

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

API 47-061-01875 County Monongalia District Battelle  
Quad Wadestown Pad Name Phoenix Field/Pool Name \_\_\_\_\_  
Farm name Phoenix Well Number 4H  
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 4388192.3 Easting 562464.6  
Landing Point of Curve Northing 4388188.6 Easting 562739.3  
Bottom Hole Northing 4383542.7 Easting 565939.1

Elevation (ft) 1,503.5' 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 FOR 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 4/19/21 Date drilling commenced 12/27/2021 Date drilling ceased 3/9/2022  
Date completion activities began 4/28/2022 Date completion activities ceased 5/30/2022  
Verbal plugging (Y/N) \_\_\_\_\_ Date permission granted \_\_\_\_\_ Granted by \_\_\_\_\_

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

Freshwater depth(s) ft 1,240 Open mine(s) (Y/N) depths Y, Federal #2 @1,230  
Salt water depth(s) ft 2,760 Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 1,230 Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

Reviewed by: \_\_\_\_\_

02/23/2024

API 47-061 - 01875 Farm name Phoenix Well number 4H

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	Y
Surface	17-1/2"	13-3/8"	1,592	N	54.5	NA	Y, 19 bbl
Coal							
Intermediate 1	12-1/4"	9-5/8"	2,821	N	36	NA	Y, 10 bbl
Intermediate 2							
Intermediate 3							
Production	8-3/4"	5-1/2"	27,194	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 <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	4500 psi ready mix					CTS	48
Surface	Class A	2395	15.6	1.19	2,845	CTS	8
Coal							
Intermediate 1	Class A	905	15.6	1.19	1,075	CTS	8
Intermediate 2							
Intermediate 3							
Production	50:50 poz	5055	14.5	1.16	5,854	2,192'	48
Tubing							

Drillers TD (ft) 27,194' Loggers TD (ft) 27,187'  
 Deepest formation penetrated Marcellus Plug back to (ft) MA  
 Plug back procedure \_\_\_\_\_

Kick off depth (ft) 7,403'

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 \_\_\_\_\_

API 47- 061 - 01875 Farm name Phoenix Well number 4H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
	See attached				

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
	See	Attached						

Please insert additional pages as applicable.

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API 47- 061 - 01875 Farm name Phoenix Well number 4H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>8,207'</u> TVD	<u>8,706'</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump  
 SHUT-IN PRESSURE Surface \_\_\_\_\_ psi Bottom Hole 3238 psi DURATION OF TEST 24 hrs  
 OPEN FLOW Gas 3137 mcfpd Oil \_\_\_\_\_ bpd NGL \_\_\_\_\_ bpd Water \_\_\_\_\_ bpd GAS MEASURED BY  
 Estimated  Orifice  Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H <sub>2</sub> S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
See Attached	0		0		

Please insert additional pages as applicable.

Drilling Contractor Patterson UTI  
 Address 4000 Town Center Blvd, Suite 240 City Canonsburg State PA Zip 15317  
 Logging Company Baker Hughes  
 Address 837 Phillippi Pike City Clarksburg State WV Zip 26301  
 Cementing Company NextTier  
 Address 4000 Town Center Blvd City Canonsburg State PA Zip 15317  
 Stimulating Company Pro Frac  
 Address 800 Mountain View Drive City Smithfield State PA Zip 15478

Please insert additional pages as applicable.

Completed by Hollie Medley Telephone \_\_\_\_\_  
 Signature Hollie Medley Title Regulatory Manager Date 1/10/24

