	31.570	246.610	4065.32	322.33	-501.03	-1136.56	1738201.61	14557509.66	40°05'02.361"N	80°39'01.452"W	1242.09	246.211	1.49	-1.17	1.76
4439.00	31.110	251.600	4143.05	336.88	-517.91	-1180.74	1738157.45	14557492.78	40°05'02.196"N	80°39'02.021"W	1289.33	246.316	2.90	-0.51	5.48
4529.00	30.730	252.860	4220.26	353.49	-532.02	-1224.77	1738113.43	14557478.67	40°05'02.058"N	80°39'02.588"W	1335.33	246.521	0.83	-0.42	1.40
4620.00	31.280	250.260	4298.26	369.82	-546.86	-1269.23	1738068.99	14557463.85	40°05'01.913"N	80°39'03.161"W	1382.02	246.691	1.59	0.60	-2.86
4710.00	31.500	246.610	4375.10	383.72	-564.08	-1312.80	1738025.43	14557446.63	40°05'01.745"N	80°39'03.722"W	1428.86	246.748	2.13	0.24	-4.06
4800.00	31.310	244.830	4451.91	395.50	-583.36	-1355.55	1737982.70	14557427.35	40°05'01.556"N	80°39'04.273"W	1475.75	246.715	1.05	-0.21	-1.98
4891.00	31.330	245.210	4529.65	406.82	-603.34	-1398.43	1737939.84	14557407.39	40°05'01.360"N	80°39'04.826"W	1523.03	246.663	0.22	0.02	0.42
4981.00	30.870	244.720	4606.72	417.91	-623.01	-1440.55	1737897.73	14557387.72	40°05'01.168"N	80°39'05.369"W	1569.50	246.612	0.58	-0.51	-0.54



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Actual Wellpath Report

Timmy Minch OHI 201H AWP Proj: 16683MD
Page 4 of 10



REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot 201H
SOUTHWESTERN ENERGY	Well	Timmy Minch OHI 201H
Area	Wellbore	Timmy Minch OHI 201H AWB
Field		
Facility		

WELLPATH DATA (204 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]
5072.00	30.670	246.100	4684.91	429.36	-642.38	-1482.88	1737855.42	14557368.36	40°05'00.978"N	80°39'05.914"W	1616.04	246.578	0.81	-0.22	1.52
5162.00	31.830	247.670	4761.85	442.01	-660.70	-1525.82	1737812.50	14557350.05	40°05'00.798"N	80°39'06.468"W	1662.72	246.587	1.57	1.29	1.74
5253.00	33.680	247.160	4838.38	455.78	-679.61	-1571.28	1737767.06	14557331.14	40°05'00.613"N	80°39'07.054"W	1711.95	246.610	2.06	2.03	-0.56
5343.00	32.330	246.330	4913.85	468.95	-698.96	-1616.32	1737722.03	14557311.80	40°05'00.424"N	80°39'07.634"W	1760.97	246.614	1.58	-1.50	-0.92
5433.00	31.760	245.540	4990.14	481.12	-718.43	-1659.92	1737678.45	14557292.34	40°05'00.233"N	80°39'08.196"W	1808.72	246.596	0.79	-0.63	-0.88
5524.00	31.660	242.940	5067.56	491.94	-739.21	-1702.99	1737635.40	14557271.56	40°05'00.029"N	80°39'08.751"W	1856.50	246.536	1.51	-0.11	-2.86
5614.00	31.460	243.820	5144.25	501.90	-760.32	-1745.10	1737593.30	14557250.47	40°04'59.822"N	80°39'09.294"W	1903.54	246.458	0.56	-0.22	0.98
5705.00	31.170	243.800	5221.99	512.25	-781.20	-1787.54	1737550.88	14557229.60	40°04'59.618"N	80°39'09.841"W	1950.79	246.394	0.32	-0.32	-0.02
5795.00	31.140	245.620	5299.01	523.15	-801.09	-1829.64	1737508.80	14557209.72	40°04'59.423"N	80°39'10.384"W	1997.32	246.354	1.05	-0.03	2.02
5886.00	30.600	247.870	5377.12	535.68	-819.52	-1872.52	1737465.93	14557191.29	40°04'59.242"N	80°39'10.936"W	2044.01	246.363	1.40	-0.59	2.47
