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 - 01733 County Monongalia District Clay
Quad Blacksville Pad Name Fisher Field/Pool Name
Farm name Aaron K. Fisher Well Number Fisher 1H
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 4394328.2 Easting 567407.4
Landing Point of Curve Northing 4394212.7 Easting 567010.9
Bottom Hole Northing 4396133.4 Easting 565506.9

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 12/07/2015 Date drilling commenced 08/16/207 Date drilling ceased 10/22/2017
Date completion activities began 12/13/2017 Date completion activities ceased 01/12/2018
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 by:

Reviewed

06/11/2018

API 47- 061 - 01733 Farm name Aaron K. Fisher Well number Fisher 1H

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"	1'430'	N	54.5	N/A	Y 44 Bbl.
Coal							
Intermediate 1	12-1/4"	9-5/8"	2'651'	N	40	N/A	Y 1Bbl.
Intermediate 2							
Intermediate 3							
Production	8-3/4"	5-1/2"	17'057'	N	20	N/A	N, EST. 1'651'
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%	1140	15.6	1.21	1379.4	Surface	8
Coal							
Intermediate 1	Class A + 1%	860	15.6	1.21	1040.6	Surface	8
Intermediate 2							
Intermediate 3							
Production	50:50 Class A + Additives	3,414	14.5	1.19	4,029	1,651'	48
Tubing							

Drillers TD (ft) 17,103' Loggers TD (ft) 17,073'

Deepest formation penetrated Marcellus Plug back to (ft)

Plug back procedure

Kick off depth (ft) 6,518'

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

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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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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.

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PRODUCING FORMATION(S)	DEPTHS		
Marcellus	8,310'	TVD	17,103' MD

Please insert additional pages as applicable.

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

SHUT-IN PRESSURE Surface 3945 psi Bottom Hole _____ psi DURATION OF TEST 48 hrs

OPEN FLOW Gas 3680 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_2S, ETC)
	0		0		Please See Attachment

Please insert additional pages as applicable.

Drilling Contractor Patterson
Address 207 Carlton Dr. City Eighty Four State PA Zip 15330

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

Cementing Company BJ Service
Address 1036 E. Main St. City Bridgeport State WV Zip 26330

Stimulating Company Producers Service Corporation
Address 109 Graham St. City Zanesville State OH Zip 43701
Please insert additional pages as applicable.

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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

State

HALLIBURTON

Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 359876	**Ship To #:** 0003711790	**Quote #:** 0022341641	**Sales Order #:** 0904242010
Customer: NORTHEAST NATURAL ENERGY LLC-EBUS		**Customer Rep:**	
Well Name: FISHER	**Well #:** 1H		**API/UWI #:** 47-061-01733-08
Field:	**City (SAP):** BLACKSVILLE	**County/Parish:** MONONGALIA	**State:** WEST VIRGINIA
Legal Description: 4480S 39*42'30"-1600W 80"12'30"-BLACKSVI			
Contractor:		**Rig/Platform Name/Num:**	
Job BOM: 7521 7521			
Well Type: HORIZONTAL GAS			
Sales Person: HALAMERICA\HB67143		**Srvc Supervisor:** Dylan Morrison	

Job

Formation Name				
Formation Depth (MD)	**Top**		**Bottom**	
Form Type			**BHST**	
Job depth MD	1451ft		**Job Depth TVD**	
Water Depth			**Wk Ht Above Floor**	
Perforation Depth (MD)	**From**		**To**	

Well Data

Description	New / Used	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Casing		24	23.75	94.62			0	40		
Casing		13.375	12.615	54.5	BTC	J-55	0	1430		
Open Hole Section			17.5				40	1451		

Tools and Accessories

Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make
Guide Shoe	13.375					Top Plug	13.375		HES
Float Shoe	13.375			1430		Bottom Plug	13.375		HES
Float Collar	13.375			1385		SSR plug set	13.375		HES
Insert Float	13.375					Plug Container	13.375	1	HES
Stage Tool	13.375					Centralizers	13.375		HES

Fluid Data

Stage/Plug #: 1

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	Fresh Water	Fresh Water	10	bbl	8.33			5	

