

SOUTHWESTERN ENERGY

Location: Ohio County, WV
 Slot: Slot 3H
 Well: Benjamin Honecker OHI 3H
 Facility: Benjamin Honecker OHI PaWellbore

Plot reference wellpath is Benjamin Honecker OHI 3H PWP Rev-B-Q Grid System NAD83 / UTM Zone 17 North, US feet
 True vertical depths are referenced to SDC 42 (RKB)
 Measured depths are referenced to SDC 42 (RKB)
 SDC 42 (RKB) to Mean Sea Level: 1130 feet
 Mean Sea Level to Ground level (At Slot, Slot 3H): -1104 feet
 Coordinates are in feet referenced to Slot



Location Information

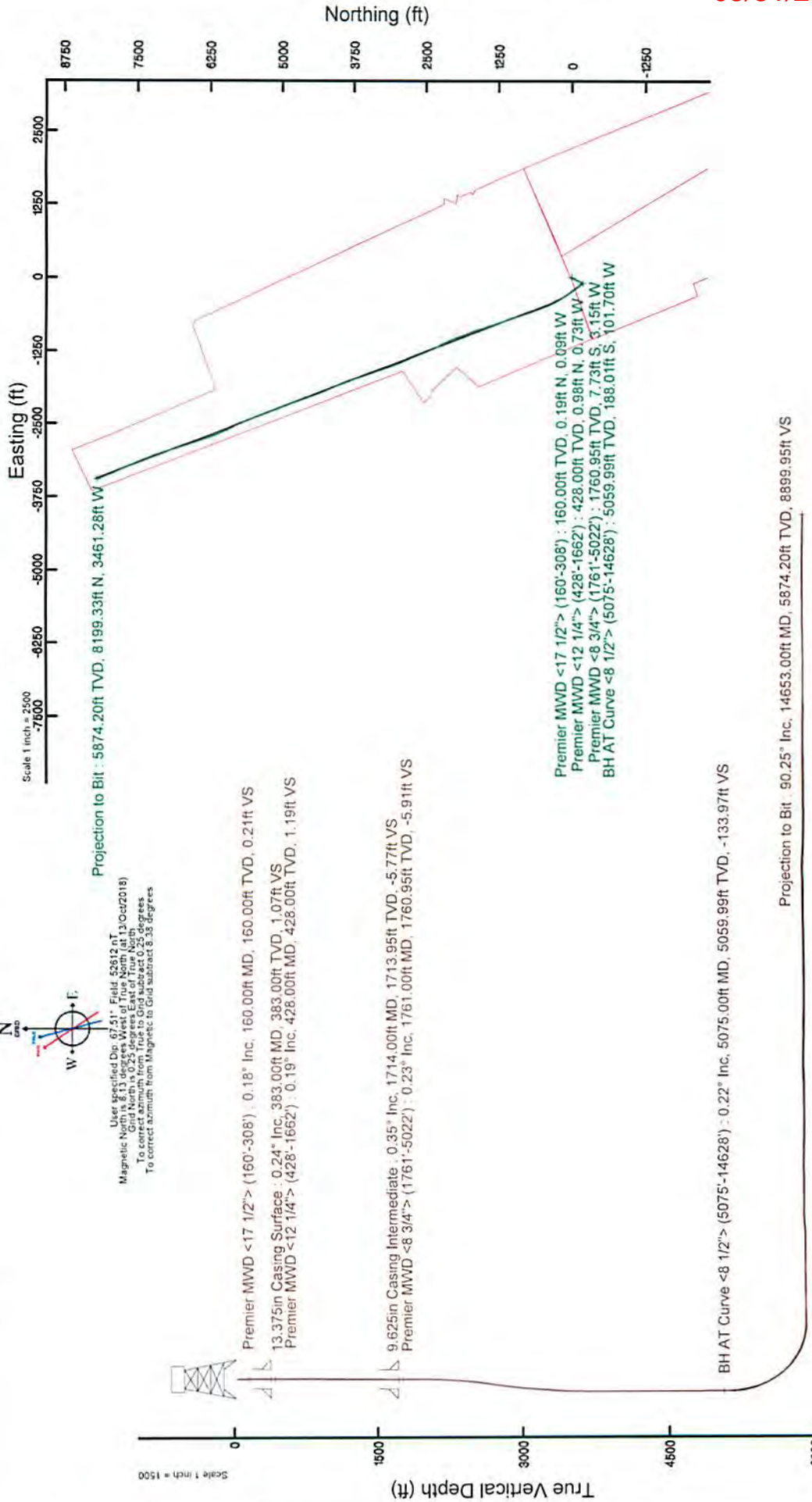
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Benjamin Honecker OHI Pad	1749038.530	1459332.530	40°09'17.198"N	80°36'40.524"W
Slot	Local N (ft)	Local E (ft)	Grid North (US ft)	Grid East (US ft)
Slot 3H	-19.19	15.01	1749053.534	14593313.343
SDC 42 (RKB) to Ground level (At Slot, Slot 3H)	26ft			
Mean Sea Level to Ground level (At Slot, Slot 3H)	-1104ft			
SDC 42 (RKB) to Mean Sea Level	1130ft			

Comments

API: 47-069-02451-0000
 BH Job #: 109444432
 Rig: SDC 42
 Duration: 10/16/2018 - 10/20/2018



User: g11 Field Dip: 0.751° Field Azimuth: 113.0 Oct 2018
 Magnetic North is 0.25 degrees East of True North
 To correct azimuth from True to Grid subtract 0.25 degrees
 To correct azimuth from Magnetic to Grid subtract 0.38 degrees



Projection to Bit: 5874.20ft TVD, 8199.33ft N, 3461.28ft W

Premier MWD <17 1/2"> (160'-308') : 160.00ft TVD, 0.19ft N, 0.09ft W
 Premier MWD <12 1/4"> (428'-1662') : 428.00ft TVD, 0.98ft N, 0.73ft W
 Premier MWD <8 3/4"> (1761'-5022') : 1760.95ft TVD, 7.73ft S, 3.15ft W
 BH AT Curve <8 1/2"> (5075'-14628') : 5059.99ft TVD, 188.01ft S, 101.70ft W

