

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 - 01735 County Monongalia District Clay
Quad Blacksville Pad Name Fisher Field/Pool Name _____
Farm name Aaron K. Fisher Well Number Fisher 5H
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 4394351.7 Easting 567414.2
Landing Point of Curve Northing 4394401.2 Easting 567426.7
Bottom Hole Northing 4396538.6 Easting 565758.3

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 12/09/2016 Date drilling ceased 02/19/2017
Date completion activities began 11/28/2017 Date completion activities ceased 12/13/2017
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:
[Signature]
6/11/2018

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API 47-061 - 01735 Farm name Aaron K. Fisher Well number Fisher 5H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/fl	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"	1,426'	N	54.5	N/A	Y 53Bbl.
Coal							
Intermediate 1	12-1/4"	9-5/8"	2,627'	N	40	N/A	Y 10Bbl.
Intermediate 2							
Intermediate 3							
Production	8-3/4"	5-1/2"	17,644'	N	20	N/A	N, EST. 1,627'
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 Plus Additives	3,526	14.5	1.18	4,154.792	1,627'	48
Tubing							

Drillers TD (ft) 17,657 Loggers TD (ft) 17,627

Deepest formation penetrated Marcellus Plug back to (ft) _____

Plug back procedure _____

Kick off depth (ft) 6,428'

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 _____

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Customer: NORTHEAST NATURAL ENERGY LLC			Date: 12/11/2016			Serv. Supervisor: Kris Cook					
Cust. Rep.: Jim Queswbery			Ticket #: BPA-1612-0007			Serv. Center: Black Lick, PA					
Lease: Fisher 3H			API Well #: 47-061-01734			County: Monongalia State: WV					
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					
13-3/8" Rubber Top Plug		13-3/8" Hp Plug Container And Manifold				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	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/TBOD/DP)	OD (in)	WEIGHT (lbs/ft)	THREAD	DEPTH (ft)	GRADE	ID (in)	BURST (psi)	COLLAPSE (psi)
17 1/2	0.3	1,426'	Casing	13 3/8	54.5	LTC	1,426'	j-55	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'					1,426'	1,383'		
WELL FLUID		DISPLACEMENT FLUID			DIFF PRESS (psi)	CSG LIFT (psi)	MAX PRESS (psi)	WATER ON LOC (bbl)			
TYPE	DENSITY	VOLUME	TYPE	DENSITY				900			
AIR		213.6 BBL	H2O	8.3 ppg	539.8	485	2184				
Time	Rate (bbl/min)	Csg. Press. (psi)	Tbg. Press. (psi)	Ann. Press. (psi)	Stg. Vol. (bbl)	Cum. Vol. (bbl)	Stage Details				
10:30 PM						0	CALLED IN FOR JOB				
1:30 AM						0	PRE CONVOY MEETING				
1:45 AM						0	LEFT YARD				
4:00 AM						0	ARRIVED ON LOCATION				
4:30 AM						0	SCHEDULED TIME TO BE OPN LOCATION				
4:00	TO	7:15				0	WAITING ON RIG TO RUN CASING				
7:00 AM						0	PRE RIG UP MEETING				
7:15 AM						0	SPOT UNITS AND SET UP				
7:00 AM	TO	8:15				0	WAIT ON CORRECT CASING CONNECTION				
8:45 AM						0	SAFETY MEETING				
9:30 AM	TO	10:30				0	WAIT ON WELDER TO WELD HALF ROUND				
10:35 AM	4	80				5	PUMP H2O				
10:37 AM		1800				5	PRESSURE TEST PUMPS AND LINES				
10:40 AM	9	232			370	375	PUMP H2O TO CIRCULATE				
11:25 AM	4	145			25	400	MIX AND PUMP GEL				
11:31 AM	4	155			5	405	PUMP WATER SPACER				
11:41 AM	8	413			245	650	MIX AND PUMP CEMENT				
12:33 PM						650	SHUT DOWN DROP PLUG				
12:35 PM	6	125			140	780	PUMP H2O DISPLACMENT				
1:04 PM	5	465			68	858	SLOW RATE				
1:21 PM	.5	800-1460					PLUG LANDED SHUT DOWN				
1:25 PM							RELEASE PRESSURE CHECKED FLOATS GOT 2.5 BBL BACK				
1:30 PM							RACK UP				
2:00 PM							PRE CONVOY MEETING				
Left Yard	12/12/16 1:45 AM			Left Loc.	12/12/16 2:30 PM						
Arrived Loc.	12/12/16 4:00 AM			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)	Kris Cook				
Yes	540	Yes	0	53	Yes	465	Service Supervisor				

