

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

RECEIVED
Office of Oil and Gas
OCT 11 2022
WV Department of
Environmental Protection

API 47-051-02317 County Marshall District Franklin
Quad Powhatan Point 7.5' Pad Name McMasters Field/Pool Name _____
Farm name Robert L. Shields, et al Well Number McMasters N-11HU
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 4,401,152.77 Easting 518,196.99
Landing Point of Curve Northing 4,400,942.91 Easting 517,583.81
Bottom Hole Northing 4,405,476.62 Easting 514,976.37

Elevation (ft) 1207.75' 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 10/26/2020 Date drilling commenced spud: 6/8/2021 blg rig: 9/27/2021 Date drilling ceased 1/8/2022
Date completion activities began 7/24/2022 Date completion activities ceased 8/9/2022
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 828' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1332' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 727-733', 822-828' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

APPROVED
Reviewed by: [Signature]
10-13-2022
STRAB 10/21/2022

API 47-051-02317

Farm name Robert L. Shields, et al

Well number McMasters N-11HU

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	26"	20"	936'	NEW	106.5#	N/A	Y
Coal							
Intermediate 1	17 1/2"	13 3/8"	2,653'	NEW	54.5#	N/A	Y
Intermediate 2	12 1/4"	9 5/8"	10,235'	NEW	47#	N/A	Y
Intermediate 3							
Production	8 1/2"	5 1/2"	28,966'	NEW	23#	N/A	Y
Tubing		2 7/8"	14,483'	NEW	4.7#	N/A	Y
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	333	15.6	1.18	392.94	0	8
Surface	A	1605	15.6	1.19	1909.95	0	8
Coal							
Intermediate 1	A	2120	15.6	1.18	2501.6	0	8
Intermediate 2	A	4070	14.5	1.28	5209.6	0	8
Intermediate 3							
Production	A	7050	16.5	1.03	7261.5	0	8
Tubing							

Drillers TD (ft) 29,043'

Loggers TD (ft) n/a

Deepest formation penetrated Trenton

Plug back to (ft) n/a

Plug back procedure n/a

RECEIVED
Office of Oil and Gas

Kick off depth (ft) 10,508'

OCT 11 2022

Check all wireline logs run

- caliper density deviated/directional induction
 neutron resistivity gamma ray temperature sonic

WYOMING DEPARTMENT OF
Environmental Protection

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 _____

OCT 11 2022

Department of
Energy and Mineral Production

McMasters N-11HU
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	76.00	12196	12584	6883	247220	6,981	0
2	84.51	12407	12668	6730	504720	8,616	0
3	81.73	12141	12651	8329	508280	8,514	0
4	84.47	12316	12652	7392	509560	8,524	0
5	84.72	12352	12543	7108	509240	8,422	0
6	86.49	12250	12727	8643	509660	8,525	0
7	86.05	11859	12102	8770	504780	8,273	0
8	88.00	12252	12621	7541	504720	8,180	0
9	87.89	11915	12115	7038	296460	7,242	0
10	84.04	11584	11993	7182	507980	8,409	0
11	86.79	11940	12302	7368	510780	8,301	0
12	87.38	11954	12250	7989	509740	8,313	0
13	84.61	11339	11571	7656	498980	8,149	0
14	87.27	11775	12022	7529	499960	8,247	0
15	87.64	11755	12218	7837	499049	8,190	0
16	87.63	11623	11807	7771	507080	8,283	0
17	86.24	11679	12023	7255	508800	8,367	0
18	87.37	11654	11989	6679	509940	8,486	0
19	88.28	11309	11663	7131	501860	8,436	0
20	88.23	11492	11823	7229	508060	8,287	0
21	87.90	11279	11590	7770	507520	8,366	0
22	87.93	11021	11324	7657	500940	8,167	0
23	89.35	11134	11437	7825	499629	8,167	0
24	89.27	11098	11413	8394	500340	8,078	0
25	89.91	11167	11561	7799	498960	8,131	0
26	89.67	11332	11578	7517	501600	8,128	0
27	89.16	11228	11478	7445	507140	8,086	0
28	89.22	11306	11514	8082	510020	8,200	0
29	88.64	11493	11934	7707	509840	9,842	0
30	86.59	11438	11784	7963	508880	11,070	0
31	88.14	11662	11896	8075	509880	8,200	0
32	88.43	11570	11769	7821	504240	8,113	0