Projection to Bit: 90.25° Inc, 14653.00ft MD, 5874.20ft TVD, 8899.95ft VS



05/31/2019

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY		Slot	Slot 3H
Area	Ohio County, WV		Well	Benjamin Honecker OHI 3H
Field	Ohio		Wellbore	Benjamin Honecker OHI 3H AWB
Facility	Benjamin Honecker OHI Pad			

REPORT SETUP INFORMATION

Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.1	
North Reference	Grid	User	Atenjen	
Scale	0.999614	Report Generated	24/Oct/2018 at 16:28	
Convergence at slot	0.25° East	Database/Source file	WA_MPL_EASTERNUS_Defn/Benjamin_Honecker_OHI_3H_AWP_Proj_14653_.xml	

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-19.19	15.01	1749053.53	14583313.34	40°09'17.008"N	80°36'40.332"W
Facility Reference Pt			1749038.53	14583332.53	40°09'17.198"N	80°36'40.524"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	1130.00ft
Horizontal Reference Pt	Slot	SDC 42 (RKB) to Mean Sea Level	1130.00ft
Vertical Reference Pt	SDC 42 (RKB)	SDC 42 (RKB) to Ground Level at Slot (Slot 3H)	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	337.22°

05/31/2019

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Office of Oil and Gas
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WV Department of
Environmental Protection

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SOUTHWESTERN ENERGY	Well	Benjamin Honecker OHI 3H
Area	Wellbore	Benjamin Honecker OHI 3H AWB
Field		
Facility		

WELLPATH DATA (170 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	336.040	0.00	0.00	0.00	0.00	1749053.53	14583313.34	40°09'17.008"N	80°36'40.332"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	336.040	26.00	0.00	0.00	0.00	1749053.53	14583313.34	40°09'17.008"N	80°36'40.332"W	0.00	0.000	0.00	0.00	0.00
160.00	0.180	336.040	160.00	0.21	0.19	-0.09	1749053.45	14583313.53	40°09'17.010"N	80°36'40.333"W	0.21	336.040	0.13	0.13	-17.88
221.00	0.110	348.190	221.00	0.36	0.34	-0.14	1749053.40	14583313.68	40°09'17.011"N	80°36'40.334"W	0.36	337.982	0.12	-0.11	19.92
308.00	0.360	324.010	308.00	0.71	0.64	-0.31	1749053.22	14583313.98	40°09'17.014"N	80°36'40.336"W	0.71	333.865	0.30	0.29	-27.79
428.00	0.190	280.660	428.00	1.19	0.98	-0.73	1749052.80	14583314.32	40°09'17.018"N	80°36'40.341"W	1.22	323.329	0.21	-0.14	-36.12
519.00	0.100	56.340	519.00	1.29	1.05	-0.81	1749052.72	14583314.40	40°09'17.018"N	80°36'40.342"W	1.33	322.341	0.30	-0.10	149.10
610.00	0.210	279.760	610.00	1.39	1.13	-0.91	1749052.62	14583314.47	40°09'17.019"N	80°36'40.344"W	1.45	321.011	0.32	0.12	-150.09
702.00	0.330	252.290	702.00	1.51	1.07	-1.33	1749052.20	14583314.42	40°09'17.019"N	80°36'40.349"W	1.71	308.923	0.19	0.13	-29.86
792.00	0.300	239.340	791.99	1.50	0.88	-1.78	1749051.76	14583314.22	40°09'17.017"N	80°36'40.355"W	1.98	296.185	0.09	-0.03	-14.39
