

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 - 02334 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-15HU
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 4,401,156.34 Easting 518,197.07
Landing Point of Curve Northing 4,401,690.80 Easting 518,906.17
Bottom Hole Northing 4,404,404.22 Easting 517,358.25

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 9/15/2020 Date drilling commenced spud:6/5/2021 big rig: 10/20/2021 Date drilling ceased 12/10/2021
Date completion activities began 7/8/2022 Date completion activities ceased 7/22/2022
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:
SK 10-13-2022
STR 10/21/2022

API 47-051-02334

Farm name Robert L. Shields, et al

Well number McMasters N-15HU

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"	923'	NEW	106.5#	N/A	Y
Coal							
Intermediate 1	17 1/2"	13 3/8"	2,651'	NEW	54.5#	N/A	Y
Intermediate 2	12 1/4"	9 5/8"	10,473'	NEW	47#	N/A	Y
Intermediate 3							
Production	8 1/2"	5 1/2"	22,477'	NEW	23#	N/A	Y
Tubing		2 7/8"	11,768'	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	452	15.6	1.18	533.36	0	8
Surface	A	1610	15.6	1.19	1915.9	0	8
Coal							
Intermediate 1	A	2115	15.6	1.18	2495.7	0	8
Intermediate 2	A	4040	14.5	1.28	5171.2	0	8
Intermediate 3							
Production	A	5465	16.5	1.03	5628.95	0	8
Tubing							

Drillers TD (ft) 22,517'

Loggers TD (ft) n/a

Deepest formation penetrated Trenton

Plug back to (ft) n/a

Plug back procedure n/a

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Kick off depth (ft) 11,268'

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 - 02334 Farm name Robert L. Shields, et al Well number McMasters N-15HU

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.

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.

10/21/2022

API 47- 051 - 02334 Farm name Robert L. Shields, et al Well number McMasters N-15HU

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>POINT PLEASANT</u>	<u>11250'-11048'</u> TVD	<u>12160'-22517'</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 7538 psi Bottom Hole _____ psi DURATION OF TEST 4 hrs

OPEN FLOW Gas 1932 mcfpd Oil 0 bpd NGL 0 bpd Water 336 bpd GAS MEASURED BY Estimated Orifice Pilot

<u>LITHOLOGY/ FORMATION</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H₂S, ETC)</u>
	<u>DEPTH IN FT NAME TVD</u>	<u>DEPTH IN FT TVD</u>	<u>DEPTH IN FT MD</u>	<u>DEPTH IN FT MD</u>	
	<u>0</u>		<u>0</u>		
<u>*see attached</u>					

Please insert additional pages as applicable.

Drilling Contractor Nabors Drilling USA
Address 505 West Greens Road, Suite 1000 City Houston State TX Zip 77067

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

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

Stimulating Company PRO-FRAC
Address 333 Shops Boulevard City Willow Park State TX Zip 76087

Please insert additional pages as applicable.

Completed by Amy L. Morris Telephone 304-376-0111
Signature Amy L. Morris Title Permitting Specialist - Appalachia Region Date 10-10-2022

