

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

API 47 - 051 - 02049 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-2HM
Operator (as registered with the OOG) Tug Hill Operating, LLC
Address 380 Southpointe Boulevard, Plaza II, Suite 200 City Canonsburg State PA Zip 15317

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,401,607.26 Easting 516,705.92
Landing Point of Curve Northing 4,401,841.56 Easting 516,681.18
Bottom Hole Northing 4,404,050.76 Easting 514,152.70

Elevation (ft) 1315.6' 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 8/1/2018 Date drilling commenced 11/22/2018 Date drilling ceased 12/17/2018
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:
Jim Heister
7/28/2020

API 47-051 - 02049 Farm name Wilbert H. Bungard, et ux Well number Blake N-2HM

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"	1158'	NEW	54.5#	N/A	Y
Coal	17 1/2"	13 3/8"	1158'	NEW	54.5#	N/A	Y
Intermediate 1	12 1/4"	9 5/8"	2858'	NEW	36#	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8 3/4"	5 1/2"	17,925'	NEW	20#	N/A	Y
Tubing		2 3/8"	8693'	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	891	15.6	1.19	1114	0	8
Coal	A	891	15.6	1.19	1114	0	8
Intermediate 1	A	978	15.6	1.19	1157	0	8
Intermediate 2							
Intermediate 3							
Production	A	4188	14.5	1.17	4919	0	8
Tubing							

Drillers TD (ft) 17,942' 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) 6,151'

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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 _____

API 47- 051 - 02049

Farm name Wilbert H. Bungard, et ux

Well number Blake N-2HM

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
	*see attached				

Please insert additional pages as applicable.

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STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

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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)
	attached							

Please insert additional pages as applicable.

API 47- 051 - 02049 Farm name Wilbert H. Bungard, et ux Well number Blake N-2HM

PRODUCING FORMATION(S)	DEPTHS	
<u>Marcellus</u>	<u>6547' - 6462'</u> TVD	<u>6923' - 17942'</u> MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1132 psi Bottom Hole _____ psi DURATION OF TEST 24 hrs

OPEN FLOW Gas 0 mcfpd Oil 0 bpd NGL 0 bpd Water 600 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 ₂ S, ETC)
<u>attached</u>	<u>0</u>		<u>0</u>		

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Please insert additional pages as applicable.

Drilling Contractor Precision
Address 10358 Richmond Avenue, Suite 700 City Houston State TX Zip 77042

Logging Company n/a
Address _____ City _____ State _____ Zip _____

Cementing Company BJ Services
Address 4000 Town Center Boulevard City Canonsburg State PA Zip 15317

Stimulating Company Halliburton Energy Services, Inc.
Address 121 Champion Way, Suite 200 City Canonsburg State PA Zip 15317

Please insert additional pages as applicable.

Completed by Amy L. Miller Telephone 304-376-0111
Signature  Title Permitting Specialist Date 6-15-2020

