

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

API 47-051-02054 County Marshall District Franklin
Quad Powhatan Point 7.5' Pad Name Blake Field/Pool Name _____
Farm name Wilbert H. Bungard, et ux Well Number Blake N-8HM

Operator (as registered with the OOG) Tug Hill Operating, LLC
Address 380 Southpointe Boulevard, Plaza II, Suite 200 City Canonsburg State PA Zip 15317

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As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,401,617.41 Easting 516,709.85
Landing Point of Curve Northing 4,402,344.88 Easting 516,832.26
Bottom Hole Northing 4,404,780.93 Easting 514,999.00

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Elevation (ft) 1315.7' 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)
SOBM; Base oil, osmotic inhibitor, weighting agent, viscosifier, emulsifier, hardness buffer, fluid loss additive, LCM, Shale inhibitor, de-foamer, soaping agent, coagulant, flocculant; specific additives per WSSP and Permit.

Date permit issued 8/2/2018 Date drilling commenced 2/1/2019 Date drilling ceased 2/20/2019
Date completion activities began 2/18/2019 Date completion activities ceased 6/9/2019
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

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

Freshwater depth(s) ft 70' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1595' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 969-975', 1054-1059' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:
Juan Pichler
7/28/2020

API 47-051 - 02054 Farm name Wilbert H. Bungard, et ux Well number Blake N-8HM

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	36"	30"	120'	NEW	94.5#	N/A	Y
Surface	17 1/2"	13 3/8"	1174'	NEW	54.5#	N/A	Y
Coal	17 1/2"	13 3/8"	1174'	NEW	54.5#	N/A	Y
Intermediate 1	12 1/4"	9 5/8"	2860'	NEW	36#	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8 3/4"	5 1/2"	17,483'	NEW	20#	N/A	Y
Tubing		2 3/8"	8742'	NEW	4.7#	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	A		15.6	1.19		0	8
Surface	A	1201	15.6	1.19	1438	0	8
Coal	A	1201	15.6	1.19	1438	0	8
Intermediate 1	A	1006	15.6	1.19	1193	0	8
Intermediate 2							
Intermediate 3							
Production	A	4230	14.5	1.17	4970	0	8
Tubing							

Drillers TD (ft) 17,512' Loggers TD (ft) n/a
 Deepest formation penetrated Marcellus Plug back to (ft) n/a
 Plug back procedure n/a

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Kick off depth (ft) 5,876'

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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 3 centralizers on surface casing at equal distance.

Intermediate - 1 centralizer every other joint.

Production - one centralizer every other joint in lateral, one centralizer every joint through curve, one centralizer every other joint 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 _____

**Blake N-8HM
PEFORATION RECORD**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
1	3/3/2019	17,338	17,386	12	Marcellus
2	3/4/2019	17,110	17,263	48	Marcellus
3	3/4/2019	16,934	17,088	48	Marcellus
4	3/4/2019	16,759	16,912	48	Marcellus
5	3/5/2019	16,583	16,737	48	Marcellus
6	3/5/2019	16,408	16,561	48	Marcellus
7	3/6/2019	16,233	16,386	48	Marcellus
8	3/6/2019	16,057	16,211	48	Marcellus
9	3/6/2019	15,882	16,035	48	Marcellus
10	3/7/2019	15,706	15,860	48	Marcellus
11	3/7/2019	15,531	15,684	48	Marcellus
12	3/8/2019	15,356	15,509	48	Marcellus
13	3/8/2019	15,180	15,334	48	Marcellus
14	3/8/2019	15,005	15,158	48	Marcellus
15	3/9/2019	14,829	14,983	48	Marcellus
16	3/9/2019	14,654	14,807	48	Marcellus
17	3/9/2019	14,479	14,632	48	Marcellus
18	3/10/2019	14,303	14,457	48	Marcellus
19	3/14/2019	14,128	14,281	48	Marcellus
20	3/14/2019	13,952	14,106	48	Marcellus
21	3/14/2019	13,777	13,930	48	Marcellus
22	3/14/2019	13,602	13,755	48	Marcellus
23	3/15/2019	13,426	13,580	48	Marcellus
24	3/15/2019	13,251	13,404	48	Marcellus
25	3/15/2019	13,075	13,229	48	Marcellus
26	3/15/2019	12,900	13,053	48	Marcellus
27	3/16/2019	12,725	12,878	48	Marcellus
28	3/16/2019	12,549	12,703	48	Marcellus
29	3/16/2019	12,374	12,527	48	Marcellus
30	3/16/2019	12,198	12,352	48	Marcellus
31	3/17/2019	12,023	12,176	48	Marcellus
32	3/17/2019	11,848	12,001	48	Marcellus
33	3/17/2019	11,672	11,826	48	Marcellus
34	3/18/2019	11,497	11,650	48	Marcellus
35	3/18/2019	11,321	11,475	48	Marcellus
36	3/18/2019	11,146	11,299	48	Marcellus
37	3/18/2019	10,971	11,124	48	Marcellus
38	3/19/2019	10,795	10,949	48	Marcellus
39	3/19/2019	10,620	10,773	48	Marcellus
40	3/19/2019	10,444	10,598	48	Marcellus
41	3/19/2019	10,269	10,422	48	Marcellus

