

SOUTHWESTERN ENERGY

Location: Ohio County, WV
 Field: Ohio
 Facility: Timmy Minch OHI Pad

Slot: Slot 401H
 Well: Timmy Minch OHI 401H
 Wellbore: Timmy Minch OHI 401H PWB

Grid System: NAD83 / UTM Zone 17 North, US feet
 * = Wellbore was transformed from a different geoidic datum.
 True vertical depths are referenced to SDC-42 (RKB)
 Measured depths are referenced to SDC-42 (RKB)
 SDC-42 (RKB) to Mean Sea Level: 1234.1 feet
 Mean Sea Level to Ground level (At Slot Slot 401H): -1208.1 feet
 Coordinates are in feet referenced to Slot
 Created by: thomazc on 2018-09-10
 Database: WA_Pennsylvania

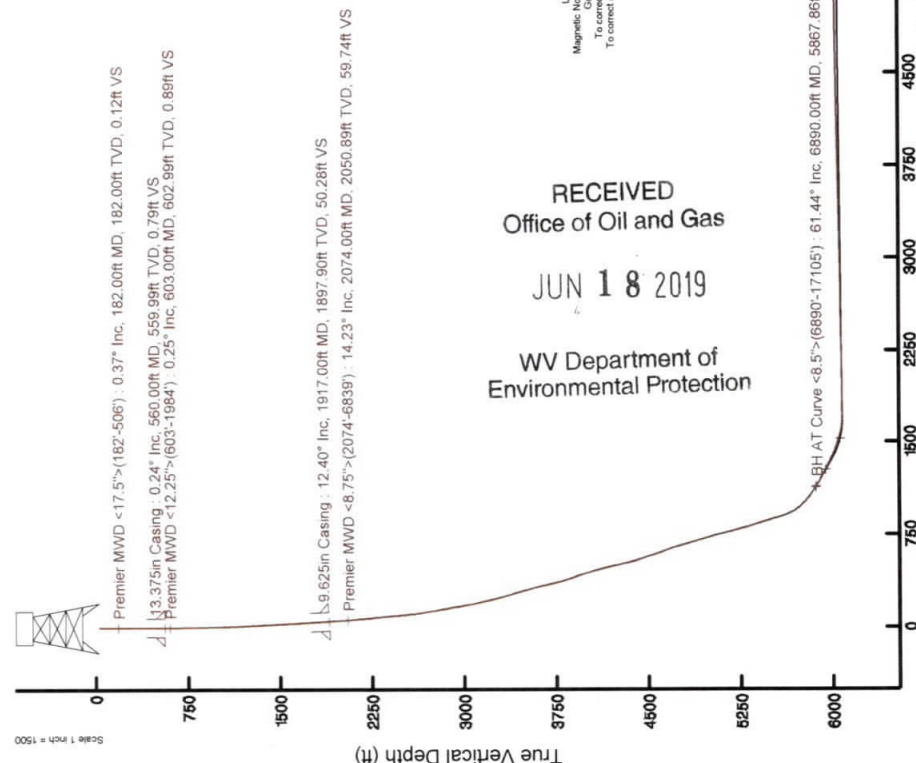
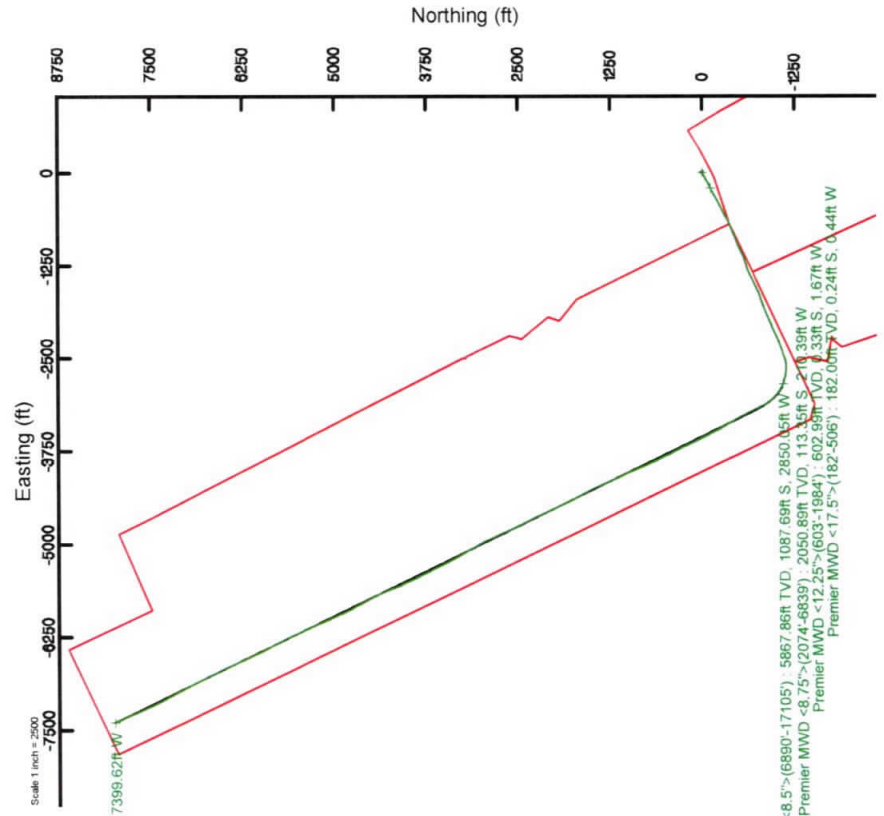


Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Timmy Minch OHI Pad	1739330.759	14556222.602	40°05'07.388"N	80°38'46.893"W
Slot	Local E (ft)	Local N (ft)	Latitude	Longitude
Slot 401H	-24.23	1739344.685	40°05'07.148"N	80°38'46.715"W
SDC-42 (RKB) to Ground level (At Slot Slot 401H): 26ft				
Mean Sea Level to Mean Sea Level				
SDC-42 (RKB) to Mean Sea Level				

Comments

API: 47-069-00266-0000
 BH Job #: T09315091
 Rtg: SDC42
 Duration: 09/04/2018 - 09/05/2018



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User specified Dip: 07.41° Field: 5025 (7/8/2020)
 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

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 401H
Area	Ohio County, WV	Well	Timmy Minch OHI 401H
Field	Ohio	Wellbore	Timmy Minch OHI 401H 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	9/10/2018 at 10:58:48 AM
Convergence at slot	0.23° East	Database/Source file	WA_Pennsylvania/Timmy_Minch_OHI_401H_AWP_Proj_17130_MD.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-24.23	13.93	1739344.69	14557998.38	40°05'07.148"N	80°38'46.715"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 (RKB) to Facility Vertical Datum	1234.10ft
Horizontal Reference Pt	Slot	SDC 42 (RKB) to Mean Sea Level	1234.10ft
Vertical Reference Pt	SDC 42 (RKB)	SDC 42 (RKB) to Ground Level at Slot (Slot 401H)	26.00ft
MD Reference Pt	SDC 42 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	317.21°

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Facility	Timmy Minch OHI Pad		

