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west virginia department of environmental protection

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Office of Oil and Gas  
601 57<sup>th</sup> Street, S.E.  
Charleston, WV 25304  
(304) 926-0450  
fax: (304) 926-0452

Harold D. Ward, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Friday, May 12, 2023  
WELL WORK PERMIT  
Horizontal 6A / New Drill

TUG HILL OPERATING, LLC  
380 SOUTHPOINTE BOULEVARD, PLAZA II  
SUITE 200  
CANONSBURG, PA 15317

Re: Permit approval for McMASTERS S-17HU  
47-051-02498-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0450.

  
James A. Martin  
Chief

Operator's Well Number: McMASTERS S-17HU  
Farm Name: ROBERT L. SHIELDS ET AL  
U.S. WELL NUMBER: 47-051-02498-00-00  
Horizontal 6A New Drill  
Date Issued: 5/12/23

Promoting a healthy environment.

05/11/2023

# PERMIT CONDITIONS 4705102499

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

## CONDITIONS

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1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Also, 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
9. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
10. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.
11. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov.

05/11/2023



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west virginia department of environmental protection

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Oil and Gas Conservation Commission  
601 57<sup>th</sup> Street SE, Charleston, WV 25304  
304-414-1239

Randall M. Albert, Chairman  
dep.wv.gov

April 26, 2023

Department of Environmental Protection  
Office of Oil and Gas  
Charleston, WV 25304

RE: Application for Deep Well Permit – API #47-051-02498

COMPANY: Tug Hill Operating, LLC

FARM: Robert L. Shields, et al

McMasters S-17HU

COUNTY: Marshall

DISTRICT: Franklin

QUAD: Powhatan Point

The deep well review of the application for the above company is **Approved to drill to Trenton for Point Pleasant completion.**

The applicant has complied with the provision of Chapter 22C-9, of the Code of West Virginia, nineteen hundred and thirty-one (1931), as amended, Oil and Gas Conservation Commission as follows:

1. Comments to Notice of Deviation filed? No.
2. Provided a certified copy of duly acknowledged and recorded consent and easement form from all surface owners? Yes
3. Provided a tabulation of all deep wells within one mile of the proposed location, including the API number of all deep wells: \*\*yes
4. Provided a plat showing that the productive interval of the well meets the requirements of the Rules of the Commission W. Va. C.S.R. § 39-1-4.2.

Sincerely,

Susan Rose  
Administrator

\*\*Corley N-9HU 47-051-01983; Corley N-10HU 47-051-01998; Burch Ridge S-7HU 47-051-02194; Burch Ridge S-6HU 47-051-02193; Blake U-7H 47-051-01766; McMasters N-11HU 47-051-02317; McMasters N-12HU 47-051-02316; McMasters N-13HU 47-051-02332; McMasters N-14HU 47-051-02333; McMasters N-15HU 47-051-02334; McMasters S-16HU

05/11/2023

4705102498

**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**WELL WORK PERMIT APPLICATION**

1) Well Operator: Tug Hill Operating, LLC 494510851 Marshall Franklin Powhatan Point 7  
Operator ID County District Quadrangle

2) Operator's Well Number: McMasters S-17HU Well Pad Name: Shields

3) Farm Name/Surface Owner: Robert L. Shields, et al Public Road Access: Burch Ridge Road - CR 29

4) Elevation, current ground: 1206' Elevation, proposed post-construction: 1206'

5) Well Type (a) Gas  Oil  Underground Storage

Other

(b) If Gas Shallow  Deep

Horizontal

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Point Pleasant is the target formation at a depth of 11,129' - 11,246', thickness of 117' and anticipated pressure of approx. 7,500 psi.

8) Proposed Total Vertical Depth: 11,396'

9) Formation at Total Vertical Depth: Trenton

10) Proposed Total Measured Depth: 22,100'

11) Proposed Horizontal Leg Length: 10,418.58'

12) Approximate Fresh Water Strata Depths: 70; 802'

13) Method to Determine Fresh Water Depths: Based on the depth of Pittsburgh Coal seam, per WVGES mapping contours

14) Approximate Saltwater Depths: 1,306'

15) Approximate Coal Seam Depths: Sewickley Coal - 701' and Pittsburgh Coal - 796'

16) Approximate Depth to Possible Void (coal mine, karst, other): None anticipated

