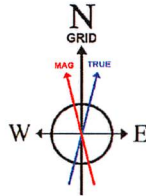
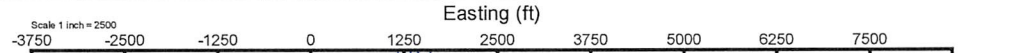


NORTHEAST NATURAL ENERGY, LLC

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

Slot: Slot 08
 Well: ERP 8H
 Wellbore: ERP 8H PWB



User specified (HDGM) Dip: 66.52° Field: 51994 nT
 Magnetic North is 8.96 degrees West of True North (at 7/16/2021)
 Grid North is 0.49 degrees West of True North
 To correct azimuth from True to Grid add 0.49 degrees
 To correct azimuth from Magnetic to Grid subtract 8.47 degrees



Gyro <12-1/4">(100'-2600') : 0.19° Inc, 100.00ft MD, 100.00ft TVD, 0.09ft VS

Plot reference wellpath is ERP 8H PWB Rev-B.0	Grid System: NAD83 / Lambert West Virginia SP Northern Zone (4701), US feet
True vertical depths are referenced to Patterson 277 (RKB)	North Reference: Grid north
Reference wellpath measured depths are referenced to Patterson 277 (RKB)	Scale: True distance
Patterson 277 (RKB) to Mean Sea Level: 1366 feet	Coordinates are in feet referenced to GSA
Mean Sea Level to Ground level (At Slot: Slot 08): -1338 feet	Depth are in feet
Offset wellpath MDs are referenced to each path's default MD datum	Created by: Heliport on 2024-07-21; Database: WP_MPL_PAT277RKB_Sch

Well Data			
Slot	Well	Wellbore	Wellpath
Slot 08	ERP 8H	ERP 8H AWP	ERP 8H AWP Proj 21758'
Slot 08	ERP 8H	ERP 8H PWB	ERP 8H PWB Rev-B.0

Tally MWD <8-3/4">(2600')(2630'-8053') : 0.19° Inc, 2630.00ft MD, 2629.98ft TVD, 1.40ft VS

API: 47-061-01879-0000
BH Job #: 110948032
Rig: Patterson 277
Duration: 7/16/21 - 7/20/21

Location Information				
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
ERP Pad	17508.11960'	428438.070'	39°42'25.3685"N	80°16'24.2106"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
Slot 08	-13.05	-15.15	1750796.810	428425.020
Patterson 277 (RKB) to Ground level (At Slot: Slot 08)			28ft	
Mean Sea Level to Ground level (At Slot: Slot 08)			-1338ft	
Patterson 277 (RKB) to Mean Sea Level			1366ft	

Well Profile Data							
Design Comment	MD (ft)	Inc (")	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)
Tie On	8053.00	30.740	230.200	7518.17	-538.92	-2053.43	4.19
Proj. to Bottom	8116.00	32.910	229.500	7571.69	-560.34	-2078.82	3.49
End of 3D Arc	8991.23	87.435	147.341	8045.93	-1200.64	-2011.27	9.55
Landing Pt.	9128.38	90.000	146.373	8048.00	-1315.43	-1936.32	2.00
BHL	21770.11	90.000	146.373	8048.00	-11841.74	5064.40	0.00

BH AT Curve <8-1/2">(8053')(8146'-21733') : 33.12° Inc, 8146.00ft MD, 7597.09ft TVD, -682.65ft VS

Projected MD at TD: 21758' : 89.91° Inc, 21758.00ft MD, 8073.02ft TVD, 12664.98ft VS

Scale 1 inch = 1750'

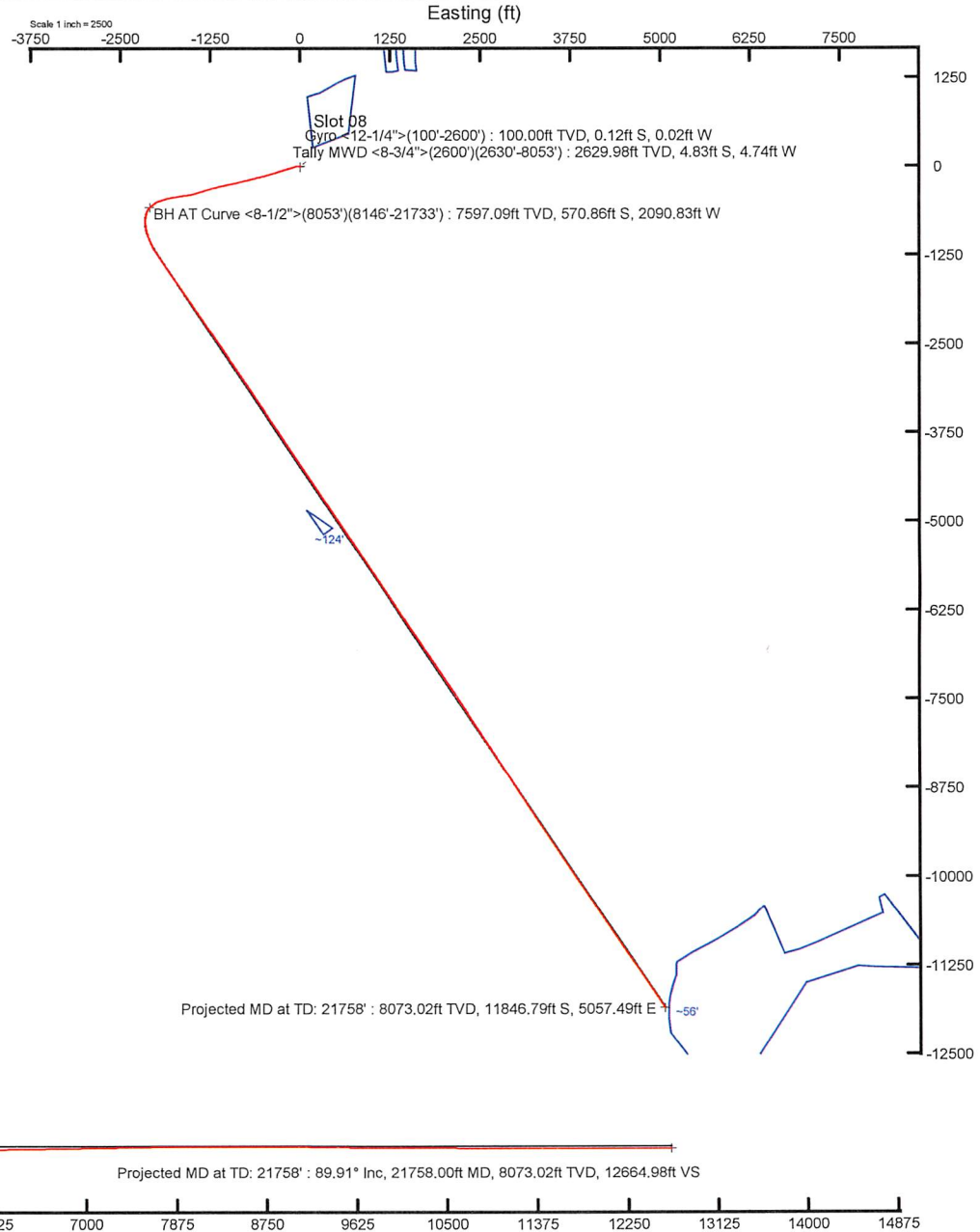
True Vertical Depth (ft)

Vertical Section (ft)

Azimuth 146.37° with reference 0.00 N, 0.00 E

Scale 1 inch = 1750'

Northing (ft)





Actual Wellpath Report

ERP 8H AWP Proj: 21758'

Page 1 of 13



REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	ERP 8H
Field	Monongalia	API/Legal	
Facility	ERP Pad	Wellbore	ERP 8H AWB
Slot	Slot 08		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert West Virginia SP, Northern Zone (4701), US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Hilpthop
Scale	0.999941	Report Generated	7/21/2021 at 11:22:44 PM
Convergence at slot	0.49° West	Database	WA_MPL_EASTERNUS_Defn

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-13.05	-15.15	1750796.81	428425.02	39°40'25.2382"N	80°16'24.4029"W
Facility Reference Pt			1750811.96	428438.07	39°40'25.3685"N	80°16'24.2106"W
Field Reference Pt			1777685.71	440640.65	39°42'28.1140"N	80°10'41.6900"W

WELLPATH DATUM

Calculation method	Minimum curvature	Patterson 277 (RKB) to Facility Vertical Datum	1366.00ft
Horizontal Reference Pt	Slot	Patterson 277 (RKB) to Mean Sea Level	1366.00ft
Vertical Reference Pt	Patterson 277 (RKB)	Patterson 277 (RKB) to Ground Level at Slot (Slot 08)	28.00ft
MD Reference Pt	Patterson 277 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	146.37°