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Customer: NORTHEAST NATURAL ENERGY LLC	Date: 12/15/2016	Serv. Supervisor: JASON D. CRIBBS
Cust. Rep.: Brad Chadwick	Ticket #: BPA-1612-0008	Serv. Center: Black Lick, PA
Lease: Fisher 5H	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/TB/COF)	OD (in)	WEIGHT (lbs/ft)	THREAD	DEPTH (ft)	GRADE	ID (in)	BURST (psi)	COLLAPSE (psi)	
12 1/4		2680	Casing	9 5/8	40		2627.8		8.84	3950	2570	

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	1411					2627.8	2581.9		

WELL FLUID		DISPLACEMENT FLUID			DIFF PRESS (psi)	CSG LIFT (psi)	MAX PRESS (psi)	WATER ON LOG (bbl)
TYPE	DENSITY	VOLUME	TYPE	DENSITY				
H2O	8.7 ppg	195.7 bbl	H2O	8.3 ppg	975	1260	3160	900

Time	Rate (bbl/min)	Csg. Press. (psi)	Tbg. Press. (psi)	Ann. Press. (psi)	Stg. Vol. (bbl)	Cum. Vol. (bbl)	Stage Details
12:45 PM						0	ARRIVE ON LOCATION
12:50 PM						0	WAIT ON RIG TO TOH/RUN CASING
8:00 PM						0	PRE-RIG UP SAFETY MEETING
8:15 PM						0	SPOT TRUCKS/RIG UP
10:00 PM						0	HOLD SAFETY MEETING WITH ALL PERSONNEL
10:15 PM						0	RIG UP TO WELL / PRIME PUMPS
10:25 PM	5	50-300			1022	1022	PUMP RECYCLED H2O TO WASH CASING INTO HOLE
1:44 AM	12/16/16	0			0	1022	SHUT DOWN/ RIG MAKE UP LANDING JOINT
2:06 AM	5	150			347	1369	PUMP RECYCLED H2O TO WASH LANDING JOINT DOWN
3:15 AM						1369	SHUT DOWN/ STAB CEMENT HEAD
3:35 AM	4	200			25	1394	MIX AND PUMP GEL SPACER
3:42 AM	4	150			10	1404	PUMP H2O TO CLEAN MIX TUB
3:45 AM	2 TO 6	300			184	1588	MIX AND PUMP CEMENT @ 15.6 PPG
4:45 AM		0			0	1588	SHUT DOWN/DROP PLUG
4:53 AM	4.5 TO 2	0-950			195	1783	PUMP H2O DISPLACEMENT
5:44 AM		1300				1783	LAND PLUG ON FC/HOLD PRESSURE 3 MINUTES
5:47 AM		1300-0				1783	RELEASE PRESSURE/FLOAT HELD WITH 1.5 BBL BLEND BACK
5:50 AM						1783	WASH UP/ RACK UP
7:00 AM						1783	JOB COMPLETE
						1783	
						1783	
						1783	
						1783	
						1783	

Left Yard	12/15/16 9:30 AM	Left Loc.	12/16/16 7:00 AM				
Arrived Loc.	12/15/16 12:45 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 D. CRIBBS
Yes	900	Yes	0	10	Yes	900	Service Supervisor

J.D. L.