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

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McMasters N-15HU
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	75.00	11221	11789	7175	256020	7,088	0
2	85.00	11794	12194	7641	500020	8,104	0
3	87.00	11787	12035	7740	503920	8,099	0
4	88.00	11521	11868	7909	505420	8,108	0
5	89.00	11722	12046	8133	500580	8,036	0
6	87.00	11715	12052	8347	501340	7,951	0
7	87.00	11914	12234	7741	502760	8,074	0
8	84.00	11766	12435	7598	507220	8,100	0
9	85.00	11588	11841	8321	490920	7,867	0
10	87.00	11581	11890	8350	509180	8,045	0
11	87.00	11661	11845	7827	497580	7,899	0
12	87.00	11572	11868	8232	501360	7,944	0
13	85.00	11479	11772	8254	507920	7,975	0
14	87.00	11502	11836	8316	508820	7,974	0
15	88.00	11669	11977	8246	487560	8,028	0
16	90.00	11604	11939	8334	508280	8,040	0
17	88.00	11253	11695	9000	509960	7,957	0
18	88.00	11093	11859	8044	509460	7,925	0
19	87.00	10858	11216	7809	509020	8,049	0
20	88.00	10887	11150	8005	500300	7,925	0
21	88.00	10797	11089	7866	503620	7,884	0
22	87.00	10690	10995	8454	509580	9,931	0
23	88.00	10767	10933	8533	507650	7,925	0
24	88.00	10669	10886	8238	500080	7,902	0
25	88.00	10747	11211	8171	499960	7,843	0
26	88.00	10638	10899	6846	503240	7,885	0
27	89.00	10669	10892	9131	502040	7,926	0
28	90.00	10771	11090	8133	505340	7,969	0
29	88.00	10576	10738	8113	500420	7,823	0
30	90.00	10504	10773	9278	509300	7,902	0
31	90.00	10542	10777	8568	508800	7,932	0
32	90.00	10518	10738	8241	497820	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)
33	90.00	10547	10705	8020	501400	7,765	0
34	89.00	10620	10856	9140	509980	7,888	0
35	90.00	10514	11088	8529	510440	7,916	0
36	90.00	10551	10856	8395	498520	7,723	0
37	90.00	10487	10728	7792	487590	7,627	0
38	89.00	10393	10681	8331	502060	7,819	0
39	90.00	10088	10326	8211	499120	7,800	0
40	90.00	10212	10653	8668	510080	7,802	0
41	90.00	9936	10247	7797	506080	7,824	0
42	89.00	9678	9858	8726	505400	7,865	0
43	89.00	9451	9654	8196	498880	7,751	0
44	87.00	9697	10195	7628	509080	7,680	0
45	88.00	9925	10339	7961	502020	7,714	0
46	90.00	9592	9713	8353	498480	7,706	0
47	89.00	9739	10270	7819	507460	7,779	0
48	88.00	9714	9860	7898	510720	7,746	0
49	88.00	9756	9946	8170	497820	7,601	0
50	89.00	9925	10082	8767	509720	7,795	0
51	89.00	9323	9629	8389	513200	7,950	0

**MCMASTERS N-15HU
PERFORATION RECORD**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
1	7/8/2022	22,280	22,331	12	Utica
2	7/8/2022	22,051	22,228	48	Utica
3	7/8/2022	21,849	22,027	48	Utica
4	7/9/2022	21,647	21,825	48	Utica
5	7/9/2022	21,445	21,623	48	Utica
6	7/9/2022	21,244	21,421	48	Utica
7	7/10/2022	21,042	21,219	48	Utica
8	7/10/2022	20,840	21,018	48	Utica
9	7/10/2022	20,638	20,816	48	Utica
10	7/10/2022	20,436	20,614	48	Utica
11	7/11/2022	20,235	20,412	48	Utica
12	7/11/2022	20,033	20,210	48	Utica
13	7/11/2022	19,831	20,009	48	Utica
14	7/11/2022	19,629	19,807	48	Utica
15	7/12/2022	19,427	19,605	48	Utica
16	7/12/2022	19,226	19,403	48	Utica
17	7/12/2022	19,024	19,201	48	Utica
18	7/13/2022	18,822	19,000	48	Utica
19	7/13/2022	18,620	18,798	48	Utica
20	7/13/2022	18,418	18,596	48	Utica
21	7/14/2022	18,217	18,394	48	Utica
22	7/14/2022	18,015	18,192	48	Utica
23	7/14/2022	17,813	17,991	48	Utica
24	7/14/2022	17,611	17,789	48	Utica
25	7/15/2022	17,409	17,587	48	Utica
26	7/15/2022	17,208	17,385	48	Utica
27	7/15/2022	17,006	17,183	48	Utica
28	7/16/2022	16,804	16,982	48	Utica
29	7/16/2022	16,602	16,780	48	Utica
30	7/16/2022	16,400	16,578	48	Utica
31	7/16/2022	16,199	16,376	48	Utica
32	7/17/2022	15,997	16,174	48	Utica
33	7/17/2022	15,795	15,973	48	Utica
34	7/17/2022	15,593	15,771	48	Utica
35	7/18/2022	15,391	15,569	48	Utica
36	7/18/2022	15,190	15,367	48	Utica
37	7/18/2022	14,988	15,165	48	Utica
38	7/18/2022	14,786	14,964	48	Utica
39	7/19/2022	14,584	14,762	48	Utica
40	7/19/2022	14,382	14,560	48	Utica
41	7/19/2022	14,181	14,358	48	Utica