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	241.140	0.00	0.00	0.00	0.00	1739344.69	14557998.38	40°05'07.148"N	80°38'46.715"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	241.140	26.00	0.00	0.00	0.00	1739344.69	14557998.38	40°05'07.148"N	80°38'46.715"W	0.00	0.000	0.00	0.00	0.00
182.00	0.370	241.140	182.00	0.12	-0.24	-0.44	1739344.24	14557998.14	40°05'07.146"N	80°38'46.721"W	0.50	241.140	0.24	0.24	-76.19
214.00	0.370	261.480	214.00	0.20	-0.31	-0.63	1739344.05	14557998.07	40°05'07.145"N	80°38'46.723"W	0.70	244.061	0.41	0.00	63.56
305.00	0.380	273.000	305.00	0.59	-0.34	-1.23	1739343.46	14557998.04	40°05'07.145"N	80°38'46.731"W	1.27	254.669	0.08	0.01	12.66
396.00	0.280	229.800	395.99	0.81	-0.46	-1.70	1739342.99	14557997.92	40°05'07.143"N	80°38'46.737"W	1.76	254.715	0.29	-0.11	-47.47
487.00	0.270	132.790	486.99	0.61	-0.75	-1.71	1739342.98	14557997.63	40°05'07.141"N	80°38'46.737"W	1.87	246.228	0.45	-0.01	-106.60
506.00	0.260	347.180	505.99	0.60	-0.74	-1.69	1739343.00	14557997.64	40°05'07.141"N	80°38'46.737"W	1.84	246.267	2.66	-0.05	-766.37
603.00	0.250	19.070	602.99	0.89	-0.33	-1.67	1739343.02	14557998.05	40°05'07.145"N	80°38'46.736"W	1.70	258.904	0.14	-0.01	32.88
697.00	0.960	259.220	696.99	1.41	-0.28	-2.37	1739342.31	14557998.10	40°05'07.145"N	80°38'46.746"W	2.39	263.265	1.18	0.76	-127.50
789.00	2.790	236.680	788.94	2.18	-1.65	-5.00	1739339.69	14557996.73	40°05'07.132"N	80°38'46.779"W	5.27	251.694	2.11	1.99	-24.50
879.00	4.740	236.680	878.74	3.16	-4.90	-9.94	1739334.75	14557993.48	40°05'07.100"N	80°38'46.843"W	11.08	243.753	2.17	2.17	0.00
969.00	6.570	241.550	968.30	5.04	-9.40	-17.57	1739327.12	14557988.99	40°05'07.056"N	80°38'46.942"W	19.93	241.867	2.10	2.03	5.41
1060.00	8.570	239.590	1058.50	7.79	-15.31	-28.00	1739316.70	14557983.08	40°05'06.998"N	80°38'47.076"W	31.91	241.332	2.22	2.20	-2.15
1150.00	9.610	239.560	1147.37	10.83	-22.51	-40.26	1739304.44	14557975.88	40°05'06.852"N	80°38'47.234"W	46.13	240.790	1.16	1.16	-0.03
1240.00	10.590	242.130	1235.97	14.57	-30.18	-54.05	1739290.66	14557968.21	40°05'06.852"N	80°38'47.412"W	61.90	240.820	1.20	1.09	2.86
1331.00	11.520	241.310	1325.28	18.93	-38.45	-69.41	1739275.30	14557959.94	40°05'06.771"N	80°38'47.610"W	79.35	241.014	1.04	1.02	-0.90
1421.00	11.700	241.100	1413.44	23.31	-47.18	-85.28	1739259.43	14557951.22	40°05'06.685"N	80°38'47.815"W	97.46	241.049	0.21	0.20	-0.23
1511.00	11.830	240.960	1501.55	27.70	-56.07	-101.34	1739243.39	14557942.34	40°05'06.598"N	80°38'48.022"W	115.81	241.046	0.15	0.14	-0.16
1602.00	12.340	241.570	1590.53	32.33	-65.22	-118.05	1739226.69	14557933.18	40°05'06.508"N	80°38'48.237"W	134.87	241.078	0.58	0.56	0.67
1692.00	12.790	241.520	1678.38	37.17	-74.55	-135.26	1739209.48	14557923.86	40°05'06.417"N	80°38'48.459"W	154.44	241.137	0.50	0.50	-0.06
1783.00	12.740	243.060	1767.13	42.40	-83.90	-153.06	1739191.69	14557914.51	40°05'06.325"N	80°38'48.688"W	174.55	241.270	0.38	-0.05	1.69
1860.00	12.620	242.810	1842.25	46.98	-91.59	-168.11	1739176.64	14557906.82	40°05'06.249"N	80°38'48.882"W	191.44	241.417	0.17	-0.16	-0.32
1939.00	12.320	242.500	1919.39	51.53	-99.43	-183.26	1739161.50	14557898.99	40°05'06.173"N	80°38'49.078"W	208.50	241.518	0.39	-0.38	-0.39
1984.00	12.520	242.340	1963.33	54.07	-103.91	-191.84	1739152.92	14557894.51	40°05'06.129"N	80°38'49.188"W	218.17	241.558	0.45	0.44	-0.36
2074.00	12.230	243.610	2050.89	59.74	-113.35	-210.39	1739134.38	14557885.07	40°05'06.036"N	80°38'49.428"W	238.98	241.685	1.93	1.90	1.41
2164.00	17.290	245.110	2137.50	66.97	-123.90	-232.44	1739112.34	14557874.53	40°05'05.933"N	80°38'49.712"W	263.40	241.940	3.43	3.40	1.67
2254.00	19.600	242.350	2222.87	75.03	-136.54	-257.94	1739086.84	14557861.89	40°05'05.809"N	80°38'50.041"W	291.85	242.106	2.74	2.57	-3.07
2345.00	20.880	242.380	2308.25	83.26	-151.14	-285.83	1739058.96	14557847.30	40°05'05.666"N	80°38'50.400"W	323.33	242.131	1.41	1.41	0.03
2435.00	22.010	237.570	2392.02	90.49	-167.62	-314.28	1739030.53	14557830.82	40°05'05.504"N	80°38'50.767"W	356.19	241.927	2.32	1.26	-5.34

