

NORTHEAST NATURAL ENERGY, LLC

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

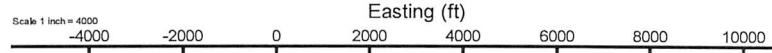
Slot: Slot 08
 Well: Phoenix 8H
 Wellbore: Phoenix 8H PWB



Plot reference wellpath is Phoenix 8H PWP Rev-A.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: 1531 feet	Coordinates are in feet referenced to Slot
Mean Sea Level to Ground level (At Slot: Slot 08): -1503 feet	Depths are in feet
Offset wellpath MDs are referenced to each path's default MD datum	Created by: manajph on 2022-02-08; Database: WA_MPL_EASTERNUS_Defn

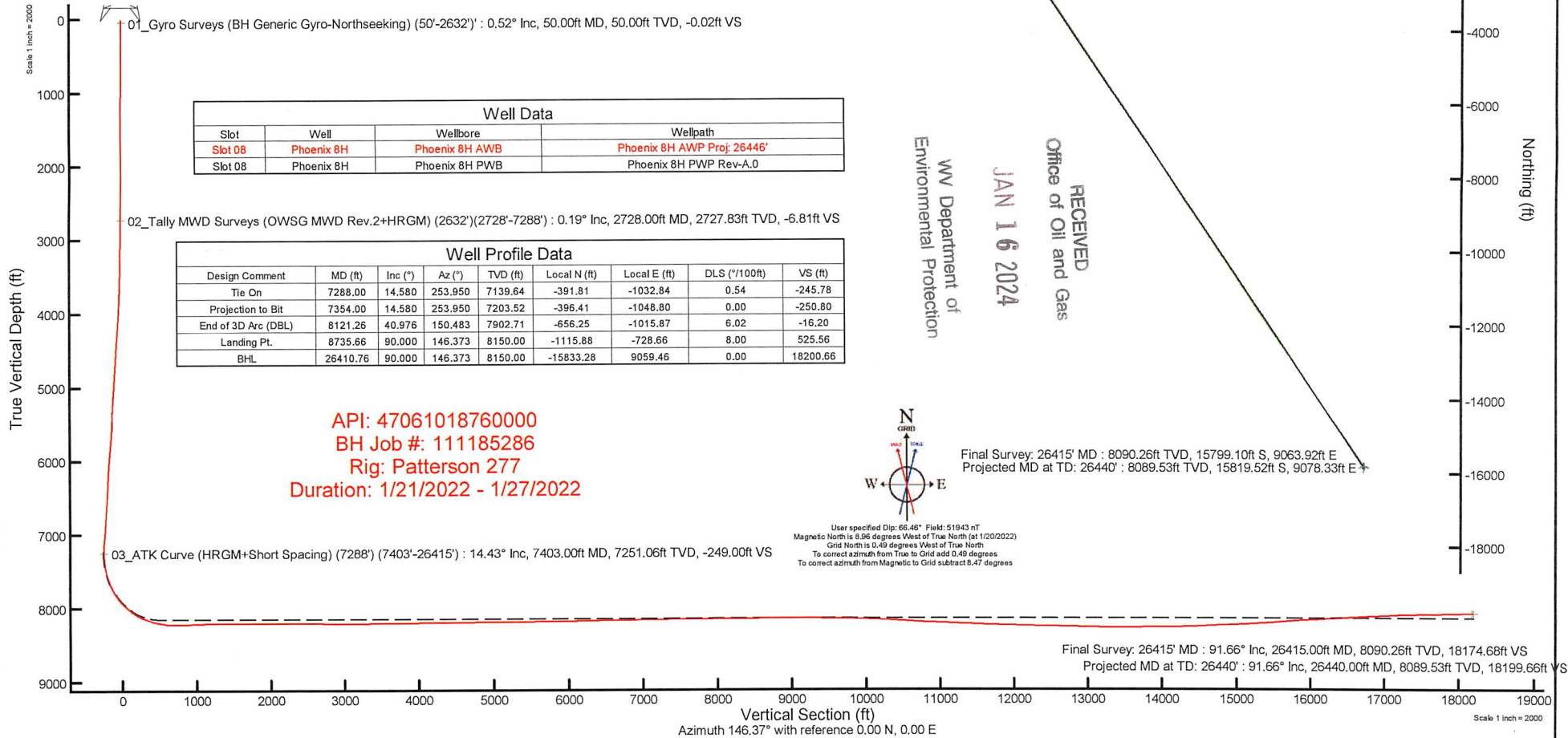
Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude		
Phoenix Pad	1751051.980	416616.940	39°38'28.5589"N	80°16'19.8414"W		
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Slot 08	-24.98	17.35	1751069.330	416591.960	39°38'28.3135"N	80°16'19.6169"W
Patterson 277 (RKB) to Ground level (At Slot: Slot 08)			28ft			
Mean Sea Level to Ground level (At Slot: Slot 08)			-1503ft			
Patterson 277 (RKB) to Mean Sea Level			1531ft			



01_Gyro Surveys (BH Generic Gyro-Northseeking) (50'-2632') : 50.00ft TVD, 0.04ft S, 0.09ft W
 02_Tally MWD Surveys (OWSG MWD Rev.2+HRGM) (2632')(2728'-7288') : 2727.83ft TVD, 1.46ft N, 10.10ft W
 03_ATK Curve (HRGM+Short Spacing) (7288') (7403'-26415') : 7251.06ft TVD, 404.69ft S, 1058.02ft W

Phoenix Hardline #1 (5.19.21)

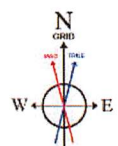


Well Data			
Slot	Well	Wellbore	Wellpath
Slot 08	Phoenix 8H	Phoenix 8H AWB	Phoenix 8H AWP Proj: 26446'
Slot 08	Phoenix 8H	Phoenix 8H PWB	Phoenix 8H PWP Rev-A.0

Well Profile Data							
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	VS (ft)
Tie On	7288.00	14.580	253.950	7139.64	-391.81	-1032.84	0.54
Projection to Bit	7354.00	14.580	253.950	7203.52	-396.41	-1048.80	0.00
End of 3D Arc (DBL)	8121.26	40.976	150.483	7902.71	-656.25	-1015.87	6.02
Landing Pt.	8735.66	90.000	146.373	8150.00	-1115.88	-728.66	8.00
BHL	26410.76	90.000	146.373	8150.00	-15833.28	9059.46	0.00

API: 47061018760000
 BH Job #: 111185286
 Rig: Patterson 277
 Duration: 1/21/2022 - 1/27/2022

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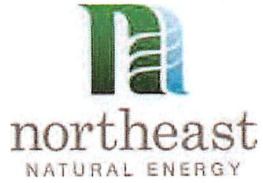


Final Survey: 26415' MD : 8090.26ft TVD, 15799.10ft S, 9063.92ft E
 Projected MD at TD: 26440' : 8089.53ft TVD, 15819.52ft S, 9078.33ft E

Final Survey: 26415' MD : 91.66° Inc, 26415.00ft MD, 8090.26ft TVD, 18174.68ft VS
 Projected MD at TD: 26440' : 91.66° Inc, 26440.00ft MD, 8089.53ft TVD, 18199.66ft VS

Vertical Section (ft)
 Azimuth 146.37° with reference 0.00 N, 0.00 E

Scale 1 inch = 2000



Actual Wellpath Report

Phoenix 8H AWP Proj: 26446'

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 8H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 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	Manajohj
Scale	0.999941	Report Generated	2/8/2022 at 4:14:47 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	-24.98	17.35	1751069.33	416591.96	39°38'28.3135"N	80°16'19.6169"W
Facility Reference Pt			1751051.98	416616.94	39°38'28.5589"N	80°16'19.8414"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	1531.00ft
Horizontal Reference Pt	Slot	Patterson 277 (RKB) to Mean Sea Level	1531.00ft
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°

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REFERENCE WELLPATH IDENTIFICATION			
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Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 8H AWB
Slot	Slot 08		

