

NORTHEAST NATURAL ENERGY, LLC

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

Slot: Slot 06
 Well: Phoenix 6H
 Wellbore: Phoenix 6H PWB



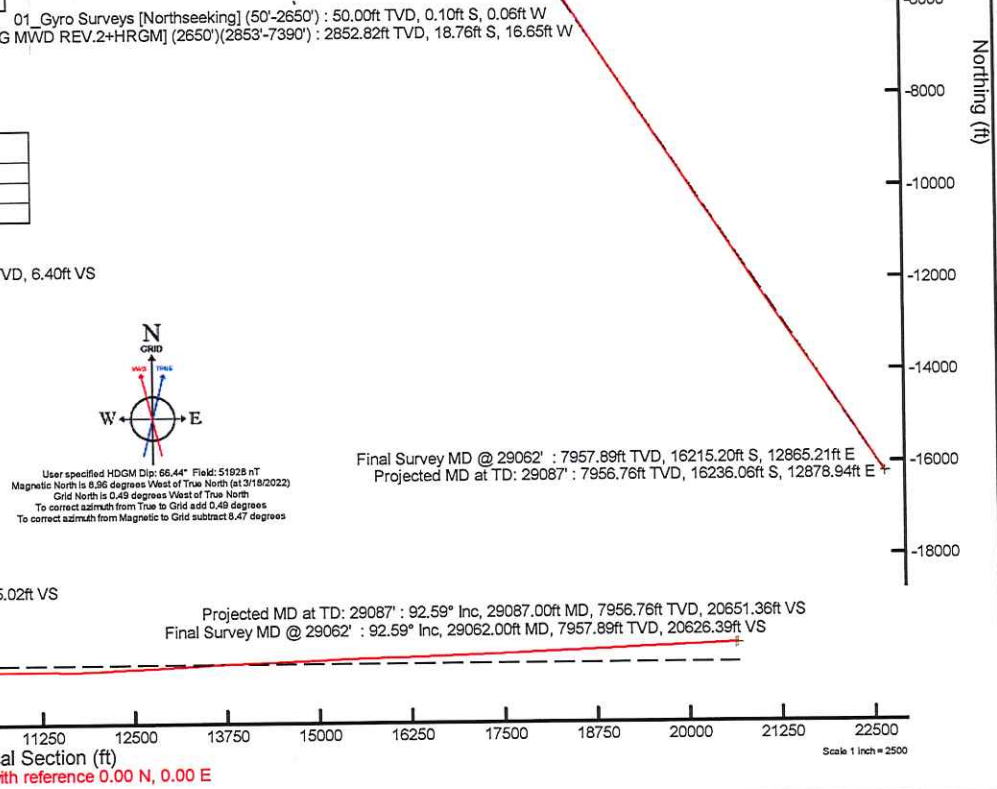
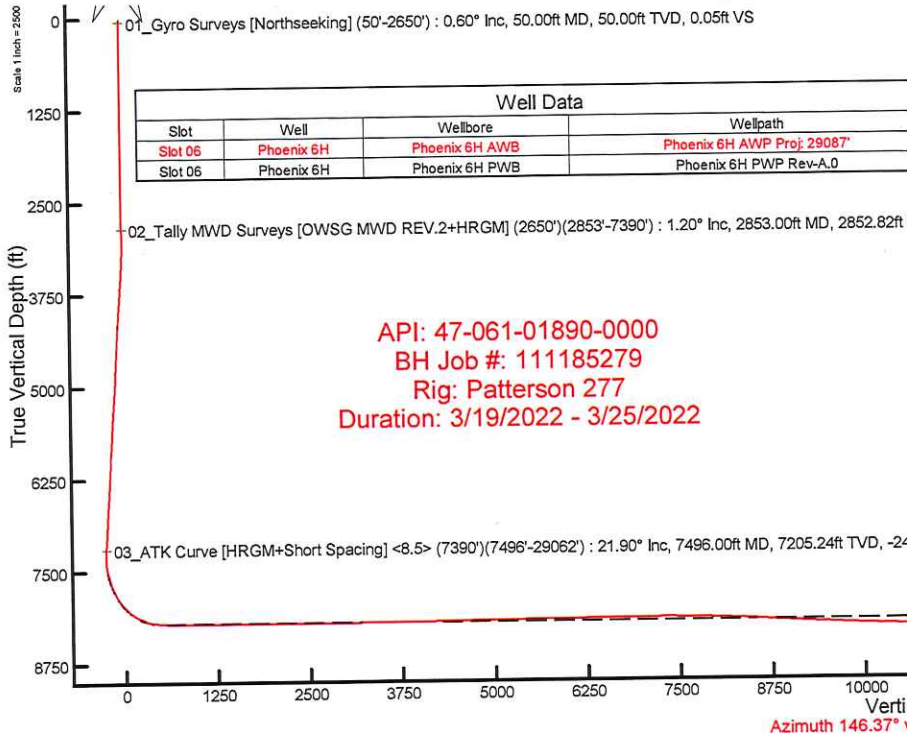
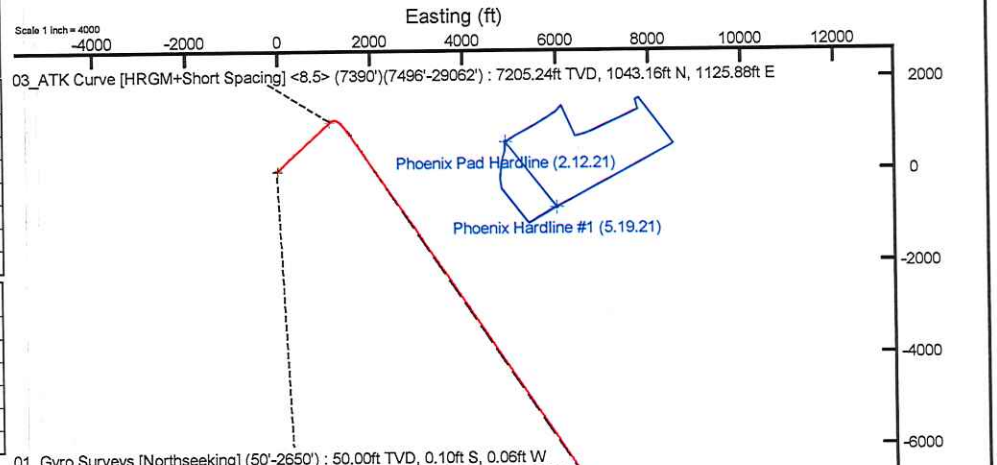
Plot reference wellpath is Phoenix 6H PWP Rev-A.0	Grid System: NAD83 / Lambert West Virginia SP, Northern Zone (4701), US feet
True vertical depths are referenced to Patterson 277 (RKB)	North Reference: Grid north
Reference wellpath measured depths are referenced to Patterson 277 (RKB)	Scale: True distance
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 06): -1503 feet	Depths are in feet
Offset wellpath MDs are referenced to each path's default MD datum	Created by: manojh on 2022-03-29; 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 06	-5.73	58.02	1751110.000	416611.210	39°38'28.5072"N	80°16'19.0991"W
Patterson 277 (RKB) to Ground level (At Slot: Slot 06)				28ft		
Mean Sea Level to Ground level (At Slot: Slot 06)				-1503ft		
Patterson 277 (RKB) to Mean Sea Level				1531ft		

Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	7390.00	23.380	46.800	7107.41	1014.91	1096.44	1.53	-237.80
Projection	7554.00	23.380	46.800	7257.94	1059.46	1143.88	0.00	-248.62
Curve	8214.30	31.550	137.932	7865.88	1019.35	1363.64	5.89	-93.52
Landing Pt.	8949.68	90.000	146.373	8210.00	526.26	1728.83	8.00	519.29
BHL	29082.73	90.000	146.373	8210.00	-16237.79	12878.09	0.00	20652.34





Actual Wellpath Report

Phoenix 6H AWP Proj: 29087'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 6H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 6H AWB
Slot	Slot 06		

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	3/29/2022 at 11:40:03 AM
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	-5.73	58.02	1751110.00	416611.21	39°38'28.5072"N	80°16'19.0991"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 06)	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°



Actual Wellpath Report

Phoenix 6H AWP Proj: 29087'
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REFERENCE WELLPATH IDENTIFICATION			
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Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 6H AWB
Slot	Slot 06		