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Perforation Record					
Stage No.	Report Date	Perforated from MD Ft.	Perforated to MD Ft.	Number of Perforations	Formation
1	12/1/2017	17,501		40	Marcellus
2	12/1/2017	17,458	17,298	40	Marcellus
3	12/2/2017	17,261	17,101	40	Marcellus
4	12/2/2017	17,059	16,903	40	Marcellus
5	12/2/2017	16,866	16,706	40	Marcellus
6	12/2/2017	16,668	16,508	40	Marcellus
7	12/3/2017	16,471	16,311	40	Marcellus
8	12/3/2017	16,273	16,113	40	Marcellus
9	12/3/2017	16,076	15,916	40	Marcellus
10	12/3/2017	15,879	15,719	40	Marcellus
11	12/3/2017	15,681	15,521	40	Marcellus
12	12/4/2017	15,484	15,324	40	Marcellus
13	12/4/2017	15,286	15,126	40	Marcellus
14	12/4/2017	15,089	14,929	40	Marcellus
15	12/5/2017	14,891	14,731	40	Marcellus
16	12/5/2017	14,694	14,534	40	Marcellus
17	12/5/2017	14,496	14,336	40	Marcellus
18	12/5/2017	14,299	14,139	40	Marcellus
19	12/5/2017	14,101	13,941	40	Marcellus
20	12/5/2017	13,904	13,744	40	Marcellus
21	12/6/2017	13,706	13,547	40	Marcellus
22	12/6/2017	13,509	13,349	40	Marcellus
23	12/6/2017	13,312	13,152	40	Marcellus
24	12/6/2017	13,114	12,954	40	Marcellus
25	12/7/2017	12,917	12,757	40	Marcellus
26	12/7/2017	12,719	12,559	40	Marcellus
27	12/7/2017	12,522	12,362	40	Marcellus
28	12/7/2017	12,324	12,164	40	Marcellus
29	12/7/2017	12,127	11,967	40	Marcellus
30	12/8/2017	11,929	11,769	40	Marcellus
31	12/8/2017	11,732	11,572	40	Marcellus
32	12/8/2017	11,534	11,374	40	Marcellus
33	12/8/2017	11,337	11,177	40	Marcellus
34	12/8/2017	11,139	10,980	40	Marcellus
35	12/8/2017	10,942	10,782	40	Marcellus
36	12/9/2017	10,745	10,585	40	Marcellus
37	12/9/2017	10,547	10,387	40	Marcellus
38	12/10/2017	10,350	10,190	40	Marcellus
39	12/10/2017	10,152	9,992	40	Marcellus
40	12/10/2017	9,955	9,795	40	Marcellus
41	12/10/2017	9,757	9,597	40	Marcellus
42	12/10/2017	9,560	9,400	40	Marcellus
43	12/10/2017	9,362	9,202	40	Marcellus
44	12/11/2017	9,165	9,005	40	Marcellus
45	12/11/2017	8,967	8,807	40	Marcellus
46	12/11/2017	8,770	8,610	40	Marcellus

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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	12/1/2017	75	9,150	600	1	301,960	6,120
2	12/1/2017	78	9,233	5,853	4,464	399,540	8,267
3	12/2/2017	79	9,130	5,340	5,211	406,380	7,857
4	12/2/2017	80	8,945	6,263	5,315	400,340	8,175
5	12/2/2017	80	8,743	5,426	5,213	400,520	8,148
6	12/2/2017	86	8,679	6,508	5,236	400,360	8,332
7	12/3/2017	87	9,049	6,513	4,409	401,300	7,885
8	12/3/2017	87	8,785	6,527	4,588	406,660	8,192
9	12/3/2017	79	8,273	5,901	4,756	402,700	8,410
10	12/3/2017	83	8,870	5,739	5,013	405,580	8,960
11	12/3/2017	86	9,294	6,224	5,125	364,480	8,063
12	12/4/2017	84	9,030	6,101	4,979	386,000	8,501
13	12/4/2017	79	9,009	5,935	4,875	341,650	7,728
14	12/4/2017	82	8,795	6,044	5,976	408,290	8,444
15	12/5/2017	80	8,659	6,047	1	351,500	6,789
16	12/5/2017	80	8,301	5,601	5,027	349,700	6,952
17	12/5/2017	80	8,063	5,984	5,317	409,000	8,521
18	12/5/2017	86	8,789	6,007	4,858	397,980	8,267
19	12/5/2017	80	8,210	5,948	5,151	402,660	8,326
20	12/5/2017	86	8,829	6,797	4,612	401,420	8,168
21	12/6/2017	86	8,576	6,691	5,203	402,760	7,879
22	12/6/2017	86	8,726	6,347	5,082	399,340	8,411
23	12/6/2017	87	8,852	6,914	4,706	409,320	8,116
24	12/6/2017	87	8,740	6,867	5,330	400,160	8,111
25	12/7/2017	87	8,887	6,250	4,646	400,620	8,382
26	12/7/2017	86	8,716	6,832	5,071	399,660	7,838
27	12/7/2017	86		6,825	4,807	399,340	8,195
28	12/7/2017	86	8,856	6,153	5,219	401,200	8,173
29	12/7/2017	85	8,595	7,228	6,069	403,380	8,220
30	12/8/2017	86	8,354	7,418	5,419	407,168	8,291
31	12/8/2017	86	8,659	6,087	5,724	400,180	7,793
32	12/8/2017	85	8,941	7,407	4,696	401,260	9,146
33	12/8/2017	87	8,829	6,880	4,744	402,160	8,049
34	12/8/2017	84	8,604	7,621	5,289	367,460	7,693
35	12/8/2017	87	8,770	7,767	4,914	400,610	8,328
36	12/9/2017	84	8,581	5,960	5,315	401,520	8,663
37	12/9/2017	85	8,997	7,807	5,877	363,970	8,577
38	12/10/2017	84	8,596	6,971	5,499	390,840	7,808
39	12/10/2017	83	8,455	7,333	6,105	400,740	8,078
40	12/10/2017	85	8,840	7,743	4,854	404,900	8,185
41	12/10/2017	86	8,480	7,510	5,157	402,640	8,609
42	12/10/2017	83	8,669	7,674	5,446	400,380	7,506
43	12/10/2017	85	8,420	7,249	5,381	399,680	7,891
44	12/11/2017	83	8,511	7,144	5,440	359,200	7,474
45	12/11/2017	85	8,425	7,365	5,319	404,720	8,399
46	12/11/2017	83	8,171	7,747	5,218	405,280	8,964

