

NORTHEAST NATURAL ENERGY, LLC

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

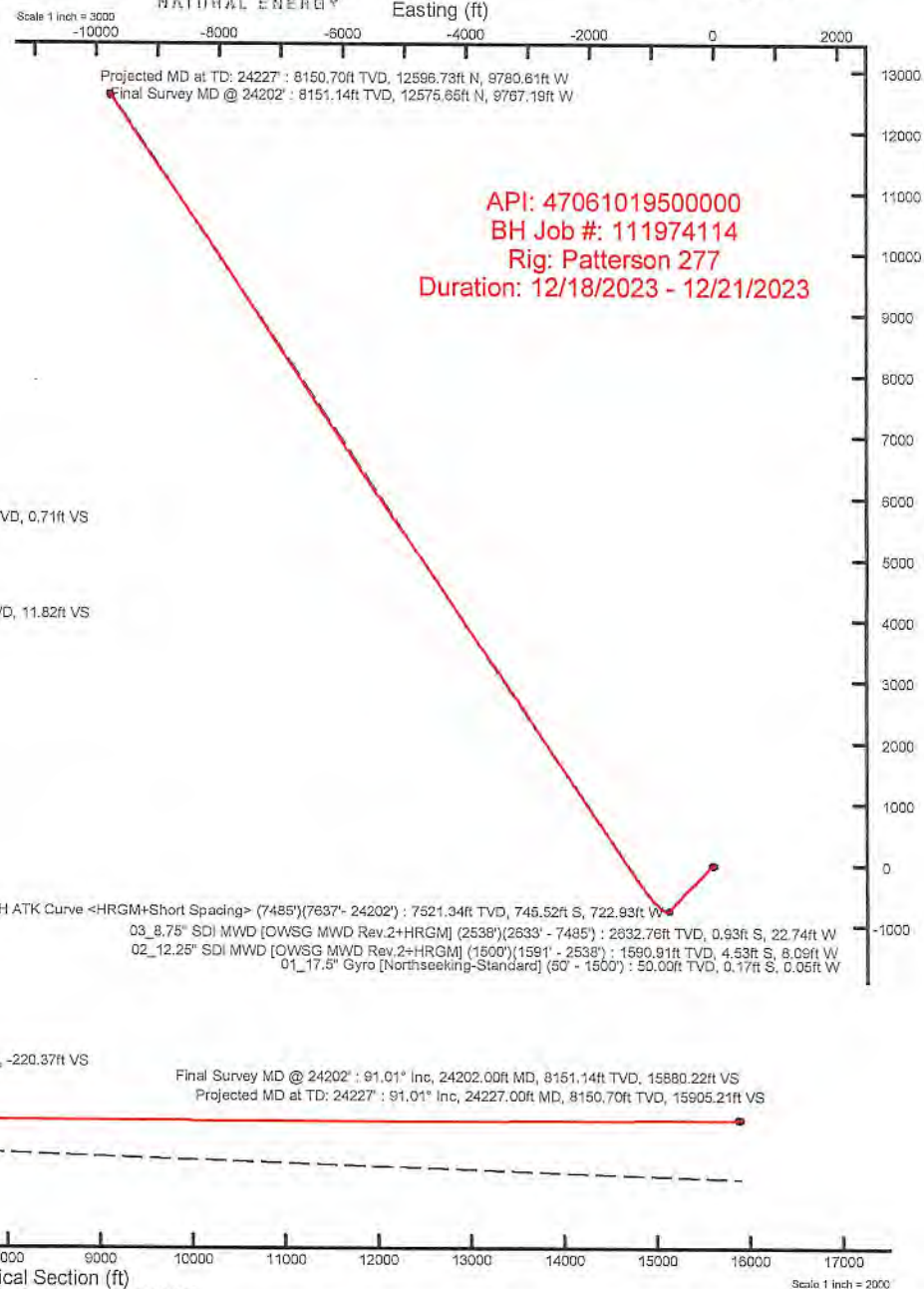
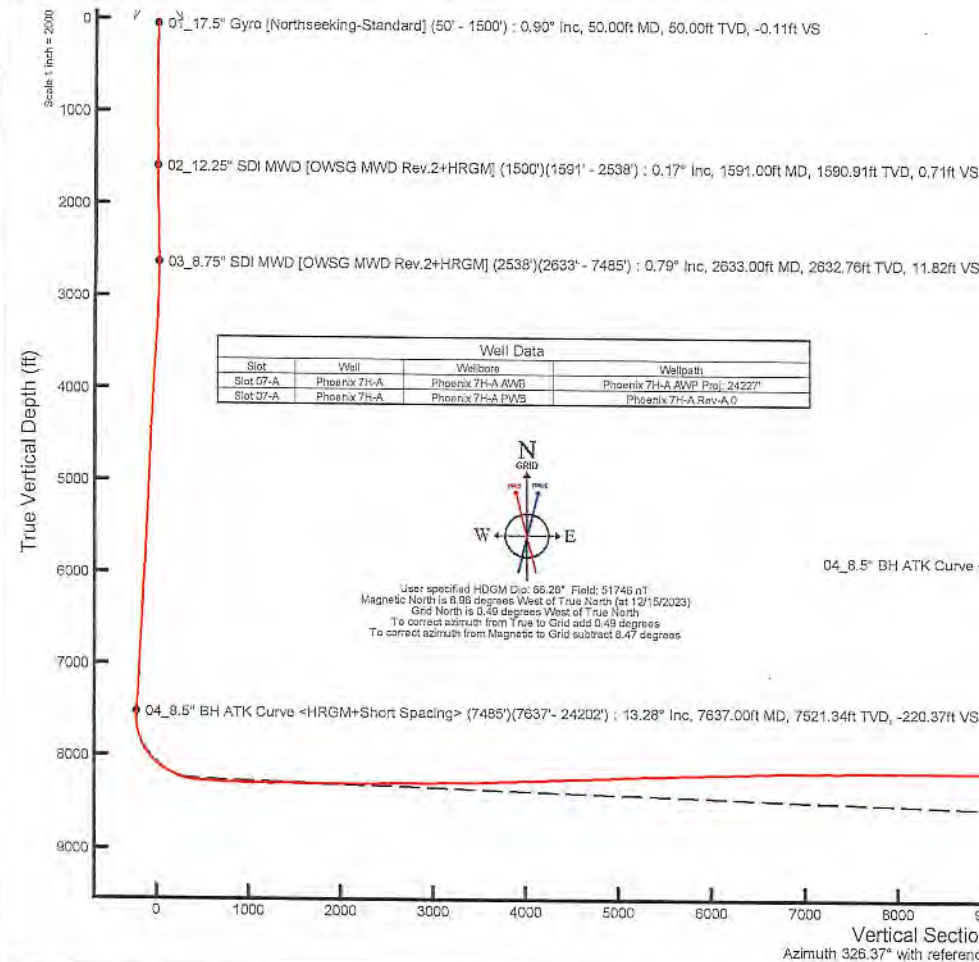
Slot: Slot 07-A
Well: Phoenix 7H-A
Wellbore: Phoenix 7H-A PWB



MD reference is Phoenix 2H-A (4424)	Grid System: NAD83 (NAD83) and UTM (UTM) Zone 18N
The wellbore depth is measured in feet (ft) from the surface	Depth Reference: 4424 (ft)
Reference is provided for the 1st and 2nd of the 2H-A (4424) group	Slot: 1st of 2H-A
Reference is provided for the 1st and 2nd of the 2H-A (4424) group	Reference is provided for the 1st and 2nd of the 2H-A (4424) group
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Location Information					
Facility Name:	Grid East (US B)	Grid North (US B)	Latitude	Longitude	
Phoenix Pad	1751051.380	616618.940	39°34'23.5583"N	82°19'19.5414"W	
Slot:	Local N (B)	Local E (B)	Latitude	Longitude	
Slot 07-A	18.32	-19.74	1751032.240	616635.260	
Patterson 277 (RKB) to Ground level (M Slot: Slot 07-A)					285
Mean Sea Level to Ground level (M Slot: Slot 07-A)					-1503H
Patterson 277 (RKB) to Mean Sea Level					1521H

Well Profile Data									
Design Comment	MD (ft)	Inc. (°)	Az. (°)	TVD (ft)	Local N (B)	Local E (B)	CLS (°/100ft)	VS (ft)	
Top Of	7485.00	13.60	223.55	7273.27	-717.87	-720.27	0.84	-208.68	
Projection	7658.00	12.62	220.55	7541.81	-745.11	-756.48	0.55	-220.55	
Build+Turn	6459.27	59.51	320.624	8196.70	-540.44	-1014.89	2.33	112.09	
Landing Pt	8720.55	86.00	326.373	8250.00	-293.72	-1156.05	9.00	417.85	
BHL	24227.43	89.00	326.373	8730.83	12502.11	-9772.67	0.00	15905.29	