Blake N-2HM
PEFORATION RECORD

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
1	3/24/2019	17,784	17,831	48	Marcellus
2	3/24/2019	17,551	17,704	48	Marcellus
3	3/25/2019	17,375	17,529	48	Marcellus
4	3/25/2019	17,200	17,353	48	Marcellus
5	3/25/2019	17,024	17,178	48	Marcellus
6	3/25/2019	16,849	17,002	48	Marcellus
7	3/26/2019	16,674	16,827	48	Marcellus
8	3/26/2019	16,498	16,652	48	Marcellus
9	3/26/2019	16,323	16,476	48	Marcellus
10	3/27/2019	16,147	16,301	48	Marcellus
11	3/27/2019	15,972	16,125	48	Marcellus
12	3/27/2019	15,797	15,950	48	Marcellus
13	3/28/2019	15,621	15,775	48	Marcellus
14	3/28/2019	15,446	15,599	48	Marcellus
15	3/28/2019	15,270	15,424	48	Marcellus
16	3/29/2019	15,095	15,248	48	Marcellus
17	3/29/2019	14,920	15,073	48	Marcellus
18	3/29/2019	14,744	14,898	48	Marcellus
19	3/30/2019	14,569	14,722	48	Marcellus
20	3/30/2019	14,393	14,547	48	Marcellus
21	3/30/2019	14,218	14,371	48	Marcellus
22	3/31/2019	14,043	14,196	48	Marcellus
23	3/31/2019	13,867	14,021	48	Marcellus
24	3/31/2019	13,692	13,845	48	Marcellus
25	4/1/2019	13,516	13,670	48	Marcellus
26	4/1/2019	13,341	13,494	48	Marcellus
27	4/1/2019	13,166	13,913	48	Marcellus
28	4/2/2019	12,990	13,144	48	Marcellus
29	4/2/2019	12,815	12,968	48	Marcellus
30	4/2/2019	12,639	12,793	48	Marcellus
31	4/3/2019	12,464	12,617	48	Marcellus
32	4/3/2019	12,289	12,442	48	Marcellus
33	4/4/2019	12,113	12,267	48	Marcellus
34	4/4/2019	11,938	12,091	48	Marcellus
35	4/5/2019	11,762	11,916	48	Marcellus
36	4/5/2019	11,587	11,740	48	Marcellus
37	4/5/2019	11,412	11,565	48	Marcellus
38	4/6/2019	11,236	11,390	48	Marcellus
39	4/6/2019	11,061	11,214	48	Marcellus
40	4/6/2019	10,885	11,039	48	Marcellus
41	4/8/2019	10,710	10,863	48	Marcellus

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Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
42	4/9/2019	10,535	10,688	48	Marcellus
43	4/9/2019	10,359	10,513	48	Marcellus
44	4/9/2019	10,184	10,337	48	Marcellus
45	4/9/2019	10,008	10,162	48	Marcellus
46	4/10/2019	9,833	9,986	48	Marcellus
47	4/11/2019	9,658	9,811	48	Marcellus
48	4/11/2019	9,482	9,636	48	Marcellus
49	4/11/2019	9,307	9,460	48	Marcellus
50	4/12/2019	9,131	9,285	48	Marcellus
51	4/12/2019	8,956	9,109	48	Marcellus
52	4/12/2019	8,781	8,934	48	Marcellus
53	4/13/2019	8,605	8,759	48	Marcellus
54	4/13/2019	8,430	8,583	48	Marcellus
55	4/14/2019	8,254	8,408	48	Marcellus
56	4/14/2019	8,079	8,232	48	Marcellus
57	4/14/2019	7,904	8,057	48	Marcellus
58	4/15/2019	7,728	7,882	48	Marcellus
59	4/15/2019	7,553	7,706	48	Marcellus
60	4/15/2019	7,377	7,531	48	Marcellus
61	4/16/2019	7,202	7,355	48	Marcellus
62	4/16/2019	7,027	7,180	48	Marcellus
63	4/16/2019	6,851	7,005	48	Marcellus

