



Planned Wellpath Report

Shawn Couch OHI 10H PWP Ex-01

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot #10	
Area	Ohio County, WV	Well	Shawn Couch OHI 10H	RECEIVED Office of Oil and Gas
Field	Ohio	Wellbore	Shawn Couch OHI 10H PWB	JUL 3 2017
Facility	Shawn Couch OHI Pad 1			

WV Department of
Environmental Protection

REPORT SETUP INFORMATION

Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 4.0.1
North Reference	Grid	User	Thomsuzc
Scale	0.999615	Report Generated	8/27/2015 at 10:01:05 AM
Convergence at slot	0.27° East	Database/Source file	WA_Eastern_US/Shawn_Couch_OHI_10H_PWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-18.18	8.47	1755375.70	14580826.79	40°08'52.145"N	80°35'19.028"W
Facility Reference Pt			1755367.23	14580844.96	40°08'52.325"N	80°35'19.136"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.478"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on Slot #10 (KB) to Facility Vertical Datum	1272.00ft
Horizontal Reference Pt	Slot	Rig on Slot #10 (KB) to Mean Sea Level	1272.00ft
Vertical Reference Pt	Rig on Slot #10 (KB)	Rig on Slot #10 (KB) to Mud Line at Slot (Slot #10)	1272.00ft
MD Reference Pt	Rig on Slot #10 (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	158.98°

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WV Department of
Environmental Protection

WELLPATH DATA (159 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	160.000	0.00	0.00	0.00	0.00	1755375.70	14580826.79	40°08'52.145"N	80°35'19.028"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	160.000	26.00	0.00	0.00	0.00	1755375.70	14580826.79	40°08'52.145"N	80°35'19.028"W	0.00	0.000	0.00	0.00	0.00
126.00†	0.000	160.000	126.00	0.00	0.00	0.00	1755375.70	14580826.79	40°08'52.145"N	80°35'19.028"W	0.00	0.000	0.00	0.00	0.00
226.00†	0.000	160.000	226.00	0.00	0.00	0.00	1755375.70	14580826.79	40°08'52.145"N	80°35'19.028"W	0.00	0.000	0.00	0.00	0.00
326.00†	0.000	160.000	326.00	0.00	0.00	0.00	1755375.70	14580826.79	40°08'52.145"N	80°35'19.028"W	0.00	0.000	0.00	0.00	0.00
426.00†	0.000	160.000	426.00	0.00	0.00	0.00	1755375.70	14580826.79	40°08'52.145"N	80°35'19.028"W	0.00	0.000	0.00	0.00	0.00
526.00†	0.000	160.000	526.00	0.00	0.00	0.00	1755375.70	14580826.79	40°08'52.145"N	80°35'19.028"W	0.00	0.000	0.00	0.00	0.00
626.00†	0.000	160.000	626.00	0.00	0.00	0.00	1755375.70	14580826.79	40°08'52.145"N	80°35'19.028"W	0.00	0.000	0.00	0.00	0.00
726.00†	0.000	160.000	726.00	0.00	0.00	0.00	1755375.70	14580826.79	40°08'52.145"N	80°35'19.028"W	0.00	0.000	0.00	0.00	0.00
800.00	0.000	160.000	800.00	0.00	0.00	0.00	1755375.70	14580826.79	40°08'52.145"N	80°35'19.028"W	0.00	0.000	0.00	0.00	0.00