10/21/2022

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)
33	83.40	11347	11874	7649	490640	9,544	0
34	87.14	11903	12258	7653	503560	8,150	0
35	83.83	11614	12049	7452	455860	7,561	0
36	88.44	11802	12216	7717	500960	8,088	0
37	89.42	11659	12038	8437	497760	8,084	0
38	88.15	11222	11451	7916	495620	8,099	0
39	88.97	11415	11830	8221	500700	8,010	0
40	86.97	11160	12019	8519	504080	9,409	0
41	90.60	11239	11544	8662	506720	8,132	0
42	89.51	11233	11486	9177	501560	8,129	0
43	87.56	10671	10896	8389	508500	8,135	0
44	86.16	11041	11517	8776	509780	8,097	0
45	87.82	11170	11773	7500	498360	7,968	0
46	89.58	11078	11309	8644	498860	8,034	0
47	87.45	10782	11049	8399	504900	7,976	0
48	89.77	11008	11322	8996	504400	9,082	0
49	86.95	10841	11141	8077	393360	7,029	0
50	88.84	10878	11032	8525	495060	7,869	0
51	87.64	10675	10970	8246	501480	7,908	0
52	88.71	10946	11344	8343	508440	7,944	0
53	87.62	10771	11126	8212	505560	7,908	0
54	88.10	11018	11296	8352	454000	7,491	0
55	86.82	10995	11533	7948	499660	8,838	0
56	87.43	11002	11266	8097	499220	7,846	0
57	87.41	10836	10994	8475	497240	7,879	0
58	88.56	10875	11101	8851	502480	7,821	0
59	86.82	10824	11210	8182	505220	8,982	0
60	87.98	10790	11142	8498	494640	7,655	0
61	87.50	10704	10908	8836	498100	7,698	0
62	88.84	10711	10917	8472	493580	7,715	0
63	86.94	10680	10829	8155	499540	7,799	0
64	87.70	10851	11239	7966	507840	7,853	0
65	88.91	10932	11336	8282	505700	7,815	0
66	88.81	10716	11020	8568	498020	7,715	0

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)
67	88.96	10719	10992	7778	509700	7,829	0
68	88.88	10433	10652	8882	497100	7,595	0
69	89.16	10647	11043	8468	504220	7,727	0
70	88.61	10550	11119	8731	505980	8,259	0
71	87.20	10679	10834	8178	508720	7,777	0
72	88.31	10744	10990	7909	508720	7,774	0
73	89.11	10838	11256	7844	501340	7,722	0
74	89.93	10577	11098	7731	505580	7,756	0
75	89.93	10698	11234	8370	506120	7,717	0
76	88.49	10359	10654	8167	501880	7,652	0
77	88.92	10294	10531	8274	504610	7,585	0
78	88.83	10594	11011	7801	506200	7,701	0
79	89.24	10504	10746	7944	504440	7,638	0
80	89.02	10318	10459	8637	504900	7,663	0
81	89.22	10601	10866	8093	496450	7,600	0
82	89.64	10272	10442	7696	495900	7,592	0
83	89.33	10420	10590	8209	497940	7,595	0
84	89.18	10319	10698	8049	481660	7,399	0
85	89.00	10073	10073	8657	495700	7,538	0
86	88.04	10039	10256	8492	510860	7,767	0