5931.00	31.160	249.690	5415.74	542.67	-827.88	-1894.05	1737444.41	14557182.93	40°04'59.160"N	80°39'11.214"W	2067.08	246.390	2.42	1.24	4.04
5976.00	30.950	252.800	5454.30	550.63	-835.34	-1916.03	1737422.44	14557175.47	40°04'59.088"N	80°39'11.497"W	2090.20	246.444	3.60	-0.47	6.91
6021.00	31.750	263.760	5492.76	561.28	-840.06	-1938.87	1737399.61	14557170.76	40°04'59.042"N	80°39'11.791"W	2113.03	246.574	12.78	1.78	24.36
6066.00	31.950	270.170	5530.99	575.16	-841.31	-1962.55	1737375.94	14557169.51	40°04'59.030"N	80°39'12.096"W	2135.28	246.796	7.53	0.44	14.24
6112.00	33.290	280.310	5569.77	592.38	-839.01	-1987.16	1737351.33	14557171.81	40°04'59.054"N	80°39'12.412"W	2157.02	247.110	12.22	2.91	22.04
6157.00	34.220	287.540	5607.20	612.26	-832.98	-2011.39	1737327.12	14557177.83	40°04'59.115"N	80°39'12.723"W	2177.05	247.504	9.16	2.07	16.07
6202.00	34.720	290.950	5644.30	633.87	-824.59	-2035.42	1737303.09	14557186.22	40°04'59.198"N	80°39'13.032"W	2196.11	247.946	4.43	1.11	7.58
6248.00	35.630	290.900	5681.90	656.77	-815.12	-2060.18	1737278.35	14557195.68	40°04'59.293"N	80°39'13.350"W	2215.57	248.413	1.98	1.98	-0.11
6292.00	37.470	290.720	5717.24	679.37	-805.82	-2084.67	1737253.87	14557204.99	40°04'59.386"N	80°39'13.665"W	2234.99	248.866	4.19	4.18	-0.41
6337.00	41.130	292.430	5752.06	704.16	-795.32	-2111.16	1737227.38	14557215.48	40°04'59.491"N	80°39'14.005"W	2256.00	249.357	8.48	8.13	3.80
6376.00	45.990	295.080	5780.32	728.02	-784.48	-2135.74	1737202.82	14557226.32	40°04'59.599"N	80°39'14.321"W	2275.25	249.831	13.31	12.46	6.79
6421.00	46.350	297.530	5811.48	757.47	-770.09	-2164.83	1737173.73	14557240.70	40°04'59.742"N	80°39'14.694"W	2297.72	250.418	4.01	0.80	5.44
6466.00	43.940	299.920	5843.22	786.94	-754.77	-2192.81	1737145.77	14557256.01	40°04'59.894"N	80°39'15.054"W	2319.07	251.006	6.55	-5.36	5.31
6512.00	44.160	303.360	5876.29	817.07	-738.00	-2220.03	1737118.56	14557272.78	40°05'00.061"N	80°39'15.403"W	2339.48	251.612	5.22	0.48	7.48
6557.00	47.170	306.010	5907.74	847.93	-719.67	-2246.48	1737092.12	14557291.10	40°05'00.243"N	80°39'15.742"W	2358.94	252.237	7.90	6.69	5.89
6602.00	51.110	308.800	5937.17	880.98	-698.99	-2273.49	1737065.12	14557311.78	40°05'00.449"N	80°39'16.089"W	2378.51	252.910	9.93	8.76	6.20
6647.00	54.960	310.720	5964.23	916.22	-675.99	-2301.11	1737037.51	14557334.77	40°05'00.677"N	80°39'16.443"W	2398.35	253.629	9.21	8.56	4.27
6691.00	59.290	313.060	5988.11	952.68	-651.31	-2328.60	1737010.03	14557359.44	40°05'00.922"N	80°39'16.795"W	2417.97	254.374	10.81	9.84	5.32
6737.00	63.810	315.230	6010.02	992.81	-623.14	-2357.60	1736981.04	14557387.60	40°05'01.202"N	80°39'17.167"W	2438.56	255.195	10.66	9.83	4.72
6782.00	67.850	318.400	6028.44	1033.73	-593.20	-2385.67	1736952.98	14557417.52	40°05'01.498"N	80°39'17.527"W	2458.31	256.036	11.04	8.98	7.04



REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 201H
Area	Ohio County, WV	Well	Timmy Minch OHI 201H
Field	Ohio	Wellbore	Timmy Minch OHI 201H AWB
Facility	Timmy Minch OHI Pad		

WELLPATH DATA (204 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]
6827.00	71.660	321.580	6044.02	1075.93	-560.86	-2412.79	1736925.87	14557449.84	40°05'01.819"N	80°39'17.874"W	2477.12	256.914	10.75	8.47	7.07
6872.00	75.000	325.400	6056.93	1118.99	-526.22	-2438.42	1736900.25	14557484.47	40°05'02.162"N	80°39'18.202"W	2494.56	257.822	11.01	7.42	8.49
6917.00	77.240	328.210	6067.72	1162.46	-489.67	-2462.33	1736876.35	14557521.01	40°05'02.525"N	80°39'18.508"W	2510.55	258.753	7.84	4.98	6.24
6963.00	79.860	331.340	6076.86	1207.02	-450.72	-2485.02	1736853.67	14557559.95	40°05'02.910"N	80°39'18.798"W	2525.56	259.720	8.77	5.70	6.80
7008.00	84.510	333.020	6082.97	1250.77	-411.30	-2505.81	1736832.89	14557599.35	40°05'03.301"N	80°39'19.063"W	2539.34	260.679	10.97	10.33	3.73
7053.00	89.350	334.050	6085.38	1294.65	-371.08	-2525.83	1736812.88	14557639.55	40°05'03.699"N	80°39'19.319"W	2552.95	261.642	11.00	10.76	2.29
7099.00	89.540	334.410	6085.83	1339.46	-329.66	-2545.83	1736792.88	14557680.96	40°05'04.109"N	80°39'19.574"W	2567.09	262.622	0.88	0.41	0.78
7189.00	89.660	335.070	6086.46	1426.94	-248.27	-2584.23	1736754.50	14557762.32	40°05'04.915"N	80°39'20.064"W	2596.13	264.512	0.75	0.13	0.73
7280.00	90.060	335.610	6086.68	1515.17	-165.57	-2622.20	1736716.54	14557844.99	40°05'05.733"N	80°39'20.548"W	2627.42	266.387	0.74	0.44	0.59
7370.00	90.990	335.990	6085.86	1602.25	-83.48	-2659.09	1736679.67	14557927.04	40°05'06.546"N	80°39'21.019"W	2660.40	268.202	1.12	1.03	0.42
7461.00	91.140	336.160	6084.16	1690.17	-0.32	-2695.99	1736642.78	14558010.17	40°05'07.369"N	80°39'21.490"W	2695.99	269.993	0.25	0.16	0.19
7551.00	91.140	335.570	6082.37	1777.21	81.80	-2732.78	1736606.00	14558092.26	40°05'08.182"N	80°39'21.959"W	2734.01	271.715	0.66	0.00	-0.66
7641.00	91.230	334.500	6080.51	1864.57	163.37	-2770.76	1736568.04	14558173.80	40°05'08.990"N	80°39'22.443"W	2775.57	273.374	1.19	0.10	-1.19
7732.00	91.260	334.010	6078.54	1953.18	245.32	-2810.28	1736528.54	14558255.71	40°05'09.801"N	80°39'22.948"W	2820.97	274.989	0.54	0.03	-0.54
7822.00	91.290	332.650	6076.53	2041.14	325.72	-2850.66	1736488.17	14558336.08	40°05'10.597"N	80°39'23.463"W	2869.21	276.518	1.51	0.03	-1.51
7913.00	91.200	332.990	6074.56	2130.24	406.65	-2892.22	1736446.63	14558416.99	40°05'11.399"N	80°39'23.994"W	2920.67	278.003	0.39	-0.10	0.37
8003.00	91.140	332.760	6072.72	2218.35	486.74	-2933.25	1736405.62	14558497.04	40°05'12.192"N	80°39'24.518"W	2973.36	279.422	0.26	-0.07	-0.26
8094.00	91.230	333.050	6070.84	2307.43	567.73	-2974.69	1736364.20	14558578.00	40°05'12.993"N	80°39'25.047"W	3028.38	280.805	0.33	0.10	0.32
8184.00	91.170	333.410	6068.95	2395.43	648.07	-3015.21	1736323.68	14558658.31	40°05'13.789"N	80°39'25.564"W	3084.07	282.130	0.41	-0.07	0.40
8275.00	91.110	333.190	6067.14	2484.38	729.35	-3056.09	1736282.82	14558739.56	40°05'14.594"N	80°39'26.086"W	3141.92	283.423	0.25	-0.07	-0.24
8365.00	91.200	332.580	6065.33	2572.49	809.44	-3097.11	1736241.83	14558819.62	40°05'15.387"N	80°39'26.610"W	3201.13	284.647	0.68	0.10	-0.68
8455.00	90.770	332.750	6063.78	2660.67	889.38	-3138.43	1736200.52	14558899.52	40°05'16.178"N	80°39'27.138"W	3262.01	285.822	0.51	-0.48	0.19
8545.00	90.830	332.930	6062.52	2748.80	969.45	-3179.51	1736159.46	14558979.56	40°05'16.971"N	80°39'27.662"W	3324.02	286.957	0.21	0.07	0.20
8636.00	90.830	333.590	6061.20	2837.77	1050.71	-3220.45	1736118.53	14559060.79	40°05'17.776"N	80°39'28.185"W	3387.51	288.070	0.73	0.00	0.73
8726.00	90.830	334.300	6059.90	2925.53	1131.55	-3259.97	1736079.02	14559141.60	40°05'18.579"N	80°39'28.689"W	3450.77	289.142	0.79	0.00	0.79
8817.00	90.800	334.610	6058.61	3014.09	1213.65	-3299.21	1736039.80	14559223.66	40°05'19.389"N	80°39'29.190"W	3515.36	290.197	0.34	-0.03	0.34
8907.00	90.860	334.270	6057.30	3101.68	1294.83	-3338.04	1736000.99	14559304.82	40°05'20.193"N	80°39'29.686"W	3580.37	291.201	0.38	0.07	-0.38
8997.00	90.860	334.630	6055.95	3189.26	1376.02	-3376.85	1735962.19	14559385.97	40°05'20.996"N	80°39'30.181"W	3646.44	292.170	0.40	0.00	0.40
9088.00	90.550	335.520	6054.83	3277.58	1458.54	-3415.20	1735923.86	14559468.46	40°05'21.813"N	80°39'30.670"W	3713.61	293.126	1.04	-0.34	0.98
9178.00	90.550	334.580	6053.97	3364.95	1540.14	-3453.16	1735885.91	14559550.02	40°05'22.621"N	80°39'31.155"W	3781.05	294.037	1.04	0.00	-1.04

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 201H
Area	Ohio County, WV	Well	Timmy Minch OHI 201H
Field	Ohio	Wellbore	Timmy Minch OHI 201H AWB
Facility	Timmy Minch OHI Pad		