RECEIVED
 Office of Oil and Gas
 FEB 06 2023
 WV Department of
 Environmental Protection



RECEIVED
Office of Oil and Gas
FEB 06 2023
WV Department
Environment

Actual Wellpath Report

ERP 8H AWP Proj: 21758'

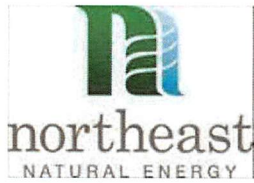
Page 2 of 13



REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	ERP 8H
Field	Monongalia	API/Legal	
Facility	ERP Pad	Wellbore	ERP 8H AWB
Slot	Slot 08		

WELLPATH DATA (232 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	189.330	0.00	0.00	0.00	0.00	1750796.81	428425.02	39°40'25.2382"N	80°16'24.4029"W	0.00	0.000	0.00	0.00	0.00
28.00	0.000	189.330	28.00	0.00	0.00	0.00	1750796.81	428425.02	39°40'25.2382"N	80°16'24.4029"W	0.00	0.000	0.00	0.00	0.00
100.00	0.190	189.330	100.00	0.09	-0.12	-0.02	1750796.79	428424.90	39°40'25.2370"N	80°16'24.4032"W	0.12	189.330	0.26	0.26	0.00
200.00	0.190	190.580	200.00	0.33	-0.44	-0.08	1750796.73	428424.58	39°40'25.2338"N	80°16'24.4039"W	0.45	189.790	0.00	0.00	1.25
300.00	0.080	232.570	300.00	0.45	-0.65	-0.16	1750796.65	428424.37	39°40'25.2318"N	80°16'24.4049"W	0.67	194.045	0.14	-0.11	41.99
400.00	0.050	12.670	400.00	0.43	-0.65	-0.21	1750796.60	428424.37	39°40'25.2317"N	80°16'24.4055"W	0.68	197.787	0.12	-0.03	140.10
500.00	0.150	288.780	500.00	0.29	-0.56	-0.32	1750796.49	428424.46	39°40'25.2326"N	80°16'24.4070"W	0.65	209.741	0.15	0.10	-83.89
600.00	0.190	278.620	600.00	0.08	-0.50	-0.61	1750796.20	428424.52	39°40'25.2332"N	80°16'24.4107"W	0.79	230.803	0.05	0.04	-10.16
700.00	0.170	256.250	700.00	-0.09	-0.51	-0.92	1750795.89	428424.51	39°40'25.2331"N	80°16'24.4146"W	1.05	241.041	0.07	-0.02	-22.37
800.00	0.060	336.160	800.00	-0.19	-0.50	-1.08	1750795.73	428424.52	39°40'25.2332"N	80°16'24.4167"W	1.19	245.423	0.17	-0.11	79.91
900.00	0.070	156.710	900.00	-0.18	-0.50	-1.08	1750795.73	428424.52	39°40'25.2331"N	80°16'24.4167"W	1.19	245.004	0.13	0.01	-179.45
1000.00	0.310	201.000	1000.00	0.04	-0.81	-1.15	1750795.66	428424.21	39°40'25.2301"N	80°16'24.4176"W	1.41	234.841	0.26	0.24	44.29
1100.00	0.120	157.030	1100.00	0.30	-1.16	-1.21	1750795.60	428423.86	39°40'25.2266"N	80°16'24.4183"W	1.68	226.165	0.24	-0.19	-43.97
1200.00	0.170	147.650	1200.00	0.55	-1.38	-1.09	1750795.72	428423.64	39°40'25.2244"N	80°16'24.4167"W	1.76	218.225	0.06	0.05	-9.38
1300.00	0.080	214.310	1300.00	0.72	-1.57	-1.05	1750795.76	428423.45	39°40'25.2226"N	80°16'24.4162"W	1.89	213.825	0.16	-0.09	66.66
1400.00	0.230	279.540	1400.00	0.61	-1.59	-1.29	1750795.52	428423.43	39°40'25.2224"N	80°16'24.4192"W	2.05	218.971	0.21	0.15	65.23
1500.00	0.250	270.740	1499.99	0.35	-1.55	-1.70	1750795.11	428423.47	39°40'25.2227"N	80°16'24.4245"W	2.31	227.606	0.04	0.02	-8.80
1600.00	0.270	249.040	1599.99	0.18	-1.64	-2.14	1750794.67	428423.38	39°40'25.2218"N	80°16'24.4301"W	2.69	232.615	0.10	0.02	-21.70
1700.00	0.460	216.830	1699.99	0.26	-2.04	-2.60	1750794.21	428422.98	39°40'25.2178"N	80°16'24.4360"W	3.31	231.877	0.27	0.19	-32.21
1800.00	0.490	233.360	1799.99	0.42	-2.62	-3.19	1750793.62	428422.40	39°40'25.2120"N	80°16'24.4434"W	4.12	230.583	0.14	0.03	16.53
1900.00	0.440	255.430	1899.99	0.31	-2.97	-3.90	1750792.91	428422.05	39°40'25.2085"N	80°16'24.4525"W	4.90	232.711	0.18	-0.05	22.07
2000.00	0.380	259.290	1999.98	0.06	-3.13	-4.60	1750792.21	428421.89	39°40'25.2069"N	80°16'24.4614"W	5.56	235.769	0.07	-0.06	3.86
2100.00	0.200	218.360	2099.98	-0.02	-3.33	-5.03	1750791.78	428421.69	39°40'25.2049"N	80°16'24.4669"W	6.03	236.530	0.26	-0.18	-40.93
2200.00	0.200	178.190	2199.98	0.19	-3.64	-5.13	1750791.68	428421.38	39°40'25.2018"N	80°16'24.4682"W	6.29	234.682	0.14	0.00	-40.17
2300.00	0.210	190.790	2299.98	0.46	-3.99	-5.16	1750791.65	428421.03	39°40'25.1983"N	80°16'24.4685"W	6.53	232.288	0.05	0.01	12.60
2400.00	0.200	189.550	2399.98	0.72	-4.34	-5.23	1750791.58	428420.68	39°40'25.1948"N	80°16'24.4693"W	6.80	230.266	0.01	-0.01	-1.24
2500.00	0.130	143.410	2499.98	0.96	-4.61	-5.19	1750791.62	428420.41	39°40'25.1922"N	80°16'24.4688"W	6.94	228.390	0.14	-0.07	-46.14
2600.00	0.320	112.730	2599.98	1.31	-4.81	-4.86	1750791.95	428420.21	39°40'25.1903"N	80°16'24.4646"W	6.84	225.332	0.22	0.19	-30.68
2630.00	0.190	81.920	2629.98	1.40	-4.83	-4.74	1750792.07	428420.19	39°40'25.1900"N	80°16'24.4630"W	6.77	224.426	0.62	-0.43	-102.70
2729.00	0.540	91.890	2728.98	1.74	-4.82	-4.11	1750792.70	428420.20	39°40'25.1902"N	80°16'24.4549"W	6.34	220.411	0.36	0.35	10.07



RECEIVED
Office of Oil and Gas
FEB 06 2023
WV Department of
Environmental Protection

Actual Wellpath Report

ERP 8H AWP Proj: 21758'

Page 3 of 13



REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	ERP 8H
Field	Monongalia	API/Legal	
Facility	ERP Pad	Wellbore	ERP 8H AWB
Slot	Slot 08		