**MCMASTERS N-11HU
PEFORATION RECORD**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
1	7/24/2022	28,767	28,818	12	Utica
2	7/24/2022	28,540	28,716	48	Utica
3	7/24/2022	28,340	28,516	48	Utica
4	7/25/2022	28,141	28,317	48	Utica
5	7/25/2022	27,941	28,117	48	Utica
6	7/25/2022	27,742	27,918	48	Utica
7	7/25/2022	27,542	27,718	48	Utica
8	7/26/2022	27,343	27,519	48	Utica
9	7/26/2022	27,143	27,319	48	Utica
10	7/26/2022	26,944	27,120	48	Utica
11	7/27/2022	26,744	26,920	48	Utica
12	7/27/2022	26,545	26,721	48	Utica
13	7/27/2022	26,345	26,521	48	Utica
14	7/27/2022	26,146	26,322	48	Utica
15	7/28/2022	25,946	26,122	48	Utica
16	7/28/2022	25,747	25,923	48	Utica
17	7/28/2022	25,547	25,723	48	Utica
18	7/28/2022	25,348	25,524	48	Utica
19	7/29/2022	25,148	25,324	48	Utica
20	7/29/2022	24,949	25,125	48	Utica
21	7/29/2022	24,749	24,925	48	Utica
22	7/30/2022	24,550	24,726	48	Utica
23	7/30/2022	24,350	24,526	48	Utica
24	7/30/2022	24,151	24,327	48	Utica
25	7/30/2022	23,951	24,127	48	Utica
26	7/31/2022	23,752	23,928	48	Utica
27	7/31/2022	23,552	23,728	48	Utica
28	7/31/2022	23,353	23,529	48	Utica
29	7/31/2022	23,153	23,329	48	Utica
30	7/31/2022	22,954	23,130	48	Utica
31	8/1/2022	22,754	22,930	48	Utica
32	8/1/2022	22,555	22,731	48	Utica
33	8/1/2022	22,355	22,531	48	Utica
34	8/2/2022	22,156	22,332	48	Utica
35	8/2/2022	21,956	22,132	48	Utica
36	8/3/2022	21,757	21,933	48	Utica
37	8/3/2022	21,557	21,733	48	Utica
38	8/3/2022	21,358	21,534	48	Utica
39	8/4/2022	21,158	21,334	48	Utica
40	8/4/2022	20,959	21,135	48	Utica
41	8/5/2022	20,759	20,935	48	Utica

10/21/2022

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
42	8/5/2022	20,560	20,736	48	Utica
43	8/5/2022	20,360	20,536	48	Utica
44	8/6/2022	20,161	20,337	48	Utica
45	8/6/2022	19,961	20,137	48	Utica
46	8/7/2022	19,762	19,938	48	Utica
47	8/8/2022	19,562	19,738	48	Utica
48	8/8/2022	19,363	19,539	48	Utica
49	8/8/2022	19,163	19,339	48	Utica
50	8/9/2022	18,964	19,140	48	Utica
51	8/10/2022	18,764	18,940	48	Utica
52	8/10/2022	18,565	18,741	48	Utica
53	8/10/2022	18,365	18,541	48	Utica
54	8/11/2022	18,166	18,342	48	Utica
55	8/11/2022	17,966	18,142	48	Utica
56	8/11/2022	17,767	17,943	48	Utica
57	8/12/2022	17,567	17,743	48	Utica
58	8/12/2022	17,368	17,544	48	Utica
59	8/12/2022	17,168	17,344	48	Utica
60	8/12/2022	16,969	17,145	48	Utica
61	8/13/2022	16,769	16,945	48	Utica
62	8/13/2022	16,570	16,746	48	Utica
63	8/13/2022	16,370	16,546	48	Utica
64	8/14/2022	16,171	16,347	48	Utica
65	8/14/2022	15,971	16,147	48	Utica
66	8/14/2022	15,772	15,948	48	Utica
67	8/14/2022	15,572	15,748	48	Utica
68	8/15/2022	15,373	15,549	48	Utica
69	8/15/2022	15,173	15,349	48	Utica
70	8/15/2022	14,974	15,150	48	Utica
71	8/15/2022	14,774	14,950	48	Utica
72	8/15/2022	14,575	14,751	48	Utica
73	8/16/2022	14,375	14,551	48	Utica
74	8/16/2022	14,176	14,352	48	Utica
75	8/16/2022	13,976	14,152	48	Utica
76	8/16/2022	13,777	13,953	48	Utica
77	8/17/2022	13,577	13,753	48	Utica
78	8/17/2022	13,378	13,554	48	Utica
79	8/17/2022	13,178	13,354	48	Utica
80	8/17/2022	12,979	13,155	48	Utica
81	8/18/2022	12,779	12,955	48	Utica
82	8/18/2022	12,580	12,756	48	Utica
83	8/18/2022	12,380	12,556	48	Utica
84	8/18/2022	12,181	12,357	48	Utica
85	8/19/2022	11,981	12,157	48	Utica