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Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
42	3/20/2019	10,094	10,247	48	Marcellus
43	3/20/2019	9,918	10,072	48	Marcellus
44	3/20/2019	9,743	9,896	48	Marcellus
45	3/21/2019	9,567	9,721	48	Marcellus
46	3/21/2019	9,392	9,545	48	Marcellus
47	3/21/2019	9,217	9,370	48	Marcellus
48	3/21/2019	9,041	9,195	48	Marcellus
49	3/21/2019	8,866	9,019	48	Marcellus
50	3/22/2019	8,690	8,844	48	Marcellus
51	3/22/2019	8,515	8,668	48	Marcellus
52	3/22/2019	8,340	8,493	48	Marcellus
53	3/22/2019	8,164	8,318	48	Marcellus
54	3/23/2019	7,989	8,142	48	Marcellus
55	3/23/2019	7,813	7,967	48	Marcellus
56	3/23/2019	7,638	7,791	48	Marcellus
57	3/23/2019	7,463	7,616	48	Marcellus

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STIMULATION INFORMATION PER STAGE

Stage No.	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)
1	82.9	7608	4353	2708	342610	8180	0
2	80.7	8117	4338	3257	440690	7940	0
3	83.3	7931	4715	2922	441850	8069	0
4	80.5	7751	5301	3324	442170	9066	0
5	81.6	7988	5051	4287	324620	7020	0
6	80.5	7686	4722	3069	442815	8452	0
7	80.1	7913	4483	3528	437140	8839	0
8	82.7	7646	4466	3075	442723	8676	0
9	80.7	7059	4579	3439	438490	8607	0
10	83.4	6872	5285	3503	441540	8696	0
11	83.2	7342	4596	3583	442550	8618	0
12	84.1	7612	4583	3421	443390	8709	0
13	84.7	7765	4301	3408	447293	8631	0
14	82.2	7779	5680	3901	441713	8479	0
15	84.4	7492	4446	3791	455385	8744	0
16	83.2	7932	4837	3576	439575	10266	0
17	84.1	7893	4546	3408	438585	8396	0
18	82.9	7632	4548	3517	445465	8608	0
19	84.3	8153	4670	3479	439610	8321	0
20	82.6	7904	4522	3382	438350	8839	0
21	83.2	7590	4712	3770	438090	8307	0
22	83.6	7869	4836	4391	335320	7216	0
23	79.4	7710	4826	3328	440550	8338	0
24	84.4	7226	5012	3988	438540	8187	0
25	81.3	7404	4836	3396	441900	8874	0
26	84.4	7099	4933	3713	441230	8252	0
27	83.9	7775	5163	3484	440330	8539	0
28	83.8	7425	4832	3411	440550	8508	0
29	85.1	7220	4776	3649	448280	8620	0

