

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

API 47-061-01892 County Monongalia District Clay
Quad Blacksville Pad Name Yost Field/Pool Name _____
Farm name Yost Heritage, Inc. Well Number Yost 2H
Operator (as registered with the OOG) Northeast Natural Energy LLC
Address 707 Virginia St. E., Suite 1200 City Charleston State WV Zip 25301

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4388307.0 Easting 567076.4
Landing Point of Curve Northing 4387633.5 Easting 566460.2
Bottom Hole Northing 4384724.7 Easting 568569.7

Elevation (ft) 1,492' GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine

Mud Type(s) and Additive(s)
Synthetic Based Mud - Horizontal Section: BIO-BASE 365, CALCIUM CHLORIDE POWDER, G-SEAL PLUS, HRP, LIME, M-I WATE (BARITE),
M-I-X II MEDIUM, MEGADRIL P SYSTEM, MEGADRIL P SYSTEM RENTAL, MEGAMUL, SAFE-CARB 250, VERSATHIN HF, VERSAWET, VG-PLUS, VINSEAL MEDIUM, WALNUT NUT PLUG MEDIUM

Date permit issued 12/1/2021 Date drilling commenced 3/1/2022 Date drilling ceased 7/11/2022
Date completion activities began 8/21/2022 Date completion activities ceased 9/7/2022
Verbal plugging (Y/N) N Date permission granted NA Granted by _____

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 180', 480', 1,378' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 2,410' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 775', 930', 1,115' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by: _____

02/23/2024

API 47-061 - 01892 Farm name Yost Heritage, Inc. Well number Yost 2H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	30"	24"	100'	N		NA	
Surface	17-1/2"	13-3/8"	1,471'	N	54.5	NA	Y, 2bbl
Coal							
Intermediate 1	12-1/4"	9-5/8"	2,666'	N	40	NA	Y, 15 bbl
Intermediate 2							
Intermediate 3							
Production	8-3/4"	5-1/2"	21,172'	N	20	NA	Y
Tubing							
Packer type and depth set							

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	4,500 PSI Grout					CTS	48
Surface	Class A + 2%	1,255	15.6	1.19	1,490	CTS	8
Coal							
Intermediate 1	Class A + 1%	890	15.6	1.18	1,053	CTS	8
Intermediate 2							
Intermediate 3							
Production	50:50 Class A + Additives	3,900	14.5	1.16	4,518	1,685	48
Tubing							

Drillers TD (ft) 21,199' Loggers TD (ft) 21,169'
 Deepest formation penetrated Marcellus Plug back to (ft) _____
 Plug back procedure _____

Kick off depth (ft) 8,295'

Check all wireline logs run caliper density deviated/directional induction
 neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____
Surface: Bow spring centralizers every 3rd joint or approximately 120'
Intermediate: Bow spring centralizers every 3rd joint or approximately 120'
Production: Rigid body centralizers placed at a minimum of every other joint (~80') from TD to surface

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

Yost 2H Perforation Report

Stage Number	Report Date	Total Shots	Cluster 1 Top TD	Cluster 5 Bottom TD
1	8/23/2022	0	0	21,069
2	8/23/2022	40	21,026	20,868
3	8/24/2022	40	20,827	20,671
4	8/24/2022	40	20,629	20,472
5	8/24/2022	40	20,430	20,274
6	8/24/2022	40	20,232	20,075
7	8/24/2022	40	20,034	19,877
8	8/25/2022	40	19,835	19,679
9	8/25/2022	40	19,637	19,480
10	8/25/2022	40	19,439	19,282
11	8/25/2022	40	19,230	0
12	8/26/2022	40	19,030	0
13	8/26/2022	40	18,830	0
14	8/26/2022	40	18,630	0
15	8/27/2022	40	18,430	0
16	8/27/2022	40	18,230	0
17	8/27/2022	40	18,030	0
18	8/27/2022	40	17,830	0
19	8/28/2022	40	17,630	0
20	8/28/2022	40	17,430	0
21	8/28/2022	40	17,240	17,084
22	8/29/2022	40	17,042	16,885
23	8/29/2022	40	16,844	16,687
24	8/29/2022	40	16,645	16,489
25	8/30/2022	40	16,447	16,290
26	8/30/2022	40	16,249	16,092
27	8/30/2022	40	16,050	15,894
28	8/30/2022	40	15,852	15,695
29	8/31/2022	40	15,654	15,497
30	8/31/2022	40	15,455	15,299
31	8/31/2022	40	15,247	0
32	8/31/2022	40	15,047	0
33	8/31/2022	40	14,847	0
34	9/1/2022	40	14,647	0
35	9/1/2022	40	14,447	0
36	9/1/2022	40	14,247	0
37	9/1/2022	40	14,047	0
38	9/2/2022	40	13,847	0
39	9/2/2022	40	13,647	0
40	9/2/2022	40	13,447	0
41	9/2/2022	40	13,257	13,101
42	9/3/2022	40	13,059	12,902
43	9/3/2022	40	12,860	12,704
44	9/3/2022	40	12,662	12,505
45	9/3/2022	40	12,464	12,307

02/23/2024

Stage Number	Report Date	Total Shots	Cluster 1 Top TD	Cluster 5 Bottom TD
46	9/4/2022	40	12,266	12,109
47	9/4/2022	40	12,067	11,911
48	9/4/2022	40	11,869	11,712
49	9/4/2022	40	11,671	11,514
50	9/5/2022	40	11,472	11,316
51	9/5/2022	40	11,274	11,117
52	9/5/2022	40	11,076	10,919
53	9/5/2022	40	10,877	10,721
54	9/6/2022	40	10,679	10,522
55	9/6/2022	40	10,479	10,324
56	9/6/2022	40	10,282	10,125
57	9/6/2022	40	10,084	9,927
58	9/6/2022	40	9,885	9,729
59	9/7/2022	40	9,687	9,530
60	9/7/2022	40	9,489	9,332

02/23/2024

Yost 2H Stimulation Report

Stage Number	Report Date	ISIP (psi)	Breakdown Pressure (psi)	Avg Treating Pressure (psi)	Avg Treating Rate (BPM)	Pad Volume (bbls)	Total Clean Fluid (Bbls)	Total Proppant Amount (lbs)	Flush Volume (bbls)
1	8/23/2022	4,620	0	9,154	90	252	6,896	299,820	514
2	8/23/2022	5,570	6,542	9,420	93	74	9,991	500,024	510
3	8/24/2022	5,941	6,497	9,529	93	57	10,039	502,048	505
4	8/24/2022	5,822	6,229	9,373	91	58	10,302	500,320	509
5	8/24/2022	5,150	7,799	9,438	92	76	10,337	500,020	503
6	8/24/2022	5,708	6,827	9,363	92	50	10,146	499,860	441
7	8/24/2022	5,417	7,874	9,370	93	99	10,012	500,540	453
8	8/25/2022	5,561	7,955	9,263	93	66	10,014	500,200	447
9	8/25/2022	5,009	7,468	9,236	89	260	10,832	501,260	486
10	8/25/2022	5,532	7,320	9,196	92	73	10,245	500,040	480
11	8/25/2022	5,945	7,458	9,258	91	28	9,778	500,940	500
12	8/26/2022	4,819	7,190	9,263	92	58	10,401	501,000	476
13	8/26/2022	5,284	6,890	9,082	92	3	10,291	501,060	463
14	8/26/2022	5,671	6,833	9,091	92	31	10,069	502,660	459
15	8/27/2022	5,246	7,058	9,247	92	254	9,908	500,580	458
16	8/27/2022	5,315	7,688	9,095	92	2	10,213	499,760	461
17	8/27/2022	5,094	7,268	8,946	92	8	10,185	500,360	458
18	8/27/2022	6,026	7,212	8,893	93	56	9,733	501,520	457
19	8/28/2022	5,357	7,113	8,918	92	72	8,864	412,600	455
20	8/28/2022	5,919	7,183	8,909	89	17	11,307	501,000	443
21	8/28/2022	5,874	7,273	8,935	92	10	9,603	458,360	463
22	8/29/2022	5,120	7,589	8,964	92	42	9,338	455,520	433
23	8/29/2022	5,255	7,787	9,085	92	10	9,880	464,380	430
24	8/29/2022	6,372	7,858	8,750	92	31	9,231	455,100	450
25	8/30/2022	6,376	7,154	8,493	92	40	9,060	456,280	433
26	8/30/2022	5,050	7,629	8,765	91	48	9,482	455,420	418
27	8/30/2022	5,332	7,014	9,022	93	41	9,335	454,340	400
28	8/30/2022	5,632	5,662	8,903	92	22	9,259	456,608	400
29	8/31/2022	4,931	5,946	8,843	93	44	9,043	453,950	398
30	8/31/2022	4,780	6,555	8,848	92	11	9,257	456,160	392
31	8/31/2022	5,162	6,606	8,889	93	2	9,287	455,640	386
32	8/31/2022	5,066	6,326	8,836	93	14	9,230	457,000	345
33	8/31/2022	5,520	5,194	8,485	92	22	8,816	453,400	329
34	9/1/2022	5,754	5,506	8,444	93	35	8,807	452,440	336
35	9/1/2022	4,873	6,649	8,443	93	6	9,244	455,520	360
36	9/1/2022	5,177	6,321	8,387	93	4	9,194	454,840	331
37	9/1/2022	5,852	4,863	8,240	93	14	8,962	451,860	330
38	9/2/2022	5,569	6,299	8,468	94	15	8,876	453,100	325
39	9/2/2022	5,230	6,727	8,517	94	48	9,290	456,920	356
40	9/2/2022	5,057	7,795	8,515	93	25	9,387	455,180	390
41	9/2/2022	5,163	6,069	8,191	93	12	8,883	453,580	298
42	9/3/2022	5,945	4,747	8,049	93	47	9,105	453,160	295
43	9/3/2022	5,073	7,122	8,271	93	1	9,281	455,560	304
44	9/3/2022	5,050	7,933	8,449	94	9	9,355	458,220	311
45	9/3/2022	5,525	7,104	8,286	93	17	9,243	450,220	311
46	9/4/2022	5,551	7,489	8,333	93	25	9,249	453,700	312