API: 47061019500000
BH Job #: 111974114
Rig: Patterson 277
Duration: 12/18/2023 - 12/21/2023

Final Survey MD @ 24202' : 91.01° Inc, 24202.00ft MD, 8151.14ft TVD, 15880.22ft VS
Projected MD at TD: 24227' : 91.01° Inc, 24227.00ft MD, 8150.70ft TVD, 15905.21ft VS

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Actual Wellpath Report

Phoenix 7H-A AWP Proj: 24227'
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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 7H-A
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 7H-A AWB
Slot	Slot 07-A		

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	12/23/2023 at 12:22:51 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	18.32	-19.74	1751032.24	416635.26	39°38'28.7383"N	80°16'20.0958"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 07-A)	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	326.37°

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Actual Wellpath Report

Phoenix 7H-A AWP Proj: 24227'

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Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 7H-A AWB
Slot	Slot 07-A		

WELLPATH DATA (273 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
0.00†	0.000	196.900	0.00	-1531.00	0.00	0.00	0.00	1751032.24	416635.26	39°38'28.7383"N	80°16'20.0958"W	0.00	0.00	0.00
28.00	0.000	196.900	28.00	-1503.00	0.00	0.00	0.00	1751032.24	416635.26	39°38'28.7383"N	80°16'20.0958"W	0.00	0.00	0.00
50.00	0.900	196.900	50.00	-1481.00	-0.11	-0.17	-0.05	1751032.19	416635.09	39°38'28.7367"N	80°16'20.0964"W	4.09	4.09	0.00
100.00	1.050	187.580	99.99	-1431.01	-0.70	-1.00	-0.22	1751032.02	416634.26	39°38'28.7284"N	80°16'20.0985"W	0.44	0.30	-18.64
150.00	1.060	171.090	149.98	-1381.02	-1.47	-1.91	-0.21	1751032.03	416633.35	39°38'28.7194"N	80°16'20.0983"W	0.61	0.02	-32.98
200.00	0.600	171.140	199.98	-1331.02	-2.13	-2.62	-0.10	1751032.14	416632.64	39°38'28.7124"N	80°16'20.0968"W	0.92	-0.92	0.10
250.00	0.560	161.950	249.98	-1281.02	-2.60	-3.11	0.01	1751032.25	416632.15	39°38'28.7075"N	80°16'20.0952"W	0.20	-0.08	-18.38
300.00	0.520	163.440	299.97	-1231.03	-3.05	-3.56	0.15	1751032.39	416631.70	39°38'28.7031"N	80°16'20.0934"W	0.08	-0.08	2.98
350.00	0.470	190.490	349.97	-1181.03	-3.42	-3.98	0.18	1751032.42	416631.28	39°38'28.6990"N	80°16'20.0930"W	0.47	-0.10	54.10
400.00	0.340	171.060	399.97	-1131.03	-3.70	-4.33	0.17	1751032.41	416630.93	39°38'28.6955"N	80°16'20.0931"W	0.37	-0.26	-38.86
450.00	0.260	171.790	449.97	-1081.03	-3.94	-4.59	0.21	1751032.45	416630.67	39°38'28.6930"N	80°16'20.0926"W	0.16	-0.16	1.46
500.00	0.270	172.650	499.97	-1031.03	-4.14	-4.82	0.24	1751032.48	416630.44	39°38'28.6907"N	80°16'20.0922"W	0.02	0.02	1.72
550.00	0.300	168.720	549.97	-981.03	-4.37	-5.06	0.28	1751032.52	416630.20	39°38'28.6883"N	80°16'20.0916"W	0.07	0.06	-7.86
600.00	0.420	180.260	599.97	-931.03	-4.64	-5.37	0.30	1751032.54	416629.89	39°38'28.6852"N	80°16'20.0913"W	0.28	0.24	23.08
650.00	0.440	184.190	649.97	-881.03	-4.95	-5.75	0.29	1751032.53	416629.51	39°38'28.6815"N	80°16'20.0914"W	0.07	0.04	7.86
700.00	0.280	143.830	699.97	-831.03	-5.22	-6.04	0.35	1751032.59	416629.22	39°38'28.6786"N	80°16'20.0907"W	0.58	-0.32	-80.72
750.00	0.250	185.470	749.96	-781.04	-5.43	-6.25	0.41	1751032.65	416629.01	39°38'28.6766"N	80°16'20.0899"W	0.38	-0.06	83.28
800.00	0.450	219.320	799.96	-731.04	-5.57	-6.51	0.27	1751032.51	416628.75	39°38'28.6740"N	80°16'20.0916"W	0.56	0.40	67.70
850.00	0.390	262.610	849.96	-681.04	-5.55	-6.68	-0.02	1751032.22	416628.58	39°38'28.6723"N	80°16'20.0953"W	0.63	-0.12	86.58
900.00	0.550	268.160	899.96	-631.04	-5.35	-6.71	-0.43	1751031.81	416628.55	39°38'28.6719"N	80°16'20.1005"W	0.33	0.32	11.10
950.00	0.560	274.300	949.96	-581.04	-5.07	-6.70	-0.91	1751031.33	416628.56	39°38'28.6720"N	80°16'20.1067"W	0.12	0.02	12.28
1000.00	0.730	287.880	999.96	-531.04	-4.67	-6.58	-1.46	1751030.78	416628.68	39°38'28.6731"N	80°16'20.1137"W	0.46	0.34	27.16
1050.00	0.740	289.220	1049.95	-481.05	-4.17	-6.38	-2.07	1751030.17	416628.88	39°38'28.6751"N	80°16'20.1215"W	0.04	0.02	2.68
1100.00	0.920	302.370	1099.95	-431.05	-3.54	-6.06	-2.71	1751029.53	416629.20	39°38'28.6782"N	80°16'20.1297"W	0.52	0.36	26.30
1150.00	0.970	303.540	1149.94	-381.06	-2.79	-5.61	-3.40	1751028.84	416629.65	39°38'28.6826"N	80°16'20.1386"W	0.11	0.10	2.34
1200.00	0.800	308.110	1199.93	-331.07	-2.02	-5.13	-4.06	1751028.18	416630.13	39°38'28.6872"N	80°16'20.1471"W	0.20	-0.14	9.14
1250.00	0.940	290.930	1249.93	-281.07	-1.32	-4.74	-4.76	1751027.48	416630.52	39°38'28.6910"N	80°16'20.1560"W	0.56	0.08	-34.36
1300.00	0.930	253.860	1299.92	-231.08	-0.86	-4.71	-5.53	1751026.71	416630.55	39°38'28.6913"N	80°16'20.1659"W	1.19	-0.02	-74.14
1350.00	0.500	240.870	1349.92	-181.08	-0.72	-4.93	-6.11	1751026.13	416630.33	39°38'28.6890"N	80°16'20.1733"W	0.92	-0.86	-26.38
1400.00	0.460	278.480	1399.91	-131.09	-0.57	-5.01	-6.50	1751025.74	416630.25	39°38'28.6882"N	80°16'20.1783"W	0.63	-0.08	75.62

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Actual Wellpath Report

Phoenix 7H-A AWP Proj: 24227'

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Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 7H-A AWB
Slot	Slot 07-A		

