

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

API 47 - 061 - 01737 County Monongalia District Clay
Quad Blacksville Pad Name Fisher Field/Pool Name _____
Farm name Aaron K. Fisher Well Number 9H
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 4394363.5 Easting 567417.5
Landing Point of Curve Northing 4394638.0 Easting 567520.1
Bottom Hole Northing 4396759.5 Easting 565906.6

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 12/07/15 Date drilling commenced 8/27/16 Date drilling ceased 10/18/16
Date completion activities began 7/3/17 Date completion activities ceased 7/17/17
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: *[Signature]*
07/20/2018

API 47-061 . 01737

Farm name Aaron K. Fisher

Well number 9H

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"	1'429'	N	54.5	N/A	Y 70 Bbls
Coal							
Intermediate 1	12-1/4"	9-5/8"	2'647'	N	40	N/A	Y 4 Bbls
Intermediate 2							
Intermediate 3							
Production	8-3/4"	5-1/2"	17,537'	N	20	N/A	N, EST. 1'647'
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%	1,202	15.6	1.19	1,431.719	Surface	8
Coal							
Intermediate 1	Class A + 1%	900	15.6	1.19	1,072.385	Surface	8
Intermediate 2							
Intermediate 3							
Production	50:50 + Additives	3,510	14.5	1.15	4,031.271	1,647'	48
Tubing							

Drillers TD (ft) 17,578' Loggers TD (ft) 17,548'

Deepest formation penetrated Marcellus Plug back to (ft) _____

Plug back procedure _____

Kick off depth (ft) 6,799'