Stage Number	Report Date	ISIP (psi)	Breakdown Pressure (psi)	Avg Treating Pressure (psi)	Avg Treating Rate (BPM)	Pad Volume (bbls)	Total Clean Fluid (Bbls)	Total Proppant Amount (lbs)	Flush Volume (bbls)
47	9/4/2022	4,889	7,081	8,207	93	26	9,232	455,620	326
48	9/4/2022	5,081	6,906	8,193	93	11	9,305	454,300	306
49	9/4/2022	5,835	8,126	8,195	93	58	9,617	454,260	305
50	9/5/2022	5,384	7,142	8,008	93	28	9,342	454,160	300
51	9/5/2022	5,041	7,469	8,291	93	1	9,187	454,080	295
52	9/5/2022	5,189	7,299	8,410	94	6	9,093	455,400	280
53	9/5/2022	6,118	7,710	8,119	94	47	9,383	455,120	298
54	9/6/2022	6,397	7,805	8,131	94	11	9,157	456,780	283
55	9/6/2022	5,422	7,731	8,158	94	12	9,288	456,440	295
56	9/6/2022	5,200	7,937	8,314	93	3	9,169	459,500	261
57	9/6/2022	6,106	7,763	8,136	94	29	9,309	457,960	274
58	9/6/2022	5,537	7,809	8,269	94	66	9,282	455,619	271
59	9/7/2022	5,640	8,140	8,323	94	13	9,190	446,691	265
60	9/7/2022	5,317	8,323	8,331	94	38	9,177	442,562	212

02/23/2024

Lithology/Formation	Top Depth in FT TVD	Bottom Depth in FT TVD	Describe rock type and record quantity and type of fluid (freshwater, brine, oil, gas, H2S, etc)
Shale/Sand	0	120	Shale/Sand
Shale/sand/silt	120	390	Shale/sand/silt with water @ 180'
sand/shale	390	510	sand/shale with water @ 480'
sandstone/siltstone	510	775	sandstone/siltstone
coal	775	780	coal
sandstone/limestone	780	930	sandstone/limestone
coal	930	940	coal
sandstone/limestone	940	1020	sandstone/limestone
Limestone	1020	1050	Limestone
Limestone/siltstone	1050	1110	Limestone/siltstone
coal	1110	1115	coal
Limestone	1115	1140	Limestone
Limestone/sandstone/shale	1140	1260	Limestone/sandstone/shale
red shale/siltstone	1260	1440	red shale/siltstone with water @ 1378'
sandstone/siltstone	1440	1680	sandstone/siltstone
sandstone/siltstone/lime	1680	2310	sandstone/siltstone/lime
Big Lime	2310	2400	Big Lime
Big Injun	2400	2580	Big Injun
siltstone	2580	2620	siltstone
Gantz	2620	2680	Gantz
siltstone	2680	3050	siltstone
Sandstone	3050	3180	Sandstone
Upper Devonian undifferentiated	3180	6000	Upper Devonian undifferentiated
siltstone/shale/gray shale	6000	6450	siltstone/shale/gray shale
Devonian silt/sand/shale	6450	7550	Devonian silt/sand/shale
Middlesex	7550	7770	Middlesex
Burkett	7770	7960	Burkett
Geneseo	7960	8011	Geneseo
Tully	8011	8062	Tully
Hamilton	8062	8176	Hamilton
Marcellus	8176	TD	Marcellus

NORTHEAST NATURAL ENERGY, LLC

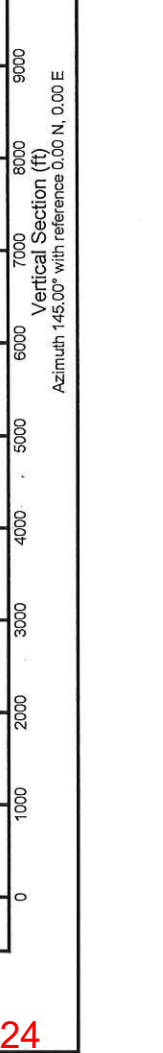
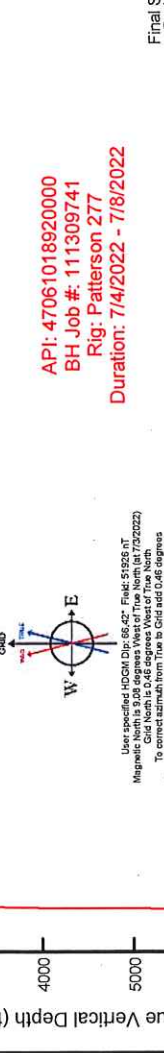
Location: Monongalia County, WV
 Field: Monogalia
 Facility: Yost Pad

Slot: Slot 02
 Well: Yost 2H
 Wellbore: Yost 2H PWB

Well Information	
Well Name	Yost 2H
Well Type	Production
Well Status	Active
Well Depth (ft)	12394.89
Wellbore	Yost 2H PWB
Wellhead	Yost 2H PWB
Well Completion	Yost 2H PWB
Well Completion Date	12/22/24
Well Completion By	Yost 2H PWB
Well Completion Status	Complete
Well Completion Description	Yost 2H PWB
Well Completion Details	Yost 2H PWB
Well Completion Notes	Yost 2H PWB
Well Completion Reference	Yost 2H PWB
Well Completion Source	Yost 2H PWB
Well Completion Target	Yost 2H PWB
Well Completion Method	Yost 2H PWB
Well Completion Equipment	Yost 2H PWB
Well Completion Personnel	Yost 2H PWB
Well Completion Materials	Yost 2H PWB
Well Completion Costs	Yost 2H PWB
Well Completion Schedule	Yost 2H PWB
Well Completion History	Yost 2H PWB
Well Completion Log	Yost 2H PWB
Well Completion Report	Yost 2H PWB
Well Completion Summary	Yost 2H PWB
Well Completion Footer	Yost 2H PWB

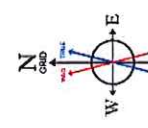
Well Profile Data	
Design Comment	MD (ft) Inc (ft) Az (°) TVD (ft) Local N (ft) Local E (ft) DLS (7100%) VS (ft)
Tit On	6922.00 25.060 149.717 -912.17 -1893.15 0.15 -2528.86
Projection	7000.00 25.060 149.717 -912.17 -1893.15 0.15 -2528.86
True Vert	7000.00 25.060 149.717 -912.17 -1893.15 0.15 -2528.86
Choke	8508.07 31.176 234.600 7649.41 -1372.42 -2180.88 0.00 -1153.21
Landmark Pt	8418.53 50.000 145.000 8260.00 -2171.00 -2052.73 0.00 600.98
BHL	21212.44 80.000 145.000 8260.00 -11632.00 4711.39 0.00 12394.89

Well Data	
Well	Yost 2H
Wellbore	Yost 2H PWB
Wellhead	Yost 2H PWB
Well Completion	Yost 2H PWB
Well Completion Date	12/22/24
Well Completion By	Yost 2H PWB
Well Completion Status	Complete
Well Completion Description	Yost 2H PWB
Well Completion Details	Yost 2H PWB
Well Completion Notes	Yost 2H PWB
Well Completion Reference	Yost 2H PWB
Well Completion Source	Yost 2H PWB
Well Completion Target	Yost 2H PWB
Well Completion Method	Yost 2H PWB
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Well Completion Personnel	Yost 2H PWB
Well Completion Materials	Yost 2H PWB
Well Completion Costs	Yost 2H PWB
Well Completion Schedule	Yost 2H PWB
Well Completion History	Yost 2H PWB
Well Completion Log	Yost 2H PWB
Well Completion Report	Yost 2H PWB
Well Completion Summary	Yost 2H PWB
Well Completion Footer	Yost 2H PWB



02/13/2024

API: 47061018920000
 BH Job #: 111309741
 Rig: Patterson 277
 Duration: 7/4/2022 - 7/8/2022



User specified HDGM Dip: 85.42° Field: 51826 ft
 Magnetic declination: 11.16° East (from NAD 83) (7/2022)
 Corrected azimuth from True to Grid add 0.46 degrees
 To correct azimuth from True to Grid add 0.46 degrees
 To correct azimuth from Magnetic to Grid subtract 6.82 degrees

Final Survey MD @ 21199 : 7981.93ft TVD, 11816.55ft S, 4689.63ft E
 Projected MD at TD: 21224 : 7981.21ft TVD, 11836.95ft S, 4704.07ft E

Final Survey MD @ 21199 : 91.66° Inc, 21199.00ft MD, 7981.93ft TVD, 12369.41ft VS
 Projected MD at TD: 21224 : 91.66° Inc, 21224.00ft MD, 7981.21ft TVD, 12394.40ft VS

Scale 1 inch = 2000

Vertical Section (ft)
 Azimuth 145.00° with reference 0.00 N, 0.00 E

REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Yost 2H
Field	Monongalia	API/Legal	
Facility	Yost Pad	Wellbore	Yost 2H AWB
Slot	Slot 02		

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	7/8/2022 at 7:18:33 PM
Convergence at slot	0.46° 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	64.38	-47.74	1766236.96	416728.48	39°38'30.9062"N	80°13'5.7376"W
Facility Reference Pt			1766284.70	416664.10	39°38'30.2737"N	80°13'5.1207"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	1520.00ft
Horizontal Reference Pt	Slot	Patterson 277 (RKB) to Mean Sea Level	1520.00ft
Vertical Reference Pt	Patterson 277 (RKB)	Patterson 277 (RKB) to Ground Level at Slot (Slot 02)	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	145.00°

REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Yost 2H
Field	Monongalia	API/Legal	
Facility	Yost Pad	Wellbore	Yost 2H AWB
Slot	Slot 02		