WELLPATH DATA (204 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]
9268.00	90.520	333.940	6053.13	3452.61	1621.20	-3492.24	1735846.84	14559631.06	40°05'23.424"N	80°39'31.654"W	3850.20	294.902	0.71	-0.03	-0.71
9359.00	90.490	334.550	6052.33	3541.25	1703.16	-3531.78	1735807.32	14559712.98	40°05'24.235"N	80°39'32.158"W	3921.00	295.745	0.67	-0.03	0.67
9449.00	90.490	335.280	6051.56	3628.66	1784.67	-3569.94	1735769.18	14559794.46	40°05'25.042"N	80°39'32.645"W	3991.17	296.561	0.81	0.00	0.81
9539.00	90.520	335.510	6050.76	3715.90	1866.49	-3607.41	1735731.72	14559876.25	40°05'25.852"N	80°39'33.123"W	4061.67	297.357	0.26	0.03	0.26
9629.00	90.550	336.940	6049.92	3802.81	1948.85	-3643.69	1735695.46	14559958.57	40°05'26.667"N	80°39'33.586"W	4132.13	298.140	1.59	0.03	1.59
9719.00	90.590	337.430	6049.03	3889.31	2031.80	-3678.58	1735660.57	14560041.50	40°05'27.488"N	80°39'34.031"W	4202.40	298.913	0.55	0.04	0.54
9810.00	90.580	337.850	6048.10	3976.57	2115.95	-3713.20	1735625.97	14560125.62	40°05'28.321"N	80°39'34.472"W	4273.77	299.676	0.46	-0.01	0.46
9901.00	90.950	337.450	6046.88	4063.82	2200.11	-3747.80	1735591.38	14560209.74	40°05'29.154"N	80°39'34.913"W	4345.86	300.415	0.60	0.41	-0.44
9991.00	90.950	336.940	6045.39	4150.31	2283.06	-3782.68	1735556.52	14560292.66	40°05'29.975"N	80°39'35.358"W	4418.26	301.113	0.57	0.00	-0.57
10081.00	90.950	336.190	6043.90	4237.07	2365.63	-3818.47	1735520.74	14560375.19	40°05'30.792"N	80°39'35.815"W	4491.87	301.779	0.83	0.00	-0.83
10172.00	90.920	334.980	6042.41	4325.19	2448.48	-3856.08	1735483.15	14560458.01	40°05'31.613"N	80°39'36.294"W	4567.75	302.414	1.33	-0.03	-1.33
10262.00	90.860	334.680	6041.02	4412.64	2529.92	-3894.35	1735444.89	14560539.42	40°05'32.419"N	80°39'36.783"W	4643.97	303.009	0.34	-0.07	-0.33
10352.00	90.980	333.350	6039.57	4500.37	2610.81	-3933.78	1735405.48	14560620.28	40°05'33.220"N	80°39'37.286"W	4721.33	303.572	1.48	0.13	-1.48
10443.00	90.950	332.840	6038.04	4589.39	2691.95	-3974.95	1735364.32	14560701.39	40°05'34.023"N	80°39'37.812"W	4800.71	304.107	0.56	-0.07	-0.56
10534.00	90.890	332.340	6036.58	4678.58	2772.72	-4016.84	1735322.45	14560782.13	40°05'34.823"N	80°39'38.347"W	4880.88	304.616	0.55	-0.07	-0.55
10624.00	91.020	331.980	6035.08	4766.92	2852.29	-4058.86	1735280.45	14560861.67	40°05'35.611"N	80°39'38.884"W	4960.84	305.097	0.43	0.14	-0.40
10715.00	91.140	332.710	6033.36	4856.18	2932.88	-4101.09	1735238.23	14560942.23	40°05'36.409"N	80°39'39.423"W	5041.90	305.570	0.81	0.13	0.80
10805.00	91.080	333.840	6031.62	4944.16	3013.25	-4141.56	1735197.78	14561022.57	40°05'37.205"N	80°39'39.940"W	5121.74	306.038	1.26	-0.07	1.26
10895.00	91.080	334.530	6029.92	5031.83	3094.26	-4180.74	1735158.61	14561103.54	40°05'38.007"N	80°39'40.440"W	5201.25	306.506	0.77	0.00	0.77
10985.00	91.050	333.780	6028.25	5119.51	3175.24	-4219.97	1735119.40	14561184.49	40°05'38.808"N	80°39'40.941"W	5281.12	306.959	0.83	-0.03	-0.83
11076.00	91.140	332.900	6026.51	5208.45	3256.55	-4260.79	1735078.59	14561265.77	40°05'39.613"N	80°39'41.462"W	5362.78	307.391	0.97	0.10	-0.97
11166.00	90.650	332.250	6025.10	5296.66	3336.42	-4302.24	1735037.16	14561345.61	40°05'40.404"N	80°39'41.992"W	5444.35	307.794	0.90	-0.54	-0.72
11257.00	90.770	333.200	6023.98	5385.81	3417.30	-4343.94	1734995.48	14561426.45	40°05'41.205"N	80°39'42.524"W	5527.00	308.192	1.05	0.13	1.04
11347.00	90.740	335.420	6022.79	5473.44	3498.39	-4382.95	1734956.49	14561507.51	40°05'42.008"N	80°39'43.022"W	5607.94	308.596	2.47	-0.03	2.47
11437.00	90.550	334.970	6021.78	5560.75	3580.08	-4420.70	1734918.75	14561589.17	40°05'42.817"N	80°39'43.504"W	5688.55	309.002	0.54	-0.21	-0.50
11527.00	90.370	338.230	6021.05	5647.49	3662.67	-4456.44	1734883.02	14561671.73	40°05'43.634"N	80°39'44.960"W	5768.45	309.416	3.63	0.20	3.62
11618.00	90.460	340.300	6020.39	5733.98	3747.77	-4488.65	1734850.82	14561756.77	40°05'44.476"N	80°39'44.370"W	5847.54	309.860	2.28	0.10	2.27
11708.00	90.490	341.080	6019.65	5818.81	3832.70	-4518.41	1734821.07	14561841.69	40°05'45.317"N	80°39'44.749"W	5925.00	310.306	0.87	0.03	0.87
11798.00	90.550	337.990	6018.83	5904.21	3917.00	-4549.88	1734789.62	14561925.96	40°05'46.151"N	80°39'45.150"W	6003.69	310.725	3.43	0.07	-3.43
11889.00	90.490	335.670	6018.01	5991.82	4000.66	-4585.68	1734753.83	14562009.58	40°05'46.979"N	80°39'45.606"W	6085.53	311.102	2.55	-0.07	-2.55

REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot 201H
SOUTHWESTERN ENERGY	Well	Timmy Minch OHI 201H
Area	Wellbore	Timmy Minch OHI 201H AWB
Field		
Facility		