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
42	7/19/2022	13,979	14,156	48	Utica
43	7/20/2022	13,777	13,955	48	Utica
44	7/20/2022	13,575	13,753	48	Utica
45	7/20/2022	13,373	13,551	48	Utica
46	7/20/2022	13,172	13,349	48	Utica
47	7/21/2022	12,970	13,147	48	Utica
48	7/21/2022	12,768	12,946	48	Utica
49	7/21/2022	12,566	12,744	48	Utica
50	7/21/2022	12,364	12,542	48	Utica
51	7/22/2022	12,163	12,340	48	Utica

McMasters N-15HU

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	1925	2018	1925	2019	Sandstone
Big Lime	2018	2073	2019	2074	Limestone
Big Injun	2073	2369	2074	2370	Sandstone
Weir	2369	2556	2370	2557	Sandstone
Berea	2556	2858	2557	2860	Sandstone
Gordon	2858	2920	2860	2922	Sandstone
Fifty Foot	2920	3494	2922	3501	Sandstone
Speechley	3494	4893	3501	4923	Sandstone
Benson	4893	5274	4923	5310	Sandstone
Alexander	5274	5863	5310	5908	Siltstone
Rhinestreet	5863	6291	5908	6343	Black Shale
Middlesex	6291	6367	6343	6421	Black Shale
Geneseo/Burkett	6367	6393	6421	6447	Black Shale
Tully	6393	6425	6447	6479	Limestone
Hamilton	6425	6475	6479	6530	Gray Shale
Marcellus	6475	6525	6530	6581	Black Shale
Onondaga	6525	6742	6581	6803	Limestone
Oriskany	6742	6841	6803	6905	Sandstone
Helderberg	6841	7214	6905	7294	Limestone
Salina	7214	8236	7294	8424	Salt/Anhydrite/LS
Lockport	8236	8604	8424	8832	Dolomite
Rose Hill	8604	8882	8832	9150	Shale
Packer Shell	8882	9092	9150	9391	Limestone
Clinton/Tuscarora	9092	9182	9391	9492	Sandstone
Juniata/Queenston	9182	9955	9492	10360	Red Shale
Reedsville	9955	10954	10360	11555	Gray Shale
Utica	10954	11210	11555	12011	Black Shale
Point Pleasant	11210	-	12011	-	Shale/Limestone

Hydraulic Fracturing Fluid Product Component Information Disclosure



Job Start Date	7/8/2022
Job End Date	7/22/2022
State	West Virginia
County	Marshall
API Number	47-051-02334-00-00
Operator Name	Tug Hill Operating, LLC
Well Name and Number	McMasters N 15HU
Latitude	39.76014000
Longitude	-80.78756300
Datum	NAD27
Federal Well	NO
Indian Well	NO
True Vertical Depth	11,164
Total Base Water Volume (gal)	16,950,192
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	84.40752	None
Sand (40/70 Proppant)	Tug Hill Operating	Proppant					
Sand (100 Mesh Proppant)	Tug Hill Operating	Proppant	Silica Substrate	14808-60-7	100.00000	11.92877	None
Hydrochloric Acid (7.5%)	CNR	Acidizing	Silica Substrate	14808-60-7	100.00000	3.25424	None
SlimStream FR 9800	Chemstream	Friction Reducer	Water	7732-18-5	85.00000	0.23771	None
			Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	37.00000	0.10347	None
			Alkanes, C16-20-iso-	90622-59-6	25.00000	0.02106	None
			Butene, homopolymer	9003-29-6	25.00000	0.02106	None
			Ethoxylated alcohols (C12-18)	58213-23-0	3.00000	0.00253	None
MC MX 9-4743	Multi-Chem	Biocide	Sodium Nitrate	7631-99-4	60.00000	0.02134	None
D-7750W	Multi-Chem	Scale Inhibitor					

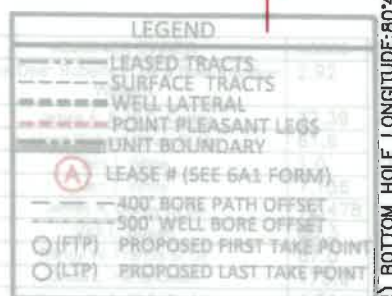
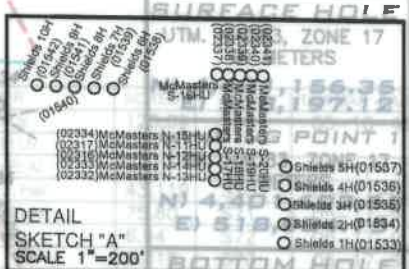
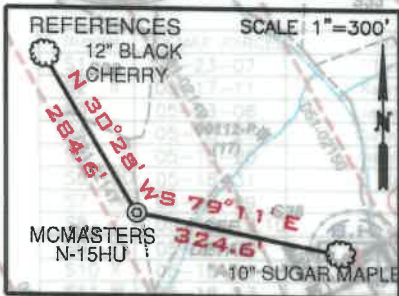
			Methanol	67-56-1	60.00000	0.00487	None
			Phosphonic Acid Salt	Proprietary	5.00000	0.00041	None
ProHib 100	CNR	Acid Inhibitor					
			2-Butoxyethanol	111-76-2	60.00000	0.00051	None
			Proprietary material	Proprietary	30.00000	0.00026	None
			Proprietary non-ionic surfactant	Proprietary	20.00000	0.00017	None
			Proprietary ethoxylated alcohol	Proprietary	10.00000	0.00009	None
			Proprietary corrosion inhibitor	Proprietary	10.00000	0.00009	None
ProFE 105	CNR	Iron Control					
			Citric Acid	77-92-9	20.00000	0.00021	None
			Acetic Acid	64-19-7	5.00000	0.00005	None
Ingredients shown above are subject to 29 CFR 1910.1200(j) 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	0.23771	
			Butene, homopolymer	9003-29-6	25.00000	0.02106	
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00253	
			Phosphonic Acid Salt	Proprietary	5.00000	0.00041	
			Proprietary material	Proprietary	30.00000	0.00026	
			Proprietary non-ionic surfactant	Proprietary	20.00000	0.00017	
			Proprietary ethoxylated alcohol	Proprietary	10.00000	0.00009	
			Proprietary corrosion inhibitor	Proprietary	10.00000	0.00009	
			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%

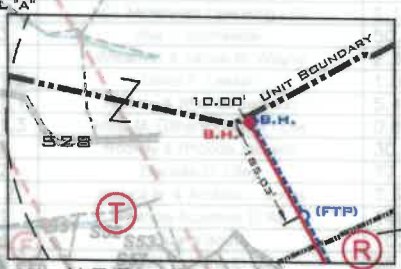
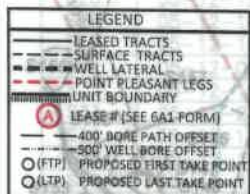
Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided. Ingredient information for chemicals subject to 29 CFR 1910.1200(j) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

MCMASTERS LEASE WELL N-15HU 553.1085± ACRES



LINE	BEARING	DISTANCE
L1	N 71°28' W	1421.46'
L2	S 40°41' W	1294.31'
L3	N 68°25' E	206.55'
L4	N 73°00' E	347.79'
L5	N 70°23' E	1090.18'
L6	N 67°23' E	453.87'

SURFACE HOLE	
UTM. NAD83, ZONE 17 IN METERS	
N	4,401,156.34
E	518,197.07
LANDING POINT 1	
UTM. NAD83, ZONE 17 IN METERS	
N	4,401,690.80
E	518,906.17
BOTTOM HOLE	
UTM. NAD83, ZONE 17 IN METERS	
N	4,404,404.22
E	517,358.25



CURVE	CHORD BEARING	CHORD LENGTH	RADIUS	ARC LENGTH
C1	N 75°13' E	396.15'	1104.41'	398.31'
C2	N 50°23' E	139.21'	252.50'	141.04'
C3	N 14°44' E	295.70'	408.97'	302.55'
C4	N 14°03' W	318.68'	1286.95'	319.50'
C5	N 25°50' W	235.37'	1325.97'	235.68'

- 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, 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 0058304.0401.147.

(+) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

FILE NUMBER: 5112
 DRAWING NUMBER: MCMASTERS N-15HU REV2
 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
 DAVID JACKSON
 LICENSED
 NO. 708
 STATE OF WEST VIRGINIA
 PROFESSIONAL SURVEYOR

JACKSON SURVEYING INC.
 P.O. Box 1480
 Clarkburg, WV 26308
 804-623-5851

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

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

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

DATE: OCTOBER 10, 2022
 OPERATORS WELL NO: MCMASTERS N-15HU
 API WELL NO: 47-051-02334
 STATE: MARSHALL COUNTY PERMIT: S87, S88

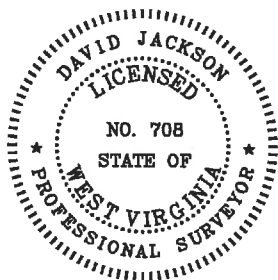
SURFACE OWNER: ROBERT L. SHIELDS, ET AL ACREAGE: 104.11
 OIL & GAS ROYALTY OWNER: ROBERT L. SHIELDS, ET AL LEASE ACREAGE: 104.11
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE (SPECIFY): **ASDRILLED**
 TARGET FORMATION: POINT PLEASANT
 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

ESTIMATED DEPTH: TVD: 11,484' TMD: 22,491'

**MCMASTERS LEASE
WELL N-15HU
553.1085± ACRES**

Number	TAX MAP -PARCEL	ADJOINER OWNER	ACRES
S137	05-19-11	Ernie L. Anderson Et Ux	0.08
S138	05-19-10	Ernie L. Anderson Et Ux	0.8125
S139	05-19-09	Penny Elaine Ashcraft	10.44
S140	05-19-20	Wilbert H. Bungard Et Ux	114.989
S141	05-19-20.3	Sidney Harmon	3.715
S142	05-19-20.1	John J. Ebert-Life	3.848
S143	05-19-7.5	Adam T. & Jesse L. Robinson	2.64
S144	05-18-1.1	Charles F. & Diana L. Haynes	0.392
S145	05-19-08	CNX Gas Company LLC	40.0
S146	05-14-07	Olan V. Rutan Et Ux	32.4801
S147	05-19-7.4	Olan V. Rutan Et Ux	1.787
S148	05-19-7.3	Olan V. Rutan Et Ux	0.341
S149	05-19-7.2	Olan Rutan	2.783
S150	05-19-7.1	Robert L. Shields Et Ux	3.399
S151	05-19-20.2	Cassandra L. Harmon	7.448
S153	05-19-05	Margjirene Keefe	126.03
S154	05-19-06	Belinda Kay Meadows, Rebecca Ann Shields & Olan V. Rutan	5.1099
S155	05-14-11	Dale R. Gallaher Et Al	12.0
S156	05-14-10.4	Adam R. & Jesse L. Robinson	3.343
S157	05-14-12	Dale R. Gallaher Et Al	135.10
S158	05-14-14	Robert L. Shields Et Al	29.05
S159	05-14-12.1	Henry Wilson Plunkert Jr.	5.0
S160	05-14-10	Wanda P. Rine-Life	107.372
S161	05-18-3.1	Nikki L. & Jonathan Stevens	2.223

Lease No.	Tax	Parcel	Lessor	Book	Page
10*14116	A	5-18-2	DONALD SHIELDS	669	367
10*14030	B	5-18-23	LOIS V YOHO	665	551
10*14109	C	5-18-3	MARTHA M RUTAN	668	636
10*17454	D	5-18-6	MARGARET A BONNETT	940	431
10*17222	E	5-18-15.3	JAMES W AND DOLLE M FOSTER	940	429
10*22432	F	5-18-15.4	EDWARD LEE BURGE SR	961	413
10*19140	G	5-18-5	TERREL L MELOTT	704	26
10*19032	H	5-18-4	JAN I ARNOLD AND MARSHAA ARNOLD	813	111
10*19339	I	5-15-10	MARK STANLEY RUCKMAN	741	75
10*19018	J	5-15-11	BENJAMIN FRANKLIN HENRY FREDRICK ALLEN HENRY	746	5
10*19337	K	5-15-12	JACK PETROCK HATTIE PETROCK	741	68
10*19337	L	5-15-14	JACK PETROCK HATTIE PETROCK	741	68
10*19309	M	5-15-2	KAREN I DENNY	798	551
10*14116	N	5-15-15	DONALD SHIELDS	669	367
10*14042	O	5-15-1	RALPH B TAYLOR	665	487
10*19030	P	5-15-3	KATHLEEN R CUSTEAD	806	39
10*14067	Q	5-14-13	REVA FRANZE	666	51
10*16913	R	5-11-15	LIONEL LAND MARY LEE PERSINGER	976	626
10*19009	S	5-12-11	LAMOYNE BAKER	665	554
10*16918	T	5-12-12.1	LIONEL LAND MARY LEE PERSINGER	976	617
10*14503	U	5-18-7	IMA LEE YOHO	756	85
10*14503	V	5-18-16	IMA LEE YOHO	756	85
10*14099	W	5-18-13	SOUTHERN CO UNTRY FARMS INC	666	489
10*14099	X	5-18-99	SOUTHERN CO UNTRY FARMS INC	666	489
10*14099	Y	5-18-30	SOUTHERN CO UNTRY FARMS INC	666	489
10*14099	Z	5-18-13.10	SOUTHERN CO UNTRY FARMS INC	666	489
10*17431	AA	5-18-29	SOUTHERN CO UNTRY FARMS INC	618	448
10*17456	BB	5-18-13.8	LORI D CARPENTER	941	223
10*14095	CC	5-17-10	JAMES A AND JILL C CORLEY	666	545
10*17780	DD	5-18-31	KENNETH E PASTALL	932	434
10*17456	EE	5-18-32.1	LORI D CARPENTER	941	223
10*17780	FF	5-18-32	KENNETH E PASTALL	932	434
10*14134	GG	5-17-12	JAMES A AND JILL C CORLEY	706	130
10*14134	HH	5-17-12.1	JAMES A AND JILL C CORLEY	706	130
10*14126	II	5-17-11	SHARON MIDCAP	697	152



P.S. 708

David L Jackson

10/21/2022



**TUG HILL
OPERATING**

OPERATOR'S
WELL #: MCMASTERS N-15HU
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV
API #: 47-051-02334

WELL PLAT
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DATE: 10/05/2022