826.00†	0.520	160.000	826.00	0.12	-0.11	0.04	1755375.74	14580826.68	40°08'52.144"N	80°35'19.027"W	0.12	160.000	2.00	2.00	0.00
926.00†	2.520	160.000	925.96	2.77	-2.60	0.95	1755376.65	14580824.18	40°08'52.119"N	80°35'19.016"W	2.77	160.000	2.00	2.00	0.00
1026.00†	4.520	160.000	1025.77	8.91	-8.37	3.05	1755378.75	14580818.42	40°08'52.062"N	80°35'18.989"W	8.91	160.000	2.00	2.00	0.00
1100.00	6.000	160.000	1099.45	15.69	-14.75	5.37	1755381.07	14580812.05	40°08'51.999"N	80°35'18.960"W	15.69	160.000	2.00	2.00	0.00
1126.00†	6.000	160.000	1125.31	18.41	-17.30	6.30	1755382.00	14580809.49	40°08'51.974"N	80°35'18.948"W	18.41	160.000	0.00	0.00	0.00
1226.00†	6.000	160.000	1224.76	28.86	-27.12	9.87	1755385.57	14580799.67	40°08'51.877"N	80°35'18.902"W	28.86	160.000	0.00	0.00	0.00
1326.00†	6.000	160.000	1324.21	39.31	-36.95	13.45	1755389.14	14580789.86	40°08'51.779"N	80°35'18.857"W	39.32	160.000	0.00	0.00	0.00
1426.00†	6.000	160.000	1423.67	49.76	-46.77	17.02	1755392.72	14580780.04	40°08'51.682"N	80°35'18.812"W	49.77	160.000	0.00	0.00	0.00
1526.00†	6.000	160.000	1523.12	60.21	-56.59	20.60	1755396.29	14580770.22	40°08'51.585"N	80°35'18.766"W	60.22	160.000	0.00	0.00	0.00
1626.00†	6.000	160.000	1622.57	70.66	-66.41	24.17	1755399.86	14580760.40	40°08'51.488"N	80°35'18.721"W	70.68	160.000	0.00	0.00	0.00
1726.00†	6.000	160.000	1722.02	81.12	-76.24	27.75	1755403.44	14580750.58	40°08'51.390"N	80°35'18.675"W	81.13	160.000	0.00	0.00	0.00
1826.00†	6.000	160.000	1821.47	91.57	-86.06	31.32	1755407.01	14580740.76	40°08'51.293"N	80°35'18.630"W	91.58	160.000	0.00	0.00	0.00
1926.00†	6.000	160.000	1920.93	102.02	-95.88	34.90	1755410.59	14580730.94	40°08'51.196"N	80°35'18.584"W	102.03	160.000	0.00	0.00	0.00
2020.00	6.000	160.000	2014.41	111.84	-105.11	38.26	1755413.94	14580721.71	40°08'51.105"N	80°35'18.542"W	111.86	160.000	0.00	0.00	0.00
2026.00†	5.941	158.996	2020.38	112.47	-105.70	38.48	1755414.16	14580721.13	40°08'51.099"N	80°35'18.539"W	112.48	159.997	2.00	-0.99	-16.73
2126.00†	5.267	139.585	2119.91	121.97	-114.03	43.31	1755418.99	14580712.81	40°08'51.016"N	80°35'18.477"W	121.97	159.203	2.00	-0.67	-19.41
2226.00†	5.308	117.757	2219.49	129.78	-119.67	50.38	1755426.06	14580707.16	40°08'50.960"N	80°35'18.386"W	129.85	157.171	2.00	0.04	-21.83
2326.00†	6.048	98.855	2319.01	135.89	-122.64	59.68	1755435.36	14580704.19	40°08'50.930"N	80°35'18.267"W	136.39	154.052	2.00	0.74	-18.90
2426.00†	7.278	85.171	2418.34	140.28	-122.92	71.20	1755446.87	14580703.92	40°08'50.927"N	80°35'18.119"W	142.05	149.920	2.00	1.23	-13.68
2526.00†	8.794	75.787	2517.36	142.95	-120.51	84.92	1755460.59	14580706.33	40°08'50.950"N	80°35'17.942"W	147.42	144.828	2.00	1.52	-9.38