WELLPATH DATA (333 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	210.800	0.00	0.00	0.00	0.00	1751110.00	416611.21	39°38'28.5072"N	80°16'19.0991"W	0.00	0.000	0.00	0.00	0.00
28.00	0.000	210.800	28.00	0.00	0.00	0.00	1751110.00	416611.21	39°38'28.5072"N	80°16'19.0991"W	0.00	0.000	0.00	0.00	0.00
50.00	0.600	210.800	50.00	0.05	-0.10	-0.06	1751109.94	416611.11	39°38'28.5062"N	80°16'19.0998"W	0.12	210.800	2.73	2.73	0.00
100.00	0.310	240.400	100.00	0.15	-0.39	-0.31	1751109.69	416610.82	39°38'28.5033"N	80°16'19.1030"W	0.50	218.493	0.73	-0.58	59.20
150.00	0.440	240.100	150.00	0.13	-0.55	-0.59	1751109.41	416610.66	39°38'28.5017"N	80°16'19.1066"W	0.81	227.073	0.26	0.26	-0.60
200.00	0.310	238.900	200.00	0.11	-0.72	-0.88	1751109.12	416610.49	39°38'28.5000"N	80°16'19.1102"W	1.13	230.663	0.26	-0.26	-2.40
250.00	0.340	243.300	250.00	0.09	-0.86	-1.13	1751108.87	416610.35	39°38'28.4987"N	80°16'19.1134"W	1.41	232.765	0.08	0.06	8.80
300.00	0.420	227.800	299.99	0.10	-1.04	-1.39	1751108.61	416610.17	39°38'28.4968"N	80°16'19.1168"W	1.74	233.135	0.26	0.16	-31.00
350.00	0.460	234.800	349.99	0.13	-1.28	-1.69	1751108.31	416609.93	39°38'28.4944"N	80°16'19.1206"W	2.12	232.833	0.13	0.08	14.00
400.00	0.550	226.100	399.99	0.18	-1.57	-2.03	1751107.97	416609.64	39°38'28.4916"N	80°16'19.1249"W	2.56	232.358	0.24	0.18	-17.40
450.00	0.400	213.500	449.99	0.29	-1.88	-2.30	1751107.70	416609.33	39°38'28.4885"N	80°16'19.1283"W	2.97	230.764	0.36	-0.30	-25.20
500.00	0.490	223.500	499.99	0.41	-2.18	-2.54	1751107.46	416609.03	39°38'28.4855"N	80°16'19.1314"W	3.35	229.415	0.24	0.18	20.00
550.00	0.470	224.000	549.99	0.50	-2.48	-2.83	1751107.17	416608.73	39°38'28.4824"N	80°16'19.1350"W	3.77	228.786	0.04	-0.04	1.00
600.00	0.450	226.200	599.98	0.58	-2.76	-3.12	1751106.88	416608.45	39°38'28.4796"N	80°16'19.1386"W	4.17	228.429	0.05	-0.04	4.40
650.00	0.680	232.000	649.98	0.63	-3.08	-3.49	1751106.51	416608.13	39°38'28.4764"N	80°16'19.1434"W	4.66	228.562	0.47	0.46	11.60
700.00	0.510	239.500	699.98	0.64	-3.38	-3.92	1751106.08	416607.83	39°38'28.4735"N	80°16'19.1488"W	5.17	229.227	0.37	-0.34	15.00
750.00	0.600	235.200	749.98	0.64	-3.64	-4.32	1751105.68	416607.57	39°38'28.4709"N	80°16'19.1540"W	5.65	229.905	0.20	0.18	-8.60
800.00	0.910	222.500	799.97	0.74	-4.08	-4.81	1751105.19	416607.13	39°38'28.4664"N	80°16'19.1601"W	6.31	229.660	0.70	0.62	-25.40
850.00	0.760	225.100	849.97	0.90	-4.61	-5.31	1751104.69	416606.60	39°38'28.4612"N	80°16'19.1665"W	7.03	229.042	0.31	-0.30	5.20
900.00	0.850	225.200	899.96	1.03	-5.11	-5.81	1751104.19	416606.10	39°38'28.4563"N	80°16'19.1728"W	7.73	228.689	0.18	0.18	0.20
950.00	0.870	226.100	949.96	1.17	-5.63	-6.35	1751103.65	416605.58	39°38'28.4510"N	80°16'19.1796"W	8.48	228.420	0.05	0.04	1.80
1000.00	0.890	230.800	999.95	1.28	-6.14	-6.92	1751103.08	416605.07	39°38'28.4460"N	80°16'19.1869"W	9.25	228.425	0.15	0.04	9.40
1050.00	0.880	232.000	1049.94	1.35	-6.62	-7.52	1751102.48	416604.59	39°38'28.4411"N	80°16'19.1945"W	10.02	228.654	0.04	-0.02	2.40
1100.00	0.960	232.800	1099.94	1.40	-7.11	-8.16	1751101.84	416604.10	39°38'28.4363"N	80°16'19.2026"W	10.82	228.933	0.16	0.16	1.60
1150.00	0.960	236.500	1149.93	1.43	-7.59	-8.84	1751101.16	416603.62	39°38'28.4314"N	80°16'19.2113"W	11.66	229.343	0.12	0.00	7.40
1200.00	1.000	237.200	1199.92	1.42	-8.06	-9.56	1751100.44	416603.15	39°38'28.4267"N	80°16'19.2204"W	12.50	229.855	0.08	0.08	1.40
1250.00	1.040	241.500	1249.92	1.37	-8.51	-10.32	1751099.68	416602.70	39°38'28.4222"N	80°16'19.2301"W	13.38	230.486	0.17	0.08	8.60
1300.00	0.920	229.800	1299.91	1.38	-8.99	-11.03	1751098.97	416602.22	39°38'28.4174"N	80°16'19.2391"W	14.23	230.816	0.47	-0.24	-23.40
1350.00	0.840	244.200	1349.90	1.37	-9.41	-11.67	1751098.33	416601.80	39°38'28.4132"N	80°16'19.2472"W	14.99	231.113	0.47	-0.16	28.80
1400.00	1.050	263.200	1399.90	1.12	-9.62	-12.45	1751097.55	416601.59	39°38'28.4111"N	80°16'19.2572"W	15.74	232.301	0.75	0.42	38.00



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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 6H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 6H AWB
Slot	Slot 06		

WELLPATH DATA (333 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	1.040	253.400	1449.89	0.78	-9.81	-13.34	1751096.66	416601.40	39°38'28.4092"N	80°16'19.2685"W	16.56	233.681	0.36	-0.02	-19.60
1500.00	1.330	234.900	1499.88	0.66	-10.27	-14.25	1751095.75	416600.94	39°38'28.4045"N	80°16'19.2801"W	17.57	234.221	0.95	0.58	-37.00
1550.00	0.660	252.300	1549.87	0.59	-10.69	-15.00	1751095.00	416600.52	39°38'28.4003"N	80°16'19.2897"W	18.42	234.520	1.45	-1.34	34.80
1600.00	0.550	249.500	1599.87	0.46	-10.86	-15.50	1751094.50	416600.35	39°38'28.3985"N	80°16'19.2960"W	18.93	234.974	0.23	-0.22	-5.60
1650.00	0.380	241.500	1649.86	0.39	-11.03	-15.87	1751094.13	416600.18	39°38'28.3969"N	80°16'19.3007"W	19.32	235.208	0.36	-0.34	-16.00
1700.00	0.320	244.100	1699.86	0.36	-11.17	-16.14	1751093.86	416600.04	39°38'28.3955"N	80°16'19.3042"W	19.63	235.324	0.12	-0.12	5.20
1750.00	0.510	224.900	1749.86	0.38	-11.38	-16.42	1751093.58	416599.83	39°38'28.3933"N	80°16'19.3078"W	19.98	235.270	0.47	0.38	-38.40
1800.00	0.520	222.500	1799.86	0.48	-11.71	-16.73	1751093.27	416599.50	39°38'28.3901"N	80°16'19.3117"W	20.42	235.017	0.05	0.02	-4.80
1850.00	0.460	212.100	1849.86	0.62	-12.05	-16.99	1751093.01	416599.16	39°38'28.3867"N	80°16'19.3150"W	20.83	234.667	0.21	-0.12	-20.80
1900.00	0.550	207.500	1899.86	0.82	-12.43	-17.21	1751092.79	416598.78	39°38'28.3829"N	80°16'19.3177"W	21.23	234.163	0.20	0.18	-9.20
1950.00	0.370	227.000	1949.86	0.96	-12.75	-17.44	1751092.56	416598.46	39°38'28.3797"N	80°16'19.3206"W	21.61	233.824	0.47	-0.36	39.00
2000.00	0.460	204.900	1999.85	1.09	-13.04	-17.64	1751092.36	416598.17	39°38'28.3768"N	80°16'19.3232"W	21.94	233.521	0.36	0.18	-44.20
2050.00	0.290	230.100	2049.85	1.21	-13.31	-17.82	1751092.18	416597.90	39°38'28.3742"N	80°16'19.3255"W	22.24	233.253	0.47	-0.34	50.40
2100.00	0.420	217.600	2099.85	1.28	-13.53	-18.03	1751091.97	416597.68	39°38'28.3719"N	80°16'19.3281"W	22.55	233.110	0.30	0.26	-25.00
2150.00	0.560	199.600	2149.85	1.49	-13.91	-18.23	1751091.77	416597.30	39°38'28.3682"N	80°16'19.3306"W	22.93	232.651	0.41	0.28	-36.00
2200.00	0.500	210.000	2199.85	1.73	-14.33	-18.42	1751091.58	416596.88	39°38'28.3640"N	80°16'19.3329"W	23.34	232.117	0.23	-0.12	20.80
2250.00	0.480	198.100	2249.85	1.96	-14.72	-18.59	1751091.41	416596.49	39°38'28.3602"N	80°16'19.3351"W	23.71	231.635	0.21	-0.04	-23.80
2300.00	0.480	191.700	2299.84	2.23	-15.12	-18.70	1751091.30	416596.09	39°38'28.3562"N	80°16'19.3365"W	24.05	231.039	0.11	0.00	-12.80
2350.00	0.290	201.800	2349.84	2.45	-15.44	-18.79	1751091.21	416595.77	39°38'28.3530"N	80°16'19.3376"W	24.32	230.581	0.40	-0.38	20.20
2400.00	0.490	190.400	2399.84	2.68	-15.77	-18.87	1751091.13	416595.44	39°38'28.3497"N	80°16'19.3386"W	24.60	230.118	0.43	0.40	-22.80
2450.00	0.400	184.000	2449.84	2.97	-16.16	-18.93	1751091.08	416595.06	39°38'28.3459"N	80°16'19.3392"W	24.88	229.514	0.21	-0.18	-12.80
2500.00	0.480	182.600	2499.84	3.28	-16.54	-18.95	1751091.05	416594.67	39°38'28.3421"N	80°16'19.3395"W	25.15	228.881	0.16	0.16	-2.80
2550.00	0.240	102.800	2549.84	3.52	-16.77	-18.85	1751091.15	416594.44	39°38'28.3399"N	80°16'19.3383"W	25.23	228.346	0.99	-0.48	-159.60
2600.00	0.450	194.800	2599.84	3.73	-16.98	-18.80	1751091.20	416594.23	39°38'28.3378"N	80°16'19.3376"W	25.34	227.908	1.03	0.42	184.00
2650.00	0.520	173.700	2649.84	4.06	-17.40	-18.83	1751091.17	416593.81	39°38'28.3337"N	80°16'19.3378"W	25.64	227.257	0.38	0.14	-42.20
2853.00	1.200	102.090	2852.82	6.40	-18.76	-16.65	1751093.35	416592.45	39°38'28.3204"N	80°16'19.3098"W	25.08	221.585	0.57	0.33	-35.28
2916.00	2.510	87.370	2915.78	7.58	-18.84	-14.62	1751095.38	416592.38	39°38'28.3198"N	80°16'19.2840"W	23.85	217.827	2.20	2.08	-23.37
3010.00	4.150	66.640	3009.62	9.25	-17.39	-9.45	1751100.56	416593.82	39°38'28.3345"N	80°16'19.2179"W	19.79	208.505	2.14	1.74	-22.05
3108.00	7.760	52.680	3107.08	9.46	-11.97	-0.93	1751109.07	416599.24	39°38'28.3888"N	80°16'19.1096"W	12.01	184.419	3.94	3.68	-14.24
3202.00	10.150	44.370	3199.93	7.33	-2.20	9.92	1751119.91	416609.01	39°38'28.4863"N	80°16'18.9721"W	10.16	102.528	2.88	2.54	-8.84



Actual Wellpath Report

Phoenix 6H AWP Proj: 29087'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 6H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 6H AWB
Slot	Slot 06		