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		Date: 9/9/2018		Serv. Supervisor: DAVE DEYARMIN							
Date: 9/9/2018		Invoice # BPA-1809-0006		Serv. Supervisor: ANTHONY BARBARA							
Lease: FISHER #9H		Permit #		County and State: MONONGALIA W.V							
District: BLACK LICK, PA		Rig:		Type of Job: 9 5/8" Intermediate String							
Employees & Units on Job Site:		DAVE DEYARMIN 91-3288		DAN DEYARMIN 93-4067							
Ralph Juan		Frank Cook		George Swamik 92-1148							
				Anthony Barbara 91-2144							
Materials Furnished by C&J ENERGY SERVICES											
Plugs		Casing Hardware		Physical Slurry Properties							
9 5/8 RUBBER & SPARE		CEMENT HEAD & SWADGE		Sacks of Cement	Slurry Wt PPG						
				Slurry Yield CuFt	Water GPS						
Spacer: GEL 500 LBS				Bbls	Bbls of Mix Water						
Lead:											
Tail: CJ910 CJ110 1% C,C		900		15.6	1.19						
				5.22	191						
Acid:					112						
Displacement Chemicals: NA											
HOLE			TUBING - CASING - DRILL PIPE				COLLAR DEPTHS				
SIZE	% EXCESS	DEPTH	SIZE	WGT	TYPE	DEPTH	GRADE	ID	SHOE	FLOAT	STAGE
12 1/4	30%	2680	8 5/8	40	BUTT	2650		8.835	NA	NA	na
LAST CASING			PKR / CMT RET / LINER PKR		PERF DEPTH		TOP CONN		WELL FLUID		
SIZE	ID	DEPTH	BRAND / TYPE		DEPTH	TOP	BTM	SIZE	THREAD	TYPE	WGT
13 3/8	12.615	1429								AIR	
DISPL VOLUME		DISPL FLUID		CAL PSI		WATER		CEMENT TEMP		MAX PRESSURE	
VOLUME	UOM	TYPE	WGT	BMP PLUG	PH	TEMP	GOING DOWN HOLE		RATED	WORKING	Bbls H2O on Loc.
197.0	BBL	H2O	8.33	985	8	68	88.6		2500	850	2000
Time Hrs	Rate	Pressure	Bbls Pumped	Fluid Type	Time Left Yard		12:11 PM	Time Left Loc		10:45 AM	
					Time Arrived on Loc		3:13 PM	Time Arrived Yard		2:00 PM	
10:00 AM					CALLED IN FOR JOB						
12:03 PM					PRECONVOY MEETING						
12:11 PM					LEFT YARD						
3:13 PM					ARRIVE ON LOCATION						
3:20 PM					PRE-JOB SAFETY MEETING						
3:26 PM					SPOT TRUCKS						
3:30 PM					RUN LINES TO WELL PRIME PUMPS						
4:27 PM					SAFETY MEETING						
4:48 PM	5	130	4680	GEL	PUMP WHILE RIG DRILLING BACK TO BOTTOM						
11:00 AM					SHUT DOWN						
3:00 PM	4-5	25-170	2880	GEL	PUMP WHILE RIG DRILLING BACK TO BOTTOM						
6:00 AM					SHUT DOWN						
1:00 PM	4-5	25-120		GEL	PUMP ON RIG WHILE RUNNING CASING						
12:30 AM					RE-SPOT TRUCKS/RIG UP CEMENT LINES						
1:30 AM	4-5	26-120		GEL	CONTINUE PUMPING WHILE RUNNING CASING						
6:16 AM					SAFETY MEETING WITH COMPANY MAN AND RIG CREW						
6:53 AM	3.5	150	10	H2O	LOAD LINES WASH OUT MUD FROM LINES AND TRUCK						
7:10 AM		2700			PRESSURE TEST						
7:28 AM	4	200	35	GEL	Mix and Pump Gell						
7:39 AM	4	200	5	H2O	Spacer						
7:42 AM	3	170	191	CEMT	Mix and Pump Cement @ 15.6# PPG Weighed with Pressurized Mud Scales						
8:12 AM					Dropped Plug						
8:13 AM	3	0	1	H2O	Start Displacement						
8:19 AM	5.5	50	20	H2O	Rate and Pressure						
8:24 AM	6.1	70	50	H2O	Rate and Pressure						
8:32 AM	6.1	150	100	H2O	Rate and Pressure						
8:38 AM			120	H2O	Rate and Pressure						
8:41 AM	6.1	580	150	H2O	Rate and Pressure. Gell came back @ 135bbls.						
8:47 AM			180		COMPANY MAN SAID SHUT DOWN SINCE WE HAD CEMENT BACK. 4 BBLs						
8:50 AM					Closed in Head and Rigged Down						
Bumped Plug	Final Lift Pressure	Floats Held	PSI Left on Casing	Cement to Surface	Total Circulation	Recommended time to wait on cement		DAVE DEYARMIN			
NO	860	NA	825	4 Bbls	50			07/20/2018 Service Supervisor			

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Customer: NORTHEAST NATURAL ENERGY LLC	Date: 10/18/2016	Serv. Supervisor: JASON D. CRIBBS
Cust. Rep.: JAY LEWIS	Ticket #: BPA-1610-0013	Serv. Center: Black Lick, PA
Lease: Fisher 9H	API Well #:	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 (bbbls)	Mix Water (bbbls)
Spacer 1:	CJ810 PureScrub Spacer + 0.5 gpb CJ880	-	13.5			50	
Spacer 2:	CJ810 PureScrub Spacer	-	13.5			50	
Scavenger							
Lead							
Tail:	50:50 CJ010:CJ910 + 0.35% CJ210 + 0.2% CJ500 + 0.2% CJX157011	3510	14.5	1.15	4.79	718	401

Displacement Chemicals:

OPEN HOLE DATA			TUBULAR DATA								
SIZE (in)	EXCESS (%)	DEPTH (ft)	TYPE (CSG/TBGRDP)	OD (in)	WEIGHT (lbs/ft)	THREAD	DEPTH (ft)	GRADE	ID (in)	BURST (psi)	COLLAPSE (psi)
8 3/4		6600	Casing	5 1/2	20	BTC	17540.6		4.79	12360	11080
8 1/2		17578									