WELLPATH DATA (306 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	247.200	0.00	0.00	0.00	0.00	1751069.33	416591.96	39°38'28.3135"N	80°16'19.6169"W	0.00	0.000	0.00	0.00	0.00
28.00	0.000	247.200	28.00	0.00	0.00	0.00	1751069.33	416591.96	39°38'28.3135"N	80°16'19.6169"W	0.00	0.000	0.00	0.00	0.00
50.00	0.520	247.200	50.00	-0.02	-0.04	-0.09	1751069.24	416591.92	39°38'28.3131"N	80°16'19.6181"W	0.10	247.200	2.36	2.36	0.00
100.00	0.450	249.100	100.00	-0.10	-0.20	-0.48	1751068.85	416591.76	39°38'28.3115"N	80°16'19.6231"W	0.52	247.913	0.14	-0.14	3.80
150.00	0.520	259.700	150.00	-0.24	-0.31	-0.89	1751068.44	416591.65	39°38'28.3104"N	80°16'19.6282"W	0.94	250.979	0.23	0.14	21.20
200.00	0.460	271.400	199.99	-0.44	-0.34	-1.32	1751068.01	416591.62	39°38'28.3100"N	80°16'19.6337"W	1.36	255.385	0.23	-0.12	23.40
250.00	0.450	286.300	249.99	-0.71	-0.28	-1.70	1751067.63	416591.68	39°38'28.3106"N	80°16'19.6386"W	1.73	260.575	0.24	-0.02	29.80
300.00	0.460	274.200	299.99	-0.98	-0.21	-2.09	1751067.24	416591.75	39°38'28.3112"N	80°16'19.6436"W	2.10	264.186	0.19	0.02	-24.20
350.00	0.420	270.300	349.99	-1.21	-0.20	-2.48	1751066.85	416591.76	39°38'28.3113"N	80°16'19.6485"W	2.48	265.441	0.10	-0.08	-7.80
400.00	0.460	212.000	399.99	-1.23	-0.37	-2.77	1751066.56	416591.59	39°38'28.3096"N	80°16'19.6522"W	2.79	262.448	0.86	0.08	-116.60
450.00	0.460	222.700	449.99	-1.10	-0.68	-3.01	1751066.32	416591.28	39°38'28.3065"N	80°16'19.6553"W	3.09	257.183	0.17	0.00	21.40
500.00	0.430	267.000	499.99	-1.14	-0.84	-3.33	1751066.00	416591.12	39°38'28.3049"N	80°16'19.6594"W	3.44	255.822	0.67	-0.06	88.60
550.00	0.460	295.400	549.98	-1.41	-0.77	-3.70	1751065.63	416591.19	39°38'28.3056"N	80°16'19.6641"W	3.78	258.313	0.44	0.06	56.80
600.00	0.400	316.600	599.98	-1.76	-0.55	-4.00	1751065.33	416591.41	39°38'28.3077"N	80°16'19.6680"W	4.04	262.138	0.34	-0.12	42.40
650.00	0.460	345.900	649.98	-2.12	-0.23	-4.17	1751065.16	416591.73	39°38'28.3109"N	80°16'19.6702"W	4.18	266.828	0.45	0.12	58.60
700.00	0.460	353.900	699.98	-2.48	0.16	-4.24	1751065.09	416592.12	39°38'28.3148"N	80°16'19.6711"W	4.24	272.203	0.13	0.00	16.00
750.00	0.520	346.200	749.98	-2.88	0.58	-4.32	1751065.01	416592.54	39°38'28.3189"N	80°16'19.6721"W	4.36	277.693	0.18	0.12	-15.40
800.00	0.490	329.500	799.98	-3.30	0.99	-4.48	1751064.85	416592.95	39°38'28.3229"N	80°16'19.6742"W	4.59	282.435	0.30	-0.06	-33.40
850.00	0.560	329.200	849.97	-3.76	1.38	-4.71	1751064.62	416593.34	39°38'28.3268"N	80°16'19.6773"W	4.91	286.341	0.14	0.14	-0.60
900.00	0.520	337.600	899.97	-4.23	1.80	-4.92	1751064.41	416593.76	39°38'28.3309"N	80°16'19.6800"W	5.24	290.094	0.18	-0.08	16.80
950.00	0.570	356.700	949.97	-4.66	2.26	-5.02	1751064.31	416594.22	39°38'28.3354"N	80°16'19.6814"W	5.51	294.211	0.37	0.10	38.20
1000.00	0.610	9.600	999.97	-5.07	2.77	-4.99	1751064.34	416594.73	39°38'28.3405"N	80°16'19.6810"W	5.71	299.013	0.28	0.08	25.80
1050.00	0.670	20.600	1049.96	-5.44	3.31	-4.85	1751064.48	416595.27	39°38'28.3458"N	80°16'19.6792"W	5.87	304.295	0.27	0.12	22.00
1100.00	0.700	351.100	1099.96	-5.89	3.88	-4.79	1751064.54	416595.84	39°38'28.3515"N	80°16'19.6786"W	6.17	309.008	0.70	0.06	-59.00
1150.00	0.800	325.000	1149.96	-6.51	4.47	-5.04	1751064.29	416596.43	39°38'28.3572"N	80°16'19.6818"W	6.74	311.569	0.70	0.20	-52.20
1200.00	0.900	311.700	1199.95	-7.24	5.02	-5.53	1751063.80	416596.98	39°38'28.3626"N	80°16'19.6882"W	7.47	312.198	0.44	0.20	-26.60
1250.00	1.010	310.700	1249.94	-8.05	5.57	-6.16	1751063.17	416597.52	39°38'28.3680"N	80°16'19.6962"W	8.30	312.095	0.22	0.22	-2.00
1300.00	1.350	325.200	1299.93	-9.06	6.34	-6.83	1751062.50	416598.30	39°38'28.3755"N	80°16'19.7049"W	9.32	312.850	0.90	0.68	29.00
1350.00	1.440	321.900	1349.92	-10.27	7.31	-7.55	1751061.78	416599.27	39°38'28.3851"N	80°16'19.7142"W	10.51	314.075	0.24	0.18	-6.60
1400.00	1.200	280.200	1399.91	-11.26	7.90	-8.46	1751060.87	416599.86	39°38'28.3909"N	80°16'19.7258"W	11.57	313.054	1.93	-0.48	-83.40



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Actual Wellpath Report

Phoenix 8H AWP Proj: 26446'

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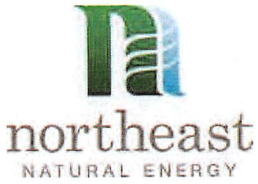


REFERENCE WELLPATH IDENTIFICATION

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

WELLPATH DATA (306 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]
1450.00	0.900	220.100	1449.90	-11.52	7.69	-9.23	1751060.11	416599.65	39°38'28.3888"N	80°16'19.7356"W	12.01	309.827	2.17	-0.60	-120.20
1500.00	0.760	195.000	1499.89	-11.19	7.07	-9.56	1751059.77	416599.03	39°38'28.3826"N	80°16'19.7399"W	11.90	306.484	0.77	-0.28	-50.20
1550.00	0.210	276.300	1549.89	-11.03	6.76	-9.74	1751059.59	416598.72	39°38'28.3795"N	80°16'19.7421"W	11.86	304.770	1.51	-1.10	162.60
1600.00	0.450	292.900	1599.89	-11.25	6.85	-10.01	1751059.32	416598.81	39°38'28.3803"N	80°16'19.7456"W	12.13	304.373	0.51	0.48	33.20
1650.00	0.620	282.800	1649.89	-11.61	6.99	-10.46	1751058.87	416598.94	39°38'28.3816"N	80°16'19.7513"W	12.58	303.742	0.39	0.34	-20.20
1700.00	0.770	252.800	1699.89	-11.90	6.95	-11.04	1751058.29	416598.91	39°38'28.3812"N	80°16'19.7588"W	13.05	302.171	0.78	0.30	-60.00
1750.00	0.780	238.400	1749.88	-12.01	6.67	-11.65	1751057.68	416598.63	39°38'28.3784"N	80°16'19.7666"W	13.43	299.780	0.39	0.02	-28.80
1800.00	0.610	155.400	1799.88	-11.76	6.25	-11.83	1751057.50	416598.21	39°38'28.3742"N	80°16'19.7688"W	13.38	297.836	1.86	-0.34	-166.00
1850.00	0.610	147.400	1849.88	-11.23	5.78	-11.58	1751057.75	416597.74	39°38'28.3697"N	80°16'19.7655"W	12.94	296.536	0.17	0.00	-16.00
1900.00	0.610	143.200	1899.87	-10.69	5.34	-11.28	1751058.06	416597.30	39°38'28.3654"N	80°16'19.7616"W	12.48	295.361	0.09	0.00	-8.40
1950.00	0.630	145.600	1949.87	-10.15	4.90	-10.96	1751058.37	416596.86	39°38'28.3610"N	80°16'19.7575"W	12.01	294.107	0.07	0.04	4.80
2000.00	0.650	149.900	1999.87	-9.60	4.43	-10.66	1751058.67	416596.39	39°38'28.3564"N	80°16'19.7537"W	11.55	292.571	0.10	0.04	8.60
2050.00	0.710	169.200	2049.86	-9.03	3.88	-10.46	1751058.87	416595.84	39°38'28.3510"N	80°16'19.7510"W	11.16	290.360	0.47	0.12	38.60
2100.00	0.720	177.100	2099.86	-8.47	3.26	-10.39	1751058.94	416595.22	39°38'28.3449"N	80°16'19.7500"W	10.89	287.445	0.20	0.02	15.80
2150.00	0.800	213.700	2149.86	-8.07	2.66	-10.57	1751058.76	416594.62	39°38'28.3389"N	80°16'19.7522"W	10.90	284.132	0.97	0.16	73.20
2200.00	0.780	217.600	2199.85	-7.82	2.10	-10.97	1751058.36	416594.06	39°38'28.3333"N	80°16'19.7573"W	11.17	280.841	0.11	-0.04	7.80
2250.00	0.700	260.800	2249.85	-7.84	1.78	-11.48	1751057.85	416593.74	39°38'28.3301"N	80°16'19.7638"W	11.61	278.825	1.10	-0.16	86.40
2300.00	0.500	298.800	2299.84	-8.16	1.84	-11.97	1751057.36	416593.80	39°38'28.3307"N	80°16'19.7701"W	12.11	278.731	0.87	-0.40	76.00
2350.00	0.190	1.200	2349.84	-8.42	2.03	-12.16	1751057.17	416593.99	39°38'28.3325"N	80°16'19.7725"W	12.33	279.461	0.89	-0.62	124.80
2400.00	0.350	38.400	2399.84	-8.54	2.23	-12.06	1751057.27	416594.19	39°38'28.3345"N	80°16'19.7713"W	12.27	280.468	0.46	0.32	74.40
2450.00	0.450	87.300	2449.84	-8.48	2.36	-11.77	1751057.56	416594.32	39°38'28.3358"N	80°16'19.7676"W	12.01	281.326	0.69	0.20	97.80
2500.00	0.500	107.200	2499.84	-8.21	2.30	-11.37	1751057.96	416594.26	39°38'28.3353"N	80°16'19.7624"W	11.60	281.451	0.34	0.10	39.80
2550.00	0.470	97.900	2549.84	-7.91	2.21	-10.96	1751058.38	416594.17	39°38'28.3344"N	80°16'19.7572"W	11.18	281.404	0.17	-0.06	-18.60
2600.00	0.390	83.600	2599.84	-7.69	2.20	-10.58	1751058.75	416594.16	39°38'28.3344"N	80°16'19.7524"W	10.81	281.746	0.27	-0.16	-28.60
2632.00	0.610	150.600	2631.84	-7.47	2.06	-10.39	1751058.94	416594.02	39°38'28.3330"N	80°16'19.7499"W	10.59	281.236	1.82	0.69	209.37
2728.00	0.190	166.510	2727.83	-6.81	1.46	-10.10	1751059.23	416593.42	39°38'28.3271"N	80°16'19.7462"W	10.21	278.246	0.45	-0.44	16.57
2827.00	0.340	211.910	2826.83	-6.54	1.06	-10.22	1751059.11	416593.02	39°38'28.3231"N	80°16'19.7476"W	10.27	275.895	0.25	0.15	45.86
2921.00	2.730	256.790	2920.79	-7.20	0.31	-12.55	1751056.78	416592.27	39°38'28.3155"N	80°16'19.7773"W	12.55	271.401	2.66	2.54	47.74
3015.00	4.140	263.330	3014.62	-9.52	-0.60	-18.10	1751051.23	416591.36	39°38'28.3060"N	80°16'19.8481"W	18.11	268.105	1.55	1.50	6.96
3109.00	5.350	251.200	3108.30	-12.18	-2.41	-25.62	1751043.72	416589.55	39°38'28.2876"N	80°16'19.9441"W	25.73	264.636	1.67	1.29	-12.90