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

## Phoenix 4H 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	5/1/22	5,158	10,800	9,864	90	520	7,522	300,520	605
2	5/2/22	4,636	6,627	9,617	76	43	10,151	455,580	597
3	5/2/22	5,595	6,814	9,965	90	15	9,645	458,513	532
4	5/2/22	5,043	6,440	9,774	89	153	10,305	465,080	580
5	5/3/22	5,551	7,894	9,870	90	26	10,033	454,900	583
6	5/3/22	5,699	7,327	9,961	91	57	9,436	453,668	532
7	5/3/22	5,174	6,905	9,820	91	28	9,622	457,300	575
8	5/4/22	5,127	7,477	9,824	92	28	9,666	455,350	578
9	5/4/22	5,090	6,652	9,846	92	48	9,650	455,656	565
10	5/4/22	5,757	5,842	9,759	90	22	9,285	455,700	562
11	5/5/22	5,509	7,344	9,783	92	47	9,369	461,218	568
12	5/5/22	6,015	6,543	9,663	92	46	9,651	473,880	556
13	5/5/22	5,961	7,342	9,660	92	33	9,404	454,560	549
14	5/6/22	5,988	6,481	9,496	89	36	9,465	455,295	554
15	5/6/22	5,428	6,914	9,729	91	39	9,528	455,900	540
16	5/7/22	5,398	7,547	9,673	91	18	9,467	452,824	988
17	5/7/22	5,914	7,650	9,756	91	26	10,608	454,660	532
18	5/8/22	6,203	7,467	9,753	91	38	9,434	456,414	534
19	5/8/22	6,476	6,701	9,691	90	288	9,656	458,610	528
20	5/9/22	6,363	6,648	9,580	92	88	9,595	453,960	518
21	5/9/22	5,998	7,263	9,632	91	37	9,717	454,829	535
22	5/9/22	5,740	7,282	9,673	91	16	9,229	455,040	508
23	5/10/22	5,932	7,377	9,651	92	29	9,531	456,340	503
24	5/10/22	5,808	6,894	9,569	91	39	9,482	455,264	483
25	5/10/22	5,528	7,257	9,804	89	21	9,327	457,760	246
26	5/11/22	6,116	7,407	9,571	91	30	9,491	455,740	491
27	5/11/22	6,074	7,166	9,576	91	41	9,660	455,388	498
28	5/11/22	5,557	6,949	9,614	90	33	9,498	456,600	479
29	5/12/22	5,733	7,703	9,587	90	15	9,523	455,060	482
30	5/12/22	5,968	7,374	9,450	91	41	9,199	455,452	485
31	5/12/22	5,897	6,828	9,340	90	22	9,484	457,012	472
32	5/13/22	6,063	7,504	9,454	90	23	9,337	456,692	466
33	5/13/22	6,294	7,590	9,605	90	25	9,416	455,191	467
34	5/13/22	5,453	6,674	9,629	88	32	9,479	456,572	454
35	5/14/22	5,826	7,173	9,455	91	18	9,460	456,952	456
36	5/14/22	6,319	7,205	9,638	91	22	9,278	456,226	460
37	5/14/22	6,246	7,334	9,661	94	38	9,413	457,437	455
38	5/15/22	5,800	7,701	9,663	92	21	9,209	455,192	443
39	5/15/22	5,600	8,003	9,688	94	25	9,338	455,875	367
40	5/15/22	5,669	8,206	9,732	93	22	9,179	455,457	367
41	5/15/22	5,573	7,793	9,754	93	43	9,398	454,600	367
42	5/16/22	5,878	7,856	9,769	93	16	9,339	454,484	367
43	5/16/22	5,884	7,343	9,741	93	50	9,326	453,788	367
44	5/16/22	5,948	8,600	9,744	90	11	9,092	454,200	367