WELLPATH DATA (333 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]
3298.00	9.960	42.400	3294.46	3.56	9.97	21.43	1751131.43	416621.18	39°38'28.6076"N	80°16'18.8263"W	23.64	65.040	0.41	-0.20	-2.05
3392.00	11.880	41.500	3386.75	-0.88	23.23	33.32	1751143.32	416634.43	39°38'28.7396"N	80°16'18.6757"W	40.62	55.125	2.05	2.04	-0.96
3487.00	14.470	44.310	3479.25	-5.87	39.04	48.10	1751158.09	416650.25	39°38'28.8972"N	80°16'18.4886"W	61.95	50.930	2.81	2.73	2.96
3581.00	16.170	40.120	3569.91	-11.99	57.46	64.74	1751174.73	416668.67	39°38'29.0806"N	80°16'18.2779"W	86.56	48.408	2.16	1.81	-4.46
3676.00	16.520	41.660	3661.07	-19.12	77.67	82.24	1751192.23	416688.87	39°38'29.2817"N	80°16'18.0564"W	113.12	46.638	0.59	0.37	1.62
3771.00	17.110	42.280	3752.00	-25.95	98.10	100.62	1751210.61	416709.30	39°38'29.4852"N	80°16'17.8237"W	140.52	45.727	0.65	0.62	0.65
3869.00	19.650	43.550	3845.00	-33.12	120.71	121.67	1751231.66	416731.91	39°38'29.7104"N	80°16'17.5571"W	171.39	45.228	2.62	2.59	1.30
3964.00	21.630	44.500	3933.90	-40.27	144.78	144.95	1751254.94	416755.98	39°38'29.9503"N	80°16'17.2621"W	204.87	45.035	2.11	2.08	1.00
4058.00	22.800	47.510	4020.92	-46.64	169.44	170.53	1751280.52	416780.64	39°38'30.1962"N	80°16'16.9379"W	240.39	45.184	1.74	1.24	3.20
4153.00	22.370	46.150	4108.63	-52.68	194.39	197.14	1751307.13	416805.59	39°38'30.4451"N	80°16'16.6005"W	276.86	45.401	0.71	-0.45	-1.43
4247.00	23.190	46.910	4195.30	-58.89	219.43	223.55	1751333.54	416830.63	39°38'30.6947"N	80°16'16.2656"W	313.25	45.533	0.93	0.87	0.81
4343.00	23.220	49.260	4283.54	-64.34	244.69	251.70	1751361.68	416855.89	39°38'30.9468"N	80°16'15.9086"W	351.04	45.808	0.96	0.03	2.45
4438.00	22.350	46.970	4371.13	-69.61	269.24	279.09	1751389.07	416880.44	39°38'31.1917"N	80°16'15.5611"W	387.79	46.029	1.31	-0.92	-2.41
4532.00	22.760	49.000	4457.94	-74.86	293.37	305.88	1751415.86	416904.56	39°38'31.4324"N	80°16'15.2214"W	423.82	46.196	0.94	0.44	2.16
4630.00	22.040	46.420	4548.54	-80.47	318.48	333.51	1751443.49	416929.67	39°38'31.6829"N	80°16'14.8710"W	461.15	46.320	1.24	-0.73	-2.63
4726.00	22.120	48.390	4637.50	-86.09	342.90	360.07	1751470.05	416954.09	39°38'31.9265"N	80°16'14.5341"W	497.22	46.399	0.78	0.08	2.05
4819.00	21.900	49.760	4723.73	-90.52	365.73	386.40	1751496.38	416976.92	39°38'32.1544"N	80°16'14.2000"W	532.04	46.574	0.60	-0.24	1.47
4914.00	21.050	50.160	4812.13	-94.41	388.11	413.03	1751523.00	416999.29	39°38'32.3778"N	80°16'13.8621"W	566.76	46.781	0.91	-0.89	0.42
5009.00	21.600	50.120	4900.63	-98.16	410.25	439.54	1751549.52	417021.44	39°38'32.5988"N	80°16'13.5256"W	601.25	46.974	0.58	0.58	-0.04
5103.00	22.350	47.500	4987.80	-102.80	433.42	466.00	1751575.97	417044.60	39°38'32.8300"N	80°16'13.1900"W	636.40	47.075	1.31	0.80	-2.79
5198.00	22.050	47.460	5075.76	-108.34	457.68	492.46	1751602.43	417068.86	39°38'33.0720"N	80°16'12.8544"W	672.30	47.096	0.32	-0.32	-0.04
5293.00	21.600	46.070	5163.95	-114.23	481.87	518.19	1751628.16	417093.05	39°38'33.3132"N	80°16'12.5282"W	707.61	47.080	0.72	-0.47	-1.46
5388.00	21.570	45.480	5252.28	-120.66	506.24	543.23	1751653.20	417117.42	39°38'33.5563"N	80°16'12.2107"W	742.55	47.019	0.23	-0.03	-0.62
5483.00	21.430	45.130	5340.67	-127.34	530.73	567.98	1751677.95	417141.91	39°38'33.8004"N	80°16'11.8970"W	777.35	46.942	0.20	-0.15	-0.37
5581.00	20.970	45.030	5432.04	-134.28	555.75	593.08	1751703.04	417166.93	39°38'34.0498"N	80°16'11.5790"W	812.77	46.861	0.47	-0.47	-0.10
5676.00	21.500	49.250	5520.60	-139.78	579.13	618.29	1751728.26	417190.31	39°38'34.2830"N	80°16'11.2592"W	847.16	46.873	1.70	0.56	4.44
5772.00	22.680	50.010	5609.55	-144.01	602.51	645.80	1751755.76	417213.69	39°38'34.5163"N	80°16'10.9101"W	883.22	46.986	1.26	1.23	0.79
5866.00	23.040	48.110	5696.17	-148.66	626.44	673.38	1751783.34	417237.61	39°38'34.7552"N	80°16'10.5602"W	919.71	47.068	0.87	0.38	-2.02
5961.00	24.720	48.260	5783.03	-154.13	652.08	702.04	1751812.00	417263.25	39°38'35.0110"N	80°16'10.1966"W	958.16	47.113	1.77	1.77	0.16
6056.00	23.440	44.160	5869.77	-160.93	678.86	730.03	1751839.99	417290.03	39°38'35.2780"N	80°16'9.8418"W	996.90	47.080	2.22	-1.35	-4.32



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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 6H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 6H AWB
Slot	Slot 06		

WELLPATH DATA (333 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]
6151.00	23.670	46.820	5956.85	-168.09	705.47	757.10	1751867.06	417316.63	39°38'35.5432"N	80°16'9.4986"W	1034.84	47.022	1.14	0.24	2.80
6245.00	22.830	51.270	6043.23	-172.84	729.79	785.09	1751895.04	417340.96	39°38'35.7860"N	80°16'9.1435"W	1071.90	47.091	2.07	-0.89	4.73
6340.00	21.770	48.820	6131.12	-176.80	752.92	812.73	1751922.68	417364.09	39°38'36.0169"N	80°16'8.7928"W	1107.89	47.188	1.48	-1.12	-2.58
6439.00	20.290	45.150	6223.53	-182.55	777.12	838.72	1751948.67	417388.28	39°38'36.2582"N	80°16'8.4632"W	1143.40	47.183	2.00	-1.49	-3.71
6534.00	20.370	47.560	6312.61	-188.29	799.89	862.60	1751972.54	417411.05	39°38'36.4853"N	80°16'8.1604"W	1176.39	47.160	0.89	0.08	2.54
6629.00	22.460	47.560	6401.05	-193.60	823.30	888.19	1751998.14	417434.46	39°38'36.7188"N	80°16'7.8358"W	1211.08	47.171	2.20	2.20	0.00
6723.00	22.950	47.640	6487.77	-199.13	847.76	914.99	1752024.93	417458.92	39°38'36.9628"N	80°16'7.4960"W	1247.36	47.184	0.52	0.52	0.09
6818.00	21.260	44.710	6575.78	-205.42	872.49	940.79	1752050.73	417483.64	39°38'37.2093"N	80°16'7.1688"W	1283.09	47.157	2.12	-1.78	-3.08
6913.00	21.640	46.240	6664.20	-211.98	896.84	965.56	1752075.50	417508.00	39°38'37.4521"N	80°16'6.8549"W	1317.81	47.113	0.71	0.40	1.61
7007.00	21.380	47.570	6751.66	-217.65	920.39	990.73	1752100.67	417531.54	39°38'37.6870"N	80°16'6.5358"W	1352.28	47.108	0.59	-0.28	1.41
7102.00	20.840	48.290	6840.28	-222.68	943.32	1016.12	1752126.06	417554.47	39°38'37.9157"N	80°16'6.2136"W	1386.49	47.128	0.63	-0.57	0.76
7197.00	21.640	48.950	6928.83	-227.32	966.06	1041.95	1752151.88	417577.22	39°38'38.1427"N	80°16'5.8860"W	1420.89	47.164	0.88	0.84	0.69
7296.00	22.080	48.400	7020.71	-232.25	990.41	1069.63	1752179.56	417601.56	39°38'38.3856"N	80°16'5.5348"W	1457.74	47.202	0.49	0.44	-0.56
7390.00	23.380	46.800	7107.41	-237.80	1014.91	1096.44	1752206.37	417626.05	39°38'38.6300"N	80°16'5.1948"W	1494.06	47.211	1.53	1.38	-1.70
7496.00	21.900	45.520	7205.24	-245.02	1043.16	1125.88	1752235.81	417654.30	39°38'38.9116"N	80°16'4.8216"W	1534.85	47.184	1.47	-1.40	-1.21
7590.00	21.820	54.820	7292.50	-248.80	1065.51	1152.67	1752262.60	417676.65	39°38'39.1348"N	80°16'4.4815"W	1569.70	47.250	3.68	-0.09	9.89
7684.00	20.340	65.850	7380.25	-246.58	1082.27	1181.87	1752291.80	417693.41	39°38'39.3029"N	80°16'4.1101"W	1602.53	47.519	4.50	-1.57	11.73
7779.00	20.290	84.080	7469.43	-236.19	1090.73	1213.35	1752323.28	417701.87	39°38'39.3892"N	80°16'3.7086"W	1631.54	48.046	6.64	-0.05	19.19
7873.00	20.170	99.160	7557.69	-217.59	1089.83	1245.58	1752355.51	417700.97	39°38'39.3830"N	80°16'3.2964"W	1655.05	48.816	5.53	-0.13	16.04
7968.00	21.890	112.100	7646.41	-191.81	1080.55	1278.18	1752388.10	417691.70	39°38'39.2941"N	80°16'2.8787"W	1673.72	49.789	5.20	1.81	13.62
8062.00	23.930	123.150	7733.03	-159.79	1063.53	1310.40	1752420.32	417674.67	39°38'39.1285"N	80°16'2.4650"W	1687.67	50.937	5.06	2.17	11.76
8156.00	29.610	134.900	7816.98	-119.45	1036.67	1342.86	1752452.77	417647.82	39°38'38.8658"N	80°16'2.0472"W	1696.45	52.332	8.23	6.04	12.50
8251.00	35.020	136.550	7897.24	-69.55	1000.29	1378.25	1752488.17	417611.43	39°38'38.5093"N	80°16'1.5907"W	1702.98	54.029	5.77	5.69	1.74
8345.00	42.160	139.790	7970.67	-11.56	956.55	1417.22	1752527.14	417567.70	39°38'38.0804"N	80°16'1.0878"W	1709.83	55.983	7.89	7.60	3.45
8440.00	49.340	142.760	8036.92	56.17	903.44	1459.67	1752569.58	417514.60	39°38'37.5591"N	80°16'0.5394"W	1716.64	58.245	7.88	7.56	3.13
8534.00	58.130	143.720	8092.47	131.78	842.76	1504.96	1752614.86	417453.92	39°38'36.9632"N	80°15'59.9539"W	1724.86	60.752	9.39	9.35	1.02
8628.00	64.680	143.830	8137.44	214.18	776.22	1553.70	1752663.61	417387.38	39°38'36.3097"N	80°15'59.3235"W	1736.81	63.454	6.97	6.97	0.12
8723.00	72.010	144.560	8172.47	302.35	704.65	1605.31	1752715.21	417315.82	39°38'35.6068"N	80°15'58.6560"W	1753.15	66.301	7.75	7.72	0.77
8818.00	79.480	146.330	8195.85	394.35	628.86	1657.48	1752767.37	417240.03	39°38'34.8622"N	80°15'57.9809"W	1772.76	69.223	8.07	7.86	1.86
8913.00	86.300	146.410	8207.60	488.56	550.42	1709.65	1752819.55	417161.59	39°38'34.0913"N	80°15'57.3054"W	1796.07	72.154	7.18	7.18	0.08