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

WELLPATH DATA (306 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]
3203.00	5.980	240.150	3201.84	-13.63	-6.25	-34.01	1751035.32	416585.71	39°38'28.2488"N	80°16'20.0510"W	34.58	259.580	1.34	0.67	-11.76
3298.00	6.900	240.760	3296.24	-14.39	-11.51	-43.28	1751026.05	416580.46	39°38'28.1961"N	80°16'20.1689"W	44.79	255.114	0.97	0.97	0.64
3392.00	8.370	244.670	3389.41	-15.81	-17.19	-54.40	1751014.94	416574.77	39°38'28.1390"N	80°16'20.3103"W	57.05	252.461	1.66	1.56	4.16
3487.00	10.060	244.630	3483.18	-18.00	-23.70	-68.14	1751001.19	416568.26	39°38'28.0734"N	80°16'20.4853"W	72.15	250.819	1.78	1.78	-0.04
3582.00	11.440	245.100	3576.51	-20.62	-31.23	-84.19	1750985.15	416560.74	39°38'27.9977"N	80°16'20.6896"W	89.79	249.649	1.46	1.45	0.49
3676.00	12.960	244.780	3668.38	-23.58	-39.64	-102.18	1750967.16	416552.32	39°38'27.9130"N	80°16'20.9186"W	109.60	248.795	1.62	1.62	-0.34
3774.00	15.220	244.230	3763.43	-26.95	-49.92	-123.71	1750945.63	416542.04	39°38'27.8097"N	80°16'21.1927"W	133.40	248.024	2.31	2.31	-0.56
3868.00	16.640	244.820	3853.82	-30.61	-61.01	-147.00	1750922.34	416530.95	39°38'27.6981"N	80°16'21.4892"W	159.16	247.460	1.52	1.51	0.63
3963.00	16.860	245.780	3944.79	-34.86	-72.45	-171.87	1750897.47	416519.51	39°38'27.5829"N	80°16'21.8059"W	186.52	247.143	0.37	0.23	1.01
4058.00	17.280	250.060	4035.61	-40.46	-82.91	-197.70	1750871.64	416509.05	39°38'27.4773"N	80°16'22.1349"W	214.39	247.247	1.39	0.44	4.51
4152.00	17.180	247.730	4125.39	-46.49	-92.94	-223.67	1750845.67	416499.03	39°38'27.3760"N	80°16'22.4658"W	242.21	247.437	0.74	-0.11	-2.48
4247.00	16.170	251.030	4216.39	-52.61	-102.55	-249.17	1750820.18	416489.41	39°38'27.2788"N	80°16'22.7906"W	269.45	247.629	1.46	-1.06	3.47
4342.00	16.440	252.390	4307.57	-59.66	-110.92	-274.49	1750794.86	416481.05	39°38'27.1940"N	80°16'23.1134"W	296.06	247.996	0.49	0.28	1.43
4436.00	16.850	250.350	4397.63	-66.63	-119.53	-300.00	1750769.35	416472.44	39°38'27.1068"N	80°16'23.4385"W	322.94	248.277	0.76	0.44	-2.17
4531.00	16.680	247.000	4488.60	-72.47	-129.48	-325.52	1750743.83	416462.48	39°38'27.0062"N	80°16'23.7636"W	350.33	248.308	1.03	-0.18	-3.53
4625.00	16.130	248.240	4578.77	-77.64	-139.60	-350.06	1750719.29	416452.37	39°38'26.9042"N	80°16'24.0762"W	376.87	248.259	0.69	-0.59	1.32
4720.00	16.030	248.890	4670.06	-83.20	-149.21	-374.56	1750694.80	416442.76	39°38'26.8071"N	80°16'24.3882"W	403.18	248.279	0.22	-0.11	0.68
4819.00	15.990	249.390	4765.22	-89.24	-158.94	-400.07	1750669.28	416433.03	39°38'26.7088"N	80°16'24.7133"W	430.48	248.334	0.15	-0.04	0.51
4914.00	15.660	248.730	4856.62	-94.93	-168.19	-424.27	1750645.09	416423.78	39°38'26.6153"N	80°16'25.0215"W	456.39	248.375	0.40	-0.35	-0.69
5009.00	15.890	245.800	4948.04	-99.80	-178.18	-448.08	1750621.28	416413.80	39°38'26.5146"N	80°16'25.3248"W	482.20	248.315	0.87	0.24	-3.08
5104.00	17.110	249.720	5039.13	-105.16	-188.35	-473.05	1750596.31	416403.62	39°38'26.4119"N	80°16'25.6429"W	509.17	248.289	1.74	1.28	4.13
5198.00	16.450	251.890	5129.13	-111.92	-197.28	-498.67	1750570.69	416394.69	39°38'26.3215"N	80°16'25.9694"W	536.28	248.416	0.97	-0.70	2.31
5293.00	15.500	249.140	5220.46	-118.32	-205.98	-523.32	1750546.04	416385.99	39°38'26.2334"N	80°16'26.2835"W	562.40	248.515	1.28	-1.00	-2.89
5388.00	15.220	249.920	5312.06	-124.05	-214.78	-546.89	1750522.47	416377.19	39°38'26.1444"N	80°16'26.5839"W	587.56	248.558	0.37	-0.29	0.82
5483.00	15.490	247.970	5403.67	-129.52	-223.82	-570.36	1750499.00	416368.15	39°38'26.0530"N	80°16'26.8829"W	612.71	248.574	0.61	0.28	-2.05
5579.00	15.380	245.540	5496.21	-134.13	-233.90	-593.84	1750475.53	416358.07	39°38'25.9514"N	80°16'27.1818"W	638.24	248.501	0.68	-0.11	-2.53
5673.00	15.380	246.540	5586.85	-138.31	-244.03	-616.62	1750452.75	416347.95	39°38'25.8494"N	80°16'27.4719"W	663.15	248.409	0.28	0.00	1.06
5767.00	15.830	250.260	5677.38	-143.59	-253.32	-640.12	1750429.25	416338.66	39°38'25.7556"N	80°16'27.7713"W	688.42	248.409	1.17	0.48	3.96
5862.00	16.010	253.530	5768.74	-150.57	-261.41	-664.88	1750404.49	416330.56	39°38'25.6735"N	80°16'28.0869"W	714.42	248.537	0.96	0.19	3.44
5957.00	16.560	252.950	5859.93	-158.30	-269.09	-690.39	1750378.99	416322.88	39°38'25.5954"N	80°16'28.4121"W	740.98	248.705	0.60	0.58	-0.61



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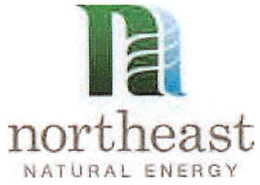
Phoenix 8H AWP Proj: 26446'