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes  No

(a) If Yes, provide Mine Info: Name: \_\_\_\_\_

Depth: \_\_\_\_\_

Seam: \_\_\_\_\_

Owner: \_\_\_\_\_

18) **CASING AND TUBING PROGRAM**

<b>TYPE</b>	<u>Size (in)</u>	<u>New or Used</u>	<u>Grade</u>	<u>Weight per ft. (lb/ft)</u>	<u>FOOTAGE: For Drilling (ft)</u>	<u>INTERVALS: Left in Well (ft)</u>	<u>CEMENT: Fill-up (Cu. Ft.)/CTS</u>
Conductor	30"	NEW	BW	BW	120'	120'	259FT^3(CTS)
Fresh Water/Coal	20"	NEW	J55	106.5#	900'	900'	1,463FT^3(CTS)
Intermediate 1	13 3/8"	NEW	J55	54.5#	2,600'	2,600'	1,835FT^3(CTS)
Intermediate 2	9 5/8"	NEW	HPP110	47#	10,080'	10,080'	3,286FT^3(CTS)
Production	5 1/2"	NEW	HCP110	23#	22,100'	22,100'	5,234FT^3(CTS)
Tubing	2 7/8"	NEW	HCP110	6.5#		10,759'	
Liners							

<b>TYPE</b>	<u>Size (in)</u>	<u>Wellbore Diameter (in)</u>	<u>Wall Thickness (in)</u>	<u>Burst Pressure (psi)</u>	<u>Anticipated Max. Internal Pressure (psi)</u>	<u>Cement Type</u>	<u>Cement Yield (cu. ft./k)</u>
Conductor	30"	36"	1.0	2,333	1,866	CLASS A	1.2
Fresh Water/Coal	20"	26"	.5	2,410	1,928	SEE #24	1.2
Intermediate 1	13 3/8"	17 1/2"	.38	2,740	2,192	SEE #24	1.2
Intermediate 2	9 5/8"	12 1/4"	.472	10,730	6,968	SEE #24	1.33
Production	5 1/2"	8 1/2"	.415	16,510	13,208	SEE #24	1.17/1.19
Tubing	2 7/8"			14,530	11,624		
Liners							

**PACKERS**

Kind:	N/A			
Sizes:	N/A			
Depths Set:	N/A			

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*Steve Brown*  
3-22-2023

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill through the Point Pleasant and TD Pilot Hole 150' into the Trenton. Log vertical section and run a solid cement plug back to proposed KOP(10,259'). Drill curve and lateral per proposed well plan, run and cement production casing. Perform CBL from 60 deg to surface, make cleanout run, and stimulate.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

Well to be completed with approximately 26,042,500 lb. proppant and 402,636 bbl of water. Max rate = 80bpm; max psi = 9,000#.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 17.76 acres

22) Area to be disturbed for well pad only, less access road (acres): 5.84 acres

23) Describe centralizer placement for each casing string:

Will run 3 centralizers on surface casing at equal distance. Intermediate strings will have 1 centralizer every other joint. Production casing will have one centralizer every other joint in lateral, one centralizer every joint through curve, one centralizer every other joint to surface.

24) Describe all cement additives associated with each cement type:

Sfc - Premium NE-1 + 2% CaCl; Int1 - Premium NE-1 + 1.5% CaCL + Flake; Int2 - Lead: Premium NE-1 + 5% BA-90 + .85% R-3 + 3% KCl + .75 gals/100sk FP-13L + 1% MPA-170 Tail: Premium NE-1 + .1% R-3 + 5% KCl + 1% CD-32 + .4% FL-52 +.2% ASA-301 + .6% Sodium Metasilicate; Kick Plug - Class H Cement + 1% CD-32 + .7% Sodium Metasilicate + .1% R-3 + .75 gal/100sk FP-13L; Prod - Lead: 50:50 (Poz:Class H) + .3% R-3 + .3% MPA-250 + .75 gal/100sk FP-13L Tail: 25:75 (Poz:Class H) + .3% R-3 + .3% MPA-250 + .375 gal/100sk FP-13L

25) Proposed borehole conditioning procedures:

Will circulate a minimum of 3 hours at TD, short trip to curve, circulate bottoms up, check for flow, POOH

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\*Note: Attach additional sheets as needed.