WELLPATH DATA (273 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
1450.00	0.760	293.880	1449.91	-81.09	-0.16	-4.84	-7.00	1751025.24	416630.42	39°38'28.6898"N	80°16'20.1847"W	0.68	0.60	30.80
1500.00	0.550	280.690	1499.91	-31.09	0.29	-4.87	-7.54	1751024.70	416630.59	39°38'28.6915"N	80°16'20.1918"W	0.51	-0.42	-26.38
1591.00	0.170	293.860	1590.91	59.91	0.71	-4.53	-8.09	1751024.15	416630.73	39°38'28.6928"N	80°16'20.1987"W	0.42	-0.42	14.47
1686.00	0.600	296.800	1685.90	154.90	1.26	-4.25	-8.66	1751023.58	416631.01	39°38'28.6956"N	80°16'20.2080"W	0.45	0.45	3.09
1781.00	0.590	252.230	1780.90	249.90	1.83	-4.17	-9.57	1751022.67	416631.09	39°38'28.6962"N	80°16'20.2177"W	0.48	-0.01	-46.92
1875.00	0.620	242.280	1874.89	343.89	2.01	-4.56	-10.48	1751021.76	416630.70	39°38'28.6924"N	80°16'20.2293"W	0.12	0.03	-10.59
1970.00	0.930	293.850	1969.89	438.89	2.71	-4.49	-11.64	1751020.60	416630.78	39°38'28.6930"N	80°16'20.2441"W	0.77	0.33	54.28
2065.00	1.430	300.750	2064.87	533.87	4.43	-3.57	-13.37	1751018.87	416631.69	39°38'28.7019"N	80°16'20.2663"W	0.55	0.53	7.26
2160.00	1.890	290.950	2159.83	628.83	6.78	-2.40	-15.85	1751016.39	416632.86	39°38'28.7132"N	80°16'20.2981"W	0.57	0.48	-10.32
2254.00	1.190	295.120	2253.79	722.79	8.88	-1.43	-18.18	1751014.06	416633.83	39°38'28.7226"N	80°16'20.3290"W	0.75	-0.74	4.44
2349.00	0.460	272.400	2348.78	817.78	9.94	-1.00	-19.46	1751012.79	416634.26	39°38'28.7268"N	80°16'20.3444"W	0.83	-0.77	-23.92
2444.00	0.640	267.180	2443.78	912.78	10.44	-1.01	-20.37	1751011.87	416634.25	39°38'28.7268"N	80°16'20.3560"W	0.20	0.19	-5.49
2538.00	0.730	275.240	2537.77	1006.77	11.09	-0.98	-21.49	1751010.75	416634.28	39°38'28.7268"N	80°16'20.3703"W	0.14	0.10	8.57
2633.00	0.790	269.020	2632.76	1101.76	11.82	-0.93	-22.74	1751009.50	416634.33	39°38'28.7271"N	80°16'20.3864"W	0.11	0.06	-6.55
2727.00	0.810	275.940	2726.75	1195.75	12.59	-0.88	-24.05	1751008.19	416634.38	39°38'28.7276"N	80°16'20.4031"W	0.10	0.02	7.36
2829.00	1.020	265.950	2828.74	1297.74	13.50	-0.87	-25.68	1751006.57	416634.39	39°38'28.7275"N	80°16'20.4239"W	0.26	0.21	-9.79
2927.00	1.810	219.580	2926.71	1395.71	13.48	-2.12	-27.53	1751004.71	416633.14	39°38'28.7150"N	80°16'20.4475"W	1.36	0.81	-47.32
3022.00	3.460	212.480	3021.61	1490.61	11.89	-5.70	-30.03	1751002.21	416629.56	39°38'28.6794"N	80°16'20.4790"W	1.77	1.74	-7.47
3116.00	5.950	224.440	3115.29	1584.29	9.73	-11.57	-34.96	1750997.28	416623.69	39°38'28.6210"N	80°16'20.5414"W	2.83	2.65	12.72
3211.00	8.860	222.780	3209.48	1678.48	6.99	-20.46	-43.38	1750988.86	416614.81	39°38'28.5325"N	80°16'20.6480"W	3.07	3.06	-1.75
3305.00	11.400	221.860	3302.01	1771.01	2.96	-32.69	-54.50	1750977.74	416602.57	39°38'28.4106"N	80°16'20.7888"W	2.71	2.70	-0.98
3400.00	13.110	223.460	3394.84	1863.84	-1.80	-47.50	-68.18	1750964.07	416587.76	39°38'28.2630"N	80°16'20.9620"W	1.83	1.80	1.68
3495.00	13.940	223.110	3487.21	1956.21	-6.83	-63.68	-83.41	1750948.84	416571.59	39°38'28.1019"N	80°16'21.1549"W	0.88	0.87	-0.37
3590.00	13.100	218.670	3579.58	2048.58	-12.73	-80.44	-97.96	1750934.29	416554.83	39°38'27.9350"N	80°16'21.3390"W	1.40	-0.88	-4.67
3684.00	11.640	216.880	3671.39	2140.39	-19.13	-96.34	-110.30	1750921.94	416538.92	39°38'27.7768"N	80°16'21.4951"W	1.61	-1.55	-1.90
3783.00	11.220	217.680	3768.43	2237.43	-25.55	-111.95	-122.18	1750910.06	416523.31	39°38'27.6215"N	80°16'21.6453"W	0.45	-0.42	0.81
3878.00	12.130	221.980	3861.46	2330.46	-30.99	-126.69	-134.51	1750897.74	416508.58	39°38'27.4749"N	80°16'21.8012"W	1.32	0.96	4.53
3972.00	13.660	224.690	3953.09	2422.09	-35.69	-141.92	-148.92	1750883.33	416493.35	39°38'27.3231"N	80°16'21.9838"W	1.75	1.63	2.88
4067.00	14.420	223.770	4045.25	2514.25	-40.54	-158.44	-165.00	1750867.25	416476.83	39°38'27.1585"N	80°16'22.1874"W	0.83	0.80	-0.97
4161.00	14.670	226.060	4136.24	2605.24	-45.29	-175.15	-181.66	1750850.59	416460.12	39°38'26.9919"N	80°16'22.3986"W	0.67	0.27	2.44

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Phoenix 7H-A AWP Proj: 24227'
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Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 7H-A AWB
Slot	Slot 07-A		

WELLPATH DATA (273 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
4256.00	14.850	225.180	4228.11	2697.11	-49.74	-192.08	-198.96	1750833.29	416443.19	39°38'26.8231"N	80°16'22.6179"W	0.30	0.19	-0.93
4351.00	14.360	219.700	4320.04	2789.04	-55.48	-209.73	-215.12	1750817.13	416425.55	39°38'26.6474"N	80°16'22.8225"W	1.54	-0.52	-5.77
4445.00	13.560	222.700	4411.27	2880.27	-61.43	-226.79	-230.04	1750802.21	416408.48	39°38'26.4774"N	80°16'23.0113"W	1.15	-0.85	3.19
4539.00	13.900	224.120	4502.58	2971.58	-66.43	-243.00	-245.37	1750786.88	416392.28	39°38'26.3160"N	80°16'23.2055"W	0.51	0.36	1.51
4634.00	13.730	225.190	4594.83	3063.83	-71.04	-259.13	-261.32	1750770.94	416376.14	39°38'26.1552"N	80°16'23.4075"W	0.32	-0.18	1.13
4732.00	13.190	228.450	4690.14	3159.14	-74.83	-274.75	-277.94	1750754.32	416360.53	39°38'25.9995"N	80°16'23.6183"W	0.95	-0.55	3.33
4827.00	11.600	226.840	4782.92	3251.92	-77.91	-288.47	-293.01	1750739.24	416346.81	39°38'25.8626"N	80°16'23.8095"W	1.71	-1.67	-1.69
4921.00	11.410	223.700	4875.04	3344.04	-81.51	-301.66	-306.33	1750725.93	416333.82	39°38'25.7311"N	80°16'23.9783"W	0.70	-0.20	-3.34
5016.00	11.610	224.120	4968.12	3437.12	-85.60	-315.31	-319.48	1750712.78	416319.97	39°38'25.5950"N	80°16'24.1448"W	0.23	0.21	0.44
5111.00	11.620	225.070	5061.18	3530.18	-89.34	-328.81	-333.02	1750699.24	416306.47	39°38'25.4605"N	80°16'24.3165"W	0.41	0.01	2.05
5206.00	12.170	227.430	5154.14	3623.14	-92.61	-342.23	-347.29	1750684.97	416293.06	39°38'25.3267"N	80°16'24.4973"W	0.65	0.58	1.43
5301.00	13.190	226.270	5246.82	3715.82	-96.07	-356.49	-362.50	1750669.77	416278.79	39°38'25.1844"N	80°16'24.6902"W	1.11	1.07	-1.22
5395.00	13.030	221.420	5338.37	3807.37	-100.68	-371.85	-377.26	1750655.01	416263.43	39°38'25.0314"N	80°16'24.8771"W	1.18	-0.17	-5.16
5490.00	11.990	221.090	5431.12	3900.12	-106.04	-387.32	-390.83	1750641.44	416247.96	39°38'24.8773"N	80°16'25.0489"W	1.10	-1.09	-0.35
5585.00	11.480	226.310	5524.14	3993.14	-110.29	-401.28	-404.14	1750628.13	416234.01	39°38'24.7383"N	80°16'25.2175"W	1.25	-0.56	5.49
5683.00	13.290	228.090	5619.86	4088.86	-113.62	-415.53	-419.56	1750612.70	416219.76	39°38'24.5961"N	80°16'25.4131"W	1.91	1.87	1.82
5778.00	14.540	227.520	5712.07	4181.07	-117.02	-430.87	-436.48	1750595.78	416204.41	39°38'24.4430"N	80°16'25.6277"W	1.32	1.32	-0.60
5873.00	15.440	225.270	5803.83	4272.83	-121.29	-447.83	-454.26	1750578.00	416187.46	39°38'24.2740"N	80°16'25.8531"W	1.13	0.95	-2.37
5967.00	14.880	222.280	5894.56	4363.56	-126.64	-465.56	-471.27	1750561.00	416169.72	39°38'24.0972"N	80°16'26.0686"W	1.02	-0.60	-3.18
6062.00	13.770	216.110	5986.61	4455.61	-133.53	-483.73	-486.14	1750546.13	416151.56	39°38'23.9165"N	80°16'26.2568"W	1.99	-1.17	-6.49
6156.00	12.550	220.780	6078.15	4547.15	-140.14	-500.50	-499.41	1750532.86	416134.79	39°38'23.7496"N	80°16'26.4243"W	1.72	-1.30	4.97
6251.00	12.670	223.990	6170.86	4639.86	-145.15	-515.81	-513.39	1750518.89	416119.48	39°38'23.5971"N	80°16'26.6013"W	0.75	0.13	3.38
6346.00	12.030	224.230	6263.66	4732.66	-149.47	-530.40	-527.53	1750504.75	416104.89	39°38'23.4517"N	80°16'26.7805"W	0.68	-0.67	0.25
6441.00	11.940	224.160	6356.59	4825.59	-153.63	-544.54	-541.28	1750490.99	416090.75	39°38'23.3108"N	80°16'26.9547"W	0.10	-0.09	-0.07
6539.00	12.610	222.410	6452.35	4921.35	-158.35	-559.71	-555.56	1750476.72	416075.58	39°38'23.1596"N	80°16'27.1355"W	0.78	0.68	-1.79
6633.00	12.240	220.100	6544.15	5013.15	-163.62	-574.91	-568.89	1750463.38	416060.38	39°38'23.0083"N	80°16'27.3043"W	0.66	-0.39	-2.46
6728.00	12.130	218.930	6637.01	5106.01	-169.43	-590.38	-581.65	1750450.62	416044.92	39°38'22.8544"N	80°16'27.4657"W	0.28	-0.12	-1.23
6823.00	11.930	222.260	6729.92	5198.92	-174.82	-605.41	-594.53	1750437.75	416029.89	39°38'22.7047"N	80°16'27.6286"W	0.76	-0.21	3.51
6918.00	12.790	222.310	6822.72	5291.72	-179.77	-620.45	-608.21	1750424.07	416014.84	39°38'22.5549"N	80°16'27.8019"W	0.91	0.91	0.05
7013.00	13.490	224.710	6915.23	5384.23	-184.56	-636.11	-623.08	1750409.19	415999.19	39°38'22.3989"N	80°16'27.9903"W	0.93	0.74	2.53