882.00	0.650	186.490	881.99	1.02	0.25	-2.04	1749051.49	14583313.59	40°09'17.011"N	80°36'40.358"W	2.06	276.925	0.58	0.39	-58.72
973.00	0.700	166.740	972.99	0.02	-0.81	-1.97	1749051.56	14583312.54	40°09'17.000"N	80°36'40.357"W	2.13	247.755	0.26	0.05	-21.70
1063.00	0.860	175.810	1062.98	-1.16	-2.01	-1.80	1749051.74	14583311.33	40°09'16.988"N	80°36'40.355"W	2.70	221.705	0.22	0.18	10.08
1153.00	0.720	194.050	1152.97	-2.26	-3.24	-1.88	1749051.65	14583310.11	40°09'16.976"N	80°36'40.356"W	3.75	210.192	0.32	-0.16	20.27
1243.00	0.580	210.120	1242.96	-2.98	-4.18	-2.25	1749051.29	14583309.16	40°09'16.967"N	80°36'40.361"W	4.75	208.287	0.25	-0.16	17.86
1333.00	0.220	174.080	1332.96	-3.42	-4.75	-2.46	1749051.08	14583308.60	40°09'16.961"N	80°36'40.364"W	5.35	207.402	0.47	-0.40	-40.04
1424.00	0.330	189.420	1423.96	-3.81	-5.18	-2.48	1749051.05	14583308.17	40°09'16.957"N	80°36'40.364"W	5.74	205.637	0.14	0.12	16.86
1514.00	0.440	194.530	1513.96	-4.31	-5.77	-2.61	1749050.92	14583307.58	40°09'16.951"N	80°36'40.366"W	6.33	204.380	0.13	0.12	5.68
1604.00	0.660	185.470	1603.95	-5.04	-6.62	-2.75	1749050.79	14583306.73	40°09'16.943"N	80°36'40.368"W	7.17	202.564	0.26	0.24	-10.07
1662.00	0.490	202.730	1661.95	-5.51	-7.18	-2.88	1749050.66	14583306.17	40°09'16.937"N	80°36'40.369"W	7.74	201.842	0.42	-0.29	29.76
1761.00	0.230	214.090	1760.95	-5.91	-7.73	-3.15	1749050.38	14583305.61	40°09'16.932"N	80°36'40.373"W	8.35	202.176	0.27	-0.26	11.47
1806.00	0.200	212.610	1805.95	-6.00	-7.88	-3.25	1749050.29	14583305.47	40°09'16.930"N	80°36'40.374"W	8.52	202.397	0.07	-0.07	-3.29
1896.00	0.190	217.890	1895.95	-6.17	-8.13	-3.42	1749050.11	14583305.22	40°09'16.928"N	80°36'40.377"W	8.82	202.837	0.02	-0.01	5.87
1987.00	0.240	183.840	1986.95	-6.41	-8.44	-3.53	1749050.01	14583304.91	40°09'16.925"N	80°36'40.378"W	9.14	202.694	0.15	0.05	-37.42
2077.00	1.670	215.560	2076.93	-7.27	-9.69	-4.30	1749049.23	14583303.66	40°09'16.912"N	80°36'40.388"W	10.60	203.943	1.63	1.59	35.24
2167.00	4.680	219.770	2166.78	-9.65	-13.58	-7.41	1749046.12	14583299.77	40°09'16.874"N	80°36'40.428"W	15.47	208.635	3.35	3.34	4.68
2258.00	7.110	216.130	2257.30	-14.27	-20.98	-13.11	1749040.43	14583292.37	40°09'16.801"N	80°36'40.502"W	24.74	211.999	2.70	2.67	-4.00
2348.00	7.940	215.420	2346.52	-20.42	-30.55	-20.00	1749033.54	14583282.81	40°09'16.707"N	80°36'40.591"W	36.51	213.211	0.93	0.92	-0.79
2439.00	9.330	215.950	2436.49	-27.56	-41.64	-27.97	1749025.57	14583271.72	40°09'16.598"N	80°36'40.695"W	50.16	213.890	1.53	1.53	0.58
2529.00	10.770	208.570	2525.11	-36.60	-54.93	-36.28	1749017.27	14583258.43	40°09'16.467"N	80°36'40.802"W	65.83	213.440	2.14	1.60	-8.20