*John Gowan*  
3-22-2023

05/11/2023  
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WELL NAME: McMasters S-17HU COUNTY: Marshall  
 STATE: WV DISTRICT: Franklin  
 OF Elev: 1,206' GL Elev: 1,206'  
 TD: 22,100'  
 TH Latitude: 39.70030238  
 TH Longitude: -80.78751484  
 BH Latitude: 39.733836  
 BH Longitude: -80.773113



Formation	Depth TVD
Deepest Fresh Water	802'
Sewickley Coal	701'
Pittsburgh Coal	796'
Big Lime	1,983'
Berra	2,321'
Tully	6,358'
Marcellus	6,440'
Onondaga	6,490'
Salina	7,176'
Lockport	8,183'
Utica	10,866'
Point Pleasant	11,129'
Landing Depth	11,181'
Trenton	11,246'
Pilot Hole TD	11,396'

CASING SUMMARY							
Type	Hole Size (in)	Csg Size (in)	Depth (MD)	Depth (TVD)	Weight (lb/ft)	Grade	Top of Cement
Conductor	36	30	120'	120'	BW	BW	Surface
Surface	26	20	900'	900'	106.5	J55	Surface
Intermediate 1	17 1/2	13 5/8	2,600'	2,600'	84.5	J55	Surface
Intermediate 2	12 1/4	9 5/8	10,080'	10,012'	47	HPP110	Surface
Production	8 1/2	5 1/2	22,100'	11,363'	23	HCP110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
Type	Sacks	Class	Density (ppg)	Fluid Type	Centralizer Notes
Conductor	338	A	15.6	Air	None
Surface	1,376	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	1,389	A	15.6	Air	1 Centralizer every other joint
Intermediate 2	3,002	A	14.5	Air	1 Centralizer every other joint
Production	5,354	A	16.5	Air / SOBM	1 every other joint in lateral; 1 per joint in curve; 1 every other joint in surface

Lateral TD @ 22,100' R MD  
 11,363' R TVD

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*Steve Gorman*  
 3-22-2023

Landing Point @ 11,684' MD / 11,181' TVD  
 PH TVD = 150' below Trenton Top

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## Tug Hill Operating, LLC Casing and Cement Program

### McMasters S-17HU

### Casing

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	20"	J55	26"	900'	CTS
Intermediate 1	13 3/8"	J55	17 1/2"	2,600'	CTS
Intermediate 2	9 5/8"	HPP110	12 1/4"	10,080'	CTS
Production	5 1/2"	HCP110	8 1/2"	22,100'	CTS

### Cement

Conductor:	Premium NE-1 + 2% bwoc CaC12 + 46.5% Fresh Water – Conductor Cement mixed at 15.6 ppg, Y=1.2
Surface:	Premium NE-1 + 2% bwoc CaC12 + 46.5% Fresh Water – Surface Cement mixed at 15.6 ppg, Y=1.2
Intermediate 1:	Premium NE-1 + 1% bwoc CaC12 + 46.5% Fresh Water – Intermediate Cement mixed at 15.6 ppg, Y=1.2
Intermediate 2:	Premium NE-1 + 1% bwoc CaC12 + 46.5% Fresh Water – Intermediate Cement mixed at 14.5 ppg, Y=1.35
Kick Off Plug:	Class H Cement + 1% CD-32 + .7% Sodium Metasilicate + .1% R-3 + .75 gal/100sk FP-13L - KOP Plug
Production:	50:50 Poz: Premium NE-1 + .1% bwoc ASA-301 + 60lb/sk ASCA-1 + .35% bwoc BA-10A + .25% bwoc MPA-170, 44 lb sack + .5% bwoc R-3 + .75 gals/100sk FP-13L – Production Cement mixed at 16.5 ppg, Y = 1.03

