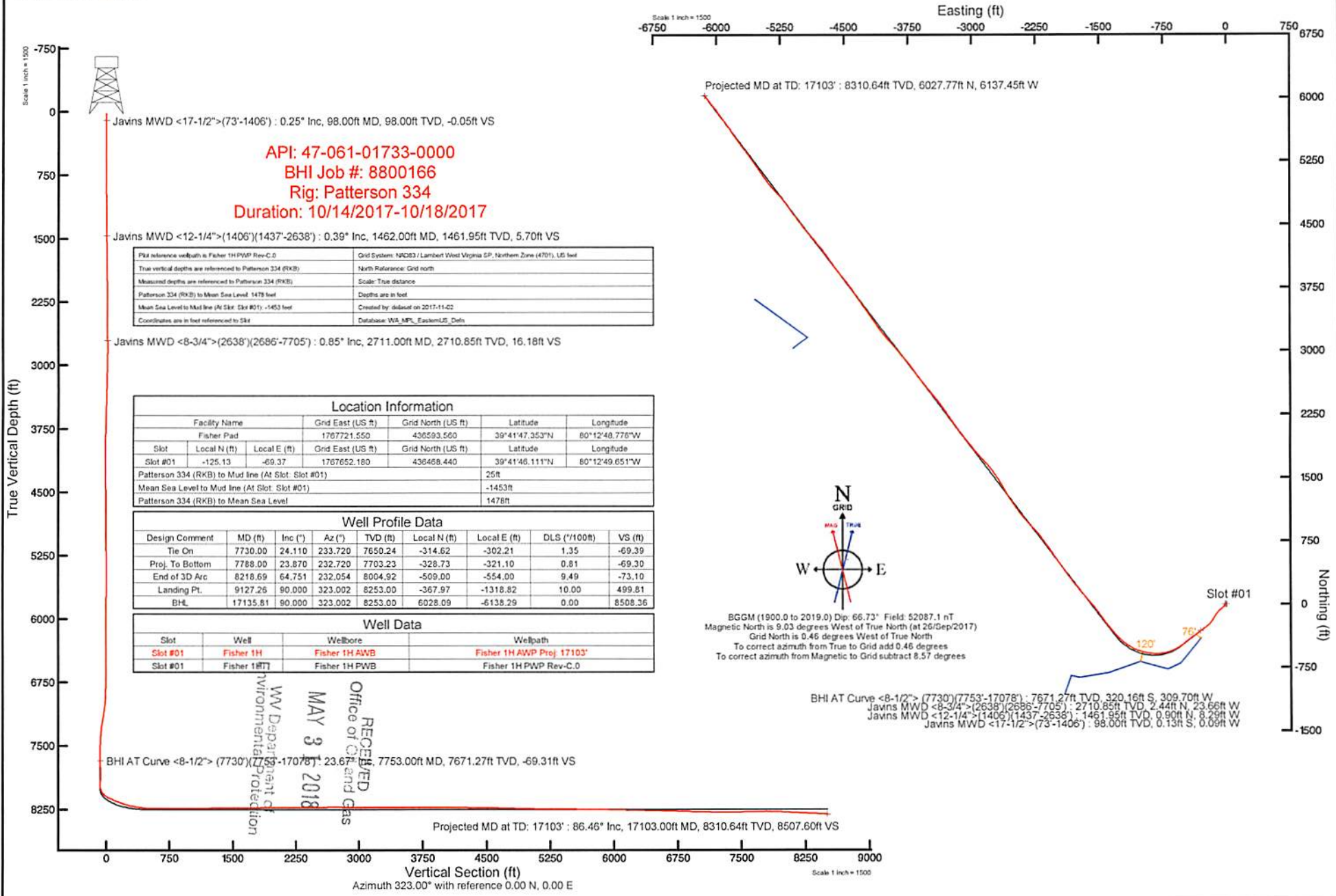


# NORTHEAST NATURAL ENERGY, LLC

Location: Monongalia County, WV  
 Field: Monongalia  
 Facility: Fisher Pad

Slot: Slot #01  
 Well: Fisher 1H  
 Wellbore: Fisher 1H PWB



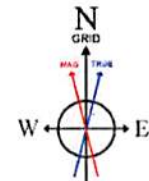
**API: 47-061-01733-0000**  
**BHI Job #: 8800166**  
**Rig: Patterson 334**  
**Duration: 10/14/2017-10/18/2017**

Fix reference wellpath to Fisher 1H PWB Rev-C.0	Grid System: NAD83 / Lambert West Virginia SP, Northern Zone (4701), US feet
True vertical depths are referenced to Patterson 334 (RKB)	North Reference: Grid north
Measured depths are referenced to Patterson 334 (RKB)	Scale: True distance
Patterson 334 (RKB) to Mean Sea Level: 1478 feet	Depths are in feet
Mean Sea Level to Mud line (At Slot: Slot #01): -1453 feet	Created by: dibaset on 2017-11-02
Coordinates are in feet referenced to SRT	Database: WA_MPL_EasternUS_Dept

Location Information				
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Fisher Pad	1767721.500	436593.500	39°41'47.353"N	80°12'48.776"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
Slot #01	-125.13	-69.37	1767652.180	436468.440
Patterson 334 (RKB) to Mud line (At Slot: Slot #01)			25ft	
Mean Sea Level to Mud line (At Slot: Slot #01)			-1453ft	
Patterson 334 (RKB) to Mean Sea Level			1478ft	

Well Profile Data								
Design Comment	MD (ft)	Inc (")	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS ("/100ft)	VS (ft)
Tie On	7730.00	24.110	233.720	7650.24	-314.62	-302.21	1.35	-69.39
Proj. To Bottom	7788.00	23.870	232.720	7703.23	-328.73	-321.10	0.81	-69.30
End of 3D Arc	8218.69	64.751	232.054	8004.92	-509.00	-554.00	9.49	-73.10
Landing Pt.	9127.26	90.000	323.002	8253.00	-367.97	-1318.82	10.00	499.81
BHL	17135.81	90.000	323.002	8253.00	6028.09	-6138.29	0.00	8508.36

Well Data			
Slot	Well	Wellbore	Wellpath
Slot #01	Fisher 1H	Fisher 1H AWB	Fisher 1H AWP Proj 17103'
Slot #01	Fisher 1H	Fisher 1H PWB	Fisher 1H PWP Rev-C.0



BGGM (1900.0 to 2019.0) Dip: 66.73° Field: 52087.1 nT  
 Magnetic North is 9.03 degrees West of True North (at 26/sep/2017)  
 Grid North is 0.46 degrees West of True North  
 To correct azimuth from True to Grid add 0.46 degrees  
 To correct azimuth from Magnetic to Grid subtract 8.57 degrees

BHI AT Curve <8-1/2"> (7730)(7753-17078) : 23.67° Inc, 7753.00ft MD, 7671.27ft TVD, -69.31ft VS  
 Javins MWD <8-3/4">(2638)(2686-7705) : 0.85° Inc, 2711.00ft MD, 2710.85ft TVD, 2.44ft N, 23.66ft W  
 Javins MWD <12-1/4">(1406)(1437-2638) : 0.39° Inc, 1462.00ft MD, 1461.95ft TVD, 0.90ft N, 8.29ft W  
 Javins MWD <17-1/2">(73-1406) : 0.25° Inc, 98.00ft MD, 98.00ft TVD, 0.13ft S, 0.09ft W

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Projected MD at TD: 17103' : 86.46° Inc, 17103.00ft MD, 8310.64ft TVD, 8507.60ft VS

Vertical Section (ft)  
 Azimuth 323.00° with reference 0.00 N, 0.00 E

Scale 1 inch = 1500



# Actual Wellpath Report

Fisher 1H AWP Proj: 17103'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #01
Area	Monongalia County, WV	Well	Fisher 1H
Field	Monongalia	Wellbore	Fisher 1H AWB
Facility	Fisher Pad		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert West Virginia SP, Northern Zone (4701), US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Delaset
Scale	0.999941	Report Generated	02/Nov/2017 at 14:01
Convergence at slot	0.46° West	Database/Source file	WA_MPL_EasternUS_Defn/Fisher_1H_AWP_Proj_17103_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-125.13	-69.37	1767652.18	436468.44	39°41'46.111"N	80°12'49.651"W
Facility Reference Pt			1767721.55	436593.56	39°41'47.353"N	80°12'48.776"W
Field Reference Pt			1777685.71	440640.65	39°42'28.114"N	80°10'41.690"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Patterson 334 (RKB) to Facility Vertical Datum	1478.00ft
Horizontal Reference Pt	Slot	Patterson 334 (RKB) to Mean Sea Level	1478.00ft
Vertical Reference Pt	Patterson 334 (RKB)	Patterson 334 (RKB) to Mud Line at Slot (Slot #01)	25.00ft
MD Reference Pt	Patterson 334 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	323.00°

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# Actual Wellpath Report

Fisher 1H AWP Proj: 17103

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Operator	NORTHEAST NATURAL ENERGY, LLC
Area	Monongalia County, WV
Field	Monongalia
Facility	Fisher Pad
Slot	Slot #01
Well	Fisher 1H
	Fisher 1H AWB

