

MAY - 1 2020

Page ___ of ___

WV Department of
Environmental Protection

WR-35
Rev. 8/23/13

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

API 47 - 061 - 01838 County Monongalia District Clay
Quad Blacksville, WV Pad Name Cummins Field/Pool Name _____
Farm name Jerry L. Yost et al Well Number 8H
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 4393295.5 Easting 570205.4
Landing Point of Curve Northing 4390304.8 Easting 570048.9
Bottom Hole Northing 4387694.0 Easting 572079.0

Elevation (ft) 1,358' 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 5/10/2019 Date drilling commenced 8/6/2019 Date drilling ceased 10/21/2019
Date completion activities began 11/23/2019 Date completion activities ceased 12/24/2019
Verbal plugging (Y/N) N Date permission granted NA Granted by NA

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

Freshwater depth(s) ft 750', 906', 1,248' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 2,123' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 530', 906', 1,248' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:
Haynes K. D.
6/5/2020

API 47-061 - 01838 Farm name Jerry L. Yost et al Well number 8H

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"	40'	N	NA	NA	Y
Surface	17.5"	13-3/8"	1,318'	N	54.5	NA	Y, 31 bbl
Coal							
Intermediate 1	12.25"	9-5/8"	2,496'	N	40	NA	Y, 20 bbl
Intermediate 2							
Intermediate 3							
Production	8.5"	5.5"	19,682'	N	40	NA	
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	4500 psi ready mix	36				CTS	48
Surface	Class A	1,034	15.6	1.18	1,218	CTS	8
Coal							
Intermediate 1	Class A	831	15.6	1.18	982	CTS	8
Intermediate 2							
Intermediate 3							
Production	Class A	3,580	14.5	1.16	4,149	2,047'	48
Tubing							

Drillers TD (ft) 19,695' Loggers TD (ft) 19,665'
 Deepest formation penetrated Marcellus Plug back to (ft) NA
 Plug back procedure NA

Kick off depth (ft) 5,610'

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 _____

Cummins 8H Perforation Information

Stage Number	Report Date	Cluster 5 Bottom TD	Cluster 1 Top TD	Total Shots
1	11/23/19	19,549	0	0
2	11/27/19	19,351	19,506	40
3	11/27/19	19,154	19,309	40
4	11/28/19	18,958	19,113	40
5	11/29/19	18,761	18,916	40
6	11/29/19	18,565	18,720	40
7	11/30/19	18,368	18,524	40
8	11/30/19	18,172	18,327	40
9	11/30/19	17,976	18,131	40
10	12/1/19	17,779	17,934	40
11	12/1/19	17,583	17,738	40
12	12/2/19	17,386	17,542	40
13	12/3/19	17,190	17,345	40
14	12/3/19	16,994	17,149	40
15	12/4/19	16,797	16,952	40
16	12/4/19	16,601	16,756	40
17	12/5/19	16,404	16,559	40
18	12/5/19	16,208	16,363	40
19	12/5/19	16,011	16,167	40
20	12/6/19	15,815	15,970	40
21	12/6/19	15,619	15,774	40
22	12/7/19	15,422	15,577	40
23	12/7/19	15,226	15,381	40
24	12/8/19	15,029	15,184	40
25	12/8/19	14,833	14,988	40
26	12/9/19	14,637	14,792	40
27	12/9/19	14,440	14,595	40
28	12/9/19	14,244	14,399	40
29	12/10/19	14,047	14,202	40
30	12/10/19	13,851	14,006	40
31	12/11/19	13,654	13,810	40
32	12/12/19	13,458	13,613	40
33	12/12/19	13,262	13,417	40
34	12/13/19	13,065	13,220	40
35	12/13/19	12,869	13,024	40
36	12/14/19	12,672	12,827	40
37	12/14/19	12,476	12,631	40
38	12/14/19	12,279	12,435	40
39	12/15/19	12,083	12,238	40
40	12/15/19	11,887	12,042	40
41	12/16/19	11,690	11,845	40
42	12/16/19	11,494	11,649	40
43	12/17/19	11,297	11,452	40
44	12/18/19	11,101	11,256	40
45	12/17/19	10,905	11,060	40
46	12/20/19	10,708	10,863	40
47	12/21/19	10,512	10,667	40
48	12/21/19	10,315	10,470	40
49	12/21/19	10,119	10,274	40
50	12/22/19	9,922	10,078	40
51	12/22/19	9,726	9,881	40
52	12/22/19	9,530	9,685	40
53	12/22/19	9,333	9,488	40
54	12/23/19	9,137	9,292	40
55	12/23/19	8,940	9,095	40
56	12/23/19	8,744	8,899	40
57	12/23/19	8,547	8,703	40