Actual Wellpath Report

Benjamin Honecker OHI 3H AWP Proj:14653
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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 3H
Area	Ohio County, WV	Well	Benjamin Honecker OHI 3H
Field	Ohio	Wellbore	Benjamin Honecker OHI 3H AWB
Facility	Benjamin Honecker OHI Pad		

WELLPATH DATA (170 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]
2619.00	11.420	205.290	2613.43	-47.81	-70.38	-44.10	1749009.45	14583242.99	40°09'16.314"N	80°36'40.904"W	83.05	212.076	1.01	0.72	-3.64
2709.00	11.420	200.230	2701.65	-60.28	-86.79	-50.99	1749002.56	14583226.58	40°09'16.153"N	80°36'40.994"W	100.66	210.435	1.11	0.00	-5.62
2800.00	10.110	197.770	2791.04	-72.94	-102.85	-56.55	1748997.01	14583210.53	40°09'15.994"N	80°36'41.066"W	117.37	208.801	1.53	-1.44	-2.70
2890.00	8.660	190.020	2879.84	-84.63	-117.05	-60.14	1748993.42	14583196.34	40°09'15.854"N	80°36'41.113"W	131.59	207.193	2.13	-1.61	-8.61
2980.00	7.860	194.940	2968.91	-95.20	-129.67	-62.90	1748990.66	14583183.73	40°09'15.729"N	80°36'41.149"W	144.12	205.878	1.19	-0.89	5.47
3071.00	7.390	211.900	3059.11	-103.50	-140.65	-67.60	1748985.96	14583172.75	40°09'15.621"N	80°36'41.210"W	156.05	205.670	2.52	-0.52	18.64
3161.00	7.410	216.210	3148.36	-109.84	-150.24	-74.09	1748979.48	14583163.16	40°09'15.526"N	80°36'41.295"W	167.52	206.248	0.62	0.02	4.79
3251.00	7.610	212.350	3237.59	-116.25	-159.97	-80.69	1748972.88	14583153.43	40°09'15.431"N	80°36'41.380"W	179.17	206.765	0.63	0.22	-4.51
3342.00	6.570	205.390	3327.90	-123.19	-169.78	-86.12	1748967.44	14583143.63	40°09'15.334"N	80°36'41.451"W	190.37	206.897	1.46	-1.14	-7.43
3432.00	4.760	206.420	3417.45	-129.06	-177.77	-89.99	1748963.58	14583135.64	40°09'15.255"N	80°36'41.501"W	199.26	206.850	2.01	-2.01	1.14
3522.00	3.600	219.670	3507.22	-132.81	-183.29	-93.46	1748960.11	14583130.12	40°09'15.201"N	80°36'41.546"W	205.75	207.016	1.67	-1.29	14.72
3612.00	2.180	234.770	3597.10	-134.49	-186.46	-96.66	1748956.91	14583126.96	40°09'15.170"N	80°36'41.587"W	210.02	207.403	1.78	-1.58	16.78
3703.00	1.530	247.870	3688.05	-134.85	-187.91	-99.20	1748954.37	14583125.50	40°09'15.155"N	80°36'41.620"W	212.49	207.830	0.85	-0.71	14.40
3793.00	1.580	240.660	3778.02	-134.97	-188.97	-101.40	1748952.18	14583124.44	40°09'15.145"N	80°36'41.648"W	214.46	208.216	0.22	0.06	-8.01
3884.00	0.490	223.760	3869.00	-135.27	-189.87	-102.76	1748950.82	14583123.55	40°09'15.136"N	80°36'41.666"W	215.89	208.422	1.23	-1.20	-18.57
3974.00	0.420	134.040	3959.00	-135.73	-190.38	-102.79	1748950.79	14583123.04	40°09'15.131"N	80°36'41.666"W	216.35	208.365	0.72	-0.08	-99.69
4064.00	0.270	107.750	4049.00	-136.17	-190.67	-102.35	1748951.23	14583122.75	40°09'15.128"N	80°36'41.661"W	216.40	208.226	0.24	-0.17	-29.21
4155.00	0.370	112.580	4140.00	-136.52	-190.85	-101.87	1748951.70	14583122.57	40°09'15.126"N	80°36'41.655"W	216.34	208.093	0.11	0.11	5.31
4245.00	0.060	7.880	4230.00	-136.68	-190.91	-101.60	1748951.98	14583122.50	40°09'15.126"N	80°36'41.651"W	216.26	208.020	0.43	-0.34	-116.33
4336.00	0.100	314.960	4321.00	-136.57	-190.81	-101.65	1748951.93	14583122.61	40°09'15.127"N	80°36'41.652"W	216.20	208.045	0.09	0.04	-58.15
4426.00	0.150	55.190	4411.00	-136.47	-190.69	-101.61	1748951.97	14583122.73	40°09'15.128"N	80°36'41.651"W	216.07	208.051	0.22	0.06	111.37
4517.00	0.210	331.240	4502.00	-136.28	-190.47	-101.59	1748951.99	14583122.94	40°09'15.130"N	80°36'41.651"W	215.87	208.073	0.27	0.07	-92.25
4607.00	0.070	27.830	4592.00	-136.08	-190.28	-101.64	1748951.93	14583123.14	40°09'15.132"N	80°36'41.652"W	215.73	208.110	0.20	-0.16	62.88
4697.00	0.370	336.790	4682.00	-135.76	-189.96	-101.73	1748951.84	14583123.45	40°09'15.135"N	80°36'41.653"W	215.49	208.170	0.37	0.33	-56.71
4787.00	0.420	349.600	4771.99	-135.14	-189.37	-101.91	1748951.67	14583124.04	40°09'15.141"N	80°36'41.655"W	215.05	208.286	0.11	0.06	14.23
4878.00	0.290	25.140	4862.99	-134.66	-188.84	-101.87	1748951.71	14583124.58	40°09'15.146"N	80°36'41.655"W	214.56	208.345	0.27	-0.14	39.05
4968.00	0.160	352.290	4952.99	-134.39	-188.51	-101.79	1748951.79	14583124.91	40°09'15.150"N	80°36'41.653"W	214.23	208.368	0.20	-0.14	-36.50
5022.00	0.360	19.720	5006.99	-134.19	-188.27	-101.74	1748951.83	14583125.14	40°09'15.152"N	80°36'41.653"W	214.00	208.386	0.43	0.37	50.80
5075.00	0.220	353.160	5059.99	-133.97	-188.01	-101.70	1748951.88	14583125.40	40°09'15.154"N	80°36'41.652"W	213.75	208.409	0.36	-0.26	-50.11
5101.00	0.550	329.930	5085.99	-133.80	-187.86	-101.76	1748951.81	14583125.56	40°09'15.156"N	80°36'41.653"W	213.65	208.445	1.38	1.27	-89.35