WELLPATH DATA (357 stations) † = Interpolated/extrapolated station												
MD	Inclination	Azimuth	TVD	Vent Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	1767652.18	436468.44	39°41'46.11"N	80°12'49.651"W	0.00	0.00
25.00	0.00	215.950	25.00	0.00	0.00	1767652.18	436468.44	39°41'46.11"N	80°12'49.651"W	0.00	0.00	0.00
98.00	0.250	215.950	98.00	-0.05	-0.13	1767652.09	436468.31	39°41'46.110"N	80°12'49.652"W	0.16	215.950	0.34
127.00	0.220	209.330	127.00	-0.09	-0.23	1767652.02	436468.21	39°41'46.109"N	80°12'49.653"W	0.28	214.627	0.14
157.00	0.210	207.800	157.00	-0.13	-0.33	1767651.97	436468.11	39°41'46.108"N	80°12'49.654"W	0.39	212.885	0.04
186.00	0.170	225.130	186.00	-0.16	-0.40	1767651.91	436468.04	39°41'46.107"N	80°12'49.655"W	0.49	213.407	0.24
215.00	0.180	177.300	215.00	-0.21	-0.48	1767651.88	436467.96	39°41'46.106"N	80°12'49.655"W	0.56	211.568	0.49
246.00	0.250	198.970	246.00	-0.28	-0.59	1767651.86	436467.85	39°41'46.105"N	80°12'49.655"W	0.67	207.969	0.34
277.00	0.220	227.190	277.00	-0.33	-0.70	1767651.80	436467.74	39°41'46.104"N	80°12'49.656"W	0.79	208.619	0.38
308.00	0.170	220.900	308.00	-0.34	-0.77	1767651.73	436467.67	39°41'46.104"N	80°12'49.657"W	0.90	210.456	0.18
339.00	0.160	226.750	339.00	-0.36	-0.84	1767651.66	436467.60	39°41'46.103"N	80°12'49.658"W	0.98	211.649	0.06
370.00	0.050	180.010	370.00	-0.37	-0.88	1767651.63	436467.56	39°41'46.102"N	80°12'49.658"W	1.04	211.880	0.42
402.00	0.150	196.430	402.00	-0.41	-0.93	1767651.62	436467.51	39°41'46.102"N	80°12'49.658"W	1.09	210.905	0.32
433.00	0.240	257.640	433.00	-0.41	-0.99	1767651.55	436467.45	39°41'46.101"N	80°12'49.659"W	1.17	212.718	0.69
464.00	0.610	234.830	464.00	-0.38	-1.10	1767651.35	436467.34	39°41'46.100"N	80°12'49.662"W	1.38	216.986	1.31
495.00	0.200	237.780	495.00	-0.38	-1.23	1767651.18	436467.21	39°41'46.099"N	80°12'49.664"W	1.59	219.206	1.32
526.00	0.240	230.120	526.00	-0.38	-1.30	1767651.08	436467.14	39°41'46.098"N	80°12'49.665"W	1.71	220.481	1.43
558.00	0.220	40.550	558.00	-0.37	-1.30	1767651.07	436467.14	39°41'46.098"N	80°12'49.665"W	1.71	220.481	1.43
589.00	0.100	228.140	589.00	-0.36	-1.27	1767651.09	436467.17	39°41'46.099"N	80°12'49.665"W	1.68	220.602	1.03
620.00	0.290	241.140	620.00	-0.35	-1.33	1767651.00	436467.11	39°41'46.098"N	80°12'49.666"W	1.78	221.603	0.63
651.00	0.250	297.780	651.00	-0.28	-1.34	1767650.87	436467.10	39°41'46.098"N	80°12'49.668"W	1.87	224.419	0.83
683.00	0.260	283.720	683.00	-0.16	-1.29	1767650.74	436467.15	39°41'46.098"N	80°12'49.669"W	1.93	228.256	0.20
714.00	0.350	250.690	713.99	-0.08	-1.30	1767650.58	436467.14	39°41'46.098"N	80°12'49.671"W	2.06	230.872	0.62
745.00	0.440	254.820	744.99	0.00	-1.36	1767650.38	436467.08	39°41'46.098"N	80°12'49.674"W	2.26	232.910	0.30
776.00	0.410	258.160	775.99	0.09	-1.42	1767650.15	436467.02	39°41'46.097"N	80°12'49.677"W	2.47	235.035	0.13
808.00	0.730	257.370	807.99	0.22	-1.49	1767649.84	436466.95	39°41'46.096"N	80°12'49.681"W	2.77	237.568	1.00
839.00	0.520	291.150	838.99	0.42	-1.48	1767649.52	436466.96	39°41'46.096"N	80°12'49.685"W	3.04	240.959	1.34
870.00	0.420	269.520	869.99	0.61	-1.43	1767649.27	436467.01	39°41'46.097"N	80°12'49.688"W	3.24	243.833	0.65
901.00	0.600	264.840	900.99	0.76	-1.44	1767649.00	436467.00	39°41'46.097"N	80°12'49.692"W	3.49	245.595	0.60
932.00	0.550	256.820	931.99	0.91	-1.49	1767648.69	436466.95	39°41'46.096"N	80°12'49.696"W	3.79	248.840	0.31

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# Actual Wellpath Report

Fisher 1H AWP Proj: 17103'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #01
Area	Monongalia County, WV	Well	Fisher 1H
Field	Monongalia	Wellbore	Fisher 1H AWB
Facility	Fisher Pad		

WELLPATH DATA (357 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]	Comments
963.00	0.680	264.650	962.98	1.06	-1.54	-3.82	1767648.36	436466.90	39°41'46.096"N	80°12'49.700"W	4.12	247.982	0.50	0.42	25.26	
994.00	0.580	270.760	993.98	1.26	-1.56	-4.16	1767648.02	436466.88	39°41'46.095"N	80°12'49.704"W	4.44	249.448	0.39	-0.32	19.71	
1026.00	1.080	269.000	1025.98	1.53	-1.56	-4.62	1767647.56	436466.88	39°41'46.095"N	80°12'49.710"W	4.88	251.325	1.56	1.56	-5.50	
1057.00	0.770	270.080	1056.97	1.83	-1.57	-5.12	1767647.06	436466.87	39°41'46.095"N	80°12'49.717"W	5.35	252.991	1.00	-1.00	3.48	
1088.00	0.730	275.950	1087.97	2.09	-1.55	-5.53	1767646.66	436466.89	39°41'46.095"N	80°12'49.722"W	5.74	254.372	0.28	-0.13	18.94	
1119.00	0.730	276.670	1118.97	2.36	-1.50	-5.92	1767646.26	436466.94	39°41'46.096"N	80°12'49.727"W	6.11	255.757	0.03	0.00	2.32	
1150.00	0.760	295.620	1149.97	2.68	-1.39	-6.30	1767645.88	436467.05	39°41'46.097"N	80°12'49.732"W	6.45	257.554	0.80	0.10	61.13	
1182.00	0.740	306.960	1181.96	3.07	-1.17	-6.66	1767645.52	436467.27	39°41'46.099"N	80°12'49.736"W	6.76	259.994	0.47	-0.06	35.44	
1213.00	0.550	305.100	1212.96	3.40	-0.97	-6.94	1767645.24	436467.47	39°41'46.101"N	80°12'49.740"W	7.00	262.053	0.62	-0.61	-6.00	
1244.00	0.620	315.860	1243.96	3.71	-0.76	-7.18	1767645.00	436467.68	39°41'46.103"N	80°12'49.743"W	7.22	263.935	0.42	0.23	34.71	
1275.00	0.570	309.720	1274.96	4.03	-0.54	-7.41	1767644.77	436467.90	39°41'46.105"N	80°12'49.746"W	7.43	265.805	0.26	-0.16	-19.81	
1307.00	0.480	334.000	1306.96	4.31	-0.32	-7.59	1767644.59	436468.12	39°41'46.107"N	80°12'49.748"W	7.60	267.576	0.74	-0.28	75.88	
1338.00	0.530	323.910	1337.96	4.58	-0.09	-7.73	1767644.45	436468.35	39°41'46.110"N	80°12'49.750"W	7.73	269.342	0.33	0.16	-32.55	
1369.00	0.470	331.470	1368.96	4.85	0.14	-7.88	1767644.30	436468.58	39°41'46.112"N	80°12'49.752"W	7.88	271.009	0.29	-0.19	24.39	
1400.00	0.540	335.310	1399.95	5.12	0.38	-8.00	1767644.18	436468.82	39°41'46.114"N	80°12'49.754"W	8.01	272.742	0.25	0.23	12.39	
1431.00	0.640	335.470	1430.95	5.43	0.67	-8.13	1767644.05	436469.11	39°41'46.117"N	80°12'49.755"W	8.16	274.733	0.32	0.32	0.52	
1462.00	0.390	310.080	1461.95	5.70	0.90	-8.29	1767643.89	436469.34	39°41'46.119"N	80°12'49.757"W	8.33	276.191	1.07	-0.81	-81.90	Javins MWD <12-1/4">(1406')(1437'-2638')
1494.00	0.440	293.890	1493.95	5.92	1.02	-8.48	1767643.70	436469.46	39°41'46.121"N	80°12'49.760"W	8.54	276.849	0.40	0.16	-50.59	
1525.00	0.460	303.720	1524.95	6.14	1.14	-8.69	1767643.49	436469.58	39°41'46.122"N	80°12'49.763"W	8.77	277.444	0.26	0.06	31.71	
1556.00	0.510	288.560	1555.95	6.37	1.25	-8.93	1767643.25	436469.69	39°41'46.123"N	80°12'49.766"W	9.02	277.963	0.44	0.16	-48.90	
1587.00	0.600	294.540	1586.95	6.63	1.36	-9.21	1767642.97	436469.80	39°41'46.124"N	80°12'49.769"W	9.31	278.405	0.34	0.29	19.29	
1619.00	0.630	302.570	1618.95	6.94	1.52	-9.51	1767642.67	436469.96	39°41'46.126"N	80°12'49.773"W	9.63	279.110	0.28	0.09	25.09	
1650.00	0.740	298.450	1649.94	7.28	1.71	-9.83	1767642.35	436470.15	39°41'46.127"N	80°12'49.777"W	9.98	279.881	0.39	0.35	-13.29	
1681.00	0.890	299.460	1680.94	7.68	1.93	-10.21	1767641.97	436470.37	39°41'46.129"N	80°12'49.782"W	10.39	280.677	0.49	0.48	3.26	
1712.00	0.840	292.400	1711.94	8.10	2.13	-10.63	1767641.55	436470.57	39°41'46.131"N	80°12'49.787"W	10.84	281.330	0.38	-0.16	-22.77	
1743.00	0.990	291.220	1742.93	8.52	2.31	-11.09	1767641.09	436470.75	39°41'46.133"N	80°12'49.793"W	11.33	281.784	0.49	0.48	-3.81	
1775.00	0.840	289.220	1774.93	8.95	2.49	-11.57	1767640.61	436470.93	39°41'46.135"N	80°12'49.799"W	11.84	282.150	0.48	-0.47	-6.25	
1806.00	0.820	290.270	1805.92	9.33	2.64	-11.99	1767640.19	436471.08	39°41'46.136"N	80°12'49.805"W	12.28	282.427	0.08	-0.06	3.39	
1837.00	0.840	280.610	1836.92	9.68	2.76	-12.43	1767639.75	436471.20	39°41'46.138"N	80°12'49.810"W	12.73	282.530	0.46	0.06	-31.16	
1868.00	0.760	276.900	1867.92	9.99	2.83	-12.85	1767639.33	436471.27	39°41'46.138"N	80°12'49.816"W	13.16	282.409	0.31	-0.26	-11.97	

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# Actual Wellpath Report

Fisher 1H AWP Proj: 17103'  
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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #01
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Fisher 1H
Area	Monongalia County, WV	Wellbore	Fisher 1H AWB
Field	Monongalia		
Facility	Fisher Pad		

WELLPATH DATA (357 stations)																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
1899.00	0.830	272.930	1898.92	10.28	2.86	-13.28	1767638.90	436471.30	39°41'46.138"N	80°12'49.821"W	13.59	282.170	0.29	0.23	-12.81	
1931.00	0.910	270.080	1930.91	10.58	2.88	-13.77	1767638.41	436471.32	39°41'46.139"N	80°12'49.828"W	14.06	281.802	0.28	0.25	-8.91	
1962.00	0.900	271.630	1961.91	10.88	2.88	-14.26	1767637.92	436471.32	39°41'46.139"N	80°12'49.834"W	14.55	281.435	0.09	-0.03	5.00	
1993.00	0.840	271.970	1992.90	11.18	2.90	-14.73	1767637.45	436471.34	39°41'46.139"N	80°12'49.840"W	15.01	281.135	0.19	-0.19	1.10	
2024.00	0.840	266.860	2023.90	11.45	2.89	-15.18	1767637.00	436471.33	39°41'46.139"N	80°12'49.846"W	15.45	280.793	0.24	0.00	-16.48	
2055.00	0.780	264.480	2054.90	11.88	2.85	-15.62	1767636.56	436471.30	39°41'46.139"N	80°12'49.851"W	15.88	280.381	0.22	-0.19	-7.68	
2118.00	0.610	265.600	2117.89	12.09	2.79	-16.38	1767635.80	436471.23	39°41'46.138"N	80°12'49.861"W	16.62	279.681	0.27	-0.27	1.78	
2149.00	0.550	261.690	2148.89	12.25	2.76	-16.69	1767635.49	436471.20	39°41'46.137"N	80°12'49.865"W	16.92	279.390	0.23	-0.19	-12.61	
2180.00	0.540	273.700	2179.89	12.42	2.75	-16.98	1767635.20	436471.19	39°41'46.137"N	80°12'49.869"W	17.20	279.191	0.37	-0.03	38.74	
2211.00	0.650	266.650	2210.88	12.61	2.75	-17.31	1767634.88	436471.19	39°41'46.137"N	80°12'49.873"W	17.52	279.020	0.43	0.35	-22.74	
2243.00	0.740	268.750	2242.89	12.83	2.73	-17.69	1767634.49	436471.17	39°41'46.137"N	80°12'49.878"W	17.90	278.778	0.29	0.28	6.56	
2274.00	0.760	268.500	2273.88	13.07	2.72	-18.10	1767634.08	436471.16	39°41'46.137"N	80°12'49.883"W	18.30	278.554	0.07	0.06	-0.81	
2305.00	0.600	265.730	2304.88	13.27	2.70	-18.47	1767633.71	436471.14	39°41'46.136"N	80°12'49.888"W	18.66	278.333	0.53	-0.52	-8.94	
2336.00	0.860	270.200	2335.88	13.50	2.69	-18.86	1767633.32	436471.13	39°41'46.136"N	80°12'49.893"W	19.05	278.128	0.86	0.84	14.42	
2368.00	0.790	264.600	2367.88	13.76	2.67	-19.32	1767632.86	436471.11	39°41'46.136"N	80°12'49.899"W	19.50	277.879	0.33	-0.22	-17.50	
2399.00	0.770	267.560	2398.87	13.99	2.64	-19.74	1767632.44	436471.08	39°41'46.136"N	80°12'49.904"W	19.92	277.630	0.15	-0.06	9.55	
2431.00	0.820	271.690	2430.87	14.26	2.64	-20.19	1767632.00	436471.08	39°41'46.136"N	80°12'49.910"W	20.36	277.458	0.24	0.16	12.91	
2462.00	0.820	267.500	2461.87	14.52	2.64	-20.63	1767631.55	436471.08	39°41'46.136"N	80°12'49.915"W	20.80	277.291	0.19	0.00	-13.52	
2493.00	0.750	264.910	2492.86	14.76	2.61	-21.05	1767631.13	436471.05	39°41'46.135"N	80°12'49.921"W	21.21	277.071	0.25	-0.23	-8.35	
2524.00	0.790	264.950	2523.86	14.98	2.57	-21.47	1767630.71	436471.01	39°41'46.135"N	80°12'49.926"W	21.62	276.839	0.13	0.13	0.13	
2555.00	0.700	267.840	2554.86	15.20	2.55	-21.87	1767630.31	436470.99	39°41'46.135"N	80°12'49.931"W	22.02	276.647	0.31	-0.29	9.32	
2586.00	0.610	259.750	2585.86	15.38	2.51	-22.22	1767629.96	436470.95	39°41'46.134"N	80°12'49.936"W	22.36	276.450	0.42	-0.29	-26.10	
2618.00	0.610	262.140	2617.85	15.54	2.46	-22.56	1767629.62	436470.90	39°41'46.134"N	80°12'49.940"W	22.69	276.220	0.08	0.00	7.47	
2649.00	0.690	269.630	2648.85	15.73	2.43	-22.91	1767629.27	436470.87	39°41'46.133"N	80°12'49.944"W	23.04	276.067	0.38	0.26	24.16	
2663.00	0.570	267.490	2662.85	15.82	2.43	-23.06	1767629.12	436470.87	39°41'46.133"N	80°12'49.946"W	23.19	276.018	0.87	-0.86	-15.29	
2711.00	0.850	272.390	2710.85	16.18	2.44	-23.66	1767628.53	436470.88	39°41'46.133"N	80°12'49.954"W	23.78	275.879	0.60	0.58	10.21	Javins MWD <8-3/4" >(2638')(2686'-7705')
2741.00	0.830	274.490	2740.84	16.47	2.45	-24.09	1767628.09	436470.90	39°41'46.134"N	80°12'49.960"W	24.22	275.834	0.12	-0.07	7.00	
2773.00	0.640	279.690	2772.84	16.75	2.51	-24.50	1767627.68	436470.95	39°41'46.134"N	80°12'49.965"W	24.63	275.849	0.63	-0.59	16.25	
2804.00	0.690	233.090	2803.84	16.88	2.43	-24.82	1767627.36	436470.87	39°41'46.133"N	80°12'49.969"W	24.94	275.585	1.70	0.16	-150.32	
2835.00	1.730	207.160	2834.83	16.87	1.90	-25.18	1767627.00	436470.84	39°41'46.128"N	80°12'49.974"W	25.26	274.311	3.71	3.35	-83.65	

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# Actual Wellpath Report

Fisher 1H AWP Proj: 17103'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #01
Area	Monongalia County, WV	Well	Fisher 1H
Field	Monongalia	Wellbore	Fisher 1H AWB
Facility	Fisher Pad		

WELLPATH DATA (357 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)	Comments
2866.00	2.250	201.620	2865.81	16.15	0.92	-25.62	1767626.56	436469.36	39°41'46.118"N	80°12'49.979"W	25.64	272.049	1.79	1.68	-17.87	
2897.00	2.290	199.350	2896.79	15.49	-0.23	-26.05	1767626.13	436468.21	39°41'46.107"N	80°12'49.984"W	26.05	269.487	0.32	0.13	-7.32	
2929.00	2.210	195.610	2928.77	14.76	-1.43	-26.43	1767625.75	436467.01	39°41'46.095"N	80°12'49.989"W	26.47	266.901	0.52	-0.25	-11.69	
2960.00	2.150	192.700	2959.74	14.02	-2.57	-26.72	1767625.46	436465.87	39°41'46.084"N	80°12'49.993"W	26.84	264.498	0.41	-0.19	-9.39	
2991.00	2.080	192.290	2990.72	13.28	-3.69	-26.97	1767625.22	436464.75	39°41'46.073"N	80°12'49.996"W	27.22	262.206	0.23	-0.23	-1.32	
3022.00	2.080	187.710	3021.70	12.51	-4.80	-27.16	1767625.02	436463.64	39°41'46.062"N	80°12'49.998"W	27.58	259.982	0.54	0.00	-14.77	
3053.00	2.020	179.300	3052.68	11.67	-5.90	-27.23	1767624.95	436462.54	39°41'46.051"N	80°12'49.999"W	27.86	257.771	0.99	-0.19	-27.13	
3085.00	1.950	176.190	3084.66	10.76	-7.01	-27.19	1767624.99	436461.43	39°41'46.040"N	80°12'49.998"W	28.08	255.544	0.40	-0.22	-9.72	
3116.00	1.820	177.350	3115.65	9.92	-8.03	-27.13	1767625.05	436460.41	39°41'46.030"N	80°12'49.997"W	28.29	253.518	0.44	-0.42	3.74	
3178.00	1.680	177.870	3177.62	8.36	-9.92	-27.05	1767625.13	436458.52	39°41'46.011"N	80°12'49.996"W	28.81	249.863	0.23	-0.23	0.84	
3210.00	1.560	174.770	3209.60	7.60	-10.82	-26.99	1767625.19	436457.62	39°41'46.002"N	80°12'49.995"W	29.08	248.154	0.46	-0.37	-9.69	
3241.00	1.540	179.540	3240.59	6.91	-11.66	-26.95	1767625.23	436456.78	39°41'45.994"N	80°12'49.995"W	29.36	246.608	0.42	-0.06	15.39	
3272.00	1.700	177.240	3271.58	6.19	-12.53	-26.93	1767625.26	436455.91	39°41'45.985"N	80°12'49.994"W	29.70	245.038	0.56	0.52	-7.42	
3303.00	1.770	179.250	3302.57	5.43	-13.47	-26.90	1767625.28	436454.97	39°41'45.976"N	80°12'49.994"W	30.08	243.395	0.30	0.23	6.48	
3334.00	1.780	178.150	3333.55	4.65	-14.43	-26.87	1767625.31	436454.01	39°41'45.966"N	80°12'49.994"W	30.50	241.764	0.11	0.03	-3.55	
3365.00	1.690	178.100	3364.54	3.88	-15.37	-26.84	1767625.34	436453.07	39°41'45.957"N	80°12'49.993"W	30.93	240.207	0.29	-0.29	-0.16	
3397.00	1.610	178.410	3396.52	3.13	-16.29	-26.82	1767625.37	436452.15	39°41'45.948"N	80°12'49.993"W	31.38	238.721	0.25	-0.25	0.97	
3428.00	1.680	177.860	3427.51	2.40	-17.18	-26.79	1767625.39	436451.26	39°41'45.939"N	80°12'49.992"W	31.82	237.325	0.23	0.23	-1.77	
3459.00	1.660	178.930	3458.50	1.66	-18.08	-26.76	1767625.42	436450.36	39°41'45.930"N	80°12'49.992"W	32.30	235.953	0.12	-0.06	3.45	
3490.00	1.520	178.430	3489.49	0.97	-18.94	-26.74	1767625.44	436449.50	39°41'45.922"N	80°12'49.991"W	32.77	234.688	0.45	-0.45	-1.61	
3522.00	1.340	177.590	3521.48	0.31	-19.74	-26.71	1767625.47	436448.70	39°41'45.914"N	80°12'49.991"W	33.22	233.537	0.57	-0.56	-2.62	
3553.00	1.320	176.010	3552.47	-0.29	-20.46	-26.67	1767625.51	436447.98	39°41'45.907"N	80°12'49.990"W	33.62	232.512	0.13	-0.06	-5.10	
3584.00	1.170	177.510	3583.46	-0.85	-21.13	-26.64	1767625.55	436447.31	39°41'45.900"N	80°12'49.990"W	34.00	231.573	0.50	-0.48	4.84	
3615.00	1.050	178.100	3614.45	-1.34	-21.73	-26.61	1767625.57	436446.71	39°41'45.894"N	80°12'49.989"W	34.36	230.765	0.39	-0.39	1.90	
3646.00	0.980	173.280	3645.45	-1.80	-22.28	-26.57	1767625.61	436446.16	39°41'45.889"N	80°12'49.989"W	34.68	230.022	0.36	-0.23	-15.55	
3678.00	0.970	181.490	3677.44	-2.25	-22.82	-26.55	1767625.63	436445.62	39°41'45.884"N	80°12'49.988"W	35.01	229.316	0.44	-0.03	25.66	
3709.00	0.960	176.900	3708.44	-2.67	-23.34	-26.54	1767625.64	436445.10	39°41'45.878"N	80°12'49.988"W	35.35	228.667	0.25	-0.03	-14.81	
3740.00	0.810	181.200	3739.44	-3.06	-23.82	-26.53	1767625.65	436444.62	39°41'45.874"N	80°12'49.988"W	35.66	228.080	0.53	-0.48	13.87	
3771.00	0.720	183.460	3770.43	-3.38	-24.24	-26.55	1767625.63	436444.21	39°41'45.870"N	80°12'49.988"W	35.95	227.607	0.31	-0.29	7.29	
3802.00	0.700	187.650	3801.43	-3.66	-24.62	-26.58	1767625.60	436443.82	39°41'45.866"N	80°12'49.989"W	36.23	227.200	0.18	-0.06	13.52	

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# Actual Wellpath Report

Fisher 1H AWP Proj: 17103'

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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #01
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Fisher 1H
Area	Monongalia County, WV	Wellbore	Fisher 1H AWB
Field	Monongalia		
Facility	Fisher Pad		