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Blake N-2HM
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	84.5	7617	3964	3117	339450	8122	0
2	82.4	7604	4727	3533	435820	8747	0
3	83.3	7641	5022	4099	439220	8712	0
4	84.3	7871	5045	3633	438960	8735	0
5	84.4	7925	5019	4117	445330	8682	0
6	83.3	7930	5105	3519	445090	8965	0
7	84.9	7686	4774	3930	441680	8380	0
8	81.8	7684	4676	3622	433930	8708	0
9	83.4	8002	4738	3877	453745	8890	0
10	83.5	7784	4758	4069	517225	10043	0
11	82.7	7616	4675	4008	522805	10239	0
12	83.3	7613	4708	3747	505295	10117	0
13	87.7	7880	4930	3751	520410	10488	0
14	83.7	7883	4888	3795	416150	9038	0
15	82.4	7413	4937	3530	522045	13305	0
16	85.5	7548	4691	4404	523665	11634	0
17	86.4	7781	4999	3801	529560	10235	0
18	85.3	7672	4994	4232	517640	10384	0
19	89.4	8033	4782	3496	518670	10560	0
20	84.8	7668	4923	3516	526175	10694	0
21	85.1	7471	4857	3840	524275	10507	0
22	84.7	7212	4662	3905	522725	10667	0
23	89.1	7758	4765	3636	522365	10176	0
24	89.6	8011	4738	3801	439780	8931	0
25	89.3	7735	4580	4243	370550	8933	0
26	88.8	7731	4671	3695	442890	8725	0
27	87.6	7730	4721	4348	443060	8775	0
28	89	7839	4769	3920	445120	10590	0
29	85.2	7785	4789	3550	441510	8837	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	89.6	7923	4892	3822	435800	8967	0
31	89.2	7659	4543	3916	441230	9119	0
32	87.9	7892	4861	3737	437720	10927	0
33	88.7	7622	4782	3959	439720	8514	0
34	90.1	7687	4903	3376	439150	8982	0
35	86	7759	4770	4043	370963	9858	0
36	88.1	7598	4916	3577	441360	8737	0
37	89.2	7100	5105	3582	446820	8975	0
38	89.6	6541	5611	3950	442560	9074	0
39	89.6	6668	5445	3963	441650	8511	0
40	89.8	6549	5152	3797	441960	9003	0
41	89.5	6604	5802	4736	441720	8793	0
42	89.8	6481	5028	4173	439870	8965	0
43	89.8	6303	5060	4409	443430	8476	0
44	89.7	6312	4371	4290	444660	8252	0
45	89.3	6410	4829	4772	443100	8432	0
46	89.7	6513	4653	4194	441130	8308	0
47	88.8	6279	4884	5062	442145	8461	0
48	87.5	6299	4457	4534	437430	8445	0
49	89.1	6349	5464	4311	356660	7046	0
50	89.4	6308	4950	4461	362600	6963	0
51	88.1	6275	4709	4227	363720	6930	0
52	89.1	6175	4996	4772	357020	7919	0
53	89.6	6277	4712	5082	359530	6613	0
54	89.5	6158	4956	4397	359960	6701	0
55	89.5	6131	5252	4959	371635	6955	0
56	89	6269	5536	4751	359980	6908	0
57	89.2	6294	5354	4750	358480	6697	0
58	89.6	6062	4879	4644	357480	6984	0
59	89.1	6264	5057	5049	338000	6567	0
60	89.7	6218	5234	4869	360240	7005	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)
61	89.6	6151	5016	4918	369405	7321	0
62	89.5	6054	5191	5208	368825	6816	0
63	89	6217	5704	4225	365285	7310	0

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BLAKE N-2HM

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	1972	2060	Sandstone
Big Lime	2060	2102	2060	2102	Limestone
Big Injun	2102	2448	2102	2448	Sandstone
Weir	2448	2603	2448	2603	Sandstone
Berea	2603	2883	2603	2884	Sandstone
Gordon	2883	2930	2884	2931	Sandstone
Fifty Foot	2930	3546	2931	3547	Sandstone
Speechley	3546	4958	3547	4977	Sandstone
Benson	4958	5345	4977	5372	Sandstone
Alexander	5345	5924	5372	5960	Siltstone
Rhinestreet	5924	6347	5960	6417	Black shale
Middlesex	6347	6427	6417	6541	Black shale
Geneseo/Burkett	6427	6455	6541	6592	Black shale
Tully	6455	6479	6592	6642	Limestone
Hamilton	6479	6511	6642	6724	Grey shale
Marcellus	6511	-	6724	-	Black shale



Well: Blake 02 HM (slot E)
 Site: Blake Pad
 Project: Marshall County, West Virginia
 Design: rev1
 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	3500.00	0.00	0.00	3500.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 2"/100' build
3	4026.89	10.54	42.52	4023.92	35.61	32.65	2.00	42.52	1.13	Begin 10.54" tangent section
4	6021.53	10.54	42.52	5984.92	304.49	279.18	0.00	0.00	9.68	Begin 10"/100' build/turn
5	6933.58	91.00	311.29	6550.00	769.44	-88.08	10.00	-91.02	596.65	Begin 91.00" lateral
6	17959.35	91.00	311.29	6358.00	8044.25	-8371.08	0.00	0.00	1609.69	PBHLTD

ANNOTATIONS SURVEYS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Annotation
189.00	0.49	254.29	189.00	-0.22	-0.78	0.41	MWD surveys
17886.00	91.00	308.16	6462.73	7982.11	-8332.66	11538.93	Survey @ 17886.00 MD 6462.73 TVD
17942.00	91.00	308.16	6461.75	8016.70	-8376.68	11594.64	Survey projected to 17942.00 MD 6461.75 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: 14440940.05 Easting: 1695226.07 Latitude: 39.76422598 Longitude: -80.80495697

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

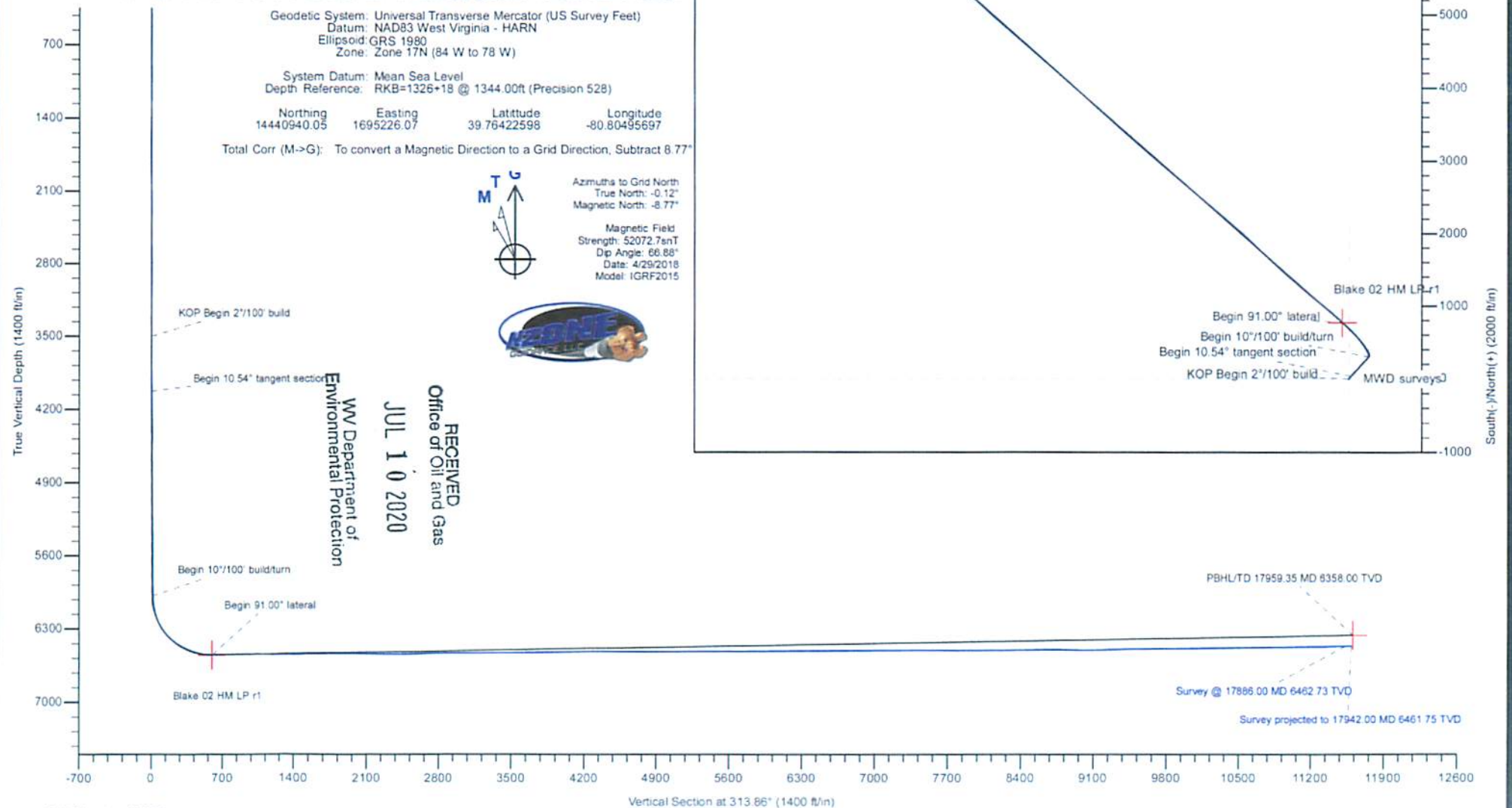


Azimuths to Grid North
 True North: -0.12°
 Magnetic North: -8.77°

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



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Vertical Section at 313.86° (1400 ft/in)