Cummins 8H Stimulation Information

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	11/23/19	4,513	0	9,318	88	1,113	7,685	300,950	447
2	11/27/19	4,682	8,042	9,896	87	13	9,658	450,280	436
3	11/27/19	6,476	6,114	9,482	87	400	10,255	450,920	428
4	11/28/19	5,064	6,343	9,743	89	17	9,374	450,140	431
5	11/29/19	5,238	6,383	9,499	89	25	9,467	450,600	418
6	11/29/19	5,436	5,979	9,435	89	14	9,443	450,860	417
7	11/30/19	5,049	6,488	9,359	84	89	9,481	450,800	410
8	11/30/19	5,292	6,707	9,657	90	4	9,378	450,400	405
9	11/30/19	5,238	6,687	9,655	84	221	10,147	454,800	402
10	12/1/19	5,124	6,551	9,703	88	11	9,056	450,480	403
11	12/1/19	6,198	6,375	9,551	87	59	9,304	450,100	392
12	12/2/19	5,957	6,163	9,445	86	11	9,223	450,480	390
13	12/3/19	5,553	5,310	9,684	77	28	10,035	450,780	384
14	12/3/19	4,992	6,451	9,437	81	184	10,174	450,680	380
15	12/4/19	6,113	6,673	9,262	86	14	8,905	450,040	380
16	12/4/19	5,986	6,296	9,258	87	52	9,178	450,700	371
17	12/5/19	6,051	6,685	9,178	84	27	8,927	450,440	367
18	12/5/19	6,204	6,330	9,246	86	45	9,253	450,520	374
19	12/5/19	6,208	6,302	9,273	86	37	8,774	450,460	360
20	12/6/19	5,132	6,078	9,125	84	120	10,829	451,820	360
21	12/6/19	5,243	6,319	9,293	87	54	8,376	363,300	400
22	12/7/19	5,421	6,716	8,862	85	9	8,890	451,360	346
23	12/7/19	5,982	6,191	8,988	86	67	8,779	452,280	342
24	12/8/19	6,291	5,308	8,812	83	113	9,468	450,500	342
25	12/8/19	5,309	6,534	8,912	82	55	8,679	449,980	328
26	12/9/19	6,081	6,107	8,767	86	82	9,273	450,280	331
27	12/9/19	5,627	6,410	8,789	85	130	9,283	450,600	328
28	12/9/19	5,979	6,173	8,855	79	15	8,571	450,060	321
29	12/10/19	6,220	6,171	9,084	88	88	9,397	450,660	323
30	12/10/19	6,037	6,447	8,694	85	56	8,596	449,140	309
31	12/11/19	5,819	6,509	8,501	83	55	9,038	450,220	309
32	12/12/19	6,370	6,128	8,652	84	5	8,743	427,840	302
33	12/12/19	5,772	4,986	8,811	87	76	9,188	450,040	298
34	12/13/19	6,196	6,207	8,590	88	26	9,045	449,980	296
35	12/13/19	5,600	6,684	8,738	87	15	9,008	450,340	289
36	12/14/19	6,384	6,506	8,620	86	41	8,504	450,560	284
37	12/14/19	5,833	6,795	8,681	89	25	9,093	450,480	280
38	12/14/19	5,514	6,789	8,602	88	39	8,565	455,960	276
39	12/15/19	6,372	6,810	8,535	88	49	9,171	450,720	272
40	12/15/19	5,730	6,572	8,626	87	29	9,044	440,500	266
41	12/16/19	6,657	6,530	8,519	88	23	9,143	450,800	263
42	12/16/19	6,124	6,174	8,435	88	23	10,012	491,360	251
43	12/17/19	6,856	7,186	8,589	88	28	9,127	450,180	255
44	12/18/19	6,599	6,466	8,590	87	27	9,009	454,600	250
45	12/17/19	6,168	6,483	8,698	86	60	10,406	449,300	245
46	12/20/19	5,836	6,562	8,556	86	109	9,132	450,960	240
47	12/21/19	5,713	8,253	8,652	80	68	9,119	450,240	236
48	12/21/19	7,009	7,188	8,520	89	56	9,299	451,400	334
49	12/21/19	6,248	8,018	8,485	83	80	9,136	450,020	227
50	12/22/19	7,041	6,576	8,546	87	41	9,017	450,340	225
51	12/22/19	5,949	6,874	8,492	88	30	9,103	450,920	219
52	12/22/19	6,004	7,734	8,352	90	51	9,365	449,300	214
53	12/22/19	6,007	6,526	8,211	90	17	9,021	456,380	211
54	12/23/19	6,038	7,106	8,285	87	14	8,906	450,820	208
55	12/23/19	6,254	7,079	8,060	87	25	9,088	450,020	205
56	12/23/19	6,026	7,284	8,414	88	34	9,133	450,300	200
57	12/23/19	5,698	8,660	8,257	88	60	8,965	448,420	195