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	2683					17540.6	17517.9		NA

WELL FLUID		DISPLACEMENT FLUID			DIFF PRESS (psi)	CSG LIFT (psi)	MAX PRESS (psi)	WATER ON LOC (bbl)
TYPE	DENSITY	VOLUME	TYPE	DENSITY				
OBM	12.6 ppg	388.9 bbl	H2O	8.3 ppg	2617	6072	6000	1200

Time	Rate (bbl/min)	Csg. Press. (psi)	Tbg. Press. (psi)	Ann. Press. (psi)	Stg. Vol. (bbl)	Cum. Vol. (bbl)	Stage Details
12:00 AM						0	ARRIVE TO LOCATION/HOLD PRE-JOB SAFETY MEETING
12:15 AM						0	WAIT ON RIG TO FINISH RUNNING CASING
2:30 AM						0	SPOT TRUCKS/RIG UP/PRIME PUMPS
4:50 AM						0	HOLD SAFETY MEETING WITH ALL PERSONNEL
5:55 AM	3	500			5	5	PUMP H2O TO LOAD LINES
5:56 AM	0	0			0	5	PRESSURE TEST PUMPS AND LINES TO 6000 PSI
5:58 AM	0	0			0	5	CHANGE OUT VALVE ON PLUG CONTAINER
6:23 AM	0	0			0	5	PRESSURE TEST PUMPS AND LINES TO 6000 PSI
6:27 AM	5	1500			50	55	RELEASE BOTTOM PLUG/ MIX & PUMP SPACER 1 @ 13.5 PPG
6:36 AM	5	1500			50	105	MIX AND PUMP SPACER 2 @ 13.5 PPG
6:47 AM	7.1	2000			718	823	MIX AND PUMP CEMENT @ 14.5 PPG
8:28 AM	0	0			0	823	SHUT DOWN/WASH LINES/RELEASE TOP PLUG
8:37 AM	9 TO 2	0-3300			389	1212	PUMP H2O DISPLACEMENT
9:36 AM		4300				1212	LAND PLUG ON FC/HOLD PRESSURE 5 MINUTES
9:41 AM		4300-0				1212	RELEASE PRESSURE/CHECK FLOATS/FLOATS HELD
9:53 AM		0-4300			6	1218	PRESSURE BACK UP ON WELL/HOLD 3 MINUTES
10:00 AM		4300-0				1218	RELEASE PRESSURE/CHECK FLOATS/FLOATS HELD
10:05 AM						1218	RIG DOWN FLOOR
10:15 AM						1218	WASH UP/RACK UP
						1218	JOB COMPLETE
						1218	
						1218	
						1218	

Left Yard	10/17/16 9:00 PM	Left Loc.	10/18/16 11:00 AM				
Arrived Loc.	10/18/16 12:00 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)	Service Supervisor
Yes	3300	YES	0		Yes	4300	

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Perforation Record

Stage No.	Report Date	Perforated from MD Ft.	Perforated to MD ft.	Number of Perforations	Formation
1	7/2/2017		17,396	40	Marceullus
2	7/3/2017	17,358	17,195	40	Marceullus
3	7/3/2017	17,157	16,994	40	Marceullus
4	7/3/2017	16,956	16,793	40	Marceullus
5	7/4/2017	16,755	16,592	40	Marceullus
6	7/5/2017	16,554	16,391	40	Marceullus
7	7/6/2017	16,352	16,190	40	Marceullus
8	7/6/2017	16,152	15,989	40	Marceullus
9	7/6/2017	15,951	15,788	40	Marceullus
10	7/7/2017	15,750	15,587	40	Marceullus
11	7/7/2017	15,549	15,386	40	Marceullus
12	7/7/2017	15,348	15,185	40	Marceullus
13	7/8/2017	15,147	14,984	40	Marceullus
14	7/8/2017	14,946	14,783	40	Marceullus
15	7/8/2017	14,745	14,582	40	Marceullus
16	7/8/2017	14,544	14,381	40	Marceullus
17	7/8/2017	14,343	14,180	40	Marceullus
18	7/9/2017	14,142	13,979	40	Marceullus
19	7/9/2017	13,740	13,577	40	Marceullus
20	7/9/2017	13,740	13,577	40	Marceullus
21	7/9/2017	13,539	13,376	40	Marceullus
22	7/10/2017	13,338	13,175	40	Marceullus
23	7/10/2017	13,338	13,175	40	Marceullus
24	7/11/2017	12,936	12,773	40	Marceullus
25	7/11/2017	12,534	12,371	40	Marceullus
26	7/11/2017	12,534	12,371	40	Marceullus
27	7/12/2017	12,333	12,170	40	Marceullus
28	7/12/2017	12,132	11,969	40	Marceullus
29	7/12/2017	11,931	11,768	40	Marceullus
30	7/12/2017	11,730	11,567	40	Marceullus
31	7/12/2017	11,529	11,366	40	Marceullus
32	7/13/2017	11,328	11,165	40	Marceullus
33	7/13/2017	11,127	10,964	40	Marceullus
34	7/13/2017	10,926	10,763	40	Marceullus
35	7/14/2017	10,725	10,562	40	Marceullus
36	7/14/2017	10,524	10,361	40	Marceullus
37	7/14/2017	9,954	9,793	40	Marceullus
38	7/15/2017	10,122	9,959	40	Marceullus
39	7/15/2017	9,921	9,758	40	Marceullus
40	7/15/2017	9,720	9,557	40	Marceullus
41	7/16/2017	9,519	9,356	40	Marceullus
42	7/16/2017	9,318	9,155	40	Marceullus
43	7/16/2017	9,117	8,954	40	Marceullus
44	7/16/2017	8,976	8,753	40	Marceullus

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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	7/2/2017	70	9,003	8,859	5,235	299,085	7,795
2	7/3/2017	81	8,306	6,046	4,210	399,438	7,702
3	7/3/2017	81	8,296	6,056	4,515	403,603	7,472
4	7/3/2017	81	8,403	5,892	4,329	403,480	7,476
5	7/4/2017	79	8,261	6,495	5,111	399,785	7,626
6	7/5/2017	81	8,240	6,408	5,125	399,349	8,969
7	7/6/2017	81	8,347	6,198	4,857	403,514	7,727
8	7/6/2017	81	8,469	6,408	4,684	401,455	7,323
9	7/6/2017	81	8,285	6,834	5,156	399,815	7,567
10	7/7/2017	88	8,564	6,015	5,392	400,291	7,688
11	7/7/2017	82	8,291	6,333	5,319	401,401	7,740
12	7/7/2017	85	8,620	6,799	5,462	399,336	8,668
13	7/8/2017	88	8,790	6,509	4,948	399,476	7,258
14	7/8/2017	81	8,175	6,561	5,414	401,090	7,476
15	7/8/2017	81	8,183	6,210	5,462	402,063	8,650
16	7/8/2017	89	8,620	6,236	5,047	400,932	7,696
17	7/8/2017	84	8,399	6,715	5,585	398,416	7,812
18	7/9/2017	81	8,263	6,413	5,064	399,974	7,655
19	7/9/2017	80	8,240	6,315	4,910	398,993	7,418
20	7/9/2017	80	8,163	6,604	4,972	402,224	7,480
21	7/9/2017	82	8,109	6,820	4,559	403,559	7,691
22	7/10/2017	88	8,731	7,006	4,919	401,430	7,333
23	7/10/2017	82	8,085	6,587	4,820	401,660	7,605
24	7/11/2017	85	8,551	7,037	5,452	400,320	7,556
25	7/11/2017	81	8,081	6,724	4,999	402,184	7,658
26	7/11/2017	79	8,145	7,241	4,874	401,336	7,721
27	7/12/2017	80	8,161	6,474	5,018	400,324	7,595
28	7/12/2017	81	8,228	6,434	5,005	402,318	7,512
29	7/12/2017	81	8,219	6,616	4,903	402,960	7,416
30	7/12/2017	81	7,960	6,943	5,587	400,282	7,647
31	7/12/2017	80	8,191	6,506	4,783	400,628	7,680
32	7/13/2017	82	8,293	7,070	5,223	403,518	7,639
33	7/13/2017	81	8,300	6,821	5,898	398,453	8,564
34	7/13/2017	81	8,261	7,168	5,131	400,314	7,262
35	7/14/2017	82	8,325	7,208	4,987	403,956	7,765
36	7/14/2017	81	8,197	7,368	5,308	403,933	7,682
37	7/14/2017	80	8,097	7,375	4,875	399,452	7,315
38	7/15/2017	80	8,143	7,501	9,999	400,218	7,395
39	7/15/2017	82	8,124	7,323	5,436	400,115	7,456
40	7/15/2017	81	8,129	7,531	5,170	396,018	7,536
41	7/16/2017	80	8,143	7,170	5,125	399,810	7,387
42	7/16/2017	82	8,288	7,561	5,307	364,080	7,178
43	7/16/2017	80	8,053	7,768	5,381	400,442	8,301
44	7/16/2017	80	7,936	7,621	5,272	404,668	7,383

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Formation and Depths

<u>Lithology/Formation</u>	<u>Top Depth in FT</u>	<u>Bottom</u>	<u>Top Depth</u>	<u>Bottom</u>	<u>Describe rock type and record quantity and type of fluid (freshwater, brine, oil, gas, H₂S, etc)</u>
	<u>Name TVD</u>	<u>Depth in FT</u>		<u>in FT MD</u>	
	<u>TVD</u>	<u>TVD</u>		<u>MD</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	7784	7688	7947	shale
Burkett	7784	7976	7947	8192	shale
Geneseo	7976	8022	8192	8225	shale
Tully	8022	8069	8225	8328	limestone
Hamilton	8069	8181	8328	8542	shale
Marcellus	8181	8233	8542	8678	shale
Cherry Valley	8233	8236	8678	8690	limestone
Lower Marcellus	8236		8690		shale

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Hydraulic Fracturing Fluid Product Component Information Disclosure

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Job Start Date:	7/2/2017
Job End Date:	7/17/2017
State:	West Virginia
County:	Monongalia
API Number:	47-061-01737-00-00
Operator Name:	Northeast Natural Energy LLC
Well Name and Number:	Fisher 9H
Latitude:	39.69645800
Longitude:	-80.21367100
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	8,274
Total Base Water Volume (gal):	14,561,484
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	Operator	Carrier					
			Water	7732-18-5	100.00000	87.24870	
Sand, White	BJ Services	Proppant					
				Listed Below			

Other Chemical (s)	BJ Services	See Trade Name (s) List					
			Water	7732-18-5	92.50000	0.10784	
MaxPerm 30	BJ Services	Friction Reducer					
				Listed Below			
HCl, 5.1 - 7.5%	BJ Services	Acidizing					
				Listed Below			
Ferrotrol 300L	BJ Services	Iron Control					
				Listed Below			
CI-14	BJ Services	Corrosion Inhibitor					
				Listed Below			
K-139	Nalco-Champion	Microbial Control					
				Listed Below			
EC6486A	Nalco-Champion	Scale Inhibitor					
				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	12.57980	
			Acrylamide Modified Acrylic Polymer	38193-60-1	60.00000	0.02972	
			Petroleum distillates	64742-47-8	30.00000	0.01486	
			Hydrochloric Acid	7647-01-0	7.50000	0.00624	

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			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	30.00000	0.00488	Office of Air and Gas MAY 31 2018 WV Department of Environmental Protection
			Sodium Chloride	7647-14-5	5.00000	0.00248	
			Sorbitan monooleate ethoxylate	9005-65-6	5.00000	0.00248	
			Sorbic, mono-(9Z)-9octadecenoate	1338-43-8	5.00000	0.00248	
			Oxyalkylated Alcohol	78330-21-9	5.00000	0.00248	
			Glutaraldehyde	111-30-8	10.00000	0.00192	
			Citric Acid	77-92-9	60.00000	0.00145	
			Ethylene Glycol	107-21-1	30.00000	0.00140	
			Amine Triphosphate	Proprietary	30.00000	0.00126	
			Ethanol	64-17-5	5.00000	0.00067	
			Methanol	67-56-1	100.00000	0.00056	
			Acetic acid	127-08-2	1.00000	0.00050	
			Polyoxyalkylenes	68951-67-7	30.00000	0.00017	
			Fatty Acids	61790-12-3	1.20000	0.00006	
			Acetic acid, Potassium Salt	64-19-7	0.10000	0.00005	
			Tetrasodium EDTA	64-02-8	0.10000	0.00005	
			Modified Thiourea Polymer	68527-49-1	7.00000	0.00004	
			Propargyl Alcohol	107-19-7	5.00000	0.00003	
			Olefin	64743-02-8	5.00000	0.00003	
			Ammonium Persulfate	7727-54-0	100.00000	0.00001	
			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)