05/31/2019



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Facility	Benjamin Honecker OHI Pad		

WELLPATH DATA (170 stations)

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate
[ft]	[°]	[°]	[ft]	[ft]	[ft]	[ft]	[US ft]	[US ft]	[°]	[°]	[ft]	[°]	[°/100ft]	[°/100ft]	[°/100ft]
5191.00	6.020	322.480	5175.81	-128.80	-183.74	-104.86	1748948.72	14583129.68	40°09'15.197"N	80°36'41.693"W	211.55	209.713	6.08	6.08	-8.28
5282.00	10.130	327.880	5265.89	-116.29	-173.17	-112.02	1748941.56	14583140.24	40°09'15.302"N	80°36'41.784"W	206.24	212.899	4.59	4.52	5.93
5372.00	15.100	325.010	5363.69	-97.01	-156.85	-122.96	1748930.62	14583156.55	40°09'15.463"N	80°36'41.924"W	199.30	218.094	5.56	5.52	-3.19
5463.00	21.680	320.820	5440.00	-69.27	-134.08	-140.40	1748913.19	14583179.31	40°09'15.689"N	80°36'42.148"W	194.14	226.317	7.37	7.23	-4.60
5553.00	27.480	320.380	5521.81	-33.41	-105.18	-164.16	1748889.44	14583208.20	40°09'15.976"N	80°36'42.452"W	194.96	237.352	6.45	6.44	-0.49
5643.00	34.380	322.650	5598.96	11.11	-68.94	-192.85	1748860.76	14583244.43	40°09'16.335"N	80°36'42.820"W	204.80	250.330	7.77	7.67	2.52
5734.00	42.150	324.390	5670.36	65.83	-23.62	-226.27	1748827.35	14583289.73	40°09'16.784"N	80°36'43.247"W	227.50	264.041	8.62	8.54	1.91
5824.00	51.090	326.120	5732.12	129.77	30.11	-263.45	1748790.18	14583343.44	40°09'17.317"N	80°36'43.723"W	265.17	276.521	10.03	9.93	1.92
5915.00	56.110	326.550	5786.10	201.68	91.06	-304.03	1748749.62	14583404.37	40°09'17.921"N	80°36'44.242"W	317.38	286.673	5.53	5.52	0.47
6005.00	62.380	326.770	5832.10	277.67	155.64	-346.52	1748707.15	14583468.93	40°09'18.561"N	80°36'44.786"W	379.87	294.188	6.97	6.97	0.24
6095.00	70.950	329.360	5867.72	359.18	225.73	-390.13	1748663.55	14583538.99	40°09'19.256"N	80°36'45.344"W	450.73	300.054	9.88	9.52	2.88
6140.00	75.280	330.960	5880.79	401.91	263.08	-411.55	1748642.15	14583576.32	40°09'19.625"N	80°36'45.617"W	488.45	302.588	10.21	9.62	3.56
6185.00	78.060	332.690	5891.16	445.49	301.67	-432.21	1748621.49	14583614.90	40°09'20.008"N	80°36'45.881"W	527.08	304.914	7.22	6.18	3.84
6231.00	81.040	334.770	5899.51	490.64	342.23	-452.23	1748601.48	14583655.44	40°09'20.409"N	80°36'46.137"W	567.13	307.117	7.86	6.48	4.52
6275.00	85.070	336.320	5904.83	534.29	381.98	-470.30	1748583.41	14583695.18	40°09'20.803"N	80°36'46.367"W	605.89	309.084	9.80	9.16	3.52
6321.00	88.920	337.540	5907.24	580.21	424.24	-488.30	1748565.42	14583737.42	40°09'21.221"N	80°36'46.597"W	646.85	310.984	8.78	8.37	2.65
6366.00	90.460	339.380	5907.48	625.20	466.09	-504.82	1748548.91	14583779.25	40°09'21.636"N	80°36'46.807"W	687.08	312.716	5.33	3.42	4.09
6456.00	89.170	338.780	5907.77	715.15	550.16	-536.96	1748516.79	14583863.29	40°09'22.468"N	80°36'47.216"W	768.76	315.696	1.58	-1.43	-0.67
6546.00	90.250	340.770	5908.23	805.05	634.60	-568.07	1748485.69	14583947.70	40°09'23.304"N	80°36'47.612"W	851.71	318.166	2.52	1.20	2.21
6637.00	90.680	341.160	5907.49	895.85	720.62	-597.74	1748456.02	14584033.68	40°09'24.155"N	80°36'47.990"W	936.27	320.325	0.64	0.47	0.43
6727.00	90.370	340.990	5906.66	985.65	805.75	-626.93	1748426.84	14584118.78	40°09'24.997"N	80°36'48.361"W	1020.92	322.115	0.39	-0.34	-0.19
6817.00	90.400	341.730	5906.06	1075.41	891.03	-655.70	1748398.09	14584204.03	40°09'25.841"N	80°36'48.727"W	1105.29	323.651	0.82	0.03	0.82
6908.00	90.370	340.500	5905.45	1166.20	977.13	-685.15	1748368.65	14584290.09	40°09'26.693"N	80°36'49.101"W	1193.40	324.962	1.35	-0.03	-1.35
6998.00	90.310	340.240	5904.91	1256.06	1061.89	-715.39	1748338.43	14584374.83	40°09'27.532"N	80°36'49.486"W	1280.39	326.032	0.30	-0.07	-0.29
7089.00	90.310	339.710	5904.42	1346.95	1147.39	-746.55	1748307.28	14584460.29	40°09'28.379"N	80°36'49.882"W	1368.88	326.950	0.58	0.00	-0.58
7178.00	90.430	339.980	5903.85	1435.86	1230.94	-777.21	1748276.63	14584543.80	40°09'29.206"N	80°36'50.273"W	1455.77	327.732	0.33	0.13	0.30
7269.00	90.430	342.710	5903.16	1526.61	1317.15	-806.32	1748247.53	14584629.98	40°09'30.059"N	80°36'50.643"W	1544.35	328.526	3.00	0.00	3.00
7359.00	90.460	342.040	5902.46	1616.24	1402.92	-833.57	1748220.29	14584715.72	40°09'30.908"N	80°36'50.989"W	1631.88	329.283	0.75	0.03	-0.74
7450.00	90.430	342.170	5901.76	1706.91	1489.52	-861.53	1748192.34	14584802.28	40°09'31.764"N	80°36'51.344"W	1720.72	329.955	0.15	-0.03	0.14
7540.00	90.370	342.380	5901.13	1796.56	1575.24	-888.93	1748164.95	14584887.97	40°09'32.613"N	80°36'51.692"W	1808.75	330.563	0.24	-0.07	0.23