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

WELLPATH DATA (306 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]
6051.00	17.460	251.300	5949.82	-165.75	-277.54	-716.55	1750352.82	416314.43	39°38'25.5097"N	80°16'28.7456"W	768.42	248.827	1.09	0.96	-1.76
6150.00	18.290	248.810	6044.04	-172.93	-287.92	-745.10	1750324.27	416304.06	39°38'25.4047"N	80°16'29.1094"W	798.80	248.873	1.14	0.84	-2.52
6245.00	17.810	247.570	6134.36	-178.96	-298.85	-772.43	1750296.94	416293.13	39°38'25.2943"N	80°16'29.4576"W	828.23	248.849	0.65	-0.51	-1.31
6340.00	15.870	245.100	6225.29	-183.75	-309.87	-797.65	1750271.73	416282.11	39°38'25.1833"N	80°16'29.7786"W	855.72	248.770	2.18	-2.04	-2.60
6434.00	13.610	245.510	6316.19	-187.46	-319.86	-819.37	1750250.01	416272.12	39°38'25.0827"N	80°16'30.0552"W	879.59	248.675	2.41	-2.40	0.44
6528.00	13.090	253.410	6407.65	-192.34	-327.49	-839.64	1750229.74	416264.49	39°38'25.0056"N	80°16'30.3135"W	901.25	248.693	2.02	-0.55	8.40
6623.00	14.100	253.250	6499.99	-198.85	-333.89	-861.03	1750208.35	416258.09	39°38'24.9405"N	80°16'30.5862"W	923.50	248.804	1.06	1.06	-0.17
6718.00	15.230	249.930	6591.90	-205.14	-341.51	-883.83	1750185.55	416250.47	39°38'24.8633"N	80°16'30.8768"W	947.52	248.874	1.48	1.19	-3.49
6813.00	16.900	248.830	6683.18	-211.04	-350.78	-908.43	1750160.95	416241.20	39°38'24.7696"N	80°16'31.1902"W	973.80	248.886	1.79	1.76	-1.16
6908.00	17.680	250.040	6773.89	-217.43	-360.69	-934.87	1750134.52	416231.29	39°38'24.6694"N	80°16'31.5270"W	1002.04	248.902	0.90	0.82	1.27
7002.00	16.370	249.300	6863.77	-223.77	-370.25	-960.68	1750108.71	416221.73	39°38'24.5727"N	80°16'31.8559"W	1029.56	248.923	1.41	-1.39	-0.79
7098.00	15.820	252.810	6956.01	-230.50	-378.90	-985.83	1750083.56	416213.09	39°38'24.4851"N	80°16'32.1765"W	1056.14	248.976	1.16	-0.57	3.66
7193.00	14.540	255.970	7047.69	-238.17	-385.62	-1009.78	1750059.62	416206.37	39°38'24.4167"N	80°16'32.4818"W	1080.90	249.099	1.60	-1.35	3.33
7288.00	14.580	253.950	7139.64	-245.78	-391.81	-1032.84	1750036.56	416200.17	39°38'24.3534"N	80°16'32.7759"W	1104.66	249.225	0.54	0.04	-2.13
7403.00	14.430	231.770	7251.06	-249.00	-404.69	-1058.02	1750011.37	416187.29	39°38'24.2240"N	80°16'33.0964"W	1132.78	249.068	4.80	-0.13	-19.29
7497.00	13.700	214.830	7342.28	-243.97	-421.08	-1073.59	1749995.81	416170.90	39°38'24.0607"N	80°16'33.2935"W	1153.21	248.584	4.43	-0.78	-18.02
7592.00	13.560	192.950	7434.67	-232.18	-441.19	-1082.51	1749986.88	416150.80	39°38'23.8613"N	80°16'33.4054"W	1168.97	247.826	5.40	-0.15	-23.03
7687.00	16.600	175.470	7526.43	-212.65	-465.59	-1083.94	1749985.46	416126.40	39°38'23.6200"N	80°16'33.4209"W	1179.70	246.755	5.72	3.20	-18.40
7781.00	21.260	157.350	7615.40	-184.15	-494.74	-1076.30	1749993.09	416097.25	39°38'23.3326"N	80°16'33.3201"W	1184.57	245.313	7.93	4.96	-19.28
7876.00	23.540	157.870	7703.23	-148.65	-528.21	-1062.52	1750006.87	416063.78	39°38'23.0029"N	80°16'33.1403"W	1186.58	243.567	2.41	2.40	0.55
7971.00	29.960	155.530	7788.02	-106.59	-567.42	-1045.53	1750023.86	416024.58	39°38'22.6169"N	80°16'32.9188"W	1189.58	241.511	6.85	6.76	-2.46
8064.00	37.170	153.830	7865.46	-55.74	-613.83	-1023.49	1750045.90	415978.17	39°38'22.1601"N	80°16'32.6319"W	1193.45	239.047	7.82	7.75	-1.83
8158.00	44.210	151.450	7936.70	5.14	-668.18	-995.27	1750074.12	415923.82	39°38'21.6255"N	80°16'32.2652"W	1198.76	236.124	7.67	7.49	-2.53
8253.00	49.690	149.430	8001.53	74.35	-728.51	-960.99	1750108.40	415863.50	39°38'21.0322"N	80°16'31.8204"W	1205.91	232.835	5.97	5.77	-2.13
8348.00	55.140	148.860	8059.45	149.52	-793.10	-922.38	1750147.00	415798.91	39°38'20.3971"N	80°16'31.3197"W	1216.47	229.310	5.76	5.74	-0.60
8443.00	62.440	148.480	8108.64	230.65	-862.45	-880.15	1750189.23	415729.56	39°38'19.7153"N	80°16'30.7723"W	1232.27	225.582	7.69	7.68	-0.40
8538.00	68.390	146.810	8148.15	316.98	-935.38	-833.92	1750235.46	415656.64	39°38'18.9986"N	80°16'30.1733"W	1253.14	221.718	6.46	6.26	-1.76
8633.00	73.140	147.270	8179.44	406.64	-1010.62	-785.14	1750284.24	415581.40	39°38'18.2592"N	80°16'29.5415"W	1279.76	217.843	5.02	5.00	0.48
8728.00	78.580	147.780	8202.64	498.71	-1088.31	-735.70	1750333.68	415503.72	39°38'17.4956"N	80°16'28.9010"W	1313.65	214.059	5.75	5.73	0.54
8822.00	82.250	147.890	8218.29	591.35	-1166.76	-686.37	1750383.01	415425.27	39°38'16.7246"N	80°16'28.2618"W	1353.67	210.467	3.91	3.90	0.12



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Phoenix 8H AWP Proj: 26446'

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

WELLPATH DATA (306 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]
8917.00	89.540	147.850	8225.09	686.01	-1246.95	-636.00	1750433.37	415345.09	39°38'15.9364"N	80°16'27.6092"W	1399.78	207.024	7.67	7.67	-0.04
9011.00	90.580	148.170	8224.99	779.97	-1326.67	-586.21	1750483.16	415265.37	39°38'15.1527"N	80°16'26.9639"W	1450.41	203.839	1.16	1.11	0.34
9106.00	91.820	147.780	8223.00	874.91	-1407.19	-535.84	1750533.52	415184.85	39°38'14.3612"N	80°16'26.3113"W	1505.76	200.846	1.37	1.31	-0.41
9200.00	92.710	147.340	8219.28	968.82	-1486.46	-485.46	1750583.90	415105.59	39°38'13.5822"N	80°16'25.6586"W	1563.73	198.086	1.06	0.95	-0.47
9307.00	92.030	145.770	8214.86	1075.72	-1575.66	-426.54	1750642.82	415016.39	39°38'12.7056"N	80°16'24.8957"W	1632.38	195.147	1.60	-0.64	-1.47
9402.00	91.260	146.030	8212.13	1170.68	-1654.30	-373.30	1750696.05	414937.76	39°38'11.9331"N	80°16'24.2065"W	1695.89	192.716	0.86	-0.81	0.27
9497.00	90.520	146.030	8210.65	1265.66	-1733.07	-320.23	1750749.12	414858.99	39°38'11.1591"N	80°16'23.5195"W	1762.41	190.469	0.78	-0.78	0.00
9592.00	90.060	145.890	8210.17	1360.66	-1811.79	-267.05	1750802.30	414780.28	39°38'10.3856"N	80°16'22.8311"W	1831.37	188.385	0.51	-0.48	-0.15
9688.00	90.000	145.910	8210.12	1456.65	-1891.29	-213.23	1750856.12	414700.79	39°38'9.6046"N	80°16'22.1345"W	1903.27	186.432	0.07	-0.06	0.02
9782.00	89.940	145.620	8210.17	1550.65	-1969.00	-160.34	1750909.00	414623.08	39°38'8.8411"N	80°16'21.4500"W	1975.52	184.656	0.32	-0.06	-0.31
9876.00	89.970	145.710	8210.25	1644.64	-2046.62	-107.32	1750962.01	414545.46	39°38'8.0785"N	80°16'20.7638"W	2049.43	183.002	0.10	0.03	0.10
9971.00	89.910	145.710	8210.35	1739.64	-2125.11	-53.80	1751015.53	414466.98	39°38'7.3074"N	80°16'20.0711"W	2125.79	181.450	0.06	-0.06	0.00
10066.00	89.910	145.790	8210.50	1834.63	-2203.64	-0.34	1751068.99	414388.46	39°38'6.5359"N	80°16'19.3791"W	2203.64	180.009	0.08	0.00	0.08
10162.00	90.060	145.500	8210.52	1930.62	-2282.89	53.84	1751123.16	414309.21	39°38'5.7572"N	80°16'18.6780"W	2283.52	178.649	0.34	0.16	-0.30
10256.00	90.150	145.760	8210.35	2024.61	-2360.48	106.90	1751176.23	414231.63	39°38'4.9950"N	80°16'17.9912"W	2362.90	177.407	0.29	0.10	0.28
10351.00	89.910	145.430	8210.30	2119.61	-2438.86	160.58	1751229.90	414153.25	39°38'4.2249"N	80°16'17.2965"W	2444.14	176.233	0.43	-0.25	-0.35
10447.00	89.940	145.740	8210.42	2215.60	-2518.06	214.84	1751284.16	414074.06	39°38'3.4469"N	80°16'16.5943"W	2527.20	175.123	0.32	0.03	0.32
10540.00	89.910	145.630	8210.55	2308.59	-2594.87	267.27	1751336.58	413997.25	39°38'2.6922"N	80°16'15.9158"W	2608.60	174.119	0.12	-0.03	-0.12
10635.00	89.750	145.320	8210.83	2403.58	-2673.14	321.11	1751390.42	413918.99	39°38'1.9233"N	80°16'15.2191"W	2692.35	173.150	0.37	-0.17	-0.33
10733.00	89.780	145.530	8211.23	2501.56	-2753.83	376.72	1751446.03	413838.30	39°38'1.1306"N	80°16'14.4994"W	2779.48	172.210	0.22	0.03	0.21
10828.00	89.290	145.800	8212.00	2596.55	-2832.27	430.30	1751499.61	413759.86	39°38'0.3599"N	80°16'13.8060"W	2864.77	171.361	0.59	-0.52	0.28
10923.00	88.860	144.370	8213.53	2691.51	-2910.16	484.67	1751553.97	413681.98	39°37'59.5947"N	80°16'13.1026"W	2950.24	170.545	1.57	-0.45	-1.51
11018.00	89.200	145.630	8215.14	2786.47	-2987.97	539.15	1751608.45	413604.18	39°37'58.8304"N	80°16'12.3978"W	3036.22	169.772	1.37	0.36	1.33
11113.00	89.630	145.880	8216.11	2881.46	-3066.49	592.61	1751661.90	413525.66	39°37'58.0589"N	80°16'11.7059"W	3123.23	169.062	0.52	0.45	0.26
11208.00	89.660	145.640	8216.70	2976.45	-3145.03	646.06	1751715.35	413447.13	39°37'57.2873"N	80°16'11.0142"W	3210.70	168.392	0.25	0.03	-0.25
11303.00	90.030	145.070	8216.96	3071.44	-3223.18	700.07	1751769.35	413368.98	39°37'56.5195"N	80°16'10.3154"W	3298.33	167.746	0.72	0.39	-0.60
11397.00	91.230	146.170	8215.92	3165.42	-3300.75	753.14	1751822.42	413291.41	39°37'55.7574"N	80°16'9.6285"W	3385.59	167.147	1.73	1.28	1.17
11492.00	89.940	145.950	8214.95	3260.41	-3379.56	806.18	1751875.46	413212.61	39°37'54.9831"N	80°16'8.9420"W	3474.39	166.583	1.38	-1.36	-0.23
11587.00	91.170	146.530	8214.03	3355.40	-3458.54	858.97	1751928.24	413133.64	39°37'54.2071"N	80°16'8.2587"W	3563.61	166.052	1.43	1.29	0.61
11682.00	91.690	147.170	8211.66	3450.37	-3538.05	910.90	1751980.17	413054.13	39°37'53.4257"N	80°16'7.5863"W	3653.43	165.562	0.87	0.55	0.67