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Area	Ohio County, WV	Well	Shawn Couch OHI 10H	
Field	Ohio	Wellbore	Shawn Couch OHI 10H PWB	
Facility	Shawn Couch OHI Pad 1			

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WELLPATH DATA (159 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]
2626.00†	10.473	69.262	2615.95	143.90	-115.41	100.83	1755476.49	14580711.42	40°08'51.000"N	80°35'17.736"W	153.25	138.858	2.00	1.68	-6.53
2726.00†	12.247	64.564	2713.99	143.13	-107.64	118.91	1755494.57	14580719.19	40°08'51.076"N	80°35'17.503"W	160.39	132.151	2.00	1.77	-4.70
2826.00†	14.082	61.056	2811.36	140.63	-97.19	139.14	1755514.78	14580729.63	40°08'51.178"N	80°35'17.242"W	169.72	124.936	2.00	1.83	-3.51
2910.68	15.666	58.724	2893.20	137.18	-86.27	157.93	1755533.57	14580740.55	40°08'51.285"N	80°35'16.999"W	179.95	118.647	2.00	1.87	-2.75
2926.00†	15.666	58.724	2907.95	136.44	-84.12	161.46	1755537.10	14580742.70	40°08'51.306"N	80°35'16.954"W	182.06	117.520	0.00	0.00	0.00
3026.00†	15.666	58.724	3004.23	131.63	-70.10	184.54	1755560.17	14580756.71	40°08'51.444"N	80°35'16.656"W	197.41	110.801	0.00	0.00	0.00
3126.00†	15.666	58.724	3100.52	126.83	-56.09	207.62	1755583.24	14580770.72	40°08'51.581"N	80°35'16.358"W	215.06	105.117	0.00	0.00	0.00
3226.00†	15.666	58.724	3196.80	122.02	-42.07	230.70	1755606.31	14580784.74	40°08'51.719"N	80°35'16.060"W	234.50	100.334	0.00	0.00	0.00
3326.00†	15.666	58.724	3293.09	117.21	-28.05	253.78	1755629.38	14580798.75	40°08'51.856"N	80°35'15.762"W	255.32	96.307	0.00	0.00	0.00
3426.00†	15.666	58.724	3389.37	112.40	-14.03	276.86	1755652.45	14580812.76	40°08'51.994"N	80°35'15.464"W	277.21	92.901	0.00	0.00	0.00
3526.00†	15.666	58.724	3485.66	107.59	-0.01	299.94	1755675.52	14580826.78	40°08'52.131"N	80°35'15.166"W	299.94	90.002	0.00	0.00	0.00
3626.00†	15.666	58.724	3581.95	102.79	14.01	323.01	1755698.59	14580840.79	40°08'52.269"N	80°35'14.868"W	323.32	87.516	0.00	0.00	0.00
3726.00†	15.666	58.724	3678.23	97.98	28.03	346.09	1755721.66	14580854.81	40°08'52.406"N	80°35'14.570"W	347.23	85.370	0.00	0.00	0.00
3826.00†	15.666	58.724	3774.52	93.17	42.05	369.17	1755744.73	14580868.82	40°08'52.544"N	80°35'14.272"W	371.56	83.502	0.00	0.00	0.00
3926.00†	15.666	58.724	3870.80	88.36	56.07	392.25	1755767.80	14580882.83	40°08'52.681"N	80°35'13.973"W	396.24	81.865	0.00	0.00	0.00
4026.00†	15.666	58.724	3967.09	83.55	70.09	415.33	1755790.87	14580896.85	40°08'52.819"N	80°35'13.675"W	421.20	80.421	0.00	0.00	0.00
4126.00†	15.666	58.724	4063.37	78.74	84.11	438.41	1755813.94	14580910.86	40°08'52.956"N	80°35'13.377"W	446.41	79.140	0.00	0.00	0.00
4226.00†	15.666	58.724	4159.66	73.94	98.13	461.49	1755837.01	14580924.87	40°08'53.094"N	80°35'13.079"W	471.81	77.996	0.00	0.00	0.00
4326.00†	15.666	58.724	4255.94	69.13	112.15	484.57	1755860.08	14580938.89	40°08'53.231"N	80°35'12.781"W	497.38	76.969	0.00	0.00	0.00
4426.00†	15.666	58.724	4352.23	64.32	126.16	507.65	1755883.15	14580952.90	40°08'53.368"N	80°35'12.483"W	523.09	76.043	0.00	0.00	0.00
4526.00†	15.666	58.724	4448.51	59.51	140.18	530.73	1755906.22	14580966.92	40°08'53.506"N	80°35'12.185"W	548.93	75.204	0.00	0.00	0.00
4626.00†	15.666	58.724	4544.80	54.70	154.20	553.81	1755929.29	14580980.93	40°08'53.643"N	80°35'11.887"W	574.87	74.441	0.00	0.00	0.00
4726.00†	15.666	58.724	4641.08	49.90	168.22	576.88	1755952.36	14580994.94	40°08'53.781"N	80°35'11.589"W	600.91	73.743	0.00	0.00	0.00
4826.00†	15.666	58.724	4737.37	45.09	182.24	599.96	1755975.43	14581008.96	40°08'53.918"N	80°35'11.291"W	627.03	73.104	0.00	0.00	0.00
4926.00†	15.666	58.724	4833.65	40.28	196.26	623.04	1755998.50	14581022.97	40°08'54.056"N	80°35'10.993"W	653.22	72.515	0.00	0.00	0.00
5026.00†	15.666	58.724	4929.94	35.47	210.28	646.12	1756021.57	14581036.99	40°08'54.193"N	80°35'10.695"W	679.48	71.973	0.00	0.00	0.00
5126.00†	15.666	58.724	5026.22	30.66	224.30	669.20	1756044.64	14581051.00	40°08'54.331"N	80°35'10.397"W	705.79	71.470	0.00	0.00	0.00
5226.00†	15.666	58.724	5122.51	25.86	238.32	692.28	1756067.71	14581065.01	40°08'54.468"N	80°35'10.099"W	732.15	71.004	0.00	0.00	0.00
5326.00†	15.666	58.724	5218.79	21.05	252.34	715.36	1756090.78	14581079.03	40°08'54.606"N	80°35'09.801"W	758.56	70.570	0.00	0.00	0.00
5426.00†	15.666	58.724	5315.08	16.24	266.36	738.44	1756113.85	14581093.04	40°08'54.743"N	80°35'09.503"W	785.01	70.165	0.00	0.00	0.00