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Actual Wellpath Report

Benjamin Honecker OHI 3H AWP Proj:14653'
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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 3H
Area	Ohio County, WV	Well	Benjamin Honecker OHI 3H
Field	Ohio	Wellbore	Benjamin Honecker OHI 3H AWB
Facility	Benjamin Honecker OHI Pad		

WELLPATH DATA (170 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]
7631.00	90.490	341.170	5900.45	1887.26	1661.67	-917.39	1748136.51	14584974.37	40°09'33.468"N	80°36'52.054"W	1898.09	331.098	1.34	0.13	-1.33
7721.00	90.430	338.000	5899.72	1977.17	1746.01	-948.77	1748105.13	14585058.67	40°09'34.303"N	80°36'52.453"W	1987.14	331.480	3.52	-0.07	-3.52
7812.00	90.650	337.980	5898.87	2068.16	1830.37	-982.88	1748071.04	14585143.00	40°09'35.138"N	80°36'52.888"W	2077.57	331.765	0.24	0.24	-0.02
7902.00	90.620	340.220	5897.87	2158.10	1914.44	-1014.98	1748038.95	14585227.04	40°09'35.970"N	80°36'53.297"W	2166.85	332.069	2.49	-0.03	2.49
7993.00	90.620	340.240	5896.88	2248.97	2000.07	-1045.76	1748008.18	14585312.63	40°09'36.818"N	80°36'53.688"W	2256.96	332.397	0.02	0.00	0.02
8083.00	90.740	336.980	5895.82	2338.93	2083.85	-1078.57	1747975.38	14585396.39	40°09'37.647"N	80°36'54.106"W	2346.44	332.635	3.62	0.13	-3.62
8173.00	90.680	333.150	5894.70	2428.84	2165.44	-1116.51	1747937.46	14585477.94	40°09'38.455"N	80°36'54.590"W	2436.33	332.724	4.26	-0.07	-4.26
8263.00	90.650	332.120	5893.66	2518.54	2245.36	-1157.87	1747896.11	14585557.83	40°09'39.246"N	80°36'55.119"W	2526.33	332.721	1.14	-0.03	-1.14
8354.00	90.580	334.020	5892.68	2609.30	2326.49	-1199.08	1747854.92	14585638.93	40°09'40.050"N	80°36'55.645"W	2617.32	332.733	2.09	-0.08	2.09
8444.00	90.680	337.230	5891.69	2699.24	2408.45	-1236.22	1747817.79	14585720.86	40°09'40.861"N	80°36'56.119"W	2707.19	332.829	3.57	0.11	3.57
8535.00	90.590	336.680	5890.68	2790.24	2492.18	-1271.84	1747782.19	14585804.56	40°09'41.690"N	80°36'56.573"W	2797.95	332.963	0.61	-0.10	-0.60
8624.00	90.550	337.460	5889.79	2879.23	2574.14	-1306.51	1747747.53	14585886.49	40°09'42.502"N	80°36'57.015"W	2886.73	333.090	0.88	-0.04	0.88
8715.00	90.710	338.360	5888.79	2970.22	2658.46	-1340.73	1747713.32	14585970.77	40°09'43.336"N	80°36'57.451"W	2977.41	333.237	1.00	0.18	0.99
8805.00	90.650	336.610	5887.73	3060.21	2741.59	-1375.19	1747678.88	14586053.87	40°09'44.159"N	80°36'57.890"W	3067.16	333.361	1.95	-0.07	-1.94
8896.00	90.220	334.600	5887.04	3151.16	2824.46	-1412.77	1747641.31	14586136.70	40°09'44.980"N	80°36'58.369"W	3158.08	333.426	2.26	-0.47	-2.21
8986.00	90.180	336.150	5886.72	3241.11	2906.27	-1450.27	1747603.82	14586218.48	40°09'45.790"N	80°36'58.848"W	3248.03	333.480	1.72	-0.04	1.72
9076.00	90.150	339.770	5886.46	3331.09	2989.68	-1484.04	1747570.07	14586301.86	40°09'46.616"N	80°36'59.278"W	3337.75	333.601	4.02	-0.03	4.02
9167.00	90.310	340.500	5886.10	3421.97	3075.26	-1514.96	1747539.16	14586387.41	40°09'47.463"N	80°36'59.672"W	3428.17	333.774	0.82	0.18	0.80
9257.00	90.310	341.120	5885.61	3511.79	3160.26	-1544.54	1747509.59	14586472.38	40°09'48.304"N	80°37'00.048"W	3517.51	333.953	0.69	0.00	0.69
9347.00	90.280	341.240	5885.15	3601.58	3245.45	-1573.58	1747480.57	14586557.53	40°09'49.147"N	80°37'00.417"W	3606.81	334.133	0.14	-0.03	0.13
9438.00	90.250	341.080	5884.73	3692.36	3331.57	-1602.96	1747451.19	14586643.62	40°09'49.999"N	80°37'00.791"W	3697.14	334.306	0.18	-0.03	-0.18
9528.00	90.250	340.270	5884.33	3782.20	3416.50	-1632.75	1747421.42	14586728.51	40°09'50.840"N	80°37'01.170"W	3786.60	334.457	0.90	0.00	-0.90
9618.00	90.250	340.940	5883.94	3872.04	3501.39	-1662.63	1747391.55	14586813.37	40°09'51.680"N	80°37'01.550"W	3876.09	334.599	0.74	0.00	0.74
9709.00	90.220	341.920	5883.57	3962.79	3587.65	-1691.61	1747362.58	14586899.60	40°09'52.534"N	80°37'01.919"W	3966.46	334.756	1.08	-0.03	1.08
9799.00	90.250	342.020	5883.20	4052.48	3673.23	-1719.47	1747334.73	14586985.15	40°09'53.380"N	80°37'02.273"W	4055.76	334.915	0.12	0.03	0.11
9889.00	90.250	342.590	5882.80	4142.12	3758.97	-1746.82	1747307.39	14587070.85	40°09'54.229"N	80°37'02.620"W	4145.03	335.075	0.63	0.00	0.63
9980.00	90.310	341.710	5882.36	4232.79	3845.59	-1774.72	1747279.51	14587157.44	40°09'55.086"N	80°37'02.975"W	4235.35	335.227	0.97	0.07	-0.97
10070.00	90.180	338.430	5881.97	4322.66	3930.19	-1805.39	1747248.84	14587242.00	40°09'55.923"N	80°37'03.365"W	4325.02	335.328	3.65	-0.14	-3.64
10161.00	89.970	335.870	5881.86	4413.65	4014.04	-1840.73	1747213.52	14587325.82	40°09'56.753"N	80°37'03.816"W	4415.97	335.365	2.82	-0.23	-2.81
10251.00	90.250	335.750	5881.68	4503.63	4096.13	-1877.60	1747176.66	14587407.89	40°09'57.566"N	80°37'04.286"W	4505.96	335.374	0.34	0.31	-0.13



Actual Wellpath Report

Benjamin Honecker OHI 3H AWP Proj:14653'
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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 3H
Area	Ohio County, WV	Well	Benjamin Honecker OHI 3H
Field	Ohio	Wellbore	Benjamin Honecker OHI 3H AWB
Facility	Benjamin Honecker OHI Pad		