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Actual Wellpath Report

Phoenix 8H AWP Proj: 26446'

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

WELLPATH DATA (306 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]
11777.00	89.850	145.650	8210.39	3545.36	-3617.17	963.45	1752032.72	412975.01	39°37'52.6482"N	80°16'6.9060"W	3743.28	165.085	2.51	-1.94	-1.60
11872.00	90.980	146.040	8209.70	3640.35	-3695.78	1016.78	1752086.05	412896.40	39°37'51.8758"N	80°16'6.2158"W	3833.10	164.617	1.26	1.19	0.41
11967.00	89.230	146.610	8209.52	3735.34	-3774.84	1069.46	1752138.72	412817.35	39°37'51.0990"N	80°16'5.5339"W	3923.41	164.182	1.94	-1.84	0.60
12063.00	91.170	146.410	8209.19	3831.34	-3854.90	1122.43	1752191.69	412737.30	39°37'50.3123"N	80°16'4.8482"W	4014.98	163.766	2.03	2.02	-0.21
12158.00	90.310	146.640	8207.96	3926.33	-3934.13	1174.82	1752244.08	412658.07	39°37'49.5336"N	80°16'4.1699"W	4105.80	163.373	0.94	-0.91	0.24
12253.00	90.460	147.240	8207.32	4021.32	-4013.75	1226.64	1752295.90	412578.46	39°37'48.7512"N	80°16'3.4989"W	4197.00	163.006	0.65	0.16	0.63
12348.00	90.860	146.170	8206.23	4116.31	-4093.15	1278.79	1752348.04	412499.06	39°37'47.9709"N	80°16'2.8238"W	4288.26	162.650	1.20	0.42	-1.13
12443.00	90.770	146.870	8204.88	4211.30	-4172.38	1331.19	1752400.44	412419.84	39°37'47.1924"N	80°16'2.1454"W	4379.59	162.305	0.74	-0.09	0.74
12538.00	90.150	146.840	8204.12	4306.29	-4251.92	1383.13	1752452.37	412340.30	39°37'46.4107"N	80°16'1.4729"W	4471.22	161.981	0.65	-0.65	-0.03
12633.00	90.220	145.890	8203.81	4401.29	-4331.01	1435.75	1752504.99	412261.21	39°37'45.6335"N	80°16'0.7918"W	4562.79	161.659	1.00	0.07	-1.00
12728.00	90.680	146.660	8203.06	4496.29	-4410.02	1488.49	1752557.73	412182.21	39°37'44.8571"N	80°16'0.1091"W	4654.45	161.349	0.94	0.48	0.81
12823.00	90.280	146.470	8202.27	4591.28	-4489.30	1540.83	1752610.07	412102.94	39°37'44.0781"N	80°15'59.4315"W	4746.36	161.057	0.47	-0.42	-0.20
12918.00	90.650	146.420	8201.50	4686.28	-4568.46	1593.34	1752662.57	412023.78	39°37'43.3001"N	80°15'58.7518"W	4838.34	160.773	0.39	0.39	-0.05
13013.00	90.710	146.530	8200.37	4781.27	-4647.65	1645.81	1752715.04	411944.59	39°37'42.5219"N	80°15'58.0727"W	4930.45	160.500	0.13	0.06	0.12
13106.00	90.060	146.500	8199.74	4874.27	-4725.21	1697.12	1752766.34	411867.03	39°37'41.7597"N	80°15'57.4085"W	5020.74	160.244	0.70	-0.70	-0.03
13201.00	90.770	146.260	8199.06	4969.27	-4804.32	1749.71	1752818.94	411787.93	39°37'40.9824"N	80°15'56.7277"W	5113.02	159.989	0.79	0.75	-0.25
13297.00	90.430	146.760	8198.05	5065.26	-4884.38	1802.68	1752871.90	411707.88	39°37'40.1957"N	80°15'56.0420"W	5206.42	159.742	0.63	-0.35	0.52
13392.00	90.520	146.990	8197.26	5160.25	-4963.94	1854.59	1752923.81	411628.33	39°37'39.4138"N	80°15'55.3699"W	5299.07	159.514	0.26	0.09	0.24
13487.00	90.400	146.060	8196.50	5255.25	-5043.18	1906.99	1752976.21	411549.09	39°37'38.6351"N	80°15'54.6916"W	5391.68	159.287	0.99	-0.13	-0.98
13582.00	90.400	146.550	8195.84	5350.25	-5122.21	1959.69	1753028.90	411470.06	39°37'37.8585"N	80°15'54.0095"W	5484.29	159.064	0.52	0.00	0.52
13678.00	90.430	146.630	8195.14	5446.24	-5202.35	2012.55	1753081.76	411389.93	39°37'37.0710"N	80°15'53.3252"W	5578.06	158.851	0.09	0.03	0.08
13773.00	90.800	146.710	8194.12	5541.24	-5281.72	2064.75	1753133.95	411310.57	39°37'36.2910"N	80°15'52.6496"W	5670.95	158.648	0.40	0.39	0.08
13868.00	90.550	146.870	8193.00	5636.23	-5361.19	2116.78	1753185.98	411231.09	39°37'35.5099"N	80°15'51.9760"W	5763.95	158.454	0.31	-0.26	0.17
13964.00	91.110	146.690	8191.61	5732.22	-5441.50	2169.37	1753238.56	411150.80	39°37'34.7208"N	80°15'51.2952"W	5857.99	158.264	0.61	0.58	-0.19
14058.00	90.060	146.610	8190.65	5826.21	-5520.01	2221.04	1753290.23	411072.29	39°37'33.9492"N	80°15'50.6263"W	5950.09	158.082	1.12	-1.12	-0.09
14154.00	90.460	146.350	8190.22	5922.21	-5600.05	2274.05	1753343.24	410992.26	39°37'33.1627"N	80°15'49.9401"W	6044.16	157.899	0.50	0.42	-0.27
14249.00	90.800	146.820	8189.17	6017.20	-5679.34	2326.36	1753395.55	410912.97	39°37'32.3835"N	80°15'49.2629"W	6137.33	157.725	0.61	0.36	0.49
14345.00	91.260	145.720	8187.45	6113.18	-5759.16	2379.66	1753448.85	410833.15	39°37'31.5991"N	80°15'48.5731"W	6231.43	157.550	1.24	0.48	-1.15
14440.00	90.650	146.440	8185.86	6208.17	-5837.98	2432.67	1753501.85	410754.33	39°37'30.8246"N	80°15'47.8872"W	6324.55	157.379	0.99	-0.64	0.76
14535.00	91.600	146.810	8184.00	6303.15	-5917.30	2484.92	1753554.10	410675.02	39°37'30.0451"N	80°15'47.2109"W	6417.89	157.220	1.07	1.00	0.39



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Actual Wellpath Report

Phoenix 8H AWP Proj: 26446'

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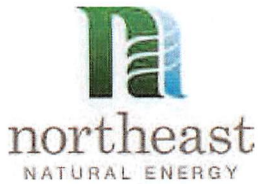