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 6H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 6H AWB
Slot	Slot 06		

WELLPATH DATA (333 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]
9008.00	87.690	145.560	8212.58	583.42	471.78	1762.72	1752872.62	417082.96	39°38'33.3187"N	80°15'56.6184"W	1824.77	75.016	1.71	1.46	-0.89
9103.00	89.450	146.250	8214.95	678.39	393.14	1815.96	1752925.85	417004.33	39°38'32.5460"N	80°15'55.9294"W	1858.03	77.784	1.99	1.85	0.73
9198.00	89.350	145.630	8215.95	773.38	314.44	1869.16	1752979.05	416925.63	39°38'31.7727"N	80°15'55.2407"W	1895.42	80.451	0.66	-0.11	-0.65
9304.00	89.450	146.030	8217.06	879.37	226.74	1928.69	1753038.57	416837.94	39°38'30.9111"N	80°15'54.4702"W	1941.97	83.295	0.39	0.09	0.38
9399.00	89.690	146.220	8217.77	974.36	147.87	1981.64	1753091.52	416759.07	39°38'30.1361"N	80°15'53.7848"W	1987.15	85.732	0.32	0.25	0.20
9493.00	89.080	145.600	8218.78	1068.36	70.03	2034.32	1753144.20	416681.24	39°38'29.3712"N	80°15'53.1029"W	2035.53	88.028	0.93	-0.65	-0.66
9588.00	89.570	145.880	8219.90	1163.34	-8.48	2087.80	1753197.67	416602.73	39°38'28.5999"N	80°15'52.4108"W	2087.82	90.233	0.59	0.52	0.29
9682.00	89.880	145.920	8220.35	1257.34	-86.32	2140.50	1753250.37	416524.90	39°38'27.8351"N	80°15'51.7287"W	2142.24	92.309	0.33	0.33	0.04
9776.00	90.860	145.860	8219.74	1351.33	-164.14	2193.21	1753303.08	416447.08	39°38'27.0704"N	80°15'51.0464"W	2199.35	94.280	1.04	1.04	-0.06
9871.00	89.880	145.860	8219.13	1446.33	-242.77	2246.53	1753356.39	416368.46	39°38'26.2978"N	80°15'50.3564"W	2259.61	96.168	1.03	-1.03	0.00
9966.00	90.090	145.850	8219.15	1541.32	-321.39	2299.85	1753409.71	416289.84	39°38'25.5253"N	80°15'49.6663"W	2322.20	97.955	0.22	0.22	-0.01
10060.00	89.480	146.120	8219.50	1635.32	-399.31	2352.43	1753462.29	416211.93	39°38'24.7597"N	80°15'48.9857"W	2386.08	99.634	0.71	-0.65	0.29
10154.00	90.710	145.290	8219.35	1729.31	-476.96	2405.40	1753515.25	416134.28	39°38'23.9967"N	80°15'48.3002"W	2452.23	101.216	1.58	1.31	-0.88
10249.00	90.650	145.400	8218.22	1824.29	-555.10	2459.41	1753569.26	416056.14	39°38'23.2290"N	80°15'47.6013"W	2521.28	102.719	0.13	-0.06	0.12
10344.00	89.910	144.900	8217.76	1919.26	-633.06	2513.70	1753623.54	415978.19	39°38'22.4631"N	80°15'46.8990"W	2592.19	104.136	0.94	-0.78	-0.53
10439.00	89.480	145.680	8218.26	2014.24	-711.16	2567.79	1753677.63	415900.10	39°38'21.6959"N	80°15'46.1990"W	2664.45	105.480	0.94	-0.45	0.82
10534.00	89.510	145.620	8219.10	2109.23	-789.59	2621.39	1753731.23	415821.67	39°38'20.9253"N	80°15'45.5054"W	2737.73	106.763	0.07	0.03	-0.06
10629.00	89.970	145.390	8219.53	2204.22	-867.88	2675.19	1753785.03	415743.38	39°38'20.1561"N	80°15'44.8092"W	2812.45	107.974	0.54	0.48	-0.24
10723.00	89.880	145.270	8219.65	2298.21	-945.19	2728.66	1753838.50	415666.08	39°38'19.3966"N	80°15'44.1173"W	2887.73	109.106	0.16	-0.10	-0.13
10818.00	90.000	144.270	8219.75	2393.17	-1022.79	2783.47	1753893.30	415588.48	39°38'18.6343"N	80°15'43.4085"W	2965.43	110.176	1.06	0.13	-1.05
10912.00	90.120	145.470	8219.66	2487.13	-1099.67	2837.56	1753947.38	415511.61	39°38'17.8791"N	80°15'42.7087"W	3043.19	111.183	1.28	0.13	1.28
11007.00	89.420	146.360	8220.04	2582.13	-1178.34	2890.79	1754000.62	415432.94	39°38'17.1060"N	80°15'42.0197"W	3121.73	112.177	1.19	-0.74	0.94
11101.00	90.150	147.000	8220.39	2676.12	-1256.89	2942.43	1754052.25	415354.40	39°38'16.3341"N	80°15'41.3512"W	3199.63	113.130	1.03	0.78	0.68
11196.00	90.770	148.060	8219.63	2771.10	-1337.03	2993.43	1754103.24	415274.26	39°38'15.5463"N	80°15'40.6907"W	3278.46	114.068	1.29	0.65	1.12
11291.00	91.170	146.790	8218.02	2866.07	-1417.08	3044.57	1754154.38	415194.22	39°38'14.7596"N	80°15'40.0283"W	3358.20	114.959	1.40	0.42	-1.34
11386.00	90.860	146.260	8216.34	2961.05	-1496.31	3096.96	1754206.77	415115.00	39°38'13.9810"N	80°15'39.3501"W	3439.49	115.788	0.65	-0.33	-0.56
11482.00	90.770	147.270	8214.97	3057.04	-1576.59	3149.57	1754259.37	415034.71	39°38'13.1919"N	80°15'38.6690"W	3522.13	116.591	1.06	-0.09	1.05
11577.00	91.230	146.760	8213.31	3152.02	-1656.27	3201.28	1754311.08	414955.04	39°38'12.4089"N	80°15'37.9994"W	3604.36	117.356	0.72	0.48	-0.54
11671.00	90.490	145.580	8211.90	3246.00	-1734.34	3253.60	1754363.41	414876.97	39°38'11.6417"N	80°15'37.3221"W	3686.99	118.060	1.48	-0.79	-1.26
11765.00	90.000	145.710	8211.50	3340.00	-1811.94	3306.65	1754416.45	414799.38	39°38'10.8792"N	80°15'36.6357"W	3770.55	118.721	0.54	-0.52	0.14



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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 6H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 6H AWB
Slot	Slot 06		