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Formation and Depths

<u>Lithology/Formation</u>	<u>Top Depth in FT Name TVD</u>	<u>Bottom Depth in FT TVD</u>	<u>Top Depth in FT MD</u>	<u>Bottom Depth in FT MD</u>	<u>Describe rock type and record quantity and type of fluid (freshwater, brine, oil, gas, H2S, etc)</u>
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	7568	7783	7689	7909	shale
Burkett	7783	7977	7909	8118	shale
Geneseo	7977	8018	8118	8165	shale
Tully	8018	8065	8165	8226	limestone
Hamilton	8065	8173	8226	8393	shale
Marcellus	8173	8224	8393	8510	shale
Cherry Valley	8224	8226	8510	8517	limestone
Lower Marcellus	8226		8517		shale

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/1/2017
Job End Date:	12/11/2017
State:	West Virginia
County:	Monongalia
API Number:	47-061-01735-00-00
Operator Name:	Northeast Natural Energy LLC
Well Name and Number:	Fisher 5H
Latitude:	39.69640000
Longitude:	-80.21370000
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	8,283
Total Base Water Volume (gal):	14,607,936
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	86.51955	None
Sand (Proppant)	Producers Service Corp	Proppant	Crystalline Silica (quartz)	14808-60-7	100.00000	12.81611	None
IC Acid (7.5%)	Producers Service Corp	Acidizing	Hydrogen Chloride	7647-01-0	40.00000	0.22914	None
BIOC11219A	Nalco-Champion	Biocide	Methanol	67-56-1	60.00000	0.01336	None
			Benzyl-(C12-C16 Alkyl)-Dimethyl-Ammonium Chloride	68424-85-1	30.00000	0.00668	None
			Glutaraldehyde	111-30-8	10.00000	0.00223	None
STIMLUBE HBVB	Producers Service Corp	Friction Reducer	Petroleum Distallates	64742-47-8	30.00000	0.01195	None
			Ammonium Acetate	631-61-8	10.00000	0.00398	None
STIMLUBE F	Producers Service Corp	Friction Reducer	Petroleum Distallates	64742-47-8	30.00000	0.00676	None

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			Alcohols, ethoxylated	68551-12-2	3.10000	0.00070	None
			Alcohols, ethoxylated	68002-97-1	3.10000	0.00070	None
			Alcohols, ethoxylated	68439-50-9	3.10000	0.00070	None
SCAL16486A	Nalco-Champion	Scale Inhibitor					
			Ethylene Glycol	107-21-1	30.00000	0.00174	None
			Amine Triphosphate	Proprietary	30.00000	0.00174	None
PROHIB II	Producers Service Corp	Inhibitor					
			Acetic Acid	64-19-7	90.00000	0.00096	None
			2-Ethylhexanol	104-76-7	10.00000	0.00011	None
			Methanol	67-56-1	10.00000	0.00011	None
			Cocamide Diethanolamine	68603-42-9	5.00000	0.00005	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					
			Benzyl-(C12-C16 Alkyl)-Dimethyl-Ammonium Chloride	68424-85-1	30.00000	0.00668	
			Ammonium Acetate	631-61-8	10.00000	0.00398	
			Glutaraldehyde	111-30-8	10.00000	0.00223	
			Ethylene Glycol	107-21-1	30.00000	0.00174	
			Alcohols, ethoxylated	68002-97-1	3.10000	0.00070	
			Alcohols, ethoxylated	68439-50-9	3.10000	0.00070	
			Alcohols, ethoxylated	68551-12-2	3.10000	0.00070	
			Methanol	67-56-1	10.00000	0.00011	
			2-Ethylhexanol	104-76-7	10.00000	0.00011	
			Cocamide Diethanolamine	68603-42-9	5.00000	0.00005	
			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)