WELLPATH DATA (232 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]
2823.00	0.480	75.940	2822.97	2.13	-4.74	-3.28	1750793.53	428420.28	39°40'25.1910"N	80°16'24.4444"W	5.77	214.687	0.16	-0.06	-16.97
2918.00	0.620	72.550	2917.97	2.41	-4.49	-2.41	1750794.40	428420.53	39°40'25.1936"N	80°16'24.4332"W	5.10	208.176	0.15	0.15	-3.57
3012.00	1.230	330.800	3011.96	1.54	-3.46	-2.41	1750794.40	428421.56	39°40'25.2038"N	80°16'24.4334"W	4.22	214.903	1.58	0.65	-108.24
3106.00	2.940	301.980	3105.90	-1.66	-1.30	-4.95	1750791.86	428423.72	39°40'25.2249"N	80°16'24.4661"W	5.12	255.268	2.08	1.82	-30.66
3201.00	4.770	284.680	3200.68	-6.83	0.99	-10.84	1750785.97	428426.01	39°40'25.2470"N	80°16'24.5416"W	10.88	275.218	2.26	1.93	-18.21
3296.00	6.770	279.920	3295.19	-13.64	2.96	-20.18	1750776.63	428427.98	39°40'25.2657"N	80°16'24.6613"W	20.39	278.334	2.16	2.11	-5.01
3390.00	8.450	269.840	3388.37	-21.26	3.89	-32.54	1750764.27	428428.91	39°40'25.2739"N	80°16'24.8195"W	32.77	276.818	2.28	1.79	-10.72
3485.00	9.450	254.990	3482.22	-27.60	1.85	-47.06	1750749.76	428426.87	39°40'25.2525"N	80°16'25.0049"W	47.09	272.253	2.64	1.05	-15.63
3583.00	10.410	253.420	3578.75	-32.77	-2.76	-63.31	1750733.50	428422.26	39°40'25.2055"N	80°16'25.2123"W	63.37	267.505	1.02	0.98	-1.60
3678.00	11.890	249.800	3671.96	-37.56	-8.59	-80.73	1750716.09	428416.43	39°40'25.1464"N	80°16'25.4343"W	81.18	263.928	1.72	1.56	-3.81
3772.00	12.060	251.060	3763.91	-42.30	-15.12	-99.10	1750697.71	428409.90	39°40'25.0803"N	80°16'25.6686"W	100.25	261.326	0.33	0.18	1.34
3867.00	13.560	253.920	3856.55	-48.17	-21.43	-119.19	1750677.63	428403.60	39°40'25.0163"N	80°16'25.9248"W	121.10	259.810	1.71	1.58	3.01
3962.00	16.360	255.730	3948.32	-55.97	-27.81	-142.86	1750653.95	428397.21	39°40'24.9512"N	80°16'26.2269"W	145.55	258.985	2.99	2.95	1.91
4056.00	19.060	254.440	4037.86	-65.12	-35.19	-170.49	1750626.33	428389.83	39°40'24.8759"N	80°16'26.5793"W	174.08	258.337	2.90	2.87	-1.37
4151.00	21.610	252.470	4126.93	-74.78	-44.62	-202.12	1750594.71	428380.40	39°40'24.7800"N	80°16'26.9828"W	206.98	257.550	2.78	2.68	-2.07
4246.00	22.750	251.520	4214.90	-84.44	-55.71	-236.22	1750560.60	428369.31	39°40'24.6675"N	80°16'27.4177"W	242.70	256.729	1.26	1.20	-1.00
4344.00	24.510	252.520	4304.68	-95.04	-67.83	-273.58	1750523.24	428357.20	39°40'24.5446"N	80°16'27.8942"W	281.87	256.076	1.84	1.80	1.02
4439.00	27.570	252.370	4390.02	-106.59	-80.41	-313.34	1750483.49	428344.62	39°40'24.4169"N	80°16'28.4012"W	323.49	255.608	3.22	3.22	-0.16
4534.00	28.580	252.120	4473.84	-118.81	-94.04	-355.92	1750440.91	428330.98	39°40'24.2785"N	80°16'28.9442"W	368.13	255.199	1.07	1.06	-0.26
4629.00	29.940	251.960	4556.72	-131.35	-108.36	-400.09	1750396.75	428316.66	39°40'24.1332"N	80°16'29.5075"W	414.50	254.845	1.43	1.43	-0.17
4723.00	28.850	253.570	4638.62	-144.37	-122.04	-444.15	1750352.69	428302.99	39°40'23.9943"N	80°16'30.0694"W	460.61	254.636	1.43	-1.16	1.71
4819.00	28.010	255.020	4723.04	-158.42	-134.42	-488.14	1750308.70	428290.61	39°40'23.8682"N	80°16'30.6307"W	506.31	254.604	1.13	-0.87	1.51
4913.00	32.330	257.830	4804.29	-174.69	-145.43	-534.06	1750262.79	428279.60	39°40'23.7555"N	80°16'31.2166"W	553.50	254.767	4.83	4.60	2.99
5008.00	34.350	257.910	4883.65	-193.82	-156.40	-585.10	1750211.74	428268.63	39°40'23.6427"N	80°16'31.8682"W	605.64	255.035	2.13	2.13	0.08
5107.00	31.820	255.660	4966.60	-212.70	-168.72	-637.71	1750159.14	428256.31	39°40'23.5165"N	80°16'32.5396"W	659.65	255.181	2.84	-2.56	-2.27
5199.00	32.070	254.040	5044.67	-228.13	-181.44	-684.69	1750112.16	428243.59	39°40'23.3868"N	80°16'33.1390"W	708.32	255.158	0.97	0.27	-1.76
5296.00	32.960	257.020	5126.47	-245.25	-194.45	-735.16	1750061.69	428230.58	39°40'23.2539"N	80°16'33.7831"W	760.45	255.185	1.89	0.92	3.07
5390.00	31.380	257.240	5206.03	-262.99	-205.60	-783.95	1750012.90	428219.44	39°40'23.1395"N	80°16'34.4058"W	810.47	255.305	1.69	-1.68	0.23
5485.00	29.480	254.760	5287.95	-279.18	-217.21	-830.64	1749966.22	428207.83	39°40'23.0208"N	80°16'35.0015"W	858.57	255.346	2.40	-2.00	-2.61
5579.00	28.260	254.910	5370.26	-293.55	-229.08	-874.44	1749922.42	428195.95	39°40'22.8998"N	80°16'35.5604"W	903.95	255.320	1.30	-1.30	0.16



Actual Wellpath Report

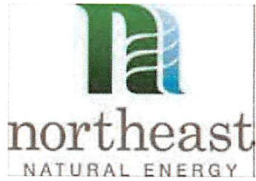
ERP 8H AWP Proj: 21758'

Page 4 of 13



REFERENCE WELLPATH IDENTIFICATION				
Operator	NORTHEAST NATURAL ENERGY, LLC		Well	ERP 8H
Field	Monongalia		API/Legal	
Facility	ERP Pad		Wellbore	ERP 8H AWB
Slot	Slot 08			