WELLPATH DATA (333 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]	
11861.00	90.340	144.730	8211.21	3435.97	-1890.79	3361.41	1754471.20	414720.53	39°38'10.1045"N	80°15'35.9273"W	3856.71	119.358	1.08	0.35	-1.02	
11955.00	90.740	147.190	8210.33	3529.96	-1968.68	3414.02	1754523.81	414642.65	39°38'9.3393"N	80°15'35.2464"W	3940.97	119.970	2.65	0.43	2.62	
12048.00	90.620	146.220	8209.22	3622.95	-2046.40	3465.07	1754574.86	414564.93	39°38'8.5754"N	80°15'34.5855"W	4024.24	120.565	1.05	-0.13	-1.04	
12143.00	89.940	144.570	8208.76	3717.93	-2124.59	3519.02	1754628.80	414486.75	39°38'7.8072"N	80°15'33.8875"W	4110.64	121.121	1.88	-0.72	-1.74	
12237.00	90.800	146.520	8208.15	3811.92	-2202.10	3572.20	1754681.98	414409.25	39°38'7.0457"N	80°15'33.1995"W	4196.41	121.652	2.27	0.91	2.07	
12331.00	89.940	146.140	8207.55	3905.91	-2280.33	3624.31	1754734.09	414331.02	39°38'6.2769"N	80°15'32.5249"W	4282.00	122.177	1.00	-0.91	-0.40	
12426.00	90.620	146.350	8207.08	4000.91	-2359.31	3677.09	1754786.87	414252.05	39°38'5.5008"N	80°15'31.8418"W	4368.91	122.685	0.75	0.72	0.22	
12521.00	90.890	146.340	8205.83	4095.90	-2438.38	3729.74	1754839.51	414172.98	39°38'4.7237"N	80°15'31.1604"W	4456.08	123.175	0.28	0.28	-0.01	
12616.00	90.920	146.750	8204.33	4190.89	-2517.63	3782.10	1754891.87	414093.74	39°38'3.9449"N	80°15'30.4825"W	4543.43	123.650	0.43	0.03	0.43	
12710.00	90.860	146.330	8202.87	4284.88	-2596.04	3833.92	1754943.69	414015.33	39°38'3.1743"N	80°15'29.8117"W	4630.16	124.103	0.45	-0.06	-0.45	
12806.00	91.140	146.440	8201.19	4380.86	-2675.97	3887.06	1754996.82	413935.40	39°38'2.3888"N	80°15'29.1239"W	4719.12	124.545	0.31	0.29	0.11	
12900.00	90.740	146.350	8199.65	4474.85	-2754.25	3939.08	1755048.84	413857.12	39°38'1.6195"N	80°15'28.4506"W	4806.48	124.962	0.44	-0.43	-0.10	
12994.00	91.690	146.460	8197.66	4568.83	-2832.53	3991.08	1755100.84	413778.85	39°38'0.8503"N	80°15'27.7776"W	4894.08	125.364	1.02	1.01	0.12	
13089.00	90.340	145.930	8195.98	4663.81	-2911.46	4043.93	1755153.68	413699.93	39°38'0.0747"N	80°15'27.0936"W	4982.96	125.752	1.53	-1.42	-0.56	
13184.00	91.390	146.880	8194.54	4758.80	-2990.58	4096.48	1755206.23	413620.81	39°37'59.2971"N	80°15'26.4134"W	5071.96	126.131	1.49	1.11	1.00	
13279.00	91.200	147.230	8192.40	4853.77	-3070.28	4148.14	1755257.88	413541.11	39°37'58.5138"N	80°15'25.7446"W	5160.78	126.507	0.42	-0.20	0.37	
13374.00	89.850	146.210	8191.52	4948.76	-3149.70	4200.26	1755310.00	413461.71	39°37'57.7333"N	80°15'25.0699"W	5250.03	126.866	1.78	-1.42	-1.07	
13469.00	90.920	146.850	8190.89	5043.75	-3228.94	4252.65	1755362.39	413382.47	39°37'56.9545"N	80°15'24.3917"W	5339.58	127.209	1.31	1.13	0.67	
13564.00	90.340	146.000	8189.84	5138.75	-3308.08	4305.18	1755414.92	413303.33	39°37'56.1767"N	80°15'23.7118"W	5429.37	127.539	1.08	-0.61	-0.89	
13658.00	90.430	146.470	8189.21	5232.74	-3386.23	4357.43	1755467.16	413225.19	39°37'55.4088"N	80°15'23.0357"W	5518.49	127.851	0.51	0.10	0.50	
13753.00	90.770	146.420	8188.22	5327.74	-3465.39	4409.93	1755519.66	413146.03	39°37'54.6309"N	80°15'22.3561"W	5608.61	128.161	0.36	0.36	-0.05	
13847.00	90.120	146.760	8187.49	5421.73	-3543.86	4461.69	1755571.42	413067.57	39°37'53.8597"N	80°15'21.6861"W	5697.86	128.460	0.78	-0.69	0.36	
13942.00	90.740	145.990	8186.77	5516.73	-3622.96	4514.30	1755624.02	412988.48	39°37'53.0824"N	80°15'21.0053"W	5788.32	128.749	1.04	0.65	-0.81	
14036.00	90.090	146.150	8186.09	5610.72	-3700.95	4566.76	1755676.48	412910.49	39°37'52.3160"N	80°15'20.3263"W	5878.12	129.022	0.71	-0.69	0.17	
14131.00	91.390	147.370	8184.86	5705.71	-3780.39	4618.83	1755728.55	412831.05	39°37'51.5352"N	80°15'19.6523"W	5968.67	129.299	1.88	1.37	1.28	
14229.00	90.370	145.890	8183.36	5803.69	-3862.22	4672.73	1755782.44	412749.22	39°37'50.7310"N	80°15'18.9547"W	6062.27	129.575	1.83	-1.04	-1.51	
14323.00	90.550	146.820	8182.60	5897.69	-3940.47	4724.80	1755834.52	412670.98	39°37'49.9620"N	80°15'18.2807"W	6152.33	129.828	1.01	0.19	0.99	
14419.00	90.460	146.660	8181.76	5993.68	-4020.75	4777.45	1755887.16	412590.71	39°37'49.1731"N	80°15'17.5992"W	6244.23	130.084	0.19	-0.09	-0.17	
14514.00	90.370	145.680	8181.07	6088.68	-4099.66	4830.34	1755940.04	412511.80	39°37'48.3976"N	80°15'16.9148"W	6335.57	130.322	1.04	-0.09	-1.03	
14609.00	91.110	146.640	8179.84	6183.67	-4178.56	4883.24	1755992.94	412432.91	39°37'47.6223"N	80°15'16.2303"W	6427.00	130.553	1.28	0.78	1.01	



Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 6H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 6H AWB
Slot	Slot 06		

WELLPATH DATA (333 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]
14704.00	90.460	146.340	8178.54	6278.66	-4257.76	4935.68	1756045.38	412353.71	39°37'46.8439"N	80°15'15.5516"W	6518.39	130.783	0.75	-0.68	-0.32
14798.00	90.400	146.540	8177.84	6372.66	-4336.09	4987.64	1756097.34	412275.39	39°37'46.0741"N	80°15'14.8791"W	6608.95	131.003	0.22	-0.06	0.21
14892.00	91.110	146.240	8176.60	6466.65	-4414.37	5039.67	1756149.36	412197.11	39°37'45.3048"N	80°15'14.2057"W	6699.62	131.216	0.82	0.76	-0.32
14988.00	90.000	146.280	8175.67	6562.64	-4494.19	5092.99	1756202.68	412117.29	39°37'44.5204"N	80°15'13.5157"W	6792.37	131.426	1.16	-1.16	0.04
15083.00	90.650	146.690	8175.13	6657.64	-4573.39	5145.44	1756255.13	412038.10	39°37'43.7420"N	80°15'12.8369"W	6884.15	131.631	0.81	0.68	0.43
15177.00	90.800	146.690	8173.94	6751.63	-4651.95	5197.06	1756306.74	411959.55	39°37'42.9700"N	80°15'12.1688"W	6974.96	131.832	0.16	0.16	0.00
15273.00	90.250	146.320	8173.06	6847.63	-4732.00	5250.04	1756359.71	411879.50	39°37'42.1832"N	80°15'11.4832"W	7067.86	132.029	0.69	-0.57	-0.39
15368.00	90.400	146.650	8172.52	6942.62	-4811.20	5302.49	1756412.17	411800.30	39°37'41.4048"N	80°15'10.8043"W	7159.89	132.219	0.38	0.16	0.35
15463.00	90.520	145.830	8171.76	7037.62	-4890.18	5355.28	1756464.95	411721.33	39°37'40.6287"N	80°15'10.1212"W	7252.10	132.401	0.87	0.13	-0.86
15558.00	89.970	145.540	8171.35	7132.61	-4968.64	5408.84	1756518.50	411642.87	39°37'39.8577"N	80°15'9.4283"W	7344.59	132.571	0.65	-0.58	-0.31
15654.00	90.620	146.590	8170.86	7228.61	-5048.29	5462.43	1756572.09	411563.23	39°37'39.0750"N	80°15'8.7349"W	7437.97	132.744	1.29	0.68	1.09
15749.00	90.090	146.240	8170.27	7323.60	-5127.43	5514.98	1756624.64	411484.09	39°37'38.2973"N	80°15'8.0549"W	7530.31	132.914	0.67	-0.56	-0.37
15844.00	89.720	146.240	8170.43	7418.60	-5206.41	5567.77	1756677.43	411405.12	39°37'37.5211"N	80°15'7.3717"W	7622.78	133.079	0.39	-0.39	0.00
15938.00	88.550	145.300	8171.85	7512.59	-5284.12	5620.64	1756730.29	411327.42	39°37'36.7575"N	80°15'6.6877"W	7714.50	133.232	1.60	-1.24	-1.00
16033.00	89.480	146.460	8173.48	7607.57	-5362.75	5673.92	1756783.57	411248.79	39°37'35.9848"N	80°15'5.9984"W	7807.20	133.385	1.56	0.98	1.22
16129.00	89.750	147.180	8174.12	7703.56	-5443.10	5726.45	1756836.10	411168.45	39°37'35.1952"N	80°15'5.3184"W	7900.60	133.547	0.80	0.28	0.75
16223.00	88.580	145.780	8175.49	7797.55	-5521.45	5778.35	1756888.00	411090.10	39°37'34.4251"N	80°15'4.6468"W	7992.23	133.698	1.94	-1.24	-1.49
16319.00	88.280	146.470	8178.12	7893.51	-5601.13	5831.84	1756941.49	411010.43	39°37'33.6421"N	80°15'3.9547"W	8085.98	133.844	0.78	-0.31	0.72
16414.00	88.890	147.430	8180.47	7988.47	-5680.73	5883.64	1756993.28	410930.83	39°37'32.8597"N	80°15'3.2843"W	8178.50	133.995	1.20	0.64	1.01
16509.00	87.600	146.040	8183.38	8083.42	-5760.12	5935.72	1757045.35	410851.44	39°37'32.0794"N	80°15'2.6102"W	8271.14	134.140	2.00	-1.36	-1.46
16602.00	87.750	147.340	8187.15	8176.34	-5837.78	5986.75	1757096.38	410773.79	39°37'31.3162"N	80°15'1.9498"W	8361.86	134.278	1.41	0.16	1.40
16697.00	88.180	147.920	8190.53	8271.26	-5917.96	6037.58	1757147.21	410693.61	39°37'30.5279"N	80°15'1.2916"W	8454.27	134.427	0.76	0.45	0.61
16792.00	86.640	147.220	8194.82	8366.14	-5998.06	6088.47	1757198.09	410613.51	39°37'29.7405"N	80°15'0.6327"W	8546.71	134.571	1.78	-1.62	-0.74
16887.00	87.140	147.150	8199.97	8460.99	-6077.79	6139.87	1757249.50	410533.80	39°37'28.9569"N	80°14'59.9673"W	8639.30	134.709	0.53	0.53	-0.07
16983.00	87.170	146.860	8204.74	8556.86	-6158.20	6192.09	1757301.71	410453.38	39°37'28.1665"N	80°14'59.2914"W	8733.01	134.843	0.30	0.03	-0.30
17078.00	86.550	146.490	8209.94	8651.72	-6237.46	6244.20	1757353.82	410374.13	39°37'27.3875"N	80°14'58.6170"W	8825.87	134.969	0.76	-0.65	-0.39
17173.00	85.720	146.790	8216.35	8746.50	-6316.63	6296.32	1757405.94	410294.97	39°37'26.6094"N	80°14'57.9425"W	8918.71	135.092	0.93	-0.87	0.32
17269.00	87.200	148.030	8222.27	8842.30	-6397.35	6347.93	1757457.54	410214.25	39°37'25.8159"N	80°14'57.2744"W	9012.34	135.222	2.01	1.54	1.29
17364.00	87.290	147.860	8226.84	8937.15	-6477.78	6398.29	1757507.90	410133.83	39°37'25.0252"N	80°14'56.6222"W	9104.93	135.354	0.20	0.09	-0.18
17459.00	87.230	147.500	8231.38	9032.02	-6557.97	6449.02	1757558.63	410053.64	39°37'24.2369"N	80°14'55.9653"W	9197.65	135.480	0.38	-0.06	-0.38