10/21/2022

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
86	8/19/2022	11,782	11,958	48	Utica

McMasters N-11HU

Lithology Information

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	1911	2004	1912	2005	Sandstone
Big Lime	2004	2059	2005	2060	Limestone
Big Injun	2059	2355	2060	2357	Sandstone
Weir	2355	2542	2357	2545	Sandstone
Berea	2542	2844	2545	2848	Sandstone
Gordon	2844	2906	2848	2910	Sandstone
Fifty Foot	2906	3480	2910	3490	Sandstone
Speechley	3480	4879	3490	4913	Sandstone
Benson	4879	5260	4913	5300	Sandstone
Alexander	5260	5849	5300	5900	Siltstone
Rhinestreet	5849	6277	5900	6334	Black Shale
Middlesex	6277	6353	6334	6411	Black Shale
Geneseo/Burkett	6353	6379	6411	6438	Black Shale
Tully	6379	6411	6438	6470	Limestone
Hamilton	6411	6461	6470	6521	Gray Shale
Marcellus	6461	6511	6521	6572	Black Shale
Onondaga	6511	6732	6572	6797	Limestone
Oriskany	6732	6828	6797	6896	Sandstone
Heiderberg	6828	7200	6896	7282	Limestone
Salina	7200	8209	7282	8338	Salt/Anhydrite/LS
Lockport	8209	8572	8338	8720	Dolomite
Rose Hill	8572	8848	8720	9011	Shale
Packer Shell	8848	9055	9011	9230	Limestone
Clinton/Tuscarora	9055	9144	9230	9325	Sandstone
Juniata/Queenston	9144	9894	9325	10109	Red Shale
Reedsville	9894	10862	10109	11155	Gray Shale
Utica	10862	11122	11155	11621	Black Shale
Point Pleasant	11122	-	11621	-	Shale/Limestone

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date	7/24/2022
Job End Date	8/19/2022
State	West Virginia
County	Marshall
API Number	47-051-02317-00-00
Operator Name	Tug Hill Operating, LLC
Well Name and Number	McMasters N 11HU
Latitude	39.76010700
Longitude	-80.78756400
Datum	NAD27
Federal Well	NO
Indian Well	NO
True Vertical Depth	11,016
Total Base Water Volume (gal)	29,208,564
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	Tug Hill Operating	Carrier/Base Fluid	Water	7732-18-5	100.00000	84.7853	None
Sand (40/70 White Proppant)	Tug Hill Operating	Proppant	Silica Substrate	14808-60-7	100.00000	11.6484	None
Sand (100 Mesh Proppant)	Tug Hill Operating	Proppant	Silica Substrate	14808-60-7	100.00000	3.1715	None
Hydrochloric Acid (7.5%)	CNR	Acidizing	Water	7732-18-5	85.00000	0.2226	None
			Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	37.00000	0.0969	None
StimStream FR 9800	Chemstream	Friction Reducer	Butene, homopolymer	9003-29-6	25.00000	0.0217	None
			Alkanes, C16-20-iso-	90622-59-6	25.00000	0.0217	None
MC MX 9-4743	Multi-Chem	Biocide	Ethoxylated alcohols (C12-18)	58213-23-0	3.00000	0.0026	None
ID-7750W	Multi-Chem	Scale Inhibitor	Sodium Nitrate	7631-99-4	60.00000	0.0215	None