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Stage No.	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)
30	83.8	7373	4818	3457	440480	8876	0
31	82.6	7332	5078	3640	432680	8431	0
32	83.3	7782	5043	4011	399090	8258	0
33	84.8	7451	4854	3938	443440	8524	0
34	84.8	7338	4989	3498	440500	8517	0
35	83.5	7150	4913	3479	440980	8077	0
36	89	7405	4946	3816	440680	8566	0
37	88.4	7455	4663	3776	440110	8533	0
38	89.8	7480	5031	3510	441530	8591	0
39	83.5	7533	4993	4412	418980	9081	0
40	89.8	7139	5073	4301	439720	10191	0
41	89.8	7367	5403	4423	441848	9057	0
42	85.7	7614	5168	4724	413958	9520	0
43	89.6	7133	4842	4493	436110	8515	0
44	89.8	7145	5032	3971	435990	8428	0
45	87.7	7077	5121	4198	441430	8884	0
46	88.4	7129	5834	3536	437710	8637	0
47	89.8	6938	4684	4233	446100	8913	0
48	88.5	7287	4988	4493	434160	8565	0
49	89.8	7086	4956	3862	440610	8577	0
50	89.1	7063	5158	4010	446010	8595	0
51	89	6822	4909	4363	437060	8672	0
52	89.4	6897	4644	3904	436500	8583	0
53	86.6	7193	4812	3601	436050	8705	0
54	88.3	6883	4794	3707	438030	8428	0
55	87.8	6929	5008	4111	439730	8738	0
56	86	6794	4963	4236	378580	8039	0
57	88.1	6825	4887	4627	440120	8633	0

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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
Maxton	1972	2060	1973	2061	Sandstone
Big Lime	2060	2102	2061	2103	Limestone
Big Injun	2102	2448	2103	2449	Sandstone
Weir	2448	2603	2449	2604	Sandstone
Berea	2603	2883	2604	2884	Sandstone
Gordon	2883	2930	2884	2931	Sandstone
Fifty Foot	2930	3546	2931	3559	Sandstone
Speechley	3546	4958	3559	5239	Sandstone
Benson	4958	5345	5239	5707	Sandstone
Alexander	5345	5924	5707	6412	Siltstone
Rhinestreet	5924	6341	6412	6934	Black shale
Middlesex	6341	6423	6934	7080	Black shale
Geneseo/Burkett	6423	6450	7080	7137	Black shale
Tully	6450	6473	7137	7193	Limestone
Hamilton	6473	6506	7193	7291	Grey shale
Marcellus	6506	-	7291	-	Black shale



Well: Blake 08 HM (slot B)
 Site: Blake Pad
 Project: Marshall County, West Virginia
 Design: rev3
 Rig: Precision 528

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 1 1/100' build
3	1350.00	1.50	330.00	1349.98	1.70	-0.98	1.00	330.00	1.95	Begin 1.50° tangent
4	2918.55	1.50	330.00	2918.00	37.26	-21.51	0.00	0.00	43.01	Begin 3 1/100' build/turn
5	4026.23	34.18	19.98	3959.19	351.05	80.44	3.00	51.73	270.73	Begin 34.18° tangent
6	6680.67	34.18	19.98	6155.22	1752.41	590.06	0.00	0.00	1261.96	Begin 8 1/100' build/turn
7	6977.82	50.00	352.97	6376.82	1946.60	604.87	8.00	-59.68	1425.82	Begin 10 1/100' build/turn
8	7470.19	91.00	323.09	6541.00	2356.12	422.62	10.00	-41.11	1872.78	Begin 91.00° lateral
9	17497.13	91.00	323.09	6366.00	10372.71	-5597.62	0.00	0.00	1786.70	PBHL/TD 17497.13 MD:6366.00 TVD

ANNOTATIONS SURVEYS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Annotation
184.00	0.28	334.00	184.00	0.40	-0.20	0.45	MWD surveys
17456.00	89.80	320.38	6415.91	10335.85	-5577.31	11744.63	Survey @ 17456.00 MD 6415.91 TVD
17512.00	89.80	320.38	6416.10	10378.99	-5613.02	11799.55	Survey projected to 17512.00 MD 6416.10 TVD

Geodetic System: Universal Transverse Mercator (US Survey Feet)
 Datum: NAD83 West Virginia - HARN
 Ellipsoid: GRS 1980
 Zone: Zone 17N (84 W to 78 W)

System Datum: Mean Sea Level
 Depth Reference: RKB=1326+18 @ 1344.00ft (Precision 528)