WELLPATH DATA (239 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	269.100	0.00	0.00	0.00	0.00	1766236.96	416728.48	39°38'30.9062"N	80°13'5.7376"W	0.00	0.000	0.00	0.00	0.00
28.00	0.000	269.100	28.00	0.00	0.00	0.00	1766236.96	416728.48	39°38'30.9062"N	80°13'5.7376"W	0.00	0.000	0.00	0.00	0.00
50.00	0.440	269.100	50.00	-0.05	0.00	-0.08	1766236.88	416728.48	39°38'30.9062"N	80°13'5.7387"W	0.08	269.100	2.00	2.00	0.00
100.00	0.470	301.800	100.00	-0.34	0.10	-0.45	1766236.51	416728.58	39°38'30.9072"N	80°13'5.7434"W	0.46	282.960	0.52	0.06	65.40
150.00	0.460	274.100	150.00	-0.66	0.23	-0.83	1766236.13	416728.71	39°38'30.9084"N	80°13'5.7482"W	0.86	285.325	0.45	-0.02	-55.40
200.00	0.250	321.700	200.00	-0.89	0.33	-1.09	1766235.87	416728.81	39°38'30.9094"N	80°13'5.7516"W	1.14	286.612	0.69	-0.42	95.20
250.00	0.160	62.800	250.00	-0.99	0.44	-1.10	1766235.86	416728.92	39°38'30.9105"N	80°13'5.7517"W	1.18	291.990	0.64	-0.18	202.20
300.00	0.210	296.500	300.00	-1.06	0.52	-1.12	1766235.84	416729.00	39°38'30.9112"N	80°13'5.7519"W	1.23	294.784	0.66	0.10	-252.60
350.00	0.210	355.500	350.00	-1.22	0.65	-1.21	1766235.75	416729.13	39°38'30.9125"N	80°13'5.7531"W	1.37	298.241	0.41	0.00	118.00
400.00	0.190	301.900	399.99	-1.38	0.78	-1.29	1766235.67	416729.26	39°38'30.9139"N	80°13'5.7541"W	1.51	301.378	0.36	-0.04	-107.20
450.00	0.210	294.700	449.99	-1.53	0.87	-1.44	1766235.52	416729.35	39°38'30.9147"N	80°13'5.7561"W	1.68	301.040	0.06	0.04	-14.40
500.00	0.250	200.700	499.99	-1.55	0.80	-1.56	1766235.40	416729.28	39°38'30.9140"N	80°13'5.7576"W	1.75	297.203	0.68	0.08	-188.00
550.00	0.180	50.600	549.99	-1.50	0.75	-1.54	1766235.42	416729.23	39°38'30.9135"N	80°13'5.7573"W	1.71	295.987	0.83	-0.14	-300.20
600.00	0.370	203.300	599.99	-1.42	0.65	-1.54	1766235.42	416729.13	39°38'30.9125"N	80°13'5.7574"W	1.67	292.910	1.07	0.38	305.40
650.00	0.180	292.400	649.99	-1.40	0.53	-1.68	1766235.28	416729.01	39°38'30.9114"N	80°13'5.7591"W	1.76	287.626	0.82	-0.38	178.20
700.00	0.240	336.200	699.99	-1.57	0.66	-1.79	1766235.17	416729.14	39°38'30.9126"N	80°13'5.7606"W	1.91	290.178	0.33	0.12	87.60
750.00	0.220	3.700	749.99	-1.75	0.85	-1.83	1766235.13	416729.33	39°38'30.9145"N	80°13'5.7611"W	2.02	294.939	0.22	-0.04	55.00
800.00	0.180	338.900	799.99	-1.90	1.02	-1.85	1766235.11	416729.50	39°38'30.9162"N	80°13'5.7614"W	2.11	298.846	0.19	-0.08	-49.60
850.00	0.090	285.300	849.99	-2.00	1.10	-1.92	1766235.04	416729.58	39°38'30.9170"N	80°13'5.7622"W	2.21	299.917	0.29	-0.18	-107.20
900.00	0.250	78.900	899.99	-1.99	1.13	-1.85	1766235.11	416729.61	39°38'30.9173"N	80°13'5.7613"W	2.17	301.546	0.67	0.32	307.20
950.00	0.180	35.300	949.99	-1.97	1.22	-1.70	1766235.26	416729.70	39°38'30.9181"N	80°13'5.7594"W	2.09	305.727	0.34	-0.14	-87.20
1000.00	0.300	104.300	999.99	-1.90	1.25	-1.52	1766235.44	416729.73	39°38'30.9185"N	80°13'5.7572"W	1.97	309.401	0.58	0.24	138.00
1050.00	0.180	253.800	1049.99	-1.83	1.20	-1.47	1766235.49	416729.68	39°38'30.9179"N	80°13'5.7565"W	1.90	309.121	0.93	-0.24	299.00
1100.00	0.200	295.700	1099.99	-1.90	1.20	-1.59	1766235.37	416729.68	39°38'30.9179"N	80°13'5.7581"W	1.99	306.916	0.24	-0.12	83.80
1150.00	0.320	176.500	1149.99	-1.82	1.08	-1.63	1766235.33	416729.56	39°38'30.9168"N	80°13'5.7586"W	1.96	303.507	0.79	0.40	-238.40
1200.00	0.330	139.600	1199.99	-1.56	0.83	-1.53	1766235.43	416729.31	39°38'30.9143"N	80°13'5.7573"W	1.74	298.524	0.41	0.02	-73.80
1250.00	0.340	155.500	1249.99	-1.27	0.59	-1.38	1766235.58	416729.07	39°38'30.9119"N	80°13'5.7553"W	1.50	293.118	0.19	0.02	31.80
1300.00	0.360	100.600	1299.99	-1.01	0.42	-1.16	1766235.80	416728.90	39°38'30.9103"N	80°13'5.7525"W	1.24	290.058	0.65	0.04	-109.80
1350.00	0.240	94.700	1334.99	-0.89	0.40	-0.98	1766235.98	416728.88	39°38'30.9101"N	80°13'5.7502"W	1.06	292.090	0.35	-0.34	-16.86
1397.00	0.280	196.440	1496.99	-0.42	-0.01	-0.75	1766236.21	416728.47	39°38'30.9061"N	80°13'5.7472"W	0.75	269.248	0.25	0.02	62.80

REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Yost 2H
Field	Monongalia	API/Legal	
Facility	Yost Pad	Wellbore	Yost 2H AWB
Slot	Slot 02		

WELLPATH DATA (239 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]
1591.00	1.190	314.320	1590.98	-1.24	0.45	-1.52	1766235.44	416728.93	39°38'30.9106"N	80°13'5.7570"W	1.58	286.586	1.43	0.97	125.40
1686.00	3.710	315.570	1685.89	-5.24	3.34	-4.37	1766232.59	416731.82	39°38'30.9389"N	80°13'5.7939"W	5.50	307.331	2.65	2.65	1.32
1781.00	5.350	315.180	1780.59	-12.64	8.67	-9.65	1766227.31	416737.15	39°38'30.9912"N	80°13'5.8618"W	12.97	311.952	1.73	1.73	-0.41
1876.00	6.310	311.170	1875.09	-22.07	15.25	-16.70	1766220.26	416743.73	39°38'31.0556"N	80°13'5.9526"W	22.62	312.404	1.10	1.01	-4.22
1970.00	7.430	307.790	1968.42	-32.89	22.38	-25.39	1766211.57	416750.86	39°38'31.1254"N	80°13'6.0645"W	33.84	311.388	1.27	1.19	-3.60
2065.00	7.670	297.000	2062.60	-44.36	29.02	-35.90	1766201.07	416757.50	39°38'31.1902"N	80°13'6.1934"W	46.16	308.953	1.51	0.25	-11.36
2159.00	6.730	279.420	2155.87	-53.75	32.77	-46.92	1766190.04	416761.25	39°38'31.2264"N	80°13'6.3407"W	57.23	304.930	2.54	-1.00	-18.70
2254.00	4.910	266.710	2250.38	-59.79	33.45	-56.47	1766180.49	416761.92	39°38'31.2323"N	80°13'6.4629"W	65.63	300.637	2.34	-1.92	-13.38
2349.00	4.250	260.820	2345.08	-63.46	32.65	-64.01	1766172.96	416761.13	39°38'31.2239"N	80°13'6.5591"W	71.85	297.028	0.85	-0.69	-6.20
2444.00	4.860	273.230	2439.78	-67.48	32.32	-71.50	1766165.47	416760.79	39°38'31.2200"N	80°13'6.6548"W	78.46	294.323	1.22	0.64	13.06
2538.00	5.380	280.410	2533.40	-73.09	33.34	-79.81	1766157.16	416761.82	39°38'31.2294"N	80°13'6.7612"W	86.49	292.671	0.88	0.55	7.64
2634.00	6.050	276.970	2628.93	-79.67	34.76	-89.26	1766147.71	416763.24	39°38'31.2427"N	80°13'6.8821"W	95.79	291.280	0.78	0.70	-3.58
2742.00	6.820	269.850	2736.25	-87.14	35.44	-101.32	1766135.65	416763.92	39°38'31.2484"N	80°13'7.0364"W	107.34	289.278	1.03	0.71	-6.59
2836.00	7.470	259.300	2829.52	-92.85	34.29	-112.91	1766124.06	416762.77	39°38'31.2362"N	80°13'7.1843"W	118.00	286.894	1.55	0.69	-11.22
2931.00	9.190	252.000	2923.52	-97.61	30.80	-126.19	1766110.78	416759.28	39°38'31.2006"N	80°13'7.3538"W	129.89	283.716	2.12	1.81	-7.68
3026.00	10.390	246.790	3017.13	-101.58	25.08	-141.28	1766095.69	416753.56	39°38'31.1429"N	80°13'7.5461"W	143.49	280.065	1.57	1.26	-5.48
3120.00	11.350	240.950	3109.45	-104.27	17.25	-157.16	1766079.81	416745.72	39°38'31.0642"N	80°13'7.7482"W	158.10	276.262	1.55	1.02	-6.21
3214.00	12.670	236.480	3201.39	-105.49	7.06	-173.84	1766063.13	416735.54	39°38'30.9623"N	80°13'7.9604"W	173.98	272.326	1.72	1.40	-4.76
3308.00	13.870	234.720	3292.88	-105.70	-5.14	-191.63	1766045.34	416723.34	39°38'30.8403"N	80°13'8.1866"W	191.70	268.463	1.35	1.28	-1.87
3404.00	16.010	234.750	3385.63	-105.59	-19.43	-211.84	1766025.14	416709.05	39°38'30.6975"N	80°13'8.4435"W	212.73	264.760	2.23	2.23	0.03
3502.00	17.080	234.640	3479.57	-105.44	-35.56	-234.61	1766002.36	416692.92	39°38'30.5363"N	80°13'8.7329"W	237.29	261.382	1.09	1.09	-0.11
3597.00	18.640	237.590	3569.99	-106.04	-51.77	-258.81	1765978.17	416676.71	39°38'30.3741"N	80°13'9.0406"W	263.93	258.688	1.90	1.64	3.11
3692.00	19.850	237.660	3659.68	-107.47	-68.54	-285.25	1765951.72	416659.95	39°38'30.2064"N	80°13'9.3769"W	293.37	256.490	1.27	1.27	0.07
3786.00	21.760	239.150	3747.55	-109.48	-86.01	-313.70	1765923.28	416642.48	39°38'30.0314"N	80°13'9.7387"W	325.28	254.668	2.11	2.03	1.59
3881.00	23.500	237.020	3835.23	-111.42	-105.35	-344.71	1765892.27	416622.14	39°38'29.8378"N	80°13'10.1331"W	360.45	253.006	2.02	1.83	-2.24
3976.00	25.540	236.230	3921.66	-112.52	-127.05	-377.62	1765859.36	416601.44	39°38'29.6208"N	80°13'10.5516"W	398.42	251.405	2.17	2.15	-0.83
4071.00	27.340	237.010	4006.72	-113.73	-150.31	-412.95	1765824.04	416578.18	39°38'29.3881"N	80°13'11.0008"W	439.45	249.999	1.93	1.89	0.82
4166.00	28.970	236.570	4090.48	-115.12	-174.87	-450.45	1765786.54	416553.62	39°38'29.1425"N	80°13'11.4776"W	483.20	248.784	1.73	1.72	-0.46
4261.00	30.910	237.000	4171.93	-116.59	-200.56	-489.70	1765747.29	416527.93	39°38'28.8854"N	80°13'11.9767"W	529.18	247.728	2.08	2.06	0.46
4355.00	31.780	236.080	4253.06	-117.91	-227.81	-530.92	1765706.07	416500.68	39°38'28.6129"N	80°13'12.5009"W	577.73	246.777	1.05	0.92	-0.97

REFERENCE WELLPATH IDENTIFICATION

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Field	Monongalia	API/Legal	
Facility	Yost Pad	Wellbore	Yost 2H AWB
Slot	Slot 02		

WELLPATH DATA (239 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]
4453.00	31.640	234.620	4336.43	-118.23	-257.09	-573.30	1765663.70	416471.40	39°38'28.3201"N	80°13'13.0395"W	628.30	245.846	0.80	-0.14	-1.49
4548.00	31.300	235.500	4417.46	-118.28	-285.50	-613.95	1765823.05	416443.00	39°38'28.0362"N	80°13'13.5563"W	677.08	245.061	0.60	-0.36	0.93
4642.00	32.040	236.030	4497.46	-118.94	-313.26	-654.75	1765582.25	416415.24	39°38'27.7586"N	80°13'14.0750"W	725.83	244.432	0.84	0.79	0.56
4736.00	31.800	232.650	4577.26	-118.37	-342.22	-695.12	1765541.88	416386.28	39°38'27.4692"N	80°13'14.5880"W	774.80	243.788	1.92	-0.26	-3.60
4831.00	30.780	232.020	4658.44	-116.08	-372.37	-734.18	1765502.82	416356.14	39°38'27.1682"N	80°13'15.0842"W	823.21	243.107	1.13	-1.07	-0.66
4926.00	30.760	234.360	4740.07	-114.55	-401.48	-773.09	1765463.92	416327.02	39°38'26.8773"N	80°13'15.5785"W	871.12	242.556	1.26	-0.02	2.46
5021.00	31.090	235.300	4821.56	-114.41	-429.60	-812.99	1765424.02	416298.91	39°38'26.5963"N	80°13'16.0858"W	919.52	242.147	0.62	0.35	0.99
5116.00	31.550	236.920	4902.72	-115.37	-457.13	-853.99	1765383.03	416271.38	39°38'26.3210"N	80°13'16.6069"W	968.64	241.840	1.01	0.48	1.71
5211.00	31.650	236.170	4983.63	-116.71	-484.57	-895.52	1765341.50	416243.94	39°38'26.0465"N	80°13'17.1350"W	1018.21	241.582	0.43	0.11	-0.79
5305.00	30.490	236.190	5064.15	-117.71	-511.57	-935.82	1765301.20	416216.94	39°38'25.7764"N	80°13'17.6474"W	1066.52	241.336	1.23	-1.23	0.02
5403.00	29.950	237.050	5148.83	-119.10	-538.71	-977.01	1765260.01	416189.80	39°38'25.5049"N	80°13'18.1710"W	1115.68	241.128	0.71	-0.55	0.88
5498.00	29.460	236.250	5231.34	-120.46	-564.59	-1016.33	1765220.69	416163.92	39°38'25.2461"N	80°13'18.6710"W	1162.62	240.947	0.66	-0.52	-0.84
5594.00	29.410	235.490	5314.95	-121.17	-591.06	-1055.38	1765181.64	416137.46	39°38'24.9814"N	80°13'19.1675"W	1209.62	240.749	0.39	-0.05	-0.79
5688.00	29.360	232.720	5396.86	-120.45	-618.09	-1092.74	1765144.29	416110.42	39°38'24.7113"N	80°13'19.6422"W	1255.43	240.506	1.45	-0.05	-2.95
5784.00	28.840	230.360	5480.75	-117.65	-647.12	-1129.29	1765107.73	416081.40	39°38'24.4215"N	80°13'20.1065"W	1301.57	240.186	1.31	-0.54	-2.46
5877.00	29.680	233.150	5561.88	-115.09	-675.24	-1164.99	1765072.04	416053.28	39°38'24.1408"N	80°13'20.5600"W	1346.54	239.903	1.72	0.90	3.00
5973.00	32.060	235.120	5644.28	-114.37	-704.07	-1204.92	1765032.11	416024.45	39°38'23.8527"N	80°13'21.0674"W	1395.55	239.701	2.69	2.48	2.05
6067.00	35.050	238.090	5722.61	-115.88	-732.61	-1248.31	1764988.72	415995.91	39°38'23.5671"N	80°13'21.6191"W	1447.41	239.592	3.63	3.18	3.16
6161.00	35.700	237.370	5799.26	-118.47	-761.67	-1294.32	1764942.72	415966.86	39°38'23.2763"N	80°13'22.2042"W	1501.80	239.524	0.82	0.69	-0.77
6259.00	34.500	233.870	5879.44	-119.11	-793.46	-1340.83	1764896.22	415935.07	39°38'22.9985"N	80°13'22.7954"W	1558.01	239.384	2.39	-1.22	-3.57
6354.00	33.040	233.420	5958.41	-117.86	-824.76	-1383.36	1764853.69	415903.78	39°38'22.6458"N	80°13'23.3358"W	1610.56	239.197	1.56	-1.54	-0.47
6449.00	31.000	237.650	6038.97	-118.28	-853.29	-1424.83	1764812.22	415875.25	39°38'22.3605"N	80°13'23.8630"W	1660.79	239.084	3.19	-2.15	4.45
6544.00	28.630	238.480	6121.39	-120.79	-878.28	-1484.91	1764772.14	415850.25	39°38'22.1104"N	80°13'24.3726"W	1708.02	239.055	2.53	-2.49	0.87
6638.00	26.070	236.680	6204.87	-122.76	-901.40	-1501.37	1764735.68	415827.13	39°38'21.8789"N	80°13'24.8363"W	1751.18	239.020	2.86	-2.72	-1.91
6733.00	24.830	233.170	6290.66	-122.74	-924.83	-1534.78	1764702.27	415803.71	39°38'21.6448"N	80°13'25.2610"W	1791.89	238.928	2.05	-1.31	-3.69
6828.00	25.080	233.730	6376.79	-121.66	-948.70	-1566.98	1764670.08	415779.84	39°38'21.4063"N	80°13'25.6701"W	1831.79	238.808	0.36	0.26	0.59
6922.00	25.060	234.050	6461.93	-120.88	-972.17	-1599.16	1764637.90	415756.37	39°38'21.1718"N	80°13'26.0790"W	1871.48	238.703	0.15	-0.02	0.34
7017.00	24.810	236.780	6566.22	-121.23	-999.69	-1639.06	1764598.00	415728.85	39°38'20.8967"N	80°13'26.5862"W	1919.87	238.620	1.02	-0.22	2.37
7112.00	27.720	234.700	6651.40	-121.73	-1023.38	-1673.77	1764563.29	415705.16	39°38'20.6597"N	80°13'27.0275"W	1961.84	238.558	3.21	3.06	-2.19
7206.00	29.430	235.020	6733.95	-121.63	-1049.26	-1710.54	1764526.52	415679.29	39°38'20.4011"N	80°13'27.4948"W	2006.71	238.475	1.83	1.82	0.34