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Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 7H-A
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 7H-A AWB
Slot	Slot 07-A		

WELLPATH DATA (273 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
7107.00	13.150	223.580	7006.70	5475.70	-189.15	-651.65	-638.17	1750394.11	415983.65	39°38'22.2441"N	80°16'28.1813"W	0.46	-0.36	-1.22
7202.00	13.410	225.190	7099.16	5568.16	-193.68	-667.24	-653.43	1750378.85	415968.06	39°38'22.0886"N	80°16'28.3747"W	0.48	0.27	1.72
7297.00	14.540	225.830	7191.35	5680.35	-198.00	-683.31	-669.80	1750362.48	415951.99	39°38'21.9284"N	80°16'28.5822"W	1.20	1.18	0.67
7391.00	14.320	220.210	7282.39	5751.39	-203.39	-700.41	-685.77	1750346.51	415934.89	39°38'21.7580"N	80°16'28.7844"W	1.51	-0.23	-5.98
7485.00	13.820	220.550	7373.57	5842.57	-209.69	-717.82	-700.57	1750331.71	415917.48	39°38'21.5847"N	80°16'28.9717"W	0.54	-0.53	0.36
7637.00	13.280	217.200	7521.34	5990.34	-220.37	-745.52	-722.93	1750309.36	415889.78	39°38'21.3091"N	80°16'29.2544"W	0.63	-0.36	-2.20
7701.00	13.230	235.510	7583.66	6052.66	-222.89	-755.53	-733.41	1750298.87	415879.78	39°38'21.2093"N	80°16'29.3874"W	6.53	-0.08	28.61
7795.00	14.450	270.250	7675.08	6144.08	-216.51	-761.58	-754.04	1750278.24	415873.73	39°38'21.1477"N	80°16'29.6504"W	8.80	1.30	36.96
7889.00	18.240	291.930	7765.35	6234.35	-197.81	-756.03	-779.45	1750252.84	415879.28	39°38'21.2005"N	80°16'29.9758"W	7.57	4.03	23.06
7982.00	26.010	299.810	7851.46	6320.46	-167.52	-740.43	-810.70	1750221.59	415894.88	39°38'21.3520"N	80°16'30.3769"W	8.93	8.35	8.47
8076.00	32.230	310.080	7933.59	6402.59	-124.95	-714.00	-847.82	1750184.47	415921.30	39°38'21.6100"N	80°16'30.8543"W	8.47	6.62	10.93
8170.00	39.980	316.550	8009.50	6478.50	-71.03	-675.87	-887.85	1750144.45	415959.43	39°38'21.9834"N	80°16'31.3701"W	9.18	8.24	6.88
8264.00	49.330	315.020	8076.30	6545.30	-6.18	-628.62	-933.92	1750098.38	416006.68	39°38'22.4464"N	80°16'31.9642"W	10.01	9.95	-1.63
8358.00	57.000	319.260	8132.63	6601.63	68.02	-573.44	-984.93	1750047.37	416061.85	39°38'22.9874"N	80°16'32.6224"W	8.92	8.16	4.51
8452.00	62.590	321.590	8179.90	6648.90	148.78	-510.82	-1036.62	1749995.68	416124.47	39°38'23.6018"N	80°16'33.2900"W	6.82	5.95	2.48
8546.00	69.140	321.370	8218.32	6687.32	234.21	-443.75	-1090.02	1749942.28	416191.54	39°38'24.2601"N	80°16'33.9800"W	6.97	6.97	-0.23
8639.00	76.580	323.320	8245.71	6714.71	322.79	-373.42	-1144.25	1749888.06	416261.86	39°38'24.9504"N	80°16'34.6809"W	8.25	8.00	2.10
8734.00	84.020	325.720	8261.71	6730.71	416.31	-297.22	-1198.54	1749833.77	416338.06	39°38'25.6989"N	80°16'35.3833"W	8.22	7.83	2.53
8829.00	88.000	325.730	8268.32	6737.32	511.06	-218.92	-1251.90	1749780.42	416416.35	39°38'26.4681"N	80°16'36.0740"W	4.19	4.19	0.01
8924.00	86.270	325.380	8273.06	6742.06	605.92	-140.68	-1305.56	1749726.76	416494.59	39°38'27.2368"N	80°16'36.7686"W	1.86	-1.82	-0.37
9019.00	87.140	326.750	8278.52	6747.52	700.76	-61.99	-1358.51	1749673.82	416573.27	39°38'28.0099"N	80°16'37.4541"W	1.71	0.92	1.44
9113.00	88.000	327.060	8282.51	6751.51	794.67	16.89	-1409.79	1749622.54	416651.95	39°38'28.7830"N	80°16'38.1183"W	0.97	0.91	0.33
9208.00	89.080	326.950	8284.93	6753.93	889.84	96.34	-1461.50	1749570.83	416731.59	39°38'29.5658"N	80°16'38.7881"W	1.14	1.14	-0.12
9303.00	88.710	326.250	8286.76	6755.76	984.62	175.63	-1513.79	1749518.54	416810.88	39°38'30.3449"N	80°16'39.4653"W	0.83	-0.39	-0.74
9397.00	88.920	327.170	8288.71	6757.71	1078.59	254.19	-1565.37	1749466.96	416889.43	39°38'31.1169"N	80°16'40.1333"W	1.00	0.22	0.98
9492.00	88.400	325.240	8290.93	6759.93	1173.56	333.11	-1618.20	1749414.14	416968.35	39°38'31.8923"N	80°16'40.8173"W	2.10	-0.55	-2.03
9587.00	90.520	326.490	8291.82	6760.82	1268.55	411.74	-1671.50	1749360.84	417046.97	39°38'32.6648"N	80°16'41.5073"W	2.59	2.23	1.32
9682.00	90.400	327.170	8291.06	6760.06	1363.54	491.25	-1723.47	1749308.87	417126.48	39°38'33.4461"N	80°16'42.1805"W	0.73	-0.13	0.72
9776.00	89.600	326.020	8291.06	6760.06	1457.54	569.72	-1775.22	1749257.12	417204.95	39°38'34.2172"N	80°16'42.8507"W	1.49	-0.85	-1.22
9871.00	88.650	326.730	8292.51	6761.51	1552.52	648.82	-1827.82	1749204.63	417284.04	39°38'34.9943"N	80°16'43.5319"W	1.25	-1.00	0.75

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Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 7H-A
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 7H-A AWB
Slot	Slot 07-A		