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
2	Gel Spacer	Gel Spacer	25	bbl	8.4			3	
20 lbm/bbl		NATIONAL PREMIUM GOLD - 50 LB BAG (101612629)							

1 lbm/bbl	POLY-E-FLAKE (101216940)

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	Fresh Water	Fresh Water	10	bbl	8.33			4	

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
4	HalCem (TM) System	HALCEM (TM) SYSTEM Class A Cement	1140	sack	15.6	1.21		6	5.41

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
5	Fresh Water Displacement	Fresh Water Displacement	214	bbl	8.33			8	

Cement Left In Pipe	Amount	45 ft	Reason	Shoe Joint

Mix Water:	pH 6	Mix Water Chloride:	## ppm	Mix Water Temperature:	77 °F
Cement Temperature:	82 °F	Plug Displaced by:	9 lb/gal	Disp. Temperature:	75 °F
Plug Bumped?	Yes	Bump Pressure:	580 psi	Floats Held?	Yes
Cement Returns:	44 bbl	Returns Density:	## lb/gal kg/m3	Returns Temperature:	## °F °C

Comment pumped 250bbl processed water to establish circulation, cleared shoe with no pressure, rig tried to work casing down a bit, but no luck. Pumped 170bbl of displacement when cement came to surface, 44bbl total to surface. Bumped at 214bbl 580psi, taken to 960psi per OSR. Held for 5min. bled back 1bbl. FLOATS HELD.

1.0 Real-Time Job Summary

1.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	DS Pmp Stg Tot (bbl)	DS Pump Press (psi)	DS Pump Rate (bbl/min)	PS Pmp Stg Tot (bbl)	Comments
Event	1	Arrive at Rig	Arrive at Rig	8/19/2017	13:00:00	USER						crew on location Start Charging
Event	2	Other	water test	8/19/2017	14:00:00	USER						PH 7 CL good SG 1.000 Temp 70 mud scales read water at 8.33#
Event	3	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	8/19/2017	15:00:00	USER						slips trips falls pinch points work together work smart use team lifts
Event	4	Safety Meeting - Pre Job	Safety Meeting - Pre Job	8/19/2017	17:20:00	USER						SWA mustar co man 911 caller buffer zone puming casing done watch iron on floor
Event	5	Start Job	Start Job	8/19/2017	18:00:55	COM5	8.34	0.00	0.00	0.00	0.00	Ready to pump loaded lines with 5bbl h20
Event	6	Test Lines	Test Lines	8/19/2017	18:07:52	COM5	8.24	2.80	16.00	0.00	2.80	tested kick outs to 500psi and then tested lines to 5000psi good test
Event	7	Circulate Well	Circulate Well	8/19/2017	18:11:44	COM5	8.25	0.00	4.00	0.00	0.00	pumped 360bbl of water to wash casing down
Event	8	End Job	End Job	8/19/2017	19:45:27	COM5						done pumping casing down
Event	9	Safety Meeting - Pre Job	Safety Meeting - Pre Job	8/19/2017	20:00:00	USER						SWA buffer zone co man 911 caller pump schedule
Event	10	Start Job	Start Job	8/19/2017	20:31:35	COM5	8.50	32.70	-2.00	0.00	14.40	ready to pump loaded lines with 3bbl h20
Event	11	Test Lines	Test Lines	8/19/2017	20:37:35	COM5	8.49	35.00	7.00	0.10	14.40	tested klk outs to 500psi then tested lines to 5000psi good test