REFERENCE WELLPATH IDENTIFICATION

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

WELLPATH DATA (306 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]
14631.00	91.380	145.980	8181.50	6399.11	-5997.23	2538.03	1753607.21	410595.10	39°37'29.2596"N	80°15'46.5234"W	6512.17	157.062	0.89	-0.23	-0.86
14726.00	90.550	146.540	8179.90	6494.10	-6076.22	2590.79	1753659.96	410516.12	39°37'28.4835"N	80°15'45.8406"W	6605.50	156.907	1.05	-0.87	0.59
14822.00	91.420	146.710	8178.25	6590.08	-6156.37	2643.59	1753712.76	410435.97	39°37'27.6958"N	80°15'45.1571"W	6699.96	156.761	0.92	0.91	0.18
14917.00	90.710	146.730	8176.49	6685.06	-6235.78	2695.71	1753764.88	410356.56	39°37'26.9154"N	80°15'44.4825"W	6793.51	156.621	0.75	-0.75	0.02
15012.00	90.490	145.030	8175.49	6780.05	-6314.42	2749.00	1753818.16	410277.93	39°37'26.1427"N	80°15'43.7930"W	6886.86	156.474	1.80	-0.23	-1.79
15107.00	90.550	145.960	8174.63	6875.04	-6392.70	2802.81	1753871.97	410199.65	39°37'25.3736"N	80°15'43.0968"W	6980.14	156.325	0.98	0.06	0.98
15203.00	91.350	146.860	8173.04	6971.02	-6472.66	2855.91	1753925.07	410119.70	39°37'24.5878"N	80°15'42.4095"W	7074.71	156.192	1.25	0.83	0.94
15298.00	90.710	145.670	8171.33	7066.00	-6551.65	2908.66	1753977.81	410040.71	39°37'23.8116"N	80°15'41.7269"W	7168.29	156.061	1.42	-0.67	-1.25
15393.00	90.740	146.240	8170.13	7160.99	-6630.36	2961.84	1754030.99	409962.01	39°37'23.0382"N	80°15'41.0388"W	7261.83	155.929	0.60	0.03	0.60
15488.00	91.050	146.430	8168.64	7255.98	-6709.41	3014.50	1754083.64	409882.96	39°37'22.2613"N	80°15'40.3573"W	7355.50	155.806	0.38	0.33	0.20
15584.00	90.460	146.910	8167.38	7351.97	-6789.62	3067.24	1754136.38	409802.76	39°37'21.4731"N	80°15'39.6746"W	7450.29	155.689	0.79	-0.61	0.50
15679.00	90.150	147.720	8166.87	7446.95	-6869.57	3118.54	1754187.68	409722.81	39°37'20.6873"N	80°15'39.0104"W	7544.29	155.584	0.91	-0.33	0.85
15774.00	90.620	147.720	8166.23	7541.93	-6949.89	3169.27	1754238.41	409642.50	39°37'19.8978"N	80°15'38.3534"W	7638.41	155.486	0.49	0.49	0.00
15869.00	91.020	148.490	8164.87	7636.87	-7030.54	3219.46	1754288.60	409561.86	39°37'19.1050"N	80°15'37.7033"W	7732.62	155.396	0.91	0.42	0.81
15964.00	90.740	147.310	8163.42	7731.82	-7111.00	3269.94	1754339.07	409481.39	39°37'18.3140"N	80°15'37.0495"W	7826.80	155.305	1.28	-0.29	-1.24
16060.00	90.740	147.430	8162.18	7827.80	-7191.84	3321.70	1754390.83	409400.56	39°37'17.5194"N	80°15'36.3793"W	7921.89	155.209	0.12	0.00	0.12
16154.00	90.620	147.460	8161.06	7921.78	-7271.07	3372.28	1754441.40	409321.34	39°37'16.7407"N	80°15'35.7244"W	8015.03	155.118	0.13	-0.13	0.03
16249.00	90.740	147.980	8159.93	8016.75	-7351.38	3423.01	1754492.13	409241.03	39°37'15.9512"N	80°15'35.0675"W	8109.24	155.032	0.56	0.13	0.55
16344.00	90.430	147.430	8158.96	8111.71	-7431.68	3473.76	1754542.88	409160.74	39°37'15.1619"N	80°15'34.4102"W	8203.47	154.947	0.66	-0.33	-0.58
16439.00	90.740	147.910	8157.99	8206.68	-7511.95	3524.57	1754593.68	409080.47	39°37'14.3729"N	80°15'33.7524"W	8297.71	154.864	0.60	0.33	0.51
16535.00	90.310	147.000	8157.11	8302.66	-7592.87	3576.21	1754645.32	408999.56	39°37'13.5775"N	80°15'33.0837"W	8392.91	154.780	1.05	-0.45	-0.95
16630.00	90.890	147.920	8156.12	8397.64	-7672.95	3627.30	1754696.41	408919.48	39°37'12.7903"N	80°15'32.4221"W	8487.14	154.698	1.14	0.61	0.97
16725.00	90.620	146.490	8154.87	8492.62	-7752.80	3678.75	1754747.86	408839.64	39°37'12.0055"N	80°15'31.7560"W	8581.32	154.615	1.53	-0.28	-1.51
16821.00	90.770	146.690	8153.70	8588.61	-7832.93	3731.61	1754800.71	408759.51	39°37'11.2180"N	80°15'31.0720"W	8676.39	154.527	0.26	0.16	0.21
16915.00	90.180	146.500	8152.92	8682.61	-7911.40	3783.36	1754852.46	408681.05	39°37'10.4469"N	80°15'30.4022"W	8769.49	154.442	0.66	-0.63	-0.20
17011.00	90.580	146.570	8152.29	8778.60	-7991.48	3836.29	1754905.39	408600.97	39°37'9.6599"N	80°15'29.7171"W	8864.59	154.357	0.42	0.42	0.07
17106.00	90.550	146.090	8151.35	8873.60	-8070.54	3888.96	1754958.05	408521.92	39°37'8.8829"N	80°15'29.0356"W	8958.66	154.272	0.51	-0.03	-0.51
17201.00	90.310	146.630	8150.64	8968.59	-8149.63	3941.59	1755010.68	408442.83	39°37'8.1057"N	80°15'28.3546"W	9052.76	154.189	0.62	-0.25	0.57
17297.00	89.720	147.360	8150.61	9064.59	-8230.13	3993.88	1755062.96	408362.33	39°37'7.3145"N	80°15'27.6777"W	9148.01	154.114	0.98	-0.61	0.76
17391.00	90.370	146.810	8150.54	9158.58	-8309.04	4044.96	1755114.04	408283.42	39°37'6.5389"N	80°15'27.0165"W	9241.31	154.043	0.91	0.69	-0.59



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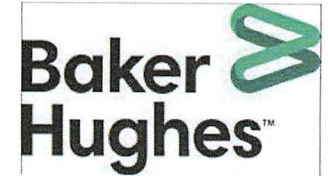
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Actual Wellpath Report

Phoenix 8H AWP Proj: 26446'

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Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 8H
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Slot	Slot 08		

WELLPATH DATA (306 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]
17486.00	89.260	146.820	8150.84	9253.57	-8388.55	4096.95	1755166.03	408203.92	39°37'5.7575"N	80°15'26.3435"W	9335.56	153.969	1.17	-1.17	0.01
17582.00	88.400	146.510	8152.80	9349.55	-8468.74	4149.70	1755218.77	408123.74	39°37'4.9694"N	80°15'25.6609"W	9430.77	153.895	0.95	-0.90	-0.32
17677.00	88.680	146.510	8155.22	9444.52	-8547.94	4202.10	1755271.17	408044.54	39°37'4.1911"N	80°15'24.9828"W	9524.96	153.822	0.29	0.29	0.00
17772.00	89.600	146.610	8156.65	9539.51	-8627.20	4254.44	1755323.51	407965.29	39°37'3.4121"N	80°15'24.3054"W	9619.20	153.750	0.97	0.97	0.11
17866.00	89.510	146.870	8157.38	9633.50	-8705.80	4306.00	1755375.06	407886.69	39°37'2.6396"N	80°15'23.6382"W	9712.50	153.682	0.29	-0.10	0.28
17961.00	89.320	146.540	8158.35	9728.50	-8785.20	4358.14	1755427.21	407807.29	39°37'1.8593"N	80°15'22.9633"W	9806.80	153.615	0.40	-0.20	-0.35
18056.00	88.460	145.310	8160.19	9823.47	-8863.88	4411.36	1755480.42	407728.63	39°37'1.0862"N	80°15'22.2748"W	9900.93	153.541	1.58	-0.91	-1.29
18152.00	87.880	146.350	8163.26	9919.42	-8943.26	4465.25	1755534.31	407649.25	39°37'0.3061"N	80°15'21.5777"W	9996.02	153.468	1.24	-0.60	1.08
18247.00	88.090	146.530	8166.60	10014.36	-9022.38	4517.73	1755586.79	407570.13	39°36'59.5286"N	80°15'20.8985"W	10090.25	153.402	0.29	0.22	0.19
18342.00	87.850	146.380	8169.96	10109.30	-9101.51	4570.20	1755639.25	407491.01	39°36'58.7510"N	80°15'20.2197"W	10184.50	153.337	0.30	-0.25	-0.16
18437.00	87.290	145.760	8173.99	10204.21	-9180.26	4623.17	1755692.22	407412.26	39°36'57.9771"N	80°15'19.5342"W	10278.66	153.270	0.88	-0.59	-0.65
18533.00	87.200	146.940	8178.60	10300.10	-9260.08	4676.31	1755745.35	407332.45	39°36'57.1927"N	80°15'18.8467"W	10373.86	153.206	1.23	-0.09	1.23
18628.00	86.310	146.930	8183.98	10394.94	-9339.56	4728.06	1755797.10	407252.97	39°36'56.4115"N	80°15'18.1770"W	10468.14	153.150	0.94	-0.94	-0.01
18723.00	86.800	146.200	8189.69	10489.77	-9418.70	4780.30	1755849.34	407173.84	39°36'55.6338"N	80°15'17.5008"W	10562.35	153.091	0.92	0.52	-0.77
18818.00	86.210	146.710	8195.48	10584.59	-9497.73	4832.70	1755901.74	407094.81	39°36'54.8571"N	80°15'16.8228"W	10656.54	153.032	0.82	-0.62	0.54
18913.00	86.430	146.610	8201.58	10679.39	-9576.93	4884.81	1755953.84	407015.62	39°36'54.0787"N	80°15'16.1485"W	10750.76	152.976	0.25	0.23	-0.11
19009.00	87.170	146.750	8206.94	10775.24	-9657.02	4937.46	1756006.49	406935.53	39°36'53.2915"N	80°15'15.4672"W	10846.04	152.920	0.78	0.77	0.15
19104.00	87.910	146.470	8211.02	10870.15	-9736.27	4989.69	1756058.72	406856.29	39°36'52.5127"N	80°15'14.7913"W	10940.38	152.866	0.83	0.78	-0.29
19199.00	88.240	146.400	8214.21	10965.10	-9815.38	5042.19	1756111.21	406777.18	39°36'51.7352"N	80°15'14.1120"W	11034.74	152.810	0.36	0.35	-0.07
19295.00	87.410	146.520	8217.85	11061.03	-9895.34	5095.19	1756164.21	406697.22	39°36'50.9494"N	80°15'13.4262"W	11130.08	152.756	0.87	-0.86	0.13
19390.00	87.350	146.250	8222.19	11155.93	-9974.37	5147.73	1756216.74	406618.20	39°36'50.1727"N	80°15'12.7464"W	11224.40	152.702	0.29	-0.06	-0.28
19485.00	87.440	146.480	8226.51	11250.83	-10053.39	5200.29	1756269.31	406539.19	39°36'49.3962"N	80°15'12.0663"W	11318.73	152.649	0.26	0.09	0.24
19580.00	87.690	146.420	8230.55	11345.75	-10132.49	5252.75	1756321.76	406460.09	39°36'48.6188"N	80°15'11.3876"W	11413.09	152.597	0.27	0.26	-0.06
19675.00	87.780	146.710	8234.30	11440.67	-10211.71	5305.05	1756374.06	406380.88	39°36'47.8403"N	80°15'10.7108"W	11507.50	152.548	0.32	0.09	0.31
19770.00	87.630	146.900	8238.11	11535.59	-10291.14	5357.02	1756426.02	406301.45	39°36'47.0596"N	80°15'10.0382"W	11601.95	152.501	0.25	-0.16	0.20
19866.00	87.630	146.650	8242.08	11631.51	-10371.38	5409.58	1756478.58	406221.22	39°36'46.2710"N	80°15'9.3581"W	11697.39	152.454	0.26	0.00	-0.26
19961.00	88.680	146.980	8245.13	11726.45	-10450.84	5461.55	1756530.54	406141.76	39°36'45.4900"N	80°15'8.6856"W	11791.89	152.409	1.16	1.11	0.35
20056.00	88.150	146.310	8247.76	11821.42	-10530.16	5513.76	1756582.75	406062.44	39°36'44.7104"N	80°15'8.0100"W	11886.37	152.363	0.90	-0.56	-0.71
20152.00	88.430	146.620	8250.63	11917.37	-10610.15	5566.77	1756635.76	405982.46	39°36'43.9243"N	80°15'7.3241"W	11981.83	152.316	0.44	0.29	0.32
20247.00	88.280	146.690	8253.35	12012.33	-10689.47	5618.97	1756687.96	405903.14	39°36'43.1447"N	80°15'6.6486"W	12076.33	152.271	0.17	-0.16	0.07



