

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

API 47 - 061 - 01880 County Monongalia District Battelle  
Quad Wadestown Pad Name ERP Field/Pool Name \_\_\_\_\_  
Farm name Phoenix Energy Resources, LLC Well Number 14H  
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 4391812.2 Easting 562335.6  
Landing Point of Curve Northing 4392026.8 Easting 563133.6  
Bottom Hole Northing 4389027.8 Easting 565206.8

Elevation (ft) 1,338' 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 5/10/2022 Date drilling commenced 9/13/2021 Date drilling ceased 9/26/2021  
Date completion activities began 12/21/2021 Date completion activities ceased 2/1/2022  
Verbal plugging (Y/N) NA Date permission granted \_\_\_\_\_ Granted by \_\_\_\_\_

RECEIVED  
Office of Oil and Gas  
FEB 06 2023

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

Freshwater depth(s) ft 1,217' Open mine(s) (Y/N) depths N WV Department of  
Salt water depth(s) ft 2,470' Void(s) encountered (Y/N) depths N Environmental Protection  
Coal depth(s) ft 1,119' Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

Reviewed by: MDK 2/23/2023  
**APPROVED**  
03/17/2023

API 47-061 - 01880 Farm name Phoenix Energy Resources, LLC Well number 14H

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'				
Surface	17-1/2"	13-3/8"	1,302'	N	54.5	NA	N, top job
Coal							
Intermediate 1	12-3/8"	9-5/8"	2,577'	N	36	NA	Y, 8 bbl
Intermediate 2							
Intermediate 3							
Production	8-3/4" & 8-1/2"	5-1/2"	21,040'	N	20	NA	
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	Type 1	36					48
Surface	Class A	1,130	15.6	1.20	1,351	420	12
Coal							
Intermediate 1	Class A	880	15.6	1.19	1,045	CTS	8
Intermediate 2							
Intermediate 3							
Production	50:50 poz	3,925	14.5	1.16	4,732	2,358	48
Tubing							

Drillers TD (ft) 21,083' Loggers TD (ft) 21,053'  
 Deepest formation penetrated Marcellus Plug back to (ft) NA  
 Plug back procedure NA

RECEIVED  
Office of Oil and Gas  
FEB 06 2023

Kick off depth (ft) 7,949'

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

WV Department of Environmental Protection

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 - 01880 Farm name Phoenix Energy Resources, LLC Well number 14H

**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.

API 47- 061 - 01880 Farm name Phoenix Energy Resources, LLC Well number 14H

PRODUCING FORMATION(S)	DEPTHS		
Marcellus	8,078'	TVD	21,111' 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 3954 psi DURATION OF TEST 24 hrs

OPEN FLOW Gas 5492 mcfpd Oil \_\_\_\_\_ bpd NGL \_\_\_\_\_ bpd Water \_\_\_\_\_ bpd  
 GAS MEASURED BY  Estimated  Orifice  Pilot

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

RECEIVED  
Office of Oil and Gas  
FEB 06 2023  
WV Department of  
Environmental Protection

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 ProFrac  
 Address 800 Mountain View Drive City Smithfield State PA Zip 15478

Please insert additional pages as applicable.

Completed by Hollie Medley Telephone 304-414-7060  
 Signature Hollie Medley Title Regulatory Manager Date 2-1-23

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

03/17/2023



Cement Job Log



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

Customer:	NORTHEAST NATURAL ENERGY LLC	Date:	17-Sep-21	Serv. Supervisor:	Steven Long
Cust. Rep.:	TROY	Ticket #:	BPA-2109-0015	Serv. Center:	Black Lick - 1571
Well Name:	ERP 14H	API Well #:	47-061-1880	County:	Monongalia
Well Type:	GAS	Rig:	PATTERSON 277	State:	WV
			Type of Job:	CM-INTER. CASING	

Materials Furnished by NextTier

Plugs	Casing Hardware	Physical Slurry Properties							
		Sacks of Cement	Fluid Density (lb/gal)	Excess	Yield (cuft/sk)	Mix Water (gal/sk)	Fluid Volume (bbbls)	Fluid Volume (cuft)	Mix Water (bbbls)
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	880	15.6	30%	1.19	5.24	186.17	1,045.35	110
Fresh Water Displacement			8.33				197.91		
0									

RECEIVED  
Office of Oil and Gas  
FEB 06 2023  
WV Department of Environmental Protection

Displacement Chemicals:

OPEN HOLE DATA						TUBULAR DATA						
12.375 in. O.H. 1,336 to 2,600 ft			9.625 in. 36#, (0 to 2,600 ft)			SIZE WEIGHT	THRD	DEPTH (ft)	GRADE	ID (in)	BURST (psi)	COLLAPSE (psi)
Ambient Temp.	Bulk Temp.	Slurry 1 Temp.	Slurry 2 Temp.	Slurry 3 Temp.	Slurry 4 Temp.	9.625 36#	BTC	2605	J-55	8.921	3520	2020
61.0 °F		81.0 °F										
PREVIOUS CASING DATA				PERFORATED INTERVAL DATA				CASING EQUIPMENT DEPTHS				
13.375 in. 54.5# (0 to 1,336 ft)				TOP	BTM	SPF	SIZE	SHOE	FLOAT	STAGE	ACP	
								2605	2561			
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 (bbbl)
TYPE	DENSITY	VOLUME	TYPE	DENSITY								
P. H2O	8.3 ppg	198 bbl	P. H2O	8.3 ppg		967	982	2816	< 200	7	71.2 °F	1800
Bumped Plug	Final Differential (psi)	Floater Held (Y/N)	PSI Left on Casing	Cement to Surface (bbbl)	Top of Cement (ft)	Full Circ. During Job (Y/N)	Max Pump Pressure (psi)	Casing Rotation	Additional Hrs Charged (hrs)	Casing Rediprocation	Rathole Length (ft)	
Yes	1,120.00	Y	-	8.00	-	Yes	1,630.00	No	2.00	No	45	

Comments/Additional Details:

*Steven Long*  
Service Supervisor

*17-Sep-21*  
Date

Cement Job Log



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

Customer: <b>NORTHEAST NATURAL ENERGY LLC</b>	Date: <b>26-Sep-21</b>	Serv. Supervisor: <b>Michael Franco</b>
Cust. Rep.: <b>Troy</b>	Ticket #: <b>BPA-2109-0028</b>	Serv. Center: <b>Black Lick - 1571</b>
Well Name: <b>ERP 14H</b>	API Well #: <b>47-061-1880</b>	County: <b>Monongalia</b> State: <b>WV</b>
Well Type:	Rig: <b>Patterson 277</b>	Type of Job: <b>CM-PROD. CASING</b>

Plugs	Casing Hardware	Materials Furnished by NexTier							Physical Slurry Properties		
		Sacks of Cement	Fluid Density (lb/gal)	Excess	Yield (cuft/sk)	Mix Water (gall/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 NSU-887L	100	13.5		5.65	26.78	80.00	565.17	64		
14.5 lb/gal Cement	50 % NCM-910+50 % NP2-010 +0.2 % NFP-703+0.15 % NAS-504+0.25 % NRT-213+0.15 % NFL-549+0.1 % NTC-405	3925	14.5		1.16	4.90	809.28	4,544.13	458		
Sugar Water Displacement	+5.0 PPB NRT-215					-	20.00	-			
Fresh Water Displacement						-	449.40	-			
						-					
						-					
						-					
						-					
						-					
						-					
						-					
						-					

RECEIVED  
Office of Oil and Gas  
FEB 06 2023  
WV Department of Environmental Protection

Displacement Chemicals:

OPEN HOLE DATA				TUBULAR DATA									
8.75 in. O.H. 2,600 to 9,203 ft		5.5 in. 20#, ( 0 to 21,169 ft )			SIZE WEIGHT	THRD	DEPTH (ft)	GRADE	ID (in)	BURST (psi)	COLLAPSE (psi)		
Ambient Temp	Bulk Temp	Slurry 1 Temp	Slurry 2 Temp	Slurry 3 Temp	Slurry 4 Temp	5.5 20#	BTC	21068	P-110	4.778	12360	11080	
75.0 °F													

PREVIOUS CASING DATA		PERFORATED INTERVAL DATA				CASING EQUIPMENT DEPTHS			
9.625 in. 36# ( 0 to 2,600 ft )		TOP	BTM	SPF	SIZE	SHOE	FLOAT	STAGE	ACP
						21068	21068		

WELL FLUID		DISPLACEMENT FLUID				DIFF PRESS	CSG LIFT	MAX PRESS	Mix H2O Chlorides (ppm)	Mix H2O pH	Mix H2O Temp	WATER ON LOG (bbl)
TYPE	DENSITY	VOLUME	TYPE	DENSITY		(psi)	(psi)	(psi)				
OBM	12.5 ppg	465.6 bbl	H2O	8.3 ppg		1985	15515		3	7	68.0 °F	1200

Comments/Additional Details:	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	3,500.00	Y	-	-	1,959	Yes		No	-	No	43'

Top of Cement = 1959'      Top of Spacer = 289'      14 bbl Mud Left in Hole

Michael Franco      26-Sep-21  
Service Supervisor      Date

**ERP 14H**  
**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	12/22/2021	5,017	7,143	10,029	72	429	7,864	300,027	463
2	12/26/2021	5,374	7,948	10,219	79	99	9,346	445,065	473
3	12/27/2021	5,145	7,212	10,085	73	32	9,442	444,927	460
4	12/27/2021	5,883	6,958	9,414	88	381	9,761	445,010	511
5	12/28/2021	5,802	8,063	10,095	78	410	9,683	444,750	493
6	12/29/2021	5,792	7,909	10,108	89	6	9,547	444,500	462
7	12/30/2021	6,063	7,878	9,708	92	14	9,413	444,810	493
8	12/30/2021	5,942	7,681	9,521	87	10	9,259	445,050	439
9	12/31/2021	5,659	7,142	9,542	89	74	9,629	445,070	445
10	1/1/2022	5,809	6,614	9,435	91	22	9,308	444,950	441
11	1/2/2022	5,819	6,222	9,432	90	24	9,290	445,000	428
12	1/3/2022	5,556	7,032	9,416	92	166	9,387	445,000	420
13	1/4/2022	5,801	7,491	9,235	90	70	9,233	445,150	424
14	1/4/2022	6,222	7,148	9,497	90	12	9,184	444,950	412
15	1/5/2022	5,631	7,759	9,981	93	51	9,185	445,000	403
16	1/5/2022	6,029	6,721	9,684	90	65	9,226	445,050	418
17	1/6/2022	6,010	9,770	9,953	92	30	9,169	445,000	404
18	1/6/2022	6,457	7,007	9,806	91	35	9,196	445,000	406
19	1/7/2022	6,550	6,698	9,824	91	12	8,691	445,000	400
20	1/7/2022	5,920	9,219	9,717	88	5	9,207	444,500	378
21	1/8/2022	5,204	7,032	9,709	91	23	9,381	445,000	391
22	1/9/2022	5,310	7,728	9,716	89	5	9,202	444,580	396
23	1/10/2022	5,462	6,244	9,823	91	98	8,562	445,000	370
24	1/10/2022	5,347	8,295	9,716	87	20	9,362	445,000	377
25	2/14/2022	5,848	8,167	9,383	91	56	8,270	390,200	390
26	1/11/2022	5,863	7,449	9,629	90	50	9,149	444,857	354
27	1/12/2022	5,668	7,422	9,621	91	15	9,280	445,100	368
28	1/12/2022	5,655	7,271	9,606	89	3	9,151	444,920	343
29	1/12/2022	6,374	7,459	9,479	91	21	9,212	444,950	341
30	1/13/2022	5,592	7,852	9,581	92	52	9,267	444,950	359
31	1/13/2022	6,130	7,482	9,547	91	32	9,223	444,950	329
32	1/13/2022	6,281	7,537	9,426	91	17	9,175	445,000	335
33	1/14/2022	5,980	5,896	9,321	92	48	9,192	445,000	322
34	1/14/2022	5,961	7,443	9,161	92	29	9,152	445,000	318
35	1/8/2022	5,796	7,388	9,320	92	54	9,161	444,900	334
36	1/15/2022	5,509	7,530	9,109	92	76	9,081	445,000	314
37	1/16/2022	5,511	7,629	9,296	91	66	9,136	445,000	319
38	1/17/2022	6,374	7,250	9,289	93	13	9,200	445,000	415
39	1/18/2022	5,889	7,413	9,147	92	67	9,097	445,000	306
40	1/19/2022	5,408	7,167	8,868	92	24	9,073	445,000	300
41	1/19/2022	5,514	7,322	8,877	92	16	9,069	445,000	293
42	1/20/2022	5,737	7,150	8,912	92	28	9,188	445,000	285
43	1/21/2022	5,594	6,742	8,582	92	110	9,153	445,000	282
44	1/22/2022	5,747	6,789	8,689	92	34	8,967	445,000	281
45	1/22/2022	6,453	6,981	8,538	92	63	9,131	445,000	272

03/17/2023



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)
46	1/22/2022	5,770	5,267	8,641	92	10	8,912	445,000	269
47	1/23/2022	5,993	7,128	8,858	92	83	9,261	445,000	292
48	1/23/2022	6,154	7,392	8,618	92	65	9,005	445,000	256
49	1/23/2022	6,056	7,099	8,583	92	27	9,186	445,000	253
50	1/24/2022	6,069	7,200	8,735	92	26	8,729	445,000	250
51	1/24/2022	6,481	7,360	8,657	92	63	9,017	445,000	245
52	1/24/2022	5,929	7,246	8,552	91	31	8,619	441,000	282
53	1/25/2022	5,351	7,631	8,568	92	56	9,061	445,000	245
54	1/25/2022	4,965	7,515	8,647	92	31	9,006	445,000	230
55	1/26/2022	5,495	7,383	8,316	93	74	9,018	445,000	240
56	1/26/2022	6,692	7,209	8,211	91	47	9,036	445,000	241
57	1/27/2022	6,371	6,899	8,260	92	11	8,982	445,000	220
58	1/28/2022	6,195	7,444	8,503	92	35	8,985	445,000	217
59	1/28/2022	5,208	7,027	8,935	89	78	8,950	445,000	222
60	1/29/2022	5,796	7,380	8,899	89	49	9,517	433,600	448
61	1/29/2022	6,077	7,009	8,390	92	37	9,064	445,100	203

RECEIVED  
Office of Oil and Gas  
FEB 06 2023  
WV Department of  
Environmental Protection

03/17/2023

**ERP 14H**  
Perforation Report

Stage Number	Report Date	Total Shots	Cluster 1 Top TD	Cluster 5 Bottom TD
1	12/22/2021	40	0	20,961
2	12/26/2021	40	20,917	20,760
3	12/27/2021	40	20,718	20,560
4	12/27/2021	40	20,518	20,361
5	12/28/2021	40	20,319	20,161
6	12/29/2021	40	20,120	19,962
7	12/30/2021	40	19,920	19,763
8	12/30/2021	40	19,721	19,563
9	12/31/2021	40	19,521	19,364
10	1/1/2022	40	19,322	19,164
11	1/2/2022	40	19,123	18,965
12	1/3/2022	40	18,923	18,766
13	1/4/2022	40	18,724	18,566
14	1/4/2022	40	18,524	18,367
15	1/5/2022	40	18,325	18,167
16	1/5/2022	40	18,126	17,968
17	1/6/2022	40	17,926	17,769
18	1/6/2022	40	17,727	17,569
19	1/7/2022	40	17,527	17,370
20	1/7/2022	40	17,328	17,170
21	1/8/2022	40	17,129	19,971
22	1/9/2022	40	16,929	16,772
23	1/10/2022	40	16,730	16,572
24	1/10/2022	40	16,530	16,373
25	2/14/2022	40	16,331	16,173
26	1/11/2022	40	16,132	15,974
27	1/12/2022	40	15,932	15,775
28	1/12/2022	40	15,733	15,575
29	1/12/2022	40	15,533	15,376
30	1/13/2022	40	15,334	15,176
31	1/13/2022	40	15,135	14,977
32	1/13/2022	40	14,935	14,778
33	1/14/2022	40	14,736	14,578
34	1/14/2022	40	14,536	14,379
35	1/8/2022	40	14,337	14,179
36	1/15/2022	40	14,138	13,980
37	1/16/2022	40	13,938	13,781
38	1/17/2022	40	13,739	13,581
39	1/18/2022	40	13,539	13,382
40	1/19/2022	40	13,340	13,182
41	1/19/2022	40	13,141	12,983
42	1/20/2022	40	12,941	12,784
43	1/21/2022	40	12,742	12,584
44	1/22/2022	40	12,542	12,385
45	1/22/2022	40	12,343	12,185
46	1/22/2022	40	12,144	11,986

RECEIVED  
Office of Oil and Gas  
FEB 06 2023  
WV Department of  
Environmental Protection

03/17/2023

Stage Number	Report Date	Total Shots	Cluster 1 Top TD	Cluster 5 Bottom TD
47	1/23/2022	40	11,944	11,787
48	1/23/2022	40	11,745	11,587
49	1/23/2022	40	11,545	11,388
50	1/24/2022	40	11,346	11,188
51	1/24/2022	40	11,147	10,989
52	1/24/2022	40	10,947	10,790
53	1/25/2022	40	10,748	10,590
54	1/25/2022	40	10,548	10,391
55	1/26/2022	40	10,349	10,191
56	1/26/2022	40	10,150	9,992
57	1/27/2022	40	9,950	9,793
58	1/28/2022	40	9,751	9,593
59	1/28/2022	40	9,551	9,394
60	1/29/2022	40	9,352	9,194
61	1/29/2022	40	9,153	8,995

RECEIVED  
Office of Oil and Gas

FEB 06 2023

WV Department of  
Environmental Protection

03/17/2023

ERP Completion Lithology			
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)
Sand/silt	0	175	Sand/silt
Sand/red shale	175	280	sand with reddish shale
sandstone/shale	280	620	sandstone/shale
coal	550	555	coal
coal	610	614	coal
sandstone	620	680	sandstone
Washington Coal	665	668	coal
siltstone/sandstone	680	715	siltstone/sandstone
sandstone/siltstone	715	767	sandstone/siltstone
Waynesburg Coal	734	737	Waynesburg Coal
Limestone/sandstone/shale	767	865	Limestone/sandstone/shale
Limestone/siltstone	873	910	Limestone/siltstone
Limestone	910	950	Limestone
sandstone/siltstone	950	994	sandstone/siltstone
Sewickley coal	994	998	Sewickley coal
Limestone	998	1040	Limestone
Limestone/siltstone	1040	1114	Limestone/siltstone
Pittsburgh coal	1114	1119	Pittsburgh coal
Limestone/siltstone	1119	1220	Limestone/siltstone
Maxon	1450	1500	Maxon
Red Rock/siltstone/limestone	1500	2149	Red Rock/siltstone/limestone
Little Lime	2149	2217	Little Lime
Big Lime	2217	2367	Big Lime
Big Injun	2367	2470	Big Injun
Sand/silt	2470	2546	Sand/silt
Gantz	2546	2590	Gantz
Sand/shale	2590	5540	Sand/shale
gray shale/siltstone	5540	7399	gray shale/siltstone
Middlesex	7399	7655	Middlesex
Burkett	7655	7820	Burkett
Geneseo	7820	7865	Geneseo
Tully	7865	7913	Tully
Hamilton	7913	8001	Hamilton
Marcellus	8001	TD	Marcellus

**RECEIVED**  
 Office of Oil and Gas  
**FEB 06 2023**  
 WV Department of  
 Environmental Protection

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/22/2021
Job End Date:	1/29/2022
State:	West Virginia
County:	Monongalia
API Number:	47-061-01880-00-00
Operator Name:	Northeast Natural Energy LLC
Well Name and Number:	ERP 14H
Latitude:	39.67386800
Longitude:	-80.27318300
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	8,076
Total Base Water Volume (gal):	23,494,800
Total Base Non Water Volume:	0



RECEIVED  
 Office of Oil and Gas  
 FEB 06 2022  
 WV Department of Environmental Protection

## 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	87.62373	None
Sand (100 Mesh Proppant)	ProFrac	Proppant	Silica Substrate	14808-60-7	100.00000	9.28441	None
Sand (40/70 White Proppant)	ProFrac	Proppant	Silica Substrate	14808-60-7	100.00000	2.77450	None
Hydrochloric Acid (7.5%)	CNR	Acidizing	Water	7732-18-5	85.00000	0.17227	None
			Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	37.00000	0.07499	None
StimSTREAM SC 405	Chemstream	Scale Control	Non-Hazardous Substances	Proprietary	70.00000	0.02188	None
			2-Phosphono-1,2,4-butanetricarboxylic acid (PBTC)	37971-36-1	10.00000	0.00313	None
			Diethylenetriamine penta (methylene phosphonic acid) (DTPMP)	15827-60-8	10.00000	0.00313	None
			Citric Acid	77-92-9	10.00000	0.00313	None

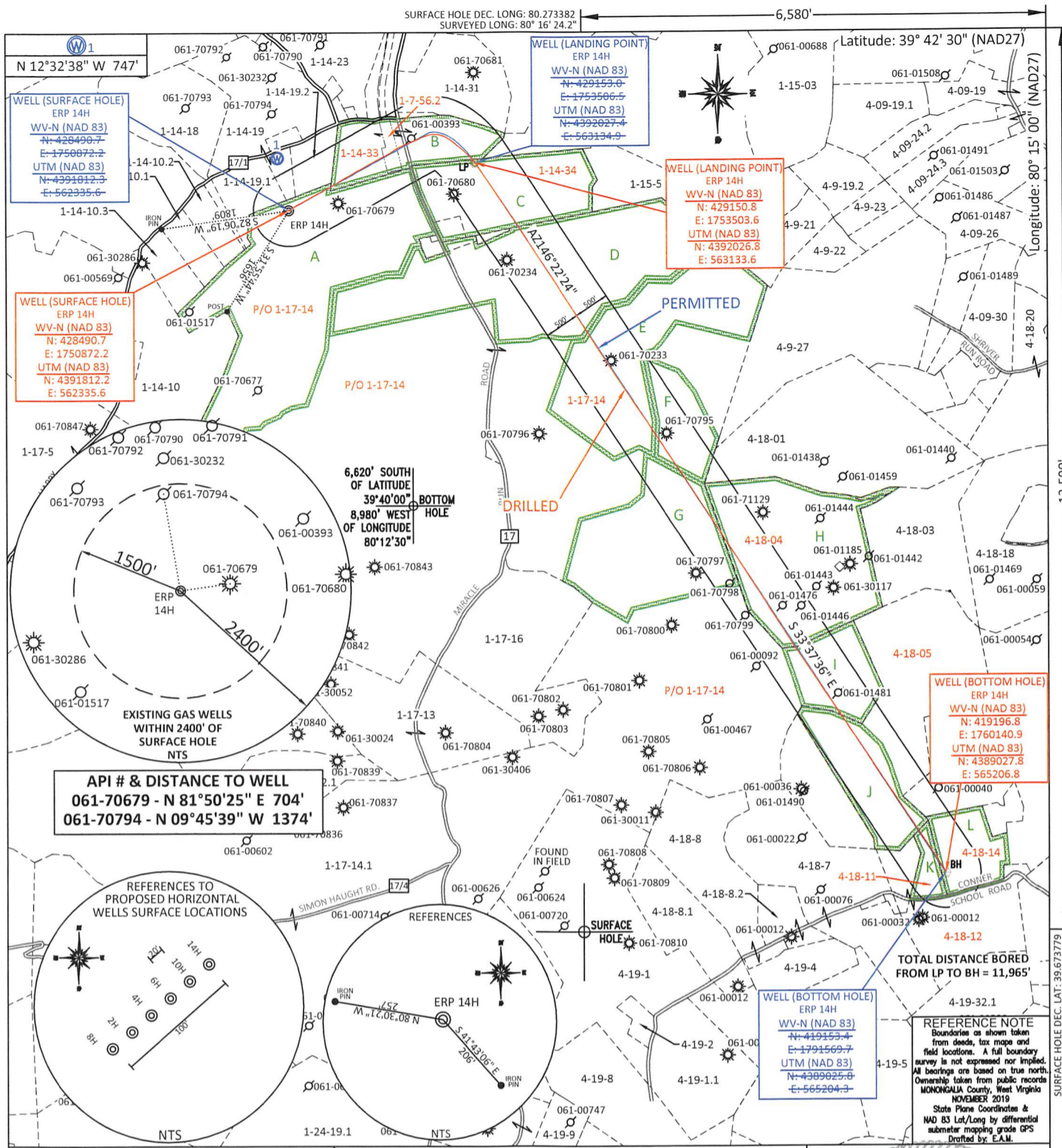
StimSTREAM FR 9800	Chemstream	Friction Reducer					
			Alkanes, C16-20-iso-	90622-59-6	25.00000	0.01378	None
			Butene, homopolymer	9003-29-6	25.00000	0.01378	None
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00165	None
Clearal 268	Chemstream	Biocide					
			Non-Hazardous Substances	Proprietary	80.00000	0.02143	None
			Glutaraldehyde	111-30-8	20.00000	0.00536	None
			Quaternary Ammonim 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
ProHib 100	CNR	Acid Inhibitor					
			2-Butoxyethanol	111-76-2	60.00000	0.00040	None
			Proprietary material	Proprietary	30.00000	0.00020	None
			Proprietary non-ionic surfactant	Proprietary	20.00000	0.00013	None
			Proprietary ethoxylated alcohol	Proprietary	10.00000	0.00007	None
			Proprietary corrosion inhibitor	Proprietary	10.00000	0.00007	None
ProFE 105	CNR	Iron Control					
			Citric Acid	77-92-9	20.00000	0.00017	None
			Acetic Acid	64-19-7	5.00000	0.00004	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	0.17227	
			Non-Hazardous Substances	Proprietary	70.00000	0.02188	
			Non-Hazardous Substances	Proprietary	80.00000	0.02143	
			Butene, homopolymer	9003-29-6	25.00000	0.01378	
			Diethylenetriamine penta (methylene phosphonic acid) (DTPMP)	15827-60-8	10.00000	0.00313	
			Citric Acid	77-92-9	10.00000	0.00313	
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00165	
			Didecyl dimethyl ammonium chloride	7173-51-5	3.00000	0.00080	
			Quaternary Ammonim Compounds	68424-85-1	3.00000	0.00080	
			Ethanol	64-17-5	1.50000	0.00040	
			Proprietary material	Proprietary	30.00000	0.00020	
			Proprietary non-ionic surfactant	Proprietary	20.00000	0.00013	
			Proprietary ethoxylated alcohol	Proprietary	10.00000	0.00007	
			Proprietary corrosion inhibitor	Proprietary	10.00000	0.00007	
			Acetic Acid	64-19-7	5.00000	0.00004	

\* Total Water Volume sources may include fresh water, produced water, and/or recycled water

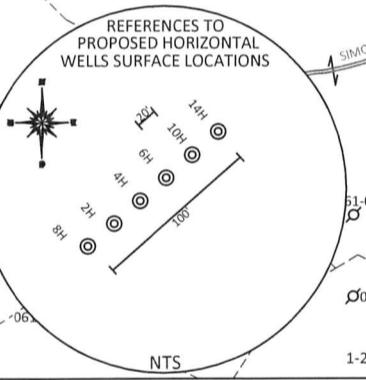
\*\* Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)



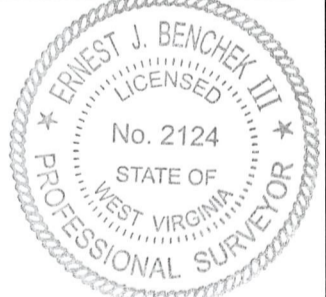
**API # & DISTANCE TO WELL**  
 061-70679 - N 81°50'25" E 704'  
 061-70794 - N 09°45'39" W 1374'



**REFERENCE NOTE**  
 Boundaries as shown from deeds, tax maps and field locations. A full boundary survey is not expressed nor implied. All bearings are based on true north. Ownership taken from public records MONONGALIA County, West Virginia NOVEMBER 2019 State Plane Coordinates & NAD 83 Lat/Long by differential submeter mapping grade GPS Drafted by: E.A.M.

FILE #: NNE20  
 DRAWING #: 2991  
 SCALE: PLAT: 1" = 2000'  
TICK: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY: 1/200  
 PROVEN SOURCE OF ELEVATION: SUBMETER MAPPING GRADE GPS

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.  
 Signed: [Signature]  
 L.L.S. #2124 : Ernest J. Benchek III



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP  
 OFFICE OF OIL & GAS  
 601 57TH STREET  
 CHARLESTON, WV 25304  
 Well Type:  Oil  Waste Diposal  Production  Deep  
 Gas  Liquid Injection  Storage  Shallow  
 WATERSHED: DUNKARD CREEK  
 COUNTY/DISTRICT: MONONGALIA / BATTELLE  
 SURFACE OWNER: Phoenix Energy Resources, LLC  
 OIL & GAS ROYALTY OWNER: Phoenix Energy Resources, LLC, et al.  
 LEASE NUMBERS: \_\_\_\_\_

DATE: NOVEMBER 18, 2021  
 OPERATOR'S WELL #: ERP 14H (AS-DRILLED)  
 API WELL #: 47 61 01880  
 STATE COUNTY PERMIT  
 AS-BUILT ELEVATION: 1,338.60'  
 QUADRANGLE: WADESTOWN  
 ACREAGE: 1510.488 +/-  
 ACREAGE: 773.273 +/-

DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE   
 PLUG OFF FORMATION  PERFORATE NEW FORMATION  PLUG & ABANDON   
 CLEAN OUT & REPLUG  OTHER CHANGE  (SPECIFY): \_\_\_\_\_  
 TARGET FORMATION: MARCELLUS  
 DRILLED DEPTH: TVD: 8,078' TMD: 21,111'  
 WELL OPERATOR: NORTHEAST NATURAL ENERGY LLC  
 DESIGNATED AGENT: JOHN ADAMS  
 ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200  
 ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200  
 CITY: CHARLESTON STATE: WV ZIP CODE: 25301  
 CITY: CHARLESTON STATE: WV ZIP CODE: 25301

03/17/2023

PROPERTY OWNER INDEX	
1-17-14	PHOENIX ENERGY RESOURCES, LLC
1-14-34	EASTERN ASSOCIATED COAL CORP.
4-18-04	NORMAN C. BROOKOVER
4-18-05	EASTERN ROYALTY CORP.
4-18-11	DALE L. COPELAND
1-14-33	GLENN N & ORPHA J REED
4-18-14	GARY ALLEN COPELAND
1-7-56.2	PENNSYLVANIA LINES LLC

LEASE INDEX			
A	WV-061-005667-001	G	WV-061-003767-004
B	WV-061-005782-001	H	WV-061-005272-001
C	WV-061-005667-001	I	WV-061-005666-001
D	WV-061-003767-004	J	WV-061-003461-001
E	WV-061-005329-001	K	WV-061-005688-001
F	WV-061-005142-001	L	WV-061-005486-001

03/17/2023

FILE #: NEE20

DRAWING #: 2991

SCALE: N/A

DATE: NOVEMBER 18, 2021

OPERATOR'S WELL #: ERP 14H

API WELL #: 47 61 01880  
STATE COUNTY PERMIT