WELLPATH DATA (232 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]
5674.00	28.610	259.020	5453.81	-309.46	-239.27	-918.49	1749878.38	428185.77	39°40'22.7953"N	80°16'36.1225"W	949.14	255.399	2.09	0.37	4.33
5769.00	29.480	257.630	5536.86	-326.70	-248.61	-963.65	1749833.22	428176.43	39°40'22.6991"N	80°16'36.6991"W	995.20	255.534	1.16	0.92	-1.46
5863.00	32.280	257.330	5617.53	-344.07	-259.07	-1010.74	1749786.13	428165.97	39°40'22.5917"N	80°16'37.3001"W	1043.42	255.624	2.98	2.98	-0.32
5958.00	31.990	258.370	5697.98	-362.57	-269.71	-1060.14	1749736.73	428155.33	39°40'22.4824"N	80°16'37.9307"W	1093.91	255.726	0.66	-0.31	1.09
6053.00	32.640	257.760	5778.26	-381.34	-280.21	-1109.83	1749687.05	428144.82	39°40'22.3743"N	80°16'38.5649"W	1144.65	255.830	0.77	0.68	-0.64
6152.00	32.360	257.070	5861.76	-400.44	-291.80	-1161.74	1749635.14	428133.24	39°40'22.2554"N	80°16'39.2275"W	1197.83	255.900	0.47	-0.28	-0.70
6246.00	30.770	253.390	5941.86	-416.37	-304.31	-1209.31	1749587.58	428120.73	39°40'22.1277"N	80°16'39.8344"W	1247.01	255.876	2.66	-1.69	-3.91
6341.00	30.810	253.210	6023.47	-430.54	-318.28	-1255.89	1749541.00	428106.76	39°40'21.9856"N	80°16'40.4286"W	1295.59	255.779	0.11	0.04	-0.19
6436.00	28.460	253.810	6106.03	-444.37	-331.62	-1300.92	1749495.97	428093.42	39°40'21.8499"N	80°16'41.0030"W	1342.52	255.699	2.49	-2.47	0.63
6530.00	28.110	253.280	6188.81	-457.52	-344.24	-1343.64	1749453.25	428080.80	39°40'21.7216"N	80°16'41.5479"W	1387.04	255.630	0.46	-0.37	-0.56
6625.00	28.430	252.370	6272.48	-470.27	-357.52	-1386.63	1749410.27	428067.52	39°40'21.5866"N	80°16'42.0962"W	1431.98	255.542	0.57	0.34	-0.96
6720.00	26.520	252.310	6356.76	-482.33	-370.82	-1428.39	1749368.51	428054.22	39°40'21.4516"N	80°16'42.6288"W	1475.74	255.447	2.01	-2.01	-0.06
6815.00	26.290	254.480	6441.85	-494.69	-382.89	-1468.87	1749328.03	428042.15	39°40'21.3288"N	80°16'43.1451"W	1517.95	255.390	1.04	-0.24	2.28
6910.00	27.200	259.550	6526.70	-509.78	-392.46	-1510.50	1749286.40	428032.58	39°40'21.2307"N	80°16'43.6764"W	1560.65	255.435	2.58	0.96	5.34
7005.00	28.510	261.250	6610.69	-527.86	-399.85	-1554.26	1749242.64	428025.19	39°40'21.1539"N	80°16'44.2352"W	1604.87	255.573	1.61	1.38	1.79
7101.00	29.700	263.120	6694.57	-548.21	-406.19	-1600.52	1749196.39	428018.86	39°40'21.0874"N	80°16'44.8261"W	1651.26	255.760	1.56	1.24	1.95
7195.00	30.680	261.370	6775.82	-568.83	-412.57	-1647.35	1749149.56	428012.47	39°40'21.0202"N	80°16'45.4243"W	1698.23	255.940	1.40	1.04	-1.86
7290.00	31.190	259.270	6857.31	-588.64	-420.79	-1695.48	1749101.43	428004.26	39°40'20.9349"N	80°16'46.0389"W	1746.92	256.062	1.26	0.54	-2.21
7384.00	30.890	258.400	6937.85	-607.16	-430.17	-1743.03	1749053.88	427994.87	39°40'20.8381"N	80°16'46.6459"W	1795.33	256.137	0.57	-0.32	-0.93
7479.00	30.690	259.940	7019.46	-626.01	-439.31	-1790.79	1749006.13	427985.73	39°40'20.7437"N	80°16'47.2557"W	1843.89	256.217	0.86	-0.21	1.62
7574.00	30.540	255.420	7101.23	-643.58	-449.62	-1838.03	1748958.89	427975.42	39°40'20.6377"N	80°16'47.8586"W	1892.23	256.254	2.43	-0.16	-4.76
7674.00	29.720	255.360	7187.72	-659.94	-462.29	-1886.60	1748910.32	427962.76	39°40'20.5084"N	80°16'48.4784"W	1942.42	256.232	0.82	-0.82	-0.06
7769.00	29.290	253.450	7270.40	-674.43	-474.86	-1931.66	1748865.26	427950.19	39°40'20.3803"N	80°16'49.0532"W	1989.18	256.189	1.09	-0.45	-2.01
7863.00	29.330	248.240	7352.38	-685.92	-489.94	-1975.10	1748821.84	427935.11	39°40'20.2275"N	80°16'49.6070"W	2034.96	256.068	2.71	0.04	-5.54
7958.00	28.540	236.910	7435.58	-690.92	-510.98	-2015.75	1748781.18	427914.07	39°40'20.0162"N	80°16'50.1245"W	2079.51	255.776	5.82	-0.83	-11.93
8053.00	30.740	230.200	7518.17	-688.53	-538.92	-2053.43	1748743.50	427886.13	39°40'19.7368"N	80°16'50.6033"W	2122.97	255.294	4.19	2.32	-7.06
8146.00	33.120	228.850	7597.09	-682.65	-570.86	-2090.83	1748706.11	427854.20	39°40'19.4179"N	80°16'51.0780"W	2167.36	254.729	2.67	2.56	-1.45
8241.00	36.420	207.280	7675.42	-665.47	-613.17	-2123.43	1748673.51	427811.88	39°40'18.9970"N	80°16'51.4902"W	2210.19	253.893	13.34	3.47	-22.71
8336.00	43.970	192.370	7748.10	-628.71	-670.67	-2143.50	1748653.44	427754.39	39°40'18.4270"N	80°16'51.7404"W	2245.97	252.626	12.83	7.95	-15.69
8429.00	47.760	183.990	7812.91	-578.95	-736.63	-2152.82	1748644.12	427688.44	39°40'17.7744"N	80°16'51.8523"W	2275.36	251.111	7.64	4.08	-9.01



RECEIVED
Office of Oil and Gas
FEB 06 2023
WV Department of
Environmental Protection

Actual Wellpath Report

ERP 8H AWP Proj: 21758'

Page 5 of 13



REFERENCE WELLPATH IDENTIFICATION				
Operator	NORTHEAST NATURAL ENERGY, LLC		Well	ERP 8H
Field	Monongalia		API/Legal	
Facility	ERP Pad		Wellbore	ERP 8H AWB
Slot	Slot 08			

WELLPATH DATA (232 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]
8523.00	55.680	177.530	7871.13	-518.04	-810.29	-2153.57	1748643.37	427614.78	39°40'17.0464"N	80°16'51.8537"W	2300.96	249.381	10.00	8.43	-6.87
8619.00	60.450	167.370	7921.99	-444.95	-890.84	-2142.71	1748654.24	427534.24	39°40'16.2513"N	80°16'51.7058"W	2320.51	247.425	10.26	4.97	-10.58
8713.00	67.950	162.600	7962.90	-364.80	-972.46	-2120.70	1748676.24	427452.62	39°40'15.4466"N	80°16'51.4153"W	2333.03	245.366	9.19	7.98	-5.07
8809.00	74.650	156.420	7993.68	-276.33	-1057.50	-2088.81	1748708.13	427367.58	39°40'14.6088"N	80°16'50.9981"W	2341.25	243.148	9.26	6.98	-6.44
8904.00	80.070	151.190	8014.48	-184.48	-1140.60	-2047.88	1748749.05	427284.49	39°40'13.7911"N	80°16'50.4655"W	2344.10	240.884	7.83	5.71	-5.51
8999.00	85.220	147.800	8026.64	-90.44	-1221.73	-2000.07	1748796.87	427203.37	39°40'12.9935"N	80°16'49.8450"W	2343.69	238.582	6.47	5.42	-3.57
9093.00	87.380	146.300	8032.71	3.35	-1300.44	-1949.05	1748847.88	427124.66	39°40'12.2200"N	80°16'49.1838"W	2343.06	236.288	2.80	2.30	-1.60
9188.00	87.350	146.120	8037.07	98.25	-1379.31	-1896.27	1748900.66	427045.80	39°40'11.4451"N	80°16'48.5002"W	2344.85	233.969	0.19	-0.03	-0.19
9283.00	87.660	145.880	8041.21	193.15	-1457.99	-1843.20	1748953.73	426967.12	39°40'10.6721"N	80°16'47.8127"W	2350.13	231.656	0.41	0.33	-0.25
9377.00	89.010	146.210	8043.94	287.11	-1535.92	-1790.72	1749006.20	426889.19	39°40'9.9064"N	80°16'47.1330"W	2359.18	229.380	1.48	1.44	0.35
9471.00	87.720	144.730	8046.62	381.06	-1613.33	-1737.46	1749059.46	426811.79	39°40'9.1460"N	80°16'46.4434"W	2370.99	227.122	2.09	-1.37	-1.57
9565.00	88.030	145.750	8050.11	474.97	-1690.50	-1683.90	1749113.01	426734.62	39°40'8.3880"N	80°16'45.7499"W	2386.07	224.888	1.13	0.33	1.09
9660.00	88.310	146.050	8053.14	569.92	-1769.13	-1630.67	1749166.24	426656.00	39°40'7.6155"N	80°16'45.0605"W	2406.01	222.668	0.43	0.29	0.32
9753.00	88.090	145.430	8056.06	662.87	-1845.95	-1578.34	1749218.56	426579.18	39°40'6.8608"N	80°16'44.3828"W	2428.72	220.531	0.71	-0.24	-0.67
9848.00	87.690	143.310	8059.56	757.74	-1923.11	-1523.04	1749273.86	426502.03	39°40'6.1030"N	80°16'43.6671"W	2453.16	218.378	2.27	-0.42	-2.23
9943.00	88.520	145.690	8062.70	852.63	-2000.40	-1467.91	1749328.99	426424.74	39°40'5.3439"N	80°16'42.9535"W	2481.20	216.271	2.65	0.87	2.51
10038.00	88.120	145.470	8065.49	947.58	-2078.74	-1414.23	1749382.66	426346.41	39°40'4.5743"N	80°16'42.2585"W	2514.20	214.229	0.48	-0.42	-0.23
10133.00	87.940	146.500	8068.75	1042.52	-2157.43	-1361.12	1749435.77	426267.72	39°40'3.8011"N	80°16'41.5706"W	2550.92	212.248	1.10	-0.19	1.08
10228.00	88.220	145.400	8071.94	1137.46	-2236.10	-1307.96	1749488.93	426189.06	39°40'3.0283"N	80°16'40.8821"W	2590.54	210.325	1.19	0.29	-1.16
10322.00	88.310	145.300	8074.78	1231.40	-2313.39	-1254.54	1749542.35	426111.77	39°40'2.2690"N	80°16'40.1904"W	2631.66	208.471	0.14	0.10	-0.11
10417.00	88.310	145.790	8077.58	1326.35	-2391.69	-1200.82	1749596.07	426033.47	39°40'1.4998"N	80°16'39.4948"W	2676.22	206.660	0.52	0.00	0.52
10511.00	87.660	144.040	8080.89	1420.26	-2468.56	-1146.82	1749650.06	425956.61	39°40'0.7447"N	80°16'38.7958"W	2721.95	204.918	1.98	-0.69	-1.86
10606.00	88.400	146.900	8084.16	1515.18	-2546.77	-1093.01	1749703.87	425878.40	39°39'59.9764"N	80°16'38.0991"W	2771.41	203.228	3.11	0.78	3.01
10700.00	88.090	146.740	8087.03	1609.13	-2625.41	-1041.59	1749755.28	425799.77	39°39'59.2037"N	80°16'37.4329"W	2824.48	201.640	0.37	-0.33	-0.17
10795.00	88.220	146.450	8090.09	1704.08	-2704.67	-989.32	1749807.55	425720.51	39°39'58.4248"N	80°16'36.7557"W	2879.93	200.092	0.33	0.14	-0.31
10890.00	87.810	146.250	8093.38	1799.03	-2783.71	-936.71	1749860.16	425641.48	39°39'57.6483"N	80°16'36.0742"W	2937.08	198.598	0.48	-0.43	-0.21
10985.00	88.000	146.540	8096.86	1893.96	-2862.78	-884.16	1749912.70	425562.42	39°39'56.8714"N	80°16'35.3936"W	2996.20	197.163	0.36	0.20	0.31
11079.00	87.970	146.240	8100.16	1987.91	-2941.01	-832.16	1749964.70	425484.19	39°39'56.1026"N	80°16'34.7200"W	3056.48	195.799	0.32	-0.03	-0.32
11173.00	87.750	146.100	8103.67	2081.84	-3019.04	-779.87	1750016.99	425406.16	39°39'55.3360"N	80°16'34.0427"W	3118.14	194.484	0.28	-0.23	-0.15
11267.00	87.660	145.980	8107.44	2175.76	-3096.95	-727.40	1750069.46	425328.26	39°39'54.5705"N	80°16'33.3632"W	3181.23	193.218	0.16	-0.10	-0.13