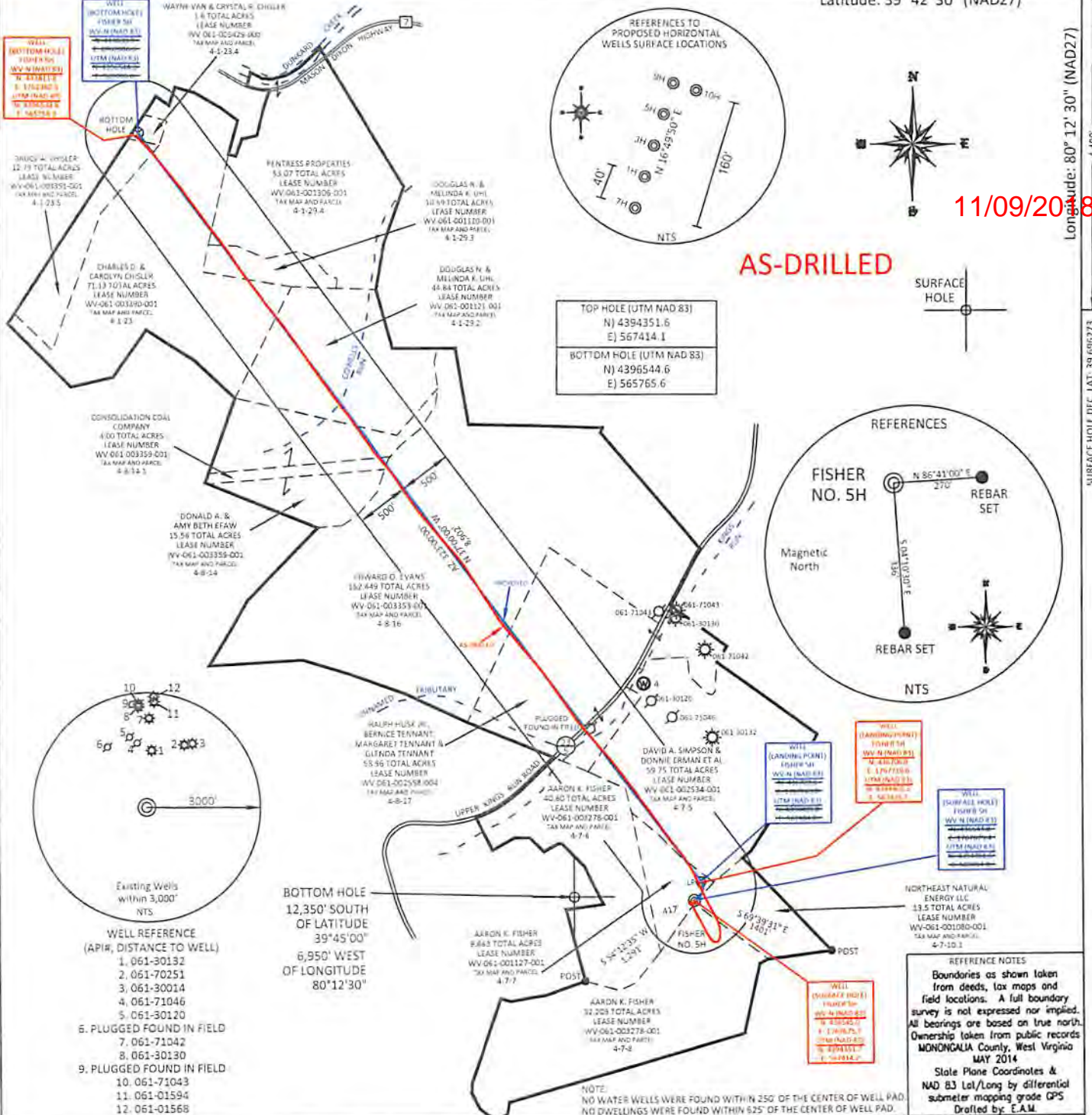
RECEIVED
 Office of Oil and Gas
 MAY 31 2018
 WV Department of
 Environmental Protection

SURFACE HOLE DEC. LONG: 80 21391.7
SURVEYED LONG. 80° 12' 50.1"

Latitude: 39° 42' 30" (NAD27)

11/09/2018

Longitude: 80° 12' 30" (NAD27)



- WELL REFERENCE (API#, DISTANCE TO WELL)
- 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

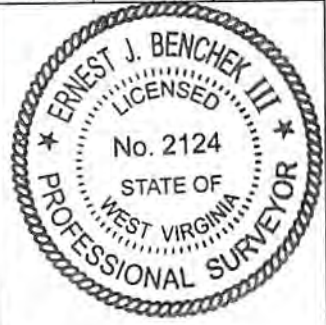
REFERENCE NOTES
 Boundaries as shown taken from deeds, tax maps and field locations. A full boundary survey is not expressed nor implied. All bearings are based on true north. Ownership taken from public records MONONGALIA County, West Virginia MAY 2014
 State Plane Coordinates & NAD 83 Lat/Long by differential submeter mapping grade GPS
 Drafted by: E.A.M.