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JUL 3 2017

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5526.00†	15.666	58.724	5411.36	11.43	280.38	761.52	1756136.92	14581107.05	40°08'54.881"N	80°35'09.205"W	811.49	69.787	0.00	0.00	0.00
5626.00†	15.666	58.724	5507.65	6.62	294.40	784.60	1756159.99	14581121.07	40°08'55.018"N	80°35'08.907"W	838.01	69.433	0.00	0.00	0.00
5726.00†	15.666	58.724	5603.93	1.82	308.42	807.68	1756183.06	14581135.08	40°08'55.156"N	80°35'08.609"W	864.56	69.100	0.00	0.00	0.00
5741.25	15.666	58.724	5618.61	1.08	310.55	811.19	1756186.58	14581137.22	40°08'55.177"N	80°35'08.563"W	868.61	69.051	0.00	0.00	0.00
5826.00†	16.401	89.647	5700.22	3.27	316.58	832.98	1756208.36	14581143.24	40°08'55.235"N	80°35'08.282"W	891.11	69.190	10.00	0.87	36.49
5926.00†	21.842	115.716	5794.83	21.85	308.57	863.94	1756239.30	14581135.24	40°08'55.155"N	80°35'07.884"W	917.39	70.345	10.00	5.44	26.07
6026.00†	29.667	130.235	5884.92	57.18	284.46	899.68	1756275.03	14581111.13	40°08'54.915"N	80°35'07.425"W	943.58	72.454	10.00	7.82	14.52
6126.00†	38.443	138.863	5967.73	108.20	244.96	939.12	1756314.46	14581071.65	40°08'54.523"N	80°35'06.920"W	970.54	75.381	10.00	8.78	8.63
6226.00†	47.645	144.630	6040.77	173.35	191.28	981.07	1756356.39	14581017.99	40°08'53.990"N	80°35'06.383"W	999.54	78.967	10.00	9.20	5.77
6326.00†	57.060	148.899	6101.80	250.66	125.05	1024.24	1756399.55	14580951.79	40°08'53.334"N	80°35'05.831"W	1031.85	83.039	10.00	9.42	4.27
6426.00†	66.592	152.336	6148.97	337.77	48.28	1067.33	1756442.62	14580875.05	40°08'52.573"N	80°35'05.281"W	1068.42	87.410	10.00	9.53	3.44
6526.00†	76.189	155.305	6180.85	432.04	-36.68	1109.02	1756484.30	14580790.12	40°08'51.732"N	80°35'04.749"W	1109.63	91.895	10.00	9.60	2.97
6626.00†	85.819	158.037	6196.47	530.61	-127.28	1148.06	1756523.32	14580699.56	40°08'50.834"N	80°35'04.252"W	1155.09	96.326	10.00	9.63	2.73
6661.53	89.244	158.984	6198.00†	566.10	-160.30	1161.06	1756536.31	14580666.55	40°08'50.508"N	80°35'04.086"W	1172.07	97.861	10.00	9.64	2.66
6726.00†	89.244	158.984	6198.85	630.56	-220.48	1184.18	1756559.42	14580606.39	40°08'49.912"N	80°35'03.792"W	1204.53	100.547	0.00	0.00	0.00
6826.00†	89.244	158.984	6200.17	730.55	-313.82	1220.04	1756595.27	14580513.09	40°08'48.988"N	80°35'03.336"W	1259.75	104.425	0.00	0.00	0.00
6926.00†	89.244	158.984	6201.49	830.55	-407.16	1255.90	1756631.11	14580419.79	40°08'48.064"N	80°35'02.880"W	1320.25	107.962	0.00	0.00	0.00
7026.00†	89.244	158.984	6202.81	930.54	-500.50	1291.76	1756666.96	14580326.48	40°08'47.140"N	80°35'02.424"W	1385.33	111.179	0.00	0.00	0.00
7126.00†	89.244	158.984	6204.13	1030.53	-593.84	1327.62	1756702.81	14580233.18	40°08'46.216"N	80°35'01.968"W	1454.38	114.099	0.00	0.00	0.00
7226.00†	89.244	158.984	6205.45	1130.52	-687.18	1363.48	1756738.65	14580139.88	40°08'45.292"N	80°35'01.512"W	1526.85	116.748	0.00	0.00	0.00
7326.00†	89.244	158.984	6206.77	1230.51	-780.52	1399.34	1756774.50	14580046.57	40°08'44.368"N	80°35'01.055"W	1602.30	119.152	0.00	0.00	0.00
7426.00†	89.244	158.984	6208.09	1330.50	-873.86	1435.20	1756810.34	14579953.27	40°08'43.444"N	80°35'00.599"W	1680.30	121.336	0.00	0.00	0.00
7526.00†	89.244	158.984	6209.41	1430.49	-967.20	1471.06	1756846.19	14579859.96	40°08'42.519"N	80°35'00.143"W	1760.53	123.324	0.00	0.00	0.00
7626.00†	89.244	158.984	6210.73	1530.48	-1060.54	1506.92	1756882.04	14579766.66	40°08'41.595"N	80°34'59.687"W	1842.70	125.137	0.00	0.00	0.00
7726.00†	89.244	158.984	6212.04	1630.48	-1153.88	1542.78	1756917.88	14579673.36	40°08'40.671"N	80°34'59.231"W	1926.55	126.794	0.00	0.00	0.00
7826.00†	89.244	158.984	6213.36	1730.47	-1247.22	1578.64	1756953.73	14579580.05	40°08'39.747"N	80°34'58.775"W	2011.87	128.311	0.00	0.00	0.00
7926.00†	89.244	158.984	6214.68	1830.46	-1340.56	1614.50	1756989.57	14579486.75	40°08'38.823"N	80°34'58.319"W	2098.50	129.704	0.00	0.00	0.00
8026.00†	89.244	158.984	6216.00	1930.45	-1433.90	1650.36	1757025.42	14579393.45	40°08'37.899"N	80°34'57.863"W	2186.26	130.985	0.00	0.00	0.00
8126.00†	89.244	158.984	6217.32	2030.44	-1527.24	1686.22	1757061.26	14579300.14	40°08'36.975"N	80°34'57.406"W	2275.03	132.168	0.00	0.00	0.00
8226.00†	89.244	158.984	6218.64	2130.43	-1620.58	1722.08	1757097.11	14579206.84	40°08'36.051"N	80°34'56.950"W	2364.70	133.261	0.00	0.00	0.00