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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]
2526.00	23.190	239.270	2476.03	97.30	-185.92	-344.08	1739000.74	14557812.53	40°05'05.324"N	80°38'51.151"W	391.10	241.615	1.48	1.30	1.87
2616.00	23.570	241.180	2558.65	105.34	-203.65	-375.08	1738969.76	14557794.81	40°05'05.150"N	80°38'51.551"W	426.80	241.500	0.94	0.42	2.12
2706.00	28.110	243.720	2639.63	115.72	-221.72	-409.87	1738934.97	14557776.74	40°05'04.973"N	80°38'52.000"W	466.00	241.588	5.19	5.04	2.83
2797.00	30.280	244.200	2719.06	128.52	-241.20	-449.75	1738895.11	14557757.27	40°05'04.782"N	80°38'52.514"W	510.35	241.795	2.40	2.38	0.53
2887.00	31.350	243.910	2796.36	141.88	-261.38	-491.21	1738853.67	14557737.11	40°05'04.584"N	80°38'53.048"W	556.42	241.982	1.20	1.19	-0.32
2978.00	32.360	243.120	2873.65	155.35	-282.80	-534.19	1738810.70	14557715.69	40°05'04.374"N	80°38'53.602"W	604.43	242.104	1.20	1.11	-0.87
3071.00	33.510	241.160	2951.71	168.37	-306.43	-578.88	1738766.03	14557692.07	40°05'04.142"N	80°38'54.178"W	654.99	242.105	1.69	1.24	-2.11
3162.00	34.490	241.720	3027.15	180.88	-330.76	-623.58	1738721.35	14557667.75	40°05'03.904"N	80°38'54.754"W	705.87	242.058	1.13	1.08	0.62
3252.00	34.860	245.200	3101.17	195.21	-353.62	-669.37	1738675.57	14557644.90	40°05'03.680"N	80°38'55.345"W	757.04	242.153	2.24	0.41	3.87
3343.00	34.690	246.680	3175.92	211.87	-374.78	-716.76	1738628.20	14557623.74	40°05'03.472"N	80°38'55.956"W	808.83	242.396	0.95	-0.19	1.63
3433.00	34.910	248.230	3249.82	229.65	-394.47	-764.20	1738580.79	14557604.06	40°05'03.280"N	80°38'56.567"W	860.00	242.698	1.01	0.24	1.72
3523.00	36.670	248.770	3322.83	248.76	-413.76	-813.17	1738531.83	14557584.78	40°05'03.091"N	80°38'57.198"W	912.38	243.032	1.99	1.96	0.60
3614.00	38.720	248.830	3394.83	269.23	-433.88	-865.04	1738479.98	14557564.67	40°05'02.894"N	80°38'57.866"W	967.75	243.363	2.25	2.25	0.07
3705.00	39.200	246.960	3465.59	289.44	-455.41	-918.05	1738427.00	14557543.15	40°05'02.683"N	80°38'58.549"W	1024.80	243.616	1.40	0.53	-2.05
3795.00	39.000	246.340	3535.43	308.33	-477.91	-970.16	1738374.90	14557520.66	40°05'02.463"N	80°38'59.221"W	1081.48	243.775	0.49	-0.22	-0.69
3886.00	38.660	244.920	3606.33	326.36	-501.45	-1022.13	1738322.95	14557497.13	40°05'02.233"N	80°38'59.891"W	1138.51	243.868	1.05	-0.37	-1.56
3976.00	38.600	244.180	3676.63	343.11	-525.59	-1072.87	1738272.24	14557472.99	40°05'01.996"N	80°39'00.545"W	1194.69	243.900	0.52	-0.07	-0.82
4066.00	36.730	246.140	3747.88	360.03	-548.71	-1122.76	1738222.37	14557449.89	40°05'01.769"N	80°39'01.188"W	1249.66	243.955	2.47	-2.08	2.18
4157.00	36.630	251.330	3820.88	379.96	-568.41	-1173.37	1738171.77	14557430.19	40°05'01.577"N	80°39'01.840"W	1303.80	244.153	3.41	-0.11	5.70
4247.00	36.660	254.390	3893.09	403.21	-584.24	-1224.69	1738120.47	14557414.37	40°05'01.422"N	80°39'02.501"W	1356.91	244.497	2.03	0.03	3.40
4338.00	37.620	251.290	3965.64	426.95	-600.46	-1277.17	1738068.02	14557398.16	40°05'01.264"N	80°39'03.177"W	1411.28	244.820	2.31	1.05	-3.41
4430.00	39.500	247.480	4037.59	448.55	-620.68	-1330.80	1738014.40	14557377.95	40°05'01.066"N	80°39'03.868"W	1468.43	244.996	3.29	2.04	-4.14
4520.00	41.620	245.090	4105.96	467.65	-644.23	-1384.36	1737960.86	14557354.40	40°05'00.836"N	80°39'04.558"W	1526.92	245.044	2.92	2.36	-2.66
4611.00	41.600	242.410	4174.01	484.85	-670.95	-1438.55	1737906.70	14557327.69	40°05'00.574"N	80°39'05.257"W	1587.33	244.995	1.96	-0.02	-2.95
4702.00	41.300	241.960	4242.21	500.41	-699.06	-1491.83	1737853.44	14557299.59	40°05'00.298"N	80°39'05.943"W	1647.49	244.892	0.46	-0.33	-0.49
4793.00	40.710	243.630	4310.89	516.45	-726.36	-1544.92	1737800.37	14557272.30	40°05'00.030"N	80°39'06.628"W	1707.16	244.819	1.37	-0.65	1.84
4885.00	40.930	246.620	4380.52	534.95	-751.65	-1599.47	1737745.84	14557247.03	40°04'59.782"N	80°39'07.331"W	1767.28	244.829	2.14	0.24	3.25
4976.00	40.800	249.340	4449.34	556.05	-773.97	-1654.66	1737690.68	14557224.71	40°04'59.564"N	80°39'08.042"W	1826.72	244.932	1.96	-0.14	2.99
5067.00	40.330	251.310	4518.48	579.28	-793.90	-1710.37	1737634.98	14557204.79	40°04'59.369"N	80°39'08.760"W	1885.64	245.101	1.50	-0.52	2.16
5157.00	40.810	250.710	4586.84	602.90	-812.94	-1765.72	1737579.66	14557185.75	40°04'59.183"N	80°39'09.473"W	1943.87	245.278	0.69	0.53	-0.67

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Facility	Timmy Minch OHI Pad		

WELLPATH DATA (204 stations)

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5247.00	41.980	249.670	4654.36	626.12	-833.12	-1821.70	1737523.69	14557165.59	40°04'58.986"N	80°39'10.194"W	2003.17	245.424	1.51	1.30	-1.16
5337.00	41.870	248.250	4721.32	648.41	-854.71	-1877.83	1737467.59	14557144.01	40°04'58.775"N	80°39'10.917"W	2063.19	245.527	1.06	-0.12	-1.58
5428.00	41.540	245.730	4789.26	668.90	-878.36	-1933.54	1737411.90	14557120.36	40°04'58.543"N	80°39'11.635"W	2123.70	245.569	1.88	-0.36	-2.77
5518.00	40.480	246.600	4857.18	688.07	-902.23	-1987.56	1737357.90	14557096.50	40°04'58.309"N	80°39'12.331"W	2182.75	245.585	1.34	-1.18	0.97
5609.00	39.860	247.290	4926.71	707.89	-925.22	-2041.57	1737303.91	14557073.52	40°04'58.084"N	80°39'13.027"W	2241.44	245.620	0.84	-0.68	0.76
5700.00	40.910	247.980	4996.03	728.47	-947.65	-2096.09	1737249.41	14557051.10	40°04'57.865"N	80°39'13.730"W	2300.36	245.672	1.25	1.15	0.76
5790.00	40.360	244.470	5064.33	747.57	-971.26	-2149.72	1737195.81	14557027.50	40°04'57.633"N	80°39'14.421"W	2358.95	245.686	2.61	-0.61	-3.90
5880.00	40.150	243.980	5133.02	764.59	-996.55	-2202.09	1737143.46	14557002.22	40°04'57.386"N	80°39'15.096"W	2417.09	245.651	0.42	-0.23	-0.54
5971.00	39.310	246.070	5203.01	782.37	-1021.12	-2254.80	1737090.76	14556977.66	40°04'57.145"N	80°39'15.775"W	2475.24	245.636	1.73	-0.92	2.30
6061.00	37.500	247.920	5273.54	801.28	-1042.98	-2306.25	1737039.33	14556955.81	40°04'56.931"N	80°39'16.438"W	2531.13	245.666	2.38	-2.01	2.06
6152.00	36.390	251.510	5346.27	822.19	-1061.95	-2357.53	1736988.08	14556936.84	40°04'56.745"N	80°39'17.099"W	2585.67	245.751	2.67	-1.22	3.95
6242.00	36.610	252.930	5418.62	844.82	-1078.30	-2408.50	1736937.12	14556920.50	40°04'56.586"N	80°39'17.756"W	2638.87	245.882	0.97	0.24	1.58
6333.00	36.190	251.010	5491.87	867.44	-1095.01	-2459.85	1736885.80	14556903.80	40°04'56.422"N	80°39'18.417"W	2692.56	246.004	1.33	-0.46	-2.11
6378.00	35.740	249.820	5528.29	877.85	-1103.86	-2484.75	1736860.91	14556894.95	40°04'56.336"N	80°39'18.738"W	2718.91	246.047	1.85	-1.00	-2.64
6423.00	35.860	251.110	5564.79	888.24	-1112.67	-2509.55	1736836.11	14556886.15	40°04'56.250"N	80°39'19.057"W	2745.16	246.089	1.70	0.27	2.87
6468.00	36.280	254.970	5601.17	899.79	-1120.39	-2534.89	1736810.79	14556878.43	40°04'56.175"N	80°39'19.384"W	2771.45	246.155	5.14	0.93	8.58
6513.00	38.010	260.450	5637.04	913.59	-1126.14	-2561.42	1736784.27	14556872.68	40°04'56.119"N	80°39'19.725"W	2798.04	246.267	8.29	3.84	12.18
6558.00	41.660	264.010	5671.60	930.15	-1130.00	-2589.97	1736755.73	14556868.82	40°04'56.082"N	80°39'20.093"W	2825.75	246.428	9.56	8.11	7.91
6604.00	45.710	269.470	5704.87	950.40	-1131.75	-2621.66	1736724.05	14556867.07	40°04'56.066"N	80°39'20.501"W	2855.51	246.651	12.02	8.80	11.87
6649.00	50.280	273.520	5734.98	973.76	-1130.84	-2655.07	1736690.66	14556867.99	40°04'56.076"N	80°39'20.930"W	2885.86	246.930	12.16	10.16	9.00
6694.00	53.630	276.150	5762.71	999.94	-1127.83	-2690.37	1736655.37	14556870.99	40°04'56.107"N	80°39'21.384"W	2917.20	247.256	8.75	7.44	5.84
6740.00	55.450	279.330	5789.40	1028.87	-1122.78	-2727.48	1736618.27	14556876.04	40°04'56.158"N	80°39'21.861"W	2949.54	247.625	6.88	3.96	6.91
6784.00	57.120	283.460	5813.83	1058.54	-1115.53	-2763.34	1736582.42	14556883.28	40°04'56.231"N	80°39'22.322"W	2980.01	248.017	8.68	3.80	9.39
6830.00	59.000	286.830	5838.17	1091.62	-1105.33	-2801.01	1736544.77	14556893.49	40°04'56.334"N	80°39'22.807"W	3011.21	248.465	7.44	4.09	7.33
6839.00	59.640	287.640	5842.76	1098.33	-1103.03	-2808.40	1736537.38	14556895.78	40°04'56.356"N	80°39'22.902"W	3017.25	248.557	10.51	7.11	9.00
6890.00	61.440	292.770	5867.86	1137.88	-1087.69	-2850.05	1736495.75	14556911.12	40°04'56.510"N	80°39'23.437"W	3050.55	249.111	9.44	3.53	10.06
6919.00	61.910	294.580	5881.62	1161.28	-1077.44	-2873.42	1736472.38	14556921.36	40°04'56.612"N	80°39'23.737"W	3068.78	249.446	5.73	1.62	6.24
6964.00	61.900	298.250	5902.82	1198.38	-1059.78	-2908.97	1736436.85	14556939.01	40°04'56.788"N	80°39'24.193"W	3096.00	249.983	7.19	-0.02	8.16
7010.00	62.100	302.100	5924.42	1237.21	-1039.37	-2944.07	1736401.77	14556959.42	40°04'56.991"N	80°39'24.644"W	3122.15	250.555	7.40	0.43	8.37
7100.00	64.100	311.250	5965.20	1316.00	-991.46	-3008.31	1736337.55	14557007.31	40°04'57.467"N	80°39'25.468"W	3167.48	251.759	9.33	2.22	10.17