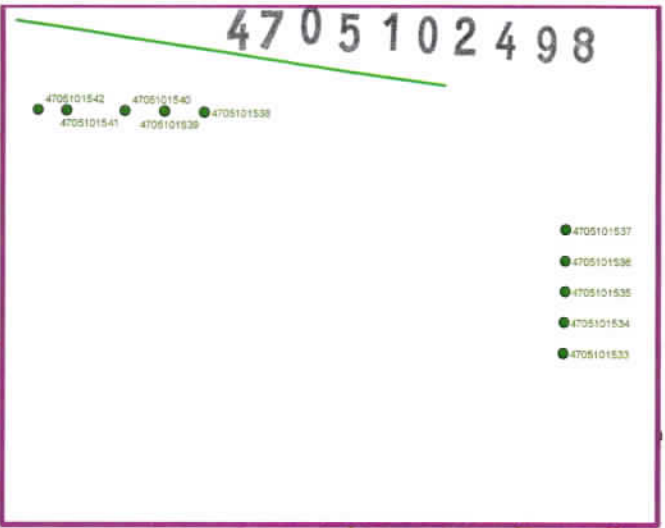
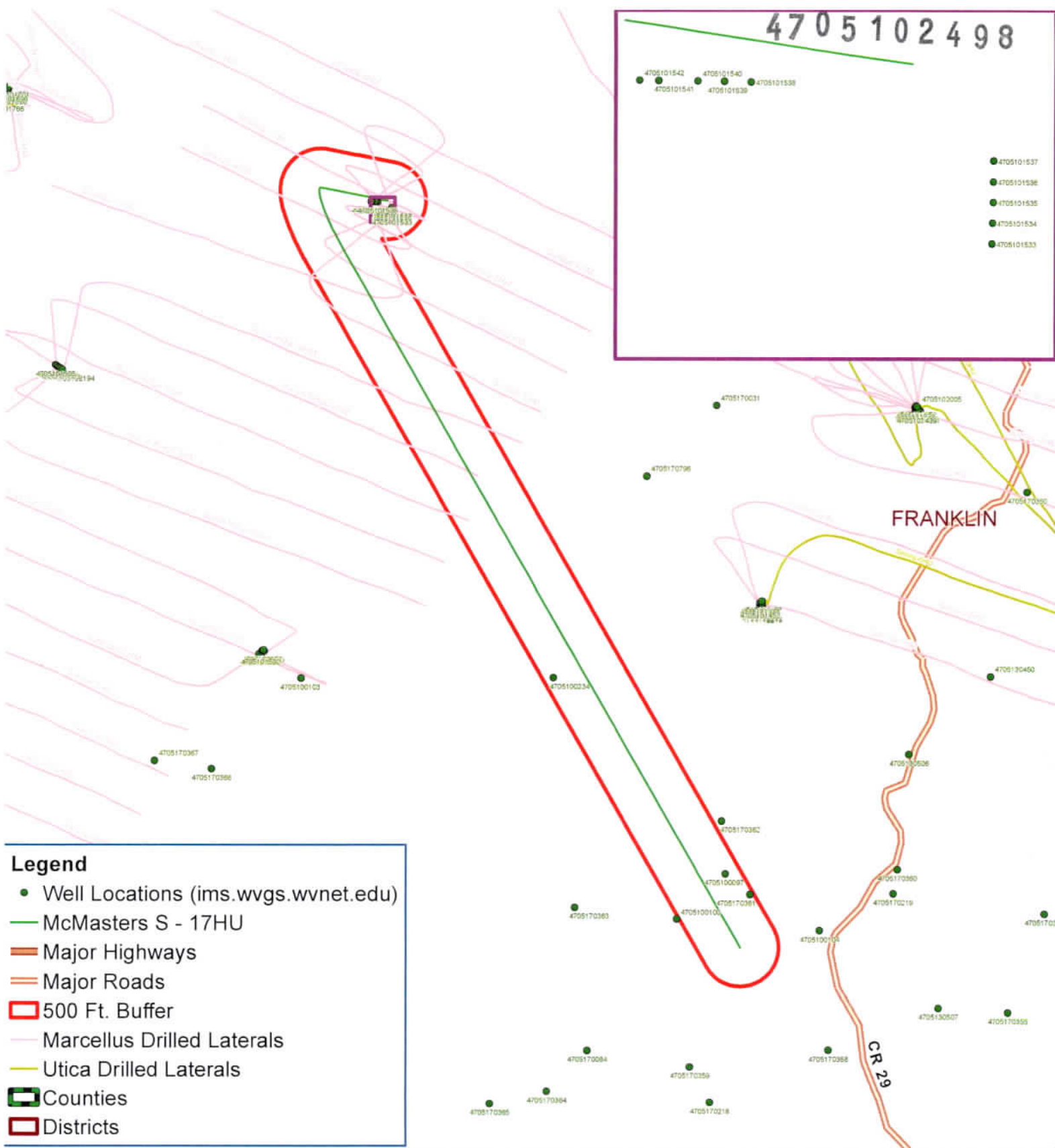
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- Legend**
- Well Locations (ims.wvgs.wvnet.edu)
  - McMasters S - 17HU
  - Major Highways
  - Major Roads
  - 500 Ft. Buffer
  - Marcellus Drilled Laterals
  - Utica Drilled Laterals
  - Counties
  - Districts



# McMasters S - 17HU Franklin District Marshall County, WV



Notes:  
All locations are approximate and are for visualization purposes only.

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Map Prepared by:



Permit well - McMasters S-17HU

Wells within 500' Buffer

Note: Well spots depicted on Area of Review map are derived from State held coordinates. The spots may differ from those depicted on the Well Plat because the Plat locations represent actual field surveyed locations. Please refer to the Plat for surveyed well spots.