WELLPATH DATA (273 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
9965.00	89.140	323.960	8294.32	6763.32	1646.48	726.12	-1881.26	1749151.09	417361.33	39°38'35.7537"N	80°16'44.2235"W	2.99	0.52	-2.95
10060.00	89.230	327.060	8295.68	6764.68	1741.45	804.40	-1935.04	1749097.32	417439.61	39°38'36.5227"N	80°16'44.9197"W	3.26	0.09	3.26
10155.00	88.950	327.100	8297.18	6766.18	1836.43	884.14	-1986.67	1749045.70	417519.34	39°38'37.3063"N	80°16'45.5884"W	0.30	-0.29	0.04
10250.00	90.550	326.080	8297.60	6766.60	1931.43	963.43	-2038.97	1748993.39	417596.64	39°38'38.0855"N	80°16'46.2658"W	2.00	1.68	-1.07
10344.00	90.490	327.260	8298.75	6765.75	2025.42	1041.97	-2090.62	1748941.75	417677.16	39°38'38.8572"N	80°16'46.9348"W	1.26	-0.06	1.26
10439.00	90.550	326.560	8295.88	6764.88	2120.41	1121.56	-2142.48	1748889.89	417756.75	39°38'39.6392"N	80°16'47.5066"W	0.74	0.06	-0.74
10534.00	91.050	327.090	8294.56	6763.56	2215.40	1201.06	-2194.46	1748837.91	417836.25	39°38'40.4205"N	80°16'48.2798"W	0.77	0.53	0.56
10629.00	90.580	326.390	8293.21	6762.21	2310.38	1280.49	-2246.56	1748785.82	417915.68	39°38'41.2010"N	80°16'48.9546"W	0.89	-0.49	-0.74
10724.00	91.020	327.040	8291.88	6760.88	2405.37	1359.90	-2298.69	1748733.69	417995.08	39°38'41.9813"N	80°16'49.6298"W	0.83	0.46	0.68
10819.00	91.320	327.390	8289.94	6758.94	2500.34	1439.75	-2350.12	1748682.27	418074.92	39°38'42.7660"N	80°16'50.2961"W	0.49	0.32	0.37
10913.00	88.800	326.600	8289.84	6758.84	2594.33	1518.57	-2401.32	1748631.07	418153.74	39°38'43.5406"N	80°16'50.9594"W	2.81	-2.68	-0.84
11008.00	90.860	325.950	8290.12	6759.12	2689.32	1597.58	-2454.06	1748578.33	418232.74	39°38'44.3166"N	80°16'51.6424"W	2.27	2.17	-0.68
11103.00	90.830	326.610	8288.72	6757.72	2784.31	1676.59	-2506.79	1748525.60	418311.75	39°38'45.0931"N	80°16'52.3252"W	0.70	-0.03	0.69
11198.00	90.920	326.770	8287.27	6756.27	2879.30	1755.97	-2558.95	1748473.44	418391.13	39°38'45.8731"N	80°16'53.0009"W	0.19	0.09	0.17
11292.00	90.580	326.480	8286.04	6755.04	2973.29	1834.46	-2610.66	1748421.74	418469.61	39°38'46.6444"N	80°16'53.6706"W	0.48	-0.36	-0.31
11387.00	90.890	326.910	8284.82	6753.82	3068.28	1913.86	-2662.82	1748369.58	418549.00	39°38'47.4245"N	80°16'54.3462"W	0.56	0.33	0.45
11481.00	91.050	326.940	8283.23	6752.23	3162.26	1992.61	-2714.11	1748318.29	418627.75	39°38'48.1984"N	80°16'55.0107"W	0.17	0.17	0.03
11576.00	90.800	326.800	8281.70	6750.70	3257.25	2072.16	-2766.03	1748266.38	418707.29	39°38'48.9800"N	80°16'55.6832"W	0.30	-0.26	-0.15
11671.00	90.460	326.730	8280.65	6749.65	3352.24	2151.61	-2818.09	1748214.32	418786.74	39°38'49.7608"N	80°16'56.3576"W	0.37	-0.36	-0.07
11765.00	90.710	326.890	8279.69	6748.69	3446.23	2230.27	-2869.55	1748162.87	418865.40	39°38'50.5337"N	80°16'57.0241"W	0.32	0.27	0.17
11860.00	91.600	326.910	8277.78	6746.78	3541.21	2309.84	-2921.41	1748111.00	418944.96	39°38'51.3156"N	80°16'57.6960"W	0.94	0.94	0.02
11955.00	91.850	327.330	8274.92	6743.92	3636.15	2389.59	-2972.96	1748059.46	419024.70	39°38'52.0992"N	80°16'58.3639"W	0.51	0.26	0.44
12049.00	92.250	327.840	8271.56	6740.56	3730.07	2468.89	-3023.32	1748009.10	419104.00	39°38'52.8786"N	80°16'59.0165"W	0.69	0.43	0.54
12144.00	92.030	328.800	8268.01	6737.01	3824.95	2549.68	-3073.18	1747959.25	419184.78	39°38'53.6727"N	80°16'59.6629"W	1.04	-0.23	1.01
12238.00	92.090	325.950	8264.63	6733.63	3918.86	2628.78	-3123.82	1747908.61	419263.88	39°38'54.4501"N	80°17'0.3191"W	3.03	0.06	-8.03
12333.00	91.750	325.460	8261.45	6730.45	4013.80	2707.22	-3177.32	1747855.12	419342.32	39°38'55.2207"N	80°17'1.0117"W	0.63	-0.36	-0.52
12428.00	91.940	324.350	8258.39	6727.39	4108.72	2784.91	-3231.90	1747800.53	419420.00	39°38'55.9837"N	80°17'1.7182"W	1.18	0.20	-1.17
12523.00	92.990	326.270	8254.30	6723.30	4203.61	2862.95	-3285.92	1747746.52	419498.03	39°38'56.7503"N	80°17'2.4175"W	2.30	1.11	2.02
12618.00	91.850	326.690	8249.29	6719.29	4298.53	2942.08	-3338.33	1747694.11	419577.16	39°38'57.5277"N	80°17'3.0964"W	1.28	-1.20	0.44
12713.00	93.050	327.320	8246.28	6715.23	4393.43	3021.68	-3390.02	1747642.43	419656.75	39°38'58.3100"N	80°17'3.7660"W	1.43	1.26	0.66