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 401H
Area	Ohio County, WV	Well	Timmy Minch OHI 401H
Field	Ohio	Wellbore	Timmy Minch OHI 401H 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]
7191.00	66.210	319.190	6003.49	1398.44	-932.88	-3066.38	1736279.51	14557065.87	40°04'58.048"N	80°39'26.212"W	3205.14	253.079	8.25	2.32	8.73
7281.00	70.250	328.360	6036.92	1481.33	-865.50	-3115.61	1736230.29	14557133.21	40°04'58.715"N	80°39'26.842"W	3233.60	254.475	10.47	4.49	10.19
7372.00	77.380	333.200	6062.28	1566.18	-789.27	-3158.18	1736187.74	14557209.42	40°04'59.470"N	80°39'27.386"W	3255.31	255.968	9.35	7.84	5.32
7417.00	80.790	333.940	6070.80	1608.57	-749.71	-3177.84	1736168.09	14557248.96	40°04'59.862"N	80°39'27.637"W	3265.08	256.726	7.75	7.58	1.64
7462.00	84.020	334.570	6076.75	1651.21	-709.54	-3197.21	1736148.72	14557289.12	40°05'00.260"N	80°39'27.884"W	3275.00	257.487	7.31	7.18	1.40
7508.00	86.580	333.920	6080.52	1695.04	-668.25	-3217.13	1736128.81	14557330.39	40°05'00.669"N	80°39'28.138"W	3285.80	258.266	5.74	5.57	-1.41
7553.00	89.970	333.660	6081.87	1738.15	-627.90	-3236.99	1736108.96	14557370.72	40°05'01.068"N	80°39'28.392"W	3297.33	259.022	7.56	7.53	-0.58
7643.00	90.580	333.250	6081.44	1824.55	-547.39	-3277.21	1736068.75	14557451.20	40°05'01.865"N	80°39'28.905"W	3322.61	260.517	0.82	0.68	-0.46
7733.00	90.520	331.550	6080.58	1911.40	-467.64	-3318.91	1736027.08	14557530.92	40°05'02.655"N	80°39'29.438"W	3351.69	261.980	1.89	-0.07	-1.89
7824.00	90.460	330.200	6079.80	1999.82	-388.15	-3363.20	1735982.80	14557610.38	40°05'03.442"N	80°39'30.004"W	3385.52	263.417	1.48	-0.07	-1.48
7915.00	90.520	329.850	6079.02	2088.55	-309.33	-3408.66	1735937.36	14557689.18	40°05'04.223"N	80°39'30.585"W	3422.67	264.815	0.39	0.07	-0.38
8005.00	91.140	331.810	6077.72	2176.00	-230.75	-3452.52	1735893.52	14557767.72	40°05'05.001"N	80°39'31.145"W	3460.22	266.176	2.28	0.69	2.18
8096.00	91.170	333.390	6075.88	2263.72	-149.98	-3494.39	1735851.66	14557848.46	40°05'05.801"N	80°39'31.680"W	3497.60	267.542	1.74	0.03	1.74
8186.00	90.990	332.930	6074.19	2350.24	-69.69	-3535.02	1735811.05	14557928.72	40°05'06.596"N	80°39'32.198"W	3535.70	268.871	0.55	-0.20	-0.51
8276.00	90.830	333.290	6072.76	2436.79	10.57	-3575.71	1735770.37	14558008.94	40°05'07.390"N	80°39'32.718"W	3575.73	270.169	0.44	-0.18	0.40
8367.00	90.990	334.310	6071.31	2523.99	92.21	-3615.89	1735730.21	14558090.55	40°05'08.199"N	80°39'33.231"W	3617.06	271.461	1.13	0.18	1.12
8457.00	91.020	335.480	6069.73	2609.72	173.69	-3654.06	1735692.05	14558172.00	40°05'09.005"N	80°39'33.718"W	3658.19	272.721	1.30	0.03	1.30
8547.00	90.860	334.530	6068.26	2695.40	255.25	-3692.09	1735654.04	14558253.53	40°05'09.813"N	80°39'34.203"W	3700.90	273.955	1.07	-0.18	-1.06
8638.00	91.020	332.900	6066.76	2782.63	336.83	-3732.38	1735613.76	14558335.08	40°05'10.620"N	80°39'34.718"W	3747.55	275.157	1.80	0.18	-1.79
8728.00	90.830	334.050	6065.31	2869.02	417.34	-3772.57	1735573.59	14558415.56	40°05'11.418"N	80°39'35.231"W	3795.58	276.313	1.29	-0.21	1.28
8818.00	91.140	333.970	6063.76	2955.17	498.23	-3812.00	1735534.18	14558496.41	40°05'12.218"N	80°39'35.734"W	3844.42	277.446	0.36	0.34	-0.09
8909.00	91.050	334.240	6062.02	3042.22	580.08	-3851.73	1735494.46	14558578.23	40°05'13.029"N	80°39'36.241"W	3895.17	278.564	0.31	-0.10	0.30
8999.00	90.950	334.840	6060.45	3128.12	661.32	-3890.42	1735455.79	14558659.45	40°05'13.833"N	80°39'36.735"W	3946.23	279.647	0.68	-0.11	0.67
9089.00	90.890	335.500	6059.01	3213.73	742.99	-3928.21	1735418.01	14558741.08	40°05'14.642"N	80°39'37.217"W	3997.85	280.711	0.74	-0.07	0.73
9180.00	91.020	336.480	6057.49	3299.87	826.11	-3965.23	1735381.01	14558824.16	40°05'15.464"N	80°39'37.689"W	4050.37	281.769	1.09	0.14	1.08
9270.00	90.990	337.350	6055.91	3384.58	908.89	-4000.51	1735345.74	14558906.91	40°05'16.284"N	80°39'38.139"W	4102.46	282.800	0.97	-0.03	0.97
9360.00	91.080	336.340	6054.29	3469.34	991.62	-4035.89	1735310.37	14559089.61	40°05'17.103"N	80°39'38.590"W	4155.93	283.804	1.13	0.10	-1.12
9450.00	91.050	334.260	6052.61	3554.87	1073.37	-4073.49	1735272.78	14559271.33	40°05'17.912"N	80°39'39.070"W	4212.54	284.762	2.31	-0.03	-2.31
9541.00	90.980	336.130	6051.00	3641.40	1155.96	-4111.66	1735234.63	14559153.88	40°05'18.729"N	80°39'39.557"W	4271.07	285.703	2.06	-0.08	2.05
9631.00	91.200	335.920	6049.29	3726.58	1238.18	-4148.23	1735198.08	14559236.07	40°05'19.543"N	80°39'40.024"W	4329.07	286.619	0.34	0.24	-0.23

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 401H
Area	Ohio County, WV	Well	Timmy Minch OHI 401H
Field	Ohio	Wellbore	Timmy Minch OHI 401H 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]
9721.00	90.990	335.900	6047.57	3811.81	1320.32	-4184.96	1735161.37	14559318.19	40°05'20.356"N	80°39'40.492"W	4388.29	287.510	0.23	-0.23	-0.02
9812.00	90.990	336.770	6046.00	3897.78	1403.66	-4221.48	1735124.86	14559401.49	40°05'21.181"N	80°39'40.958"W	4448.72	288.392	0.96	0.00	0.96
9902.00	91.170	334.660	6044.30	3983.10	1485.67	-4258.48	1735087.87	14559483.47	40°05'21.993"N	80°39'41.430"W	4510.20	289.233	2.35	0.20	-2.34
9993.00	90.920	332.690	6042.64	4070.35	1567.22	-4298.83	1735047.54	14559564.99	40°05'22.801"N	80°39'41.945"W	4575.60	290.030	2.18	-0.27	-2.16
10083.00	90.950	332.640	6041.17	4157.09	1647.16	-4340.15	1735006.23	14559644.90	40°05'23.592"N	80°39'42.473"W	4642.20	290.783	0.06	0.03	-0.06
10174.00	90.890	332.940	6039.71	4244.73	1728.08	-4381.76	1734964.64	14559725.78	40°05'24.393"N	80°39'43.004"W	4710.20	291.523	0.34	-0.07	0.33
10264.00	90.710	333.300	6038.46	4331.49	1807.99	-4423.14	1734923.27	14559805.66	40°05'25.185"N	80°39'43.533"W	4778.39	292.233	0.74	-0.20	-0.71
10354.00	90.860	333.780	6037.22	4418.06	1888.20	-4463.94	1734882.49	14559885.84	40°05'25.979"N	80°39'44.054"W	4846.86	292.928	1.65	0.17	1.64
10445.00	90.650	334.860	6036.02	4505.03	1970.20	-4503.37	1734843.08	14559967.81	40°05'26.791"N	80°39'44.557"W	4915.49	293.629	1.21	-0.23	1.19
10535.00	90.650	336.020	6035.00	4590.50	2052.05	-4540.77	1734805.69	14560049.63	40°05'27.601"N	80°39'45.035"W	4982.93	294.319	1.29	0.00	1.29
10626.00	90.830	336.700	6033.83	4676.46	2135.41	-4577.26	1734769.21	14560132.95	40°05'28.426"N	80°39'45.500"W	5050.87	295.010	0.77	0.20	0.75
10716.00	90.830	334.910	6032.52	4761.75	2217.49	-4614.14	1734732.35	14560215.00	40°05'29.238"N	80°39'45.970"W	5119.33	295.668	1.99	0.00	-1.99
10807.00	90.770	333.220	6031.25	4848.83	2299.31	-4653.94	1734692.57	14560296.80	40°05'30.049"N	80°39'46.478"W	5190.95	296.292	1.86	-0.07	-1.86
10897.00	90.550	333.940	6030.22	4935.17	2379.91	-4693.98	1734652.54	14560377.36	40°05'30.847"N	80°39'46.990"W	5262.83	296.886	0.84	-0.24	0.80
10987.00	90.520	333.680	6029.38	5021.42	2460.66	-4733.70	1734612.84	14560458.08	40°05'31.646"N	80°39'47.497"W	5335.05	297.466	0.29	-0.03	-0.29
11078.00	90.650	334.400	6028.45	5108.51	2542.48	-4773.53	1734573.02	14560539.86	40°05'32.456"N	80°39'48.005"W	5408.40	298.041	0.80	0.14	0.79
11168.00	90.460	337.360	6027.57	5193.77	2624.61	-4810.30	1734536.26	14560621.96	40°05'33.269"N	80°39'48.475"W	5479.74	298.618	3.30	-0.21	3.29
11258.00	90.680	334.820	6026.68	5278.91	2706.87	-4846.77	1734499.81	14560704.19	40°05'34.083"N	80°39'48.940"W	5551.43	299.183	2.83	0.24	-2.82
11348.00	90.520	333.130	6025.74	5365.08	2787.74	-4886.26	1734460.34	14560785.03	40°05'34.884"N	80°39'49.444"W	5625.57	299.706	1.89	-0.18	-1.88
11439.00	90.580	336.770	6024.86	5451.73	2870.16	-4924.78	1734421.83	14560867.42	40°05'35.700"N	80°39'49.936"W	5700.11	300.234	4.00	0.07	4.00
11529.00	90.520	334.500	6024.00	5537.11	2952.14	-4961.91	1734384.72	14560949.36	40°05'36.511"N	80°39'50.409"W	5773.70	300.751	2.52	-0.07	-2.52
11620.00	90.430	332.020	6023.24	5624.55	3033.40	-5002.85	1734343.79	14561030.59	40°05'37.316"N	80°39'50.932"W	5850.64	301.230	2.73	-0.10	-2.73
11710.00	90.550	330.870	6022.47	5711.78	3112.44	-5045.86	1734300.79	1456109.61	40°05'38.099"N	80°39'51.482"W	5928.58	301.668	1.28	0.13	-1.28
11800.00	90.520	330.640	6021.63	5799.28	3190.97	-5089.83	1734256.84	14561188.10	40°05'38.876"N	80°39'52.044"W	6007.38	302.085	0.26	-0.03	-0.26
11890.00	90.550	329.900	6020.79	5886.95	3269.12	-5134.46	1734212.23	14561266.22	40°05'39.650"N	80°39'52.614"W	6086.86	302.485	0.82	0.03	-0.82
11981.00	90.680	331.000	6019.82	5975.52	3348.28	-5179.34	1734167.37	14561345.35	40°05'40.434"N	80°39'53.188"W	6167.37	302.881	1.22	0.14	1.21
12071.00	90.340	332.680	6019.02	6062.60	3427.62	-5221.81	1734124.92	14561424.66	40°05'41.220"N	80°39'53.731"W	6246.27	303.281	1.90	-0.38	1.87
12161.00	90.460	333.910	6018.39	6149.07	3508.01	-5262.25	1734084.49	14561505.02	40°05'42.016"N	80°39'54.247"W	6324.35	303.689	1.37	0.13	1.37
12252.00	90.460	334.110	6017.66	6236.18	3589.81	-5302.13	1734044.63	14561586.79	40°05'42.826"N	80°39'54.756"W	6403.07	304.100	0.22	0.00	0.22
12342.00	90.460	333.560	6016.93	6322.42	3670.58	-5341.81	1734004.96	14561667.53	40°05'43.625"N	80°39'55.263"W	6481.37	304.495	0.61	0.00	-0.61



REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot 401H
SOUTHWESTERN ENERGY	Well	Timmy Minch OHI 401H
Area	Wellbore	Timmy Minch OHI 401H 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]
12433.00	90.520	333.230	6016.16	6409.81	3751.94	-5382.57	1733964.22	14561748.86	40°05'44.431"N	80°39'55.783"W	6661.18	304.879	0.37	0.07	-0.36
12523.00	90.550	333.910	6015.32	6496.16	3832.63	-5422.62	1733924.18	14561829.42	40°05'45.229"N	80°39'56.295"W	6640.27	305.251	0.76	0.03	0.76
12613.00	90.460	335.090	6014.52	6582.09	3913.76	-5461.37	1733885.45	14561910.61	40°05'46.033"N	80°39'56.789"W	6718.93	305.626	1.31	-0.10	1.31
12703.00	90.460	335.140	6013.80	6667.72	3995.40	-5499.24	1733847.22	14561992.22	40°05'46.841"N	80°39'57.273"W	6797.42	306.000	0.06	0.00	0.06
12794.00	90.460	333.030	6013.07	6754.80	4077.24	-5539.00	1733807.85	14562074.03	40°05'47.651"N	80°39'57.781"W	6877.83	306.357	2.32	0.00	-2.32
12884.00	90.370	339.140	6012.42	6839.92	4159.48	-5575.47	1733771.39	14562156.23	40°05'48.465"N	80°39'58.246"W	6956.08	306.724	6.79	-0.10	6.79
12975.00	90.460	339.910	6011.76	6924.10	4244.72	-5607.30	1733739.58	14562241.45	40°05'49.309"N	80°39'58.651"W	7032.75	307.126	0.85	0.10	0.85
13065.00	90.740	337.080	6010.81	7007.95	4328.45	-5640.29	1733706.60	14562325.13	40°05'50.137"N	80°39'59.072"W	7109.73	307.503	3.16	0.31	-3.14
13156.00	90.580	334.630	6009.77	7094.16	4411.47	-5677.51	1733669.40	14562408.13	40°05'50.959"N	80°39'59.547"W	7189.94	307.848	2.70	-0.18	-2.69
13246.00	90.370	331.380	6009.02	7180.74	4491.65	-5718.35	1733628.57	14562488.28	40°05'51.753"N	80°40'00.068"W	7271.49	308.149	3.62	-0.23	-3.61
13337.00	90.490	331.710	6008.34	7268.91	4571.66	-5761.71	1733585.23	14562568.25	40°05'52.542"N	80°40'00.622"W	7355.09	308.430	0.39	0.13	0.36
13428.00	90.460	332.520	6007.58	7356.84	4652.09	-5804.27	1733542.69	14562648.65	40°05'53.342"N	80°40'01.166"W	7438.51	308.712	0.89	-0.03	0.89
13518.00	90.370	331.170	6006.93	7443.92	4731.43	-5846.73	1733500.24	14562727.97	40°05'54.127"N	80°40'01.709"W	7521.35	308.981	1.50	-0.10	-1.50
13608.00	90.310	332.140	6006.40	7531.07	4810.64	-5889.46	1733457.53	14562807.14	40°05'54.912"N	80°40'02.255"W	7604.47	309.243	1.08	-0.07	1.08
13699.00	90.180	336.280	6006.01	7618.08	4892.56	-5929.04	1733417.96	14562889.03	40°05'55.723"N	80°40'02.760"W	7687.05	309.529	4.55	-0.14	4.55
13790.00	90.400	337.780	6005.55	7703.68	4976.34	-5964.56	1733382.46	14562972.78	40°05'56.552"N	80°40'03.213"W	7767.88	309.839	1.67	0.24	1.65
13880.00	90.370	334.310	6004.94	7788.85	5058.57	-6001.09	1733345.94	14563054.98	40°05'57.366"N	80°40'03.679"W	7848.71	310.129	3.86	-0.03	-3.86
13970.00	90.460	337.160	6004.29	7874.17	5140.61	-6038.07	1733308.97	14563136.98	40°05'58.178"N	80°40'04.151"W	7929.96	310.410	3.17	0.10	3.17
14061.00	90.280	336.990	6003.70	7959.76	5224.42	-6073.52	1733273.54	14563220.76	40°05'59.008"N	80°40'04.603"W	8011.38	310.702	0.27	-0.20	-0.19
14151.00	90.340	336.220	6003.22	8044.65	5307.02	-6109.25	1733237.82	14563303.33	40°05'59.825"N	80°40'05.059"W	8092.43	310.980	0.86	0.07	-0.86
14241.00	90.340	335.000	6002.68	8130.04	5388.99	-6146.42	1733200.67	14563385.26	40°06'00.636"N	80°40'05.534"W	8174.33	311.243	1.36	0.00	-1.36
14332.00	90.460	335.180	6002.05	8216.64	5471.52	-6184.75	1733162.36	14563467.76	40°06'01.453"N	80°40'06.023"W	8257.64	311.499	0.24	0.13	0.20
14422.00	90.400	334.870	6001.37	8302.33	5553.10	-6222.74	1733124.37	14563549.31	40°06'02.261"N	80°40'06.508"W	8340.23	311.745	0.35	-0.07	-0.34
14512.00	90.310	335.060	6000.81	8388.04	5634.64	-6260.83	1733086.30	14563630.82	40°06'03.068"N	80°40'06.994"W	8423.02	311.987	0.23	-0.10	0.21
14603.00	90.280	333.390	6000.34	8475.05	5716.59	-6300.40	1733046.75	14563712.73	40°06'03.980"N	80°40'07.499"W	8507.31	312.219	1.84	-0.03	-1.84
14693.00	90.370	332.560	5999.83	8561.66	5796.76	-6341.29	1733005.87	14563792.87	40°06'04.673"N	80°40'08.022"W	8591.53	312.431	0.93	0.10	-0.92
14783.00	90.310	332.150	5999.30	8648.54	5876.48	-6383.05	1732964.13	14563872.56	40°06'05.463"N	80°40'08.555"W	8676.19	312.634	0.46	-0.07	-0.46
14873.00	90.370	332.600	5998.77	8735.40	5966.22	-6424.78	1732922.42	14563952.27	40°06'06.252"N	80°40'09.089"W	8760.96	312.833	0.50	0.07	0.50
14964.00	90.280	333.980	5998.25	8822.84	6037.51	-6465.68	1732881.53	14564033.53	40°06'07.057"N	80°40'09.611"W	8846.27	313.039	1.52	-0.10	1.52
15055.00	90.310	335.260	5997.78	8909.66	6119.72	-6504.68	1732842.54	14564115.71	40°06'07.871"N	80°40'10.109"W	8930.95	313.253	1.41	0.03	1.41

REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot 401H
SOUTHWESTERN ENERGY	Well	Timmy Minch OHI 401H
Area	Wellbore	Timmy Minch OHI 401H 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]
15145.00	90.400	335.900	5997.22	8995.08	6201.67	-6541.89	1732805.35	14564197.62	40°06'08.682"N	80°40'10.584"W	9014.27	313.471	0.72	0.10	0.71
15235.00	90.550	337.010	5996.48	9080.04	6284.17	-6577.84	1732769.42	14564280.09	40°06'09.499"N	80°40'11.043"W	9097.18	313.692	1.24	0.17	1.23
15325.00	90.580	335.710	5995.59	9165.06	6366.61	-6613.93	1732733.34	14564362.50	40°06'10.315"N	80°40'11.503"W	9180.29	313.908	1.44	0.03	-1.44
15416.00	90.490	334.210	5994.74	9251.72	6449.05	-6652.44	1732694.85	14564444.91	40°06'11.131"N	80°40'11.995"W	9265.27	314.111	1.65	-0.10	-1.65
15506.00	90.400	334.460	5994.04	9337.72	6530.17	-6691.42	1732655.88	14564526.00	40°06'11.934"N	80°40'12.492"W	9349.77	314.301	0.30	-0.10	0.28
15596.00	90.400	333.830	5993.41	9423.82	6611.16	-6730.67	1732616.65	14564606.96	40°06'12.736"N	80°40'12.994"W	9434.47	314.487	0.70	0.00	-0.70
15687.00	90.550	334.100	5992.66	9510.95	6692.92	-6770.61	1732576.73	14564688.69	40°06'13.545"N	80°40'13.504"W	9520.31	314.669	0.34	0.16	0.30
15777.00	90.340	333.860	5991.96	9597.12	6773.80	-6810.09	1732537.26	14564769.53	40°06'14.346"N	80°40'14.008"W	9605.29	314.847	0.35	-0.23	-0.27
15867.00	90.580	333.120	5991.24	9683.51	6854.33	-6850.26	1732497.11	14564850.03	40°06'15.143"N	80°40'14.521"W	9690.61	315.017	0.86	0.27	-0.82
15958.00	90.520	333.250	5990.36	9770.99	6935.54	-6891.31	1732456.07	14564931.21	40°06'15.947"N	80°40'15.046"W	9777.11	315.183	0.16	-0.07	0.14
16048.00	90.280	332.070	5989.73	9857.74	7015.49	-6932.64	1732414.76	14565011.12	40°06'16.739"N	80°40'15.574"W	9862.99	315.340	1.34	-0.27	-1.31
16138.00	90.090	332.260	5989.44	9944.69	7095.07	-6974.66	1732372.75	14565090.68	40°06'17.527"N	80°40'16.111"W	9949.17	315.490	0.30	-0.21	0.21
16229.00	90.590	332.050	5988.90	10032.61	7175.53	-7017.17	1732330.26	14565171.11	40°06'18.323"N	80°40'16.654"W	10036.38	315.639	0.60	0.55	-0.23
16319.00	90.280	332.660	5988.22	10119.48	7255.26	-7058.92	1732288.52	14565250.80	40°06'19.113"N	80°40'17.187"W	10122.61	315.786	0.76	-0.34	0.68
16410.00	90.330	332.440	5987.74	10207.23	7336.01	-7100.87	1732246.59	14565331.52	40°06'19.912"N	80°40'17.723"W	10209.77	315.933	0.25	0.05	-0.24
16500.00	90.310	333.650	5987.23	10293.82	7416.23	-7141.67	1732205.81	14565411.71	40°06'20.706"N	80°40'18.245"W	10295.82	316.080	1.34	-0.02	1.34
16591.00	90.220	335.420	5986.81	10380.68	7498.38	-7180.79	1732166.70	14565493.83	40°06'21.520"N	80°40'18.744"W	10382.17	316.239	1.95	-0.10	1.95
16681.00	90.150	336.270	5986.52	10465.96	7580.50	-7217.62	1732129.89	14565575.92	40°06'22.333"N	80°40'19.214"W	10467.00	316.405	0.95	-0.08	0.94
16772.00	90.180	336.490	5986.26	10551.92	7663.88	-7254.08	1732093.44	14565659.26	40°06'23.158"N	80°40'19.680"W	10552.57	316.574	0.24	0.03	0.24
16862.00	90.150	336.980	5986.00	10636.74	7746.56	-7289.63	1732057.91	14565741.91	40°06'23.976"N	80°40'20.133"W	10637.10	316.741	0.55	-0.03	0.54
16953.00	90.370	336.050	5985.59	10722.62	7830.02	-7325.89	1732021.66	14565825.34	40°06'24.802"N	80°40'20.596"W	10722.77	316.905	1.05	0.24	-1.02
17045.00	90.340	334.980	5985.02	10809.96	7913.74	-7364.02	1731983.54	14565909.03	40°06'25.631"N	80°40'21.083"W	10810.00	317.061	1.16	-0.03	-1.16
17105.00	90.280	335.380	5984.69	10867.04	7968.20	-7389.21	1731958.37	14565963.47	40°06'26.170"N	80°40'21.404"W	10867.04	317.159	0.67	-0.10	0.67
17130.00	90.280	335.380	5984.57	10890.79	7990.93	-7399.62	1731947.96	14565986.19	40°06'26.395"N	80°40'21.537"W	10890.79	317.200	0.00	0.00	0.00

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 401H
Area	Ohio County, WV	Well	Timmy Minch OHI 401H
Field	Ohio	Wellbore	Timmy Minch OHI 401H AWB
Facility	Timmy Minch OHI Pad		

HOLE & CASING SECTIONS - Ref Wellbore: Timmy Minch OHI 401H AWB Ref Wellpath: Timmy Minch OHI 401H AWP Proj: 17130'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	560.00	534.00	26.00	559.99	0.00	0.00	-0.51	-1.70
13.375in Casing	26.00	560.00	534.00	26.00	559.99	0.00	0.00	-0.51	-1.70
12.25in Open Hole	560.00	1917.00	1357.00	559.99	1897.90	-0.51	-1.70	-97.26	-179.08
9.625in Casing	26.00	1917.00	1891.00	26.00	1897.90	0.00	0.00	-97.26	-179.08
8.75in Open Hole	1917.00	6839.00	4922.00	1897.90	5842.76	-97.26	-179.08	-1103.03	-2808.40
8.5in Open Hole	6839.00	17130.00	10291.00	5842.76	5984.57	-1103.03	-2808.40	7990.93	-7399.62

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Timmy Minch OHI 401H BHL Rev-3	5999.22	7993.32	-7399.57	1731948.01	14565988.58	40°06'26.419"N	80°40'21.536"W	point
Timmy Minch OHI 401H LP Rev-4	6082.00	-691.54	-3219.08	1736126.86	14557307.11	40°05'00.439"N	80°39'28.165"W	point

WELLPATH COMPOSITION - Ref Wellbore: Timmy Minch OHI 401H AWB Ref Wellpath: Timmy Minch OHI 401H AWP Proj: 17130'MD

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	506.00	OWSG MWD rev2 + HRGM	01 Premier MWD <17.5">(182'-505')	Timmy Minch OHI 401H AWB
506.00	1984.00	OWSG MWD rev2 + HRGM	02 Premier MWD <12.25">(603'-1984')	Timmy Minch OHI 401H AWB
1984.00	6839.00	OWSG MWD rev2 + HRGM	03 Premier MWD <8.75">(2074'-6839')	Timmy Minch OHI 401H AWB
6839.00	17105.00	BHI AutoTrak Curve (Short)	04 BH AT Curve <8.5">(6839')(6890'-17105')	Timmy Minch OHI 401H AWB
17105.00	17130.00	Blind Drilling (std)	Projection to bit	Timmy Minch OHI 401H AWB

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 401H
Area	Ohio County, WV	Well	Timmy Minch OHI 401H
Field	Ohio	Wellbore	Timmy Minch OHI 401H AWB
Facility	Timmy Minch OHI Pad		

COMMENTS

Wellpath general comments

API: 47-069-00266-0000
BH Job #: 109315091
Rig: SDC42
Duration: 09/04/2018 - 09/05/2018

Timmy Minch OHI 401H
ATTACHMENT 1
PERF REPORT

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	12/20/2018	17,084	16,991	36
2	1/12/2019	16,958	16,851	42
3	1/14/2019	16,818	16,711	42
4	1/15/2019	16,678	16,571	42
5	1/15/2019	16,538	16,431	42
6	1/15/2019	16,398	16,291	42
7	1/17/2019	16,258	16,151	42
8	1/17/2019	16,118	16,011	42
9	1/17/2019	15,978	15,871	42
10	1/18/2019	15,838	15,731	42
11	1/18/2019	15,698	15,591	42
12	1/19/2019	15,558	15,451	42
13	1/20/2019	15,418	15,311	42
14	1/22/2019	15,278	15,171	42
15	1/23/2019	15,138	15,031	42
16	1/23/2019	14,998	14,891	42
17	1/23/2019	14,858	14,751	42
18	1/24/2019	14,718	14,611	42
19	1/24/2019	14,578	14,471	42
20	1/24/2019	14,438	14,331	42
21	1/24/2019	14,298	14,191	42
22	1/25/2019	14,158	14,051	42
23	1/25/2019	14,018	13,911	42
24	1/26/2019	13,878	13,771	42
25	1/27/2019	13,738	13,631	42
26	1/27/2019	13,598	13,491	42
27	1/27/2019	13,458	13,351	42
28	1/28/2019	13,318	13,211	42
29	1/28/2019	13,178	13,071	42
30	1/28/2019	13,038	12,931	42
31	2/14/2019	12,898	12,791	42
32	2/20/2019	12,758	12,651	42
33	2/20/2019	12,618	12,511	42
34	2/21/2019	12,478	12,371	40
35	2/21/2019	12,338	12,231	42
36	2/22/2019	12,198	12,091	38
37	2/22/2019	12,058	11,951	42
38	2/23/2019	11,918	11,811	42
39	2/24/2019	11,778	11,671	42
40	2/24/2019	11,638	11,531	42
41	2/25/2019	11,498	11,391	34
42	2/25/2019	11,358	11,251	42
43	2/26/2019	11,218	11,111	42