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	3/24/2019
Job End Date:	4/16/2019
State:	West Virginia
County:	Marshall
API Number:	47-051-02049-00-00
Operator Name:	Tug Hill Operating, LLC
Well Name and Number:	Blake 2H
Latitude:	39.76416710
Longitude:	-80.80498839
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,545
Total Base Water Volume (gal):	23,962,166
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	Operator	Base Fluid					
			Water	7732-18-5	100.00000	87.42460	Density = 8.340
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.52152	

SAND-PREMIUM WHITE-40/70, BULK	Halliburton	Proppant					
				Listed Below			
OILPERM A	Halliburton	Non-ionic Surfactant					
				Listed Below			
FDP-S1296-17	Halliburton	Corrosion Inhibitor					
				Listed Below			
HYDROCHLORIC ACID	Halliburton	Solvent					
				Listed Below			
SAND-PREMIUM WHITE-40/70, BULK	Halliburton	Proppant					
				Listed Below			
Legend LD-2115	Multi-Chem	Friction Reducer					
				Listed Below			
SAND-COMMON WHITE-100 MESH, SSA-2, BULK (100003676)	Halliburton	Proppant					
				Listed Below			
Legend LD-2850	Multi-Chem	Friction Reducer					

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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	11.97182	
			Hydrochloric acid	7647-01-0	15.00000	0.07823	
			Inorganic salt	Proprietary	30.00000	0.01613	
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01613	
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.00800	
			Ethanaminium,N,N,N-trimethyl-2-[(1-oxo-2-propen-1-yl)oxy]-, chloride (1:1), polymer with 2-propenamide	69418-26-4	30.00000	0.00800	
			Sodium chloride	7647-14-5	10.00000	0.00267	
			Ammonium chloride	12125-02-9	10.00000	0.00267	
			9-Octadecenamide,n,n-bis-2(hydroxy-ethyl)-,(Z)	93-83-4	5.00000	0.00133	
			Methanol	67-56-1	100.00000	0.00079	
			Ethanol	64-17-5	60.00000	0.00050	
			Oxyalkylated phenolic resin	Proprietary	30.00000	0.00033	
			Heavy aromatic petroleum naphtha	64742-94-5	30.00000	0.00025	
			Modified thiourea polymer	Proprietary	30.00000	0.00024	
			Naphthalene	91-20-3	5.00000	0.00004	
			Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy-, branched	127087-87-0	5.00000	0.00004	
			Propargyl alcohol	107-19-7	5.00000	0.00004	

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			Ethoxylated alcohols	Proprietary	5.00000	0.00004	Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
			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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WV Department of
Environmental Protection

**BLAKE LEASE
WELL N-2HM
775.276± ACRES**

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

DETAIL SKETCH "A" SCALE 1"=100'

(+) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

36" R.O.

REFERENCES SCALE 1"=400'