Actual Wellpath Report

Phoenix 6H AWP Proj: 29087'

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 6H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 6H AWB
Slot	Slot 06		

WELLPATH DATA (333 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]
17554.00	87.080	147.300	8236.10	9126.88	-6637.90	6500.14	1757609.75	409973.71	39°37'23.4512"N	80°14'55.3035"W	9290.51	135.601	0.26	-0.16	-0.21
17650.00	87.110	147.250	8240.96	9222.75	-6718.56	6551.98	1757661.57	409893.06	39°37'22.6583"N	80°14'54.6326"W	9384.43	135.719	0.06	0.03	-0.05
17745.00	87.380	147.080	8245.53	9317.63	-6798.29	6603.43	1757713.02	409813.33	39°37'21.8746"N	80°14'53.9666"W	9477.45	135.833	0.34	0.28	-0.18
17840.00	87.660	147.060	8249.64	9412.53	-6877.95	6655.02	1757764.61	409733.68	39°37'21.0916"N	80°14'53.2988"W	9570.56	135.944	0.30	0.29	-0.02
17936.00	87.720	146.280	8253.51	9508.45	-6958.10	6707.73	1757817.32	409653.54	39°37'20.3039"N	80°14'52.6167"W	9664.82	136.050	0.81	0.06	-0.81
18031.00	87.450	146.380	8257.51	9603.37	-7037.09	6760.35	1757869.93	409574.55	39°37'19.5276"N	80°14'51.9359"W	9758.22	136.149	0.30	-0.28	0.11
18126.00	87.470	146.420	8261.72	9698.28	-7116.14	6812.87	1757922.45	409495.51	39°37'18.7507"N	80°14'51.2563"W	9851.63	136.247	0.05	0.02	0.04
18222.00	87.230	147.140	8266.16	9794.17	-7196.36	6865.41	1757974.99	409415.29	39°37'17.9622"N	80°14'50.5764"W	9945.93	136.348	0.79	-0.25	0.75
18317.00	88.090	146.580	8270.04	9889.09	-7275.84	6917.30	1758026.87	409335.81	39°37'17.1810"N	80°14'49.9048"W	10039.27	136.447	1.08	0.91	-0.59
18412.00	88.210	146.530	8273.10	9984.04	-7355.07	6969.63	1758079.20	409256.59	39°37'16.4023"N	80°14'49.2277"W	10132.76	136.541	0.14	0.13	-0.05
18508.00	87.940	146.590	8276.33	10079.98	-7435.14	7022.50	1758132.07	409176.53	39°37'15.6154"N	80°14'48.5435"W	10227.26	136.635	0.29	-0.28	0.06
18603.00	88.240	145.940	8279.50	10174.93	-7514.09	7075.23	1758184.80	409097.58	39°37'14.8394"N	80°14'47.8613"W	10320.88	136.723	0.75	0.32	-0.68
18698.00	88.400	146.980	8282.28	10269.89	-7593.24	7127.70	1758237.26	409018.43	39°37'14.0615"N	80°14'47.1825"W	10414.48	136.811	1.11	0.17	1.09
18793.00	87.780	146.490	8285.45	10364.83	-7672.63	7179.77	1758289.34	408939.05	39°37'13.2812"N	80°14'46.5085"W	10508.02	136.901	0.83	-0.65	-0.52
18889.00	88.860	146.670	8288.26	10460.79	-7752.72	7232.63	1758342.18	408858.96	39°37'12.4941"N	80°14'45.8247"W	10602.62	136.988	1.14	1.12	0.19
18984.00	89.570	146.740	8289.56	10555.78	-7832.12	7284.77	1758394.32	408779.57	39°37'11.7137"N	80°14'45.1499"W	10696.26	137.074	0.75	0.75	0.07
19079.00	89.690	146.920	8290.18	10650.77	-7911.64	7336.75	1758446.30	408700.06	39°37'10.9321"N	80°14'44.4773"W	10789.90	137.159	0.23	0.13	0.19
19175.00	89.720	146.100	8290.67	10746.77	-7991.70	7389.72	1758499.26	408620.00	39°37'10.1452"N	80°14'43.7919"W	10884.63	137.241	0.85	0.03	-0.85
19270.00	89.290	146.270	8291.49	10841.76	-8070.63	7442.58	1758552.13	408541.08	39°37'9.3696"N	80°14'43.1080"W	10978.48	137.318	0.49	-0.45	0.18
19365.00	89.940	146.980	8292.13	10936.76	-8149.96	7494.84	1758604.38	408461.75	39°37'8.5899"N	80°14'42.4318"W	11072.24	137.398	1.01	0.68	0.75
19460.00	89.200	146.150	8292.84	11031.76	-8229.23	7547.18	1758656.72	408382.48	39°37'7.8107"N	80°14'41.7545"W	11166.03	137.475	1.17	-0.78	-0.87
19556.00	89.820	146.230	8293.66	11127.75	-8308.99	7600.60	1758710.14	408302.73	39°37'7.0268"N	80°14'41.0635"W	11260.93	137.549	0.65	0.65	0.08
19649.00	89.350	146.530	8294.34	11220.75	-8386.43	7652.09	1758761.62	408225.29	39°37'6.2657"N	80°14'40.3973"W	11352.83	137.622	0.60	-0.51	0.32
19745.00	89.570	146.100	8295.24	11316.74	-8466.31	7705.33	1758814.86	408145.42	39°37'5.4807"N	80°14'39.7085"W	11447.73	137.694	0.50	0.23	-0.45
19839.00	90.310	147.280	8295.34	11410.74	-8544.87	7756.95	1758866.48	408066.87	39°37'4.7086"N	80°14'39.0406"W	11540.58	137.767	1.48	0.79	1.26
19935.00	88.740	145.980	8296.14	11506.73	-8625.03	7809.75	1758919.28	407986.70	39°37'3.9206"N	80°14'38.3574"W	11635.44	137.840	2.12	-1.64	-1.35
20030.00	89.820	146.140	8297.33	11601.72	-8703.84	7862.79	1758972.31	407907.90	39°37'3.1462"N	80°14'37.6714"W	11729.46	137.906	1.15	1.14	0.17
20126.00	90.220	147.130	8297.30	11697.72	-8784.02	7915.59	1759025.10	407827.73	39°37'2.3581"N	80°14'36.9883"W	11824.36	137.977	1.11	0.42	1.03
20221.00	91.320	147.010	8296.02	11792.70	-8863.74	7967.22	1759076.74	407748.01	39°37'1.5744"N	80°14'36.3200"W	11918.16	138.049	1.16	1.16	-0.13
20316.00	91.940	146.260	8293.32	11887.66	-8943.05	8019.45	1759128.96	407668.70	39°37'0.7949"N	80°14'35.6443"W	12012.07	138.117	1.02	0.65	-0.79



Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 6H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 6H AWB
Slot	Slot 06		