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 #: 2375
 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: [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 / CLAY
 SURFACE OWNER: AARON K. FISHER
 OIL & GAS ROYALTY OWNER: HENRY P. AMES, III, ET AL
 LEASE NUMBERS: _____

DATE: APRIL 13, 2018
 OPERATOR'S WELL #: FISHER NO. 5H
 API WELL #: 47 61
 STATE COUNTY PERMIT

AS-BUILT ELEVATION: 1,453'
 QUADRANGLE: BLACKSVILLE, WV
 ACREAGE: 9.663 +/-
 ACREAGE: 610.705 +/-

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: 8,283.76' TMD: 17,657'
 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

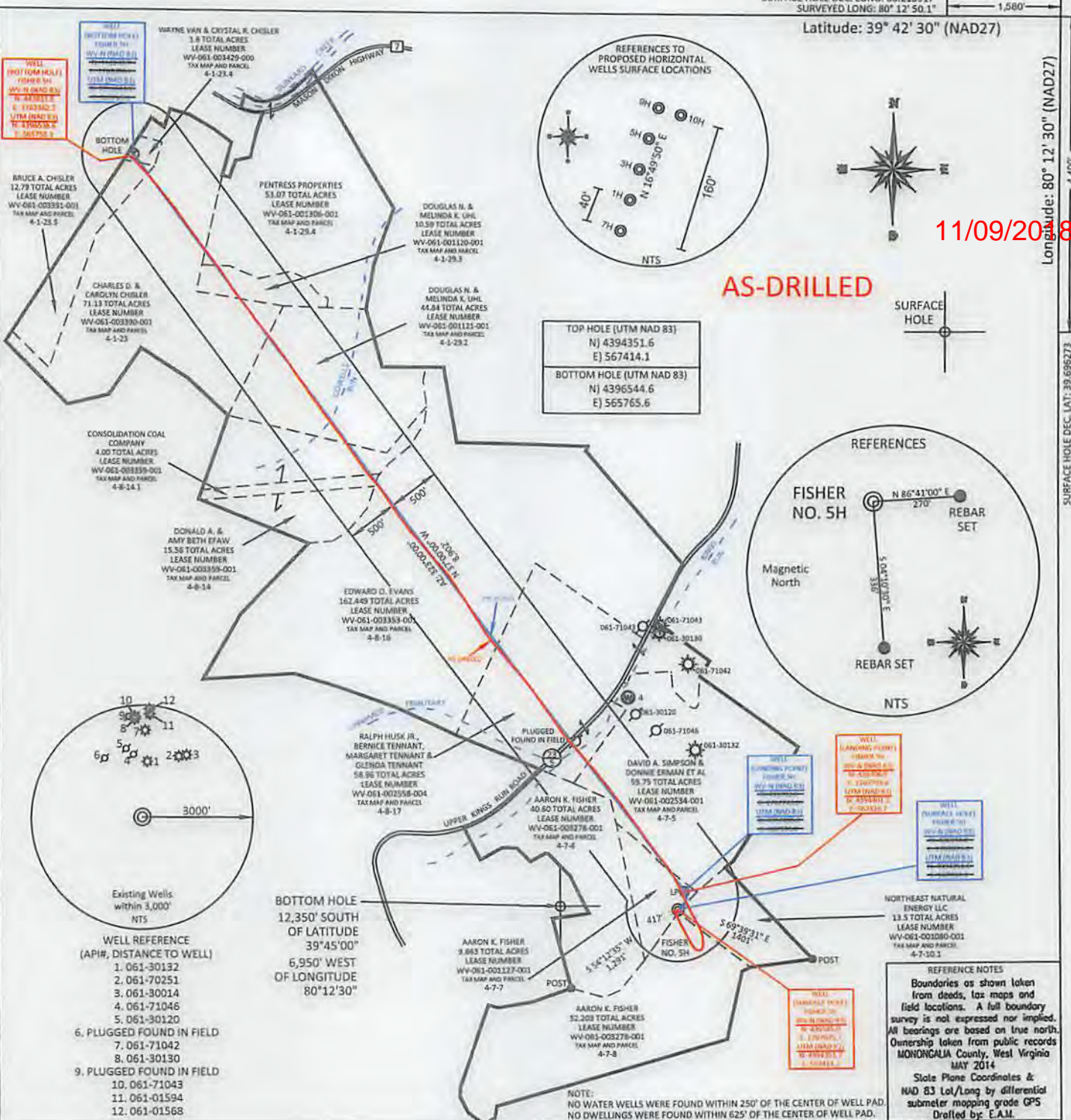
SURFACE HOLE DEC. LONG: 80.213917
SURVEYED LONG: 80° 12' 50.1"