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45	5/17/22	5,617	8,042	9,812	9	27	9,307	442,585	413
46	5/17/22	5,518	8,335	9,675	96	27	9,075	440,210	437
47	5/17/22	6,311	8,112	9,580	93	26	9,303	454,853	402
48	5/18/22	5,876	7,792	9,553	92	16	9,241	444,924	397
49	5/18/22	5,796	8,359	9,519	94	39	9,320	450,780	399
50	5/18/22	5,726	7,431	9,383	94	35	9,195	460,180	392
51	5/19/22	6,226	7,637	9,187	92	13	8,867	450,740	383
52	5/19/22	6,612	6,897	9,160	94	58	8,901	455,840	382
53	5/19/22	5,284	7,389	9,244	94	29	9,069	447,420	385
54	5/19/22	5,454	6,835	9,143	92	10	8,879	809,100	363
55	5/20/22	5,344	7,199	9,121	92	14	8,844	453,420	368
56	5/20/22	5,725	8,236	9,071	94	19	8,988	439,680	367
57	5/20/22	5,522	8,934	9,272	93	10	9,113	454,080	363
58	5/20/22	5,673	8,776	9,198	92	12	9,213	455,860	355
59	5/21/22	5,377	8,520	9,231	91	9	9,111	455,784	347
60	5/21/22	5,946	9,273	9,103	94	77	9,279	431,157	341
61	5/21/22	5,463	8,514	9,146	93	25	9,009	444,880	340
62	5/22/22	5,401	8,410	9,004	93	55	9,458	456,820	333
63	5/22/22	5,891	7,884	9,041	94	42	9,328	459,460	330
64	5/22/22	6,001	7,442	8,881	94	53	9,196	453,660	326
65	5/22/22	5,908	8,067	8,847	94	15	9,007	457,140	-
66	5/23/22	5,847	8,019	8,804	95	26	9,067	453,780	312
67	5/23/22	5,901	8,084	8,906	94	32	9,176	457,750	307
68	5/23/22	5,582	7,922	8,841	94	15	9,150	456,100	307
69	5/24/22	5,787	8,478	8,912	94	41	9,114	455,550	298
70	5/24/22	5,856	7,767	8,923	94	71	9,371	453,260	294
71	5/24/22	6,917	7,789	8,734	94	21	9,210	455,646	298
72	5/25/22	6,331	7,644	8,706	94	15	9,125	455,150	292
73	5/25/22	6,246	7,397	8,688	94	40	9,114	453,820	280
74	5/25/22	6,063	7,616	8,695	94	37	8,835	454,792	291
75	5/26/22	6,263	7,731	8,714	94	35	8,438	456,000	302
76	5/26/22	5,578	7,995	8,652	94	28	8,488	455,880	267
77	5/27/22	5,919	7,994	8,502	94	30	8,971	455,190	295
78	5/27/22	5,583	7,139	8,458	95	38	9,391	458,710	260
79	5/27/22	5,414	7,617	8,496	94	24	8,642	456,830	258
80	5/27/22	5,657	7,786	8,291	94	33	8,523	456,930	258
81	5/28/22	6,030	7,642	8,353	94	29	8,538	457,400	258
82	5/28/22	5,622	7,359	8,337	95	26	8,698	455,016	240
83	5/28/22	5,695	7,393	8,284	95	14	8,369	456,520	236
84	5/28/22	5,844	7,993	8,218	95	16	8,531	456,660	232
85	5/28/22	5,730	7,331	8,123	94	11	8,403	454,376	240
86	5/28/22	5,947	7,446	8,097	95	32	8,549	455,357	234
87	5/29/22	5,932	7,716	8,129	94	41	8,711	456,560	230
88	5/29/22	6,084	7,717	8,091	94	42	8,565	455,780	233
89	5/29/22	5,912	7,661	8,174	95	17	8,664	455,640	209
90	5/29/22	5,677	7,635	8,147	95	39	8,568	455,990	205
91	5/29/22	5,815	7,813	8,220	94	27	8,489	456,340	214
92	5/30/22	5,389	7,704	8,175	94	47	8,474	452,390	212
93	5/30/22	5,370	7,056	8,216	95	31	8,628	456,670	191
94	5/30/22	5,225	7,752	8,051	95	32	8,470	451,053	187

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**Phoenix 4H**  
Stimulation Report

Stage Number	Report Date	Total Shots	Cluster 1 Top TD	Cluster 5 Bottom TD
1	5/1/22	40	-	27,084
2	5/2/22	40	27,041	26,882
3	5/2/22	40	26,840	26,681
4	5/2/22	40	26,639	26,481
5	5/3/22	40	26,439	26,280
6	5/3/22	40	26,238	26,080
7	5/3/22	40	26,037	25,879
8	5/4/22	40	25,837	25,678
9	5/4/22	40	25,636	25,478
10	5/4/22	40	25,435	25,277
11	5/5/22	40	25,235	25,076
12	5/5/22	40	25,034	24,876
13	5/5/22	40	24,833	24,675
14	5/6/22	40	24,633	24,474
15	5/6/22	40	24,432	24,274
16	5/7/22	40	24,231	24,073
17	5/7/22	40	24,031	23,872
18	5/8/22	40	23,830	23,672
19	5/8/22	40	23,629	23,471
20	5/9/22	40	23,429	23,270
21	5/9/22	40	23,228	23,070
22	5/9/22	40	23,027	22,869
23	5/10/22	40	22,827	22,668
24	5/10/22	40	22,626	22,468
25	5/10/22	40	22,425	22,267
26	5/11/22	40	22,225	22,066
27	5/11/22	40	22,024	21,866
28	5/11/22	40	21,824	21,665
29	5/12/22	40	21,623	21,464
30	5/12/22	40	21,422	21,264
31	5/12/22	40	21,222	21,063
32	5/13/22	40	21,021	20,862
33	5/13/22	40	20,820	20,662
34	5/13/22	40	20,620	20,461
35	5/14/22	40	20,419	20,260
36	5/14/22	40	20,218	20,060
37	5/14/22	40	20,018	19,859
38	5/15/22	40	19,817	19,658
39	5/15/22	40	19,616	19,458
40	5/15/22	40	19,416	19,257
41	5/15/22	40	19,215	19,056
42	5/16/22	40	19,014	18,856
43	5/16/22	40	18,814	18,655
44	5/16/22	40	18,613	18,454

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45	5/17/22	40	18,412	18,254
46	5/17/22	40	18,212	18,053
47	5/17/22	40	18,011	17,852
48	5/18/22	40	17,810	17,652
49	5/18/22	40	17,610	17,451
50	5/18/22	40	17,409	17,250
51	5/19/22	40	17,208	17,050
52	5/19/22	40	17,008	16,849
53	5/19/22	40	16,807	16,648
54	5/19/22	40	16,606	16,448
55	5/20/22	40	16,406	16,247
56	5/20/22	40	16,205	16,046
57	5/20/22	40	16,004	15,846
58	5/20/22	40	15,804	15,645
59	5/21/22	40	15,603	15,445
60	5/21/22	40	15,402	15,244
61	5/21/22	40	15,202	15,043
62	5/22/22	40	15,001	14,843
63	5/22/22	40	14,800	14,642
64	5/22/22	40	14,600	14,441
65	5/22/22	40	14,399	14,241
66	5/23/22	40	14,198	14,040
67	5/23/22	40	13,998	13,839
68	5/23/22	40	13,797	13,639
69	5/24/22	40	13,596	14,438
70	5/24/22	40	13,396	13,237
71	5/24/22	40	13,195	13,037
72	5/25/22	40	12,994	12,836
73	5/25/22	40	12,794	12,635
74	5/25/22	40	12,593	12,435
75	5/26/22	40	12,392	12,234
76	5/26/22	40	12,192	12,033
77	5/27/22	40	11,991	11,833
78	5/27/22	40	11,791	11,632
79	5/27/22	40	11,590	11,431
80	5/27/22	40	11,389	11,231
81	5/28/22	40	11,189	11,030
82	5/28/22	40	10,988	10,829
83	5/28/22	40	10,787	10,629
84	5/28/22	40	10,587	10,428
85	5/28/22	40	10,386	10,227
86	5/28/22	40	10,185	10,027
87	5/29/22	40	9,985	9,826
88	5/29/22	40	9,784	9,625
89	5/29/22	40	9,583	9,425
90	5/29/22	40	9,383	9,224
91	5/29/22	40	9,182	9,023
92	5/30/22	40	8,981	8,823
93	5/30/22	40	8,781	8,622
94	5/30/22	40	8,580	8,421

02/23/2024



**Cement Job Log**



NexTier Completion Solutions  
3990 Rogerdale Rd., Houston, TX 77042  
(713)325-6000

Customer:	NORTHEAST NATURAL ENERGY LLC	Date:	<b>21-Feb-22</b>	Serv. Supervisor:	Steven Long		
Cust. Rep.:	JOSH	Ticket #:	BPA-2202-0032	Serv. Center:	Black Lick - 1571		
Well Name:	Phoenix 4H	API Well #:	47-061-01875	County:	Monongalia	State:	WV
Well Type:		Rig:	PATTERSON 277	Type of Job:	CM-SURFACE CASING		