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Actual Wellpath Report

Phoenix 8H AWP Proj: 26446'

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REFERENCE WELLPATH IDENTIFICATION

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

WELLPATH DATA (306 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]
20343.00	88.370	145.740	8256.16	12108.29	-10769.23	5672.33	1756741.31	405823.39	39°36'42.3609"N	80°15'5.9583"W	12171.75	152.223	0.99	0.09	-0.99
20438.00	88.460	146.470	8258.79	12203.25	-10848.05	5725.29	1756794.27	405744.57	39°36'41.5863"N	80°15'5.2732"W	12266.18	152.176	0.77	0.09	0.77
20533.00	88.280	146.770	8261.49	12298.21	-10927.35	5777.54	1756846.51	405665.28	39°36'40.8069"N	80°15'4.5972"W	12360.70	152.134	0.37	-0.19	0.32
20629.00	88.830	146.630	8263.91	12394.18	-11007.56	5830.22	1756899.20	405585.07	39°36'40.0186"N	80°15'3.9154"W	12456.24	152.092	0.59	0.57	-0.15
20724.00	88.710	146.660	8265.95	12489.16	-11086.89	5882.45	1756951.42	405505.75	39°36'39.2389"N	80°15'3.2397"W	12550.79	152.051	0.13	-0.13	0.03
20819.00	89.750	146.720	8267.23	12584.14	-11166.28	5934.61	1757003.58	405426.37	39°36'38.4587"N	80°15'2.5647"W	12645.37	152.010	1.10	1.09	0.06
20914.00	89.420	146.600	8267.91	12679.14	-11245.64	5986.82	1757055.79	405347.01	39°36'37.6787"N	80°15'1.8892"W	12739.96	151.971	0.37	-0.35	-0.13
21010.00	87.570	146.110	8270.44	12775.10	-11325.53	6039.99	1757108.95	405267.12	39°36'36.8936"N	80°15'1.2013"W	12835.46	151.929	1.99	-1.93	-0.51
21105.00	88.310	146.940	8273.85	12870.04	-11404.72	6092.35	1757161.31	405187.94	39°36'36.1153"N	80°15'0.5238"W	12929.98	151.889	1.17	0.78	0.87
21200.00	87.970	146.580	8276.93	12964.99	-11484.13	6144.40	1757213.35	405108.53	39°36'35.3347"N	80°14'59.8504"W	13024.55	151.852	0.52	-0.36	-0.38
21296.00	89.750	147.350	8278.84	13060.96	-11564.59	6196.72	1757265.67	405028.07	39°36'34.5439"N	80°14'59.1733"W	13120.18	151.816	2.02	1.85	0.80
21391.00	88.250	146.900	8280.50	13155.93	-11644.36	6248.28	1757317.23	404948.31	39°36'33.7598"N	80°14'58.5060"W	13214.85	151.782	1.65	-1.58	-0.47
21486.00	88.620	145.540	8283.10	13250.90	-11723.30	6301.08	1757370.02	404869.38	39°36'32.9841"N	80°14'57.8230"W	13309.37	151.743	1.48	0.39	-1.43
21581.00	90.090	145.950	8284.17	13345.88	-11801.81	6354.55	1757423.49	404790.87	39°36'32.2126"N	80°14'57.1315"W	13403.84	151.700	1.61	1.55	0.43
21677.00	90.370	145.400	8283.78	13441.87	-11881.09	6408.68	1757477.62	404711.60	39°36'31.4335"N	80°14'56.4314"W	13499.31	151.658	0.64	0.29	-0.57
21772.00	91.290	146.130	8282.40	13536.86	-11959.62	6462.12	1757531.05	404633.07	39°36'30.6619"N	80°14'55.7403"W	13593.80	151.616	1.24	0.97	0.77
21867.00	90.060	145.600	8281.29	13631.84	-12038.25	6515.42	1757584.35	404554.45	39°36'29.8892"N	80°14'55.0509"W	13688.32	151.577	1.41	-1.29	-0.56
21962.00	90.430	145.240	8280.88	13726.83	-12116.46	6569.34	1757638.27	404476.24	39°36'29.1207"N	80°14'54.3537"W	13782.78	151.534	0.54	0.39	-0.38
22058.00	90.310	145.640	8280.26	13822.81	-12195.52	6623.80	1757692.72	404397.19	39°36'28.3439"N	80°14'53.6495"W	13878.23	151.492	0.44	-0.12	0.42
22153.00	90.400	147.090	8279.67	13917.81	-12274.61	6676.42	1757745.34	404318.10	39°36'27.5666"N	80°14'52.9688"W	13972.85	151.457	1.53	0.09	1.53
22248.00	90.280	145.240	8279.11	14012.80	-12353.52	6729.31	1757798.23	404239.20	39°36'26.7911"N	80°14'52.2847"W	14067.44	151.422	1.95	-0.13	-1.95
22343.00	91.080	145.910	8277.98	14107.79	-12431.87	6783.01	1757851.92	404160.85	39°36'26.0212"N	80°14'51.5902"W	14161.95	151.382	1.10	0.84	0.71
22438.00	91.050	145.780	8276.21	14202.77	-12510.47	6836.34	1757905.25	404082.25	39°36'25.2488"N	80°14'50.9006"W	14256.49	151.346	0.14	-0.03	-0.14
22534.00	91.720	145.850	8273.89	14298.73	-12589.86	6890.26	1757959.17	404002.87	39°36'24.4686"N	80°14'50.2032"W	14352.02	151.309	0.70	0.70	0.07
22629.00	92.120	145.800	8270.71	14393.67	-12668.42	6943.59	1758012.50	403924.32	39°36'23.6967"N	80°14'49.5134"W	14446.53	151.273	0.42	0.42	-0.05
22724.00	92.650	145.640	8266.76	14488.59	-12746.85	6997.05	1758065.96	403845.89	39°36'22.9260"N	80°14'48.8221"W	14541.01	151.237	0.58	0.56	-0.17
22820.00	92.930	145.900	8262.08	14584.47	-12826.12	7050.99	1758119.89	403766.62	39°36'22.1469"N	80°14'48.1245"W	14636.46	151.201	0.40	0.29	0.27
22915.00	92.710	145.920	8257.41	14679.35	-12904.70	7104.17	1758173.07	403688.05	39°36'21.3747"N	80°14'47.4367"W	14730.94	151.167	0.23	-0.23	0.02
23010.00	92.590	145.900	8253.02	14774.24	-12983.29	7157.36	1758226.26	403609.46	39°36'20.6024"N	80°14'46.7488"W	14825.44	151.133	0.13	-0.13	-0.02
23105.00	92.490	145.970	8248.81	14869.15	-13061.91	7210.52	1758279.41	403530.84	39°36'19.8298"N	80°14'46.0613"W	14919.96	151.100	0.13	-0.11	0.07