REFERENCE WELLPATH IDENTIFICATION

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Slot	Slot 02		

WELLPATH DATA (239 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]
7321.00	31.270	234.820	6815.92	-121.56	-1076.84	-1749.82	1764487.25	415651.70	39°38'20.1253"N	80°13'27.9940"W	2054.62	238.392	1.94	1.94	-0.21
7416.00	31.340	235.090	6897.09	-121.52	-1105.19	-1790.23	1764446.84	415623.36	39°38'19.8420"N	80°13'28.5077"W	2103.90	238.311	0.17	0.07	0.28
7511.00	31.280	234.850	6978.26	-121.49	-1133.53	-1830.66	1764406.41	415595.02	39°38'19.5587"N	80°13'29.0215"W	2153.18	238.235	0.15	-0.06	-0.25
7605.00	31.390	235.030	7058.55	-121.44	-1161.61	-1870.67	1764366.40	415566.94	39°38'19.2780"N	80°13'29.5300"W	2201.99	238.162	0.15	0.12	0.19
7701.00	31.310	234.800	7140.53	-121.37	-1190.31	-1911.54	1764325.53	415538.24	39°38'18.9911"N	80°13'30.0495"W	2251.85	238.090	0.15	-0.08	-0.24
7795.00	31.280	235.080	7220.86	-121.32	-1218.36	-1951.51	1764285.57	415510.19	39°38'18.7107"N	80°13'30.5575"W	2300.61	238.023	0.16	-0.03	0.30
7890.00	30.430	235.000	7302.41	-121.35	-1246.28	-1991.44	1764245.64	415482.28	39°38'18.4316"N	80°13'31.0650"W	2349.27	237.961	0.90	-0.89	-0.08
7985.00	31.240	234.620	7383.98	-121.19	-1274.34	-2031.23	1764205.85	415454.21	39°38'18.1511"N	80°13'31.5707"W	2397.89	237.897	0.88	0.85	-0.40
8080.00	30.910	235.240	7465.35	-121.13	-1302.52	-2071.37	1764165.72	415426.04	39°38'17.8694"N	80°13'32.0808"W	2446.86	237.837	0.48	-0.35	0.65
8174.00	31.330	234.940	7545.82	-121.20	-1330.32	-2111.21	1764125.88	415398.24	39°38'17.5915"N	80°13'32.5871"W	2495.38	237.784	0.48	0.45	-0.32
8269.00	31.250	235.090	7627.00	-121.21	-1358.61	-2151.63	1764085.46	415369.95	39°38'17.3087"N	80°13'33.1009"W	2544.67	237.730	0.12	-0.08	0.16
8363.00	31.800	222.600	7707.22	-115.93	-1390.83	-2188.43	1764048.67	415337.73	39°38'16.9873"N	80°13'33.5679"W	2593.00	237.562	6.96	0.59	-13.29
8457.00	33.650	210.800	7786.37	-99.92	-1431.48	-2218.56	1764018.53	415297.09	39°38'16.5832"N	80°13'33.9489"W	2640.29	237.169	7.06	1.97	-12.55
8552.00	37.270	197.090	7863.86	-71.40	-1481.68	-2240.53	1763996.56	415246.89	39°38'16.0854"N	80°13'34.2246"W	2686.14	236.523	9.18	3.81	-14.43
8647.00	41.180	188.800	7937.49	-31.11	-1540.14	-2253.79	1763983.31	415188.43	39°38'15.5065"N	80°13'34.3879"W	2729.76	235.653	6.88	4.12	-8.73
8742.00	46.180	181.660	8006.22	19.02	-1605.39	-2259.57	1763977.53	415123.19	39°38'14.8612"N	80°13'34.4551"W	2771.81	234.607	7.39	5.26	-7.52
8836.00	51.610	174.370	8068.04	78.42	-1676.05	-2256.94	1763980.16	415052.53	39°38'14.1631"N	80°13'34.4141"W	2811.21	233.402	8.21	5.78	-7.76
8930.00	57.370	168.700	8122.65	146.86	-1751.63	-2245.55	1763991.55	414976.95	39°38'13.4171"N	80°13'34.2608"W	2847.93	232.044	7.85	6.13	-6.03
9025.00	63.580	163.420	8169.47	223.97	-1831.75	-2225.54	1764011.55	414896.84	39°38'12.6269"N	80°13'33.9968"W	2882.42	230.544	8.13	6.54	-5.56
9121.00	68.520	159.780	8208.44	308.01	-1914.94	-2197.81	1764039.28	414813.66	39°38'11.8070"N	80°13'33.6338"W	2915.03	228.935	6.20	5.15	-3.79
9215.00	74.900	154.700	8237.94	395.17	-1997.14	-2163.25	1764073.84	414731.46	39°38'10.9974"N	80°13'33.1835"W	2944.18	227.286	8.51	6.79	-5.40
9310.00	80.350	150.240	8258.30	487.12	-2079.35	-2120.35	1764116.74	414649.25	39°38'10.1883"N	80°13'32.6267"W	2969.78	225.559	7.34	5.74	-4.69
9404.00	85.410	146.100	8269.95	580.20	-2158.55	-2071.17	1764165.92	414570.06	39°38'9.4096"N	80°13'31.9899"W	2991.50	223.817	6.93	5.38	-4.40
9498.00	91.910	144.300	8272.15	674.12	-2235.67	-2017.57	1764219.51	414492.95	39°38'8.6517"N	80°13'31.2968"W	3011.45	222.065	7.17	6.91	-1.91
9592.00	92.000	144.630	8268.94	768.07	-2312.11	-1962.96	1764274.12	414416.51	39°38'7.9006"N	80°13'30.5910"W	3033.00	220.331	0.35	0.10	0.34
9687.00	92.150	143.320	8265.50	863.00	-2389.38	-1907.80	1764329.28	414339.25	39°38'7.1414"N	80°13'29.8779"W	3057.59	218.606	0.34	0.16	-0.31
9781.00	91.940	144.710	8262.15	956.94	-2465.88	-1853.27	1764383.80	414262.75	39°38'6.3898"N	80°13'29.1731"W	3084.67	216.927	0.46	-0.22	0.40
9876.00	90.860	144.130	8259.83	1051.90	-2543.12	-1798.02	1764439.05	414185.52	39°38'5.6309"N	80°13'28.4589"W	3114.53	215.261	1.29	-1.14	-0.61
9971.00	91.200	144.210	8258.12	1146.87	-2620.13	-1742.41	1764494.65	414108.51	39°38'4.8742"N	80°13'27.7403"W	3146.60	213.624	0.37	0.36	0.08
10064.00	91.080	144.470	8256.27	1239.85	-2695.67	-1688.21	1764548.86	414032.97	39°38'4.1320"N	80°13'27.0397"W	3180.68	212.057	0.31	-0.13	0.28



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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Yost 2H
Field	Monongalia	API/Legal	
Facility	Yost Pad	Wellbore	Yost 2H AWB
Slot	Slot 02		

WELLPATH DATA (239 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]
10159.00	91.020	144.610	8254.53	1334.83	-2773.04	-1633.10	1764603.96	413955.61	39°38'3.3718"N	80°13'26.3274"W	3218.19	210.495	0.16	-0.06	0.15
10253.00	90.920	144.520	8252.94	1428.81	-2849.62	-1578.61	1764658.44	413879.04	39°38'2.6193"N	80°13'25.6230"W	3257.66	208.985	0.14	-0.11	-0.10
10347.00	91.080	144.760	8251.30	1522.80	-2926.27	-1524.22	1764712.83	413802.39	39°38'1.8662"N	80°13'24.9200"W	3299.44	207.514	0.31	0.17	0.26
10442.00	90.550	144.050	8249.95	1617.78	-3003.51	-1468.93	1764768.12	413725.16	39°38'1.1072"N	80°13'24.2054"W	3343.47	206.062	0.93	-0.56	-0.75
10537.00	90.220	144.400	8249.31	1712.77	-3080.58	-1413.40	1764823.65	413648.09	39°38'0.3500"N	80°13'23.4876"W	3389.35	204.646	0.51	-0.35	0.37
10631.00	90.680	144.510	8248.57	1806.76	-3157.06	-1358.75	1764878.29	413571.61	39°37'59.5985"N	80°13'22.7813"W	3437.04	203.286	0.50	0.49	0.12
10724.00	90.220	144.400	8247.84	1899.76	-3232.73	-1304.69	1764932.35	413495.95	39°37'58.8550"N	80°13'22.0826"W	3486.08	201.978	0.51	-0.49	-0.12
10819.00	90.890	144.100	8246.92	1994.74	-3309.82	-1249.19	1764987.85	413418.86	39°37'58.0975"N	80°13'21.3653"W	3537.71	200.677	0.77	0.71	-0.32
10914.00	91.200	144.480	8245.19	2089.72	-3386.95	-1193.75	1765043.28	413341.74	39°37'57.3397"N	80°13'20.6488"W	3591.16	199.415	0.52	0.33	0.40
11009.00	90.370	143.970	8243.88	2184.70	-3464.02	-1138.22	1765098.81	413264.68	39°37'56.5825"N	80°13'19.9311"W	3646.22	198.190	1.03	-0.87	-0.54
11103.00	91.320	143.920	8242.50	2278.67	-3540.00	-1082.90	1765154.13	413188.69	39°37'55.8359"N	80°13'19.2163"W	3701.93	197.009	1.01	1.01	-0.05
11198.00	91.260	145.950	8240.36	2373.65	-3617.74	-1028.34	1765208.69	413110.97	39°37'55.0720"N	80°13'18.5110"W	3761.05	195.868	2.14	-0.06	2.14
11292.00	92.060	144.690	8237.64	2467.60	-3695.00	-974.88	1765262.14	413033.70	39°37'54.3127"N	80°13'17.8197"W	3821.44	194.780	1.59	0.85	-1.34
11388.00	91.600	144.300	8234.57	2563.55	-3773.11	-919.15	1765317.87	412955.60	39°37'53.5452"N	80°13'17.0995"W	3883.45	193.691	0.63	-0.48	-0.41
11483.00	90.890	144.890	8232.51	2658.52	-3850.52	-864.13	1765372.89	412878.19	39°37'52.7845"N	80°13'16.3883"W	3946.30	192.649	0.97	-0.75	0.62
11578.00	90.550	144.100	8231.31	2753.51	-3927.85	-808.96	1765428.05	412800.87	39°37'52.0247"N	80°13'15.6753"W	4010.29	191.638	0.91	-0.36	-0.83
11673.00	90.680	144.430	8230.29	2848.50	-4004.96	-753.48	1765483.53	412723.76	39°37'51.2670"N	80°13'14.9583"W	4075.22	190.655	0.37	0.14	0.35
11769.00	90.920	144.480	8228.95	2944.48	-4083.07	-697.67	1765539.33	412645.66	39°37'50.4996"N	80°13'14.2371"W	4142.24	189.696	0.26	0.25	0.05
11864.00	90.740	144.210	8227.58	3039.47	-4160.25	-642.30	1765594.70	412568.48	39°37'49.7412"N	80°13'13.5215"W	4209.54	188.777	0.34	-0.19	-0.28
11959.00	90.490	144.260	8226.56	3134.45	-4237.33	-586.78	1765650.21	412491.41	39°37'48.9838"N	80°13'12.8040"W	4277.77	187.884	0.27	-0.26	0.05
12055.00	90.740	144.210	8225.53	3230.44	-4315.22	-530.68	1765706.31	412413.52	39°37'48.2185"N	80°13'12.0790"W	4347.73	187.011	0.27	0.26	-0.05
12150.00	92.000	145.060	8223.25	3325.41	-4392.67	-475.71	1765761.28	412336.08	39°37'47.4575"N	80°13'11.3685"W	4418.35	186.181	1.60	1.33	0.89
12245.00	91.420	143.990	8220.42	3420.36	-4470.00	-420.60	1765816.38	412258.76	39°37'46.6976"N	80°13'10.6563"W	4489.74	185.375	1.28	-0.61	-1.13
12340.00	92.340	144.070	8217.30	3515.29	-4546.84	-364.83	1765872.15	412181.92	39°37'45.9426"N	80°13'10.9357"W	4561.45	184.588	0.97	0.97	0.08
12435.00	92.500	144.760	8213.22	3610.20	-4624.03	-309.60	1765927.37	412104.73	39°37'45.1842"N	80°13'10.2220"W	4634.38	183.831	0.77	0.26	0.73
12529.00	92.800	145.180	8208.80	3704.10	-4700.92	-255.71	1765981.27	412027.85	39°37'44.4286"N	80°13'8.5253"W	4707.86	183.114	0.50	0.22	0.45
12624.00	93.020	145.330	8203.97	3798.97	-4778.88	-201.63	1766035.34	411949.90	39°37'43.6624"N	80°13'7.8262"W	4783.13	182.416	0.28	0.23	0.16
12719.00	93.480	145.270	8198.59	3893.82	-4856.85	-147.64	1766089.33	411871.92	39°37'42.8961"N	80°13'7.1282"W	4859.10	181.741	0.49	0.48	-0.06
12814.00	93.480	145.140	8192.82	3988.64	-4934.72	-93.53	1766143.44	411794.06	39°37'42.1308"N	80°13'6.4287"W	4935.61	181.086	0.14	0.00	-0.14
12909.00	93.260	144.700	8187.24	4083.48	-5012.33	-39.03	1766197.94	411716.45	39°37'41.3681"N	80°13'5.7242"W	5012.48	180.446	0.52	-0.23	-0.46