Materials Furnished by NexTier									
Plugs	Casing Hardware	Physical Slurry Properties							
		Sacks of Cement	Fluid Density (lb/gal)	Excess	Yield (cuft/sk)	Mix Water (gal/sk)	Fluid Volume (bbls)	Fluid Volume (cuft)	Mix Water (bbls)
6% Gel Spacer	+20.0 PPB NEX-020		8.7		4.62	33.66	25.00	-	
15.6 lb/gal Cement	100 % NCM-910 +1.0 % NAC-110+0.25 PPS NUM-600	2395	15.6	12%	1.19	5.21	506.68	2,845.01	297
Fresh Water Displacement			8.33			-	225.39	-	
0						-		-	
						-		-	
						-		-	
						-		-	
						-		-	
						-		-	
						-		-	
						-		-	

Displacement Chemicals:

OPEN HOLE DATA						TUBULAR DATA							
22 in. O.H. 128 to 1,498 ft			13.375 in. 54.5#, (0 to 1,498 ft)			SIZE WEIGHT	THRD	DEPTH (ft)	GRADE	ID (in)	BURST (psi)	COLLAPSE (psi)	
Ambient Tmp.	Bulk Tmp.	Slurry 1 Tmp.	Slurry 2 Tmp.	Slurry 3 Tmp.	Slurry 4 Tmp.	13.375	54.5	BTC	1592	J-55	12.615	2730	1130
40.0 °F		57.0 °F											
PREVIOUS CASING DATA				PERFORATED INTERVAL DATA				CASING EQUIPMENT DEPTHS					
24 in. 97.4# (0 to 128 ft)				TOP	BTM	SPF	SIZE	SHOE	FLOAT	STAGE	ACP		
								1592	1548				
WELL FLUID			DISPLACEMENT FLUID			DIFF PRESS (psi)	CSG LIFT (psi)	MAX PRESS (psi)	Mix H2O Chlorides (ppm)	Mix H2O pH	Mix H2O Temp	WATER ON LOC (bbl)	
TYPE	DENSITY	VOLUME	TYPE	DENSITY									
H2O	8.4 ppg	239.3 bbl	H2O	8.4 ppg	585	470	2184	< 200	7	50.0 °F	1600		
Bumped Plug	Final Differential (psi)	Floats Held (Y/N)	PSI Left on Casing	Cement to Surface (bbl)	Top of Cement (ft)	Full Circ. During Job (Y/N)	Max Pump Pressure (psi)	Casing Rotation	Additional Hrs Charged (hrs)	Casing Reciprocation	Rathole Length (ft)		
Yes	600.00	Y	-	19.00	-	Yes	1,100.00	No	11.00	No			

Comments/Additional Details:

<i>Steven Long</i> Service Supervisor		<i>21-Feb-22</i> Date
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02/23/2024

**Cement Job Log**



NextTier Completion Solutions  
3990 Rogerdale Rd., Houston, TX 77042  
(713)325-6000

Customer:	NORTHEAST NATURAL ENERGY LLC	Date:	23-Feb-22	Serv. Supervisor:	Tim Monoskey
Cust. Rep.:	JOSH	Ticket #:	BPA-2202-0035	Serv. Center:	Black Lick - 1571
Well Name:	Phoenix 4H	API Well #:	47-061-01875	County:	Monongalia State: WV
Well Type:		Rig:	PATTERSON 277	Type of Job:	CM-INTER. CASING

Materials Furnished by NextTier										
Plugs	Casing Hardware	Sacks of Cement	Fluid Density (lb/gal)	Excess	Yield (cuft/sk)	Mix Water (gal/sk)	Fluid Volume (bbls)	Fluid Volume (cuft)	Mix Water (bbls)	
CUSTOMER SUPPLIED	NEXTIER 9 5/8 PLUG CONTAINER									
TOP PLUG										
6% Gel Spacer	+20.0 PPB NEX-020		8.7		4.62	33.66	25.00	-		
15.6 lb/gal Cement	100 % NCM-910 +1.0 % NAC-110	905	15.6	30%	1.19	5.24	191.46	1,075.05	113	
Fresh Water Displacement			8.33				210.13	-		
0										