RECEIVED
Office of Oil and Gas
FEB 06 2023
WV Department of Environmental Protection

Actual Wellpath Report

ERP 8H AWP Proj: 21758'

Page 6 of 13



REFERENCE WELLPATH IDENTIFICATION				
Operator	NORTHEAST NATURAL ENERGY, LLC		Well	ERP 8H
Field	Monongalia		API/Legal	
Facility	ERP Pad		Wellbore	ERP 8H AWB
Slot	Slot 08			

WELLPATH DATA (232 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]
11361.00	87.910	144.830	8111.07	2269.68	-3174.27	-674.07	1750122.78	425250.94	39°39'53.8110"N	80°16'32.6727"W	3245.05	191.989	1.25	0.27	-1.22
11456.00	88.030	147.220	8114.43	2364.61	-3253.00	-621.02	1750175.83	425172.22	39°39'53.0375"N	80°16'31.9857"W	3311.74	190.808	2.52	0.13	2.52
11550.00	87.850	146.860	8117.81	2458.54	-3331.81	-569.91	1750226.93	425093.41	39°39'52.2629"N	80°16'31.3234"W	3380.21	189.707	0.43	-0.19	-0.38
11644.00	88.400	146.440	8120.89	2552.49	-3410.29	-518.26	1750278.58	425014.93	39°39'51.4917"N	80°16'30.6544"W	3449.45	188.641	0.74	0.59	-0.45
11738.00	89.630	146.680	8122.50	2646.47	-3488.72	-466.47	1750330.37	424936.51	39°39'50.7211"N	80°16'29.9835"W	3519.77	187.616	1.33	1.31	0.26
11833.00	89.720	146.760	8123.04	2741.47	-3568.14	-414.34	1750382.49	424857.10	39°39'49.9407"N	80°16'29.3082"W	3592.11	186.624	0.13	0.09	0.08
11927.00	88.920	146.660	8124.16	2835.46	-3646.71	-362.75	1750434.08	424778.54	39°39'49.1686"N	80°16'28.6398"W	3664.70	185.681	0.86	-0.85	-0.11
12022.00	89.170	146.560	8125.74	2930.45	-3726.02	-310.48	1750486.35	424699.23	39°39'48.3893"N	80°16'27.9627"W	3738.93	184.763	0.28	0.26	-0.11
12116.00	89.420	146.930	8126.90	3024.44	-3804.62	-258.93	1750537.89	424620.64	39°39'47.6169"N	80°16'27.2950"W	3813.42	183.893	0.48	0.27	0.39
12211.00	89.170	146.660	8128.07	3119.43	-3884.10	-206.91	1750589.91	424541.16	39°39'46.8359"N	80°16'26.6210"W	3889.60	183.049	0.39	-0.26	-0.28
12305.00	89.140	146.970	8129.45	3213.41	-3962.76	-155.47	1750641.35	424462.50	39°39'46.0629"N	80°16'25.9546"W	3965.81	182.247	0.33	-0.03	0.33
12400.00	88.740	146.280	8131.21	3308.40	-4042.08	-103.22	1750693.60	424383.19	39°39'45.2835"N	80°16'25.2777"W	4043.39	181.463	0.84	-0.42	-0.73
12494.00	89.480	146.650	8132.67	3402.38	-4120.42	-51.29	1750745.52	424304.85	39°39'44.5137"N	80°16'24.6052"W	4120.74	180.713	0.88	0.79	0.39
12589.00	89.350	146.740	8133.64	3497.38	-4199.81	0.87	1750797.68	424225.46	39°39'43.7335"N	80°16'23.9295"W	4199.81	179.988	0.17	-0.14	0.09
12684.00	90.060	146.400	8134.13	3592.38	-4279.10	53.20	1750850.01	424146.19	39°39'42.9545"N	80°16'23.2516"W	4279.43	179.288	0.83	0.75	-0.36
12778.00	90.280	146.380	8133.85	3686.37	-4357.38	105.24	1750902.04	424067.91	39°39'42.1852"N	80°16'22.5776"W	4358.65	178.616	0.24	0.23	-0.02
12872.00	91.570	146.270	8132.33	3780.36	-4435.59	157.35	1750954.15	423989.70	39°39'41.4167"N	80°16'21.9027"W	4438.39	177.968	1.38	1.37	-0.12
12967.00	90.770	144.830	8130.39	3875.33	-4513.91	211.08	1751007.87	423911.38	39°39'40.6473"N	80°16'21.2071"W	4518.85	177.323	1.73	-0.84	-1.52
13062.00	90.740	146.430	8129.14	3970.31	-4592.32	264.70	1751061.50	423832.98	39°39'39.8770"N	80°16'20.5129"W	4599.94	176.701	1.68	-0.03	1.68
13157.00	90.490	146.680	8128.12	4065.30	-4671.58	317.06	1751113.85	423753.72	39°39'39.0981"N	80°16'19.8347"W	4682.33	176.117	0.37	-0.26	0.26
13252.00	90.520	146.440	8127.29	4160.30	-4750.85	369.41	1751166.19	423674.45	39°39'38.3191"N	80°16'19.1567"W	4765.19	175.554	0.25	0.03	-0.25
13346.00	90.340	146.340	8126.58	4254.30	-4829.14	421.44	1751218.22	423596.18	39°39'37.5499"N	80°16'18.4828"W	4847.49	175.012	0.22	-0.19	-0.11
13441.00	90.580	146.780	8125.82	4349.29	-4908.41	473.79	1751270.57	423516.91	39°39'36.7710"N	80°16'17.8048"W	4931.22	174.487	0.53	0.25	0.46
13535.00	90.550	146.150	8124.89	4443.29	-4986.76	525.71	1751322.49	423438.57	39°39'36.0011"N	80°16'17.1322"W	5014.39	173.982	0.67	-0.03	-0.67
13630.00	90.430	146.370	8124.08	4538.28	-5065.75	578.48	1751375.25	423359.57	39°39'35.2249"N	80°16'16.4489"W	5098.68	173.485	0.26	-0.13	0.23
13725.00	90.490	146.380	8123.32	4633.28	-5144.86	631.08	1751427.85	423280.48	39°39'34.4476"N	80°16'15.7676"W	5183.42	173.007	0.06	0.06	0.01
13820.00	90.710	146.380	8122.32	4728.27	-5223.96	683.68	1751480.45	423201.38	39°39'33.6703"N	80°16'15.0864"W	5268.51	172.544	0.23	0.23	0.00
13915.00	90.990	146.530	8120.91	4823.26	-5303.13	736.17	1751532.93	423122.21	39°39'32.8924"N	80°16'14.4066"W	5353.98	172.097	0.33	0.29	0.16
14010.00	91.420	146.370	8118.91	4918.24	-5382.29	788.66	1751585.42	423043.06	39°39'32.1146"N	80°16'13.7268"W	5439.76	171.664	0.48	0.45	-0.17
14104.00	92.060	146.540	8116.06	5012.20	-5460.59	840.58	1751637.34	422964.76	39°39'31.3451"N	80°16'13.0544"W	5524.91	171.249	0.70	0.68	0.18