			Methanol	67-56-1	60.00000	0.00489	None
			Phosphonic Acid Salt	Proprietary	5.00000	0.00041	None
ProHib 100	CNR	Acid Inhibitor					
			2-Butoxyethanol	111-76-2	60.00000	0.00049	None
			Proprietary material	Proprietary	30.00000	0.00025	None
			Proprietary non-ionic surfactant	Proprietary	20.00000	0.00016	None
			Proprietary corrosion inhibitor	Proprietary	10.00000	0.00008	None
			Proprietary ethoxylated alcohol	Proprietary	10.00000	0.00008	None
ProFE 105	CNR	Iron Control					
			Citric Acid	77-92-9	20.00000	0.00020	None
			Acetic Acid	64-19-7	5.00000	0.00005	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					
			Water	7732-18-5	85.00000	0.22260	
			Butene, homopolymer	9003-29-6	25.00000	0.02173	
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00261	
			Phosphonic Acid Salt	Proprietary	5.00000	0.00041	
			Proprietary material	Proprietary	30.00000	0.00025	
			Proprietary non-ionic surfactant	Proprietary	20.00000	0.00016	
			Proprietary corrosion inhibitor	Proprietary	10.00000	0.00008	
			Proprietary ethoxylated alcohol	Proprietary	10.00000	0.00008	
			Acetic Acid	64-19-7	5.00000	0.00005	

* Total Water Volume sources may include fresh water, produced water, and/or recycled water

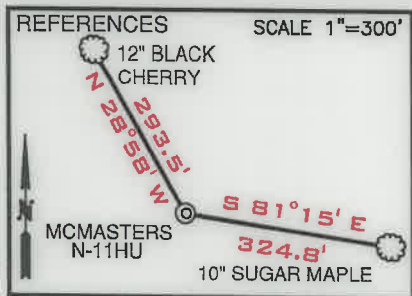
** Information is based on the maximum potential for concentration and thus the total may be over 100%

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)

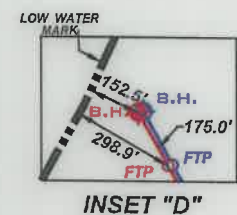
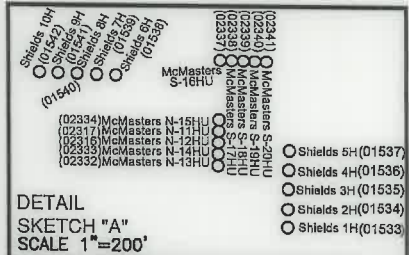
(TH) 10,615'

(BH) 9,433'

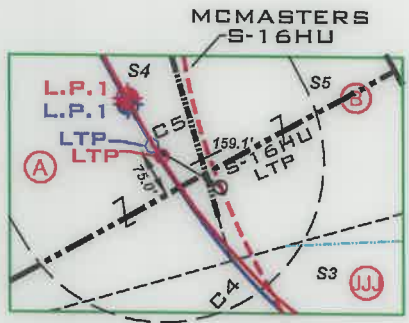
**MCMASTERS LEASE
WELL N-11HU
608.7765± ACRES**



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



ASDRILLED LEG
PERMITTED LEG



(+) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

INSET "C" NTS

SURFACE HOLE
UTM. NAD83, ZONE 17
IN METERS

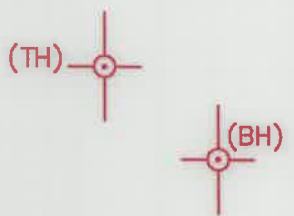
N) 4,401,152.77
E) 518,196.99

LANDING POINT 1
UTM. NAD83, ZONE 17
IN METERS

N) 4,400,942.91
E) 517,583.81

BOTTOM HOLE
UTM. NAD83, ZONE 17
IN METERS

N) 4,405,476.62
E) 514,976.37



LINE	BEARING	DISTANCE
L1	N 71°01' W	1424.78'
L2	S 41°00' W	1285.15'
L3	S 47°39' W	1509.71'