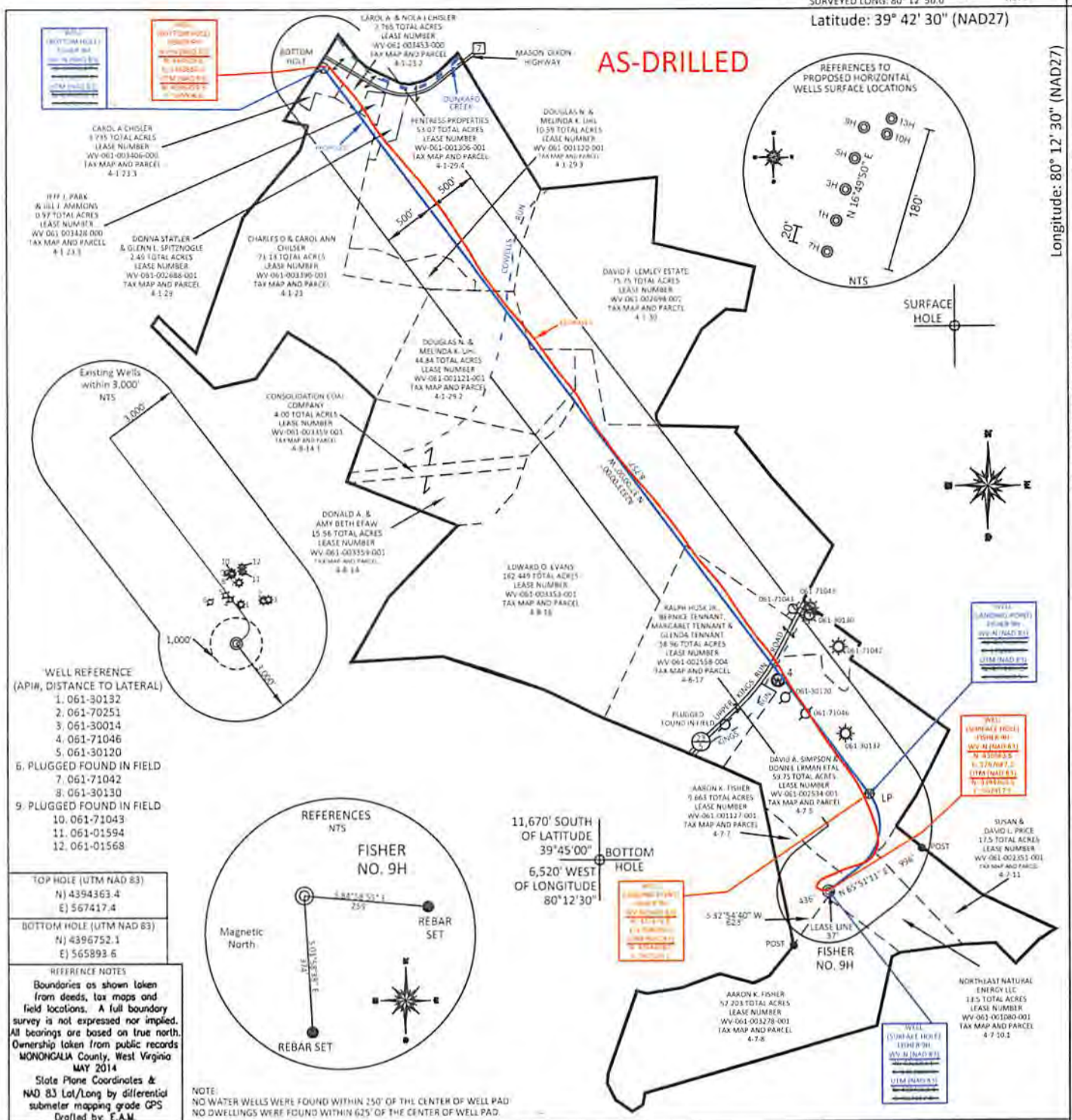
SURFACE HOLE DEC. LONG: 80 213877

SURVEYED LONG: 80° 12' 50.0"

Latitude: 39° 42' 30" (NAD27)

Longitude: 80° 12' 30" (NAD27)

SURFACE HOLE DEC. LAT: 39.696378
SURVEYED LAT: 39° 42' 30"



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 WYDEP
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:

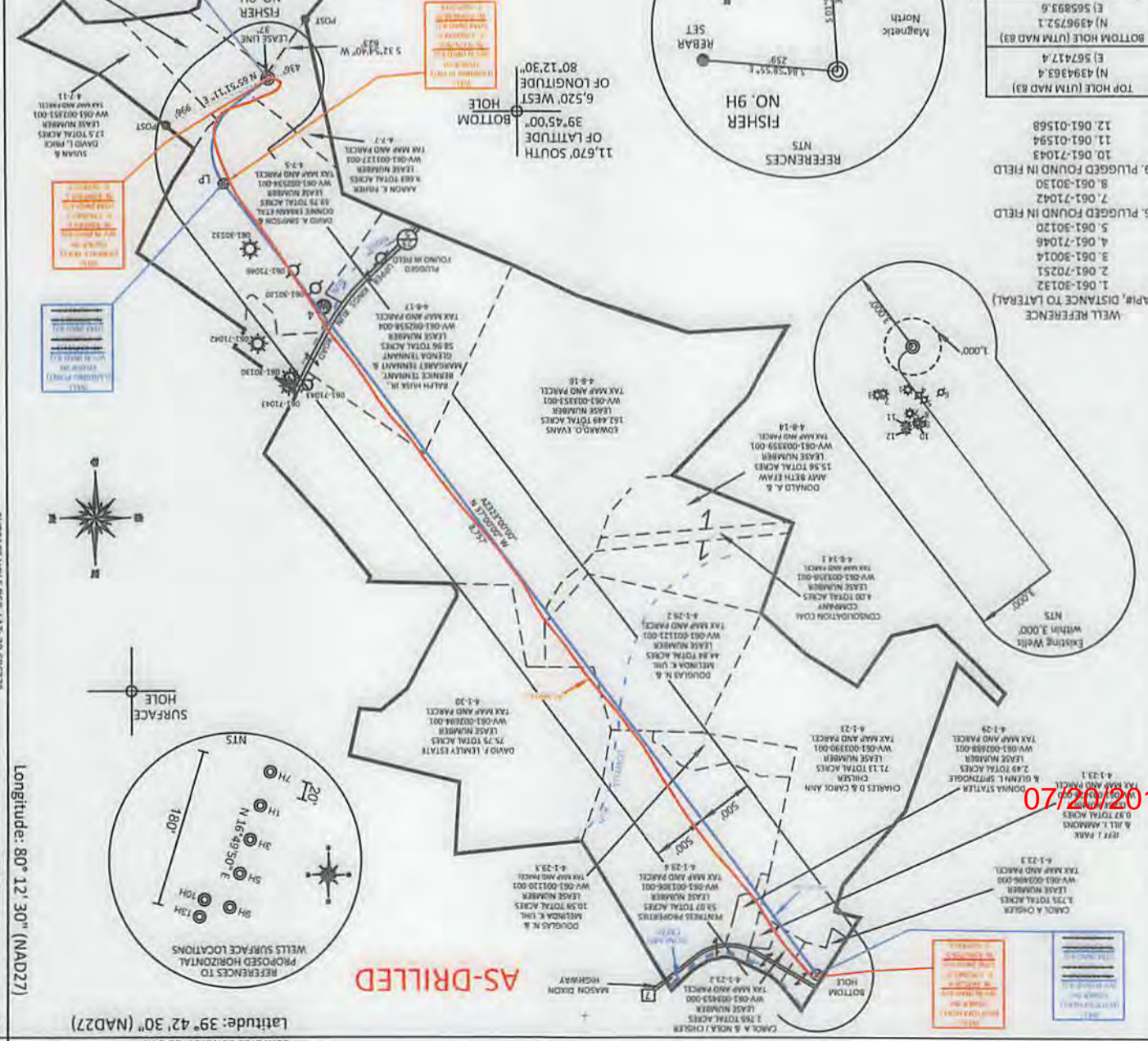
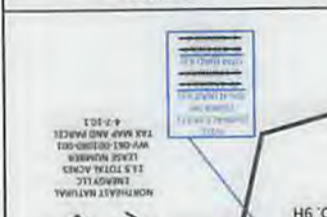
DATE: MAY 21, 2018
OPERATOR'S WELL #: FISHER NO. 9H
API WELL #: 47 61
STATE COUNTY PERMIT
AS-BUILT ELEVATION: 1,453'
QUADRANGLE: BLACKSVILLE
ACREAGE: 9.663 +/-
ACREAGE: 640.205 +/-

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: 8,274.87' TMD: 17,578'
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

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 WYDEP OFFICE OF OIL & GAS
 601 57TH STREET
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 Well Type: Oil Waste Disposal Production Deep
 Gas Liquid Injection Storage Shallow
 WATERSHED: DUNKARD CREEK
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 SURFACE OWNER: AARON K. FISHER
 OIL & GAS ROYALTY OWNER: HENRY P. AMES, III, ET AL
 LEASE NUMBERS: AS-BUILT ELEVATION: 1,453'
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 ACREAGE: 9.663 +/-
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 TARGET FORMATION: MARCELLUS
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 DESIGNATED AGENT: JOHN ADAMS
 ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200
 CITY: CHARLESTON STATE: WV ZIP CODE: 25301

DATE: MAY 21, 2018
 OPERATOR'S WELL #: FISHER NO. 9H
 API WELL #: 47 STATE COUNTY PERMIT
 DRAWING #: 2373
 SCALE: PLAT 1" = 100' TIC 1" = 200'
 MINIMUM DEGREE OF ACCURACY: 1/200
 PROVEN SOURCE SUBMETER MAPPING GRADE GPS
 OF ELEVATION: L.L.S. #2124: Ernest J. Benchek III
 Signed: *[Signature]*
 THE DEPARTMENT OF ENVIRONMENTAL PROTECTION,
 LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY
 PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND
 BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY
 I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS



07/20/2018