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Timmy Minch OHI 401H
ATTACHMENT 1
PERF REPORT

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
44	2/26/2019	11,078	10,971	42
45	2/27/2019	10,938	10,831	42
46	2/27/2019	10,798	10,691	42
47	2/27/2019	10,658	10,551	42
48	2/28/2019	10,518	10,411	42
49	2/28/2019	10,378	10,271	42
50	2/28/2019	10,238	10,131	42
51	3/1/2019	10,098	9,991	42
52	3/2/2019	9,958	9,851	42
53	3/3/2019	9,818	9,711	42
54	3/4/2019	9,678	9,571	42
55	3/4/2019	9,538	9,431	42
56	3/6/2019	9,398	9,291	42
57	3/5/2019	9,258	9,151	42
58	3/6/2019	9,118	9,011	42
59	3/6/2019	8,978	8,871	42
60	3/8/2019	8,838	8,731	30
61	3/8/2019	8,698	8,591	42
62	3/8/2019	8,558	8,451	42
63	3/9/2019	8,418	8,311	42
64	3/9/2019	8,278	8,171	42
65	3/9/2019	8,138	8,031	42
66	3/9/2019	7,998	7,891	42
67	3/10/2019	7,858	7,721	42
68	3/11/2019	7,718	7,541	18
69	3/12/2019	7,508	7,331	18

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Timmy Minch OHI 401H

ATTACHMENT 2

STIM REPORT

WV Department of
Environmental Protection

STAGE NUM	Stim Date	Ave Pump Rate (BPM)	Ave Treatment	Max Breakdown	ISIP (PSI)	Amount of Proppant (lbs)	Amount of water bbls	nitrogen/cu ft
1	1/11/2019	84.6	7,545	7,750	3,750	281,450	6,852	0
2	1/14/2019	86.7	7,329	5,319	3,737	280,818	5,670	0
3	1/14/2019	90.6	7,999	5,385	4,029	280,993	6,714	0
4	1/15/2019	92	7,560	4,916	4,075	282,561	6,175	0
5	1/16/2019	81.5	7,266	3,137	4,384	267,181	6,324	0
6	1/16/2019	96.9	7,970	4,460	4,148	284,890	6,356	0
7	1/17/2019	93	7,765	3,146	4,046	271,614	6,623	0
8	1/17/2019	93.2	8,009	4,977	4,268	283,738	5,236	0
9	1/18/2019	87.6	8,259	5,427	4,271	280,467	5,392	0
10	1/18/2019	93.8	7,967	4,935	4,227	284,225	5,057	0
11	1/19/2019	92	7,695	5,145	4,336	281,125	5,567	0
12	1/19/2019	93.9	7,871	5,386	4,081	285,088	4,493	0
13	1/22/2019	87.8	7,719	4,697	4,143	280,075	6,818	0
14	1/23/2019	75.2	8,411	5,379	4,096	272,589	6,324	0
15	1/23/2019	84.5	6,794	3,394	4,097	281,441	5,477	0
16	1/23/2019	86.7	6,968	5,833	4,358	282,058	5,312	0
17	1/23/2019	98.2	7,368	4,667	4,345	283,685	5,399	0
18	1/24/2019	89.1	7,399	5,877	4,210	271,529	5,133	0
19	1/24/2019	87.8	7,294	5,575	3,997	281,962	5,266	0
20	1/24/2019	96.9	7,750	5,457	4,082	281,374	5,206	0
21	1/24/2019	73.4	7,542	5,181	4,035	275,510	6,025	0
22	1/25/2019	89.7	7,142	5,249	4,152	274,743	5,072	0
23	1/26/2019	72.9	7,747	5,387	4,770	280,422	6,996	0
24	1/26/2019	97.4	7,307	4,778	4,232	280,623	4,967	0
25	1/27/2019	94.5	7,227	5,005	4,181	281,237	5,075	0
26	1/27/2019	83.3	6,854	4,437	3,976	280,678	5,200	0
27	1/27/2019	96.9	7,893	5,234	4,177	280,310	5,070	0
28	1/28/2019	86.1	7,145	4,293	4,662	280,270	6,102	0
29	1/28/2019	83.3	7,125	5,080	4,508	280,408	5,156	0
30	2/13/2019	91	7,638	5,302	4,366	282,100	6,278	0
31	2/19/2019	95.4	7,769	4,465	4,312	280,550	5,345	0
32	2/20/2019	97.3	8,129	5,378	4,391	332,180	4,347	0
33	2/21/2019	93.6	8,132	5,545	4,586	280,325	4,604	0
34	2/21/2019	93.2	7,976	5,390	4,548	296,710	4,477	0
35	2/22/2019	92.4	7,985	5,100	4,503	281,005	4,255	0
36	2/22/2019	98.7	8,068	5,519	4,478	279,584	4,327	0
37	2/23/2019	91	8,143	5,339	4,155	280,879	4,123	0
38	2/23/2019	84	7,910	5,274	4,464	280,703	4,280	0
39	2/24/2019	88.6	8,084	5,111	4,712	276,439	4,137	0
40	2/24/2019	96.3	7,970	5,520	4,366	282,460	4,076	0
41	2/25/2019	100	7,965	5,508	4,540	279,920	4,113	0
42	2/26/2019	93	7,847	4,950	4,249	278,994	4,231	0
43	2/26/2019	93.7	7,908	5,362	4,643	282,038	4,143	0
44	2/26/2019	96	7,751	5,575	4,377	280,251	4,352	0
45	2/27/2019	80.1	7,441	5,640	4,149	282,013	5,239	0
46	2/27/2019	98.2	7,932	5,496	4,508	282,063	4,305	0
47	2/27/2019	97.4	7,880	5,232	4,486	276,551	4,117	0
48	2/28/2019	95.2	7,929	5,721	4,627	281,032	4,536	0
49	2/28/2019	99	7,868	5,814	4,432	280,258	4,058	0
50	3/1/2019	83	7,587	5,698	4,476	36,733	7,929	0
51	3/2/2019	97.5	7,713	5,140	4,304	280,817	4,807	0
52	3/3/2019	96.5	7,581	5,552	4,670	280,419	4,292	0
53	3/4/2019	93.9	7,786	5,432	4,554	260,309	5,273	0

Timmy Minch OHI 401H

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	3/4/2019	95.9	7,537	5,655	4,735	280,038	4,179	0
55	3/5/2019	88.5	7,301	5,431	4,241	279,568	4,679	0
56	3/5/2019	99	7,541	4,897	4,630	277,656	4,119	0
57	3/5/2019	7408	7,408	5,246	4,446	279,532	4,114	0
58	3/6/2019	7353	7,353	5,333	4,645	280,784	4,132	0
59	3/8/2019	97.7	7,879	5,488	4,220	282,984	4,143	0
60	3/8/2019	96.1	7,663	4,274	3,850	280,948	4,283	0
61	3/8/2019	96.5	7,451	5,486	4,441	279,078	4,001	0
62	3/8/2019	93	7,821	5,563	4,702	280,312	3,866	0
63	3/9/2019	96.4	7,245	5,401	4,302	280,580	3,859	0
64	3/9/2019	99.9	7,486	5,260	4,647	280,199	4,085	0
65	3/9/2019	96.7	8,031	4,877	4,574	280,854	3,817	0
66	3/10/2019	98.7	7,533	5,663	4,507	280,199	3,990	0
67	3/10/2019	99	7,499	6,012	4,549	281,015	4,024	0
68	3/11/2019	83	8,140	5,902	4,454	421,163	7,686	0
69	3/11/2019	80	8,001	5,713	4,477	453,667	7,576	0

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