WELLPATH DATA (357 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 (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
3834.00	0.650	188.780	3833.43	-3.93	-24.99	-26.64	1767625.54	436443.45	39°41'45.862"N	80°12'49.989"W	36.53	226.828	0.16	-0.16	3.53	
3865.00	0.580	202.860	3864.43	-4.13	-25.31	-26.73	1767625.46	436443.13	39°41'45.859"N	80°12'49.990"W	36.81	226.560	0.54	-0.23	45.42	
3896.00	0.550	193.830	3895.43	-4.30	-25.60	-26.82	1767625.36	436442.84	39°41'45.856"N	80°12'49.992"W	37.08	226.338	0.30	-0.10	-29.13	
3927.00	0.510	182.380	3926.42	-4.50	-25.88	-26.86	1767625.32	436442.56	39°41'45.853"N	80°12'49.992"W	37.30	226.068	0.36	-0.13	-36.94	
3959.00	0.470	187.120	3958.42	-4.71	-26.15	-26.89	1767625.30	436442.29	39°41'45.851"N	80°12'49.992"W	37.51	225.792	0.18	-0.12	14.81	
3990.00	0.490	191.150	3989.42	-4.89	-26.41	-26.93	1767625.25	436442.03	39°41'45.848"N	80°12'49.993"W	37.72	225.556	0.13	0.06	13.00	
4021.00	0.350	188.430	4020.42	-5.04	-26.63	-26.97	1767625.22	436441.81	39°41'45.846"N	80°12'49.993"W	37.90	225.357	0.46	-0.45	-8.77	
4052.00	0.170	135.930	4051.42	-5.15	-26.76	-26.95	1767625.23	436441.68	39°41'45.845"N	80°12'49.983"W	37.98	225.202	0.91	-0.58	-169.35	
4083.00	0.120	79.690	4082.42	-5.21	-26.79	-26.88	1767625.30	436441.66	39°41'45.844"N	80°12'49.992"W	37.95	225.104	0.46	-0.16	-181.45	
4114.00	0.170	60.330	4113.42	-5.23	-26.76	-26.81	1767625.37	436441.68	39°41'45.845"N	80°12'49.991"W	37.88	225.058	0.22	0.16	-62.42	
4145.00	0.150	26.270	4144.42	-5.22	-26.70	-26.75	1767625.43	436441.74	39°41'45.845"N	80°12'49.991"W	37.80	225.060	0.31	-0.06	-109.87	
4177.00	0.060	307.270	4176.42	-5.19	-26.65	-26.75	1767625.43	436441.79	39°41'45.846"N	80°12'49.991"W	37.76	225.105	0.47	-0.28	-246.87	
4208.00	0.100	303.160	4207.42	-5.15	-26.63	-26.78	1767625.40	436441.82	39°41'45.846"N	80°12'49.991"W	37.77	225.170	0.13	0.13	-13.26	
4239.00	0.200	316.630	4238.42	-5.07	-26.57	-26.84	1767625.34	436441.87	39°41'45.846"N	80°12'49.992"W	37.77	225.292	0.34	0.32	43.45	
4270.00	0.240	322.290	4269.42	-4.95	-26.48	-26.92	1767625.26	436441.96	39°41'45.847"N	80°12'49.983"W	37.76	225.472	0.15	0.13	18.26	
4302.00	0.330	290.400	4301.42	-4.80	-26.40	-27.05	1767625.13	436442.05	39°41'45.848"N	80°12'49.995"W	37.79	225.699	0.56	0.28	-99.66	
4333.00	0.320	297.200	4332.42	-4.65	-26.33	-27.21	1767624.97	436442.12	39°41'45.849"N	80°12'49.997"W	37.86	225.946	0.13	-0.03	21.94	
4364.00	0.460	284.040	4363.42	-4.47	-26.26	-27.41	1767624.77	436442.19	39°41'45.850"N	80°12'49.999"W	37.95	226.229	0.53	0.45	-42.45	
4395.00	0.510	287.430	4394.42	-4.27	-26.18	-27.66	1767624.52	436442.26	39°41'45.850"N	80°12'50.002"W	38.09	226.569	0.19	0.16	10.94	
4426.00	0.400	308.120	4425.42	-4.05	-26.08	-27.98	1767624.31	436442.37	39°41'45.851"N	80°12'50.005"W	38.17	226.911	0.63	-0.35	66.74	
4457.00	0.440	321.650	4456.42	-3.83	-25.92	-28.04	1767624.15	436442.53	39°41'45.853"N	80°12'50.007"W	38.18	227.249	0.34	0.13	43.65	
4489.00	0.480	316.250	4488.41	-3.57	-25.72	-28.20	1767623.98	436442.72	39°41'45.855"N	80°12'50.009"W	38.17	227.634	0.18	0.12	-16.88	
4520.00	0.580	313.730	4519.41	-3.29	-25.52	-28.41	1767623.77	436442.92	39°41'45.857"N	80°12'50.012"W	38.19	228.064	0.33	0.32	-8.13	
4551.00	0.300	307.740	4550.41	-3.05	-25.36	-28.59	1767623.60	436443.08	39°41'45.858"N	80°12'50.014"W	38.21	228.418	0.91	-0.90	-19.32	
4582.00	0.200	281.850	4581.41	-2.93	-25.30	-28.70	1767623.48	436443.14	39°41'45.859"N	80°12'50.016"W	38.26	228.603	0.48	-0.32	-83.52	
4613.00	0.270	261.330	4612.41	-2.86	-25.30	-28.83	1767623.35	436443.14	39°41'45.859"N	80°12'50.017"W	38.36	228.727	0.35	0.23	-66.19	
4644.00	0.300	218.970	4643.41	-2.84	-25.38	-28.95	1767623.23	436443.07	39°41'45.858"N	80°12'50.019"W	38.50	228.765	0.67	0.10	-136.65	
4675.00	0.340	222.880	4674.41	-2.88	-25.51	-29.06	1767623.12	436442.94	39°41'45.857"N	80°12'50.020"W	38.67	228.730	0.15	0.13	12.61	
4707.00	0.310	223.130	4706.41	-2.91	-25.64	-29.19	1767622.99	436442.80	39°41'45.856"N	80°12'50.022"W	38.85	228.704	0.09	-0.09	0.78	
4738.00	0.280	253.690	4737.41	-2.90	-25.72	-29.32	1767622.86	436442.72	39°41'45.855"N	80°12'50.024"W	39.00	228.739	0.51	-0.10	98.58	

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# Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #01
Area	Monongalia County, WV	Well	Fisher 1H
Field	Monongalia	Wellbore	Fisher 1H AWB
Facility	Fisher Pad		

WELLPATH DATA (357 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]	Comments
4769.00	0.100	286.590	4768.41	-2.85	-25.74	-29.42	1767622.77	436442.71	39°41'45.855"N	80°12'50.025"W	39.09	228.819	0.66	-0.58	106.13	
4800.00	0.000	221.100	4799.41	-2.83	-25.73	-29.44	1767622.74	436442.71	39°41'45.855"N	80°12'50.025"W	39.10	228.853	0.32	-0.32	236.81	
4832.00	0.350	33.770	4831.41	-2.80	-25.65	-29.39	1767622.79	436442.80	39°41'45.855"N	80°12'50.025"W	39.01	228.890	1.09	1.09	105.53	
4863.00	0.540	29.000	4862.41	-2.71	-25.44	-29.26	1767622.92	436443.00	39°41'45.857"N	80°12'50.023"W	38.78	229.000	0.62	0.61	-15.39	
4894.00	0.590	14.960	4893.41	-2.55	-25.16	-29.15	1767623.03	436443.28	39°41'45.860"N	80°12'50.022"W	38.51	229.207	0.47	0.16	-45.29	
4925.00	0.760	0.980	4924.41	-2.29	-24.80	-29.11	1767623.07	436443.64	39°41'45.864"N	80°12'50.021"W	38.24	229.571	0.76	0.55	-45.10	
4957.00	0.730	9.620	4956.40	-1.98	-24.38	-29.07	1767623.11	436444.06	39°41'45.868"N	80°12'50.021"W	37.94	230.009	0.36	-0.09	27.00	
4988.00	0.820	18.230	4987.40	-1.72	-23.98	-28.97	1767623.21	436444.46	39°41'45.872"N	80°12'50.019"W	37.61	230.382	0.47	0.29	27.77	
5019.00	0.900	0.210	5018.40	-1.40	-23.53	-28.90	1767623.28	436444.92	39°41'45.876"N	80°12'50.018"W	37.26	230.851	0.91	0.26	-58.13	
5050.00	0.930	348.240	5049.39	-0.98	-23.04	-28.95	1767623.23	436445.41	39°41'45.881"N	80°12'50.019"W	37.00	231.489	0.62	0.10	-38.61	
5081.00	1.060	339.520	5080.39	-0.47	-22.52	-29.10	1767623.08	436445.92	39°41'45.886"N	80°12'50.021"W	36.80	232.263	0.64	0.42	-28.13	
5113.00	0.970	328.880	5112.38	0.08	-22.01	-29.34	1767622.84	436446.43	39°41'45.891"N	80°12'50.024"W	36.68	233.125	0.65	-0.28	-33.25	
5144.00	0.970	318.550	5143.38	0.60	-21.59	-29.65	1767622.53	436446.85	39°41'45.896"N	80°12'50.028"W	36.68	233.942	0.56	0.00	-33.32	
5175.00	0.670	290.300	5174.38	1.02	-21.33	-30.00	1767622.19	436447.11	39°41'45.898"N	80°12'50.033"W	36.81	234.583	1.60	-0.97	-91.13	
5206.00	0.570	284.520	5205.37	1.29	-21.23	-30.32	1767621.87	436447.21	39°41'45.899"N	80°12'50.037"W	37.01	234.998	0.38	-0.32	-18.65	
5237.00	0.740	283.480	5236.37	1.57	-21.14	-30.66	1767621.52	436447.30	39°41'45.900"N	80°12'50.041"W	37.24	235.409	0.55	0.55	-3.35	
5269.00	0.650	272.320	5268.37	1.84	-21.09	-31.04	1767621.14	436447.35	39°41'45.900"N	80°12'50.046"W	37.53	235.810	0.51	-0.28	-34.88	
5300.00	0.340	277.500	5299.37	2.02	-21.07	-31.31	1767620.87	436447.37	39°41'45.901"N	80°12'50.050"W	37.74	236.062	1.01	-1.00	16.71	
5331.00	0.180	355.080	5330.37	2.12	-21.01	-31.40	1767620.78	436447.43	39°41'45.901"N	80°12'50.051"W	37.78	236.218	1.13	-0.52	250.26	
5362.00	0.460	16.940	5361.37	2.24	-20.84	-31.37	1767620.81	436447.60	39°41'45.903"N	80°12'50.050"W	37.66	236.403	0.97	0.90	70.52	
5393.00	0.640	15.750	5392.37	2.41	-20.56	-31.29	1767620.89	436447.89	39°41'45.906"N	80°12'50.049"W	37.44	236.697	0.58	0.58	-3.84	
5425.00	0.800	5.080	5424.36	2.69	-20.16	-31.22	1767620.96	436448.28	39°41'45.910"N	80°12'50.049"W	37.16	237.147	0.65	0.50	-33.34	
5487.00	0.640	6.050	5486.36	3.26	-19.39	-31.15	1767621.04	436449.06	39°41'45.917"N	80°12'50.048"W	36.69	238.101	0.26	-0.26	1.56	
5518.00	0.330	54.220	5517.36	3.39	-19.16	-31.05	1767621.13	436449.28	39°41'45.919"N	80°12'50.046"W	36.49	238.325	1.57	-1.00	155.39	
5549.00	0.230	112.740	5548.36	3.33	-19.13	-30.93	1767621.26	436449.31	39°41'45.920"N	80°12'50.045"W	36.37	238.256	0.93	-0.32	188.77	
5580.00	0.450	160.290	5579.36	3.16	-19.27	-30.83	1767621.36	436449.17	39°41'45.918"N	80°12'50.044"W	36.35	237.988	1.10	0.71	153.39	
5612.00	0.420	161.030	5611.36	2.93	-19.50	-30.75	1767621.44	436448.94	39°41'45.916"N	80°12'50.043"W	36.41	237.615	0.10	-0.09	2.31	
5642.00	0.800	169.010	5641.35	2.64	-19.81	-30.67	1767621.51	436448.63	39°41'45.913"N	80°12'50.042"W	36.51	237.141	1.29	1.27	26.60	
5673.00	1.010	170.630	5672.35	2.20	-20.29	-30.58	1767621.60	436448.15	39°41'45.908"N	80°12'50.040"W	36.70	236.437	0.68	0.68	5.23	
5705.00	0.910	165.090	5704.35	1.71	-20.82	-30.47	1767621.71	436447.63	39°41'45.903"N	80°12'50.039"W	36.90	235.663	0.43	-0.31	-17.31	

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# Actual Wellpath Report

Fisher 1H AWP Proj: 17103'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #01
Area	Monongalia County, WV	Well	Fisher 1H
Field	Monongalia	Wellbore	Fisher 1H AWB
Facility	Fisher Pad		

WELLPATH DATA (357 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)	Comments
5736.00	1.010	163.400	5735.34	1.23	-21.32	-30.33	1767621.85	436447.13	39°41'45.898"N	80°12'50.037"W	37.07	234.902	0.34	0.32	-5.45	
5767.00	0.860	171.920	5766.34	0.77	-21.81	-30.22	1767621.96	436446.63	39°41'45.893"N	80°12'50.036"W	37.27	234.185	0.66	-0.48	27.48	
5798.00	0.770	165.260	5797.33	0.37	-22.24	-30.14	1767622.05	436446.20	39°41'45.889"N	80°12'50.034"W	37.45	233.573	0.42	-0.29	-21.48	
5830.00	0.800	160.900	5829.33	-0.04	-22.66	-30.01	1767622.17	436445.78	39°41'45.885"N	80°12'50.033"W	37.60	232.944	0.21	0.09	-13.62	
5861.00	0.650	162.480	5860.33	-0.41	-23.03	-29.88	1767622.30	436445.41	39°41'45.881"N	80°12'50.031"W	37.73	232.379	0.49	-0.48	5.10	
5892.00	0.630	162.380	5891.33	-0.74	-23.36	-29.78	1767622.40	436445.08	39°41'45.878"N	80°12'50.030"W	37.85	231.887	0.06	-0.06	-0.32	
5924.00	0.530	165.490	5923.32	-1.04	-23.67	-29.69	1767622.49	436444.77	39°41'45.875"N	80°12'50.029"W	37.97	231.434	0.33	-0.31	9.72	
5955.00	0.440	169.810	5954.32	-1.28	-23.93	-29.63	1767622.55	436444.51	39°41'45.872"N	80°12'50.028"W	38.09	231.079	0.31	-0.29	13.94	
5985.00	0.360	200.510	5984.32	-1.43	-24.13	-29.64	1767622.54	436444.31	39°41'45.870"N	80°12'50.028"W	38.22	230.856	0.75	-0.27	102.33	
6018.00	0.280	190.090	6017.32	-1.54	-24.31	-29.70	1767622.49	436444.14	39°41'45.869"N	80°12'50.029"W	38.37	230.699	0.30	-0.24	-31.58	
6049.00	0.250	128.300	6048.32	-1.66	-24.42	-29.66	1767622.53	436444.02	39°41'45.868"N	80°12'50.028"W	38.42	230.527	0.88	-0.10	-199.32	
6080.00	0.250	94.250	6079.32	-1.77	-24.47	-29.54	1767622.65	436443.97	39°41'45.867"N	80°12'50.027"W	38.35	230.358	0.47	0.00	-109.84	
6112.00	0.380	90.900	6111.32	-1.88	-24.48	-29.36	1767622.82	436443.97	39°41'45.867"N	80°12'50.024"W	38.22	230.183	0.41	0.41	-10.47	
6143.00	0.320	77.810	6142.32	-1.98	-24.46	-29.17	1767623.01	436443.98	39°41'45.867"N	80°12'50.022"W	38.07	230.021	0.32	-0.19	-42.23	
6174.00	0.250	73.710	6173.32	-2.04	-24.42	-29.02	1767623.16	436444.02	39°41'45.868"N	80°12'50.020"W	37.93	229.919	0.24	-0.23	-13.23	
6205.00	0.340	60.590	6204.32	-2.07	-24.36	-28.88	1767623.30	436444.08	39°41'45.868"N	80°12'50.018"W	37.78	229.852	0.36	0.29	-42.32	
6237.00	0.280	40.860	6236.32	-2.07	-24.25	-28.74	1767623.44	436444.19	39°41'45.869"N	80°12'50.016"W	37.61	229.844	0.38	-0.19	-61.66	
6263.00	0.290	32.440	6262.32	-2.03	-24.15	-28.67	1767623.52	436444.29	39°41'45.870"N	80°12'50.015"W	37.48	229.889	0.17	0.04	-32.38	
6299.00	0.210	72.770	6298.32	-2.02	-24.05	-28.55	1767623.63	436444.39	39°41'45.871"N	80°12'50.014"W	37.33	229.891	0.52	-0.22	112.03	
6330.00	0.410	82.570	6329.32	-2.10	-24.02	-28.39	1767623.79	436444.42	39°41'45.872"N	80°12'50.012"W	37.19	229.765	0.67	0.65	31.61	
6362.00	0.280	77.240	6361.32	-2.19	-23.99	-28.20	1767623.98	436444.45	39°41'45.872"N	80°12'50.009"W	37.02	229.613	0.42	-0.41	-16.66	
6393.00	0.270	40.490	6392.32	-2.20	-23.92	-28.08	1767624.10	436444.52	39°41'45.873"N	80°12'50.008"W	36.88	229.577	0.56	-0.03	-118.55	
6424.00	0.380	26.300	6423.32	-2.14	-23.77	-27.99	1767624.20	436444.67	39°41'45.874"N	80°12'50.007"W	36.72	229.658	0.44	0.35	-45.77	
6455.00	0.460	11.140	6454.32	-2.01	-23.56	-27.92	1767624.26	436444.89	39°41'45.876"N	80°12'50.006"W	36.53	229.844	0.44	0.26	-48.90	
6487.00	0.440	349.400	6486.32	-1.82	-23.31	-27.91	1767624.27	436445.13	39°41'45.879"N	80°12'50.006"W	36.37	230.139	0.53	-0.06	-67.94	
6518.00	0.770	254.120	6517.31	-1.63	-23.25	-28.14	1767624.04	436445.19	39°41'45.879"N	80°12'50.009"W	36.50	230.435	2.97	1.06	-307.35	
6549.00	2.430	234.330	6548.30	-1.54	-23.69	-28.87	1767623.31	436444.75	39°41'45.875"N	80°12'50.018"W	37.35	230.631	5.57	5.35	-63.84	
6580.00	4.180	233.920	6579.25	-1.51	-24.74	-30.32	1767621.86	436443.70	39°41'45.864"N	80°12'50.037"W	39.13	230.788	5.65	5.65	-1.32	
6611.00	5.820	234.270	6610.13	-1.46	-26.32	-32.51	1767619.67	436442.12	39°41'45.849"N	80°12'50.064"W	41.83	231.004	5.29	5.29	1.13	
6643.00	7.600	234.500	6641.91	-1.37	-28.50	-35.55	1767616.63	436439.94	39°41'45.827"N	80°12'50.103"W	45.56	231.282	5.56	5.56	0.72	

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# Actual Wellpath Report

Fisher 1H AWP Proj: 17103'  
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REFERENCE WELLPATH IDENTIFICATION	
Operator	NORTHEAST NATURAL ENERGY, LLC
Area	Monongalia County, WV
Field	Monongalia
Facility	Fisher Pad
Slot	Slot #01
Well	Fisher 1H
Wellbore	Fisher 1H AWB

WELLPATH DATA (357 stations)																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (IUS ft)	Grid North (IUS ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (F/100ft)	Build Rate (F/100ft)	Turn Rate (F/100ft)	Comments
6674.00	9.260	232.800	6672.57	-1.32	-31.20	-39.20	1767612.98	436437.25	39°41'45.800"N	80°12'50.150"W	50.10	231.489	5.41	5.35	-5.48	
6705.00	10.810	230.590	6703.10	-1.45	-34.55	-43.44	1767608.75	436433.89	39°41'45.766"N	80°12'50.203"W	55.50	231.501	5.15	5.00	-7.13	
6736.00	11.880	228.590	6733.49	-1.82	-38.51	-48.08	1767604.11	436429.94	39°41'45.727"N	80°12'50.262"W	61.60	231.307	3.68	3.45	-6.45	
6767.00	12.780	227.180	6763.78	-2.41	-42.95	-52.98	1767599.20	436425.50	39°41'45.683"N	80°12'50.325"W	68.20	230.973	3.06	2.90	-4.55	
6799.00	13.900	227.180	6794.91	-3.16	-47.97	-58.40	1767593.78	436420.48	39°41'45.633"N	80°12'50.393"W	75.57	230.603	3.00	3.50	0.00	
6828.00	15.120	228.240	6822.99	-3.83	-52.85	-63.78	1767588.41	436415.59	39°41'45.584"N	80°12'50.462"W	82.83	230.351	4.31	4.21	3.66	
6861.00	16.330	228.120	6854.75	-4.58	-58.82	-70.44	1767581.74	436409.63	39°41'45.524"N	80°12'50.546"W	91.77	230.139	3.67	3.67	-0.36	
6892.00	17.330	228.640	6884.42	-5.30	-64.78	-77.15	1767575.03	436403.67	39°41'45.465"N	80°12'50.632"W	100.74	229.983	3.28	3.23	1.68	
6924.00	18.770	225.730	6914.85	-6.32	-71.52	-84.42	1767567.77	436398.92	39°41'45.398"N	80°12'50.724"W	110.64	229.728	5.31	4.50	-9.09	
6955.00	20.210	223.300	6944.07	-7.85	-78.90	-91.66	1767560.53	436389.55	39°41'45.324"N	80°12'50.816"W	120.94	229.279	5.93	4.65	-7.84	
6986.00	21.380	219.290	6973.05	-10.09	-87.17	-98.91	1767553.28	436381.28	39°41'45.242"N	80°12'50.908"W	131.84	228.610	5.94	3.77	-12.94	
7017.00	21.880	218.570	7001.87	-12.87	-96.06	-106.09	1767546.10	436372.39	39°41'45.154"N	80°12'50.999"W	143.12	227.841	1.83	1.61	-2.32	
7048.00	22.950	217.180	7030.53	-15.96	-105.39	-113.34	1767538.84	436363.06	39°41'45.061"N	80°12'51.090"W	154.77	227.082	3.85	3.45	-4.48	
7080.00	24.300	217.230	7059.85	-19.45	-115.60	-121.10	1767531.09	436352.84	39°41'44.959"N	80°12'51.189"W	167.42	226.330	4.22	4.22	0.16	
7111.00	25.340	215.950	7087.98	-23.13	-126.05	-128.85	1767523.34	436342.39	39°41'44.855"N	80°12'51.287"W	180.28	225.629	3.78	3.35	-4.13	
7142.00	25.710	214.980	7115.96	-27.15	-136.93	-136.60	1767515.59	436333.51	39°41'44.747"N	80°12'51.385"W	193.42	224.931	1.80	1.19	-3.13	
7173.00	26.380	212.290	7143.81	-31.67	-148.26	-144.13	1767508.05	436320.19	39°41'44.635"N	80°12'51.480"W	206.78	224.191	4.35	2.10	-8.68	
7205.00	26.140	213.130	7172.51	-36.57	-160.17	-151.78	1767500.41	436308.28	39°41'44.516"N	80°12'51.577"W	220.66	223.460	1.35	-0.69	2.63	
7236.00	25.610	213.330	7200.40	-41.15	-171.49	-159.19	1767492.99	436296.96	39°41'44.404"N	80°12'51.670"W	233.99	222.871	1.73	-1.71	0.65	
7266.00	25.580	212.750	7227.46	-45.57	-182.35	-166.26	1767485.93	436286.10	39°41'44.296"N	80°12'51.760"W	246.77	222.357	0.84	-0.10	-1.93	
7298.00	25.070	214.050	7256.38	-50.17	-193.78	-173.79	1767478.40	436274.67	39°41'44.183"N	80°12'51.855"W	260.30	221.888	2.36	-1.59	4.06	
7360.00	23.990	216.840	7312.79	-57.94	-214.75	-188.71	1767463.48	436263.70	39°41'43.974"N	80°12'52.043"W	285.88	221.307	2.55	-1.74	4.50	
7391.00	23.170	220.670	7341.20	-61.00	-224.42	-196.46	1767455.73	436244.03	39°41'43.878"N	80°12'52.142"W	298.26	221.199	5.60	-2.65	12.35	
7423.00	23.250	223.960	7370.61	-63.33	-233.74	-204.95	1767447.24	436234.71	39°41'43.785"N	80°12'52.249"W	310.87	221.245	4.06	0.25	10.28	
7454.00	23.430	225.650	7399.08	-65.08	-242.45	-213.60	1767438.59	436226.00	39°41'43.688"N	80°12'52.359"W	323.13	221.380	2.24	0.58	5.45	
7485.00	23.870	226.460	7427.47	-66.59	-251.08	-222.56	1767429.64	436217.37	39°41'43.612"N	80°12'52.473"W	335.52	221.553	1.76	1.42	2.61	
7516.00	24.000	228.440	7455.81	-67.80	-259.59	-231.82	1767420.37	436208.87	39°41'43.528"N	80°12'52.590"W	348.03	221.766	2.62	0.42	6.39	
7547.00	24.250	229.310	7484.10	-68.71	-267.92	-241.37	1767410.83	436200.54	39°41'43.445"N	80°12'52.712"W	360.61	222.015	1.40	0.81	2.81	
7579.00	24.820	232.200	7513.21	-69.23	-276.32	-251.66	1767400.54	436192.14	39°41'43.361"N	80°12'52.842"W	373.74	222.325	4.15	1.78	9.03	
7610.00	25.050	233.090	7541.32	-69.31	-284.25	-262.04	1767390.15	436184.21	39°41'43.282"N	80°12'52.974"W	386.61	222.672	1.42	0.74	2.87	

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# Actual Wellpath Report

Fisher 1H AWP Proj: 17103'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #01
Area	Monongalia County, WV	Well	Fisher 1H
Field	Monongalia	Wellbore	Fisher 1H AWB
Facility	Fisher Pad		

WELLPATH DATA (357 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]	Comments
7641.00	25.150	232.170	7569.40	-69.40	-292.23	-272.49	1767379.70	436176.23	39°41'43.202"N	80°12'53.107"W	399.57	222.998	1.30	0.32	-2.97	
7672.00	25.040	232.980	7597.47	-69.49	-300.22	-282.94	1767369.26	436168.24	39°41'43.122"N	80°12'53.240"W	412.54	223.302	1.16	-0.35	2.61	
7704.00	24.390	233.200	7626.54	-69.47	-308.26	-293.63	1767358.56	436160.20	39°41'43.042"N	80°12'53.376"W	425.73	223.608	2.05	-2.03	0.69	
7730.00	24.110	233.720	7650.24	-69.39	-314.62	-302.21	1767349.99	436153.84	39°41'42.978"N	80°12'53.485"W	436.25	223.848	1.35	-1.08	2.00	
7753.00	23.670	233.180	7671.27	-69.31	-320.16	-309.70	1767342.50	436148.30	39°41'42.923"N	80°12'53.580"W	445.44	224.048	2.14	-1.91	-2.35	BHI AT Curve <8-1/2"> (7730')(7753'-17078')
7790.00	25.240	233.780	7704.95	-69.18	-329.28	-322.01	1767330.19	436139.18	39°41'42.832"N	80°12'53.737"W	460.55	224.361	4.30	4.24	1.62	
7822.00	28.770	234.500	7733.46	-68.89	-337.78	-333.78	1767318.42	436130.68	39°41'42.747"N	80°12'53.887"W	474.88	224.659	11.08	11.03	2.25	
7853.00	31.730	234.830	7760.24	-68.43	-346.81	-346.52	1767305.68	436121.65	39°41'42.657"N	80°12'54.049"W	490.26	224.976	9.56	9.55	1.06	
7885.00	34.440	234.330	7787.04	-67.95	-356.94	-360.76	1767291.45	436111.53	39°41'42.555"N	80°12'54.230"W	507.49	225.305	8.51	8.47	-1.56	
7916.00	38.110	233.670	7812.03	-67.64	-367.72	-375.59	1767276.61	436100.74	39°41'42.448"N	80°12'54.419"W	525.63	225.607	11.91	11.84	-2.13	
7948.00	41.060	232.770	7836.69	-67.56	-379.93	-391.92	1767260.29	436088.53	39°41'42.326"N	80°12'54.626"W	545.84	225.890	9.39	9.22	-2.81	
7980.00	43.370	232.110	7860.39	-67.78	-393.04	-408.96	1767243.25	436075.43	39°41'42.195"N	80°12'54.843"W	567.21	226.137	7.35	7.22	-2.06	
8012.00	47.000	232.230	7882.94	-68.11	-406.96	-426.88	1767225.32	436061.51	39°41'42.056"N	80°12'55.071"W	589.78	226.369	11.35	11.34	0.37	
8043.00	49.900	231.650	7903.50	-68.54	-421.26	-445.15	1767207.06	436047.21	39°41'41.913"N	80°12'55.303"W	612.88	226.579	9.46	9.35	-1.87	
8075.00	52.190	230.980	7923.62	-69.27	-436.81	-464.57	1767187.64	436031.65	39°41'41.758"N	80°12'55.550"W	637.68	226.764	7.34	7.16	-2.09	
8107.00	54.780	230.670	7942.66	-70.25	-453.06	-484.50	1767167.71	436015.41	39°41'41.596"N	80°12'55.803"W	663.33	226.921	8.13	8.09	-0.97	
8138.00	58.050	231.770	7959.80	-71.05	-469.23	-504.64	1767147.58	435999.24	39°41'41.434"N	80°12'56.059"W	689.08	227.082	10.95	10.55	3.55	
8170.00	60.880	234.480	7976.06	-70.98	-485.76	-526.68	1767125.53	435982.71	39°41'41.269"N	80°12'56.339"W	716.49	227.315	11.46	8.84	8.47	
8202.00	64.280	235.950	7990.80	-69.87	-501.95	-550.01	1767102.20	435966.52	39°41'41.107"N	80°12'56.636"W	744.63	227.616	11.38	10.63	4.59	
8233.00	65.530	239.080	8003.95	-67.66	-517.03	-573.69	1767078.52	435951.45	39°41'40.957"N	80°12'56.938"W	772.29	227.974	9.99	4.03	10.10	
8265.00	65.560	242.850	8017.20	-63.62	-531.16	-599.15	1767053.06	435937.31	39°41'40.815"N	80°12'57.262"W	800.70	228.442	10.72	0.09	11.78	
8297.00	65.490	247.000	8030.46	-57.61	-543.50	-625.52	1767026.69	435924.97	39°41'40.691"N	80°12'57.598"W	828.66	229.014	11.80	-0.22	12.97	
8329.00	66.140	250.090	8043.57	-49.78	-554.17	-652.69	1766999.53	435914.30	39°41'40.583"N	80°12'57.944"W	856.22	229.667	9.04	2.03	9.66	
8361.00	67.220	252.370	8056.24	-40.59	-563.63	-680.51	1766971.71	435904.85	39°41'40.488"N	80°12'58.299"W	883.61	230.367	7.36	3.37	7.12	
8455.00	71.220	261.040	8089.64	-5.23	-583.72	-765.94	1766886.29	435884.75	39°41'40.282"N	80°12'59.390"W	963.01	232.689	9.61	4.26	9.22	
8549.00	73.140	273.990	8118.52	45.39	-587.54	-855.12	1766797.11	435880.94	39°41'40.238"N	80°13'00.530"W	1037.51	235.508	13.27	2.04	13.78	
8644.00	72.980	281.410	8146.23	109.26	-575.37	-945.10	1766707.13	435893.10	39°41'40.351"N	80°13'01.683"W	1106.47	238.667	7.47	-0.17	7.81	
8739.00	73.170	288.450	8173.92	180.76	-551.97	-1032.86	1766619.39	435916.50	39°41'40.575"N	80°13'02.808"W	1171.10	241.879	7.09	0.20	7.41	
8834.00	76.510	299.100	8198.83	260.68	-515.01	-1116.59	1766535.66	435953.46	39°41'40.934"N	80°13'03.883"W	1229.64	245.239	11.37	3.52	11.21	
8929.00	80.070	306.700	8218.13	347.96	-464.50	-1194.60	1766457.65	436003.97	39°41'41.427"N	80°13'04.886"W	1281.73	248.752	8.68	3.75	8.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #01
Area	Monongalia County, WV	Well	Fisher 1H
Field	Monongalia	Wellbore	Fisher 1H AWB
Facility	Fisher Pad		

WELLPATH DATA (357 stations)																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
9023.00	89.860	315.040	8231.29	438.87	-403.64	-1264.89	1766387.37	436064.83	39°41'42.023"N	80°13'05.791"W	1327.73	252.302	9.66	4.03	8.87	
9118.00	89.380	319.660	8236.89	533.18	-333.92	-1329.09	1766323.17	436134.54	39°41'42.706"N	80°13'06.620"W	1370.39	255.897	7.57	5.81	4.86	
9213.00	91.230	321.430	8236.39	628.09	-260.58	-1389.45	1766262.81	436207.88	39°41'43.427"N	80°13'07.399"W	1413.68	259.378	2.70	1.95	1.86	
9308.00	89.910	325.280	8235.44	723.06	-184.38	-1446.14	1766206.13	436284.08	39°41'44.175"N	80°13'08.132"W	1457.84	262.734	4.28	-1.39	4.05	
9404.00	89.750	324.100	8235.73	819.02	-108.04	-1501.62	1766150.65	436362.41	39°41'44.945"N	80°13'08.850"W	1505.36	265.961	1.24	-0.17	-1.23	
9498.00	89.630	320.240	8236.24	912.99	-31.81	-1559.27	1766093.01	436436.63	39°41'45.674"N	80°13'09.585"W	1559.59	268.831	4.11	-0.13	-4.11	
9593.00	90.250	320.490	8236.34	1007.88	41.35	-1619.86	1766032.41	436509.79	39°41'46.392"N	80°13'10.378"W	1620.39	271.462	0.70	0.65	0.26	
9688.00	90.430	318.600	8235.77	1102.71	113.84	-1681.50	1765970.78	436582.07	39°41'47.102"N	80°13'11.174"W	1685.34	273.866	2.00	0.19	-1.99	
9783.00	90.740	322.070	8234.80	1197.58	186.75	-1742.13	1765910.16	436655.18	39°41'47.819"N	80°13'11.957"W	1752.11	276.119	3.67	0.33	3.65	
9877.00	91.020	321.830	8233.36	1291.56	260.76	-1800.06	1765852.23	436729.19	39°41'48.546"N	80°13'12.706"W	1818.85	278.243	0.39	0.30	-0.26	
9971.00	90.710	324.040	8231.94	1385.54	335.76	-1856.70	1765795.59	436804.18	39°41'49.283"N	80°13'13.438"W	1886.82	280.250	2.37	-0.33	2.35	
10067.00	90.060	323.850	8231.27	1481.52	413.37	-1913.20	1765739.09	436881.78	39°41'50.045"N	80°13'14.169"W	1957.35	282.192	0.68	-0.65	-0.20	
10162.00	90.060	325.970	8231.14	1576.47	491.10	-1967.81	1765684.49	436959.51	39°41'50.809"N	80°13'14.875"W	2028.17	284.013	2.23	-0.03	2.23	
10257.00	90.060	325.440	8231.05	1671.36	569.58	-2021.34	1765630.96	437037.99	39°41'51.581"N	80°13'15.568"W	2100.06	285.737	0.56	0.00	-0.56	
10352.00	90.860	325.270	8230.28	1766.28	647.73	-2075.34	1765578.96	437116.13	39°41'52.349"N	80°13'16.267"W	2174.08	287.334	0.86	0.84	-0.18	
10445.00	90.880	323.520	8229.03	1859.24	723.34	-2129.48	1765522.83	437194.73	39°41'53.091"N	80°13'16.967"W	2248.98	288.761	1.89	-0.19	-1.88	
10541.00	90.430	324.000	8228.10	1955.22	800.78	-2186.23	1765466.08	437269.15	39°41'53.852"N	80°13'17.701"W	2328.27	290.117	0.56	-0.26	0.50	
10636.00	90.460	319.870	8227.36	2050.18	875.54	-2244.79	1765407.53	437343.92	39°41'54.586"N	80°13'18.458"W	2409.49	291.307	4.35	0.03	-4.35	
10731.00	90.080	316.390	8226.91	2144.82	948.27	-2308.19	1765344.13	437414.65	39°41'55.280"N	80°13'19.276"W	2494.62	292.292	3.68	-0.39	-3.66	
10826.00	90.280	318.450	8226.60	2239.37	1016.22	-2372.46	1765279.86	437484.59	39°41'55.967"N	80°13'20.106"W	2580.94	293.187	2.18	0.20	2.17	
10921.00	90.030	323.430	8226.34	2334.28	1089.96	-2432.30	1765220.02	437558.33	39°41'56.691"N	80°13'20.879"W	2665.35	294.138	5.25	-0.25	5.24	
11016.00	90.770	324.670	8225.68	2429.26	1166.86	-2488.07	1765164.26	437632.23	39°41'57.446"N	80°13'21.600"W	2748.10	295.126	1.52	0.78	1.31	
11111.00	90.250	326.300	8224.84	2524.16	1245.13	-2541.90	1765110.44	437713.50	39°41'58.215"N	80°13'22.297"W	2830.48	296.098	1.80	-0.55	1.72	
11206.00	90.370	329.180	8224.32	2618.82	1325.46	-2592.60	1765059.74	437793.82	39°41'59.005"N	80°13'22.964"W	2911.77	297.078	3.03	0.13	3.03	
11301.00	90.060	330.820	8223.97	2713.11	1407.73	-2640.10	1765012.24	437876.08	39°41'59.814"N	80°13'23.570"W	2991.96	298.067	1.76	-0.33	1.73	
11395.00	89.630	328.060	8224.22	2806.51	1488.66	-2687.89	1764964.46	437957.01	39°42'00.610"N	80°13'24.190"W	3072.60	298.979	2.97	-0.46	-2.94	
11490.00	89.410	323.390	8225.02	2901.37	1567.14	-2741.37	1764910.98	438035.48	39°42'01.382"N	80°13'24.882"W	3157.70	299.755	4.92	-0.23	-4.92	
11585.00	89.540	320.390	8225.89	2996.34	1641.88	-2799.99	1764852.36	438110.22	39°42'02.116"N	80°13'25.640"W	3245.88	300.387	3.16	0.14	-3.16	
11679.00	90.080	316.210	8226.19	3090.00	1712.04	-2862.51	1764789.84	438180.38	39°42'02.804"N	80°13'26.447"W	3335.42	300.883	4.49	0.59	-4.45	
11773.00	90.400	319.740	8225.79	3183.62	1781.86	-2925.43	1764726.93	438250.19	39°42'03.489"N	80°13'27.259"W	3425.37	301.345	3.77	0.33	3.76	

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# Actual Wellpath Report

Fisher 1H AWP Proj: 17103'  
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REFERENCE WELLPATH IDENTIFICATION				
Operator	NORTHEAST NATURAL ENERGY, LLC		Slot	Slot #01
Area	Monongalia County, WV		Well	Fisher 1H
Field	Monongalia		Wellbore	Fisher 1H AWB
Facility	Fisher Pad			

WELLPATH DATA (357 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)	Comments
11869.00	89.690	321.490	8225.71	3279.54	1856.06	-2986.34	1764666.02	438324.38	39°42'04.217"N	80°13'28.046"W	3516.13	301.862	1.97	-0.74	1.82	
11962.00	88.830	321.710	8226.91	3372.50	1928.93	-3044.10	1764608.26	438397.26	39°42'04.933"N	80°13'28.792"W	3603.79	302.361	0.95	-0.92	0.24	
12057.00	89.630	322.420	8228.19	3467.48	2003.85	-3102.50	1764549.87	438472.17	39°42'05.669"N	80°13'29.547"W	3693.36	302.858	1.13	0.84	0.75	
12151.00	89.690	322.720	8228.75	3561.47	2078.50	-3159.63	1764492.74	438546.81	39°42'06.402"N	80°13'30.286"W	3781.98	303.338	0.33	0.06	0.32	
12246.00	90.000	324.790	8229.01	3656.46	2155.11	-3215.79	1764436.58	438623.42	39°42'07.155"N	80°13'31.012"W	3871.15	303.829	2.20	0.33	2.18	
12341.00	89.880	325.120	8229.10	3751.40	2232.88	-3270.34	1764382.03	438701.19	39°42'07.919"N	80°13'31.718"W	3959.91	304.324	0.37	-0.13	0.35	
12435.00	89.970	325.290	8229.23	3845.33	2310.08	-3323.98	1764328.40	438778.38	39°42'08.677"N	80°13'32.413"W	4047.88	304.798	0.20	0.10	0.18	
12530.00	90.150	322.470	8229.13	3940.31	2386.81	-3379.98	1764272.40	438855.10	39°42'09.431"N	80°13'33.137"W	4137.77	305.228	2.97	0.19	-2.97	
12626.00	90.280	318.460	8228.77	4036.20	2460.83	-3441.08	1764211.31	438929.12	39°42'10.158"N	80°13'33.926"W	4230.45	305.570	4.18	0.14	-4.18	
12721.00	89.970	322.230	8228.56	4131.08	2533.96	-3501.69	1764150.70	439002.25	39°42'10.876"N	80°13'34.709"W	4322.36	305.891	3.98	-0.33	3.97	
12815.00	89.660	322.060	8228.86	4225.07	2608.18	-3559.37	1764093.02	439076.46	39°42'11.605"N	80°13'35.455"W	4412.68	306.233	0.38	-0.33	-0.18	
12910.00	89.510	323.660	8229.55	4320.06	2683.90	-3616.73	1764035.67	439152.18	39°42'12.348"N	80°13'36.197"W	4503.78	306.578	1.69	-0.16	1.68	
13005.00	89.480	324.910	8230.39	4415.03	2761.03	-3672.18	1763980.22	439229.31	39°42'13.106"N	80°13'36.914"W	4594.37	306.939	1.32	-0.03	1.32	
13100.00	89.170	322.900	8231.51	4510.01	2837.79	-3728.14	1763924.26	439306.06	39°42'13.860"N	80°13'37.638"W	4685.30	307.278	2.14	-0.33	-2.12	
13195.00	88.800	318.100	8233.19	4604.88	2911.06	-3788.54	1763863.87	439379.32	39°42'14.579"N	80°13'38.418"W	4777.79	307.538	5.07	-0.39	-5.05	
13290.00	88.370	320.120	8235.54	4699.62	2982.85	-3850.71	1763801.71	439451.11	39°42'15.284"N	80°13'39.221"W	4870.87	307.762	2.17	-0.45	2.13	
13385.00	88.460	320.440	8238.17	4794.48	3055.89	-3911.39	1763741.02	439524.15	39°42'16.001"N	80°13'40.005"W	4963.61	308.000	0.35	0.09	0.34	
13480.00	88.460	318.130	8240.72	4889.24	3127.87	-3973.33	1763679.09	439596.12	39°42'16.707"N	80°13'40.805"W	5056.77	308.210	2.43	0.00	-2.43	
13575.00	88.860	321.540	8242.94	4984.05	3200.44	-4034.58	1763617.84	439668.68	39°42'17.420"N	80°13'41.596"W	5149.82	308.423	3.61	0.42	3.59	
13670.00	89.010	324.720	8244.71	5079.03	3276.41	-4091.57	1763560.86	439744.65	39°42'18.166"N	80°13'42.333"W	5241.74	308.687	3.35	0.16	3.35	
13765.00	89.630	325.510	8245.84	5173.95	3354.34	-4145.89	1763506.54	439822.57	39°42'18.932"N	80°13'43.036"W	5332.92	308.975	1.06	0.65	0.83	
13861.00	89.540	325.090	8246.53	5269.87	3433.26	-4200.54	1763451.89	439901.49	39°42'19.707"N	80°13'43.744"W	5425.11	309.260	0.45	-0.09	-0.44	
13956.00	89.380	325.850	8247.43	5364.78	3511.52	-4254.39	1763398.05	439979.75	39°42'20.476"N	80°13'44.441"W	5516.39	309.536	0.82	-0.17	0.80	
14051.00	89.660	323.880	8248.22	5459.72	3589.20	-4309.06	1763343.38	440057.43	39°42'21.240"N	80°13'45.148"W	5608.06	309.792	2.09	0.29	-2.07	
14146.00	89.260	328.400	8249.12	5554.55	3668.07	-4361.97	1763290.47	440136.28	39°42'22.015"N	80°13'45.834"W	5699.26	310.061	4.78	-0.42	4.76	
14241.00	89.140	325.220	8250.45	5649.32	3747.55	-4413.97	1763238.48	440215.76	39°42'22.796"N	80°13'46.507"W	5790.27	310.332	3.35	-0.13	-3.35	
14337.00	89.750	321.510	8251.38	5745.29	3824.57	-4471.24	1763181.21	440292.78	39°42'23.553"N	80°13'47.248"W	5883.82	310.543	3.92	0.64	-3.86	
14432.00	88.860	320.540	8252.53	5840.23	3898.42	-4530.99	1763121.47	440366.62	39°42'24.278"N	80°13'48.020"W	5977.25	310.708	1.39	-0.94	-1.02	
14527.00	89.110	323.450	8254.21	5935.19	3973.25	-4589.46	1763062.99	440441.45	39°42'25.012"N	80°13'48.776"W	6070.41	310.884	3.07	0.26	3.06	
14622.00	88.340	326.880	8256.33	6030.08	4051.20	-4643.71	1763008.75	440519.39	39°42'25.778"N	80°13'49.478"W	6162.48	311.102	3.70	-0.81	3.61	

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# Actual Wellpath Report

Fisher 1H AWP Proj: 17103

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NATURAL ENERGY



Operator	Area	Field	Facility
NORTHEAST NATURAL ENERGY, LLC	Monongalia County, WV	Monongalia	Fisher Pad
Slot	Well	Wellbore	Fisher 1H AWP
Slot #01	Fisher 1H		

## WELLPATH DATA (357 stations)

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate	Comments
ft	°	°	ft	ft	ft	ft	ft	ft	ft	°	°	ft	ft	ft/100ft	ft/100ft	ft/100ft	
14716.00	88.710	323.630	8258.75	6123.97	4128.40	-4697.26	1762955.21	440596.59	39°42'26.53"N	80°13'50.17"W	80°13'50.17"W	6253.63	311.312	3.48	-0.39	-3.46	
14811.00	88.610	324.630	8260.97	6218.92	4205.36	-4752.90	1762899.56	440673.55	39°42'27.29"N	80°13'50.89"W	80°13'50.89"W	6346.27	311.502	1.06	-0.11	1.05	
14905.00	88.550	319.610	8263.30	6312.85	4279.51	-4810.59	1762841.89	440747.69	39°42'28.02"N	80°13'51.63"W	80°13'51.63"W	6438.63	311.656	5.34	-0.06	-5.34	
15000.00	88.680	318.910	8265.59	6407.62	4351.47	-4822.57	1762779.91	440819.64	39°42'28.72"N	80°13'52.43"W	80°13'52.43"W	6532.78	311.767	0.75	0.14	-0.74	
15095.00	88.710	320.690	8267.76	6502.44	4424.01	-4933.87	1762718.61	440892.18	39°42'29.43"N	80°13'53.22"W	80°13'53.22"W	6626.83	311.881	1.87	0.03	1.87	
15189.00	88.580	323.700	8269.98	6566.40	4498.25	-4991.46	1762661.02	440966.41	39°42'30.16"N	80°13'53.97"W	80°13'53.97"W	6719.30	312.025	3.20	-0.14	3.20	
15284.00	88.120	322.110	8272.72	6691.35	4573.99	-5048.74	1762603.75	441042.15	39°42'30.91"N	80°13'54.71"W	80°13'54.71"W	6812.57	312.176	1.74	-0.48	-1.67	
15379.00	88.210	323.820	8275.76	6786.30	4649.78	-5105.92	1762546.57	441117.94	39°42'31.65"N	80°13'55.45"W	80°13'55.45"W	6905.86	312.323	1.80	0.09	1.80	
15474.00	88.090	326.230	8278.83	6881.19	4727.58	-5160.35	1762492.15	441195.73	39°42'32.42"N	80°13'56.15"W	80°13'56.15"W	6998.51	312.494	2.64	-0.13	2.64	
15569.00	88.520	319.350	8281.64	6976.09	4803.16	-5217.74	1762434.76	441271.31	39°42'33.16"N	80°13'56.90"W	80°13'56.90"W	7091.91	312.631	7.25	0.45	-7.24	
15663.00	88.420	315.490	8283.33	7069.61	4872.35	-5281.32	1762371.18	441340.49	39°42'33.84"N	80°13'57.72"W	80°13'57.72"W	7185.55	312.693	4.22	0.96	-4.11	
15759.00	88.830	318.810	8284.80	7165.08	4942.71	-5346.59	1762305.92	441410.85	39°42'34.53"N	80°13'58.56"W	80°13'58.56"W	7281.24	312.752	3.51	-0.61	3.46	
15854.00	88.980	324.460	8286.61	7260.00	5017.15	-5405.52	1762246.99	441485.29	39°42'35.26"N	80°13'59.32"W	80°13'59.32"W	7375.06	312.866	5.95	0.16	5.95	
15950.00	90.740	326.280	8288.85	7355.91	5096.14	-5460.07	1762192.44	441564.27	39°42'36.03"N	80°14'00.03"W	80°14'00.03"W	7468.80	313.026	2.64	1.83	1.90	
16045.00	91.170	326.140	8289.26	7450.79	5174.62	-5513.58	1762138.93	441642.74	39°42'36.81"N	80°14'00.72"W	80°14'00.72"W	7561.50	313.184	1.28	0.45	-1.20	
16139.00	91.350	324.740	8293.20	7544.71	5251.54	-5567.56	1762084.95	441719.66	39°42'37.56"N	80°14'01.42"W	80°14'01.42"W	7653.53	313.327	0.47	0.19	-0.43	
16234.00	90.920	324.180	8291.32	7639.66	5328.83	-5622.77	1762029.75	441796.95	39°42'38.32"N	80°14'02.13"W	80°14'02.13"W	7746.74	313.463	0.74	-0.45	-0.59	
16329.00	90.920	323.650	8279.79	7734.64	5405.59	-5678.72	1761973.80	441873.71	39°42'39.08"N	80°14'02.86"W	80°14'02.86"W	7840.17	313.588	0.00	-0.56	-0.56	
16423.00	89.540	323.950	8279.41	7828.62	5481.44	-5734.23	1761918.29	441949.55	39°42'39.82"N	80°14'03.58"W	80°14'03.58"W	7932.70	313.709	1.50	-1.47	0.32	
16518.00	87.840	325.370	8281.59	7923.55	5558.91	-5789.17	1761863.36	442027.02	39°42'40.58"N	80°14'04.29"W	80°14'04.29"W	8025.96	313.838	2.33	-1.79	1.49	
16613.00	86.980	326.050	8285.88	8018.35	5637.32	-5842.63	1761809.90	442105.42	39°42'41.35"N	80°14'04.98"W	80°14'04.98"W	8118.85	313.975	1.15	-0.91	0.72	
16707.00	86.980	8290.83	8112.18	5713.31	-5887.70	1761754.83	442181.41	39°42'42.10"N	80°14'05.69"W	80°14'05.69"W	8211.27	314.090	4.21	0.00	-4.21		
16803.00	87.320	324.870	8295.61	8208.05	5790.36	-5954.76	1761697.78	442258.45	39°42'42.86"N	80°14'06.43"W	80°14'06.43"W	8305.87	314.198	2.91	0.35	2.90	
16898.00	87.410	322.480	8299.97	8302.94	5866.81	-6010.97	1761641.58	442334.90	39°42'43.61"N	80°14'07.16"W	80°14'07.16"W	8399.48	314.305	2.51	0.09	-2.52	
16993.00	87.230	320.810	8304.42	8397.80	5941.23	-6069.85	1761582.69	442409.31	39°42'44.34"N	80°14'07.92"W	80°14'07.92"W	8493.60	314.386	1.77	-0.19	-1.76	
1703.00	86.460	322.760	8309.10	8482.65	6007.91	-6122.35	1761530.20	442475.98	39°42'44.99"N	80°14'08.60"W	80°14'08.60"W	8577.77	314.459	2.46	-0.91	2.29	Projected MD at TD: 17103'
86.460	322.760	8310.64	8507.60	6202.77	-6137.45	1761515.10	442495.85	39°42'45.19"N	80°14'08.79"W	80°14'08.79"W	8602.46	314.483	0.00	0.00	0.00		

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #01
Area	Monongalia County, WV	Well	Fisher 1H
Field	Monongalia	Wellbore	Fisher 1H AWB
Facility	Fisher Pad		

HOLE & CASING SECTIONS - Ref Wellbore: Fisher 1H AWB Ref Wellpath: Fisher 1H AWP Proj: 17103'										
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]	
24in Conductor	25.00	65.00	40.00	25.00	65.00	0.00	0.00	-0.04	-0.03	
17.5in Open Hole	65.00	1455.00	1390.00	65.00	1454.95	-0.04	-0.03	0.86	-8.25	
13.375in Casing Surface	25.00	1455.00	1430.00	25.00	1454.95	0.00	0.00	0.86	-8.25	
12.25in Open Hole	1455.00	2676.00	1221.00	1454.95	2675.85	0.86	-8.25	2.43	-23.20	
9.625in Casing Intermediate	25.00	2676.00	2651.00	25.00	2675.85	0.00	0.00	2.43	-23.20	
8.75in Open Hole	2676.00	7788.00	5112.00	2675.85	7703.14	2.43	-23.20	-328.77	-321.32	
8.5in Open Hole	7788.00	17103.00	9315.00	7703.14	8310.64	-328.77	-321.32	6027.77	-6137.45	
5.5in Casing Production	25.00	17103.00	17078.00	25.00	8310.64	0.00	0.00	6027.77	-6137.45	

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Fisher 1H BHL Rev-3	8253.00	6028.09	-6138.29	1761514.26	442496.16	39°42'45.194"N	80°14'08.808"W	point
Fisher 1H LP Rev-3	8253.00	-367.97	-1318.82	1766333.44	436100.49	39°41'42.371"N	80°13'06.485"W	point

WELLPATH COMPOSITION - Ref Wellbore: Fisher 1H AWB Ref Wellpath: Fisher 1H AWP Proj: 17103'					
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	
25.00	1431.00	OWSG MWD rev2 - Standard	01_Javins MWD <17-1/2">(73'-1406')	Fisher 1H AWB	
1431.00	2663.00	OWSG MWD rev2 - Standard	02_Javins MWD <12-1/4">(1406')(1437'-2638')	Fisher 1H AWB	
2663.00	7730.00	OWSG MWD rev2 - Standard	03_Javins MWD <8-3/4">(2638')(2686'-7705')	Fisher 1H AWB	
7730.00	17078.00	BHI AutoTrak Curve (Axial)	04_BHI AT Curve <8-1/2">(7730')(7753'-17078')	Fisher 1H AWB	
17078.00	17103.00	Blind Drilling (std)	Projection to bit	Fisher 1H AWB	

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #01
Area	Monongalia County, WV	Well	Fisher 1H
Field	Monongalia	Wellbore	Fisher 1H AWB
Facility	Fisher Pad		

COMMENTS
<p>Wellpath general comments API: 47-061-01733-0000 BHI Job #: 8800166 Rig: Patterson 334 Duration: 10/14/2017-10/18/2017 Javins MWD &lt;17-1/2"&gt;(73'-1406') Javins MWD &lt;12-1/4"&gt;(1406')(1437'-2638') Javins MWD &lt;8-3/4"&gt;(2638')(2686'-7705') BHI AT Curve &lt;8-1/2"&gt; (7730')(7753'-17078') Projected MD at TD: 17103'</p>

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