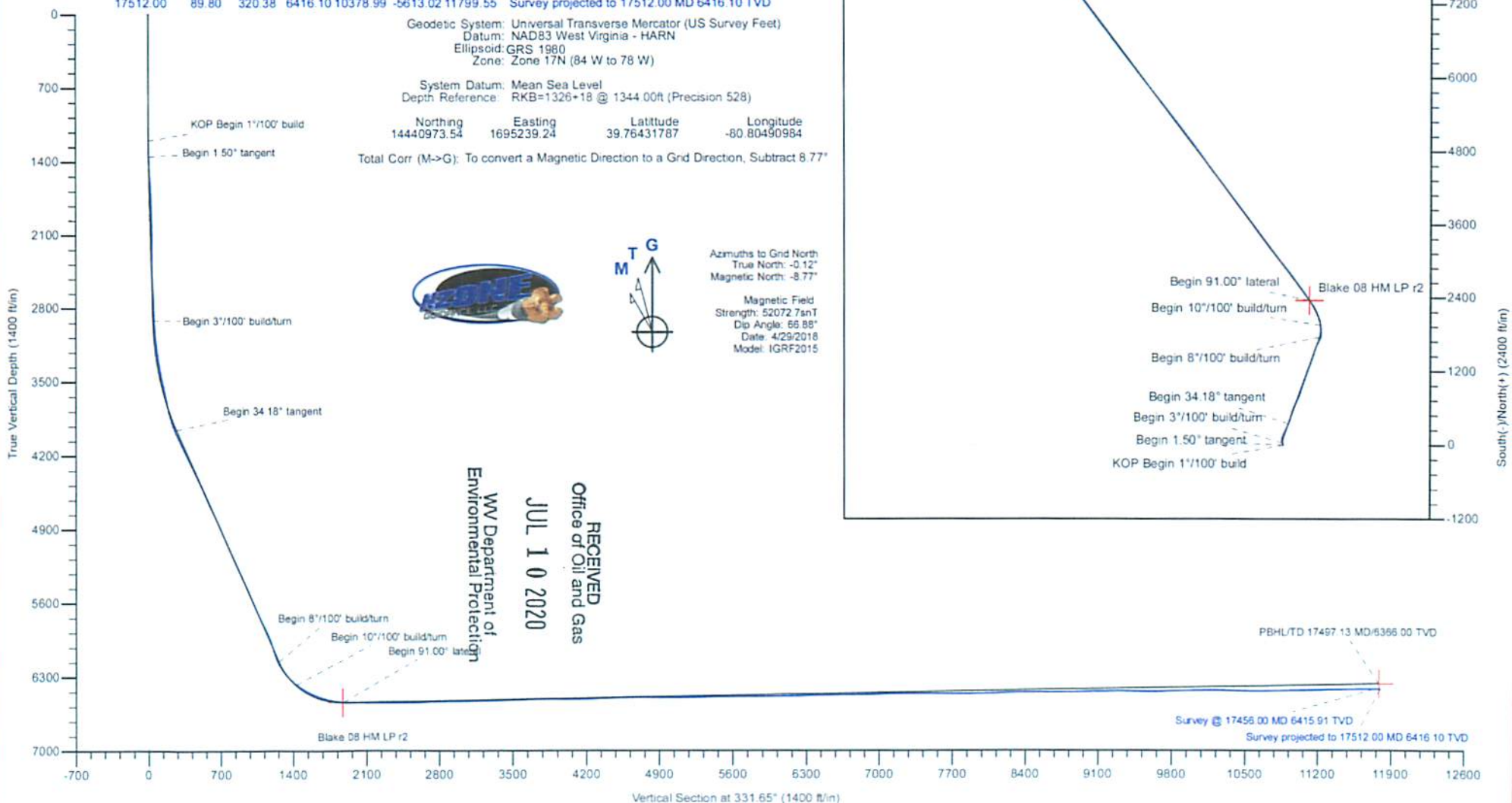
Northing	Easting	Latitude	Longitude
14440973.54	1695239.24	39.76431787	-80.80490984

Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.77°



Azimuths to Grid North
 True North: -0.12°
 Magnetic North: -8.77°

Magnetic Field
 Strength: 52072.7nT
 Dip Angle: 66.88°
 Date: 4/29/2018
 Model: IGRF2015



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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	3/3/2019
Job End Date:	3/24/2019
State:	West Virginia
County:	Marshall
API Number:	47-051-02054-00-00
Operator Name:	Tug Hill Operating, LLC
Well Name and Number:	Blake 8HM
Latitude:	39.76420000
Longitude:	-80.80490000
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,538
Total Base Water Volume (gal):	21,663,440
Total Base Non Water Volume:	0

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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
Fresh Water	Halliburton	Base Fluid					
			Water	7732-18-5	100.00000	87.58741	Density = 8.34
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.42906	