API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705100234	Unknown	1289' TVD	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well.	Well was plugged 6/18/1952.
4705100097	Fauber & Henry	1152' TVD	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well.	Well was plugged 5/20/1949.
4705100100	Fauber & Henry	1165' TVD	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well.	Well was plugged 8/6/1945.
4705170361	Unknown	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well.	State records are incomplete.
4705101533	Tug Hill Operating, LLC	6509' TVD, 9961' MD	Marcellus	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore.	Producing Marcellus horizontal well.
4705101534	Tug Hill Operating, LLC	6514' TVD, 9890' MD	Marcellus	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore.	Producing Marcellus horizontal well.
4705101535	Tug Hill Operating, LLC	6519' TVD, 9890' MD	Marcellus	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore.	Producing Marcellus horizontal well.
4705101536	Tug Hill Operating, LLC	6526' TVD, 10185' MD	Marcellus	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore.	Producing Marcellus horizontal well.
4705101537	Tug Hill Operating, LLC	6527' TVD, 10560' MD	Marcellus	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore.	Producing Marcellus horizontal well.
4705101538	Tug Hill Operating, LLC	6494' TVD, 9541' MD	Marcellus	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore.	Producing Marcellus horizontal well.
4705101539	Tug Hill Operating, LLC	6488' TVD, 11480' MD	Marcellus	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore.	Producing Marcellus horizontal well.
4705101540	Tug Hill Operating, LLC	6490' TVD, 12101' MD	Marcellus	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore.	Producing Marcellus horizontal well.
4705101541	Tug Hill Operating, LLC	6485' TVD, 9612' MD	Marcellus	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore.	Producing Marcellus horizontal well.
4705101542	Tug Hill Operating, LLC	6487' TVD, 11281' MD	Marcellus	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore.	Producing Marcellus horizontal well.

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West County # 01 Permit # 00234

NorthWest, Teton, and 100 E 100 N

Table with 10 columns: Well ID, Well Name, Well Type, Well Status, Well Depth, Well Completion, Well Production, Well Injection, Well Injection Volume, Well Injection Rate.

West County # 01 Permit # 00237

NorthWest, Teton, and 100 E 100 N

Table with 10 columns: Well ID, Well Name, Well Type, Well Status, Well Depth, Well Completion, Well Production, Well Injection, Well Injection Volume, Well Injection Rate.

West County # 01 Permit # 00238

NorthWest, Teton, and 100 E 100 N

Table with 10 columns: Well ID, Well Name, Well Type, Well Status, Well Depth, Well Completion, Well Production, Well Injection, Well Injection Volume, Well Injection Rate.

West County # 01 Permit # 00241

NorthWest, Teton, and 100 E 100 N

Table with 10 columns: Well ID, Well Name, Well Type, Well Status, Well Depth, Well Completion, Well Production, Well Injection, Well Injection Volume, Well Injection Rate.

West County # 01 Permit # 00232

NorthWest, Teton, and 100 E 100 N

Table with 10 columns: Well ID, Well Name, Well Type, Well Status, Well Depth, Well Completion, Well Production, Well Injection, Well Injection Volume, Well Injection Rate.

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West County - 51 Period - 0103

Account	Balance	Debit	Credit	Balance
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West County - 51 Period - 0103

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West County - 51 Period - 0103

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Bureau of Oil and Gas Regulation  
REGISTRATION AND REPORTING SECTION  
REGISTRATION AND REPORTING SECTION

West Virginia Department of Environmental Protection  
Bureau of Oil and Gas Regulation  
REGISTRATION AND REPORTING SECTION  
REGISTRATION AND REPORTING SECTION

West Virginia Department of Environmental Protection  
Bureau of Oil and Gas Regulation  
REGISTRATION AND REPORTING SECTION  
REGISTRATION AND REPORTING SECTION

Well ID	Well Name	Well Type	Well Status	Well Depth	Well Diameter	Well Completion	Well Location	Well Operator	Well Completion Date	Well Completion Status
0000000001	...	...	...	...	...	...	...	...	...	...
0000000002	...	...	...	...	...	...	...	...	...	...
0000000003	...	...	...	...	...	...	...	...	...	...
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0000000005	...	...	...	...	...	...	...	...	...	...
0000000006	...	...	...	...	...	...	...	...	...	...
0000000007	...	...	...	...	...	...	...	...	...	...
0000000008	...	...	...	...	...	...	...	...	...	...
0000000009	...	...	...	...	...	...	...	...	...	...
0000000010	...	...	...	...	...	...	...	...	...	...

There is no Volume II Log data for this well.  
There is no Propping data for this well.  
There is no Seismic data for this well.