WV Department of
Environmental Protection



Planned Wellpath Report

Shawn Couch OHI 10H PWP Ex-01

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot #10	RECEIVED Office of Oil and Gas JUL 3 2017
Area	Ohio County, WV	Well	Shawn Couch OHI 10H	
Field	Ohio	Wellbore	Shawn Couch OHI 10H PWB	
Facility	Shawn Couch OHI Pad 1			

WV Department of Environmental Protection

WELLPATH DATA (159 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]
8326.00†	89.244	158.984	6219.96	2230.42	-1713.92	1757.94	1757132.96	14579113.53	40°08'35.127"N	80°34'56.494"W	2455.17	134.274	0.00	0.00	0.00
8426.00†	89.244	158.984	6221.28	2330.42	-1807.26	1793.80	1757168.80	14579020.23	40°08'34.203"N	80°34'56.038"W	2546.35	135.214	0.00	0.00	0.00
8526.00†	89.244	158.984	6222.60	2430.41	-1900.60	1829.66	1757204.65	14578926.93	40°08'33.279"N	80°34'55.582"W	2638.16	136.089	0.00	0.00	0.00
8626.00†	89.244	158.984	6223.92	2530.40	-1993.94	1865.51	1757240.49	14578833.62	40°08'32.355"N	80°34'55.126"W	2730.55	136.906	0.00	0.00	0.00
8726.00†	89.244	158.984	6225.24	2630.39	-2087.27	1901.37	1757276.34	14578740.32	40°08'31.431"N	80°34'54.670"W	2823.46	137.668	0.00	0.00	0.00
8826.00†	89.244	158.984	6226.56	2730.38	-2180.61	1937.23	1757312.19	14578647.02	40°08'30.507"N	80°34'54.214"W	2916.84	138.382	0.00	0.00	0.00
8926.00†	89.244	158.984	6227.88	2830.37	-2273.95	1973.09	1757348.03	14578553.71	40°08'29.583"N	80°34'53.758"W	3010.64	139.052	0.00	0.00	0.00
9026.00†	89.244	158.984	6229.20	2930.36	-2367.29	2008.95	1757383.88	14578460.41	40°08'28.659"N	80°34'53.302"W	3104.83	139.681	0.00	0.00	0.00
9126.00†	89.244	158.984	6230.52	3030.35	-2460.63	2044.81	1757419.72	14578367.10	40°08'27.735"N	80°34'52.846"W	3199.37	140.273	0.00	0.00	0.00
9226.00†	89.244	158.984	6231.84	3130.35	-2553.97	2080.67	1757455.57	14578273.80	40°08'26.811"N	80°34'52.390"W	3294.24	140.831	0.00	0.00	0.00
9326.00†	89.244	158.984	6233.16	3230.34	-2647.31	2116.53	1757491.42	14578180.50	40°08'25.887"N	80°34'51.933"W	3389.39	141.358	0.00	0.00	0.00
9426.00†	89.244	158.984	6234.48	3330.33	-2740.65	2152.39	1757527.26	14578087.19	40°08'24.963"N	80°34'51.477"W	3484.82	141.855	0.00	0.00	0.00
9526.00†	89.244	158.984	6235.79	3430.32	-2833.99	2188.25	1757563.11	14577993.89	40°08'24.039"N	80°34'51.021"W	3580.50	142.327	0.00	0.00	0.00
9626.00†	89.244	158.984	6237.11	3530.31	-2927.33	2224.11	1757598.95	14577900.59	40°08'23.114"N	80°34'50.565"W	3676.41	142.773	0.00	0.00	0.00