WELLPATH DATA (204 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]
11979.00	90.490	334.530	6017.24	6079.17	4082.29	-4623.57	1734715.96	14562091.18	40°05'47.787"N	80°39'46.090"W	6167.86	311.442	1.27	0.00	-1.27
12069.00	90.490	334.380	6016.47	6166.76	4163.48	-4662.38	1734677.17	14562172.35	40°05'48.591"N	80°39'46.585"W	6250.79	311.765	0.17	0.00	-0.17
12160.00	90.430	336.050	6015.74	6255.03	4246.10	-4700.52	1734639.03	14562254.93	40°05'49.409"N	80°39'47.072"W	6334.37	312.092	1.84	-0.07	1.84
12250.00	90.370	333.190	6015.11	6342.55	4327.40	-4739.09	1734600.48	14562336.20	40°05'50.214"N	80°39'47.564"W	6417.59	312.400	3.18	-0.07	-3.18
12340.00	90.430	330.610	6014.48	6430.97	4406.78	-4781.48	1734558.11	14562415.55	40°05'51.000"N	80°39'48.106"W	6502.48	312.665	2.87	0.07	-2.87
12431.00	90.460	328.980	6013.77	6520.94	4485.42	-4827.26	1734512.35	14562494.16	40°05'51.778"N	80°39'48.691"W	6589.49	312.898	1.79	0.03	-1.79
12521.00	90.430	327.480	6013.07	6610.25	4561.93	-4874.64	1734464.98	14562570.64	40°05'52.536"N	80°39'49.297"W	6676.33	313.102	1.67	-0.03	-1.67
12612.00	90.370	329.380	6012.44	6700.51	4639.46	-4922.28	1734417.36	14562648.14	40°05'53.304"N	80°39'49.907"W	6764.13	313.306	2.09	-0.07	2.09
12702.00	90.400	331.330	6011.83	6789.35	4717.67	-4966.79	1734372.87	14562726.32	40°05'54.079"N	80°39'50.476"W	6850.22	313.526	2.17	0.03	2.17
12792.00	90.370	332.540	6011.23	6877.76	4797.09	-5009.13	1734330.54	14562805.70	40°05'54.865"N	80°39'51.017"W	6935.67	313.761	1.34	-0.03	1.34
12882.00	90.400	334.690	6010.62	6965.64	4877.71	-5049.13	1734290.57	14562886.29	40°05'55.663"N	80°39'51.527"W	7020.38	314.011	2.39	0.03	2.39
12973.00	90.430	335.500	6009.96	7053.97	4960.24	-5087.45	1734252.26	14562968.79	40°05'56.480"N	80°39'52.016"W	7105.36	314.275	0.89	0.03	0.89
13064.00	89.850	334.350	6009.74	7142.35	5042.66	-5126.01	1734213.71	14563051.18	40°05'57.296"N	80°39'52.509"W	7190.58	314.530	1.42	-0.64	-1.26
13154.00	89.940	334.760	6009.91	7229.91	5123.93	-5164.68	1734175.06	14563132.42	40°05'58.101"N	80°39'53.002"W	7275.20	314.773	0.47	0.10	0.46
13245.00	89.940	336.260	6010.00	7318.07	5206.74	-5202.40	1734137.35	14563215.20	40°05'58.921"N	80°39'53.484"W	7360.38	315.024	1.65	0.00	1.65
13335.00	90.250	337.190	6009.85	7404.77	5289.42	-5237.96	1734101.80	14563297.84	40°05'59.739"N	80°39'53.937"W	7444.07	315.280	1.09	0.34	1.03
13426.00	90.280	337.720	6009.43	7492.12	5373.46	-5272.85	1734066.93	14563381.85	40°06'00.571"N	80°39'54.382"W	7528.42	315.541	0.58	0.03	0.58
13516.00	90.280	337.180	6008.99	7578.51	5456.58	-5307.37	1734032.43	14563464.94	40°06'01.393"N	80°39'54.822"W	7611.99	315.794	0.60	0.00	-0.60
13607.00	90.220	336.980	6008.60	7666.02	5540.39	-5342.81	1733997.00	14563548.72	40°06'02.223"N	80°39'55.274"W	7696.85	316.040	0.23	-0.07	-0.22
13697.00	90.520	333.800	6008.01	7753.25	5622.21	-5380.28	1733959.54	14563630.50	40°06'03.033"N	80°39'55.753"W	7781.81	316.260	3.55	0.33	-3.53
13788.00	90.490	335.690	6007.21	7841.70	5704.50	-5419.10	1733920.73	14563712.76	40°06'03.848"N	80°39'56.248"W	7868.16	316.470	2.08	-0.03	2.08
13878.00	90.280	334.810	6006.61	7929.00	5786.23	-5456.78	1733883.07	14563794.46	40°06'04.657"N	80°39'56.729"W	7953.42	316.678	1.01	-0.23	-0.98
13969.00	90.490	334.470	6006.00	8017.49	5868.46	-5495.76	1733844.11	14563876.66	40°06'05.471"N	80°39'57.227"W	8040.03	316.878	0.44	0.23	-0.37
14059.00	90.460	334.060	6005.25	8105.15	5949.53	-5534.83	1733805.05	14563957.70	40°06'06.273"N	80°39'57.726"W	8125.96	317.068	0.46	-0.03	-0.46
14149.00	90.460	333.780	6004.53	8192.93	6030.36	-5574.40	1733765.50	14564038.50	40°06'07.073"N	80°39'58.231"W	8212.14	317.250	0.31	0.00	-0.31
14239.00	90.490	331.570	6003.78	8281.11	6110.31	-5615.71	1733720.21	14564118.42	40°06'07.865"N	80°39'58.759"W	8298.92	317.415	2.46	0.03	-2.46
14330.00	90.430	331.540	6003.05	8370.62	6190.33	-5659.05	1733680.88	14564198.40	40°06'08.657"N	80°39'59.312"W	8387.19	317.567	0.07	-0.07	-0.03
14420.00	90.460	332.430	6002.35	8459.01	6269.78	-5701.32	1733638.63	14564277.82	40°06'09.444"N	80°39'59.853"W	8474.38	317.719	0.99	0.03	0.99
14510.00	90.490	332.290	6001.60	8547.30	6349.50	-5743.07	1733596.89	14564357.51	40°06'10.233"N	80°40'00.386"W	8561.49	317.871	0.16	0.03	-0.16
14601.00	90.490	334.240	6000.83	8636.27	6430.77	-5784.01	1733555.97	14564438.74	40°06'11.038"N	80°40'00.909"W	8649.25	318.031	2.14	0.00	2.14



REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot 201H
SOUTHWESTERN ENERGY	Well	Timmy Minch OHI 201H
Ohio County, WV	Wellbore	Timmy Minch OHI 201H AWB
Ohio		
Timmy Minch OHI Pad		