West Virginia Department of Environmental Protection  
Bureau of Oil and Gas Regulation  
REGISTRATION AND REPORTING SECTION  
REGISTRATION AND REPORTING SECTION

West Virginia Department of Environmental Protection  
Bureau of Oil and Gas Regulation  
REGISTRATION AND REPORTING SECTION  
REGISTRATION AND REPORTING SECTION

West Virginia Department of Environmental Protection  
Bureau of Oil and Gas Regulation  
REGISTRATION AND REPORTING SECTION  
REGISTRATION AND REPORTING SECTION

Well ID	Well Name	Well Type	Well Status	Well Depth	Well Diameter	Well Completion	Well Location	Well Operator	Well Completion Date	Well Completion Status
0000000011	...	...	...	...	...	...	...	...	...	...
0000000012	...	...	...	...	...	...	...	...	...	...
0000000013	...	...	...	...	...	...	...	...	...	...
0000000014	...	...	...	...	...	...	...	...	...	...
0000000015	...	...	...	...	...	...	...	...	...	...
0000000016	...	...	...	...	...	...	...	...	...	...
0000000017	...	...	...	...	...	...	...	...	...	...
0000000018	...	...	...	...	...	...	...	...	...	...
0000000019	...	...	...	...	...	...	...	...	...	...
0000000020	...	...	...	...	...	...	...	...	...	...

There is no Volume II Log data for this well.  
There is no Propping data for this well.  
There is no Seismic data for this well.

West Virginia Department of Environmental Protection  
Bureau of Oil and Gas Regulation  
REGISTRATION AND REPORTING SECTION  
REGISTRATION AND REPORTING SECTION

West Virginia Department of Environmental Protection  
Bureau of Oil and Gas Regulation  
REGISTRATION AND REPORTING SECTION  
REGISTRATION AND REPORTING SECTION

West Virginia Department of Environmental Protection  
Bureau of Oil and Gas Regulation  
REGISTRATION AND REPORTING SECTION  
REGISTRATION AND REPORTING SECTION

Well ID	Well Name	Well Type	Well Status	Well Depth	Well Diameter	Well Completion	Well Location	Well Operator	Well Completion Date	Well Completion Status
0000000021	...	...	...	...	...	...	...	...	...	...
0000000022	...	...	...	...	...	...	...	...	...	...
0000000023	...	...	...	...	...	...	...	...	...	...
0000000024	...	...	...	...	...	...	...	...	...	...
0000000025	...	...	...	...	...	...	...	...	...	...
0000000026	...	...	...	...	...	...	...	...	...	...
0000000027	...	...	...	...	...	...	...	...	...	...
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0000000029	...	...	...	...	...	...	...	...	...	...
0000000030	...	...	...	...	...	...	...	...	...	...

There is no Volume II Log data for this well.  
There is no Propping data for this well.  
There is no Seismic data for this well.

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WV Department of  
Environmental Protection

05/11/2023

Well: County = 31 Permit = 01341							
Operator: <u>Summit Energy Services</u>							
Well ID: <u>65868</u>							
Well Name: <u>65868</u>							
Well Type: <u>Oil</u>							
Well Status: <u>Producing</u>							
Well Completion Date: <u>01/2011</u>							
Well Depth: <u>7500</u>							
Well Interval: <u>6500-7500</u>							
Well Completion Description: <u>2 1/2" ID Tubing Cased, 12 1/2" ID Casing, 10 1/2" ID Drill Pipe, 8 1/2" ID Drill Collar, 6 1/2" ID Drill Bit</u>							
Well Completion Details:							
Well ID	Well Name	Well Type	Well Status	Well Completion Date	Well Depth	Well Interval	Well Completion Description
65868	65868	Oil	Producing	01/2011	7500	6500-7500	2 1/2" ID Tubing Cased, 12 1/2" ID Casing, 10 1/2" ID Drill Pipe, 8 1/2" ID Drill Collar, 6 1/2" ID Drill Bit
There is no version of this well.							
There is no Plugback data for this well.							
There is no Surface data for this well.							
Well: County = 31 Permit = 01341							
Operator: <u>Summit Energy Services</u>							
Well ID: <u>65868</u>							
Well Name: <u>65868</u>							
Well Type: <u>Oil</u>							
Well Status: <u>Producing</u>							
Well Completion Date: <u>01/2011</u>							
Well Depth: <u>7500</u>							
Well Interval: <u>6500-7500</u>							
Well Completion Description: <u>2 1/2" ID Tubing Cased, 12 1/2" ID Casing, 10 1/2" ID Drill Pipe, 8 1/2" ID Drill Collar, 6 1/2" ID Drill Bit</u>							
Well Completion Details:							
Well ID	Well Name	Well Type	Well Status	Well Completion Date	Well Depth	Well Interval	Well Completion Description
65868	65868	Oil	Producing	01/2011	7500	6500-7500	2 1/2" ID Tubing Cased, 12 1/2" ID Casing, 10 1/2" ID Drill Pipe, 8 1/2" ID Drill Collar, 6 1/2" ID Drill Bit