LEGEND

- LEASE TRACTS
- SURFACE TRACTS
- WELL LATERAL
- POINT PLEASANT LEGS
- UNIT BOUNDARY
- (A) LEASE # (SEE 5A1 FORM)
- 400' BORE PATH OFFSET
- 500' WELL BORE OFFSET
- (FTP) PROPOSED FIRST TAKE POINT
- (LTP) PROPOSED LAST TAKE POINT

CURVE	CHORD BEARING	CHORD LENGTH	RADIUS	ARC LENGTH
C1	S 59°26' W	81.76'	93.38'	84.63'
C2	S 48°43' W	39.95'	77.44'	40.41'
C3	S 47°02' W	172.00'	320.79'	174.13'
C4	S 75°27' W	136.40'	162.88'	140.75'
C5	N 69°38' W	124.09'	242.82'	125.48'
C6	N 48°55' W	178.88'	735.56'	179.33'
C7	N 39°23' W	287.04'	1795.07'	287.35'
C8	N 30°20' W	230.39'	1879.13'	230.54'

- NOTES**
- BORE PATH BASED ON GRID NORTH.
 - NO WATER WELLS WITHIN 130 250' OF WELL WERE FOUND. NO DWELLINGS WITHIN 825' OF PAD CENTER WERE FOUND.
 - OWNERSHIP TAKEN FROM PUBLIC RECORDS OF MARSHALL COUNTY, WV IN MARCH, 2019. COORDINATES AND WELL TIES BASED UPON DIFFERENTIAL GPS MEASUREMENTS.
 - WELL LOCATION REFERENCES ARE BASED UPON THE MAGNETIC MERIDIAN.
 - ALL DEEP WELLS SHOWN ON THIS PLAT.
 - BOUNDARIES ALONG ROADWAYS ARE BASED UPON MEMORANDUM BY DICKIE, MCCAMEY & CHILCOTE, P.C. FILE 0058304.0401147

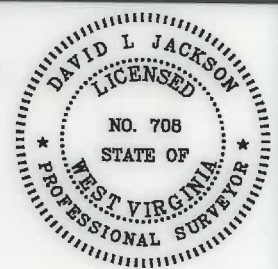
FILE NUMBER _____
DRAWING NUMBER: MCMASTERS_N-11HU_REV4
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: 1/200
PROVEN SOURCE OF ELEVATION: SUBMETER MAPPING
GRADE GPS

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

DATE: OCTOBER 05, 2022
OPERATORS WELL NO. MCMASTERS N-11HU
API WELL NO. _____

47-051-02317
STATE COUNTY PERMIT

LOCATION ELEVATION 1207.75' WATERSHED (HUC 10) FISH CREEK (HUC-10)
DISTRICT FRANKLIN COUNTY MARSHALL
QUADRANGLE POWHATAN POINT 7.5' LEASE NUMBER SEE WW-6A1 FORM

SURFACE OWNER ROBERT L. SHIELDS, ET AL ACREAGE 104.10/21/2022
OIL & GAS ROYALTY OWNER ROBERT L. SHIELDS, ET AL LEASE ACREAGE 104.11