WELLPATH DATA (333 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]
20411.00	91.970	146.010	8290.08	11982.60	-9021.89	8072.36	1759181.86	407589.87	39°37'0.0201"N	80°14'34.9599"W	12106.09	138.179	0.26	0.03	-0.26
20506.00	92.650	146.630	8286.25	12077.53	-9100.88	8124.99	1759234.50	407510.89	39°36'59.2438"N	80°14'34.2789"W	12200.06	138.242	0.97	0.72	0.65
20602.00	93.510	146.910	8281.09	12173.38	-9181.07	8177.53	1759287.03	407430.71	39°36'58.4556"N	80°14'33.5992"W	12294.87	138.309	0.94	0.90	0.29
20697.00	93.270	146.720	8275.47	12268.21	-9260.43	8229.43	1759338.93	407351.34	39°36'57.6755"N	80°14'32.9276"W	12388.67	138.374	0.32	-0.25	-0.20
20792.00	91.570	145.670	8271.46	12363.12	-9339.30	8282.24	1759391.73	407272.48	39°36'56.9004"N	80°14'32.2445"W	12482.71	138.433	2.10	-1.79	-1.11
20887.00	91.660	145.350	8268.78	12458.08	-9417.57	8336.01	1759445.50	407194.22	39°36'56.1313"N	80°14'31.5491"W	12576.95	138.486	0.35	0.09	-0.34
20982.00	92.430	146.530	8265.39	12553.01	-9496.22	8389.18	1759498.67	407115.57	39°36'55.3584"N	80°14'30.8614"W	12671.09	138.542	1.48	0.81	1.24
21077.00	92.250	146.230	8261.51	12647.93	-9575.26	8441.74	1759551.22	407036.54	39°36'54.5815"N	80°14'30.1815"W	12765.13	138.600	0.37	-0.19	-0.32
21173.00	92.220	146.200	8257.77	12743.86	-9654.99	8495.08	1759604.56	406956.81	39°36'53.7980"N	80°14'29.4915"W	12860.22	138.657	0.04	-0.03	-0.03
21268.00	91.910	146.440	8254.35	12838.80	-9733.99	8547.73	1759657.21	406877.81	39°36'53.0215"N	80°14'28.8105"W	12954.31	138.713	0.41	-0.33	0.25
21363.00	92.650	146.630	8250.57	12933.72	-9813.18	8600.07	1759709.55	406798.63	39°36'52.2432"N	80°14'28.1333"W	13048.36	138.769	0.80	0.78	0.20
21459.00	93.170	147.300	8245.69	13029.59	-9893.55	8652.34	1759761.81	406718.26	39°36'51.4531"N	80°14'27.4570"W	13143.27	138.829	0.88	0.54	0.70
21554.00	92.310	147.360	8241.15	13124.47	-9973.43	8703.56	1759813.03	406638.39	39°36'50.6679"N	80°14'26.7941"W	13237.12	138.890	0.91	-0.91	0.06
21649.00	92.620	147.060	8237.07	13219.37	-10053.22	8754.96	1759864.43	406558.60	39°36'49.8835"N	80°14'26.1289"W	13331.04	138.949	0.45	0.33	-0.32
21745.00	93.050	147.180	8232.32	13315.24	-10133.74	8807.02	1759916.48	406478.09	39°36'49.0920"N	80°14'25.4553"W	13425.96	139.007	0.46	0.45	0.12
21840.00	92.960	146.650	8227.34	13410.11	-10213.23	8858.80	1759968.26	406398.60	39°36'48.3107"N	80°14'24.7852"W	13519.93	139.062	0.57	-0.09	-0.56
21935.00	92.920	146.400	8222.47	13504.98	-10292.37	8911.13	1760020.59	406319.47	39°36'47.5328"N	80°14'24.1082"W	13614.01	139.114	0.27	-0.04	-0.26
22030.00	92.830	146.930	8217.70	13599.86	-10371.64	8963.27	1760072.72	406240.21	39°36'46.7537"N	80°14'23.4337"W	13708.07	139.166	0.57	-0.09	0.56
22125.00	92.710	146.100	8213.11	13694.75	-10450.78	9015.62	1760125.07	406161.07	39°36'45.9758"N	80°14'22.7564"W	13802.18	139.216	0.88	-0.13	-0.87
22220.00	91.600	144.560	8209.54	13789.66	-10528.85	9069.63	1760179.07	406083.00	39°36'45.2087"N	80°14'22.0583"W	13896.58	139.258	2.00	-1.17	-1.62
22315.00	91.540	144.980	8206.94	13884.59	-10606.42	9124.41	1760233.85	406005.44	39°36'44.4465"N	80°14'21.3501"W	13991.10	139.296	0.45	-0.06	0.44
22411.00	91.970	145.700	8204.00	13980.53	-10685.35	9178.98	1760288.41	405926.52	39°36'43.6710"N	80°14'20.6446"W	14086.53	139.337	0.87	0.45	0.75
22505.00	91.880	146.540	8200.84	14074.47	-10763.34	9231.35	1760340.78	405848.53	39°36'42.9044"N	80°14'19.9673"W	14179.82	139.381	0.90	-0.10	0.89
22600.00	91.970	146.890	8197.65	14169.42	-10842.71	9283.45	1760392.89	405769.16	39°36'42.1243"N	80°14'19.2931"W	14274.00	139.430	0.38	0.09	0.37
22696.00	92.060	147.510	8194.27	14265.35	-10923.36	9335.43	1760444.85	405688.52	39°36'41.3315"N	80°14'18.6206"W	14369.06	139.482	0.65	0.09	0.65
22791.00	92.190	146.910	8190.75	14360.27	-11003.17	9386.84	1760496.26	405608.72	39°36'40.5470"N	80°14'17.9553"W	14463.14	139.532	0.65	0.14	-0.63
22886.00	92.250	146.840	8187.07	14455.20	-11082.67	9438.71	1760548.14	405529.22	39°36'39.7655"N	80°14'17.2842"W	14557.29	139.580	0.10	0.06	-0.07
22982.00	92.250	147.160	8183.30	14551.12	-11163.12	9490.96	1760600.38	405448.78	39°36'38.9747"N	80°14'16.6082"W	14652.42	139.629	0.33	0.00	0.33
23077.00	92.430	146.790	8179.42	14646.03	-11242.70	9542.69	1760652.11	405369.20	39°36'38.1924"N	80°14'15.9389"W	14746.57	139.676	0.43	0.19	-0.39
23172.00	91.720	146.430	8175.98	14740.97	-11321.97	9594.94	1760704.35	405289.94	39°36'37.4133"N	80°14'15.2630"W	14840.81	139.720	0.84	-0.75	-0.38



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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 6H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 6H AWB
Slot	Slot 06		

WELLPATH DATA (333 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]
23268.00	92.220	146.680	8172.68	14836.91	-11402.02	9647.82	1760757.22	405209.88	39°36'36.6264"N	80°14'14.5790"W	14936.08	139.764	0.58	0.52	0.26
23363.00	91.380	145.950	8169.70	14931.86	-11481.03	9700.48	1760809.88	405130.88	39°36'35.8498"N	80°14'13.8978"W	15030.42	139.805	1.17	-0.88	-0.77
23458.00	92.620	146.470	8166.38	15026.80	-11559.94	9753.28	1760862.68	405051.98	39°36'35.0743"N	80°14'13.2149"W	15124.77	139.845	1.42	1.31	0.55
23553.00	92.860	146.790	8161.84	15121.69	-11639.18	9805.47	1760914.87	404972.74	39°36'34.2954"N	80°14'12.5398"W	15219.00	139.887	0.42	0.25	0.34
23648.00	92.710	146.890	8157.22	15216.58	-11718.62	9857.37	1760966.77	404893.31	39°36'33.5146"N	80°14'11.8683"W	15313.19	139.930	0.19	-0.16	0.11
23743.00	92.250	146.660	8153.11	15311.48	-11798.01	9909.38	1761018.77	404813.92	39°36'32.7342"N	80°14'11.1955"W	15407.43	139.972	0.54	-0.48	-0.24
23839.00	92.060	146.870	8149.50	15407.41	-11878.25	9961.96	1761071.35	404733.68	39°36'31.9454"N	80°14'10.5154"W	15502.69	140.014	0.29	-0.20	0.22
23934.00	91.750	146.870	8146.35	15502.36	-11957.77	10013.85	1761123.24	404654.18	39°36'31.1638"N	80°14'9.8440"W	15596.97	140.056	0.33	-0.33	0.00
24029.00	91.290	146.580	8143.83	15597.32	-12037.16	10065.95	1761175.34	404574.79	39°36'30.3834"N	80°14'9.1700"W	15691.29	140.096	0.57	-0.48	-0.31
24125.00	91.690	146.520	8141.33	15693.29	-12117.23	10118.85	1761228.23	404494.72	39°36'29.5964"N	80°14'8.4858"W	15786.66	140.135	0.42	0.42	-0.06
24220.00	91.510	147.050	8138.68	15788.25	-12196.68	10170.87	1761280.25	404415.28	39°36'28.8154"N	80°14'7.8129"W	15880.98	140.175	0.59	-0.19	0.56
24315.00	91.630	146.550	8136.07	15883.21	-12276.14	10222.87	1761332.24	404335.82	39°36'28.0343"N	80°14'7.1402"W	15975.32	140.214	0.54	0.13	-0.53
24410.00	91.170	146.310	8133.75	15978.18	-12355.28	10275.38	1761384.76	404256.69	39°36'27.2566"N	80°14'6.4610"W	16069.73	140.251	0.55	-0.48	-0.25
24505.00	90.950	146.390	8132.00	16073.16	-12434.34	10328.02	1761437.38	404177.63	39°36'26.4794"N	80°14'5.7802"W	16164.18	140.287	0.25	-0.23	0.08
24601.00	91.020	146.600	8130.34	16169.15	-12514.38	10381.00	1761490.37	404097.60	39°36'25.6927"N	80°14'5.0949"W	16259.61	140.323	0.23	0.07	0.22
24696.00	91.720	146.860	8128.07	16264.12	-12593.79	10433.10	1761542.46	404018.20	39°36'24.9122"N	80°14'4.4210"W	16353.99	140.361	0.79	0.74	0.27
24791.00	91.880	146.900	8125.09	16359.07	-12673.31	10484.98	1761594.34	403938.67	39°36'24.1305"N	80°14'3.7498"W	16448.33	140.398	0.17	0.17	0.04
24886.00	91.760	145.910	8122.07	16454.02	-12752.40	10537.52	1761646.88	403859.59	39°36'23.3531"N	80°14'3.0703"W	16542.77	140.433	1.05	-0.13	-1.04
24982.00	91.720	145.980	8119.16	16549.97	-12831.90	10591.26	1761700.61	403780.09	39°36'22.5717"N	80°14'2.3755"W	16638.28	140.464	0.08	-0.04	0.07
25077.00	91.450	145.150	8116.53	16644.93	-12910.22	10644.95	1761754.30	403701.78	39°36'21.8020"N	80°14'1.6813"W	16732.87	140.493	0.92	-0.28	-0.87
25172.00	91.850	145.670	8113.79	16739.87	-12988.40	10698.86	1761808.21	403623.61	39°36'21.0338"N	80°14'0.9844"W	16827.48	140.521	0.69	0.42	0.55
25267.00	91.690	145.830	8110.86	16834.82	-13066.89	10752.30	1761861.65	403545.12	39°36'20.2625"N	80°14'0.2934"W	16922.04	140.550	0.24	-0.17	0.17
25362.00	92.490	146.190	8107.40	16929.76	-13145.60	10805.38	1761914.72	403466.41	39°36'19.4888"N	80°13'59.6071"W	17016.55	140.581	0.92	0.84	0.38
25458.00	92.090	145.810	8103.56	17025.68	-13225.13	10859.02	1761968.35	403386.89	39°36'18.7073"N	80°13'58.9136"W	17112.05	140.611	0.57	-0.42	-0.40
25553.00	92.130	145.840	8100.06	17120.61	-13303.67	10912.35	1762021.68	403308.36	39°36'17.9353"N	80°13'58.2241"W	17206.59	140.640	0.05	0.04	0.03
25648.00	92.280	145.620	8096.41	17215.53	-13382.12	10965.80	1762075.13	403229.91	39°36'17.1644"N	80°13'57.5330"W	17301.15	140.668	0.28	0.16	-0.23
25744.00	92.060	145.840	8092.77	17311.46	-13461.39	11019.82	1762129.14	403150.64	39°36'16.3853"N	80°13'56.8346"W	17396.71	140.695	0.32	-0.23	0.23
25839.00	91.570	145.750	8089.76	17406.41	-13539.92	11073.20	1762182.52	403072.12	39°36'15.6135"N	80°13'56.1445"W	17491.29	140.723	0.52	-0.52	-0.09
25934.00	92.000	145.560	8086.80	17501.35	-13618.32	11126.77	1762236.08	402993.72	39°36'14.8430"N	80°13'55.4519"W	17585.89	140.750	0.49	0.45	-0.20
26029.00	92.370	145.940	8083.18	17596.28	-13696.79	11180.19	1762289.51	402915.26	39°36'14.0718"N	80°13'54.7611"W	17680.46	140.776	0.56	0.39	0.40



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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 6H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 6H AWB
Slot	Slot 06		