HYDROCHLORIC ACID, 22 BAUME	Halliburton	Solvent					
				Listed Below			
Sand-Common White-100 Mesh, SSA-2	Halliburton	Proppant					
				Listed Below			
Sand-Premium White-30/50	Halliburton	Proppant					
				Listed Below			
Legend LD-2115	MultiChem	Friction Reducer					
				Listed Below			
FDP-S1296-17	Halliburton	Acid Corrosion Inhibitor					
				Listed Below			
MC MX 2-2822	MultiChem	Scale Inhibitor					
				Listed Below			
MC MX 8-4743	MultiChem	Additive					
				Listed Below			
Sand-Premium White-40/70	Halliburton	Proppant					
				Listed Below			
OilPerm A	Halliburton	Non-ionic Surfactant					

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				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	11.94970	
			Hydrochloric acid	7647-01-0	30.00000	0.10654	
			Inorganic salt	Proprietary	30.00000	0.02268	
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.02268	
			Acrylamide acrylate polymer	Proprietary	30.00000	0.02268	
			Sodium nitrate	7631-99-4	60.00000	0.01499	
			Methanol	67-56-1	100.00000	0.00244	
			Amines, polyethylenepoly-, ethoxylated, phosphonomethylated, sodium salts	70900-16-2	30.00000	0.00190	
			Sodium molybdate	10102-40-6	5.00000	0.00125	
			Sodium chloride	7647-14-5	5.00000	0.00034	
			Ethanol	64-17-5	60.00000	0.00032	
			Oxyalkylated nonyl phenolic resin	Proprietary	30.00000	0.00016	
			Heavy aromatic petroleum naphtha	64742-94-5	30.00000	0.00016	
			Modified thiourea polymer	Proprietary	30.00000	0.00015	
			Mixture of dimer and trimer fatty acids of indefinite composition derived from tall oil	61790-12-3	30.00000	0.00015	
			Oxyalkylated phenolic resin	Proprietary	10.00000	0.00005	
			Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy-, branched	127087-87-0	5.00000	0.00003	
			Naphthalene	91-20-3	5.00000	0.00003	
			Propargyl alcohol	107-19-7	5.00000	0.00003	

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			Hexadecene	629-73-2	5.00000	0.00003	
			Ethoxylated alcohols	Proprietary	5.00000	0.00003	
			Sodium acetate	127-09-3	0.10000	0.00002	
			Monopotassium phosphate	7778-77-0	0.10000	0.00002	
			Yeast extract	8013-01-2	0.10000	0.00002	
			Sodium lactate	72-17-3	0.10000	0.00002	
			Formaldehyde	50-00-0	0.10000	0.00001	
			1,2,4 Trimethylbenzene	95-63-6	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)

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**BLAKE LEASE
WELL N-8HM
673.5561 ± ACRES**