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Actual Wellpath Report

Yost 2H AWP Proj: 21224'
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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Yost 2H
Field	Monongalia	API/Legal	
Facility	Yost Pad	Wellbore	Yost 2H AWB
Slot	Slot 02		

WELLPATH DATA (239 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]
13003.00	92.710	144.400	8182.34	4177.35	-5088.80	15.42	1766252.38	411639.99	39°37'40.6167"N	80°13'5.0205"W	5088.83	179.826	0.67	-0.59	-0.32
13098.00	92.250	145.490	8178.23	4272.26	-5166.50	69.93	1766306.89	411562.30	39°37'39.8532"N	80°13'4.3159"W	5166.97	179.225	1.24	-0.48	1.15
13193.00	92.280	144.960	8174.48	4367.18	-5244.47	124.07	1766361.03	411484.33	39°37'39.0869"N	80°13'3.6161"W	5245.93	178.645	0.56	0.03	-0.56
13288.00	91.880	144.850	8171.03	4462.12	-5322.14	178.66	1766415.60	411406.66	39°37'38.3235"N	80°13'2.9106"W	5325.14	178.077	0.44	-0.42	-0.12
13382.00	92.120	145.110	8167.75	4556.06	-5399.08	232.57	1766469.51	411329.73	39°37'37.5675"N	80°13'2.2137"W	5404.09	177.534	0.38	0.26	0.28
13477.00	92.370	145.380	8164.03	4650.99	-5477.07	286.68	1766523.62	411251.74	39°37'36.8010"N	80°13'1.5142"W	5484.57	177.004	0.39	0.26	0.28
13572.00	92.150	145.130	8160.28	4745.91	-5555.07	340.78	1766577.72	411173.75	39°37'36.0344"N	80°13'0.8148"W	5565.51	176.490	0.35	-0.23	-0.26
13667.00	92.090	144.680	8156.77	4840.85	-5632.75	395.36	1766632.30	411096.08	39°37'35.2711"N	80°13'0.1094"W	5646.60	175.985	0.48	-0.06	-0.47
13762.00	92.190	145.330	8153.22	4935.78	-5710.52	449.81	1766686.74	411018.31	39°37'34.5068"N	80°12'59.4056"W	5728.20	175.496	0.69	0.11	0.68
13857.00	91.600	144.540	8150.08	5030.73	-5788.23	504.35	1766741.28	410940.60	39°37'33.7431"N	80°12'58.7006"W	5810.16	175.020	1.04	-0.62	-0.83
13951.00	91.940	144.700	8147.17	5124.68	-5864.83	558.75	1766795.68	410864.00	39°37'32.9903"N	80°12'57.9976"W	5891.39	174.558	0.40	0.36	0.17
14045.00	92.650	146.610	8143.41	5218.59	-5942.38	611.74	1766848.66	410786.46	39°37'32.2281"N	80°12'57.3125"W	5973.78	174.122	2.17	0.76	2.03
14140.00	91.140	146.420	8140.27	5313.50	-6021.57	664.13	1766901.04	410707.28	39°37'31.4497"N	80°12'56.6350"W	6058.08	173.706	1.60	-1.59	-0.20
14234.00	90.770	145.830	8138.70	5407.47	-6099.60	716.51	1766953.43	410629.25	39°37'30.6826"N	80°12'55.9576"W	6141.54	173.300	0.74	-0.39	-0.63
14329.00	89.970	145.210	8138.09	5502.47	-6177.91	770.29	1767007.20	410550.95	39°37'29.9130"N	80°12'55.2624"W	6225.74	172.893	1.07	-0.84	-0.65
14424.00	90.220	146.160	8137.93	5597.46	-6256.37	823.85	1767060.76	410472.49	39°37'29.1417"N	80°12'54.5700"W	6310.38	172.498	1.03	0.26	1.00
14518.00	91.140	146.040	8136.82	5691.43	-6334.39	876.27	1767113.18	410394.48	39°37'28.3749"N	80°12'53.8921"W	6394.71	172.124	0.99	0.98	-0.13
14612.00	90.980	146.510	8135.08	5785.39	-6412.55	928.45	1767165.35	410316.32	39°37'27.6065"N	80°12'53.2173"W	6479.42	171.762	0.53	-0.17	0.50
14706.00	91.140	146.370	8133.34	5879.35	-6490.87	980.41	1767217.31	410238.01	39°37'26.8366"N	80°12'52.5454"W	6564.50	171.411	0.23	0.17	-0.15
14800.00	91.320	146.000	8131.32	5973.31	-6568.95	1032.71	1767269.60	410159.93	39°37'26.0691"N	80°12'51.8691"W	6649.63	171.066	0.44	0.19	-0.39
14894.00	91.850	146.050	8128.72	6067.25	-6646.87	1085.22	1767322.11	410082.01	39°37'25.3031"N	80°12'51.1901"W	6734.88	170.727	0.57	0.56	0.05
14989.00	92.250	145.710	8125.32	6162.18	-6725.47	1138.47	1767375.36	410003.42	39°37'24.5305"N	80°12'50.5016"W	6821.15	170.392	0.55	0.42	-0.36
15084.00	91.880	146.150	8121.90	6257.11	-6804.11	1191.65	1767428.54	409924.78	39°37'23.7575"N	80°12'49.8139"W	6907.68	170.066	0.60	-0.39	0.46
15179.00	91.660	146.540	8118.96	6352.04	-6883.15	1244.28	1767481.16	409845.75	39°37'22.9805"N	80°12'49.1334"W	6994.71	169.753	0.47	-0.23	0.41
15273.00	90.950	145.870	8116.82	6445.99	-6961.25	1296.55	1767533.43	409767.66	39°37'22.2128"N	80°12'48.4575"W	7080.96	169.449	1.04	-0.76	-0.71
15368.00	90.680	146.110	8115.47	6540.97	-7039.99	1349.68	1767586.56	409688.92	39°37'21.4388"N	80°12'47.7705"W	7168.20	169.147	0.38	-0.28	0.25
15463.00	90.460	146.230	8114.53	6635.94	-7118.90	1402.57	1767639.44	409610.01	39°37'20.6631"N	80°12'47.0867"W	7255.75	168.854	0.26	-0.23	0.13
15558.00	90.460	146.390	8113.76	6730.91	-7197.94	1455.26	1767692.13	409530.98	39°37'19.8861"N	80°12'46.4053"W	7343.58	168.570	0.17	0.00	0.17
15653.00	90.520	146.330	8112.95	6825.88	-7277.03	1507.89	1767744.75	409451.89	39°37'19.1086"N	80°12'45.7248"W	7431.61	168.293	0.09	0.06	-0.06
15747.00	90.580	146.390	8112.05	6919.85	-7355.29	1559.96	1767796.82	409373.64	39°37'18.3394"N	80°12'45.0514"W	7518.89	168.026	0.09	0.06	0.06

REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC		Well	Yost 2H
Field	Mongalia		API/Legal	
Facility	Yost Pad		Wellbore	Yost 2H AWB
Slot	Slot 02			