Displacement Chemicals: N/A

OPEN HOLE DATA						TUBULAR DATA						
12.25 in. O.H. 1,498 to 2,758 ft			9.625 in. 36#, ( 0 to 2,758 ft)			SIZE WEIGHT	THRD	DEPTH (ft)	GRADE	ID (in)	BURST (psi)	COLLAPSE (psi)
Ambient Tmp.	Bulk Tmp.	Slurry 1 Tmp.	Slurry 2 Tmp.	Slurry 3 Tmp.	Slurry 4 Tmp.	9.625" 36#	BTC	2821	J-55	8.921	3520	2020
29.0 °F	29.0 °F	54.0 °F	61.0 °F									

PREVIOUS CASING DATA		PERFORATED INTERVAL DATA				CASING EQUIPMENT DEPTHS			
13.375 in. 54.5# ( 0 to 1,498 ft)		TOP	BTM	SPF	SIZE	SHOE	FLOAT	STAGE	ACP
						2821	2776		

WELL FLUID			DISPLACEMENT FLUID			DIFF PRESS (psi)	CSG LIFT (psi)	MAX PRESS (psi)	Mix H2O Chlorides (ppm)	Mix H2O pH	Mix H2O Temp	WATER ON LOC (bbl)
TYPE	DENSITY	VOLUME	TYPE	DENSITY								
REC	8.4 ppg	214.6 bbl	REC	8.4 ppg	1048.4	1063	3500	<300	7	52.0 °F	1200	

  

Bumped Plug	Final Differential (psi)	Floats Held (Y/N)	PSI Left on Casing	Cement to Surface (bbl)	Top of Cement (ft)	Full Circ. During Job (Y/N)	Max Pump Pressure (psi)	Casing Rotation	Additional Hrs Charged (hrs)	Casing Reciprocation	Rathole Length (ft)
Yes	1,100.00	Y	-	10.00	-	No	3,500.00	No	8.00	No	20'

Comments/Additional Details:

<b>Tim Monoskey</b> Service Supervisor		23-Feb-22 Date
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02/23/2024

Cement Job Log



NexTier Completion Solutions  
3990 Rogerdale Rd., Houston, TX 77042  
(713)325-6000

Customer:	NORTHEAST NATURAL ENERGY LLC	Date:	<b>9-Mar-22</b>	Serv. Supervisor:	Steven Long
Cust. Rep.:	TROY	Ticket #:	BPA-2203-0014	Serv. Center:	Black Lick - 1571
Well Name:	Phoenix 4H	API Well #:	47-061-01876	County:	Monongalia
Well Type:		Rig:	PATTERSON 277	Type of Job:	CM-PROD. CASING

Materials Furnished by NexTier

Plugs	Casing Hardware	Physical Slurry Properties							
		Sacks of Cement	Fluid Density (lb/gal)	Excess	Yield (cuft/sk)	Mix Water (gal/sk)	Fluid Volume (bbls)	Fluid Volume (cuft)	Mix Water (bbls)
13.5 lb/gal PureScrub Spacer w/Surfactant	+7.0 PPB NFP-703+1.0 GPB NTC-885	110	13.5		5.65	26.79	80.00	621.88	70
14.5 lb/gal Cement	50 % NCM-910+50 % NPZ-010 +0.2 % NFP-703+0.15 % NAS-504+0.35 % NRT-213+0.15 % NFL-549+0.1 % NTC-405	5055	14.5		1.16	4.90	1,042.72	5,854.84	589
Sugar Water Displacement	+5.0 PPB NRT-215					-	20.00	-	
Fresh Water Displacement						-	582.84	-	
						-		-	
						-		-	
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Displacement Chemicals:

OPEN HOLE DATA				TUBULAR DATA								
8.75 in. O.H. 2,768 to 7,928 ft		8.5 in. O.H. 7,928 to 27,186 ft		SIZE WEIGHT	THRD	DEPTH (ft)	GRADE	ID (in)	BURST (psi)	COLLAPSE (psi)		
Ambient Tmp.	Bulk Tmp.	Slurry 1 Tmp.	Slurry 2 Tmp.	Slurry 3 Tmp.	Slurry 4 Tmp.	5.5 20#	BTC	27194.5	P-110	4.778	12640	11080
37.0 °F		57.8 °F										
PREVIOUS CASING DATA				PERFORATED INTERVAL DATA				CASING EQUIPMENT DEPTHS				
9.625 in. 36# ( 0 to 2,758 ft)				TOP	BTM	SPF	SIZE	SHOE	FLOAT	STAGE	ACP	
								27194.5	27193.5			
WELL FLUID		DISPLACEMENT FLUID				DIFF PRESS (psi)	CSG LIFT (psi)	MAX PRESS (psi)	Mix H2O Chlorides (ppm)	Mix H2O pH	Mix H2O Temp	WATER ON LOC (bbl)
TYPE	DENSITY	VOLUME	TYPE	DENSITY								
OBM	12.3 ppg	603.7 bbl	H2O	8.3 ppg	4600		6500	< 200	7	49.0 °F	1600	
Bumped Plug	Final Differential (psi)	Floats Held (Y/N)	PSI Left on Casing	Cement to Surface (bbl)	Top of Cement (ft)	Full Circ. During Job (Y/N)	Max Pump Pressure (psi)	Casing Rotation	Additional Hrs Charged (hrs)	Casing Reciprocation	Rathole Length (ft)	
Yes	4,025.00	Y	-	-	2,192	Yes	5,000.00	No	-	No	20	

Comments/Additional Details:

*Steven Long*  
 Service Supervisor

**9-Mar-22**  
 Date

02/23/2024

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	5/1/2022
Job End Date:	5/30/2022
State:	West Virginia
County:	Monongalia
API Number:	47-061-01875-00-00
Operator Name:	Northeast Natural Energy LLC
Well Name and Number:	Phoenix 4H
Latitude:	39.64124200
Longitude:	-80.27202300
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	8,201
Total Base Water Volume (gal):	36,240,498
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	Water	7732-18-5	100.00000	87.42339	None
Sand (100 Mesh Proppant)	ProFrac	Proppant	Silica Substrate	14808-60-7	100.00000	9.53411	None
Sand (40/70 White Proppant)	ProFrac	Proppant	Silica Substrate	14808-60-7	100.00000	2.78233	None
Hydrochloric Acid (7.5%)	CNR	Acidizing	Water	7732-18-5	85.00000	0.13337	None
			Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	37.00000	0.05806	None
StimSTREAM FR 9800	Chemstream	Friction Reducer	alkanes, C16-20-iso-	90622-59-6	25.00000	0.01390	None
			Butene, homopolymer	9003-29-6	25.00000	0.01390	None
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00167	None
Clearal 268	Chemstream	Biocide	Non-hazardous substances	Proprietary	80.00000	0.02129	None

			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	0.01408	None
			Diethylenetriamine penta (methylene phosphonic acid) (DTPMP)	15827-60-8	10.00000	0.00201	None
			Citric Acid	77-92-9	10.00000	0.00201	None
			2-Phosphono-1,2,4-butanetricarboxylic acid (PBTC)	37971-36-1	10.00000	0.00201	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 corrosion inhibitor	Proprietary	10.00000	0.00005	None
			Proprietary ethoxylated alcohol	Proprietary	10.00000	0.00005	None
ProFE 105	CNR	Iron Control					
			Citric Acid	77-92-9	20.00000	0.00008	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	0.13337	
			Non-hazardous substances	Proprietary	80.00000	0.02129	
			Non-Hazardous Substances	Proprietary	70.00000	0.01408	
			Butene, homopolymer	9003-29-6	25.00000	0.01390	
			Citric Acid	77-92-9	10.00000	0.00201	
			Diethylenetriamine penta (methylene phosphonic acid) (DTPMP)	15827-60-8	10.00000	0.00201	
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00167	
			Didecyl dimethyl ammonium chloride	7173-51-5	3.00000	0.00080	
			Quaternary Ammonium Compounds	68424-85-1	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 ethoxylated alcohol	Proprietary	10.00000	0.00005	
			Proprietary corrosion inhibitor	Proprietary	10.00000	0.00005	
			Acetic Acid	64-19-7	5.00000	0.00002	