Latitude: 39° 42' 30" (NAD27)

1,580'

Longitude: 80° 12' 30" (NAD27)

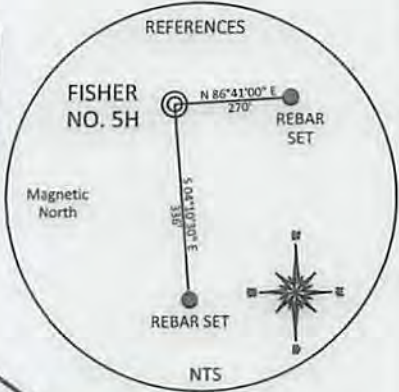
4,400'
SURFACE HOLE DEC. LAT: 39.698273
SURVEYED LAT: 39° 41' 46.6"



11/09/2018

AS-DRILLED

TOP HOLE (UTM NAD 83)
N 4394351.6
E 567414.1
BOTTOM HOLE (UTM NAD 83)
N 4396544.6
E 565765.6



- WELL REFERENCE (API#, DISTANCE TO WELL)
- 061-30132
 - 061-70251
 - 061-30014
 - 061-71046
 - 061-30120
 - PLUGGED FOUND IN FIELD
 - 061-71042
 - 061-30130
 - PLUGGED FOUND IN FIELD
 - 061-71043
 - 061-01594
 - 061-01568

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.

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 #: 2375
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: *[Signature]*
L.I.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 / CLAY
SURFACE OWNER: AARON K. FISHER
OIL & GAS ROYALTY OWNER: HENRY P. AMES, III, ET AL
LEASE NUMBERS:

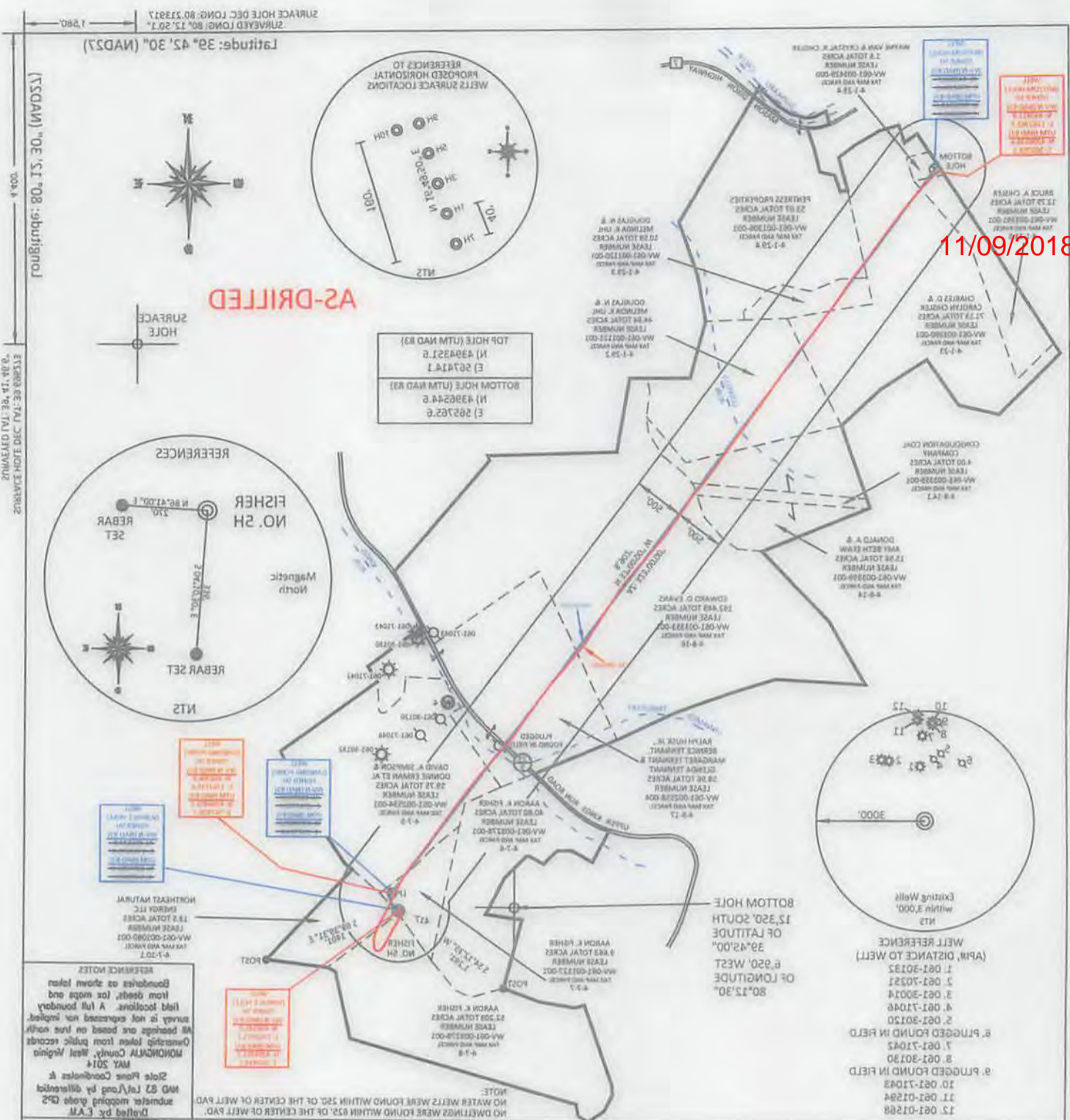
DATE: APRIL 13, 2018
OPERATOR'S WELL #: FISHER NO. 5H
API WELL #: 47 61
STATE COUNTY PERMIT