Event	12	Pump Spacer 1	Pump Spacer 1	8/19/2017	20:43:37	COM5	8.47	35.10	2.00	0.00	14.40	pumped 25bbl gel spacer at 4.5bpm with 122psi
Event	13	Pump Cement	Pump Cement	8/19/2017	20:50:03	COM5	15.6	191	165.00	4.90	0.00	pumped 10 bbl h20 to clean mix tub then pumped 860sks (191bbl Class A) Halcem @ 15.6ppg 1.21yield 5.42 gal/ sk @ 6.5bpm with psi of 500psi with sample weights of 15.6# 15.7# 15.6# and a temp of 75degrees
Event	14	Pump Displacement	Pump Displacement	8/19/2017	21:30:45	COM5	15.57		108.00	0.00		Started dispalcement of 197.5bbl at 7bpm with pressure of 450psi got cement to surface 199bbl into dispalcement
Event	15	Bump Plug	Bump Plug	8/19/2017	22:07:53	COM5	8.16	200	1748.00	0.00		bumped plug with 200bbl pumped with pressure of 1000psi and took to 1600psi and held for 5 min checked floats floats held flowed back 1bbl got 1bbl of cement to surface
Event	16	End Job	End Job	8/19/2017	22:15:55	COM5	8.12	0.00	2.00	0.00	203.70	done pumping Stop Charging at 2200
Event	17	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	8/19/2017	23:00:00	USER						slips trips falls pinch points work together work smart use team lifts stay hydrated
Event	18	Crew Leave Location	Crew Leave Location	8/20/2017	00:30:00	USER						

Cementing Treatment

Start Date	10/15/2017	**Well**	1H
End Date	10/20/2017	**County**	MONONGALIA
Client	NORTHEAST NATURAL ENERGY LLC	**State/Province**	WV
Client Field Rep	Michael Peck	**API**	47-061-01733
Service Supervisor		**Formation**	
Field Ticket No.	NNE - Fisher 1H - 5.5" Production Casing	**Rig**	Patterson 334
District	Bridgeport, WV	**Type of Job**	Long String

WELL GEOMETRY

Type	ID (in)	OD (in)	Wt. (lb/ft)	MD (ft)	TVD (ft)	Excess(%)	Grade	Thread
Previous Casing	8.84	9.63	40.00	2,651.00	2,651.00	0.00	J-55	
Open Hole	8.50			17,057.00	8,250.00	10.00		
Casing	4.78	5.50	20.00	17,057.00	8,250.00		P-110	
Open Hole	8.75			7,763.00	7,763.00	10.00		

Shoe Length (ft): 45

HARDWARE

Bottom Plug Used?	No	**Tool Type**	Float Collar
Bottom Plug Provided By		**Tool Depth (ft)**	17,012.00
Bottom Plug Size		**Max Tubing Pressure - Rated (psi)**	
Top Plug Used?	Yes	**Max Tubing Pressure - Operated (psi)**	
Top Plug Provided By	Non BJ	**Max Casing Pressure - Rated (psi)**	12,600.00
Top Plug Size	5.500	**Max Casing Pressure - Operated (psi)**	8,500.00
Centralizers Used	Yes	**Pipe Movement**	Rotation
Centralizers Quantity		**Job Pumped Through**	Manifold
Centralizers Type		**Top Connection Thread**	BTC
Landing Collar Depth (ft)	17,012	**Top Connection Size**	5.5

Cementing Treatment

CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	**Solids Present at End of Circulation**	No
Circulation Prior to Job	Yes	**10 sec SGS**	
Circulation Time (min)		**10 min SGS**	
Circulation Rate (bpm)		**30 min SGS**	
Circulation Volume (bbls)		**Flare Prior to/during the Cement Job**	No
Lost Circulation Prior to Cement Job	No	**Gas Present**	No
Mud Density In (ppg)	13.00	**Gas Units**	
Mud Density Out (ppg)			
PV Mud In			
PV Mud Out			
YP Mud In			
YP Mud Out			

TEMPERATURE

Ambient Temperature (°F)	70.00	**Slurry Cement Temperature (°F)**	71.00
Mix Water Temperature (°F)	61.50	**Flow Line Temperature (°F)**	

BJ FLUID DETAILS

Fluid Type	Fluid Name	Density (ppg)	Yield (Cu Ft/sk)	H2O Req. (gals/sk)	Vol (sk)	Vol (Cu Ft)	Vol (bbls)
Spacer / Pre Flush / Flush	MultiBond 13.5 ppg	13.5000					77.0000
Spacer / Pre Flush / Flush	UltraBond 10 13.5 ppg	13.5000					100.0000
Tail Slurry	Single Slurry 14.5 ppg	14.5000	1.1859	5.18	3,414	4,029.0000	717.5000
Displacement 1	Inhibited Water	8.3400				0.0000	20.0000
Displacement Final	Treated Water	8.3400				0.0000	357.3000