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Page 6 of 6

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WV Department of  
Environmental Protection

05/11/2023

WW-9  
(4/16)

4705102498

API Number 47 - 051 - \_\_\_\_\_  
Operator's Well No. McMasters S-17HU

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Tug Hill Operating, LLC OP Code 494510851

Watershed (HUC 10) Fish Creek Quadrangle Powhatan Point 7.5'

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes  No

Will a pit be used? Yes  No

If so, please describe anticipated pit waste: AST Tanks with proper containment will be used for staging fresh and produced water for frac

Will a synthetic liner be used in the pit? Yes  No  If so, what ml.? AST Tanks will be used with proper contain

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number UIC 2459, UIC 965, UIC 359, UIC 2D0732540, UIC 2D0732523 )
- Reuse (at API Number \_\_\_\_\_)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain \_\_\_\_\_)

Will closed loop system be used? If so, describe: Yes - For Vertical and Horizontal Drilling

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Air for vertical

-If oil based, what type? Synthetic, petroleum, etc. n/a

Additives to be used in drilling medium? Barite for weight

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. All drill cuttings to be disposed of in a Landfill

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) N/A

-Landfill or offsite name/permit number? Wetzel County Sanitary Landfill (SWF-1021 / WV0109185) and Westmoreland Sanitary Landfill, LLC (SAN1405 / PA DEP EC#1386426), Chestnut Valley Landfill (100419)

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature [Signature]

Company Official (Typed Name) Jim Pancake

Company Official Title Vice President - Geosciences

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APR 10 2023

WV Department of  
Environmental Protection

Subscribed and sworn before me this 21<sup>st</sup> day of March, 2023

[Signature]

Notary Public  
Commonwealth of Pennsylvania - Notary Seal  
Susanne Deliere, Notary Public  
Washington County  
My commission expires January 15, 2025  
Commission number 1382332  
Member, Pennsylvania Association of Notaries

My commission expires 1/15/2025

05/11/2023



Tug Hill Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 17.76 Prevegetation pH 6.0

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch 2.5 Tons/acre

Seed Mixtures

**Temporary**

**Permanent**

Seed Type	lbs/acre
Annual Ryegrass	40
Spring Oats	96

Seed Type	lbs/acre
Orchard Grass	12
Ladino	3
White Clover	2

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: 

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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Title: Oil and Gas Inspector

Date: 3/22/2023

Field Reviewed?  Yes  No

WW-9

# PROPOSED McMASTERS S-17HU

SUPPLEMENT PG 1

REFERENCE IS HEREBY MADE TO THE WV D.E.P. OFFICE OF OIL & GAS, "EROSION AND SEDIMENT CONTROL FIELD MANUAL" FOR REQUIREMENTS AND BMPs FOR AVERAGE FIELD CONDITIONS CONCERNING THE MAINTENANCE OF EXISTING ROADS AND THE CONSTRUCTION OF PROPOSED ROADS. FIELD CONDITIONS MAY REQUIRE VARIANCE FROM THESE GUIDELINES AND THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION TO THE INSPECTOR AND THE OPERATOR SHOULD THESE CONDITIONS OCCUR.

INSTALL CULVERTS AS SHOWN ON RECLAMATION PLAN OR AS FIELD CONDITIONS REQUIRE.