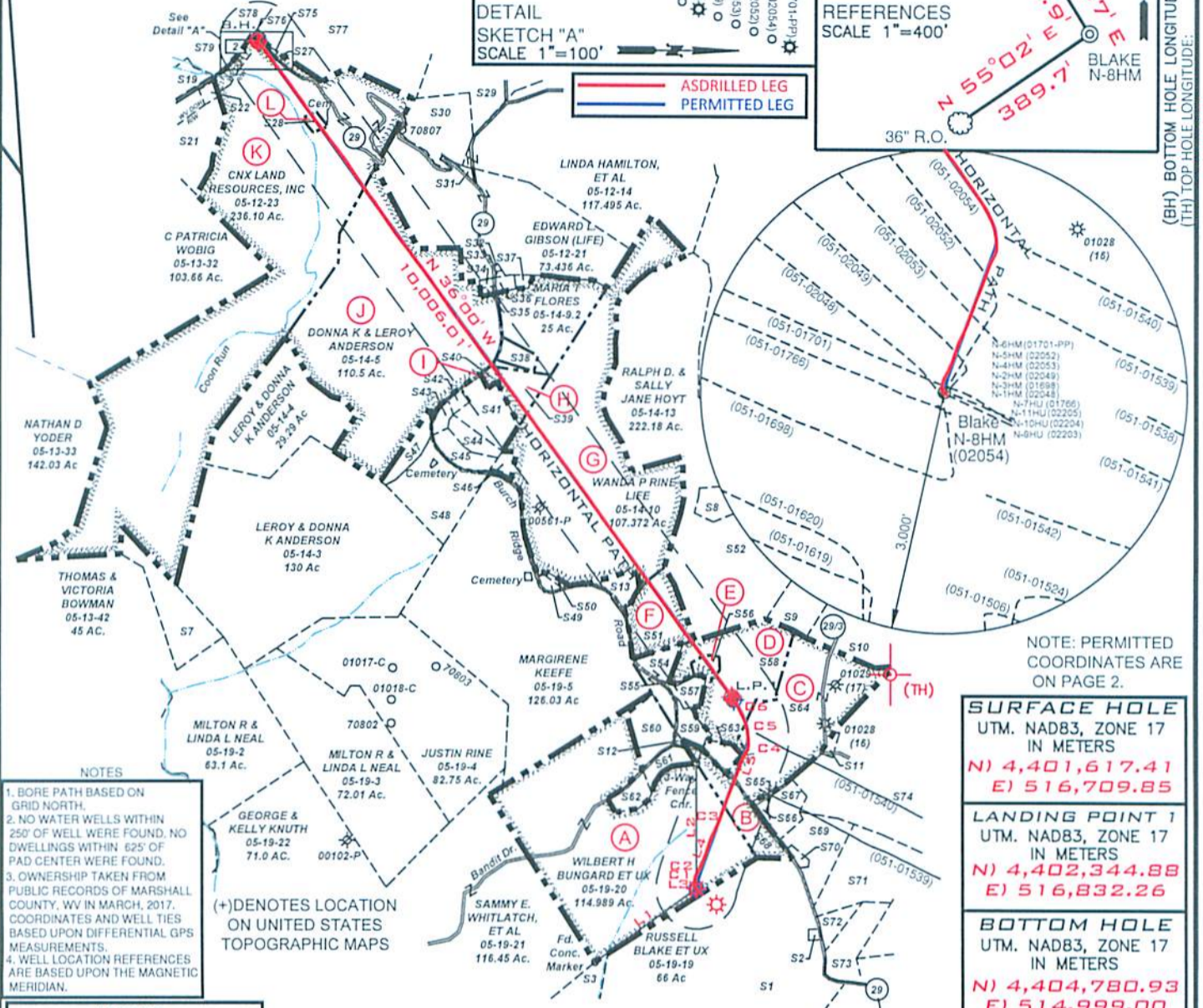
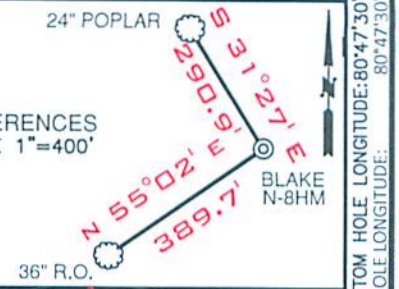
TOP HOLE LATITUDE: 39°47'30"
BOTTOM HOLE LATITUDE: 39°50'00"

- ☼ N-7HU (01766)
- N-9HU (02203)
- N-10HU (02204)
- N-11HU (02205)

DETAIL
SKETCH "A"
SCALE 1"=100'

ASDRILLED LEG
PERMITTED LEG

REFERENCES
SCALE 1"=400'



- NOTES**
- BORE PATH BASED ON GRID NORTH.
 - NO WATER WELLS WITHIN 250' OF WELL WERE FOUND. NO DWELLINGS WITHIN 625' OF PAD CENTER WERE FOUND.
 - OWNERSHIP TAKEN FROM PUBLIC RECORDS OF MARSHALL COUNTY, WV IN MARCH, 2017. COORDINATES AND WELL TIES BASED UPON DIFFERENTIAL GPS MEASUREMENTS.
 - WELL LOCATION REFERENCES ARE BASED UPON THE MAGNETIC MERIDIAN.

(+) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

NOTE: PERMITTED COORDINATES ARE ON PAGE 2.

SURFACE HOLE UTM. NAD83, ZONE 17 IN METERS N) 4,401,617.41 E) 516,709.85
LANDING POINT 1 UTM. NAD83, ZONE 17 IN METERS N) 4,402,344.88 E) 516,832.26
BOTTOM HOLE UTM. NAD83, ZONE 17 IN METERS N) 4,404,780.93 E) 514,999.00

LEGEND

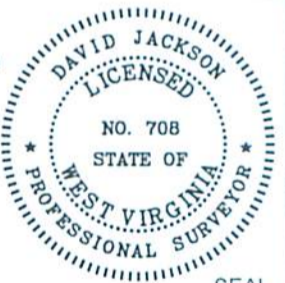
- LEASED TRACTS
- SURFACE TRACTS
- UNIT BOUNDARY
- (A) LEASE # (SEE 6A1 FORM)