Cementing Treatment

Fluid Type	Fluid Name	Component	Concentration	UOM
Spacer / Pre Flush / Flush	MultiBond 13.5 ppg	FOAM PREVENTER, FP-13L	0.03	GPB
Spacer / Pre Flush / Flush	UltraBond 10 13.5 ppg	SURFACTANT, S-5	3.50	GPB
Spacer / Pre Flush / Flush	UltraBond 10 13.5 ppg	IntegraGuard RHEO 10	100.00	PCT
Spacer / Pre Flush / Flush	MultiBond 13.5 ppg	13.5 ppg IntegraGUARD Multi	100.00	PCT
Spacer / Pre Flush / Flush	MultiBond 13.5 ppg	RETARDER, R-3	1.10	PPB
Spacer / Pre Flush / Flush	UltraBond 10 13.5 ppg	WEIGHTING ADDITIVE, BARITE	284.62	PPB
Tail Slurry	Single Slurry 14.5 ppg	CEMENT, CLASS A	50.00	PCT
Tail Slurry	Single Slurry 14.5 ppg	FOAM PREVENTER, FP-13L	0.75	GALS/100SK
Tail Slurry	Single Slurry 14.5 ppg	RETARDER, R-3	0.30	BWOB
Tail Slurry	Single Slurry 14.5 ppg	BONDING AGENT, EC-1	1.00	BWOB
Tail Slurry	Single Slurry 14.5 ppg	CEMENT, FLY ASH (POZZOLAN)	50.00	PCT
Tail Slurry	Single Slurry 14.5 ppg	SPECIAL ADDITIVE, MPA-170	0.30	BWOB
Displacement 1	Inhibited Water	BIOCIDE, ALPHA 1427	0.80	GPT
Displacement 1	Inhibited Water	SCALE CONTROL,FraCare SI 720	0.25	GPT
Displacement 1	Inhibited Water	RETARDER, SUGAR, GRANULAR	200.00	LBS
Displacement Final	Treated Water	BIOCIDE, ALPHA 1427	0.80	GPT
Displacement Final	Treated Water	SCALE CONTROL,FraCare SI 720	0.25	GPT

TREATMENT SUMMARY

Time	Fluid	Rate (bpm)	Fluid Vol. (bbls)	Pipe Pressure (psi)	Annulus Pressure (psi)	Comments
10/21/2017 2:05 AM	MultiBond 13.5 ppg	5.00	77.00		400.00	
10/21/2017 2:30 AM	UltraBond 10 13.5 ppg	5.00	100.00		700.00	
10/21/2017 2:40 AM	Single Slurry 14.5 ppg	5.00	717.50		1,100.00	
10/21/2017 4:30 AM	Inhibited Water	7.00	20.00		1,200.00	

Cementing Treatment

10/21/2017 4:32 AM	Treated Water	5.00	357.30		1,200.00	

	Min	Max	Avg
Pressure (psi)	0.00	4,500.00	2,000.00
Rate (bpm)	0.00	7.00	5.40

DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amount of Cement Returned/Reversed	0.00
Calculated Displacement Volume (bbls)	377.00	Method Used to Verify Returns	Visual
Actual Displacement Volume (bbls)	377.00	Amount of Spacer to Surface	40.00
Did Float Hold?	Yes	Pressure Left on Casing (psi)	0.00
Bump Plug	Yes	Amount Bled Back After Job	5.50
Bump Plug Pressure (psi)	2,700.00	Total Volume Pumped (bbls)	1,272.00
Were Returned Planned at Surface	No	Top Out Cement Spotted	No
Cement returns During Job		Lost Circulation During Cement Job	No

CEMENT PLUG

Bottom of Cement Plug?	No	Wiper Balls Used?	No
Wiper Ball Quantity		Plug Catcher	No
Number of Plugs			

SQUEEZE

Injection Rate (bpm)	Fluid Density (ppg)
Injection Pressure (psi)	ISIP (psi)
Type of Squeeze	FSIP (psi)
Operators Max SQ Pressure (psi)	

COMMENTS

Customer Name Northeast energy
Well Name Fisher 1-H
Job Type Long String

District Bridge Port
Supervisor Michael Peck
Engineer

Seq No.	Start Date/Time	Category	Event	Equipment	Event ID	Density (lb/gal)	Pump Rate (bpm)	Pump Vol (bbls)	Pipe Pressure (psi)	Comments
1	10/20/2017 14:00	Mobilization	Arrive on Location		48					Arrive on location rig still running casing.
2	10/20/2017 14:15	StandBy	Other (See comment)		82					Wait on rig to finish casing
3	10/20/2017 22:00	Operational	Spot Units		49					Spot trucks on location
4	10/20/2017 22:50	Operational	Rig Up		50					Run Iron to rig floor
5	10/21/17 0145	Operational	Safety Meeting		53					Safety meeting in dog house/rig floor
6	10/21/2017 2:00	Operational	Pressure Test		54					Pressure test iron 5000
7	10/21/2017 2:05	Operational	Pump Spacer		56	13.5	5	100	350	Ultra Bond Spacer From Batch Mixer
8	10/21/2017 2:25	Operational	Pump Spacer		56	13.5	5	78	300	Multi-Bond From 660-#835
9	10/21/2017 2:35	Operational	Pump Lead Cement		58	14.5	8	717	1100	Cement From Bins
10	10/21/2017 4:30	Operational	Clean Pumps and Lines		62					Clean lines and prepare to drop top plug
11	10/21/2017 4:35	Operational	Drop Top Plug		63					Top plug has left the cement head
12	10/21/2017 4:36	Operational	Pump Displacement		64	8.33	8	377	2700-4500	Pump treated water
13	10/21/2017 5:40	Operational	Land Plug		67					Plug landed
14	10/21/2017 5:45	Operational	Check Floats		68					Floats Held 5 1/2 bbl back to pump
15	10/21/2017 5:50	Operational	End Pumping		69					
16	10/21/2017 6:15	Operational	Rig Down		73					
17	10/21/2017 7:00	Mobilization	Leave Location		74					Job Complete
18										
19										
20										
21										
22										
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Perforation Record