WELLPATH DATA (239 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]
15842.00	90.800	146.430	8110.90	7014.82	-7434.42	1612.51	1767849.37	409294.52	39°37'17.5615"N	80°12'44.3718"W	7607.28	167.762	0.24	0.23	0.04
15937.00	90.650	146.230	8109.70	7109.78	-7513.47	1665.18	1767902.03	409215.47	39°37'16.7843"N	80°12'43.6908"W	7695.78	167.504	0.26	-0.16	-0.21
16031.00	90.460	144.900	8108.79	7203.77	-7591.00	1718.33	1767955.18	409137.95	39°37'16.0223"N	80°12'43.0037"W	7783.05	167.245	1.43	-0.20	-1.41
16126.00	90.770	145.360	8107.77	7298.77	-7668.93	1772.64	1768009.49	409060.02	39°37'15.2563"N	80°12'42.3018"W	7871.14	166.985	0.58	0.33	0.48
16221.00	90.680	145.430	8106.57	7393.76	-7747.12	1826.58	1768063.43	408981.83	39°37'14.4879"N	80°12'41.6045"W	7959.54	166.733	0.12	-0.09	0.07
16315.00	90.650	145.370	8105.48	7487.75	-7824.49	1879.96	1768116.80	408904.47	39°37'13.7274"N	80°12'40.9146"W	8047.17	166.490	0.07	-0.03	-0.06
16410.00	90.650	144.260	8104.40	7582.74	-7902.13	1934.69	1768171.54	408826.84	39°37'12.9645"N	80°12'40.2073"W	8135.52	166.243	1.17	0.00	-1.17
16504.00	91.200	144.430	8102.88	7676.72	-7978.50	1989.48	1768226.32	408750.47	39°37'12.2140"N	80°12'39.4995"W	8222.80	165.999	0.61	0.59	0.18
16598.00	90.710	144.060	8101.32	7770.70	-8054.77	2044.40	1768281.23	408674.20	39°37'11.4645"N	80°12'38.7900"W	8310.17	165.758	0.65	-0.52	-0.39
16693.00	91.110	144.280	8099.81	7865.68	-8131.78	2100.00	1768336.83	408597.20	39°37'10.7078"N	80°12'38.0717"W	8398.56	165.520	0.48	0.42	0.23
16787.00	91.510	144.210	8097.66	7959.64	-8208.04	2154.91	1768391.74	408520.94	39°37'9.9584"N	80°12'37.3623"W	8486.20	165.290	0.43	0.43	-0.07
16881.00	91.510	144.340	8095.18	8053.60	-8284.33	2209.78	1768446.61	408444.66	39°37'9.2088"N	80°12'36.6534"W	8573.99	165.065	0.14	0.00	0.14
16977.00	91.480	144.410	8092.68	8149.56	-8362.34	2265.68	1768502.50	408366.66	39°37'8.4422"N	80°12'35.9313"W	8663.83	164.840	0.08	-0.03	0.07
17070.00	90.920	143.930	8090.73	8242.53	-8437.72	2320.11	1768556.93	408291.28	39°37'7.7015"N	80°12'35.2281"W	8750.89	164.625	0.79	-0.60	-0.52
17165.00	91.140	144.110	8089.02	8337.50	-8514.58	2375.91	1768612.73	408214.42	39°37'6.9463"N	80°12'34.5073"W	8839.86	164.409	0.30	0.23	0.19
17260.00	91.290	144.030	8087.01	8432.47	-8591.49	2431.64	1768668.46	408137.52	39°37'6.1905"N	80°12'33.7874"W	8928.98	164.197	0.18	0.16	-0.08
17355.00	91.600	144.330	8084.61	8527.43	-8668.50	2487.22	1768724.03	408060.51	39°37'5.4339"N	80°12'33.0694"W	9018.27	163.990	0.45	0.33	0.32
17450.00	91.480	144.490	8082.06	8622.39	-8745.72	2542.49	1768779.30	407983.29	39°37'4.6750"N	80°12'32.3553"W	9107.80	163.790	0.21	-0.13	0.17
17545.00	92.250	144.250	8078.97	8717.33	-8822.90	2597.81	1768834.61	407906.12	39°37'3.9166"N	80°12'31.6408"W	9197.40	163.594	0.85	0.81	-0.25
17641.00	92.180	144.310	8075.26	8813.26	-8900.78	2653.81	1768890.61	407828.25	39°37'3.1513"N	80°12'30.9173"W	9287.98	163.398	0.10	-0.07	0.06
17736.00	91.660	144.450	8072.07	8908.20	-8977.96	2709.11	1768945.90	407751.07	39°37'2.3928"N	80°12'30.2029"W	9377.80	163.209	0.57	-0.55	0.15
17830.00	91.750	144.320	8069.28	9002.15	-9054.34	2763.82	1769000.61	407674.69	39°37'1.6422"N	80°12'29.4960"W	9466.78	163.025	0.17	0.10	-0.14
17925.00	91.720	144.330	8066.40	9097.10	-9131.48	2819.20	1769055.99	407597.56	39°37'0.8842"N	80°12'28.7806"W	9556.77	162.843	0.03	-0.03	0.01
18019.00	91.750	144.070	8063.56	9191.05	-9207.69	2874.16	1769110.95	407521.36	39°37'0.1354"N	80°12'28.0707"W	9645.84	162.664	0.28	0.03	-0.28
18114.00	91.450	143.800	8060.90	9285.99	-9284.45	2930.07	1769166.85	407444.60	39°36'59.3811"N	80°12'27.3486"W	9735.83	162.485	0.42	-0.32	-0.28
18208.00	91.850	144.900	8058.20	9379.95	-9360.80	2984.83	1769221.61	407368.25	39°36'58.6308"N	80°12'26.6411"W	9825.16	162.314	1.24	0.43	1.17
18301.00	91.820	144.660	8055.22	9472.90	-9436.74	3038.44	1769275.21	407292.32	39°36'57.8845"N	80°12'25.9485"W	9913.83	162.153	0.26	-0.03	-0.26
18396.00	91.660	144.280	8052.33	9567.85	-9514.01	3093.62	1769330.39	407215.05	39°36'57.1251"N	80°12'25.2356"W	10004.34	161.987	0.43	-0.17	-0.40
18491.00	91.850	144.330	8049.42	9662.80	-9591.13	3149.02	1769385.79	407137.94	39°36'56.3673"N	80°12'24.5199"W	10094.86	161.824	0.21	0.20	0.05
18586.00	91.660	144.180	8046.51	9757.75	-9668.20	3204.49	1769441.26	407060.87	39°36'55.6100"N	80°12'23.8034"W	10185.42	161.662	0.25	-0.20	-0.16

REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC			Well	Yost 2H
Field	Monongalia			API/Legal	
Facility	Yost Pad			Wellbore	Yost 2H AWB
Slot	Slot 02				

WELLPATH DATA (239 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]
18680.00	92.180	144.570	8043.37	9851.69	-9744.56	3259.21	1769495.97	406984.51	39°36'54.8596"N	80°12'23.0965"W	10275.16	161.507	0.69	0.55	0.41
18775.00	91.850	144.930	8040.03	9946.63	-9822.09	3314.01	1769550.77	406906.99	39°36'54.0976"N	80°12'22.3885"W	10366.11	161.355	0.51	-0.35	0.38
18869.00	92.370	144.250	8036.56	10040.56	-9898.65	3368.44	1769605.19	406830.43	39°36'53.3452"N	80°12'21.6854"W	10456.09	161.207	0.91	0.55	-0.72
18964.00	91.940	143.080	8032.99	10135.46	-9975.13	3424.68	1769661.43	406753.96	39°36'52.5938"N	80°12'20.9590"W	10546.64	161.052	1.31	-0.45	-1.23
19058.00	92.060	144.320	8029.71	10229.38	-10050.84	3480.30	1769717.05	406678.26	39°36'51.8499"N	80°12'20.2408"W	10636.34	160.901	1.32	0.13	1.32
19153.00	92.590	144.110	8025.86	10324.29	-10127.84	3535.80	1769772.55	406601.26	39°36'51.0932"N	80°12'19.5238"W	10727.30	160.755	0.60	0.56	-0.22
19248.00	91.020	145.430	8022.86	10419.24	-10205.40	3590.57	1769827.31	406523.71	39°36'50.3310"N	80°12'18.8162"W	10818.61	160.617	2.16	-1.65	1.39
19343.00	91.200	146.280	8021.02	10514.21	-10284.01	3643.89	1769880.62	406445.10	39°36'49.5583"N	80°12'18.1271"W	10910.48	160.489	0.91	0.19	0.89
19438.00	89.880	146.150	8020.13	10609.18	-10362.96	3696.71	1769933.44	406366.16	39°36'48.7821"N	80°12'17.4442"W	11002.57	160.367	1.40	-1.39	-0.14
19532.00	90.950	146.320	8019.45	10703.16	-10441.10	3748.95	1769985.68	406288.02	39°36'48.0139"N	80°12'16.7689"W	11093.75	160.249	1.15	1.14	0.18
19628.00	90.980	146.230	8017.83	10799.12	-10520.93	3802.24	1770038.97	406208.19	39°36'47.2291"N	80°12'16.0799"W	11186.92	160.130	0.10	0.03	-0.09
19722.00	90.920	146.120	8016.27	10893.09	-10599.01	3854.56	1770091.29	406130.12	39°36'46.4615"N	80°12'15.4036"W	11278.15	160.015	0.13	-0.06	-0.12
19817.00	90.980	146.260	8014.70	10988.05	-10677.93	3907.42	1770144.14	406051.20	39°36'45.6856"N	80°12'14.7204"W	11370.41	159.901	0.16	0.06	0.15
19911.00	90.980	146.140	8013.09	11082.02	-10756.04	3959.70	1770196.42	405973.10	39°36'44.9178"N	80°12'14.0445"W	11461.74	159.789	0.13	0.00	-0.13
20006.00	90.980	146.370	8011.47	11176.98	-10835.02	4012.47	1770249.18	405894.13	39°36'44.1414"N	80°12'13.3624"W	11554.11	159.679	0.24	0.00	0.24
20101.00	91.080	146.090	8009.76	11271.95	-10913.98	4065.26	1770301.98	405815.17	39°36'43.3651"N	80°12'12.6799"W	11646.51	159.571	0.31	0.11	-0.29
20197.00	91.110	146.230	8007.92	11367.91	-10993.70	4118.72	1770355.42	405735.45	39°36'42.5814"N	80°12'11.9890"W	11739.90	159.462	0.15	0.03	0.15
20292.00	90.980	146.120	8006.19	11462.87	-11072.61	4171.59	1770408.29	405656.55	39°36'41.8057"N	80°12'11.3055"W	11832.36	159.356	0.18	-0.14	-0.12
20387.00	91.020	146.290	8004.53	11557.84	-11151.54	4224.42	1770461.12	405577.62	39°36'41.0297"N	80°12'10.6226"W	11924.87	159.252	0.18	0.04	0.18
20482.00	91.140	146.270	8002.74	11652.80	-11230.55	4277.15	1770513.85	405498.62	39°36'40.2530"N	80°12'9.9409"W	12017.45	159.151	0.13	0.13	-0.02
20576.00	91.880	146.250	8000.26	11746.74	-11308.68	4329.34	1770566.04	405420.49	39°36'39.4848"N	80°12'9.2663"W	12109.07	159.051	0.79	0.79	-0.02
20671.00	91.820	145.880	7997.20	11841.67	-11387.46	4382.35	1770619.04	405341.71	39°36'38.7103"N	80°12'8.5812"W	12201.61	158.951	0.39	-0.06	-0.39
20765.00	91.750	144.120	7994.27	11935.63	-11464.42	4436.24	1770672.92	405264.76	39°36'37.9539"N	80°12'7.8849"W	12292.81	158.846	1.87	-0.07	-1.87
20859.00	91.420	144.250	7991.67	12029.58	-11540.62	4491.22	1770727.91	405188.57	39°36'37.2052"N	80°12'7.1748"W	12383.74	158.736	0.38	-0.35	0.14
20953.00	91.600	144.220	7989.19	12123.54	-11616.87	4546.14	1770782.82	405112.33	39°36'36.4655"N	80°12'6.4655"W	12474.73	158.628	0.19	0.19	-0.03
21048.00	91.820	144.130	7986.36	12218.49	-11693.86	4601.72	1770838.40	405035.34	39°36'35.6993"N	80°12'5.7477"W	12566.71	158.520	0.25	0.23	-0.09
21143.00	91.600	144.410	7983.52	12313.44	-11770.94	4657.17	1770893.85	404958.26	39°36'34.9417"N	80°12'5.0315"W	12658.77	158.414	0.37	-0.23	0.29
21238.00	91.660	144.710	7981.93	12369.41	-11816.55	4689.63	1770926.30	404912.65	39°36'34.4935"N	80°12'4.6122"W	12713.12	158.353	0.55	0.11	0.54
21333.00	91.660	144.710	7981.21	12394.40	-11836.95	4704.07	1770940.74	404892.26	39°36'34.2931"N	80°12'4.4257"W	12737.41	158.327	0.00	0.00	0.00