24" POPLAR

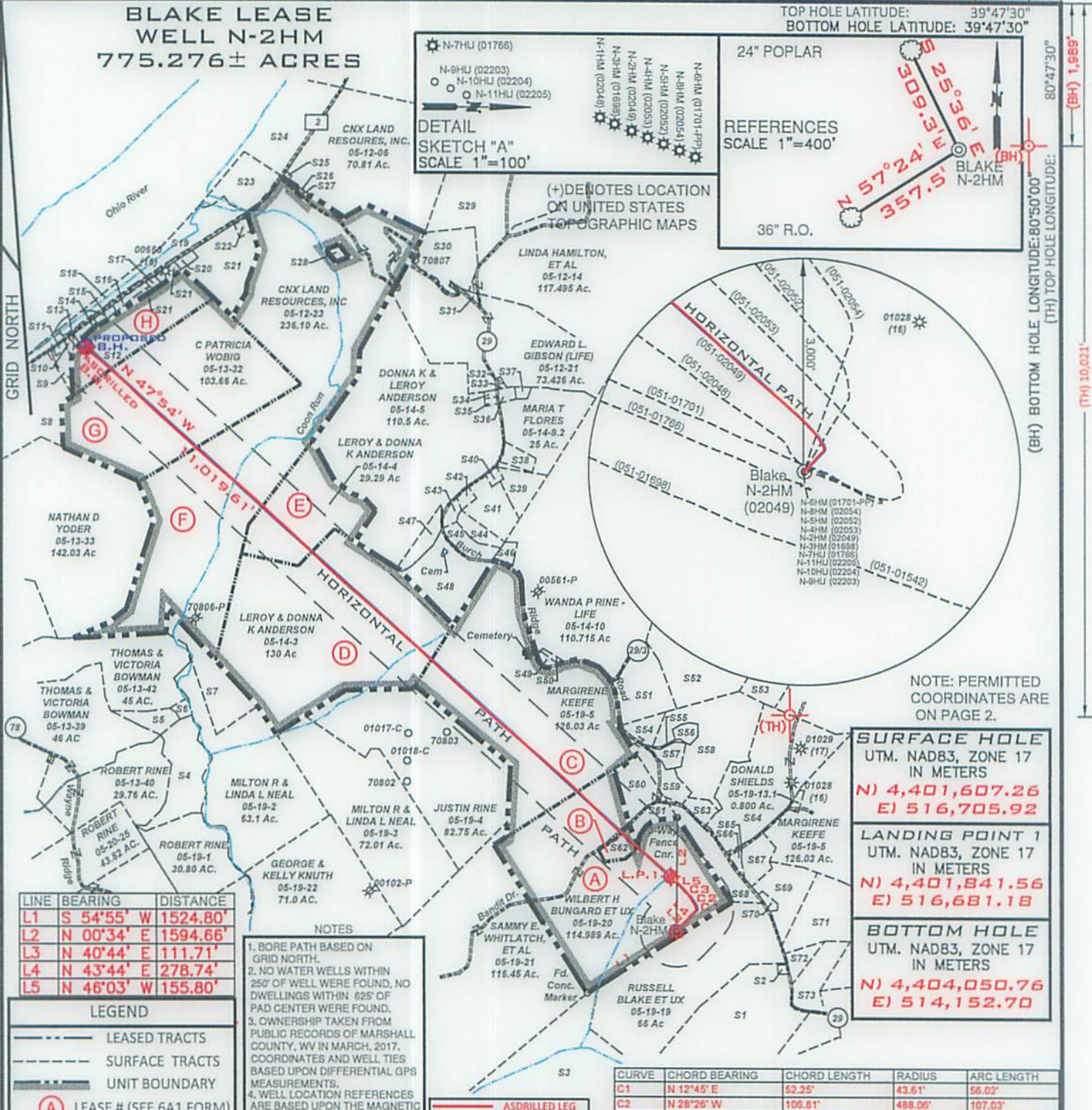
BLAKE N-2HM

309.3' E
25°36' E
357.5' E
57°24' N

(TH) 3,783'
(BH) 448'

(TH) TOP HOLE LONGITUDE: 80°50'00"
(BH) BOTTOM HOLE LONGITUDE: 80°47'30"

(BH) 1,869'
(TH) 30,021'



NOTE: PERMITTED COORDINATES ARE ON PAGE 2.