WELLPATH DATA (204 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]
14691.00	90.430	334.980	6000.10	8723.80	6512.07	-5822.60	1733517.40	14564520.02	40°06'11.843"N	80°40'01.402"W	8735.54	318.199	0.82	-0.07	0.82
14782.00	90.460	335.800	5999.40	8812.01	6594.80	-5860.49	1733479.52	14564620.71	40°06'12.662"N	80°40'01.885"W	8822.51	318.374	0.90	0.03	0.90
14872.00	90.460	337.330	5998.67	8898.78	6677.37	-5896.28	1733443.74	14564685.25	40°06'13.479"N	80°40'02.342"W	8908.06	318.555	1.70	0.00	1.70
14962.00	90.430	337.030	5997.98	8985.28	6760.33	-5931.19	1733408.85	14564768.17	40°06'14.300"N	80°40'02.787"W	8993.39	318.738	0.33	-0.03	-0.33
15053.00	90.460	336.510	5997.27	9072.93	6843.95	-5967.08	1733372.97	14564851.76	40°06'15.128"N	80°40'03.245"W	9079.96	318.916	0.57	0.03	0.57
15143.00	90.430	335.810	5996.57	9159.86	6926.26	-6003.45	1733336.61	14564934.05	40°06'15.943"N	80°40'03.709"W	9165.95	319.082	0.78	-0.03	-0.78
15234.00	90.430	334.120	5995.89	9248.23	7008.71	-6041.96	1733298.12	14565016.46	40°06'16.759"N	80°40'04.201"W	9253.50	319.237	1.86	0.00	-1.86
15323.00	90.370	331.790	5995.27	9335.35	7087.97	-6082.42	1733257.67	14565095.69	40°06'17.544"N	80°40'04.718"W	9339.98	319.366	2.62	-0.07	-2.62
15414.00	90.460	330.810	5994.61	9424.93	7167.79	-6126.12	1733213.99	14565175.48	40°06'18.334"N	80°40'05.276"W	9429.03	319.480	1.08	0.10	-1.08
15504.00	90.430	331.780	5993.91	9513.52	7246.72	-6169.35	1733170.78	14565254.38	40°06'19.116"N	80°40'05.829"W	9517.13	319.591	1.08	-0.03	1.08
15594.00	90.430	333.860	5993.23	9601.66	7326.78	-6210.45	1733129.69	14565334.40	40°06'19.908"N	80°40'06.354"W	9604.76	319.714	2.31	0.00	2.31
15685.00	90.430	335.640	5992.55	9690.11	7409.08	-6249.27	1733090.89	14565416.67	40°06'20.723"N	80°40'06.849"W	9692.67	319.854	1.96	0.00	1.96
15775.00	90.430	336.880	5991.87	9777.00	7491.46	-6285.50	1733054.68	14565499.02	40°06'21.538"N	80°40'07.312"W	9779.03	320.003	1.38	0.00	1.38
15865.00	90.460	337.540	5991.17	9863.49	7574.43	-6320.36	1733019.83	14565581.96	40°06'22.360"N	80°40'07.756"W	9865.04	320.157	0.73	0.03	0.73
15956.00	90.430	335.930	5990.47	9951.15	7658.02	-6356.30	1732983.90	14565665.52	40°06'23.187"N	80°40'08.215"W	9952.28	320.307	1.77	-0.03	-1.77
16046.00	90.490	334.470	5989.74	10038.46	7739.72	-6394.05	1732946.17	14565747.18	40°06'23.996"N	80°40'08.697"W	10039.28	320.439	1.62	0.07	-1.62
16137.00	90.370	333.040	5989.06	10127.27	7821.33	-6434.29	1732905.95	14565828.77	40°06'24.804"N	80°40'09.211"W	10127.85	320.557	1.58	-0.13	-1.57
16227.00	90.400	332.590	5988.46	10215.42	7901.39	-6475.41	1732864.84	14565908.79	40°06'25.596"N	80°40'09.736"W	10215.81	320.664	0.50	0.03	-0.50
16317.00	90.400	332.550	5987.83	10303.64	7981.27	-6516.87	1732823.40	14565988.64	40°06'26.387"N	80°40'10.266"W	10303.89	320.768	0.04	0.00	-0.04
16408.00	90.460	332.380	5987.15	10392.87	8061.96	-6558.93	1732781.35	14566069.30	40°06'27.186"N	80°40'10.803"W	10393.02	320.869	0.20	0.07	-0.19
16498.00	90.860	333.840	5986.11	10480.92	8142.22	-6599.63	1732740.67	14566149.53	40°06'27.981"N	80°40'11.323"W	10480.98	320.974	1.68	0.44	1.62
16589.00	89.820	334.490	5985.57	10569.58	8224.12	-6639.29	1732701.03	14566231.40	40°06'28.792"N	80°40'11.830"W	10569.60	321.086	1.35	-1.14	0.71
16658.00	89.720	332.840	5985.85	10636.95	8285.96	-6669.90	1732670.43	14566293.21	40°06'29.404"N	80°40'12.221"W	10636.95	321.167	2.40	-0.14	-2.39
16683.00	89.720	332.840	5985.97	10661.43	8308.20	-6681.31	1732659.02	14566315.45	40°06'29.624"N	80°40'12.367"W	10661.43	321.194	0.00	0.00	0.00

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 201H
Area	Ohio County, WV	Well	Timmy Minch OHI 201H
Field	Ohio	Wellbore	Timmy Minch OHI 201H AWB
Facility	Timmy Minch OHI Pad		

HOLE & CASING SECTIONS - Ref Wellbore: Timmy Minch OHI 201H AWB Ref Wellpath: Timmy Minch OHI 201H AWP Proj: 16683'MD

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]
17.5in Open Hole	26.00	537.00	511.00	26.00	536.99	0.00	0.00	0.00	0.52
13.375in Casing	26.00	537.00	511.00	26.00	536.99	0.00	0.00	0.54	0.52
12.25in Open Hole	537.00	1917.00	1380.00	536.99	1903.24	0.54	0.52	-69.66	-157.80
9.625in Casing	26.00	1917.00	1891.00	26.00	1903.24	0.00	0.00	-69.66	-157.80
8.75in Open Hole	1917.00	6337.00	4420.00	1903.24	5752.06	-69.66	-157.80	-795.32	-2111.16
8.5in Open Hole	6337.00	16683.00	10346.00	5752.06	5985.97	-795.32	-2111.16	8308.20	-6681.31