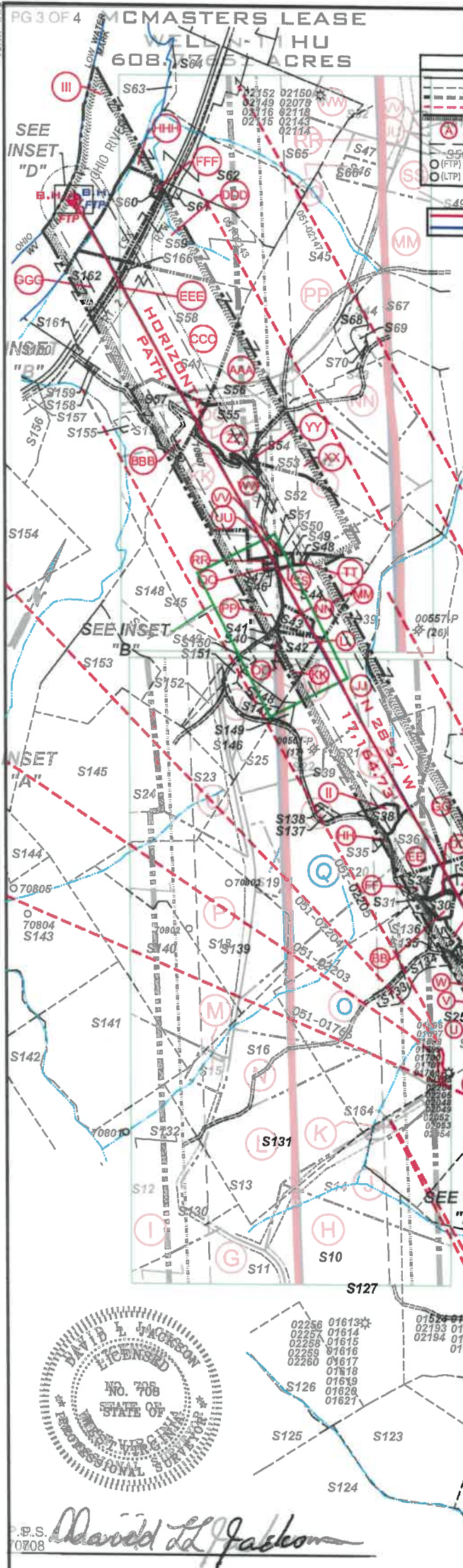
PROPOSED WORK: DRILL ASDRILLED CONVERT _____ DRILL DEEPER _____ REDRILL _____ FRACTURE OR STIMULATE _____ PLUG OFF OLD FORMATION _____
PERFORATE NEW FORMATION _____ OTHER PHYSICAL CHANGE (SPECIFY) _____ PLUG & ABANDON _____ CLEAN OUT & REPLUG _____

TARGET FORMATION POINT PLEASANT ESTIMATED DEPTH TVD: 10,887' TMD: 29,043'

WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DARREN BROWN, CT CORP
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107 ADDRESS 5098 WASHINGTON STREET WEST, SUITE 407 CHARLESTON, WV 25313-1561