RECEIVED
Office of Oil and Gas
FEB 06 2022
WV Department of Environmental Protection

Actual Wellpath Report

ERP 8H AWP Proj: 21758'

Page 7 of 13



REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	ERP 8H
Field	Monongalia	API/Legal	
Facility	ERP Pad	Wellbore	ERP 8H AWB
Slot	Slot 08		

WELLPATH DATA (232 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]
14198.00	91.820	145.900	8112.88	5106.14	-5538.68	892.81	1751689.57	422886.68	39°39'30.5778"N	80°16'12.3780"W	5610.18	170.843	0.73	-0.26	-0.68
14293.00	91.480	146.680	8110.14	5201.10	-5617.67	945.52	1751742.27	422807.69	39°39'29.8016"N	80°16'11.6955"W	5696.69	170.446	0.90	-0.36	0.82
14387.00	91.110	146.200	8108.02	5295.08	-5695.98	997.47	1751794.22	422729.38	39°39'29.0321"N	80°16'11.0227"W	5782.66	170.067	0.64	-0.39	-0.51
14481.00	90.620	146.330	8106.60	5389.07	-5774.15	1049.66	1751846.41	422651.23	39°39'28.2641"N	80°16'10.3468"W	5868.78	169.697	0.54	-0.52	0.14
14575.00	90.890	146.530	8105.36	5483.06	-5852.46	1101.64	1751898.38	422572.92	39°39'27.4946"N	80°16'9.6737"W	5955.24	169.340	0.36	0.29	0.21
14670.00	91.350	146.450	8103.50	5578.04	-5931.66	1154.07	1751950.81	422493.73	39°39'26.7163"N	80°16'8.9946"W	6042.88	168.990	0.49	0.48	-0.08
14764.00	92.160	146.800	8100.62	5671.99	-6010.12	1205.76	1752002.50	422415.27	39°39'25.9453"N	80°16'8.3251"W	6129.87	168.656	0.94	0.86	0.37
14859.00	92.340	146.080	8096.89	5766.92	-6089.22	1258.24	1752054.97	422336.17	39°39'25.1680"N	80°16'7.6456"W	6217.86	168.325	0.78	0.19	-0.76
14954.00	92.460	146.760	8092.92	5861.84	-6168.29	1310.73	1752107.46	422257.10	39°39'24.3910"N	80°16'6.9657"W	6306.02	168.003	0.73	0.13	0.72
15049.00	92.400	145.880	8088.89	5956.75	-6247.28	1363.37	1752160.10	422178.12	39°39'23.6149"N	80°16'6.2841"W	6394.31	167.689	0.93	-0.06	-0.93
15144.00	91.660	145.850	8085.52	6051.69	-6325.86	1416.64	1752213.37	422099.55	39°39'22.8428"N	80°16'5.5944"W	6482.54	167.377	0.78	-0.78	-0.03
15238.00	90.800	146.240	8083.51	6145.66	-6403.81	1469.13	1752265.85	422021.60	39°39'22.0769"N	80°16'4.9147"W	6570.17	167.079	1.00	-0.91	0.41
15333.00	90.890	146.190	8082.10	6240.65	-6482.76	1521.96	1752318.67	421942.65	39°39'21.3011"N	80°16'4.2308"W	6659.02	166.788	0.11	0.09	-0.05
15428.00	90.950	145.980	8080.58	6335.64	-6561.59	1574.96	1752371.67	421863.83	39°39'20.5266"N	80°16'3.5446"W	6747.96	166.503	0.23	0.06	-0.22
15523.00	90.860	146.270	8079.08	6430.62	-6640.45	1627.90	1752424.61	421784.97	39°39'19.7517"N	80°16'2.8590"W	6837.08	166.226	0.32	-0.09	0.31
15618.00	90.800	146.530	8077.70	6525.61	-6719.57	1680.47	1752477.17	421705.86	39°39'18.9742"N	80°16'2.1783"W	6926.51	165.959	0.28	-0.06	0.27
15712.00	90.800	146.420	8076.39	6619.61	-6797.93	1732.38	1752529.08	421627.51	39°39'18.2042"N	80°16'1.5061"W	7015.19	165.703	0.12	0.00	-0.12
15808.00	91.080	145.930	8074.81	6715.59	-6877.67	1785.81	1752582.51	421547.77	39°39'17.4207"N	80°16'0.8142"W	7105.73	165.444	0.59	0.29	-0.51
15902.00	91.080	146.020	8073.04	6809.57	-6955.56	1838.40	1752635.10	421469.88	39°39'16.6554"N	80°16'0.1334"W	7194.41	165.195	0.10	0.00	0.10
15996.00	90.980	146.220	8071.35	6903.56	-7033.59	1890.79	1752687.49	421391.86	39°39'15.8887"N	80°15'59.4551"W	7283.30	164.953	0.24	-0.11	0.21
16091.00	90.890	146.230	8069.80	6998.54	-7112.54	1943.60	1752740.29	421312.91	39°39'15.1129"N	80°15'58.7713"W	7373.32	164.716	0.10	-0.09	0.01
16186.00	90.830	146.280	8068.38	7093.53	-7191.53	1996.36	1752793.05	421233.93	39°39'14.3367"N	80°15'58.0881"W	7463.48	164.485	0.08	-0.06	0.05
16281.00	91.010	146.220	8066.85	7188.52	-7270.51	2049.14	1752845.82	421154.96	39°39'13.5607"N	80°15'57.4048"W	7553.76	164.260	0.20	0.19	-0.06
16376.00	91.140	146.170	8065.07	7283.50	-7349.43	2101.98	1752898.66	421076.04	39°39'12.7851"N	80°15'56.7206"W	7644.11	164.039	0.15	0.14	-0.05
16470.00	91.020	147.550	8063.30	7377.48	-7428.13	2153.36	1752950.04	420997.35	39°39'12.0118"N	80°15'56.0551"W	7733.95	163.834	1.47	-0.13	1.47
16565.00	90.920	147.430	8061.69	7472.45	-7508.23	2204.41	1753001.09	420917.25	39°39'11.2244"N	80°15'55.3937"W	7825.15	163.638	0.16	-0.11	-0.13
16660.00	91.050	147.290	8060.06	7567.42	-7588.21	2255.64	1753052.31	420837.27	39°39'10.4383"N	80°15'54.7301"W	7916.37	163.445	0.20	0.14	-0.15
16754.00	90.890	147.460	8058.47	7661.39	-7667.37	2306.31	1753102.98	420758.12	39°39'9.6603"N	80°15'54.0736"W	8006.72	163.259	0.25	-0.17	0.18
16848.00	90.950	146.880	8056.96	7755.37	-7746.35	2357.27	1753153.93	420679.15	39°39'8.8841"N	80°15'53.4136"W	8097.07	163.075	0.62	0.06	-0.62
16943.00	89.020	147.170	8056.98	7850.36	-7826.04	2408.97	1753205.63	420599.46	39°39'8.1009"N	80°15'52.7439"W	8188.41	162.891	2.05	-2.03	0.31



RECEIVED
Office of Oil and Gas
FEB 06 2023
WV Department of Environmental Protection

Actual Wellpath Report

ERP 8H AWP Proj: 21758'

Page 8 of 13

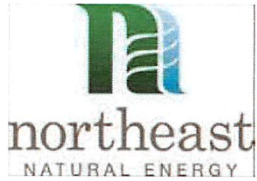


REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	ERP 8H
Field	Monongalia	API/Legal	
Facility	ERP Pad	Wellbore	ERP 8H AWB
Slot	Slot 08		