AS-BUILT ELEVATION: 1,453'
QUADRANGLE: BLACKSVILLE, WV
ACREAGE: 9.663 +/-
ACREAGE: 610.705 +/-

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: 8,283.76' TMD: 17,657'
WELL OPERATOR: NORTHEAST NATURAL ENERGY LLC
ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200
CITY: CHARLESTON STATE: WV ZIP CODE: 25301
DESIGNATED AGENT: JOHN ADAMS
ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200
CITY: CHARLESTON STATE: WV ZIP CODE: 25301

11/09/2018



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.S. #2124; Ernest J. Benchek III

FILE #:	INE14
DRAWING #:	2375
SCALE:	PLAT: 1" = 1400' TICK: 1" = 2000'
MINIMUM DEGREE OF ACCURACY:	1/300
PROVEN SOURCE OF ELEVATION:	GRADE GPS
WATERSHED:	DUNKARD CREEK

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

WADSWORTH

OFFICE OF OIL & GAS

601 27TH STREET

CHARLESTON, WV 25304

WELL TYPE: Oil Waste Disposal Production Deep

Gas Liquid Injection Storage Shallow

WATERSHED: DUNKARD CREEK

COUNTY/DISTRICT: MONONGALIA / CLAY

SURFACE OWNER: AARON K. FISHER

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

LEASE NUMBERS:

TARGET FORMATION: MARCELLUS

WELL OPERATOR: NORTHEAST NATURAL ENERGY LLC

ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200

CITY: CHARLESTON STATE: WV ZIP CODE: 25301

DESIGNATED AGENT: JOHN ADAMS

ESTIMATED DEPTH: TVD: 8,283.76', TMD: 17,657'

CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY):

PLUG OFF FORMATION PERFORATE NEW FORMATION PLUG & ABANDON

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE

LEASING: QUADRANGLE: BLACKSVILLE, WV

ACREAGE: 9.663 +/-

ACREAGE: 610.705 +/-

WELL #:

API WELL #: 47

STATE COUNTY PERMIT

OPERATOR'S WELL #: FISHER NO. 2H

DATE: APRIL 13, 2018

WELL TYPE: Gas Liquid Injection Storage Shallow

WATERSHED: DUNKARD CREEK

COUNTY/DISTRICT: MONONGALIA / CLAY

SURFACE OWNER: AARON K. FISHER

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

LEASE NUMBERS:

TARGET FORMATION: MARCELLUS

WELL OPERATOR: NORTHEAST NATURAL ENERGY LLC

ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200

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CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY):

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DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE