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

API 47 - 061 - 01738 County Monongalia District Clay
Quad Blacksville Pad Name Fisher Field/Pool Name
Farm name Aaron K. Fisher Well Number 10H
Operator (as registered with the OOG) Northeast Natural Energy LLC
Address 707 Virginia Street 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 4394360.6 Easting 567426.1
Landing Point of Curve Northing 4394588.4 Easting 567851.8
Bottom Hole Northing 4392569.7 Easting 569445.4

Elevation (ft) 1,453' 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 11/29/16 Date drilling commenced 1/11/17 Date drilling ceased 2/27/17
Date completion activities began 5/23/17 Date completion activities ceased 6/16/17
Verbal plugging (Y/N) Date permission granted Granted by

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

Freshwater depth(s) ft 1,352' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 2,500' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 350';1,930' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed

Reviewed by:
07/20/2018

API 47- 061 - 01738 Farm name Aaron K. Fisher Well number 10H

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	94.71	N/A	Grouted In
Surface	17-1/2"	13-3/8"	1,434'	N	54.5	N/A	Y 57 Bbl.
Coal							
Intermediate 1	12-1/4"	9-5/8"	2,664'	N	40	N/A	Y 5 Bbl.
Intermediate 2							
Intermediate 3							
Production	8-3/4"	5-1/2"	17,654'	N	20	N/A	N, EST. 1,664'
Tubing	N/A	2-7/8"	N/A	N	6.5	N/A	N/A
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	-	-	3 Yds	-	-	-
Surface	Class A + 2%	1,146	15.6	1.19	1,369.958	Surface	8
Coal							
Intermediate 1	Class A + 1%	871	15.6	1.19	1,033.083	Surface	8
Intermediate 2							
Intermediate 3							
Production	50:50 + Additives	3,511	14.5	1.18	4,137.948	1,664'	48
Tubing							

Drillers TD (ft) 17,667' Loggers TD (ft) 17,624'

Deepest formation penetrated Marcellus Plug back to (ft)

Plug back procedure

Kick off depth (ft) 6,431'

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 (~60') from TD to surface

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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

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API 47- 061 - 01738 Farm name Aaron K. Fisher Well number 10H

PERFORATION RECORD

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

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)
						Please	See	Attachment

Please insert additional pages as applicable.

WR-35
Rev. 8/23/13

API 47- 061 - 01738 Farm name Aaron K. Fisher Well number 10H

PRODUCING FORMATION(S)	DEPTHS			
Marcellus	8,276'	TVD	17,667'	MD

Please insert additional pages as applicable.

GAS TEST ☐ Build up ☐ Drawdown ■ Open Flow OIL TEST ☐ Flow ☐ Pump

SHUT-IN PRESSURE Surface 3,342 psi Bottom Hole _____ psi DURATION OF TEST 48 hrs

OPEN FLOW Gas 8,063 mcfpd Oil _____ bpd NGL _____ bpd Water _____ bpd GAS MEASURED BY ☐ Estimated ■ Orifice ☐ Pilot

LITHOLOGY/ FORMATION NAME	TOP DEPTH IN FT 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_2S, ETC)
	0		0		Please See Attachment

Please insert additional pages as applicable.

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Drilling Contractor Nabors
Address 82 Old Elkins Rd. City Buckhannon State WV Zip 26201

Logging Company Baker Hughes
Address 837 Philippi Pike City Clarksburg State WV Zip 26301

Cementing Company C&J Energy Services
Address 380 Southpoint Blvd #210 City Canonsburg State PA Zip 15317

Stimulating Company BJ Services
Address 1036 E. Main St. City Bridgeport State WV Zip 26330

Please insert additional pages as applicable.

Completed by Hollie Medley Telephone 304-212-0422
Signature Hollie Medley Title Regulatory Manager Date 5-18-18

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

07/20/2018

C&J Energy Services

Cement Job Log

Customer:	NORTHEAST NATURAL ENERGY LLC	**Date:**	1/13/2017	**Serv. Supervisor:**	Jason Beeson
Cust. Rep.:		**Ticket #:**	JWV1701-0013	**Serv. Center**	Jane Lew, WV
Lease:	Fisher 10H	**API Well #:**		**County:**	**Monongalia State:** West Virginia
Well Type:		**Rig:**	US Energy 9-1	**Type of Job:**	Surface Casing

Materials Furnished by C&J ENERGY SERVICES

Plugs	Casing Hardware	Physical Slurry Properties					
		Sacks of Cement	Fluid Dens (lb/gal)	Yield (cuft/sk)	Mix Water (gal/sk)	Fluid Volume (bbls)	Mix Water (bbls)
Spacer 1	6% Gel		8.7			25	
Spacer 2							
Scavenger							
Lead							
Tail:	CJ910 + 2% CJ110 + 0.25 LB/SK CJ600	1146	15.6	1.19	5.20	244	142
Displacement Chemicals							

OPEN HOLE DATA			TUBULAR DATA								
SIZE (in)	EXCESS (%)	DEPTH (ft)	TYPE (CSG/TBG/OP)	OD (in)	WEIGHT (lbs/ft)	THREAD	DEPTH (ft)	GRADE	ID (in)	BURST (psi)	COLLAPSE (psi)
17 1/2		1388	Casing	13 3/8	54.5		1428		12.61		

PREVIOUS CASING DATA				PERFORATED INTERVAL DATA				CASING EQUIPMENT DEPTHS			
SIZE (in)	WEIGHT (lbs/ft)	ID (in)	DEPTH (ft)	TOP	BTM	SPF	SIZE	SHOE	FLOAT	STAGE	ACP
24	94.5	23.27	40					42	1386		

WELL FLUID		DISPLACEMENT FLUID			DIFF PRESS (psi)	CSG LIFT (psi)	MAX PRESS (psi)	WATER ON LOC (bbl)
TYPE	DENSITY	VOLUME	TYPE	DENSITY				
		214 bbl	fresh	8.3 ppg	524	554		

Time	Rate (bbl/min)	Csg Press (psi)	Tbg Press (psi)	Ann. Press (psi)	Stg Vol (bbl)	Cum Vol. (bbl)	Stage Details
6:30 PM						0	arrived on location running casing
6:45 PM						0	spot trucks rig up
7:45 PM						0	safety meeting
8:00 PM						0	psi test to 1500
8:10 PM					255	255	pump customer processed water
8:16 PM	7	128				255	pumping processed water
8:38 PM	5	76				255	pumping processed water
8:45 PM					25	280	start gel spacer
8:47 PM	5	83				280	pumping gel spacer
8:52 PM					244	524	start cement slurry
9:10 PM	5.25	170				524	pumping cement slurry
9:20 PM	5.6	202				524	pumping cement establish circulation
9:30 PM	5.6	230				524	pumping cement slurry
9:40 PM						524	shut down drop plug
9:42 PM	4	46			214.5	738.5	begain displacement
9:49 PM	6.3	136				738.5	displacing plug
10:00 PM	6.7	213				738.5	displacing plug
10:03 PM						738.5	gel return to surface
10:09 PM	6.7	313				738.5	cement retur to surface @158 bbl (57bbl to surface)
10:10 PM	6.7	520				738.5	displacing plug
10:13 PM	5	578				738.5	displacing plug slow rate
10:21 PM	3.5	1100				738.5	plug down
10:26 PM						738.5	float held 1 bbl return
						738.5	

Left Yard	1/13/17 4:30 PM			Left Loc	1/13/17 11:30 PM		
Arrived Loc	1/13/17 6:30 PM			Left Loc			
Bumped Plug (psi)	Final Differential (psi)	Floats Held (Y/N)	PSI Left on Casing	Cement to Surface (bbl)	Full Circ During Job (Y/N)	Max Pump Pressure (psi)	Jason Beeson
Yes	597	Yes	0	57	Yes	1500	Service Supervisor

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C&J Energy Services

Cement Job Log

Customer:	NORTHEAST NATURAL ENERGY LL(	Date:	1/18/2017	Serv. Supervisor:	David Thorne
Cust. Rep.:		Ticket #:	JWV1701-0015	Serv. Center	Jane Lew, WV
Lease:	Fisher 10H	API Well #:		County: Monongalia	State: WV
Well Type:		Rig:	US Energy 9-1	Type of Job:	Intermediate Casing

Materials Furnished by C&J ENERGY SERVICES

Plugs	Casing Hardware	Physical Slurry Properties					
		Sacks of Cement	Fluid Dens (lb/gal)	Yield (cuft/sk)	Mix Water (gal/sk)	Fluid Volume (bbls)	Mix Water (bbls)
Spacer 1:	6% Gel	-	8.7			25	
Spacer 2:		-					
Scavenger							
Lead							
Tail:	CJ910 + 1% CJ110	871	15.6	1.19	5.22	184	108
Displacement Chemicals:							

OPEN HOLE DATA			TUBULAR DATA								
SIZE (in)	EXCESS (%)	DEPTH (ft)	TYPE (CSG/TBG/DP)	OD (in)	WEIGHT (lbs/ft)	THREAD	DEPTH (ft)	GRADE	ID (in)	BURST (psi)	COLLAPSE (psi)
12 1/4		2650	Casing	9 5/8	40		2650		8.84		

PREVIOUS CASING DATA				PERFORATED INTERVAL DATA				CASING EQUIPMENT DEPTHS			
SIZE (in)	WEIGHT (lbs/ft)	ID (in)	DEPTH (ft)	TOP	BTM	SPF	SIZE	SHOE	FLOAT	STAGE	ACP
13 3/8	54.5	12.61	1428						2540		

WELL FLUID		DISPLACEMENT FLUID			DIFF PRESS (psi)	CSG LIFT (psi)	MAX PRESS (psi)	WATER ON LOC (bbl)
TYPE	DENSITY	VOLUME	TYPE	DENSITY				
brine	9.0 ppg	199 bbl	water	8.3 ppg	834	982	1500	15000

Time	Rate (bbl/min)	Csg. Press. (psi)	Tbg Press (psi)	Ann. Press. (psi)	Stg. Vol (bbl)	Cum. Vol (bbl)	Stage Details
0500pm						0	Rigged up
0503pm						0	safety meeting
0505pm						0	PSI Test
0610pm	7	50			110	110	Water cirrulation during entire job
0625pm	7	50			25	135	Gel
0630pm	7	50			10	145	Water
0635pm	7	50			185	330	Slurry
0705pm						330	SD DP
0715pm	7	830			199	529	Disp 5 bbls slury to surface
0745pm	3	1330				529	Plug landed
0800pm						529	released psi 2 bbls back
0900pm						529	Washed up rigged down
						529	
						529	
						529	
						529	
						529	
						529	
						529	
						529	
						529	
						529	
						529	
						529	
						529	

Left Yard				Left Loc.			
Arrived Loc.				Left Loc.			
Bumped Plug (psi)	Final Differential (psi)	Floats Held (Y/N)	PSI Left on Casing	Cement to Surface (bbl)	Full Circ. During Job (Y/N)	Max Pump Pressure (psi)	David Thorne

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C&J Energy Services

Cement Job Log

Customer:	NORTHEAST NATURAL ENERGY LL	**Date:**	2/27/2017	**Serv. Supervisor:**	Jason Beeson
Cust. Rep.:		**Ticket #:**	JWV1702-0016	**Serv. Center**	Jane Lew, WV
Lease:	Fisher 10H	**API Well #:**	47-061-01738	**County:** Monongalia	**State:** WV
Well Type:		**Rig:**	Nabors Drilling X08	**Type of Job:**	Production Casing

Materials Furnished by C&J ENERGY SERVICES

Plugs	Casing Hardware	Physical Slurry Properties					
		Sacks of Cement	Fluid Dens (lb/gal)	Yield (cuft/sk)	Mix Water (gal/sk)	Fluid Volume (bbls)	Mix Water (bbls)
Spacer 1	CJ810 PureScrub Spacer + 0.5 gpb CJ880 + 0.25 gpb CJ883	-	13.5			50	
Spacer 2:		-					
Scavenger							
Lead							
Tail:	50:50 CJ010:CJ910 + 0.3% CJ210 + 0.2% CJ500U + 0.2% CJX157011	3511	14.5	1.18	5.19	737	434
Displacement Chemicals:							

OPEN HOLE DATA			TUBULAR DATA								
SIZE (in)	EXCESS (%)	DEPTH (ft)	TYPE (CSG/TBG/DP)	OD (in)	WEIGHT (lbs/ft)	THREAD	DEPTH (ft)	GRADE	ID (in)	BURST (psi)	COLLAPSE (psi)
8 3/4		3753	Casing	5 1/2	20		17654		4.79		
8 1/2		11250									

PREVIOUS CASING DATA				PERFORATED INTERVAL DATA				CASING EQUIPMENT DEPTHS			
SIZE (in)	WEIGHT (lbs/ft)	ID (in)	DEPTH (ft)	TOP	BTM	SPF	SIZE	SHOE	FLOAT	STAGE	ACP
9 5/8	40	8.84	2664					21	17633		

WELL FLUID		DISPLACEMENT FLUID			DIFF PRESS	CSG LIFT	MAX PRESS		WATER ON LOC (bbl)
TYPE	DENSITY	VOLUME	TYPE	DENSITY	(psi)	(psi)	(psi)		
oil base	12.5 ppg	391.5 bbl	fresh	8.3 ppg	2220	6967	6000		1500

Time	Rate (bbl/min)	Csg. Press. (psi)	Tbg. Press (psi)	Ann. Press. (psi)	Stg. Vol. (bbl)	Cum. Vol. (bbl)	Stage Details
3:30 PM						0	arrived on location due to curfew
5:00 PM						0	spot trucks rig up
9:00 PM						0	safety meeting
9:15 PM						0	rig up head
9:35 PM						0	psi test to 6000
9:45 PM	3	300			5	5	h20 launch bottom plug
9:47 PM	2.4	350			50	55	spacer at 13.5 ppg
10:00 PM	5	780			738	793	tail cement @ 14.5 ppg
10:15 PM	6	780				793	pumping tail cement
10:45 PM	6.5	1102				793	pumping tail cement
11:10 PM	6.6	1483				793	pumping tail cement
11:40 PM	6.2	1968				793	pumping tail cement
11:58 PM						793	shut down drop plug
12:00 AM	5	2780			391.5	1184.5	displacing plug
12:05 AM	6.6	3025				1184.5	displacing plug
12:21 AM	7.4	4100				1184.5	displacing plug
12:36 AM	7	4800				1184.5	displacing plug
12:53 AM	0	5860				1184.5	pressure climbed 1000 psi immediate shut down
12:54 AM	.76	5860				1184.5	reestablish rate @.76 bpm pressure climbing
12:55 AM	0	7100				1184.5	shut down @7100 psi
12:59 AM	0	0				1184.5	release pressure to pump 10 bbl return
1:05 AM						1184.5	rig up loops to recipricate casing
1:12 AM	.9	1200				1184.5	establish rate
1:14 AM	0	5000				1184.5	shut down recipricate pipe at 5000

Left Yard	2/27/17 2:00 PM			Left Loc.	2/28/17 3:30 AM		
Arrived Loc.	2/27/17 3:30 PM			Returned Yd			
Bumped Plug (psi)	Final Differential (psi)	Floats Held (Y/N)	PSI Left on Casing	Cement to Surface (bbl)	Full Circ. During Job (Y/N)	Max Pump Pressure (psi)	Jason Beeson
No	4880	No	0	0	No	7100	Service Supervisor

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Perforation Record

Stage No.	Report Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation
1	5/29/2017	17,550	17,390	40	Marcellus
2	5/30/2017	17,353	17,193	40	Marcellus
3	5/30/2017	17,155	16,996	40	Marcellus
4	5/30/2017	16,958	16,798	40	Marcellus
5	5/31/2017	16,761	16,601	40	Marcellus
6	6/1/2017	16,563	16,404	40	Marcellus
7	6/1/2017	16,367	16,206	40	Marcellus
8	6/1/2017	16,169	16,009	40	Marcellus
9	6/1/2017	15,971	15,806	40	Marcellus
10	6/2/2017	15,774	15,614	40	Marcellus
11	6/2/2017	15,576	15,417	40	Marcellus
12	6/2/2017	15,379	15,219	40	Marcellus
13	6/2/2017	15,182	15,022	40	Marcellus
14	6/2/2017	14,985	14,825	40	Marcellus
15	6/7/2017	14,786	14,627	40	Marcellus
16	6/7/2017	14,590	14,430	40	Marcellus
17	6/7/2017	14,393	14,233	40	Marcellus
18	6/8/2017	14,195	14,035	40	Marcellus
19	6/8/2017	13,998	13,838	40	Marcellus
20	6/8/2017	13,801	13,641	40	Marcellus
21	6/9/2017	13,603	13,443	40	Marcellus
22	6/9/2017	13,404	13,246	40	Marcellus
23	6/9/2017	13,208	13,049	40	Marcellus
24	6/9/2017	13,011	12,851	40	Marcellus
25	6/10/2017	12,814	12,654	40	Marcellus
26	6/10/2017	12,616	12,457	40	Marcellus
27	6/10/2017	12,419	12,259	40	Marcellus
28	6/11/2017	12,222	12,062	40	Marcellus
29	6/11/2017	12,024	11,865	40	Marcellus
30	6/11/2017	11,827	11,667	40	Marcellus
31	6/12/2017	11,630	11,470	40	Marcellus
32	6/12/2017	11,432	11,272	40	Marcellus
33	6/12/2017	11,235	11,075	40	Marcellus
34	6/12/2017	11,035	10,878	40	Marcellus
35	6/13/2017	10,840	10,680	40	Marcellus
36	6/13/2017	10,642	10,483	40	Marcellus
37	6/14/2017	10,446	10,286	40	Marcellus
38	6/14/2017	10,248	10,088	40	Marcellus
39	6/14/2017	10,051	9,891	40	Marcellus
40	6/14/2017	9,854	9,694	40	Marcellus
41	6/14/2017	9,656	9,496	40	Marcellus
42	6/15/2017	9,459	9,299	40	Marcellus

Stimulation Report

Stage No.	Report Date	Avg Treating Rate (BPM)	Avg Treating Pressure (psi)	Breakdown Pressure (psi)	ISIP (psi)	Total Amount of Proppant (lbs)	Total Clean Fluid (bbls)
1	5/29/2017	72	9,142	8,548	4,721	404,683	8,218
2	5/30/2017	71	9,094	7,032	4,813	401,773	10,445
3	5/30/2017	79	9,082	8,160	5,221	403,103	7,854
4	5/30/2017	80	8,928	8,289	5,548	402,075	7,938
5	5/31/2017	80	9,026	7,825	5,419	403,018	7,946
6	6/1/2017	80	8,932	8,046	5,557	400,791	7,702
7	6/1/2017	81	8,930	7,396	5,332	402,038	7,950
8	6/1/2017	80	8,834	7,417	5,799	351,337	7,130
9	6/1/2017	80	8,574	7,566	5,702	354,216	6,944
10	6/2/2017	79	8,639	7,125	5,532	353,231	7,043
11	6/2/2017	81	8,850	6,863	5,714	353,603	6,852
12	6/2/2017	80	8,781	8,176	5,430	352,145	6,845
13	6/2/2017	80	8,632	7,657	6,286	299,161	7,626
14	6/2/2017	80	8,632	7,601	5,591	351,220	6,745
15	6/7/2017	81	8,579	8,174	6,339	351,802	6,819
16	6/7/2017	81	8,921	8,292	5,263	351,127	6,660
17	6/7/2017	80	8,813	8,247	5,566	350,303	6,771
18	6/8/2017	77	8,750	7,698	5,559	351,372	7,140
19	6/8/2017	79	8,757	8,197	6,616	351,361	6,802
20	6/8/2017	81	8,841	7,781	5,822	348,781	7,067
21	6/9/2017	81	8,728	8,283	5,457	350,455	6,752
22	6/9/2017	80	8,498	8,967	5,390	350,750	6,878
23	6/9/2017	80	8,328	6,973	5,946	350,266	6,751
24	6/9/2017	79	8,404	8,382	6,125	356,231	6,231
25	6/10/2017	79	8,634	8,567	5,290	352,654	6,495
26	6/10/2017	80	8,352	8,305	5,316	350,242	6,597
27	6/10/2017	81	8,478	7,919	5,522	349,497	6,179
28	6/11/2017	80	8,343	7,870	5,522	348,785	6,233
29	6/11/2017	81	8,240	8,574	5,380	351,412	6,601
30	6/11/2017	80	8,401	8,075	5,413	346,971	6,292
31	6/12/2017	80	8,476	7,752	5,737	349,124	6,056
32	6/12/2017	80	8,425	8,237	5,823	350,003	6,425
33	6/12/2017	80	8,229	7,598	6,084	351,836	7,978
34	6/12/2017	80	8,423	8,443	6,152	349,510	6,071
35	6/13/2017	79	8,633	8,657	6,496	346,079	6,954
36	6/13/2017	79	8,425	8,724	5,379	352,141	6,365
37	6/14/2017	80	8,492	8,326	5,819	348,895	6,232
38	6/14/2017	80	8,626	8,847	5,093	650,471	6,686
39	6/14/2017	81	8,069	9,012	5,382	350,608	6,367
40	6/14/2017	80	8,064	8,505	6,135	350,337	6,038
41	6/14/2017	80	8,211	8,785	5,323	350,689	6,127
42	6/15/2017	79	8,083	8,276	5,449	353,187	6,721

Formation and Depths

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, H2S, etc)
Gray Sand/Shale	0	245			sand/shale
Gray/Red Shale	245	335			shale
Gray Sand	335	350			sand
Coal	350	355			coal
Sand	355	375			sand
Coal	375	380			coal
Sand/Shale	380	1056			sand/shale
Coal	1056	1066			coal
Sand/Shale	1066	1135			sand/shale
Gray/Red Shale	1135	1670			shale
Sand	1670	1864			sand
Coal	1884	1890			coal
Sand/Shale	1890	1920			sand/shale
Coal	1920	1930			coal
Sand/shale	1930	2480			sand/shale
Sand	2480	2680			sand
Sand/shale	2680	3600			sand/shale
Sandstone/Shale/Siltstone	3600	6300			sandstone/shale/siltstone
Middlesex	7577	7795	7903	8216	shale
Burkett	7795	7981	8216	8491	shale
Geneseo	7981	8024	8491	8559	shale
Tully	8024	8072	8559	8641	limestone
Hamilton	8072	8188	8641	8884	shale
Marcellus	8188	8242	8884	9073	shale
Cherry Valley	8242	8244	9073	9083	limestone
Lower Marcellus	8244		9083		shale

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	5/30/2017
Job End Date:	6/15/2017
State:	West Virginia
County:	Monongalia
API Number:	47-061-01738-00-00
Operator Name:	Northeast Natural Energy LLC
Well Name and Number:	Fisher 10H
Latitude:	39.69643400
Longitude:	-80.21356900
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	8,281
Total Base Water Volume (gal):	12,733,938
Total Base Non Water Volume:	0

FracFocus Chemical Disclosure Registry

GROUNDWATER PROTECTION COUNCIL

INTERSTATE Oil & Gas COMPACT COMMISSION

Hydraulic Fracturing Fluid Composition:

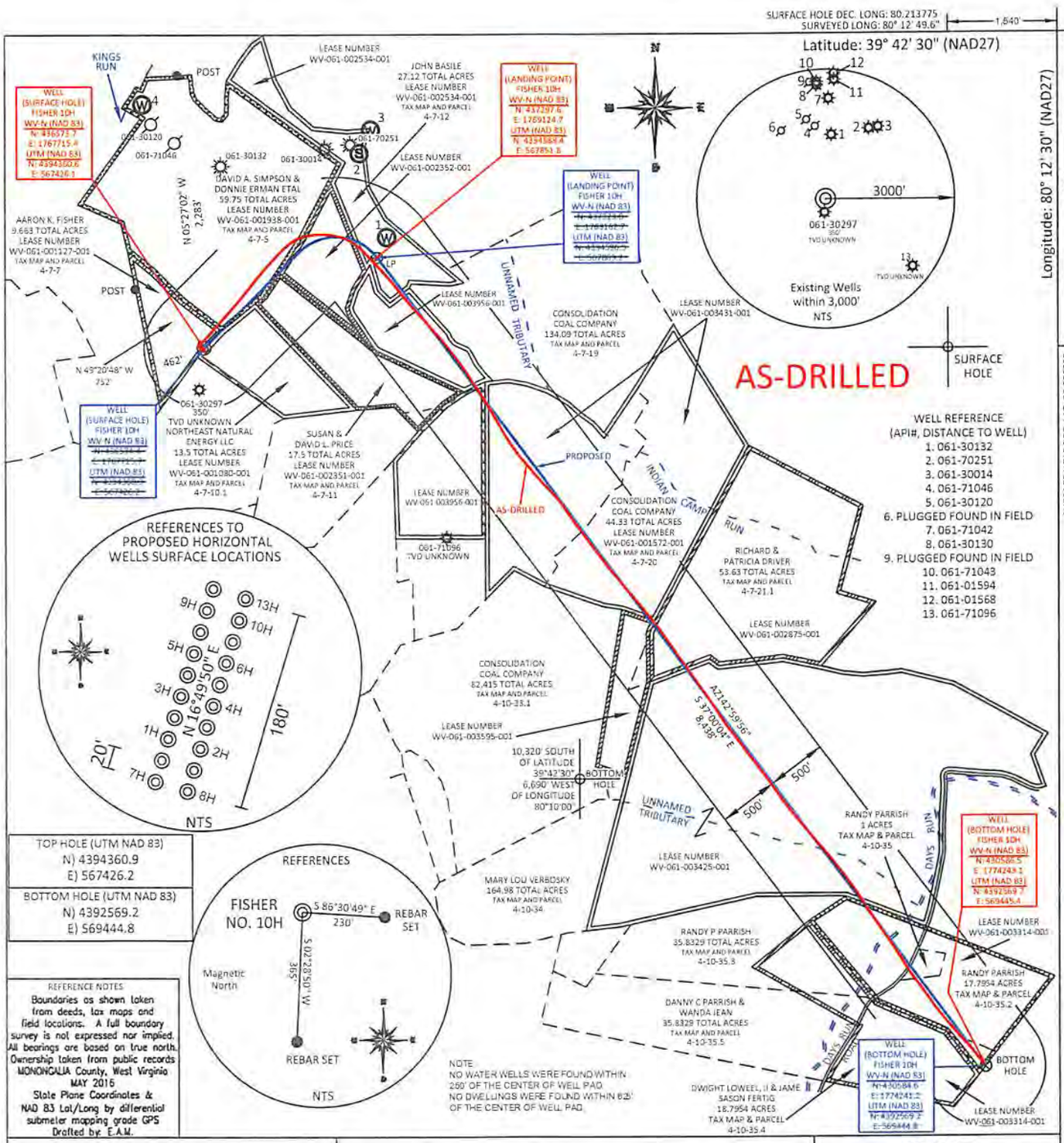
Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Operator	Carrier					
			Water	7732-18-5	100.00000	82.55485	
Sand, White	BJ Services	Proppant					
				Listed Below			

HCl, 5.1 - 7.5%	BJ Services	Acidizing					
				Listed Below			
Other Chemical (s)	BJ Services	See Trade Name (s) List					
			Water	7732-18-5	92.50000	5.25928	
MaxPerm 30	BJ Services	Friction Reducer					
				Listed Below			
Ferrotrol 300L	BJ Services	Iron Control					
				Listed Below			
CI-14	BJ Services	Corrosion Inhibitor					
				Listed Below			
GBW-5	BJ Services	Breaker					
				Listed Below			
EC6486A	Nalco-Champion	Scale Inhibitor					
				Listed Below			
K-139	Nalco-Champion	Microbial Control					
				Listed Below			
Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.							
			Crystalline Silica (Quartz)	14808-60-7	100.00000	11.69966	
			Hydrochloric Acid	7647-01-0	7.50000	0.42371	

			Acrylamide Modified Acrylic Polymer	38193-60-1	60.00000	0.03158	
			Petroleum distillates	64742-47-8	30.00000	0.01579	
			Quaternary ammounium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	30.00000	0.00454	
			Sorbian, mono-(9Z)-9octadecenoate	1338-43-8	5.00000	0.00263	
			Sorbitan monooleate ethoxylate	9005-65-6	5.00000	0.00263	
			Sodium Chloride	7647-14-5	5.00000	0.00263	
			Oxyalkylated Alcohol	78330-21-9	5.00000	0.00263	
			Citric Acid	77-92-9	60.00000	0.00235	
			Glutaraldehyde	111-30-8	10.00000	0.00178	
			Ethylene Glycol	107-21-1	30.00000	0.00131	
			Amine Triphosphate	Proprietary	30.00000	0.00118	
			Methanol	67-56-1	100.00000	0.00090	
			Ethanol	64-17-5	5.00000	0.00062	
			Acetic acid	127-08-2	1.00000	0.00053	
			Polyoxyalkylenes	68951-67-7	30.00000	0.00027	
			Ammonium Persulfate	7727-54-0	100.00000	0.00019	
			Fatty Acids	61790-12-3	10.00000	0.00009	
			Modified Thiourea Polymer	68527-49-1	7.00000	0.00006	
			Tetrasodium EDTA	64-02-8	0.10000	0.00005	
			Acetic acid, Potassium Salt	64-19-7	0.10000	0.00005	
			Olefin	64743-02-8	5.00000	0.00005	
			Propargyl Alcohol	107-19-7	5.00000	0.00005	
			Formaldehyde	50-00-0	1.00000	0.00001	

* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water
** Information is based on the maximum potential for concentration and thus the total may be over 100%
*** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

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 #: NNE14

DRAWING #: 2387

SCALE: PLAT: 1" = 1200' 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: _____

L.L.S. #2124 : Ernest J. Benchek III

ERNEST J. BENCHEK III LICENSED No. 2124 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25304

DATE: APRIL 13, 2018

OPERATOR'S WELL #: FISHER NO. 10H

API WELL #: 47 (STATE) 61 (COUNTY) ____ (PERMIT)

Well Type: ☐ Oil ☐ Waste Disposal ☐ Production ☐ Deep
☒ Gas ☐ Liquid Injection ☐ Storage ☒ Shallow

AS-BUILT ELEVATION: 1,453'

WATERSHED: DUNKARD CREEK

COUNTY/DISTRICT: MONONGALIA / CLAY

QUADRANGLE: BLACKSVILLE

SURFACE OWNER: AARON K. FISHER

ACREAGE: 9.663 +/-

OIL & GAS ROYALTY OWNER: HENRY P. AMES, III, ET AL

ACREAGE: 716.2346 +/-

LEASE NUMBERS: _____

07/20/2018

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

ESTIMATED DEPTH: TVD: 8,276.05' TMD: 17,667'

WELL OPERATOR: NORTHEAST NATURAL ENERGY LLC

DESIGNATED AGENT: JOHN ADAMS

ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200

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CITY: CHARLESTON STATE: WV ZIP CODE: 25301

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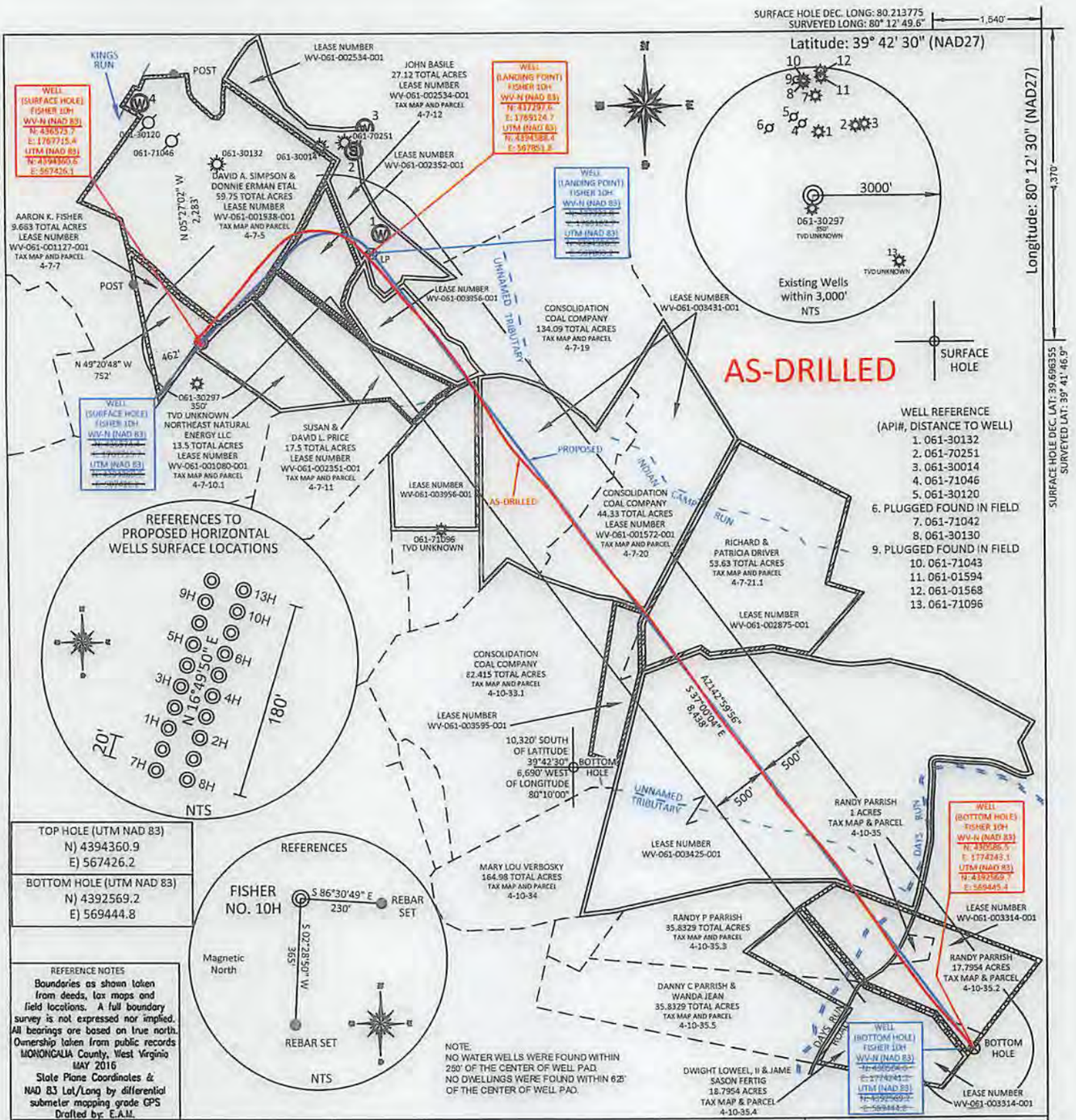

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