COUNTY NAME
PERMIT

FORM WW6

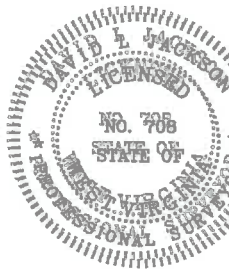


Number	TAX MAP - PARCEL	ADJONER OWNER	ACRES
S1	KKK 05-18-02	Mark E. Yoho, Et Ux	55.948
S2	05-18-24	Mark A. Yoho	15.436
S3	05-18-18	Mark A. Yoho	15.263
S4	05-19-24	David E. Yoho & Mark E. Yoho	9.976
S5	05-19-17	Roger J. & Beth E. James	9.977
S6	05-19-25	Robert L. & Rebecca A. Shields	2.307
S7	05-19-26	Robert L. Shields	11.612
S8	05-19-11	James & Sherry Beagle	18.356
S9	05-19-14	David E. Yoho & Mark E. Yoho	7.041
S10	05-19-27	David E. Yoho & Mark E. Yoho	56.899
S11	05-19-28	Charles F. & Diane L. Haynes	8.779
S12	05-19-31	Diana Henry Haynes & Carol C. Henry	62.908
S13	05-18-01	Jasper N. Burch, Et Al-Trustees	0.397
S14	05-19-32	Eric R. W. & Ashley A. Huggins	2.911
S15	05-19-30.1	Ernie & Tammy Anderson	19.037
S16	05-19-30	Russell Blake, Et Ux	66.4
S17	05-19-19	Cary Herran	0.72
S18	05-19-15	Ernie L. & Tammy L. Anderson	10.961
S19	05-19-29	Rona Lee Rice & Charles Franklin Mccardle	94.925
S20	05-19-12	Ernie L. Anderson, Et Ux	5.33
S21	05-19-19	Penny Elaine Anderson	0.08
S22	05-19-10	Wilbert H. Bungalow	0.08
S23	05-19-10	Ernie L. Anderson, Et Ux	0.08
S24	05-19-11	Ernie L. Anderson, Et Ux	0.08
S25	05-19-11	CNX Gas Company	1.5269
S26	05-19-11	Adam T. & Jesse L. Anderson	1.9709
S27	05-19-18	Robert L. Shields	0.08
S28	05-19-7.5	Olan Rutan	0.08
S29	05-19-7.1	Olan V. Rutan	0.08
S30	05-19-7.2	Olan V. Rutan	0.08
S31	05-19-5.1	Olan V. Rutan	0.08
S32	05-19-0	Olan V. Rutan	0.08
S33	05-19-4	Beth Kay Meadows, Rebecca Ann Shields, & Olan V. Rutan	0.08
S34	05-19-06	Belinda Kay Meadows, Rebecca Ann Shields, & Olan V. Rutan	0.08
S35	S72 05-19-05	Margirene K. ...	0.08
S36	EE 05-14-11	Dale R. Gallahue, Et Al	0.08
S37	EE 05-14-2	Dale R. Gallahue, Et Al	0.08
S38	II 05-14-1.4	Wanda P. ...	0.08
S39	05-14-10	Wanda P. ...	0.08
S40	K 05-14-09	Walter V. Straight Jr. Et Ux	9.311
S41	05-14-19	Brian A. Charlotte Mull	0.92
S42	LL 05-14-9.6	Maria T. Flores	6.024
S43	MM 05-14-9.2	Maria T. Flores	2.882
S44	MM 05-14-9.2	Maria T. Flores	25.0
S45	PP 05-14-05	Dorina K. & Leroy Anderson	110.5
S46	QQ 05-11-19	Joni Lyn Leon	0.457
S47	05-12-20	Joni Lyn Leon	0.457
S48	05-12-7	Joni Lyn Leon	0.752
S49	05-12-11	Joni Lyn Leon	1.118
S50	05-12-16	Gary E. Gibson, Et Al	0.46
S51	05-12-16	Gary E. Gibson, Et Al	0.104
S52	05-12-21	Edward Gibson-Life	73.436
S53	05-12-14	Linda Halpilton, Et Al	17.495
S54	05-12-15	Woodland Hill Church of God TRS	0.375
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SURFACE HOLE
UTM. NAD83, ZONE 17
IN METERS
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E 518,797.09

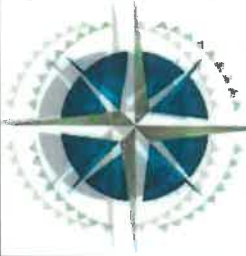
LANDING POINT 1
UTM. NAD83, ZONE 17
IN METERS
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E 517,584.21

BOTTOM HOLE
UTM. NAD83, ZONE 17
IN METERS
N 4,405,477.65
E 514,980.86



D. S. David L. Jackson
0708

10/21/2022



TUG HILL
OPERATING

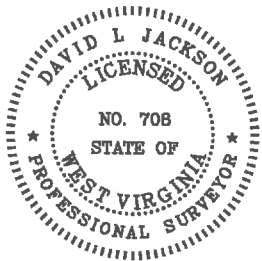
OPERATOR'S	WELIPIRAT
WELL #:	MCMASTERS-N-11HU
DISTRICT:	Franklin
COUNTY:	Marshall
STATE:	WV
FILE #:	47476051202317
	PAGE 2 OF 4
	DATE: 10/06/2022

PG 4 OF 4 MCMASTERS LEASE
WELL N-11HU
608.7765± ACRES

Table with columns: Lease ID, Tag, Parcel, Grantor, Lessor, Etc., Deed Book/Page. Lists various lease agreements and their details.

Table with columns: Number, TAX MAP -PARCEL, ADJOINER OWNER, ACRES. Lists adjacent parcels and their owners.

* Co-tenancy utilization - At least 7 mineral owners in tract. At least 75% of the royalty owners have executed a lease



P.S. 708

David L Jackson



TUG HILL OPERATING

OPERATOR'S WELL #: McMasters N11-HU
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV
API #: 47-051-02317

WELL PLAT
PAGE 4 OF 4
DATE: 10/05/2022

10/21/2022