9726.00†	89.244	158.984	6238.43	3630.30	-3020.67	2259.97	1757634.80	14577807.28	40°08'22.190"N	80°34'50.109"W	3772.53	143.197	0.00	0.00	0.00
9826.00†	89.244	158.984	6239.75	3730.29	-3114.01	2295.83	1757670.64	14577713.98	40°08'21.266"N	80°34'49.653"W	3868.84	143.600	0.00	0.00	0.00
9926.00†	89.244	158.984	6241.07	3830.28	-3207.35	2331.69	1757706.49	14577620.67	40°08'20.342"N	80°34'49.197"W	3965.34	143.983	0.00	0.00	0.00
10026.00†	89.244	158.984	6242.39	3930.28	-3300.69	2367.55	1757742.34	14577527.37	40°08'19.418"N	80°34'48.741"W	4062.00	144.349	0.00	0.00	0.00
10126.00†	89.244	158.984	6243.71	4030.27	-3394.03	2403.41	1757778.18	14577434.07	40°08'18.494"N	80°34'48.285"W	4158.83	144.697	0.00	0.00	0.00
10226.00†	89.244	158.984	6245.03	4130.26	-3487.37	2439.27	1757814.03	14577340.76	40°08'17.570"N	80°34'47.829"W	4255.80	145.029	0.00	0.00	0.00
10326.00†	89.244	158.984	6246.35	4230.25	-3580.71	2475.13	1757849.87	14577247.46	40°08'16.646"N	80°34'47.373"W	4352.90	145.346	0.00	0.00	0.00
10426.00†	89.244	158.984	6247.67	4330.24	-3674.05	2510.99	1757885.72	14577154.15	40°08'15.722"N	80°34'46.917"W	4450.14	145.650	0.00	0.00	0.00
10526.00†	89.244	158.984	6248.99	4430.23	-3767.39	2546.85	1757921.57	14577060.85	40°08'14.798"N	80°34'46.461"W	4547.49	145.940	0.00	0.00	0.00
10626.00†	89.244	158.984	6250.31	4530.22	-3860.73	2582.71	1757957.41	14576967.55	40°08'13.874"N	80°34'46.005"W	4644.96	146.219	0.00	0.00	0.00
10726.00†	89.244	158.984	6251.63	4630.21	-3954.07	2618.57	1757993.26	14576874.24	40°08'12.950"N	80°34'45.549"W	4742.53	146.486	0.00	0.00	0.00
10826.00†	89.244	158.984	6252.95	4730.21	-4047.41	2654.43	1758029.10	14576780.94	40°08'12.026"N	80°34'45.093"W	4840.20	146.742	0.00	0.00	0.00
10926.00†	89.244	158.984	6254.27	4830.20	-4140.75	2690.29	1758064.95	14576687.64	40°08'11.102"N	80°34'44.637"W	4937.96	146.988	0.00	0.00	0.00
11026.00†	89.244	158.984	6255.59	4930.19	-4234.09	2726.15	1758100.80	14576594.33	40°08'10.178"N	80°34'44.181"W	5035.81	147.224	0.00	0.00	0.00
11126.00†	89.244	158.984	6256.91	5030.18	-4327.43	2762.01	1758136.64	14576501.03	40°08'09.254"N	80°34'43.725"W	5133.75	147.452	0.00	0.00	0.00
11226.00†	89.244	158.984	6258.22	5130.17	-4420.77	2797.87	1758172.49	14576407.72	40°08'08.330"N	80°34'43.269"W	5231.76	147.671	0.00	0.00	0.00

Planned Wellpath Report

Shawn Couch OHI 10H PWP Ex-01

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #10
Area	Ohio County, WV	Well	Shawn Couch OHI 10H
Field	Ohio	Wellbore	Shawn Couch OHI 10H PWB
Facility	Shawn Couch OHI Pad 1		