HOLE & CASING SECTIONS - Ref Wellbore: Yost 2H AWB Ref Wellpath: Yost 2H AWP Proj: 21224'

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	1490.00	1462.00	28.00	1489.99	0.00	0.00	0.02	-0.74

HOLE & CASING SECTIONS - Ref Wellbore: Yost 2H AWB Ref Wellpath: Yost 2H AWP Proj: 21224'

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]
13.375in Casing Surface	28.00	1460.00	1432.00	28.00	1459.99	0.00	0.00	0.15	-0.73
12.25in Open Hole	1490.00	2660.00	1170.00	1489.99	2654.78	0.02	-0.74	35.06	-92.02
9.625in Casing Intermediate	28.00	2630.00	2602.00	28.00	2624.95	0.00	0.00	34.71	-88.84
8.75in Open Hole	2660.00	7000.00	4340.00	2654.78	6532.64	35.06	-92.02	-991.07	-1626.12
8.5in Open Hole	7000.00	21224.00	14224.00	6532.64	7981.21	-991.07	-1626.12	-11836.95	4704.07
5.5in Casing Production	28.00	21194.00	21166.00	28.00	7982.07	0.00	0.00	-11812.47	4686.74

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Yost 2H BHL Rev-3	8260.00	-11832.00	4711.98	1770948.65	404897.20	39°36'34.3425"N	80°12'4.3251"W	point
Yost 2H LP Rev-1	8260.00	-2171.00	-2052.73	1764184.36	414557.61	39°38'9.2880"N	80°13'31.7529"W	point
Yost Hardline #3 (1.31.21)	9028.00	-8613.53	8009.07	1774245.54	408115.48	39°37'6.4019"N	80°11'22.5146"W	polygon

2D Polygon: dimensions not calculated

REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Yost 2H
Field	Monongalia	API/Legal	
Facility	Yost Pad	Wellbore	Yost 2H AWB
Slot	Slot 02		

WELLPATH COMPOSITION - Ref Wellbore: Yost 2H AWB Ref Wellpath: Yost 2H AWP Proj: 21224'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
28.00	1335.00	BH Generic gyro - northseeking (Standard)	01_ <17.5">Gyro Surveys [BH Generic Gyro-Northseeking] (50'-1335')	Yost 2H AWB	7/3/2022
1335.00	2538.00	OWSG MWD rev2 + HRGM	02_ <12.25">SDI MWD [OWSG MWD Rev.2+HRGM] (1335')(1497'-2538')	Yost 2H AWB	7/3/2022
2538.00	6922.00	OWSG MWD rev2 + HRGM	03_ <8.75">SDI MWD [OWSG MWD Rev.2+HRGM] (2538')(2634'-6922')	Yost 2H AWB	7/3/2022
6922.00	21224.00	BH AutoTrak Curve/x,press (2019) (HRGM, Short spacing)	04_ <8.5">ATK Curve [HRGM+Short Spacing] (6922')(7037' - 21199')	Yost 2H AWB	7/3/2022

REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Yost 2H
Field	Monongalia	API/Legal	
Facility	Yost Pad	Wellbore	Yost 2H AWB
Slot	Slot 02		

COMMENTS

Wellpath general comments
 API: 47061018920000
 BH Job #: 111309741
 Rig: Patterson 277
 Duration: 7/4/2022 - 7/8/2022

01_ <17.5">Gyro Surveys [BH Generic Gyro-Northseeking] (50'-1335')
 02_ <12.25">SDI MWD [OWSG MWD Rev.2+HRGM] (1335')(1497'-2538')
 03_ <8.75">SDI MWD [OWSG MWD Rev.2+HRGM] (2538')(2634'-6922')
 04_ <8.5">ATK Curve [HRGM+Short Spacing] (6922')(7037' - 21199')

Final Survey MD @ 21199'
 Projected MD at TD: 21224'

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	8/23/2022
Job End Date:	9/7/2022
State:	West Virginia
County:	Monongalia
API Number:	47-061-01892-00-00
Operator Name:	Northeast Natural Energy LLC
Well Name and Number:	Yost 2H
Latitude:	39.64192600
Longitude:	-80.21826400
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	8,128
Total Base Water Volume (gal):	23,897,412
Total Base Non Water Volume:	0



Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Northeast Natural Energy	Carrier/Base Fluid					
Sand (100 Mesh Proppant)	ProFrac	Proppant	Water	7732-18-5	100.00000	87.50142	None
Sand (40/70 White Proppant)	ProFrac	Proppant	Silica Substrate	14808-60-7	100.00000	9.19629	None
Hydrochloric Acid (7.5%)	CNR	Acidizing	Silica Substrate	14808-60-7	100.00000	3.05444	None
			Water	7732-18-5	85.00000	0.12626	None
			Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	37.00000	0.05496	None
GrimSTREAM FR 9800	Chemstream	Friction Reducer	Butene, homopolymer	9003-29-6	25.00000	0.01366	None
			alkanes, C16-20-iso-	90622-59-6	25.00000	0.01366	None
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00164	None
Clearal 268	Chemstream	Biocide	Non-hazardous substances	Proprietary	80.00000	0.02130	None

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			Glutaraldehyde	111-30-8	20.00000	0.00532	None
			Quaternary Ammonium Compounds	68424-85-1	3.00000	0.00080	None
			Didecyl dimethyl ammonium chloride	7173-51-5	3.00000	0.00080	None
			Ethanol	64-17-5	1.50000	0.00040	None
StimSTREAM SC 405	Chemstream	Scale Control	Non-Hazardous Substances	Proprietary	70.00000	0.01202	None
			2-Phosphono-1,2,4-butanetricarboxylic acid (PBTC)	37971-36-1	10.00000	0.00172	None
			Diethylenetriamine penta(methylene phosphonic acid) (DTPMP)	15827-60-8	10.00000	0.00172	None
			Citric Acid	77-92-9	10.00000	0.00172	None
ProHib 100	CNR	Acid Inhibitor	2-Butoxyethanol	111-76-2	60.00000	0.00032	None
			Proprietary material	Proprietary	30.00000	0.00016	None
			Proprietary non-ionic surfactant	Proprietary	20.00000	0.00011	None
			Proprietary ethoxylated alcohol	Proprietary	10.00000	0.00005	None
			Proprietary corrosion inhibitor	Proprietary	10.00000	0.00005	None
ProFE 105	CNR	Iron Control	Citric Acid	77-92-9	20.00000	0.00007	None
			Acetic Acid	64-19-7	5.00000	0.00002	None
Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.							
Other Chemical(s)	Listed Above	See Trade Name(s) List					
			Water	7732-18-5	85.00000	0.12626	
			Non-hazardous substances	Proprietary	80.00000	0.02130	
			Butene, homopolymer	9003-29-6	25.00000	0.01366	
			Non-Hazardous Substances	Proprietary	70.00000	0.01202	
			Diethylenetriamine penta(methylene phosphonic acid) (DTPMP)	15827-60-8	10.00000	0.00172	
			Citric Acid	77-92-9	10.00000	0.00172	
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00164	
			Quaternary Ammonium Compounds	68424-85-1	3.00000	0.00080	
			Didecyl dimethyl ammonium chloride	7173-51-5	3.00000	0.00080	
			Ethanol	64-17-5	1.50000	0.00040	
			Proprietary material	Proprietary	30.00000	0.00016	
			Proprietary non-ionic surfactant	Proprietary	20.00000	0.00011	
			Proprietary corrosion inhibitor	Proprietary	10.00000	0.00005	
			Proprietary ethoxylated alcohol	Proprietary	10.00000	0.00005	
			Acetic Acid	64-19-7	5.00000	0.00002	

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