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Timmy Minch OHI 201H BHL Rev-2	5993.00	8292.23	-6674.91	1732665.42	14566299.48	40°06'29.466"N	80°40'12.285"W	point
Timmy Minch OHI 201H LP Rev-4	6076.00	-375.41	-2520.77	1736817.94	14557635.23	40°05'03.656"N	80°39'19.254"W	point

WELLPATH COMPOSITION - Ref Wellbore: Timmy Minch OHI 201H AWB Ref Wellpath: Timmy Minch OHI 201H AWP Proj: 16683'MD

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	6337.00	TOWSG MWD rev2 + HRGM	01 Premier MWD <8-3/4"> (153'-6337')	Timmy Minch OHI 201H AWB
6337.00	16658.00	BHI AutoTrak Curve (Short)	02 BH AT Curve <8-1/2"> (6337')(6376'-16658')	Timmy Minch OHI 201H AWB
16658.00	16683.00	Blind Drilling (std)	Projection to bit	Timmy Minch OHI 201H AWB



REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot 201H
SOUTHWESTERN ENERGY	Well	Timmy Minch OHI 201H
Ohio County, WV	Wellbore	Timmy Minch OHI 201H AWB
Ohio		
Timmy Minch OHI Pad		

COMMENTS

Wellpath general comments
API: 47-069-00221-0000
BH Job #: 109325633
Rig: SDC 42
Duration: 08/21/2018 - 08/25/2018

**Timmy Minch OHI 201H
ATTACHMENT 1
PERF REPORT**

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	1/4/2019	16,547	16,449	36
2	1/13/2019	16,416	16,309	42
3	1/14/2019	16,276	16,169	42
4	1/14/2019	16,136	16,029	42
5	1/15/2019	15,996	15,889	42
6	1/15/2019	15,856	15,749	42
7	1/16/2019	15,712	15,609	42
8	1/17/2019	15,576	15,469	42
9	1/17/2019	15,436	15,329	42
10	1/18/2019	15,296	15,189	42
11	1/18/2019	15,156	15,049	42
12	1/19/2019	15,016	14,909	42
13	1/19/2019	14,876	14,769	42
14	1/21/2019	14,736	14,629	42
15	1/23/2019	14,596	14,489	42
16	1/23/2019	14,456	14,349	42
17	1/23/2019	14,293	14,209	42
18	1/24/2019	14,176	14,069	42
19	1/24/2019	14,036	13,929	42
20	1/24/2019	13,896	13,789	42
21	1/25/2019	13,756	13,649	42
22	1/25/2019	13,616	13,509	42
23	1/26/2019	13,476	13,369	42
24	1/26/2019	13,336	13,229	42
25	1/26/2019	13,196	13,089	42
26	1/26/2019	13,056	12,949	42
27	1/27/2019	12,916	12,809	42
28	1/27/2019	12,776	12,669	42
29	1/27/2019	12,636	12,529	42
30	1/28/2019	12,496	12,389	42
31	1/28/2019	12,356	12,249	42
32	1/28/2019	12,216	12,109	42
33	1/29/2019	12,076	11,969	42
34	2/14/2019	11,936	11,829	42
35	2/14/2019	11,796	11,689	42
36	2/23/2019	11,656	11,549	42
37	2/23/2019	11,516	11,409	42
38	2/23/2019	11,376	11,269	42
39	2/24/2019	11,236	11,129	42
40	2/24/2019	11,096	10,989	42
41	2/26/2019	10,956	10,849	42
42	2/26/2019	10,816	10,709	42
43	2/26/2019	10,676	10,569	42

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**Timmy Minch OHI 201H
ATTACHMENT 1
PERF REPORT**

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
44	2/27/2019	10,536	10,429	42
45	2/27/2019	10,396	10,289	42
46	2/27/2019	10,256	10,149	42
47	2/28/2019	10,116	10,009	42
48	2/28/2019	9,976	9,869	42
49	3/1/2019	9,836	9,729	42
50	3/2/2019	9,696	9,589	42
51	3/2/2019	9,556	9,449	42
52	3/3/2019	9,416	9,309	42
53	3/3/2019	9,276	9,169	42
54	3/7/2019	9,136	9,029	42
55	3/7/2019	8,996	8,889	42
56	3/7/2019	8,856	8,749	42
57	3/8/2019	8,716	8,609	42
58	3/8/2019	8,576	8,469	42
59	3/8/2019	8,436	8,329	42
60	3/9/2019	8,296	8,189	42
61	3/9/2019	8,156	8,049	42
62	3/9/2019	8,016	7,909	42
63	3/10/2019	7,876	7,769	42
64	3/10/2019	7,736	7,629	42
65	3/10/2019	7,596	7,489	42
66	3/11/2019	7,456	7,349	42
67	3/11/2019	7,316	7,209	42
68	3/11/2019	7,176	7,069	42
69	3/11/2019	7,036	6,929	42