LINE	BEARING	DISTANCE	CURVE	CHORD BEARING	CHORD LENGTH	RADIUS	ARC LENGTH
L1	S 54°13' W	1554.91'	C1	N 05°41' E	80.77'	130.85'	82.11'
L2	N 00°06' E	1561.51'	C2	N 25°48' E	131.13'	332.70'	132.00'
L3	N 27°11' W	49.80'	C3	N 22°03' E	273.76'	1221.87'	274.34'
L4	N 21°20' E	472.88'	C4	N 14°26' E	239.12'	299.04'	246.00'
L5	N 20°49' E	748.05'	C5	N 13°11' W	277.87'	802.68'	279.28'
			C6	N 29°37' W	278.52'	1705.92'	278.83'

FILE NUMBER _____
DRAWING NUMBER BLAKE_WP_N-8HM
SCALE 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 RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

P.S. 708
David L Jackson



JACKSON SURVEYING INC.
P.O. Box 1460
Clarksburg, WV 26302
304-623-5851

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

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
STATE 47 COUNTY 051 PERMIT 02054

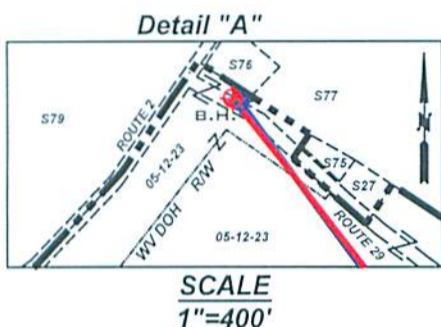
LOCATION ELEVATION 1315.7' WATERSHED (HUC 10) French Creek - Ohio River
DISTRICT Franklin COUNTY Marshall
QUADRANGLE Powhatan Point 7.5' LEASE NUMBER _____ SEE WW-6A1 Form

SURFACE OWNER WILBERT H. BUNGARD, ET UX ACREAGE 114.989
OIL & GAS ROYALTY OWNER RUSSELL BLAKE, ET AL LEASE ACREAGE 114.989
PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___ PLUG OFF OLD FORMATION ___
PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE (SPECIFY) ASDRILLED
PLUG & ABANDON ___ CLEAN OUT & REPLUG ___
TARGET FORMATION Marcellus ESTIMATED DEPTH TVD: 6,545' TMD: 17,512'
WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DIANNA STAMPER
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 ADDRESS 5400 D BIG TYLER ROAD
FORT WORTH, TX 76107 CHARLESTON, WV 25313

FORM WW6

QUANTITY NAME PERMIT

PG 2 OF 2 **BLAKE LEASE**
WELL N-8HM
673.5561 ± ACRES



SURFACE HOLE
UTM. NAD83, ZONE 17 IN METERS
N) 4,401,617.54
E) 516,709.95
LANDING POINT 1
UTM. NAD83, ZONE 17 IN METERS
N) 4,402,335.61
E) 516,838.73
BOTTOM HOLE
UTM. NAD83, ZONE 17 IN METERS
N) 4,404,779.14
E) 515,003.80