Stage No.	Report Date	Perforated from MD Ft.	Perforated to MD Ft.	Number of Perforations	Formation
1	12/16/2017		16,914	40	Marcellus
2	12/17/2017	16,877	16,716	40	Marcellus
3	12/17/2017	16,679	16,518	40	Marcellus
4	12/17/2017	16,481	16,322	40	Marcellus
5	12/17/2017	16,282	16,122	40	Marcellus
6	12/18/2017	16,084	15,924	40	Marcellus
7	12/18/2017	15,886		40	Marcellus
8	12/19/2017	15,688	15,527	40	Marcellus
9	12/19/2017	15,490	15,329	40	Marcellus
10	12/20/2017	15,290	15,131	40	Marcellus
11	12/21/2017	15,094	14,933	40	Marcellus
12	12/21/2017	14,895	14,735	40	Marcellus
13	12/22/2017	14,697	14,537	40	Marcellus
14	12/22/2017	14,499	14,339	40	Marcellus
15	12/23/2017	14,301	14,141	40	Marcellus
16	12/23/2017	14,103	13,942	40	Marcellus
17	12/26/2017	13,905	13,744	40	Marcellus
18	12/27/2017	13,707	13,546	40	Marcellus
19	12/27/2017	13,508	13,348	40	Marcellus
20	12/28/2017	13,310	13,150	40	Marcellus
21	12/29/2017	13,112	12,952	40	Marcellus
22	12/29/2017	12,914	12,754	40	Marcellus
23	12/31/2017	12,716	12,555	40	Marcellus
24	1/1/2018	12,518	12,357	40	Marcellus
25	1/1/2018	12,320	12,159	40	Marcellus
26	1/2/2018	12,122	11,961	40	Marcellus
27	1/2/2018	11,923	11,763	40	Marcellus
28	1/4/2018	11,725	11,565	40	Marcellus
29	1/6/2018	11,527	11,357	40	Marcellus
30	1/6/2018	11,329	11,169	40	Marcellus
31	1/7/2018	11,131	10,970	40	Marcellus
32	1/7/2018	10,933	10,772	40	Marcellus
33	1/7/2018	10,735	10,574	40	Marcellus
34	1/8/2018	10,536	10,376	40	Marcellus
35	1/9/2018	10,338	10,178	40	Marcellus
36	1/9/2018	10,140	9,980	40	Marcellus
37	1/10/2018	9,942	9,782	40	Marcellus
38	1/10/2018	9,744	9,583	40	Marcellus
39	1/11/2018	9,546	9,385	40	Marcellus
40	1/11/2018	9,348	9,187	40	Marcellus
41	1/12/2018	9,150	8,989	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	12/16/2017	88	8,311	6,200	4,157	302,560	6,113
2	12/17/2017	84	8,451	5,556	4,394	361,320	7,186
3	12/17/2017	82	8,473	5,700	3,999	355,220	7,004
4	12/17/2017	85	8,198	5,797	3,900	349,320	6,987
5	12/17/2017	85	7,860	5,768	4,141	351,400	6,870
6	12/18/2017	85	8,259	6,178	3,976	352,320	6,822
7	12/18/2017	82	9,234	5,859	4,050	400,940	7,289
8	12/19/2017	82	8,582	5,923	4,587	350,780	6,836
9	12/19/2017	85	8,646	6,565	3,926	349,740	6,591
10	12/20/2017	85	8,645	6,268	4,522	354,520	6,683
11	12/21/2017	82	8,660	6,567	4,494	350,160	6,755
12	12/21/2017	83	8,620	6,821	3,715	349,080	7,000
13	12/22/2017	83	8,826	5,043	4,074	350,880	6,687
14	12/22/2017	83	8,712	7,219	3,561	351,600	6,791
15	12/23/2017	85	8,603	8,032	4,637	350,540	6,795
16	12/23/2017	80	8,718	7,184	4,532	355,440	6,653
17	12/26/2017	81	8,964	7,456	4,894	361,240	6,954
18	12/27/2017	80	8,871	6,469	4,823	388,200	6,834
19	12/27/2017	80	8,885	7,625	4,575	355,840	6,928
20	12/28/2017	82	8,897	6,693	4,417	350,220	7,006
21	12/29/2017	83	8,798	6,898	4,486	351,980	6,898
22	12/29/2017	82	8,808	8,228	4,756	349,980	6,798
23	12/31/2017	73	8,462	6,290	4,689	349,280	6,759
24	1/1/2018	82	8,786	7,121	5,109	350,200	6,711
25	1/1/2018	84	8,444	6,499	5,717	349,800	6,690
26	1/2/2018	85	8,212	6,343	5,895	351,060	6,549
27	1/2/2018	85	8,320	6,777	5,443	404,320	7,611
28	1/4/2018	84	8,621	6,892	5,749	351,060	7,103
29	1/6/2018	80	8,850	6,103	5,411	359,600	6,814
30	1/6/2018	78	8,921	7,028	5,839	355,660	7,027
31	1/7/2018	82	8,705	7,310	5,926	349,820	7,472
32	1/7/2018	82	8,636	6,894	6,687	352,200	6,770
33	1/7/2018	83	8,792	6,618	243	352,220	6,698
34	1/8/2018	82	8,512	6,477	5,997	350,980	6,607
35	1/9/2018	82	8,255	6,806	6,139	350,260	6,635
36	1/9/2018	85	8,737	6,403	5,769	361,140	6,714
37	1/10/2018	83	8,468	6,660	6,470	349,680	6,906
38	1/10/2018	85	8,193	7,466	6,186	356,060	6,780
39	1/11/2018	81	8,054	7,337	5,998	352,040	6,669
40	1/11/2018	86	8,546	7,361	5,621	352,540	6,797
41	1/12/2018	83	8,360	7,206	6,329	384,700	9,243