SURFACE HOLE UTM. NAD83, ZONE 17 IN METERS
N) 4,401,607.26
E) 516,705.92
LANDING POINT 1 UTM. NAD83, ZONE 17 IN METERS
N) 4,401,841.56
E) 516,681.18
BOTTOM HOLE UTM. NAD83, ZONE 17 IN METERS
N) 4,404,050.76
E) 514,152.70

FILE NUMBER _____

DRAWING NUMBER BLAKE_WP_N-2HM

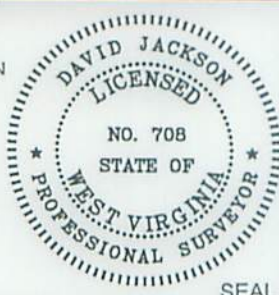
SCALE 1" = 2000'

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

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

DATE: July 08, 2020

OPERATORS WELL NO. BLAKE N-2HM

API WELL NO. _____

WELL TYPE: OIL _____ GAS X LIQUID INJECTION _____ WASTE DISPOSAL _____
(IF "GAS") PRODUCTION X STORAGE _____ DEEP _____ SHALLOW X

LOCATION ELEVATION 1315.6' 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) AS-DRILLED

PLUG & ABANDON _____ CLEAN OUT & REPLUG _____

TARGET FORMATION Marcellus ESTIMATED DEPTH TVD: 6,547' TMD: 17,942'

WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DIANNA STAMPER
CT CORPORATION SYSTEM

ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 ADDRESS 5400 D BIG TYLER ROAD
FORT WORTH, TX 76107 CHARLESTON, WV 25313

COUNTY NAME
PERMIT

**BLAKE LEASE
WELL N-2HM
775.276± ACRES**

Number	TAX MAP -PARCEL	ADJOINER 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
S4	05-13-41A	RODNEY & RHONDA JACKSON	17.05
S5	05-13-41B	LARRY & JUDY DARRAH	4.15
S6	05-13-41C	BENTON DARRAH, LILLIE MAY DUGAN, ALMA BITMER, ALBERTA PALMER & AUDREY HOWARD	1.0
S7	05-14-02	JOHN B. WILLIAMS, ET AL	20.17
S8	05-13-28	AARON PAUL HOLDREN, ET UX	17.0
S9	05-13-13D	CINDY ALIFF	3.0
S10	05-13-28.1	CINDY ALIFF	1.80
S11	05-13-29	RAYMOND E. CONNER	1.0
S12	05-13-31	CNX LAND RESOURCES, INC.	31.723
S13	05-13-31.1	RAYMOND E. CONNER, ET UX	0.277
S14	05-13-31.2	CNX LAND RESOURCES, INC.	0.938
S15	05-12-27	CNX LAND RESOURCES, INC.	0.67
S16	05-12-28	W.V. DEPT. OF HIGHWAYS	1.1
S17	05-12-24.2	W.V. DEPT. OF HIGHWAYS	0.539
S18	05-12-26	OHIO RIVER R.R. CO.	4.00
S19	05-12-25	OHIO RIVER R.R. CO.	12.8
S20	05-12-24	W.V. DEPT. OF HIGHWAYS	0.964
S21	05-12-24.3	CNX LAND RESOURCES, INC.	18.523
S22	05-12-24.1	W.V. DEPT. OF HIGHWAYS	0.99
S23	05-12-23.2	CONSOLIDATION COAL COMPANY MURRAY ENERGY	12.50
S24	05-12-6.2	CONSOLIDATION COAL COMPANY MURRAY ENERGY	25.50
S25	05-12-6.1	W.V. DEPT. OF HIGHWAYS	0.31
S26	05-12-23.3	W.V. DEPT. OF HIGHWAYS	0.111
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	JONILYN LEON	0.457
S35	05-12-19	JONILYN 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
S52	05-14-12	DALE R. GALLAHER, ET AL	135.100
S53	05-14-14	ROBERT L. SHIELD, ET AL	29.05
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
S65	05-19-11	ERNIE L. ANDERSON, ET UX	0.80
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

SURFACE HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,401,607.33
E) 516,705.94

LANDING POINT 1
UTM. NAD83, ZONE 17
IN METERS
N) 4,401,841.86
E) 516,679.09

BOTTOM HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,404,059.22
E) 514,154.44



P.S.
708

David L Jackson

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Office of Oil and Gas

JUL 10 2020

WV Department of
Environmental Protection



**TUG HILL
OPERATING**

OPERATOR'S
WELL #: Blake N-2HM
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV
API #: 47-051-02049

WELL PLAT

PAGE 2 OF 2

DATE: 07/08/2020