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MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
12807.00	92.830	326.890	8241.41	6710.41	4487.30	3100.50	-3441.00	1747591.45	419735.57	39°38'59.0845"N	80°17'4.4266"W	0.51	-0.23	-0.46
12901.00	91.290	326.010	8238.03	6707.03	4581.23	3178.79	-3492.92	1747539.54	419813.86	39°38'59.8537"N	80°17'5.0990"W	1.89	-1.64	-0.94
12996.00	93.020	324.390	8234.46	6703.46	4676.14	3256.74	-3547.09	1747485.36	419891.80	39°39'0.6194"N	80°17'5.8003"W	2.49	1.82	-1.71
13091.00	91.630	326.070	8230.60	6699.60	4771.04	3334.71	-3601.22	1747431.24	419969.76	39°39'1.3852"N	80°17'6.5010"W	2.29	-1.46	1.77
13185.00	91.510	324.610	8228.03	6697.03	4864.99	3412.00	-3654.66	1747377.81	420047.05	39°39'2.1444"N	80°17'7.1928"W	1.56	-0.13	-1.55
13280.00	93.600	326.020	8223.79	6692.79	4959.87	3490.03	-3708.66	1747323.80	420125.08	39°39'2.9109"N	80°17'7.8919"W	2.65	2.20	1.48
13375.00	92.460	326.030	8218.77	6687.77	5054.73	3568.70	-3761.68	1747270.79	420203.74	39°39'3.6838"N	80°17'8.5784"W	1.20	-1.20	0.01
13470.00	92.560	325.810	8214.61	6683.61	5149.64	3647.31	-3814.86	1747217.62	420282.34	39°39'4.4561"N	80°17'9.2671"W	0.25	0.11	-0.23
13564.00	91.600	326.290	8211.20	6680.20	5243.57	3725.23	-3867.32	1747165.16	420360.26	39°39'5.2216"N	80°17'9.9465"W	1.14	-1.02	0.51
13659.00	91.480	326.570	8208.65	6677.65	5338.54	3804.36	-3919.83	1747112.65	420439.38	39°39'5.9990"N	80°17'10.6267"W	0.32	-0.13	0.29
13754.00	90.370	326.590	8207.11	6676.11	5433.52	3883.64	-3972.15	1747060.34	420518.66	39°39'6.7780"N	80°17'11.3044"W	1.17	-1.17	0.02
13848.00	92.990	325.820	8204.36	6673.36	5527.47	3961.71	-4024.40	1747008.08	420596.73	39°39'7.5451"N	80°17'11.9812"W	2.90	2.79	-0.82
13942.00	91.820	326.690	8200.41	6669.41	5621.39	4039.81	-4076.57	1746955.92	420674.82	39°39'8.3123"N	80°17'12.6569"W	1.55	-1.24	0.93
14037.00	92.060	327.330	8197.20	6666.20	5716.33	4119.44	-4128.27	1746904.22	420754.45	39°39'9.0948"N	80°17'13.3268"W	0.72	0.25	0.67
14132.00	90.980	326.180	8194.68	6663.68	5811.29	4198.86	-4180.33	1746852.17	420833.87	39°39'9.8752"N	80°17'14.0012"W	1.66	-1.14	-1.21
14227.00	91.510	325.970	8192.61	6661.61	5906.26	4277.67	-4233.34	1746799.16	420912.67	39°39'10.6495"N	80°17'14.6877"W	0.60	0.56	-0.22
14322.00	91.290	325.860	8190.29	6659.29	6001.23	4356.33	-4286.58	1746745.94	420991.32	39°39'11.4222"N	80°17'15.3770"W	0.26	-0.23	-0.12
14416.00	90.980	325.870	8188.43	6657.43	6095.21	4434.12	-4339.30	1746693.21	421069.11	39°39'12.1864"N	80°17'16.0600"W	0.33	-0.33	0.01
14511.00	92.370	326.480	8185.65	6654.65	6190.17	4513.00	-4392.16	1746640.35	421147.99	39°39'12.9614"N	80°17'16.7446"W	1.60	1.46	0.64
14606.00	91.600	327.140	8182.36	6651.36	6285.11	4592.46	-4444.13	1746588.38	421227.44	39°39'13.7420"N	80°17'17.4180"W	1.07	-0.81	0.69
14700.00	91.690	326.400	8179.66	6648.66	6379.08	4671.05	-4495.62	1746536.89	421306.03	39°39'14.5143"N	80°17'18.0851"W	0.79	0.10	-0.79
14794.00	91.020	326.040	8177.44	6646.44	6473.04	4749.16	-4547.87	1746484.85	421384.13	39°39'15.2817"N	80°17'18.7618"W	0.81	-0.71	-0.38
14889.00	92.340	327.860	8174.65	6643.65	6567.98	4828.75	-4599.68	1746432.87	421463.71	39°39'16.0637"N	80°17'19.4328"W	2.37	1.39	1.92
14984.00	91.350	326.180	8171.60	6640.60	6662.93	4908.40	-4651.34	1746381.19	421543.36	39°39'16.8464"N	80°17'20.1026"W	2.05	-1.04	-1.77
15079.00	90.980	325.850	8169.66	6638.66	6757.90	4987.15	-4704.43	1746328.10	421622.11	39°39'17.6201"N	80°17'20.7902"W	0.52	-0.39	-0.35
15173.00	90.710	325.900	8168.28	6637.28	6851.89	5064.96	-4757.16	1746275.37	421699.91	39°39'18.3844"N	80°17'21.4731"W	0.29	-0.29	0.05
15268.00	90.520	325.940	8167.26	6636.26	6946.88	5143.64	-4810.39	1746222.14	421778.58	39°39'19.1573"N	80°17'22.1624"W	0.20	-0.20	0.04
15363.00	90.370	325.680	8166.52	6635.52	7041.87	5222.21	-4863.79	1746168.75	421857.15	39°39'19.9292"N	80°17'22.8539"W	0.33	-0.16	-0.29
15458.00	90.800	326.126	8165.55	6634.55	7136.86	5300.86	-4917.06	1746115.48	421935.80	39°39'20.7018"N	80°17'23.5439"W	0.66	0.45	0.48
15552.00	90.030	325.079	8164.87	6633.87	7230.85	5378.41	-4970.17	1746062.38	422013.34	39°39'21.4636"N	80°17'24.2316"W	1.39	-0.82	-1.12

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 7H-A
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 7H-A AWB
Slot	Slot 07-A		

WELLPATH DATA (273 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
15647.00	89.690	323.740	8165.10	6634.10	7325.79	5455.66	-5025.46	1746007.09	422090.59	39°39'22.2222"N	80°17'24.8473"W	1.45	-0.36	-1.40
15741.00	90.550	325.550	8164.90	6633.90	7419.75	5532.32	-5079.85	1745952.70	422167.24	39°39'22.9751"N	80°17'25.6513"W	2.13	0.91	1.93
15836.00	90.150	325.640	8164.32	6633.32	7514.73	5610.70	-5133.53	1745899.03	422245.62	39°39'23.7450"N	80°17'26.3464"W	0.43	-0.42	0.09
15930.00	90.180	325.940	8164.05	6633.05	7608.73	5688.44	-5186.38	1745846.18	422323.35	39°39'24.5086"N	80°17'27.0308"W	0.32	0.03	0.32
16025.00	90.520	326.190	8163.47	6632.47	7703.73	5767.25	-5239.41	1745793.15	422402.16	39°39'25.2829"N	80°17'27.7177"W	0.44	0.36	0.26
16120.00	90.030	325.240	8163.02	6632.02	7798.72	5845.74	-5292.92	1745739.64	422480.65	39°39'26.0540"N	80°17'28.4107"W	1.13	-0.52	-1.00
16214.00	91.260	325.600	8161.96	6630.96	7892.70	5923.13	-5346.27	1745686.30	422558.03	39°39'26.8141"N	80°17'29.1015"W	1.36	1.31	0.38
16308.00	89.780	325.870	8161.11	6630.11	7986.68	6000.81	-5399.19	1745633.38	422635.70	39°39'27.5772"N	80°17'29.7869"W	1.60	-1.57	0.29
16403.00	90.250	327.730	8161.08	6630.08	8081.68	6080.30	-5451.21	1745581.37	422715.19	39°39'28.3582"N	80°17'30.4608"W	2.02	0.49	1.96
16498.00	89.970	325.640	8160.90	6629.90	8176.67	6159.68	-5503.38	1745529.20	422794.57	39°39'29.1381"N	80°17'31.1369"W	2.22	-0.29	-2.20
16592.00	90.280	326.100	8160.69	6629.69	8270.67	6237.49	-5556.12	1745476.46	422872.37	39°39'29.9025"N	80°17'31.8200"W	0.59	0.33	0.49
16687.00	89.540	326.280	8160.84	6629.84	8365.66	6316.43	-5608.98	1745423.60	422951.30	39°39'30.6780"N	80°17'32.5048"W	0.80	-0.78	0.19
16781.00	91.140	326.100	8160.29	6629.29	8459.66	6394.53	-5661.29	1745371.30	423029.39	39°39'31.4452"N	80°17'33.1823"W	1.71	1.70	-0.19
16876.00	89.780	326.340	8159.52	6628.52	8554.65	6473.48	-5714.10	1745318.49	423108.35	39°39'32.2209"N	80°17'33.8665"W	1.45	-1.43	0.25
16971.00	89.660	326.020	8159.99	6628.99	8649.65	6552.41	-5766.98	1745265.61	423187.27	39°39'32.9963"N	80°17'34.5515"W	0.36	-0.13	-0.34
17065.00	89.750	325.990	8160.47	6629.47	8743.65	6630.34	-5819.53	1745213.06	423265.20	39°39'33.7619"N	80°17'35.2323"W	0.10	0.10	-0.03
17160.00	89.850	326.650	8160.80	6629.80	8838.65	6709.39	-5872.22	1745160.38	423344.24	39°39'34.5385"N	80°17'35.9148"W	0.70	0.11	0.69
17255.00	89.570	326.520	8161.28	6630.28	8933.65	6788.69	-5924.53	1745108.07	423423.53	39°39'35.3176"N	80°17'36.5926"W	0.32	-0.29	-0.14
17349.00	89.630	326.490	8161.94	6630.94	9027.64	6867.08	-5976.41	1745056.20	423501.92	39°39'36.0877"N	80°17'37.2647"W	0.07	0.06	-0.03
17444.00	89.660	325.900	8162.53	6631.53	9122.64	6946.01	-6029.26	1745003.35	423580.85	39°39'36.8632"N	80°17'37.9494"W	0.62	0.03	-0.62
17539.00	89.910	325.890	8162.88	6631.88	9217.64	7024.68	-6082.53	1744950.09	423659.51	39°39'37.6359"N	80°17'38.6394"W	0.26	0.26	-0.01
17634.00	89.910	326.080	8163.03	6632.03	9312.63	7103.42	-6135.67	1744896.94	423738.24	39°39'38.4095"N	80°17'39.3278"W	0.20	0.00	0.20
17729.00	89.820	326.050	8163.26	6632.26	9407.63	7182.24	-6188.70	1744843.91	423817.06	39°39'39.1838"N	80°17'40.0148"W	0.10	-0.09	-0.08
17823.00	89.970	326.010	8163.43	6632.43	9501.63	7260.20	-6241.23	1744791.39	423895.01	39°39'39.9496"N	80°17'40.6952"W	0.17	0.16	-0.04
17918.00	90.150	325.950	8163.33	6632.33	9596.63	7338.94	-6294.38	1744738.25	423973.75	39°39'40.7231"N	80°17'41.3837"W	0.20	0.19	-0.06
18013.00	89.660	325.610	8163.49	6632.49	9691.62	7417.49	-6347.80	1744684.82	424052.29	39°39'41.4947"N	80°17'42.0757"W	0.63	-0.52	-0.36
18108.00	89.750	326.250	8163.98	6632.98	9786.62	7496.18	-6401.02	1744631.61	424130.98	39°39'42.2677"N	80°17'42.7851"W	0.68	0.09	0.67
18202.00	90.220	326.850	8164.00	6633.00	9880.62	7574.61	-6452.84	1744579.80	424209.41	39°39'43.0383"N	80°17'43.4364"W	0.81	0.50	0.64
18297.00	88.770	326.940	8164.84	6633.84	9975.61	7654.18	-6504.72	1744527.92	424288.98	39°39'43.8201"N	80°17'44.1088"W	1.53	-1.53	0.09
18392.00	89.970	326.930	8165.88	6634.88	10070.59	7733.79	-6556.55	1744476.10	424368.58	39°39'44.6023"N	80°17'44.7805"W	1.26	1.26	-0.01