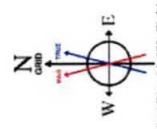
Cummins Lithology

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	210	Sand/silt
silt/red shale	210	382	silt/red shale
coal/silt	382	400	coal/silt
limestone/siltstone/sandstone	400	530	limestone/siltstone/sandstone
coal	530	540	coal
siltstone/limestone/shale	540	710	siltstone/limestone/shale
limestone/siltstone	710	750	limestone/siltstone
siltstone/sandstone	750	802	siltstone/sandstone
coal	802	810	coal
sandstone/siltstone/limestone	810	862	sandstone/siltstone/limestone
coal	862	866	coal
sandstone/limestone	866	906	sandstone/limestone
coal - Pittsburgh	906	915	coal - Pittsburgh
Limestone/siltstone	915	1010	Limestone/siltstone
sandstone	1010	1030	sandstone
sandstone/siltstone/red shale	1030	1250	sandstone/siltstone/red shale
siltstone/sandstone	1250	1330	siltstone/sandstone
sandstone	1330	1340	sandstone
sandstone/siltstone/shale	1340	2010	sandstone/siltstone/shale
sandstone	2010	2040	sandstone
sandstone/siltstone/red shale	2040	2120	sandstone/siltstone/red shale
Little Lime	2123	2204	Little Lime
Big Lime	2204	2270	Big Lime
Big Injun Sandstone	2270	2365	Big Injun Sandstone
Siltstone	2365	2460	Siltstone
Berea Sandstone	2460	2470	Berea Sandstone
siltstone/shale	2470	2721	siltstone/shale
Gantz sandstone	2730	2730	Gantz sandstone
Gordon Sandstones	2730	3210	Gordon Sandstones
Upper Devonian Sands/silts	3210	5800	Upper Devonian Sands/silts
Elk siltstones and shales	5800	6500	Elk siltstones and shales
siltstone/gray shale	6500	7364	siltstone/gray shale
Middlesex shale/silt	7364	7667	Middlesex shale/silt
Burkett shale	7667	7846	Burkett shale
Geneseo shale	7846	7899	Geneseo shale
Tully Limestone	7899	7980	Tully Limestone
Hamilton shale	7980	8084	Hamilton shale
Marcellus shale	8084	TD	Marcellus shale

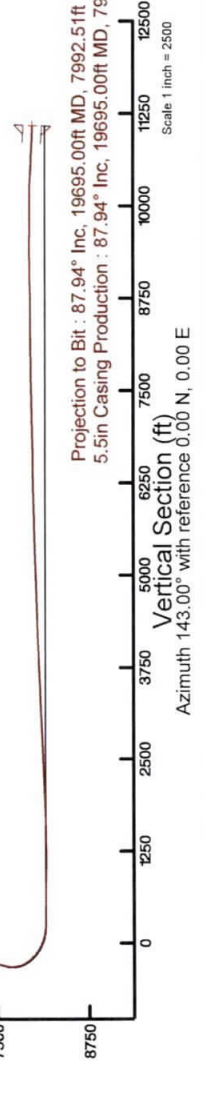
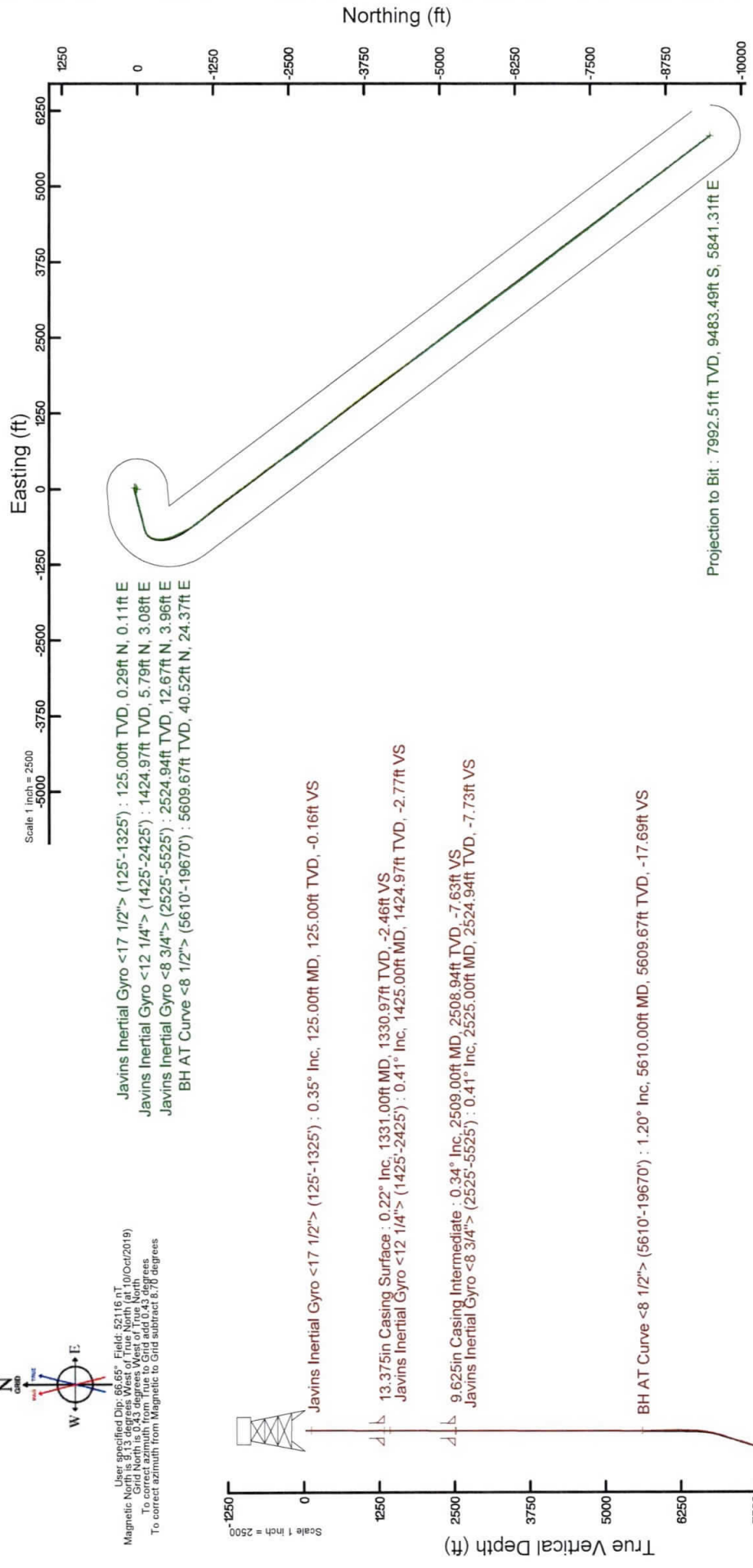
Location Information			
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude
Cummins Pad	1776796.000	423931.400	39°39'42.907"N
Local N (ft)	Local E (ft)	Grid North (US ft)	Longitude
-5.17	-19.36	423926.226	80°10'51.454"W
Slot #08	1776776.640	423926.226	Latitude
Patterson 334 (KB) to Ground level (At Slot: Slot #08)	25ft		Longitude
Mean Sea Level to Ground level (At Slot: Slot #08)	-1358ft		
Patterson 334 (KB) to Mean Sea Level	1383ft		
Comments			
API: 47-061-01838-0000			
BH Job #: 110049978A			
Rig: Patterson 334			
Duration: 10/11/2019 - 10/19/2019			



NORTHEAST NATURAL ENERGY, LLC	
Location: Monongalia County, WV	Slot: Slot #08
Field: Monongalia	Well: Cummins 8H
Facility: Cummins Pad	Wellbore: Cummins 8H PWB
Plot reference wellpath is Cummins 8H PWB Rev-C-0	Grid System: NAD83 / Lambert West Virginia SP, Northern Zone (4701), US feet
True vertical depths are referenced to Patterson 334 (KB)	North Reference: Grid north
Patterson 334 (KB) to Mean Sea Level: 1383 feet	Scale: True distance
Mean Sea Level to Ground level (At Slot: Slot #08): -1358 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: atenjen on 2019-10-22
	Database: WA_MPL_EASTERNUS_Deft



User specified Dip: 66.65° Field: 52116 nT
 Magnetic North is 63.13 degrees West of True North (at 10/01/2019)
 To correct azimuth from True to Grid add 6.43 degrees
 To correct azimuth from Magnetic to Grid subtract 8.76 degrees





Ticket #: 0

Remit to:
 Lightning Energy Services
 104 Heliport Loop Road
 Bridgeport, WV 26330

Job Times				
	On Loc:	Job Start:	Job End:	Off Loc:
Date:	07/15/19			07/15/19
Time:	5:00am	10:19am	1:00pm	3:00am

Customer and Well Information					
Customer: NORTHEAST		Well Name: CUMMINS	Well #: 8H	Well Type: GAS	
County:	State: WV	AFE #/API #: 100418-602	PO #/Permit #:	Well Class:	
Field:	Lease: CUMMINS		Rig Name/# : DECKER RIG 8		
Wellbore Information					
Bit Size (Inches): 12.25	Well MD (ft):	Well TVD (ft): 2496	BHST (F°):	BHCT (F°):	Deviation (°):
Drilling Fluid Type:	Drilling Fluid Density (ppg):	Packer Depth (ft):	Treating Down:		
Previous Casing/Liner					
Size (Inches): 13.375	Weight (lb/ft): 54.5	Thread: BTC	Grade: J-55	Total Footage (ft): 1318	
Casing/Liner/Tubing					
Size (Inches): 9.625	Weight (lb/ft): 40	Thread:	Grade:	Total Footage (ft): 2496	
Job					
Job Type: Intermediate		Connection to Well: Single plug cement head		Top Plug: YES	
Lift Pressure (PSI): 1196	Max Annulus Pressure (PSI): 926	Mix Water Temp (F°):		Bottom Plug: No	
Casing/Tubing Secured : YES	Pipe Rotated: No	Cement Return to Surface (bbl): 20	Top Job (bbl): no		
Pipe Reciprocated : No	Circulation Lost: No	Job Completed: YES			

Cement Job Log



Customer: NORTHEAST NATURAL ENERGY LLC	Date: 10/20/2019	Serv. Supervisor:
Cust. Rep.:	Ticket #: JWV1910-0007	Serv. Center Jane Lew - 3044
Lease: Cummins - 8H	API Well #: 47-061-01838	County: Monongalia State: WV
Well Type:	Rig: Patterson 334	Type of Job: CM-PROD. CASING

Materials Furnished by C&J ENERGY SERVICES

Plugs	Casing Hardware	Physical Slurry Properties						
		Sacks of Cement	Fluid Dens (lb/gal)	Excess	Yield (cuft/sk)	Mix Water (gal/sk)	Fluid Volume (bbls)	Mix Water (bbls)
13.5 ppg PureScrub Spacer w/Surfactant	+7.0 PPB CIX157011+1.1 GPB CJ880		13.5			100.00		
14.5 ppg Cement	50 % CJ010-74+50 % CJ910 +0.2 % CIX157011+0.25 % CJFCP013+0.4 % CJ415+0.15 % CJ504+0.3 % CJ511	3580	14.5		1.16	4.88	739.33	416
Displacement							434.82	
0								

Displacement Chemicals:

OPEN HOLE DATA				TUBULAR DATA							
12.25 in. O.H. (2,496 to 2,506 ft)		5.5 in. 20#, (0 to 19,682 ft)		SIZE WEIGHT	THREAD	DEPTH (ft)	GRADE	ID (in)	BURST (psi)	COLLAPSE (psi)	
8.75 in. O.H. (2,506 to 6,150 ft)				5.5 20#	BTC	19695	p-110	4.778	12640	11080	
Mix Cemt. Temperature *F	Lead Temp.	Middle Temp.	Tail Temp.								
PREVIOUS CASING DATA				PERFORATED INTERVAL DATA				CASING EQUIPMENT DEPTHS			
9.625 in. 40# (0 to 2,496 ft)				TOP	BTM	SPF	SIZE	SHOE	FLOAT	STAGE	ACP
WELL FLUID			DISPLACEMENT FLUID			DIFF PRESS (psi)	CSG LIFT (psi)	MAX PRESS (psi)	Total Number of Runs	WATER ON LOC (bbl)	
TYPE	DENSITY	VOLUME	TYPE	DENSITY							
Mud	12.5 ppg	437 bbl	Water	8.3 ppg	3350	5980				1000	

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	11/26/2019
Job End Date:	12/23/2019
State:	West Virginia
County:	Monongalia
API Number:	47-061-01838-00-00
Operator Name:	Northeast Natural Energy LLC
Well Name and Number:	Cummins 8H
Latitude:	39.66190400
Longitude:	-80.18102800
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	8,169
Total Base Water Volume (gal):	22,516,256
Total Base Non Water Volume:	0



Hydraulic Fracturing Fluid Composition:

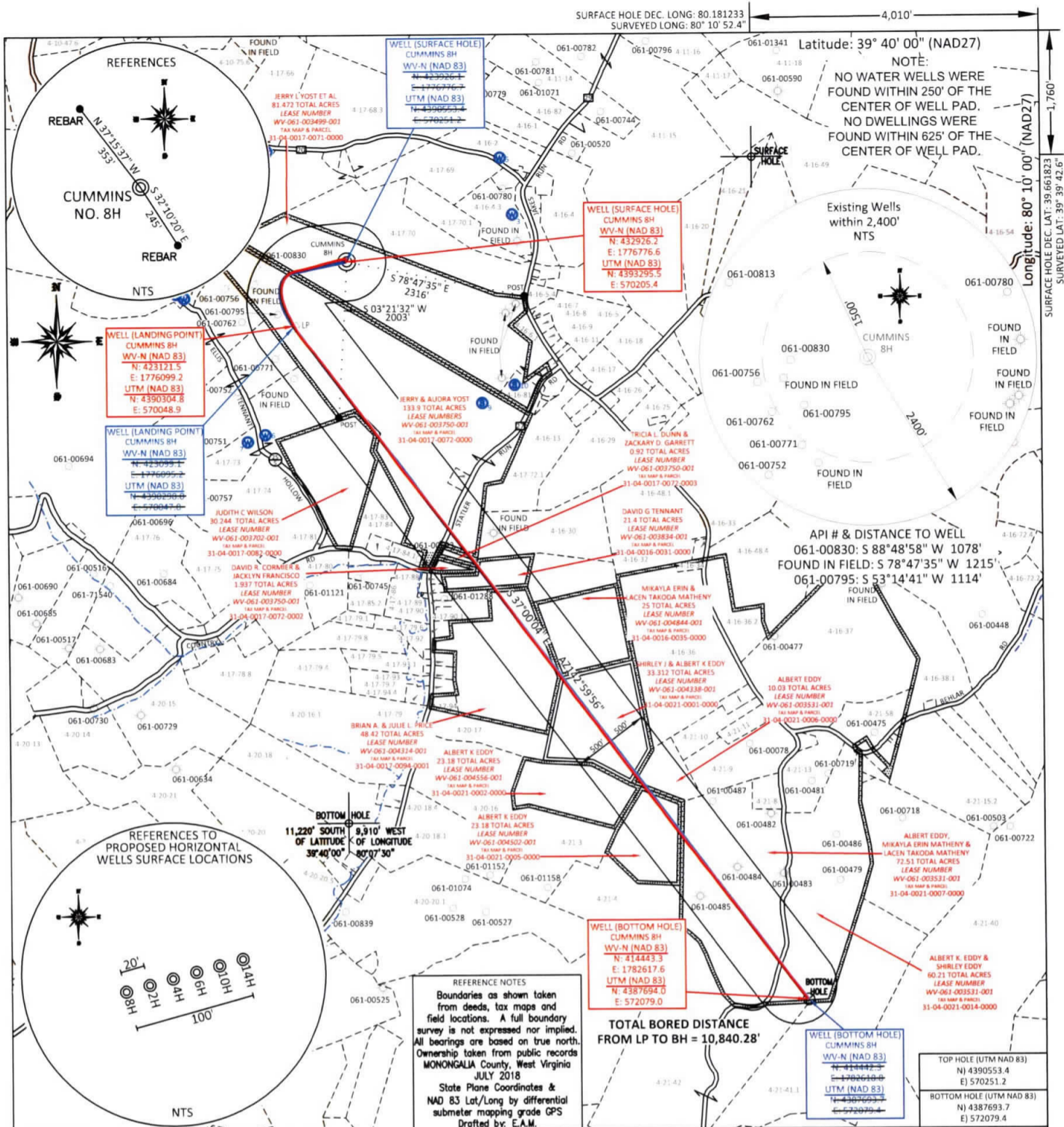
Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Northeast Natural Energy	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	87.86117	None
Sand (100 Mesh Proppant)	ProFrac	Proppant					
			Silica Substrate	14808-60-7	100.00000	8.93311	None
Sand (40/70 White Proppant)	ProFrac	Proppant					
			Silica Substrate	14808-60-7	100.00000	2.95752	None
Hydrochloric Acid (7.5%)	PVS	Acidizing					
			Water	7732-18-5	85.00000	0.13930	None
			Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	36.00000	0.05900	None
StimSTREAM FR 9800	ChemStream	Friction Reducer					
			Alkanes, C16-20-iso-	90622-59-6	25.00000	0.01165	None
			Butene, homopolymer	9003-29-6	25.00000	0.01165	None
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00140	None
Clearal 268	ChemStream	Biocide					
			Non-hazardous substances	Proprietary	90.00000	0.01657	None