Number	TAX MAP -PARCEL	SURFACE OWNER	ACRES
S1	05-19-28	DAVID D. & MARK E. YOHO	56.899
S2	05-19-32	JASPER N. BURCH ET AL - TRUSTEES	0.397
S3	05-22-04	CNX GAS COMPANY, LLC	159.05
S7	05-14-02	JOHN B. WILLIAMS, ET AL	20.17
S8	05-14-12.1	HENRY WILSON PLUNKERT, JR.	5.0
S9	05-14-14	ROBERT L. SHIELDS ET AL	29.05
S10	05-14-15	ROBERT L. SHIELDS ET AL	53.0
S11	05-19-13.1	DONALD SHIELDS	0.80
S12	05-19-20	WILBERT H. BUNGARD ET UX	114.989
S13	05-14-10.4	ADAM & JESSE ROBINSON	3.343
S19	05-12-25	CSX	12.8
S21	05-12-24.3	CNX LAND RESOURCES, INC.	18.523
S22	05-12-24.1	W.V. DEPT. OF HIGHWAYS	0.99
S27	05-12-23.1	JAMES N. DAUGHERTY	0.28
S28	05-12-22	CNX LAND RESOURCES, INC.	0.944
S29	05-12-07	ROBERT WM. RIGGENBACH, ET UX	104.231
S30	05-12-21.1	ROBERT W. JR. & WENDY L. RIGGENBACH	14.222
S31	05-12-15	WOODLAND HILL CHURCH OF GOD, TRS	0.375
S32	05-12-16	GARY E. GIBSON, ET AL	0.104
S33	05-12-16.1	GARY E. GIBSON, ET AL	0.146
S34	05-12-20	JONI LYN LEON	0.457
S35	05-12-19	JONI LYN LEON	0.457
S36	05-12-18	HILDA DELORIS BAXTER	1.018
S37	05-12-17	HILDA DELORIS BAXTER	0.752
S38	05-14-9.1	MARIA T. FLOREZ	2.882
S39	05-14-9.5	MARIA T. FLOREZ	6.024
S40	05-14-19	BRIAN A. & CHARLOTTE MULL	0.92
S41	05-14-09	WALTER W. STREIGHT JR., ET UX	9.311
S42	05-14-17	JUSTIN & JODY RINE	1.1044
S43	05-14-16	GEORGE A. KNUTH	1.6386
S44	05-14-9.4	VERNIE A. RINE, ET UX	3.404
S45	05-14-9.3	VERNIE A. RINE, ET UX	4.118
S46	05-14-10.3	VERNIE A. & JODY K. RINE	1.54
S47	05-14-07	DONNA K. & LEROY ANDERSON	4.60
S48	05-14-08	LAWRENCE EUGENE ANDERSON	18.29
S49	05-14-10.1	IDA RUTAN (LIFE), RALPH R. HOYT	0.50
S50	05-14-10.2	IDA RUTAN (LIFE), RALPH R. HOYT	0.495
S51	05-14-11	DALE R. GALLAHER, ET AL	12.0
S52	05-14-12	DALE R. GALLAHER, ET AL	135.100
S54	05-19-06	MARTHA M. RUTAN	5.1099
S55	05-19-7.3	OLAN V. RUTAN, ET UX	0.341
S56	05-19-7.4	OLAN V. RUTAN, ET UX	1.787
S57	05-19-7.2	OLAN RUTAN	2.783
S58	05-19-7	OLAN V. RUTAN, ET UX	32.4801
S59	05-19-7.1	ROBERT L. SHIELD, ET AL	3.399
S60	05-19-20.2	CASANDRA L. HARMON	7.448
S61	05-19-20.1	JOHN J. EBERT, EST.	3.848
S62	05-19-20.3	SIDNEY HARMON	3.715
S63	05-19-7.5	ADAM T. & JESSE L. ROBINSON	2.640
S64	05-19-8	CNX GAS COMPANY, LLC	40.0
S65	05-19-11	ERNIE L. ANDERSON, ET UX	0.08
S66	05-19-10	ERNIE L. ANDERSON, ET UX	0.8125
S67	05-19-12	ERNIE L. ANDERSON, ET UX	5.33
S68	05-19-09	PENNY ELAINE MENENDEZ	10.44
S69	05-19-29	ERNIE L. & TAMMY L. ANDERSON	10.961
S70	05-19-15	B.J. HERRAN REVOCABLE TRUST	0.177
S71	05-19-30	ERNIE & TAMMY ANDERSON	19.037
S72	05-19-30.1	ERIC R.W. & ASHLEY A. HUGGINS	2.911
S73	05-19-31	CHARLES F. & DIANA L. HAYNES	8.779
S74	05-19-13	RONA LEE RICE & CHARLES FRANKLIN MCCARDLE	94.925
S75	05-12-23.3	WVDOH	0.11
S76	05-12-6.1	WVDOH	0.31
S77	05-12-6	CNX LAND RESOURCES	70.81
S78	05-12-6.2	CONSOLIDATION COAL CO. & MURRAY ENERGY C/O LAND DEPT.	25.50
S79	05-12-23.2	CNX LAND RESOURCES	12.50



David L Jackson

P.S. 708

RECEIVED
Office of Oil and Gas

JUL 10 2020

WV Department of
Environmental Protection



TUG HILL
OPERATING

OPERATOR'S
 WELL #: Blake N-8HM
 DISTRICT: Franklin
 COUNTY: Marshall
 STATE: WV
 API #: 47-051-02054

WELL PLAT
 PAGE 2 OF 2
 DATE: 06/18/2020