WELLPATH DATA (232 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]
17037.00	89.940	146.880	8057.83	7944.35	-7904.89	2460.13	1753256.79	420520.61	39°39'7.3259"N	80°15'52.0813"W	8278.86	162.713	1.03	0.98	-0.31
17132.00	90.150	147.040	8057.76	8039.34	-7984.53	2511.93	1753308.58	420440.98	39°39'6.5432"N	80°15'51.4104"W	8370.33	162.536	0.28	0.22	0.17
17226.00	89.880	146.840	8057.73	8133.34	-8063.31	2563.21	1753359.86	420362.20	39°39'5.7690"N	80°15'50.7463"W	8460.91	162.365	0.36	-0.29	-0.21
17321.00	90.430	147.500	8057.48	8228.33	-8143.14	2614.71	1753411.36	420282.38	39°39'4.9844"N	80°15'50.0792"W	8552.62	162.199	0.90	0.58	0.69
17416.00	90.550	147.510	8056.67	8323.31	-8223.26	2665.74	1753462.39	420202.26	39°39'4.1969"N	80°15'49.4180"W	8644.55	162.039	0.13	0.13	0.01
17511.00	90.370	147.310	8055.90	8418.29	-8303.30	2716.91	1753513.56	420122.23	39°39'3.4102"N	80°15'48.7552"W	8736.50	161.881	0.28	-0.19	-0.21
17605.00	90.150	146.790	8055.48	8512.28	-8382.18	2768.04	1753564.68	420043.35	39°39'2.6350"N	80°15'48.0930"W	8827.40	161.725	0.60	-0.23	-0.55
17700.00	89.570	147.570	8055.71	8607.27	-8462.01	2819.53	1753616.17	419963.52	39°39'1.8503"N	80°15'47.4261"W	8919.38	161.572	1.02	-0.61	0.82
17795.00	89.390	147.040	8056.57	8702.25	-8541.96	2870.84	1753667.48	419883.58	39°39'1.0646"N	80°15'46.7614"W	9011.48	161.423	0.59	-0.19	-0.56
17889.00	89.880	147.190	8057.17	8796.24	-8620.89	2921.88	1753718.51	419804.65	39°39'0.2888"N	80°15'46.1003"W	9102.59	161.277	0.55	0.52	0.16
17984.00	89.940	147.650	8057.32	8891.23	-8700.94	2973.03	1753769.66	419724.61	39°38'59.5020"N	80°15'45.4377"W	9194.85	161.135	0.49	0.06	0.48
18078.00	89.970	146.690	8057.39	8985.21	-8779.93	3023.99	1753820.62	419645.63	39°38'58.7257"N	80°15'44.7776"W	9286.10	160.995	1.02	0.03	-1.02
18173.00	89.630	146.320	8057.72	9080.21	-8859.15	3076.42	1753873.04	419566.41	39°38'57.9471"N	80°15'44.0988"W	9378.11	160.850	0.53	-0.36	-0.39
18268.00	88.770	146.880	8059.05	9175.20	-8938.45	3128.71	1753925.33	419487.11	39°38'57.1678"N	80°15'43.4217"W	9470.20	160.709	1.08	-0.91	0.59
18363.00	89.050	147.350	8060.86	9270.18	-9018.22	3180.28	1753976.90	419407.35	39°38'56.3839"N	80°15'42.7538"W	9562.55	160.575	0.58	0.29	0.49
18457.00	89.880	147.290	8061.74	9364.16	-9097.33	3231.03	1754027.65	419328.24	39°38'55.6063"N	80°15'42.0964"W	9654.07	160.447	0.89	0.88	-0.06
18553.00	88.740	147.440	8062.89	9460.14	-9178.17	3282.80	1754079.41	419247.41	39°38'54.8117"N	80°15'41.4258"W	9747.59	160.319	1.20	-1.19	0.16
18648.00	88.860	146.080	8064.88	9555.11	-9257.60	3334.86	1754131.47	419167.98	39°38'54.0310"N	80°15'40.7517"W	9839.95	160.189	1.44	0.13	-1.43
18743.00	88.710	146.230	8066.90	9650.09	-9336.49	3387.76	1754184.36	419089.10	39°38'53.2559"N	80°15'40.0669"W	9932.12	160.057	0.22	-0.16	0.16
18838.00	89.050	146.690	8068.75	9745.07	-9415.66	3440.24	1754236.84	419009.94	39°38'52.4779"N	80°15'39.3875"W	10024.46	159.929	0.60	0.36	0.48
18933.00	90.090	146.300	8069.46	9840.07	-9494.87	3492.68	1754289.27	418930.73	39°38'51.6995"N	80°15'38.7085"W	10116.88	159.804	1.17	1.09	-0.41
19028.00	90.120	146.410	8069.29	9935.07	-9573.95	3545.31	1754341.91	418851.65	39°38'50.9223"N	80°15'38.0271"W	10209.30	159.680	0.12	0.03	0.12
19123.00	90.150	146.510	8069.07	10030.06	-9653.14	3597.80	1754394.39	418772.47	39°38'50.1442"N	80°15'37.3475"W	10301.81	159.559	0.11	0.03	0.11
19218.00	90.120	146.360	8068.84	10125.06	-9732.30	3650.32	1754446.91	418693.32	39°38'49.3663"N	80°15'36.6675"W	10394.35	159.440	0.16	-0.03	-0.16
19312.00	90.280	146.720	8068.52	10219.06	-9810.72	3702.15	1754498.74	418614.90	39°38'48.5956"N	80°15'35.9965"W	10485.99	159.326	0.42	0.17	0.38
19406.00	90.180	146.540	8068.14	10313.06	-9889.22	3753.86	1754550.44	418536.40	39°38'47.8241"N	80°15'35.3271"W	10577.72	159.214	0.22	-0.11	-0.19
19501.00	89.420	145.910	8068.47	10408.06	-9968.18	3806.67	1754603.25	418457.44	39°38'47.0482"N	80°15'34.6434"W	10670.30	159.099	1.04	-0.80	-0.66
19596.00	89.510	146.180	8069.36	10503.05	-10046.98	3859.73	1754656.30	418378.65	39°38'46.2739"N	80°15'33.9566"W	10762.87	158.985	0.30	0.09	0.28
19690.00	88.740	145.830	8070.79	10597.04	-10124.90	3912.28	1754708.85	418300.73	39°38'45.5082"N	80°15'33.2764"W	10854.47	158.873	0.90	-0.82	-0.37
19784.00	89.230	146.620	8072.46	10691.02	-10203.03	3964.53	1754761.09	418222.62	39°38'44.7405"N	80°15'32.6000"W	10946.20	158.766	0.99	0.52	0.84



Actual Wellpath Report

ERP 8H AWP Proj: 21758'

Page 9 of 13



REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	ERP 8H
Field	Monongalia	API/Legal	
Facility	ERP Pad	Wellbore	ERP 8H AWB
Slot	Slot 08		