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JUL 3 2017

WELLPATH DATA (159 stations) † = interpolated/extrapolated station

WV Department of
Environmental Protection

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]
11326.00†	89.244	158.984	6259.54	5230.16	-4514.11	2833.73	1758208.33	14576314.42	40°08'07.405"N	80°34'42.813"W	5329.84	147.882	0.00	0.00	0.00
11426.00†	89.244	158.984	6260.86	5330.15	-4607.45	2869.59	1758244.18	14576221.12	40°08'06.481"N	80°34'42.357"W	5428.00	148.085	0.00	0.00	0.00
11526.00†	89.244	158.984	6262.18	5430.15	-4700.79	2905.45	1758280.03	14576127.81	40°08'05.557"N	80°34'41.901"W	5526.22	148.281	0.00	0.00	0.00
11626.00†	89.244	158.984	6263.50	5530.14	-4794.13	2941.31	1758315.87	14576034.51	40°08'04.633"N	80°34'41.445"W	5624.50	148.470	0.00	0.00	0.00
11726.00†	89.244	158.984	6264.82	5630.13	-4887.47	2977.17	1758351.72	14575941.21	40°08'03.709"N	80°34'40.989"W	5722.84	148.653	0.00	0.00	0.00
11826.00†	89.244	158.984	6266.14	5730.12	-4980.81	3013.03	1758387.56	14575847.90	40°08'02.785"N	80°34'40.533"W	5821.24	148.829	0.00	0.00	0.00
11926.00†	89.244	158.984	6267.46	5830.11	-5074.15	3048.89	1758423.41	14575754.60	40°08'01.861"N	80°34'40.077"W	5919.69	149.000	0.00	0.00	0.00
12026.00†	89.244	158.984	6268.78	5930.10	-5167.49	3084.75	1758459.25	14575661.29	40°08'00.937"N	80°34'39.621"W	6018.19	149.165	0.00	0.00	0.00
12126.00†	89.244	158.984	6270.10	6030.09	-5260.83	3120.61	1758495.10	14575567.99	40°08'00.013"N	80°34'39.165"W	6116.74	149.325	0.00	0.00	0.00
12226.00†	89.244	158.984	6271.42	6130.08	-5354.17	3156.47	1758530.95	14575474.69	40°07'59.089"N	80°34'38.709"W	6215.34	149.479	0.00	0.00	0.00
12326.00†	89.244	158.984	6272.74	6230.08	-5447.51	3192.33	1758566.79	14575381.38	40°07'58.165"N	80°34'38.253"W	6313.98	149.629	0.00	0.00	0.00
12426.00†	89.244	158.984	6274.06	6330.07	-5540.85	3228.19	1758602.64	14575288.08	40°07'57.241"N	80°34'37.797"W	6412.66	149.774	0.00	0.00	0.00
12526.00†	89.244	158.984	6275.38	6430.06	-5634.19	3264.05	1758638.48	14575194.78	40°07'56.317"N	80°34'37.341"W	6511.38	149.915	0.00	0.00	0.00
12626.00†	89.244	158.984	6276.70	6530.05	-5727.53	3299.91	1758674.33	14575101.47	40°07'55.393"N	80°34'36.885"W	6610.14	150.052	0.00	0.00	0.00
12726.00†	89.244	158.984	6278.02	6630.04	-5820.87	3335.77	1758710.18	14575008.17	40°07'54.469"N	80°34'36.429"W	6708.94	150.184	0.00	0.00	0.00
12826.00†	89.244	158.984	6279.34	6730.03	-5914.21	3371.63	1758746.02	14574914.86	40°07'53.544"N	80°34'35.973"W	6807.77	150.313	0.00	0.00	0.00
12926.00†	89.244	158.984	6280.66	6830.02	-6007.55	3407.49	1758781.87	14574821.56	40°07'52.620"N	80°34'35.517"W	6906.64	150.438	0.00	0.00	0.00
13026.00†	89.244	158.984	6281.97	6930.01	-6100.89	3443.34	1758817.71	14574728.26	40°07'51.696"N	80°34'35.061"W	7005.53	150.560	0.00	0.00	0.00
13126.00†	89.244	158.984	6283.29	7030.01	-6194.23	3479.20	1758853.56	14574634.95	40°07'50.772"N	80°34'34.606"W	7104.46	150.678	0.00	0.00	0.00
13226.00†	89.244	158.984	6284.61	7130.00	-6287.57	3515.06	1758889.41	14574541.65	40°07'49.848"N	80°34'34.150"W	7203.42	150.793	0.00	0.00	0.00
13326.00†	89.244	158.984	6285.93	7229.99	-6380.91	3550.92	1758925.25	14574448.35	40°07'48.924"N	80°34'33.694"W	7302.40	150.904	0.00	0.00	0.00
13426.00†	89.244	158.984	6287.25	7329.98	-6474.25	3586.78	1758961.10	14574355.04	40°07'48.000"N	80°34'33.238"W	7401.41	151.013	0.00	0.00	0.00
13526.00†	89.244	158.984	6288.57	7429.97	-6567.59	3622.64	1758996.94	14574261.74	40°07'47.076"N	80°34'32.782"W	7500.45	151.119	0.00	0.00	0.00
13626.00†	89.244	158.984	6289.89	7529.96	-6660.93	3658.50	1759032.79	14574168.43	40°07'46.152"N	80°34'32.326"W	7599.52	151.222	0.00	0.00	0.00
13726.00†	89.244	158.984	6291.21	7629.95	-6754.27	3694.36	1759068.63	14574075.13	40°07'45.228"N	80°34'31.870"W	7698.60	151.323	0.00	0.00	0.00
13826.00†	89.244	158.984	6292.53	7729.95	-6847.61	3730.22	1759104.48	14573981.83	40°07'44.304"N	80°34'31.414"W	7797.71	151.421	0.00	0.00	0.00
13926.00†	89.244	158.984	6293.85	7829.94	-6940.95	3766.08	1759140.33	14573888.52	40°07'43.380"N	80°34'30.958"W	7896.84	151.516	0.00	0.00	0.00
14026.00†	89.244	158.984	6295.17	7929.93	-7034.29	3801.94	1759176.17	14573795.22	40°07'42.456"N	80°34'30.502"W	7996.00	151.609	0.00	0.00	0.00
14126.00†	89.244	158.984	6296.49	8029.92	-7127.63	3837.80	1759212.02	14573701.92	40°07'41.532"N	80°34'30.046"W	8095.17	151.700	0.00	0.00	0.00
14226.00†	89.244	158.984	6297.81	8129.91	-7220.97	3873.66	1759247.86	14573608.61	40°07'40.607"N	80°34'29.590"W	8194.37	151.789	0.00	0.00	0.00