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Timmy Minch OHI 201H

ATTACHMENT 2

STIM REPORT

WV Department of
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STAGE NUM	Stim Date	Ave Pump Rate (BPM)	Ave Treatment	Max Breakdown	ISIP (PSI)	Amount of Proppant (lbs)	Amount of water bbls	Amount of nitrogen/othe
1	1/12/2019	86.6	6,926	8,257	3,512	278,769	5,074	0
2	1/14/2019	85.6	8,336	4,205	3,750	287,523	5,762	0
3	1/14/2019	74.6	7,148	5,420	3,908	281,580	9,750	0
4	1/15/2019	77.2	6,956	4,705	4,415	278,294	8,618	0
5	1/16/2019	93.5	8,030	4,972	3,913	278,823	6,529	0
6	1/16/2019	91.4	7,398	5,072	4,095	279,008	5,916	0
7	1/17/2019	95.5	7,901	4,193	3,973	283,303	6,215	0
8	1/17/2019	90.5	7,307	4,456	4,141	282,846	6,416	0
9	1/17/2019	90.4	7,757	4,870	3,995	281,239	5,281	0
10	1/18/2019	90.9	7,605	5,206	4,114	281,922	5,374	0
11	1/19/2019	98	8005	5,322	4,364	282,084	5,034	0
12	1/19/2019	94.9	8,084	5,773	4,121	281,117	5,095	0
13	1/20/2019	96.9	8,071	5,735	4,366	276,604	5,426	0
14	1/22/2019	94.1	7,633	5,858	4,516	280,611	6,063	0
15	1/23/2019	95.9	7,744	5,374	4,417	283,299	5,300	0
16	1/23/2019	86.5	7,044	3,727	4,397	286,048	5,026	0
17	1/23/2019	94.3	7,509	5,370	4,171	282,384	6,100	0
18	1/24/2019	87.7	6,921	4,709	4,314	280,758	5,292	0
19	1/24/2019	88	7,383	5,324	4,063	280,159	5,232	0
20	1/24/2019	98.3	7,826	5,632	4,039	280,051	5,787	0
21	1/25/2019	93.9	7,422	5,206	4,069	282,110	5,285	0
22	1/25/2019	76.6	7,691	5,014	4,054	280,307	5,054	0
23	1/26/2019	80.5	6,845	6,978	4,226	278,088	5,941	0
24	1/26/2019	88.3	7,102	5,280	4,517	219,284	4,507	0
25	1/26/2019	97.2	7,458	5,386	4,514	281,289	5,006	0
26	1/27/2019	98.2	7,153	4,985	4,521	280,908	4,954	0
27	1/27/2019	88.8	6,856	4,505	4,370	282,673	5,222	0
28	1/27/2019	87.6	7,049	4,939	4,010	280,092	5,034	0
29	1/27/2019	97.9	7,725	5,154	4,178	278,951	4,797	0
30	1/28/2019	86.4	6,917	4,288	4,305	281,029	5,128	0
31	1/28/2019	95.8	7,435	5,615	4,574	281,002	4,874	0
32	1/29/2019	97.2	7,359	5,646	4,392	283,906	4,695	0
33	2/13/2019	97.5	8,068	5,160	4,427	280,100	5,063	0
34	2/22/2019	99.8	8,032	5,775	4,373	282,062	4,470	0
35	2/22/2019	97.1	8,025	5,849	4,304	278,440	4,221	0
36	2/23/2019	97.9	7,872	5,191	4,628	283,587	4,198	0
37	2/23/2019	98.5	8,002	5,401	4,610	280,780	4,121	0
38	2/24/2019	92.7	7969	5,556	4,407	279,533	4,102	0
39	2/24/2019	96.8	8,090	5,613	4,871	277,170	4,078	0
40	2/25/2019	97.9	7,712	5,669	4,339	281,270	4,137	0
41	2/26/2019	96.3	7,919	5,238	4,797	279,404	4099.285714	0
42	2/26/2019	98.5	7,877	5,264	4,413	281,950	4,149	0
43	2/26/2019	97.2	7,677	5,290	4,674	248,935	4,278	0
44	2/27/2019	98	7,892	5,425	4,633	281,489	4,185	0
45	2/27/2019	96.8	7,744	5,498	4,469	283,324	4,226	0
46	2/28/2019	97.9	7,698	5,547	4,194	283,469	4,202	0
47	2/28/2019	99	7,522	5,218	4,668	279,784	4,143	0
48	2/28/2019	99	7,622	5,370	4,806	284,266	4,159	0
49	3/1/2019	95	7,492	5,555	4,534	285,913	4,470	0
50	3/2/2019	96.8	7,700	4,199	4,340	279685	4,158	0
51	3/3/2019	96.3	7,288	5,508	4,504	289,306	4,334	0
52	3/4/2019	96.6	7,509	5,766	4,689	280,060	4,169	0
53	3/7/2019	93	7,460	5,295	4,930	281,355	4,272	0

Timmy Minch OHI 201H

ATTACHMENT 2

STIM REPORT

STAGE NUM	Stim Date	Ave Pump Rate (BPM)	Ave Treatment	Max Breakdown	ISIP (PSI)	Amount of Proppant (lbs)	Amount of water bbls	Amount of nitrogen/othe
54	3/7/2019	97.5	8,040	5,535	4,586	283,435	4,183	0
55	3/7/2019	93.7	7,736	5,529	4,778	281,844	3,934	0
56	3/7/2019	96.4	7,679	5,524	4,510	283,289	4,048	0
57	3/8/2019	96.6	7,408	5,684	4,169	281,348	4,077	0
58	3/8/2019	95.8	7,700	5,630	4,857	282,448	4,013	0
59	3/9/2019	94.3	7,715	5,794	4,583	280,831	3,897	0
60	3/9/2019	98.3	7,475	5,696	4,686	280,032	4,068	0
61	3/9/2019	96.6	7,788	5,590	4,716	284,045	4,123	0
62	3/9/2019	97.4	7,915	5,813	4,690	281,403	3,872	0
63	3/10/2019	99	7,180	5,785	4,489	290,244	4,133	0
64	3/10/2019	98.1	8,174	5,728	4,624	280,912	3,838	0
65	3/10/2019	97.5	8,199	5,661	4,603	280,656	3,863	0
66	3/11/2019	98.1	7,886	5,605	4,746	279,283	3,820	0
67	3/11/2019	98.1	7,535	5,650	4,839	279,930	4,007	0
68	3/11/2019	95.5	7,937	5,611	4,613	281,577	3,741	0
69	3/11/2019	94.2	7,950	5,690	4,486	281,612	3,738	0

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