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
Burkett	7773	7960	7867	8140	shale
Geneseo	7960	7999	8140	8223	shale
Tully	7999	8046	8223	8337	limestone
Hamilton	8046	8156	8337	8678	shale
Marcellus	8156	8206	8678	8871	shale
Cherry Valley	8206	8208	8871	8881	limestone
Lower Marcellus	8208		8881		shale

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/16/2017
Job End Date:	1/12/2018
State:	West Virginia
County:	Monongalia
API Number:	47-061-01733-00-00
Operator Name:	Northeast Natural Energy LLC
Well Name and Number:	Fisher 1H
Latitude:	39.69614200
Longitude:	-80.21379200
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	8,310
Total Base Water Volume (gal):	11,743,834
Total Base Non Water Volume:	0

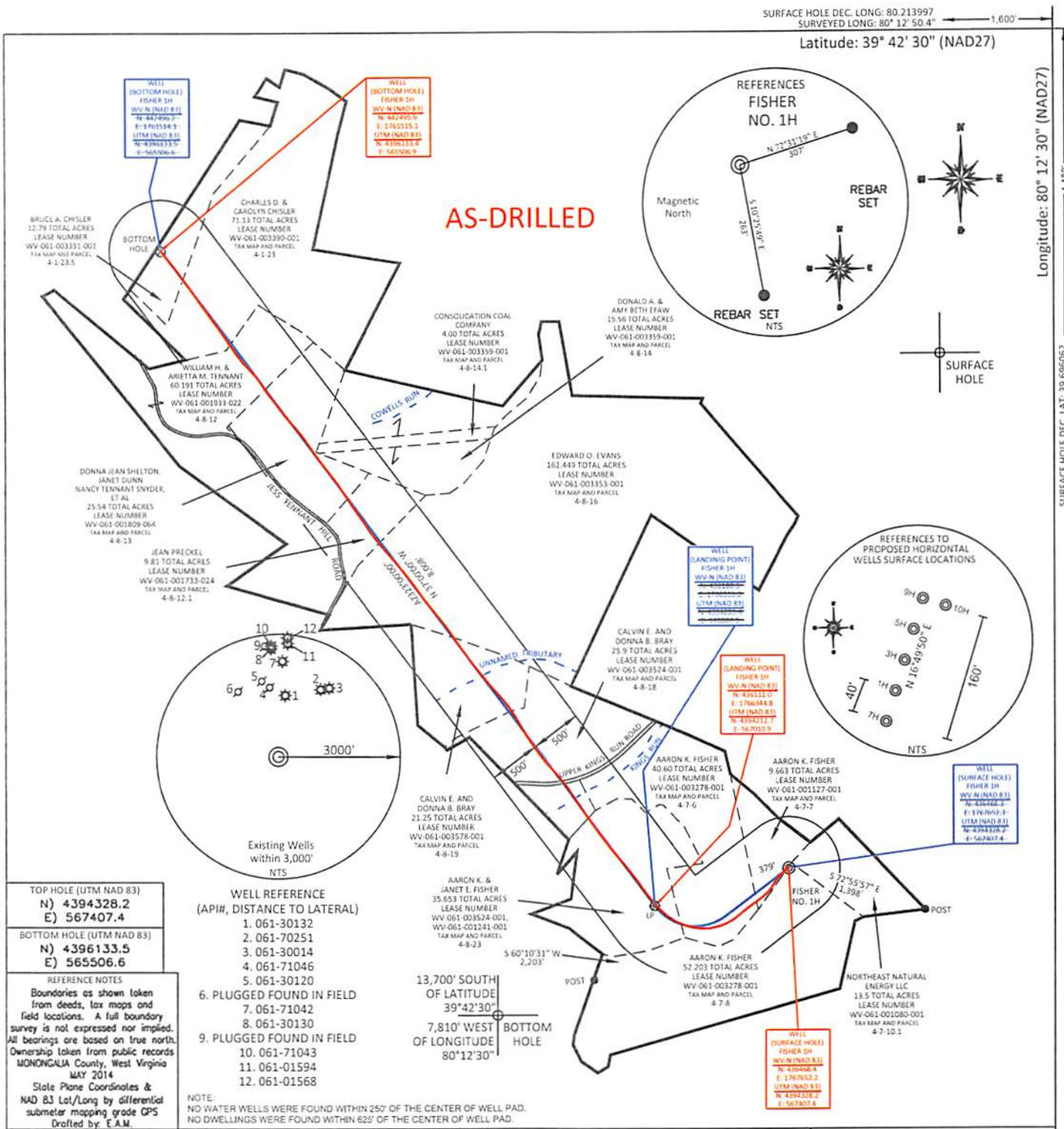
Hydraulic Fracturing Fluid Composition:

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	Company 1	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	86.68450	None
Sand (Proppant)	Producers Service Corp	Proppant					
			Crystalline Silica (quartz)	14808-60-7	100.00000	12.81407	None
IC Acid (7.5%)	Producers Service Corp	Acidizing					
			Hydrochloric Acid	7647-01-0	15.00000	0.06103	None
STIMLUBE HBVB	Producers Service Corp	Friction Reducer					
			Petroleum Distallates	64742-47-8	30.00000	0.02041	None
			Ammonium Acetate	631-61-8	10.00000	0.00680	None
BIOC11219A	Nalco-Champion	Biocide					
			Methanol	67-56-1	60.00000	0.01230	None
			Benzyl-(C12-C16 Alkyl)-Dimethyl-Ammonium Chloride	68424-85-1	30.00000	0.00615	None
			Glutaraldehyde	111-30-8	10.00000	0.00205	None
SCAL16486A	Nalco-Champion	Scale Inhibitor					
			Ethylene Glycol	107-21-1	30.00000	0.00158	None
			Amine Triphosphate	Proprietary	30.00000	0.00158	None

PROHIB II	Producers Service Corp	Inhibitor					
			Acetic Acid	64-19-7	90.00000	0.00068	None
			Methanol	67-56-1	10.00000	0.00008	None
			2-Ethylhexanol	104-76-7	10.00000	0.00008	None
			Cocamide Diethanolamine	68603-42-9	5.00000	0.00004	None
			Diethanolamine	111-42-2	1.00000	0.00001	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					
			Ammonium Acetate	631-61-8	10.00000	0.00680	
			Benzyl-(C12-C16 Alkyl)-Dimethyl-Ammonium Chloride	68424-85-1	30.00000	0.00615	
			Glutaraldehyde	111-30-8	10.00000	0.00205	
			Ethylene Glycol	107-21-1	30.00000	0.00158	
			2-Ethylhexanol	104-76-7	10.00000	0.00008	
			Methanol	67-56-1	10.00000	0.00008	
			Cocamide Diethanolamine	68603-42-9	5.00000	0.00004	
			Diethanolamine	111-42-2	1.00000	0.00001	

* 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)



TOP HOLE (UTM NAD 83)
N) 4394328.2
E) 567407.4

BOTTOM HOLE (UTM NAD 83)
N) 4396133.5
E) 565506.6

REFERENCE NOTES
Boundaries as shown taken 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 MAY 2014
State Plane Coordinates & NAD 83 Lat/Long by differential submeter mapping grade GPS
Drafted by: E.A.M.

WELL REFERENCE
(API#, DISTANCE TO LATERAL)
1. 061-30132
2. 061-70251
3. 061-30014
4. 061-71046
5. 061-30120
6. PLUGGED FOUND IN FIELD
7. 061-71042
8. 061-30130
9. PLUGGED FOUND IN FIELD
10. 061-71043
11. 061-01594
12. 061-01568

NOTE:
NO WATER WELLS WERE FOUND WITHIN 250' OF THE CENTER OF WELL PAD.
NO DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF WELL PAD.

FILE #: NNE14
DRAWING #: 2377
SCALE: PLAT: 1" = 1400' 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. 1H

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

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

WATERSHED: DUNKARD CREEK
AS-BUILT ELEVATION: 1,453'
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: 560.239 +/-
LEASE NUMBERS:

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: 8,310.64' TMD:17,103'
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