Planned Wellpath Report

Shawn Couch OHI 10H PWP Ex-01

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot #10	RECEIVED Office of Oil and Gas
Area	Ohio County, WV	Well	Shawn Couch OHI 10H	JUL 3 2017
Field	Ohio	Wellbore	Shawn Couch OHI 10H PWB	
Facility	Shawn Couch OHI Pad 1			WV Department of Environmental Protection

WELLPATH DATA (159 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]
14326.00†	89.244	158.984	6299.13	8229.90	-7314.31	3909.52	1759283.71	14573515.31	40°07'39.683"N	80°34'29.135"W	8293.58	151.875	0.00	0.00	0.00
14426.00†	89.244	158.984	6300.45	8329.89	-7407.65	3945.38	1759319.56	14573422.00	40°07'38.759"N	80°34'28.679"W	8392.81	151.960	0.00	0.00	0.00
14526.00†	89.244	158.984	6301.77	8429.88	-7500.99	3981.24	1759355.40	14573328.70	40°07'37.835"N	80°34'28.223"W	8492.06	152.042	0.00	0.00	0.00
14626.00†	89.244	158.984	6303.09	8529.88	-7594.33	4017.10	1759391.25	14573235.40	40°07'36.911"N	80°34'27.767"W	8591.33	152.123	0.00	0.00	0.00
14726.00†	89.244	158.984	6304.40	8629.87	-7687.67	4052.96	1759427.09	14573142.09	40°07'35.987"N	80°34'27.311"W	8690.61	152.202	0.00	0.00	0.00
14826.00†	89.244	158.984	6305.72	8729.86	-7781.01	4088.82	1759462.94	14573048.79	40°07'35.063"N	80°34'26.855"W	8789.91	152.279	0.00	0.00	0.00
14926.00†	89.244	158.984	6307.04	8829.85	-7874.35	4124.68	1759498.79	14572955.48	40°07'34.139"N	80°34'26.399"W	8889.23	152.354	0.00	0.00	0.00
15026.00†	89.244	158.984	6308.36	8929.84	-7967.69	4160.54	1759534.63	14572862.18	40°07'33.215"N	80°34'25.943"W	8988.56	152.427	0.00	0.00	0.00
15076.53	89.244	158.984	6309.03 ²	8980.37	-8014.86	4178.66	1759552.75	14572815.03	40°07'32.748"N	80°34'25.713"W	9038.76	152.464	0.00	0.00	0.00

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) Shawn Couch OHI 10H LP Rev-2	6661.53	6198.00	-160.30	1161.06	1756536.31	14580666.55	40°08'50.508"N	80°35'04.086"W	point
2) Shawn Couch OHI 10H BHL Rev-2	15076.53	6309.03	-8014.86	4178.66	1759552.75	14572815.03	40°07'32.748"N	80°34'25.713"W	point

SURVEY PROGRAM - Ref Wellbore: Shawn Couch OHI 10H PWB Ref Wellpath: Shawn Couch OHI 10H PWP Ex-01

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	1000.00	Generic gyro - continuous (Standard)		Shawn Couch OHI 10H PWB
1000.00	15076.53	ISCWSA MWD, Rev. 2 (Standard)		Shawn Couch OHI 10H PWB