WELLPATH DATA (170 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]
10341.00	90.250	336.330	5881.29	4593.61	4178.38	-1914.15	1747140.13	14587490.10	40°09'58.381"N	80°37'04.752"W	4595.96	335.387	0.64	0.00	0.64
10432.00	90.180	337.290	5880.95	4684.60	4262.02	-1949.99	1747104.31	14587573.71	40°09'59.209"N	80°37'05.209"W	4686.93	335.415	1.06	-0.08	1.05
10522.00	90.220	338.410	5880.63	4774.59	4345.38	-1983.92	1747070.39	14587657.03	40°10'00.034"N	80°37'05.642"W	4776.85	335.461	1.25	0.04	1.24
10613.00	90.250	339.940	5880.26	4865.54	4430.43	-2016.27	1747038.05	14587742.05	40°10'00.876"N	80°37'06.054"W	4867.66	335.530	1.68	0.03	1.68
10703.00	90.150	341.140	5879.95	4955.38	4515.29	-2046.25	1747008.08	14587826.88	40°10'01.716"N	80°37'06.435"W	4957.32	335.621	1.34	-0.11	1.33
10794.00	90.920	340.450	5879.10	5046.20	4601.22	-2076.18	1746978.16	14587912.77	40°10'02.566"N	80°37'06.816"W	5047.95	335.714	1.14	0.85	-0.76
10884.00	90.280	339.920	5878.16	5136.08	4685.89	-2106.69	1746947.66	14587997.41	40°10'03.404"N	80°37'07.204"W	5137.67	335.792	0.92	-0.71	-0.59
10975.00	90.220	340.660	5877.76	5226.94	4771.55	-2137.38	1746916.98	14588083.04	40°10'04.252"N	80°37'07.595"W	5228.39	335.870	0.82	-0.07	0.81
11065.00	90.220	341.790	5877.41	5316.72	4856.76	-2166.35	1746888.03	14588168.22	40°10'05.095"N	80°37'07.963"W	5318.01	335.961	1.26	0.00	1.26
11155.00	90.250	340.100	5877.04	5406.53	4941.83	-2195.73	1746858.66	14588253.25	40°10'05.937"N	80°37'08.337"W	5407.67	336.044	1.88	0.03	-1.88
11246.00	90.250	339.400	5876.65	5497.44	5027.20	-2227.22	1746827.18	14588338.59	40°10'06.782"N	80°37'08.738"W	5498.48	336.105	0.77	0.00	-0.77
11337.00	90.180	339.300	5876.30	5588.37	5112.35	-2259.32	1746795.10	14588423.71	40°10'07.625"N	80°37'09.147"W	5589.33	336.158	0.13	-0.08	-0.11
11427.00	90.250	339.060	5875.97	5678.32	5196.48	-2291.30	1746763.12	14588507.80	40°10'08.457"N	80°37'09.554"W	5679.21	336.206	0.28	0.08	-0.27
11517.00	90.220	338.490	5875.60	5768.29	5280.37	-2323.89	1746730.55	14588591.66	40°10'09.288"N	80°37'09.969"W	5769.12	336.246	0.63	-0.03	-0.63
11608.00	90.220	338.310	5875.25	5859.27	5364.98	-2357.39	1746697.06	14588676.24	40°10'10.125"N	80°37'10.396"W	5860.06	336.279	0.20	0.00	-0.20
11698.00	90.280	337.270	5874.86	5949.26	5448.30	-2391.41	1746663.06	14588759.52	40°10'10.950"N	80°37'10.830"W	5950.02	336.302	1.16	0.07	-1.16
11788.00	90.180	337.270	5874.49	6039.26	5531.31	-2426.18	1746628.30	14588842.50	40°10'11.772"N	80°37'11.273"W	6040.01	336.316	0.11	-0.11	0.00
11879.00	90.250	338.720	5874.15	6130.25	5615.68	-2460.28	1746594.21	14588926.84	40°10'12.607"N	80°37'11.708"W	6130.97	336.341	1.60	0.08	1.59
11969.00	90.250	337.900	5873.76	6220.23	5699.30	-2493.54	1746560.96	14589010.43	40°10'13.435"N	80°37'12.131"W	6220.91	336.370	0.91	0.00	-0.91
12059.00	90.090	335.710	5873.49	6310.22	5782.02	-2528.98	1746525.53	14589093.12	40°10'14.254"N	80°37'12.583"W	6310.91	336.376	2.44	-0.18	-2.43
12149.00	89.910	332.730	5873.49	6400.09	5863.06	-2568.12	1746486.41	14589174.12	40°10'15.056"N	80°37'13.083"W	6400.83	336.346	3.32	-0.20	-3.31
12240.00	90.120	333.980	5873.47	6490.88	5944.39	-2608.93	1746445.62	14589255.42	40°10'15.862"N	80°37'13.604"W	6491.71	336.304	1.39	0.23	1.37
12330.00	90.000	335.030	5873.38	6580.78	6025.62	-2647.67	1746406.89	14589336.63	40°10'16.666"N	80°37'14.099"W	6581.66	336.279	1.17	-0.13	1.17
12421.00	89.750	336.920	5873.57	6671.75	6108.74	-2684.72	1746369.86	14589419.71	40°10'17.489"N	80°37'14.572"W	6672.66	336.275	2.10	-0.27	2.08
12511.00	89.880	339.210	5873.86	6761.74	6192.22	-2718.33	1746336.26	14589503.15	40°10'18.315"N	80°37'15.000"W	6762.61	336.299	2.55	0.14	2.54
12602.00	89.850	340.490	5874.08	6852.64	6277.64	-2749.68	1746304.92	14589588.55	40°10'19.161"N	80°37'15.399"W	6853.43	336.346	1.41	-0.03	1.41
12693.00	89.540	342.450	5874.56	6943.38	6363.92	-2778.60	1746276.02	14589674.79	40°10'20.015"N	80°37'15.767"W	6944.07	336.413	2.18	-0.34	2.15
12783.00	89.510	342.510	5875.31	7033.00	6449.74	-2805.69	1746248.93	14589760.58	40°10'20.864"N	80°37'16.111"W	7033.57	336.491	0.07	-0.03	0.07
12873.00	89.570	342.020	5876.03	7122.65	6535.46	-2833.11	1746221.53	14589846.27	40°10'21.712"N	80°37'16.460"W	7123.11	336.563	0.55	0.07	-0.54
12963.00	89.570	342.020	5876.71	7212.33	6621.07	-2860.89	1746193.76	14589931.84	40°10'22.559"N	80°37'16.813"W	7212.71	336.631	0.00	0.00	0.00

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 3H
Area	Ohio County, WV	Well	Benjamin Honecker OHI 3H
Field	Ohio	Wellbore	Benjamin Honecker OHI 3H AWB
Facility	Benjamin Honecker OHI Pad		

WELLPATH DATA (170 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)
13054.00	89.660	342.450	5877.32	7302.98	6707.72	-2888.65	1746166.01	14590018.46	40°10'23.417"N	80°37'17.166"W	7303.28	336.701	0.48	0.10	0.47
13144.00	89.540	342.450	5877.95	7392.60	6793.53	-2915.79	1746138.88	14590104.24	40°10'24.266"N	80°37'17.511"W	7392.83	336.771	0.13	-0.13	0.00
13235.00	89.600	341.960	5878.63	7483.25	6880.18	-2943.60	1746111.08	14590190.85	40°10'25.123"N	80°37'17.864"W	7483.42	336.837	0.54	0.07	-0.54
13325.00	89.820	341.150	5879.09	7572.99	6955.55	-2972.07	1746082.62	14590276.19	40°10'25.968"N	80°37'18.226"W	7573.12	336.893	0.93	0.24	-0.90
13416.00	90.150	342.040	5879.11	7663.73	7051.90	-3000.80	1746053.90	14590362.50	40°10'26.823"N	80°37'18.592"W	7663.81	336.949	1.04	0.36	0.98
13506.00	90.280	341.280	5878.77	7753.46	7137.32	-3029.12	1746025.59	14590447.89	40°10'27.668"N	80°37'18.952"W	7753.51	337.003	0.86	0.14	-0.84
13596.00	90.280	340.770	5878.33	7843.26	7222.43	-3058.39	1745996.34	14590532.97	40°10'28.510"N	80°37'19.324"W	7843.29	337.049	0.57	0.00	-0.57
13687.00	90.250	338.400	5877.91	7934.17	7307.71	-3090.13	1745964.61	14590618.21	40°10'29.354"N	80°37'19.728"W	7934.20	337.079	2.60	-0.03	-2.60
13777.00	90.180	337.410	5877.57	8024.16	7391.10	-3123.98	1745930.77	14590701.57	40°10'30.180"N	80°37'20.160"W	8024.19	337.088	1.10	-0.08	-1.10
13868.00	90.220	336.920	5877.26	8115.16	7474.96	-3159.29	1745895.47	14590785.40	40°10'31.010"N	80°37'20.610"W	8115.18	337.089	0.54	0.04	-0.54
13959.00	90.280	337.210	5876.86	8206.16	7558.77	-3194.75	1745860.02	14590869.18	40°10'31.840"N	80°37'21.062"W	8206.18	337.088	0.33	0.07	0.32
14049.00	90.220	336.990	5876.47	8296.16	7641.68	-3229.78	1745825.01	14590952.05	40°10'32.660"N	80°37'21.509"W	8296.18	337.089	0.25	-0.07	-0.24
14139.00	90.220	336.110	5876.12	8386.15	7724.24	-3265.59	1745789.21	14591034.58	40°10'33.478"N	80°37'21.966"W	8386.18	337.083	0.98	0.00	-0.98
14230.00	90.180	335.820	5875.80	8477.13	7807.35	-3302.65	1745752.16	14591117.66	40°10'34.301"N	80°37'22.439"W	8477.16	337.071	0.32	-0.04	-0.32
14321.00	90.180	335.840	5875.52	8568.10	7890.37	-3339.91	1745714.92	14591200.65	40°10'35.123"N	80°37'22.914"W	8568.14	337.058	0.02	0.00	0.02
14411.00	90.250	338.140	5875.18	8658.10	7973.21	-3375.09	1745679.75	14591283.45	40°10'35.943"N	80°37'23.363"W	8658.13	337.057	2.56	0.08	2.56
14501.00	90.180	339.380	5874.84	8748.06	8057.09	-3407.69	1745647.16	14591367.30	40°10'36.773"N	80°37'23.778"W	8748.09	337.074	1.38	-0.08	1.38
14591.00	90.280	339.070	5874.48	8838.01	8141.24	-3439.62	1745615.25	14591451.42	40°10'37.606"N	80°37'24.185"W	8838.03	337.096	0.36	0.11	-0.34
14628.00	90.250	339.760	5874.31	8874.98	8175.87	-3452.63	1745602.25	14591486.04	40°10'37.949"N	80°37'24.351"W	8875.00	337.106	1.87	-0.08	1.86
14653.00	90.250	339.760	5874.20	8899.95	8199.33	-3461.28	1745593.60	14591509.49	40°10'38.181"N	80°37'24.461"W	8899.97	337.113	0.00	0.00	0.00

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 3H
Area	Ohio County, WV	Well	Benjamin Honecker OHI 3H
Field	Ohio	Wellbore	Benjamin Honecker OHI 3H AWB
Facility	Benjamin Honecker OHI Pad		

HOLE & CASING SECTIONS - Ref Wellbore: Benjamin Honecker OHI 3H AWB Ref Wellpath: Benjamin Honecker OHI 3H AWP Proj:14653'

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	383.00	357.00	26.00	383.00	0.00	0.00	0.00	-0.58
13.375in Casing Surface	26.00	383.00	357.00	26.00	383.00	0.00	0.00	0.00	-0.58
12.25in Open Hole	383.00	1714.00	1331.00	383.00	1713.95	0.92	-0.58	-7.53	-3.04
9.625in Casing Intermediate	26.00	1714.00	1688.00	26.00	1713.95	0.00	0.00	-7.53	-3.04
8.75in Open Hole	1714.00	5100.00	3386.00	1713.95	5084.99	-7.53	-3.04	-187.86	-101.76
8.5in Open Hole	5100.00	14653.00	9553.00	5084.99	5874.20	-187.86	-101.76	8199.33	-3461.28
5.5in Open Hole	26.00	14653.00	14627.00	26.00	5874.20	0.00	0.00	8199.33	-3461.28

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Benjamin Honecker OHI 3H BHL Rev-3	5871.00	8205.79	-3446.95	1745607.92	14591515.95	40°10'38.244"N	80°37'24.276"W	point
Benjamin Honecker OHI 3H LP Rev-3	5910.00	430.44	-471.88	1748581.84	14583743.62	40°09'21.282"N	80°36'46.385"W	point

WELLPATH COMPOSITION - Ref Wellbore: Benjamin Honecker OHI 3H AWB Ref Wellpath: Benjamin Honecker OHI 3H AWP Proj:14653'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	308.00	OWSG MWD rev2 + HRGM	01 Premier MWD <17 1/2"> (160'-308')	Benjamin Honecker OHI 3H AWB
308.00	1662.00	OWSG MWD rev2 + HRGM	01 Premier MWD <12 1/4"> (428'-1662')	Benjamin Honecker OHI 3H AWB
1662.00	5022.00	OWSG MWD rev2 + HRGM	03 Premier MWD <8 3/4"> (1761'-5022')	Benjamin Honecker OHI 3H AWB
5022.00	14628.00	BHI AutoTrak Curve (Short)	04 BH AT Curve <8 1/2"> (5075'-14628')	Benjamin Honecker OHI 3H AWB
14628.00	14653.00	Blind Drilling (std)	Projection to bit	Benjamin Honecker OHI 3H AWB

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 3H
Area	Ohio County, WV	Well	Benjamin Honecker OHI 3H
Field	Ohio	Wellbore	Benjamin Honecker OHI 3H AWB
Facility	Benjamin Honecker OHI Pad		

COMMENTS

Wellpath general comments
API: 47-069-02461-0000
BH Job #: 109444432
Rig: SDC 42
Duration: 10/16/2018 - 10/20/2018

05/31/2019

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Office of Oil and Gas
MAY 22 2019
WV Department of
Environmental Protection