			Glutaraldehyde	111-30-8	20.00000	0.00368	None
			Alkyl dimethyl benzyl ammonium chloride	68391-01-5	3.00000	0.00055	None
			Didecyl dimethyl ammonium chloride	7173-51-5	3.00000	0.00055	None
StimSTREAM SC-398	ChemStream	Scale Inhibitor	Non-hazardous substances	Proprietary	100.00000	0.01823	None
			Bis(Hexamethylene Triamine Penta(Methylene Phosphonic Acid) (BHMT)	34690-00-1	10.00000	0.00182	None
ProFE 105	ProFrac	Iron Control	Citric Acid	77-92-9	50.50000	0.00031	None
			Water	7732-18-5	49.50000	0.00031	None
ProHib 100	ProFrac	Acid Inhibitor	Methyl alcohol	67-56-1	45.00000	0.00020	None
			Ethylene glycol	107-21-1	20.00000	0.00009	None
			Isoquinoline	119-65-3	15.00000	0.00007	None
			N,N-Dimethylformamide	68-12-2	10.00000	0.00004	None
			Water	7732-18-5	10.00000	0.00004	None
			2-Butoxyethanol	111-76-2	5.00000	0.00002	None
Ingredients shown above are subject to 29 CFR 1910.1200(l) 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	0.13930	
			Non-hazardous substances	Proprietary	100.00000	0.01823	
			Non-hazardous substances	Proprietary	90.00000	0.01657	
			Butene, homopolymer	9003-29-6	25.00000	0.01165	
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00140	
			Alkyl dimethyl benzyl ammonium chloride	68391-01-5	3.00000	0.00055	
			Didecyl dimethyl ammonium chloride	7173-51-5	3.00000	0.00055	
			Water	7732-18-5	49.50000	0.00031	
			Ethylene glycol	107-21-1	20.00000	0.00009	
			Isoquinoline	119-65-3	15.00000	0.00007	
			N,N-Dimethylformamide	68-12-2	10.00000	0.00004	
			Water	7732-18-5	10.00000	0.00004	
			2-Butoxyethanol	111-76-2	5.00000	0.00002	
			Alcohols, C11-14-iso-, C13-rich, ethoxylated	78330-21-9	5.00000		

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

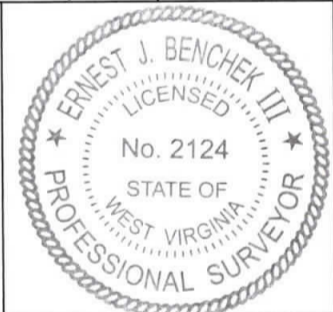
** Information is based on the maximum potential for concentration and thus the total may be over 100%

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)



FILE #: NNE15
DRAWING #: 2892
SCALE: PLAT: 1" = 1800'
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 Dipsal Production Deep
 Gas Liquid Injection Storage Shallow
WATERSHED: DUNKARD CREEK
COUNTY/DISTRICT: MONONGALIA / CLAY
SURFACE OWNER: JERRY L. YOST ET AL
OIL & GAS ROYALTY OWNER: NNE LLC, et al
LEASE NUMBERS: _____
DATE: APRIL 21, 2020
OPERATOR'S WELL #: CUMMINS 8H
API WELL #: 47 61 01838
STATE COUNTY PERMIT
AS-BUILT ELEVATION: 1,358.80'
QUADRANGLE: BLACKSVILLE
ACREAGE: 81.472 +/-
ACREAGE: 565.715 +/-
TARGET FORMATION: MARCELLUS
ESTIMATED DEPTH: TVD: 7,992' TMD: 19.695'
WELL OPERATOR: NORTHEAST NATURAL ENERGY LLC
DESIGNATED AGENT: JOHN ADAMS
ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200
CITY: CHARLESTON STATE: WV ZIP CODE: 25301
ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200
CITY: CHARLESTON STATE: WV ZIP CODE: 25301

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
PLUG OFF FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY): _____