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Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 7H-A
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 7H-A AWB
Slot	Slot 07-A		

WELLPATH DATA (273 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
18487.00	89.910	326.770	8165.98	6634.98	10165.59	7813.33	-6608.49	1744424.15	424448.11	39°39'45.3838"N	80°17'45.4538"W	0.18	-0.06	-0.17
18581.00	89.970	326.880	8166.08	6635.08	10259.59	7892.01	-6659.93	1744372.72	424526.79	39°39'46.1568"N	80°17'46.1204"W	0.13	0.06	0.12
18676.00	90.090	327.400	8166.03	6635.03	10354.58	7971.81	-6711.48	1744321.17	424606.58	39°39'46.9410"N	80°17'46.7885"W	0.56	0.13	0.55
18770.00	90.150	327.340	8165.83	6634.83	10448.56	8050.97	-6762.16	1744270.49	424685.74	39°39'47.7188"N	80°17'47.4456"W	0.09	0.06	-0.06
18865.00	90.090	326.950	8165.64	6634.64	10543.56	8130.78	-6813.70	1744218.96	424765.54	39°39'48.5030"N	80°17'48.1136"W	0.42	-0.06	-0.41
18960.00	89.850	327.160	8165.69	6634.69	10638.55	8210.50	-6865.37	1744167.29	424845.26	39°39'49.2863"N	80°17'48.7833"W	0.34	-0.25	0.22
19055.00	89.230	326.770	8166.45	6635.45	10733.54	8290.14	-6917.15	1744115.51	424924.89	39°39'50.0688"N	80°17'49.4545"W	0.77	-0.65	-0.41
19149.00	89.540	326.420	8167.46	6636.46	10827.53	8368.61	-6968.90	1744063.76	425003.35	39°39'50.8397"N	80°17'50.1251"W	0.50	0.33	-0.37
19244.00	89.380	326.390	8168.35	6637.35	10922.53	8447.73	-7021.47	1744011.20	425082.48	39°39'51.6171"N	80°17'50.8062"W	0.17	-0.17	-0.03
19338.00	89.970	326.570	8168.89	6637.89	11016.53	8526.10	-7073.37	1743959.30	425160.84	39°39'52.3870"N	80°17'51.4788"W	0.66	0.63	0.19
19433.00	89.850	326.730	8169.03	6638.03	11111.53	8605.46	-7125.60	1743907.08	425240.19	39°39'53.1667"N	80°17'52.1557"W	0.21	-0.13	0.17
19528.00	89.600	327.020	8169.49	6638.49	11206.52	8685.01	-7177.51	1743855.17	425319.74	39°39'53.9483"N	80°17'52.8285"W	0.40	-0.26	0.31
19623.00	90.250	327.010	8169.62	6638.62	11301.51	8764.70	-7229.23	1743803.45	425399.43	39°39'54.7313"N	80°17'53.4989"W	0.68	0.68	-0.01
19717.00	89.750	326.370	8169.62	6638.62	11395.51	8843.26	-7280.85	1743751.83	425477.98	39°39'55.5031"N	80°17'54.1679"W	0.86	-0.53	-0.68
19812.00	90.150	327.030	8169.70	6638.70	11490.51	8922.68	-7333.01	1743699.68	425557.37	39°39'56.2832"N	80°17'54.8438"W	0.81	0.42	0.69
19907.00	90.180	327.010	8169.42	6638.42	11585.50	9002.35	-7384.72	1743647.97	425637.06	39°39'57.0662"N	80°17'55.5141"W	0.04	0.03	-0.02
20001.00	90.150	326.880	8169.15	6638.15	11679.50	9081.14	-7436.00	1743596.70	425715.84	39°39'57.8403"N	80°17'56.1787"W	0.14	-0.03	-0.14
20096.00	89.720	326.550	8169.26	6638.26	11774.50	9160.55	-7488.13	1743544.57	425795.25	39°39'58.6205"N	80°17'56.8544"W	0.57	-0.45	-0.35
20191.00	90.000	326.850	8169.49	6638.49	11869.49	9239.95	-7540.29	1743492.41	425874.65	39°39'59.4006"N	80°17'57.5304"W	0.43	0.29	0.32
20285.00	90.000	326.960	8169.49	6638.49	11963.49	9318.70	-7591.62	1743441.09	425953.39	39°40'0.1744"N	80°17'58.1957"W	0.12	0.00	0.12
20380.00	90.030	326.910	8169.47	6638.47	12058.49	9398.32	-7643.45	1743389.26	426033.00	39°40'0.9566"N	80°17'58.8675"W	0.06	0.03	-0.05
20475.00	89.940	326.830	8169.49	6638.49	12153.48	9477.87	-7695.37	1743337.34	426112.55	39°40'1.7383"N	80°17'59.5405"W	0.13	-0.09	-0.08
20569.00	90.150	326.910	8169.42	6638.42	12247.48	9556.59	-7746.74	1743285.97	426191.27	39°40'2.5117"N	80°18'0.2064"W	0.24	0.22	0.09
20664.00	89.940	326.870	8169.35	6638.35	12342.47	9636.17	-7798.64	1743234.08	426270.84	39°40'3.2935"N	80°18'0.8790"W	0.23	-0.22	-0.04
20759.00	90.150	326.650	8169.27	6638.27	12437.47	9715.62	-7850.71	1743182.01	426350.29	39°40'4.0741"N	80°18'1.5540"W	0.32	0.22	-0.23
20853.00	90.000	326.750	8169.15	6638.15	12531.47	9794.19	-7902.32	1743130.41	426428.85	39°40'4.8460"N	80°18'2.2229"W	0.19	-0.16	0.11
20948.00	90.430	327.210	8168.79	6637.79	12626.46	9873.84	-7954.09	1743078.64	426508.50	39°40'5.6286"N	80°18'2.8939"W	0.66	0.45	0.48
21043.00	90.090	327.150	8168.36	6637.36	12721.45	9953.68	-8005.58	1743027.15	426588.33	39°40'6.4131"N	80°18'3.5614"W	0.36	-0.36	-0.06
21137.00	89.940	326.920	8168.34	6637.34	12815.45	10032.54	-8056.72	1742976.01	426667.19	39°40'7.1880"N	80°18'4.2245"W	0.29	-0.16	-0.24
21232.00	89.940	326.610	8168.43	6637.43	12910.44	10112.00	-8108.79	1742923.95	426746.65	39°40'7.9686"N	80°18'4.8994"W	0.33	0.00	-0.33

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Phoenix 7H-A AWP Proj: 24227'

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 7H-A
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 7H-A AWB
Slot	Slot 07-A		

WELLPATH DATA (273 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
21327.00	89.820	326.810	8168.63	8637.63	13005.44	10191.42	-8160.93	1742871.81	426826.05	39°40'8.7488"N	80°18'5.5752"W	0.25	-0.13	0.21
21421.00	90.310	325.780	8168.53	8637.53	13099.44	10269.61	-8213.09	1742819.65	426904.24	39°40'9.5170"N	80°18'6.2512"W	1.21	0.52	-1.10
21516.00	90.220	325.750	8168.09	8637.09	13194.43	10348.15	-8266.54	1742766.21	426982.78	39°40'10.2885"N	80°18'6.9436"W	0.10	-0.09	-0.03
21610.00	91.110	325.820	8167.00	8636.00	13288.42	10425.88	-8319.39	1742713.36	427060.50	39°40'11.0519"N	80°18'7.6283"W	0.95	0.95	0.07
21705.00	90.800	325.790	8165.41	8634.41	13383.40	10504.44	-8372.78	1742659.98	427139.06	39°40'11.8238"N	80°18'8.3199"W	0.33	-0.33	-0.03
21799.00	90.180	325.710	8164.61	8633.61	13477.39	10582.14	-8425.68	1742607.08	427216.75	39°40'12.5868"N	80°18'9.0053"W	0.67	-0.66	-0.08
21894.00	90.280	325.620	8164.23	8633.23	13572.39	10660.59	-8479.26	1742553.50	427295.19	39°40'13.3573"N	80°18'9.6994"W	0.14	0.11	-0.09
21989.00	90.280	325.800	8163.76	8632.76	13667.38	10739.07	-8532.78	1742499.98	427373.68	39°40'14.1282"N	80°18'10.3928"W	0.19	0.00	0.19
22083.00	90.400	325.610	8163.21	8632.21	13761.37	10818.73	-8585.74	1742447.02	427451.33	39°40'14.8910"N	80°18'11.0790"W	0.24	0.13	-0.20
22178.00	90.340	325.890	8162.59	8631.59	13856.36	10895.25	-8639.21	1742393.56	427529.85	39°40'15.6623"N	80°18'11.7717"W	0.30	-0.06	0.29
22273.00	90.310	325.590	8162.05	8631.05	13951.36	10973.77	-8692.69	1742340.08	427608.36	39°40'16.4335"N	80°18'12.4646"W	0.32	-0.03	-0.32
22367.00	90.220	325.940	8161.62	8630.62	14045.35	11051.48	-8745.57	1742287.20	427686.07	39°40'17.1968"N	80°18'13.1497"W	0.38	-0.10	0.37
22461.00	90.340	325.820	8161.16	8630.16	14139.34	11129.30	-8798.30	1742234.48	427763.88	39°40'17.9612"N	80°18'13.8329"W	0.18	0.13	-0.13
22556.00	90.280	325.760	8160.65	8629.65	14234.34	11207.86	-8851.71	1742181.07	427842.44	39°40'18.7328"N	80°18'14.5249"W	0.09	-0.06	-0.06
22651.00	90.220	325.620	8160.23	8629.23	14329.38	11286.33	-8905.26	1742127.53	427920.90	39°40'19.5036"N	80°18'15.2187"W	0.18	-0.06	-0.15
22746.00	90.220	325.520	8159.87	8628.87	14424.32	11364.69	-8958.97	1742073.82	427999.25	39°40'20.2732"N	80°18'15.9145"W	0.11	0.00	-0.11
22840.00	90.150	325.370	8159.56	8628.56	14518.31	11442.11	-9012.29	1742020.51	428076.66	39°40'21.0335"N	80°18'16.6052"W	0.18	-0.07	-0.16
22935.00	90.280	325.620	8159.21	8628.21	14613.30	11520.39	-9066.10	1741966.69	428154.95	39°40'21.8024"N	80°18'17.3024"W	0.30	0.14	0.26
23029.00	90.430	325.780	8158.62	8627.62	14707.29	11598.04	-9119.07	1741913.73	428232.59	39°40'22.5651"N	80°18'17.9887"W	0.23	0.16	0.17
23124.00	90.220	325.170	8158.09	8627.09	14802.27	11676.31	-9172.91	1741859.89	428310.86	39°40'23.3338"N	80°18'18.6862"W	0.68	-0.22	-0.64
23219.00	90.340	325.610	8157.62	8626.62	14897.26	11754.50	-9226.87	1741805.93	428389.04	39°40'24.1018"N	80°18'19.3852"W	0.48	0.13	0.46
23313.00	90.310	326.980	8157.09	8626.09	14991.26	11832.69	-9279.03	1741753.78	428467.23	39°40'24.8699"N	80°18'20.0612"W	1.46	-0.03	1.46
23408.00	90.280	326.740	8156.60	8625.60	15086.25	11912.24	-9330.96	1741701.85	428546.77	39°40'25.6514"N	80°18'20.7345"W	0.25	-0.03	-0.25
23502.00	90.490	326.570	8155.97	8624.97	15180.25	11990.76	-9382.63	1741650.18	428625.29	39°40'26.4228"N	80°18'21.4043"W	0.29	0.22	-0.18
23596.00	90.550	326.790	8155.11	8624.11	15274.24	12069.31	-9434.27	1741598.55	428703.83	39°40'27.1945"N	80°18'22.0736"W	0.24	0.06	0.23
23690.00	90.370	326.680	8154.36	8623.36	15368.24	12147.90	-9485.83	1741547.00	428782.42	39°40'27.9666"N	80°18'22.7420"W	0.22	-0.19	-0.12
23785.00	90.180	326.540	8153.90	8622.90	15463.23	12227.22	-9538.11	1741494.72	428861.73	39°40'28.7458"N	80°18'23.4197"W	0.25	-0.20	-0.15
23880.00	90.280	326.710	8153.52	8622.52	15558.23	12306.55	-9590.37	1741442.46	428941.06	39°40'29.5252"N	80°18'24.0971"W	0.21	0.11	0.18
23975.00	90.520	326.530	8152.86	8621.86	15653.23	12385.88	-9642.63	1741390.20	429020.38	39°40'30.3045"N	80°18'24.7747"W	0.32	0.25	-0.19
24069.00	90.340	326.640	8152.15	8621.15	15747.23	12464.34	-9694.40	1741338.44	429098.84	39°40'31.0753"N	80°18'25.4457"W	0.22	-0.19	0.12

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Actual Wellpath Report

Phoenix 7H-A AWP Proj: 24227'

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 7H-A
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 7H-A AWB
Slot	Slot 07-A		

WELLPATH DATA (273 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
24163.00	90.340	326.740	8151.60	6620.60	15841.22	12542.90	-9746.02	1741286.82	429177.39	39°40'31.8470"N	80°18'26.1149"W	0.11	0.00	0.11
24202.00	91.010	327.510	8151.14	6620.14	15880.22	12575.65	-9767.19	1741265.65	429210.14	39°40'32.1688"N	80°18'26.3893"W	2.62	1.72	1.97
24227.00‡	91.010	327.510	8150.70	6619.70	15905.21	12596.73	-9780.61	1741252.23	429231.22	39°40'32.3760"N	80°18'26.5635"W	0.00	0.00	0.00

HOLE & CASING SECTIONS - Ref Wellbore: Phoenix 7H-A AWB Ref Wellpath: Phoenix 7H-A AWP Proj: 24227'

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	1560.00	1532.00	28.00	1559.91	0.00	0.00	-4.57	-7.97
13.375in Casing Surface	28.00	1530.00	1502.00	28.00	1529.91	0.00	0.00	-4.61	-7.79
12.25in Open Hole	1560.00	2846.00	1286.00	1559.91	2845.74	-4.57	-7.97	-0.92	-25.98
9.625in Casing Intermediate	28.00	2816.00	2788.00	28.00	2815.74	0.00	0.00	-0.85	-25.45
8.75in Open Hole	2846.00	7658.00	4812.00	2845.74	7541.78	-0.92	-25.98	-749.18	-726.02
8.5in Open Hole	7658.00	24227.00	16569.00	7541.78	8150.70	-749.18	-726.02	12596.73	-9780.61
5.5in Casing Production	28.00	24197.00	24169.00	28.00	8151.22	0.00	0.00	12571.43	-9764.50

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Phoenix 7H-A LP Rev-1	8250.00	-293.72	-1196.05	1749836.26	416341.56	39°38'25.7337"N	80°16'35.3519"W	point
Phoenix 7H-A BHL Rev-1	8790.83	12602.11	-9772.67	1741260.17	429236.60	39°40'32.4298"N	80°18'26.4625"W	point

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 7H-A
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 7H-A AWB
Slot	Slot 07-A		

WELLPATH COMPOSITION - Ref Wellbore: Phoenix 7H-A AWB Ref Wellpath: Phoenix 7H-A AWP Proj: 24227'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
28.00	1500.00	BH Generic gyro - northseeking (Standard)	01_17.5" Gyro [Northseeking-Standard] (50' - 1500')	Phoenix 7H-A AWB	12/15/2023
1500.00	2538.00	OWSG MWD rev2 + HRGM	02_12.25" SDI MWD [OWSG MWD Rev.2+HRGM] (1500')(1591' - 2538')	Phoenix 7H-A AWB	12/15/2023
2538.00	7485.00	OWSG MWD rev2 + HRGM	03_8.75" SDI MWD [OWSG MWD Rev.2+HRGM] (2538')(2633' - 7485')	Phoenix 7H-A AWB	12/15/2023
7485.00	24227.00	BH AutoTrak Curve/eXpress (2019) (HRGM, Short spacing)	04_8.5" BH ATK Curve <HRGM+Short Spacing> (7485')(7637' - 24202')	Phoenix 7H-A AWB	12/15/2023

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Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 7H-A AWB
Slot	Slot 07-A		

COMMENTS

Wellpath general comments

API: 47061019500000

BH Job #: 111974114

Rig: Patterson 277

Duration: 12/18/2023 - 12/21/2023

01_17.5" Gyro [Northseeking-Standard] (50' - 1500')

02_12.25" SDI MWD [OWSG MWD Rev.2+HRGM] (1500')(1591' - 2538')

03_8.75" SDI MWD [OWSG MWD Rev.2+HRGM] (2538')(2633' - 7485')

04_8.5" BH ATK Curve <HRGM+Short Spacing> (7485')(7637'- 24202')

Final Survey MD @ 24202'

Projected MD at TD: 24227'

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