WELLPATH DATA (232 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]
19878.00	89.570	146.440	8073.44	10785.02	-10281.43	4016.36	1754812.93	418144.21	39°38'43.9700"N	80°15'31.9289"W	11038.07	158.662	0.41	0.36	-0.19
19972.00	89.690	146.330	8074.05	10879.02	-10359.71	4068.40	1754864.96	418065.94	39°38'43.2007"N	80°15'31.2552"W	11129.94	158.559	0.17	0.13	-0.12
20065.00	89.750	146.410	8074.50	10972.02	-10437.15	4119.91	1754916.47	417988.51	39°38'42.4397"N	80°15'30.5885"W	11220.86	158.459	0.11	0.06	0.09
20160.00	89.750	146.730	8074.92	11067.01	-10516.43	4172.24	1754968.80	417909.23	39°38'41.6606"N	80°15'29.9109"W	11313.84	158.360	0.34	0.00	0.34
20254.00	90.340	146.340	8074.84	11161.01	-10594.85	4224.08	1755020.63	417830.82	39°38'40.8900"N	80°15'29.2398"W	11405.86	158.263	0.75	0.63	-0.41
20349.00	90.370	146.700	8074.25	11256.01	-10674.08	4276.48	1755073.03	417751.59	39°38'40.1113"N	80°15'28.5614"W	11498.88	158.167	0.38	0.03	0.38
20443.00	90.710	146.690	8073.37	11350.00	-10752.64	4328.10	1755124.64	417673.04	39°38'39.3392"N	80°15'27.8931"W	11591.02	158.074	0.36	0.36	-0.01
20538.00	90.370	146.240	8072.47	11445.00	-10831.82	4380.58	1755177.12	417593.86	39°38'38.5611"N	80°15'27.2137"W	11684.08	157.981	0.59	-0.36	-0.47
20633.00	90.460	146.300	8071.79	11540.00	-10910.83	4433.33	1755229.87	417514.86	39°38'37.7847"N	80°15'26.5309"W	11777.12	157.887	0.11	0.09	0.06
20728.00	90.430	146.480	8071.05	11634.99	-10989.94	4485.91	1755282.45	417435.74	39°38'37.0072"N	80°15'25.8502"W	11870.23	157.796	0.19	-0.03	0.19
20823.00	89.850	146.160	8070.82	11729.99	-11069.00	4538.59	1755335.13	417356.70	39°38'36.2303"N	80°15'25.1682"W	11963.34	157.705	0.70	-0.61	-0.34
20917.00	89.660	146.040	8071.22	11823.99	-11147.02	4591.02	1755387.55	417278.68	39°38'35.4637"N	80°15'24.4897"W	12055.43	157.615	0.24	-0.20	-0.13
21011.00	89.880	146.190	8071.59	11917.99	-11225.05	4643.43	1755439.95	417200.65	39°38'34.6968"N	80°15'23.8114"W	12147.56	157.527	0.28	0.23	0.16
21105.00	89.720	145.910	8071.92	12011.99	-11303.03	4695.92	1755492.45	417122.68	39°38'33.9306"N	80°15'23.1319"W	12239.69	157.439	0.34	-0.17	-0.30
21200.00	90.000	146.750	8072.16	12106.99	-11382.09	4748.59	1755545.11	417043.62	39°38'33.1537"N	80°15'22.4502"W	12332.93	157.354	0.93	0.29	0.88
21293.00	89.880	146.290	8072.25	12199.99	-11459.66	4799.89	1755596.41	416966.06	39°38'32.3913"N	80°15'21.7860"W	12424.28	157.274	0.51	-0.13	-0.49
21388.00	90.000	146.480	8072.35	12294.99	-11538.77	4852.49	1755649.00	416886.95	39°38'31.6139"N	80°15'21.1052"W	12517.58	157.191	0.24	0.13	0.20
21483.00	89.850	146.320	8072.48	12389.99	-11617.90	4905.06	1755701.57	416807.83	39°38'30.8363"N	80°15'20.4247"W	12610.92	157.111	0.23	-0.16	-0.17
21578.00	89.850	146.470	8072.73	12484.98	-11697.02	4957.64	1755754.15	416728.71	39°38'30.0587"N	80°15'19.7441"W	12704.27	157.031	0.16	0.00	0.16
21672.00	89.940	146.170	8072.90	12578.98	-11775.24	5009.77	1755806.27	416650.49	39°38'29.2900"N	80°15'19.0694"W	12796.65	156.953	0.33	0.10	-0.32
21733.00	89.910	146.360	8072.98	12639.98	-11825.97	5043.64	1755840.15	416599.77	39°38'28.7915"N	80°15'18.6309"W	12856.59	156.902	0.32	-0.05	0.31
21758.00‡	89.910	146.360	8073.02	12664.98	-11846.79	5057.49	1755853.99	416578.96	39°38'28.5869"N	80°15'18.4516"W	12881.17	156.882	0.00	0.00	0.00

RECEIVED
 Office of Oil and Gas
 FEB 06 2023
 WV Department of
 Environmental Protection



Actual Wellpath Report

ERP 8H AWP Proj: 21758'

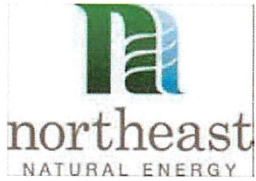
Page 10 of 13



REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	ERP 8H
Field	Monongalia	API/Legal	
Facility	ERP Pad	Wellbore	ERP 8H AWB
Slot	Slot 08		

HOLE & CASING SECTIONS - Ref Wellbore: ERP 8H AWB Ref Wellpath: ERP 8H AWP Proj: 21758'									
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	28.00	1336.00	1308.00	28.00	1336.00	0.00	0.00	-1.60	-1.10
13.375in Casing Surface	28.00	1336.00	1308.00	28.00	1336.00	0.00	0.00	-1.60	-1.10
12.25in Open Hole	1336.00	2600.00	1264.00	1336.00	2599.98	-1.60	-1.10	-4.81	-4.86
9.625in Casing Intermediate	28.00	2600.00	2572.00	28.00	2599.98	0.00	0.00	-4.81	-4.86
8.75in Open Hole	2600.00	8116.00	5516.00	2599.98	7571.86	-4.81	-4.86	-560.23	-2078.58
8.5in Open Hole	8116.00	21758.00	13642.00	7571.86	8073.02	-560.23	-2078.58	-11846.79	5057.49
5.5in Casing Production	28.00	21758.00	21730.00	28.00	8073.02	0.00	0.00	-11846.79	5057.49

RECEIVED
 Office of Oil and Gas
FEB 06 2023
 WV Department of
 Environmental Protection



Actual Wellpath Report

ERP 8H AWP Proj: 21758'

Page 11 of 13



REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	ERP 8H
Field	Monongalia	API/Legal	
Facility	ERP Pad	Wellbore	ERP 8H AWB
Slot	Slot 08		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
ERP 8H BHL Rev-2	8049.00	-11841.74	5064.40	1755860.90	416584.00	39°38'28.6374"N	80°15'18.3638"W	point
ERP 8H LP Rev-2	8049.00	-1315.43	-1936.32	1748860.61	427109.67	39°40'12.0730"N	80°16'49.0194"W	point
ERP Pad Hardline #1 (6.8.21)	8523.00	2751.25	1514.87	1752311.58	431176.10	39°40'52.5559"N	80°16'5.3309"W	polygon
2D Polygon: dimensions not calculated								
ERP Pad Hardline #2 (6.8.21)	8523.00	2614.68	1589.51	1752386.22	431039.54	39°40'51.2126"N	80°16'4.3613"W	polygon
2D Polygon: dimensions not calculated								
ERP Pad Hardline #3 (6.8.21)	8523.00	1279.76	774.03	1751570.79	429704.71	39°40'37.9512"N	80°16'14.6447"W	polygon
2D Polygon: dimensions not calculated								
ERP Pad Hardline #4 (6.8.21)	8523.00	-4849.90	101.03	1750897.83	423575.42	39°39'37.3176"N	80°16'22.5773"W	polygon
2D Polygon: dimensions not calculated								
ERP Pad Hardline #5 (6.8.21)	8523.00	-10427.73	6443.22	1757239.64	417997.93	39°38'42.7257"N	80°15'0.8900"W	polygon
2D Polygon: dimensions not calculated								

RECEIVED
 Office of Oil and Gas
 FEB 06 2023
 WV Department of
 Environmental Protection



Actual Wellpath Report

ERP 8H AWP Proj: 21758'

Page 12 of 13



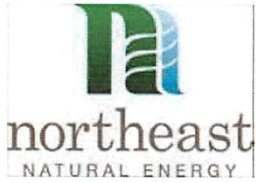
REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	ERP 8H
Field	Monongalia	API/Legal	
Facility	ERP Pad	Wellbore	ERP 8H AWB
Slot	Slot 08		

WELLPATH COMPOSITION - Ref Wellbore: ERP 8H AWB Ref Wellpath: ERP 8H AWP Proj: 21758'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
28.00	2600.00	BH Generic gyro - northseeking (Standard)	01_Gyro <12-1/4">(100'-2600')	ERP 8H AWB	7/15/2021
2600.00	8053.00	OWSG MWD rev2 + HRGM	02_Tally MWD <8-3/4">(2600')(2630'-8053')	ERP 8H AWB	7/15/2021
8053.00	21758.00	BH AutoTrak Curve/eXpress (2019) (HRGM, Short spacing)	03_BH AT Curve <8-1/2">(8053')(8146'-21733')	ERP 8H AWB	7/15/2021

RECEIVED
 Office of Oil and Gas
 FEB 06 2023
 WV Department of
 Environmental Protection



Actual Wellpath Report

ERP 8H AWP Proj: 21758'

Page 13 of 13



REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	ERP 8H
Field	Monongalia	API/Legal	
Facility	ERP Pad	Wellbore	ERP 8H AWB
Slot	Slot 08		

COMMENTS
<p>Wellpath general comments API: 47-061-01879-0000 BH Job #: 110948032 Rig: Patterson 277 Duration: 7/16/21 - 7/20/21</p> <p>Gyro <12-1/4">(100'-2600') Tally MWD <8-3/4">(2600')(2630'-8053') BH AT Curve <8-1/2">(8053')(8146'-21733') Projected MD at TD: 21758'</p>

RECEIVED
 Office of Oil and Gas
 FEB 06 2023
 NY Department of
 Environmental Protection