WELLPATH DATA (333 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]
26124.00	92.710	145.720	8078.97	17691.18	-13775.31	11233.50	1762342.81	402836.74	39°36'13.3001"N	80°13'54.0720"W	17775.00	140.803	0.43	0.36	-0.23
26219.00	92.560	145.920	8074.60	17786.07	-13853.82	11286.81	1762396.12	402758.24	39°36'12.5285"N	80°13'53.3827"W	17869.54	140.830	0.26	-0.16	0.21
26314.00	92.490	145.950	8070.42	17880.98	-13932.44	11339.97	1762449.28	402679.62	39°36'11.7558"N	80°13'52.6953"W	17964.07	140.857	0.08	-0.07	0.03
26409.00	92.280	145.760	8066.47	17975.89	-14011.00	11393.25	1762502.55	402601.07	39°36'10.9837"N	80°13'52.0065"W	18058.63	140.883	0.30	-0.22	-0.20
26505.00	92.740	145.640	8062.26	18071.79	-14090.23	11447.30	1762556.59	402521.84	39°36'10.2051"N	80°13'51.3078"W	18154.20	140.909	0.50	0.48	-0.13
26600.00	92.490	145.460	8057.93	18166.68	-14168.49	11500.98	1762610.28	402443.59	39°36'9.4360"N	80°13'50.6139"W	18248.79	140.933	0.32	-0.26	-0.19
26695.00	91.850	144.910	8054.33	18261.60	-14246.42	11555.18	1762664.47	402365.66	39°36'8.6701"N	80°13'49.9134"W	18343.47	140.955	0.89	-0.67	-0.58
26790.00	91.390	144.850	8051.64	18356.53	-14324.10	11609.81	1762719.10	402287.99	39°36'7.9069"N	80°13'49.2074"W	18438.21	140.975	0.49	-0.48	-0.06
26885.00	92.460	145.970	8048.45	18451.46	-14402.26	11663.71	1762772.99	402209.83	39°36'7.1388"N	80°13'48.5106"W	18532.87	140.998	1.63	1.13	1.18
26981.00	92.250	145.620	8044.51	18547.37	-14481.59	11717.63	1762826.91	402130.51	39°36'6.3592"N	80°13'47.8136"W	18628.45	141.022	0.42	-0.22	-0.36
27076.00	92.120	145.730	8040.89	18642.29	-14559.98	11771.16	1762880.44	402052.12	39°36'5.5887"N	80°13'47.1216"W	18723.07	141.046	0.18	-0.14	0.12
27171.00	92.370	145.800	8037.16	18737.21	-14638.46	11824.56	1762933.84	401973.64	39°36'4.8174"N	80°13'46.4311"W	18817.68	141.070	0.27	0.26	0.07
27266.00	92.220	145.970	8033.36	18832.14	-14717.05	11877.80	1762987.08	401895.06	39°36'4.0450"N	80°13'45.7429"W	18912.27	141.094	0.24	-0.16	0.18
27362.00	91.910	145.300	8029.90	18928.06	-14796.24	11931.96	1763041.23	401815.87	39°36'3.2667"N	80°13'45.0428"W	19007.90	141.117	0.77	-0.32	-0.70
27457.00	92.490	146.460	8026.25	19022.99	-14874.83	11985.20	1763094.47	401737.29	39°36'2.4943"N	80°13'44.3544"W	19102.51	141.140	1.36	0.61	1.22
27552.00	93.020	147.250	8021.69	19117.87	-14954.28	12037.09	1763146.35	401657.84	39°36'1.7133"N	80°13'43.6834"W	19196.93	141.169	1.00	0.56	0.83
27647.00	92.870	147.170	8016.81	19212.74	-15034.04	12088.47	1763197.73	401578.09	39°36'0.9292"N	80°13'43.0188"W	19291.28	141.198	0.18	-0.16	-0.08
27742.00	92.030	146.280	8012.75	19307.65	-15113.39	12140.54	1763249.80	401498.75	39°36'0.1492"N	80°13'42.3453"W	19385.75	141.225	1.29	-0.88	-0.94
27837.00	91.320	146.370	8009.97	19402.61	-15192.41	12193.19	1763302.45	401419.73	39°35'59.3724"N	80°13'41.6645"W	19480.33	141.250	0.75	-0.75	0.09
27932.00	92.890	147.430	8006.48	19497.53	-15271.94	12245.04	1763354.29	401340.21	39°35'58.5906"N	80°13'40.9939"W	19574.81	141.277	1.99	1.65	1.12
28027.00	92.960	146.950	8001.63	19592.40	-15351.68	12296.44	1763405.69	401260.47	39°35'57.8067"N	80°13'40.3289"W	19669.18	141.306	0.51	0.07	-0.51
28122.00	90.860	145.420	7998.47	19687.34	-15430.56	12349.28	1763458.52	401181.60	39°35'57.0314"N	80°13'39.6458"W	19763.78	141.329	2.73	-2.21	-1.61
28217.00	92.800	146.930	7995.43	19782.28	-15509.43	12402.13	1763511.37	401102.73	39°35'56.2562"N	80°13'38.9625"W	19858.38	141.352	2.59	2.04	1.59
28313.00	92.400	146.000	7991.08	19878.18	-15589.37	12455.11	1763564.35	401022.79	39°35'55.4704"N	80°13'38.2774"W	19953.90	141.377	1.05	-0.42	-0.97
28408.00	93.540	147.760	7986.15	19973.05	-15668.82	12506.95	1763616.18	400943.35	39°35'54.6893"N	80°13'37.6070"W	20048.34	141.403	2.21	1.20	1.85
28503.00	91.350	146.150	7982.10	20067.95	-15748.38	12558.70	1763667.93	400863.80	39°35'53.9073"N	80°13'36.9377"W	20142.80	141.429	2.86	-2.31	-1.69
28598.00	92.220	146.810	7979.14	20162.90	-15827.54	12611.14	1763720.36	400784.64	39°35'53.1291"N	80°13'36.2596"W	20237.38	141.453	1.15	0.92	0.69
28693.00	93.350	147.040	7974.53	20257.78	-15907.05	12662.92	1763772.14	400705.14	39°35'52.3475"N	80°13'35.5899"W	20331.84	141.478	1.21	1.19	0.24
28788.00	91.880	146.430	7970.19	20352.68	-15986.40	12714.97	1763824.19	400625.79	39°35'51.5675"N	80°13'34.9168"W	20426.34	141.503	1.68	-1.55	-0.64
28884.00	92.900	147.140	7966.19	20448.59	-16066.64	12767.51	1763876.73	400545.55	39°35'50.7787"N	80°13'34.2373"W	20521.85	141.527	1.29	1.06	0.74

Actual Wellpath Report

Phoenix 6H AWP Proj: 29087'

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 6H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 6H AWB
Slot	Slot 06		

WELLPATH DATA (333 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]
28979.00	92.590	146.420	7961.64	20543.48	-16146.02	12819.50	1763928.71	400466.18	39°35'49.9983"N	80°13'33.5650"W	20616.34	141.551	0.82	-0.33	-0.76
29062.00	92.590	146.660	7957.89	20626.39	-16215.20	12865.21	1763974.43	400397.01	39°35'49.3183"N	80°13'32.9739"W	20698.94	141.571	0.29	0.00	0.29
29087.00‡	92.590	146.660	7956.76	20651.36	-16236.06	12878.94	1763988.15	400376.14	39°35'49.1132"N	80°13'32.7964"W	20723.82	141.577	0.00	0.00	0.00

HOLE & CASING SECTIONS - Ref Wellbore: Phoenix 6H AWB Ref Wellpath: Phoenix 6H AWP Proj: 29087'

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	1552.00	1524.00	28.00	1551.87	0.00	0.00	-10.70	-15.02
13.375in Casing Surface	28.00	1522.00	1494.00	28.00	1521.87	0.00	0.00	-10.52	-14.63
12.25in Open Hole	1552.00	2854.00	1302.00	1551.87	2853.82	-10.70	-15.02	-18.77	-16.63
9.625in Casing Intermediate	28.00	2824.00	2796.00	28.00	2823.82	0.00	0.00	-18.62	-17.20
8.75in Open Hole	2854.00	7554.00	4700.00	2853.82	7259.08	-18.77	-16.63	1057.47	1141.99
8.5in Open Hole	7554.00	29087.00	21533.00	7259.08	7956.76	1057.47	1141.99	-16236.06	12878.94
5.5in Casing Production	28.00	29057.00	29029.00	28.00	7958.11	0.00	0.00	-16211.02	12862.47

REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 6H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 6H AWB
Slot	Slot 06		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Phoenix 6H BHL Rev-8	8210.00	-16237.79	12878.09	1763987.31	400374.41	39°35'49.0961"N	80°13'32.8070"W	point
Phoenix 6H LP Rev-6	8210.00	526.26	1728.83	1752838.72	417137.44	39°38'33.8543"N	80°15'57.0577"W	point
Phoenix Hardline #1 (5.19.21)	8528.00	-806.89	6007.24	1757116.87	415804.37	39°38'21.0362"N	80°15'2.2251"W	polygon
	2D Polygon: dimensions not calculated							
Phoenix Pad Hardline (2.12.21)	8528.00	603.89	4918.29	1756027.99	417215.07	39°38'34.8882"N	80°15'16.2957"W	polygon
	2D Polygon: dimensions not calculated							

WELLPATH COMPOSITION - Ref Wellbore: Phoenix 6H AWB Ref Wellpath: Phoenix 6H AWP Proj: 29087'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
28.00	2650.00	BH Generic gyro - northseeking (Standard)	01_Gyro Surveys [Northseeking] (50'-2650')	Phoenix 6H AWB	3/18/2022
2650.00	7390.00	OWSG MWD rev2 + HRGM	02_Tally MWD Surveys [OWSG MWD REV.2+HRGM] (2650')(2853'-7390')	Phoenix 6H AWB	3/18/2022
7390.00	29087.00	BH AutoTrak Curve/eXpress (2019) (HRGM, Short spacing)	03_ATK Curve [HRGM+Short Spacing] <8.5> (7390')(7496'-29062')	Phoenix 6H AWB	3/18/2022



Actual Wellpath Report

Phoenix 6H AWP Proj: 29087'
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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 6H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 6H AWB
Slot	Slot 06		

COMMENTS

Wellpath general comments
 API: 47-061-01890-0000
 BH Job #: 111185279
 Rig: Patterson 277
 Duration: 3/19/2022 - 3/25/2022

01_Gyro Surveys [Northseeking] (50'-2650')
 02_Tally MWD Surveys [OWSG MWD REV.2+HRGM] (2650')(2853'-7390')
 03_ATK Curve [HRGM+Short Spacing] <8.5> (7390')(7496'-29062')
 Final Survey MD @ 29062'
 Projected MD at TD: 29087'