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

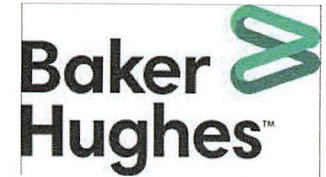
WELLPATH DATA (306 stations)															
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
23201.00	92.590	145.880	8244.55	14965.05	-13141.35	7264.26	1758333.14	403451.41	39°36'19.0491"N	80°14'45.3664"W	15015.48	151.067	0.14	0.10	-0.09
23296.00	92.550	145.790	8240.29	15059.95	-13219.88	7317.55	1758386.44	403372.89	39°36'18.2775"N	80°14'44.6771"W	15109.99	151.034	0.10	-0.04	-0.09
23391.00	93.200	145.900	8235.53	15154.83	-13298.40	7370.82	1758439.70	403294.38	39°36'17.5059"N	80°14'43.9883"W	15204.48	151.002	0.69	0.68	0.12
23486.00	93.140	146.480	8230.28	15249.68	-13377.21	7423.60	1758492.48	403215.57	39°36'16.7313"N	80°14'43.3056"W	15299.01	150.972	0.61	-0.06	0.61
23582.00	93.230	146.230	8224.94	15345.53	-13457.00	7476.71	1758545.58	403135.78	39°36'15.9471"N	80°14'42.6187"W	15394.55	150.943	0.28	0.09	-0.26
23677.00	93.630	145.820	8219.26	15440.36	-13535.64	7529.70	1758598.57	403057.14	39°36'15.1743"N	80°14'41.9333"W	15489.03	150.913	0.60	0.42	-0.43
23772.00	94.780	146.200	8212.29	15535.10	-13614.20	7582.67	1758651.54	402978.60	39°36'14.4023"N	80°14'41.2483"W	15583.43	150.884	1.27	1.21	0.40
23867.00	94.430	145.840	8204.67	15629.79	-13692.72	7635.59	1758704.46	402900.08	39°36'13.6306"N	80°14'40.5638"W	15677.78	150.854	0.53	-0.37	-0.38
23962.00	94.530	145.870	8197.24	15724.50	-13771.10	7688.75	1758757.61	402821.70	39°36'12.8603"N	80°14'39.8764"W	15772.14	150.824	0.11	0.11	0.03
24058.00	94.060	145.690	8190.05	15820.22	-13850.26	7742.59	1758811.45	402742.55	39°36'12.0825"N	80°14'39.1802"W	15867.50	150.794	0.52	-0.49	-0.19
24153.00	92.680	146.160	8184.47	15915.05	-13928.81	7795.72	1758864.58	402664.00	39°36'11.3105"N	80°14'38.4931"W	15961.99	150.765	1.53	-1.45	0.49
24248.00	93.140	146.090	8179.65	16009.93	-14007.59	7848.61	1758917.45	402585.23	39°36'10.5364"N	80°14'37.8092"W	16056.56	150.738	0.49	0.48	-0.07
24343.00	93.290	146.000	8174.32	16104.78	-14086.26	7901.58	1758970.43	402506.56	39°36'9.7632"N	80°14'37.1240"W	16151.09	150.710	0.18	0.16	-0.09
24438.00	93.450	146.400	8168.74	16199.61	-14165.07	7954.34	1759023.18	402427.76	39°36'8.9887"N	80°14'36.4417"W	16245.64	150.684	0.45	0.17	0.42
24533.00	93.420	146.020	8163.04	16294.44	-14243.88	8007.08	1759075.92	402348.95	39°36'8.2141"N	80°14'35.7596"W	16340.18	150.658	0.40	-0.03	-0.40
24629.00	93.790	145.950	8157.01	16390.25	-14323.29	8060.68	1759129.51	402269.54	39°36'7.4337"N	80°14'35.0665"W	16435.67	150.631	0.39	0.39	-0.07
24724.00	93.730	145.640	8150.78	16485.04	-14401.69	8113.97	1759182.80	402191.15	39°36'6.6632"N	80°14'34.3774"W	16530.13	150.603	0.33	-0.06	-0.33
24819.00	93.260	145.750	8144.99	16579.86	-14480.02	8167.41	1759236.24	402112.82	39°36'5.8935"N	80°14'33.6864"W	16624.61	150.575	0.51	-0.49	0.12
24914.00	93.270	145.910	8139.58	16674.70	-14558.50	8220.68	1759289.50	402034.36	39°36'5.1223"N	80°14'32.9976"W	16719.13	150.548	0.17	0.01	0.17
25009.00	92.580	145.830	8134.73	16769.57	-14637.03	8273.91	1759342.73	401955.83	39°36'4.3505"N	80°14'32.3092"W	16813.69	150.522	0.73	-0.73	-0.08
25105.00	92.430	145.810	8130.53	16865.47	-14716.37	8327.79	1759396.61	401876.49	39°36'3.5708"N	80°14'31.6125"W	16909.28	150.495	0.16	-0.16	-0.02
25200.00	92.590	145.590	8126.37	16960.38	-14794.78	8381.27	1759450.09	401798.09	39°36'2.8003"N	80°14'30.9210"W	17003.86	150.468	0.29	0.17	-0.23
25295.00	93.080	145.970	8121.67	17055.25	-14873.23	8434.63	1759503.45	401719.64	39°36'2.0293"N	80°14'30.2310"W	17098.43	150.442	0.65	0.52	0.40
25390.00	92.800	145.440	8116.80	17150.12	-14951.61	8488.09	1759556.90	401641.26	39°36'1.2591"N	80°14'29.5399"W	17192.98	150.416	0.63	-0.29	-0.56
25486.00	92.680	146.010	8112.21	17246.01	-15030.85	8542.09	1759610.90	401562.03	39°36'0.4804"N	80°14'28.8416"W	17288.55	150.390	0.61	-0.12	0.59
25581.00	90.770	145.520	8109.35	17340.95	-15109.35	8595.51	1759664.32	401483.53	39°35'59.7090"N	80°14'28.1509"W	17383.19	150.365	2.08	-2.01	-0.52
25676.00	91.320	145.860	8107.62	17435.93	-15187.81	8649.05	1759717.85	401405.08	39°35'58.9380"N	80°14'27.4587"W	17477.86	150.340	0.68	0.58	0.36
25771.00	91.540	146.230	8105.25	17530.90	-15266.58	8702.10	1759770.89	401326.31	39°35'58.1638"N	80°14'26.7728"W	17572.57	150.316	0.45	0.23	0.39
25867.00	90.830	145.780	8103.26	17626.88	-15346.16	8755.76	1759824.55	401246.74	39°35'57.3817"N	80°14'26.0788"W	17668.28	150.293	0.88	-0.74	-0.47
25962.00	91.050	145.770	8101.70	17721.86	-15424.70	8809.19	1759877.98	401168.21	39°35'56.6099"N	80°14'25.3881"W	17762.97	150.269	0.23	0.23	-0.01



Actual Wellpath Report

Phoenix 8H AWP Proj: 26446'

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REFERENCE WELLPATH IDENTIFICATION

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

WELLPATH DATA (306 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]
26057.00	90.770	145.680	8100.20	17816.84	-15503.19	8862.68	1759931.47	401089.72	39°35'55.8386"N	80°14'24.6964"W	17857.66	150.245	0.31	-0.29	-0.09
26152.00	91.820	145.870	8098.05	17911.81	-15581.72	8916.10	1759984.88	401011.19	39°35'55.0668"N	80°14'24.0058"W	17952.35	150.221	1.12	1.11	0.20
26248.00	91.630	145.960	8095.16	18007.76	-15661.19	8969.87	1760038.65	400931.73	39°35'54.2858"N	80°14'23.3104"W	18048.03	150.198	0.22	-0.20	0.09
26343.00	91.720	145.960	8092.38	18102.72	-15739.88	9023.03	1760091.81	400853.04	39°35'53.5125"N	80°14'22.6231"W	18142.74	150.176	0.09	0.09	0.00
26415.00	91.660	144.790	8090.26	18174.68	-15799.10	9063.92	1760132.70	400793.83	39°35'52.9306"N	80°14'22.0945"W	18214.45	150.157	1.63	-0.08	-1.62
26440.00‡	91.660	144.790	8089.53	18199.66	-15819.52	9078.33	1760147.10	400773.41	39°35'52.7300"N	80°14'21.9083"W	18239.33	150.150	0.00	0.00	0.00

HOLE & CASING SECTIONS - Ref Wellbore: Phoenix 8H AWB Ref Wellpath: Phoenix 8H AWP Proj: 26446'

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	1528.00	1500.00	28.00	1527.89	0.00	0.00	6.82	-9.66
13.375in Casing Surface	28.00	1498.00	1470.00	28.00	1497.89	0.00	0.00	7.10	-9.56
12.25in Open Hole	1528.00	2724.00	1196.00	1527.89	2723.83	6.82	-9.66	1.48	-10.11
9.625in Casing Intermediate	28.00	2694.00	2666.00	28.00	2693.83	0.00	0.00	1.61	-10.16
8.75in Open Hole	2724.00	7354.00	4630.00	2723.83	7203.58	1.48	-10.11	-398.02	-1047.94
8.5in Open Hole	7354.00	26440.00	19086.00	7203.58	8089.53	-398.02	-1047.94	-15819.52	9078.33
5.5in Casing Production	28.00	26410.00	26382.00	28.00	8090.40	0.00	0.00	-15795.01	9061.04

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Actual Wellpath Report

Phoenix 8H AWP Proj: 26446'

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REFERENCE WELLPATH IDENTIFICATION

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

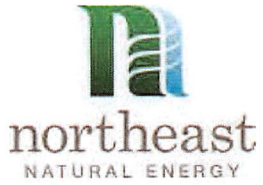
TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Phoenix 8H BHL Rev-9	8150.00	-15833.28	9059.46	1760128.23	400759.65	39°35'52.5924"N	80°14'22.1479"W	point
Phoenix 8H LP Rev-6	8150.00	-1115.88	-728.66	1750340.71	415476.15	39°38'17.2238"N	80°16'28.8080"W	point
Phoenix Hardline #1 (5.19.21)	8528.00	-787.64	6047.91	1757116.87	415804.37	39°38'21.0362"N	80°15'2.2251"W	polygon
2D Polygon: dimensions not calculated								

WELLPATH COMPOSITION - Ref Wellbore: Phoenix 8H AWB Ref Wellpath: Phoenix 8H AWP Proj: 26446'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
28.00	2632.00	BH Generic gyro - northseeking (Standard)	01_Gyro Surveys [BH Generic Gyro-Northseeking] (50'-2632')	Phoenix 8H AWB	1/19/2022
2632.00	7288.00	OWSG MWD rev2 + HRGM	02_Tally MWD Surveys [OWSG MWD Rev.2+HRGM] (2632')(2728'-7288')	Phoenix 8H AWB	1/19/2022
7288.00	26440.00	BH AutoTrak Curve/eXpress (2019) (HRGM, Short spacing)	03_ATK Curve [HRGM+Short Spacing] (7288') (7403'-26415')	Phoenix 8H AWB	1/19/2022

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Phoenix 8H AWP Proj: 26446'

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REFERENCE WELLPATH IDENTIFICATION

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

COMMENTS

Wellpath general comments

API: 47061018760000

BH Job #: 111185286

Rig: Patterson 277

Duration: 1/21/2022 - 1/27/2022

01_Gyro Surveys (BH Generic Gyro-Northseeking) (50'-2632')

02_Tally MWD Surveys (OWSG MWD Rev.2+HRGM) (2632')(2728'-7288')

03_ATK Curve (HRGM+Short Spacing) (7288') (7403'-26415')

Final Survey: 26415' MD

Projected MD at TD: 26440'

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