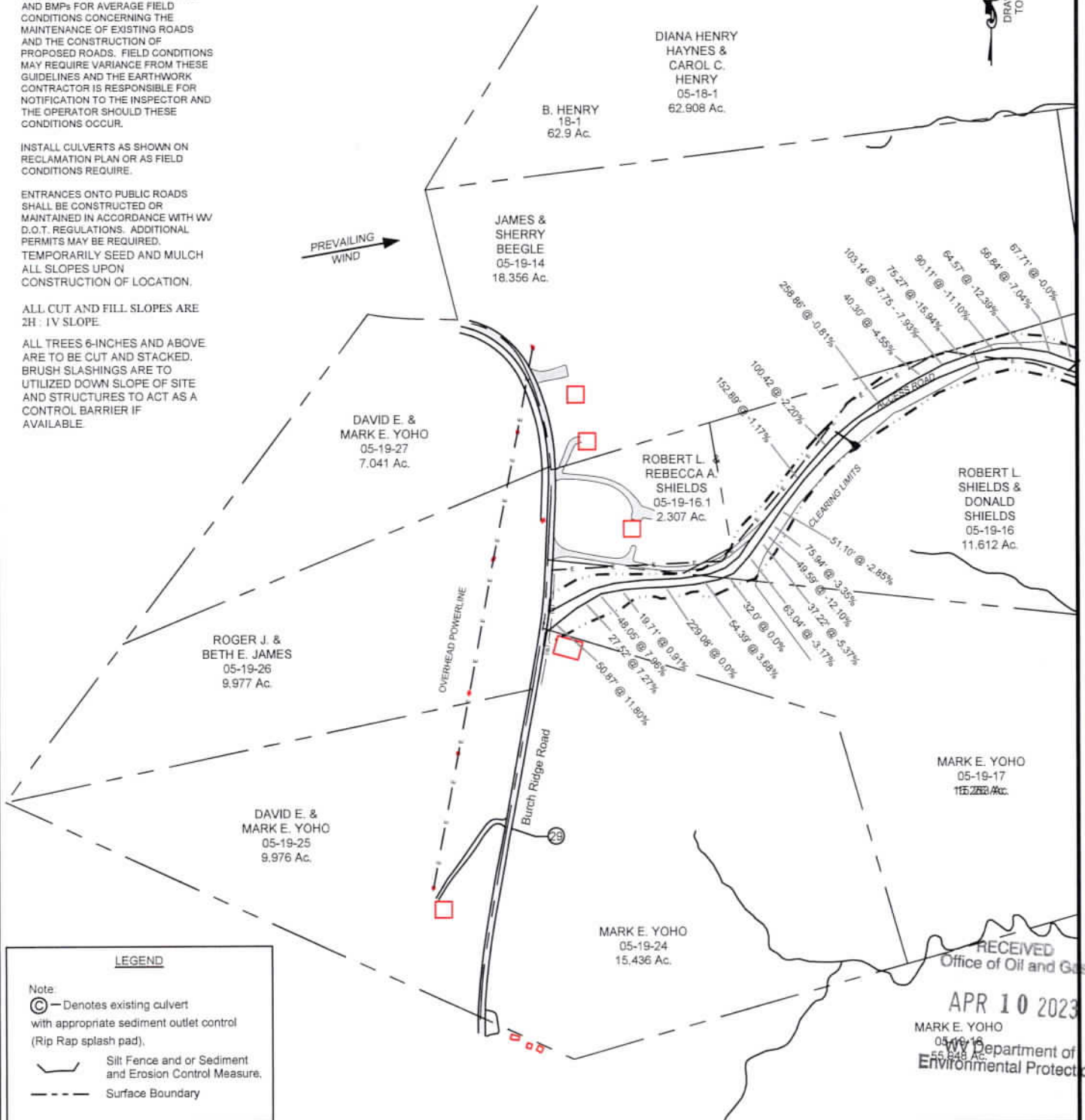
ENTRANCES ONTO PUBLIC ROADS SHALL BE CONSTRUCTED OR MAINTAINED IN ACCORDANCE WITH WV D.O.T. REGULATIONS. ADDITIONAL PERMITS MAY BE REQUIRED. TEMPORARILY SEED AND MULCH ALL SLOPES UPON CONSTRUCTION OF LOCATION.

ALL CUT AND FILL SLOPES ARE 2H : 1V SLOPE.

ALL TREES 6-INCHES AND ABOVE ARE TO BE CUT AND STACKED. BRUSH SLASHINGS ARE TO UTILIZED DOWN SLOPE OF SITE AND STRUCTURES TO ACT AS A CONTROL BARRIER IF AVAILABLE.

DRAWING NOT TO SCALE

PREVAILING WIND



**LEGEND**

Note:  
 (C) — Denotes existing culvert with appropriate sediment outlet control (Rip Rap splash pad).  
 — Silt Fence and/or Sediment and Erosion Control Measure.  
 - - - Surface Boundary

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MARK E. YOHO  
05-19-17  
15,252.8 Ac.  
WV Department of Environmental Protection

TOPO SECTION: POWATAN POINT 7.5'		OPERATOR: TUG HILL OPERATING, LLC 390 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317	
COUNTY MARSHALL	DISTRICT FRANKLIN	DATE 6-4-2020	SCALE NONE
DRAWN BY J.D.C.	JOB NO 494510851		

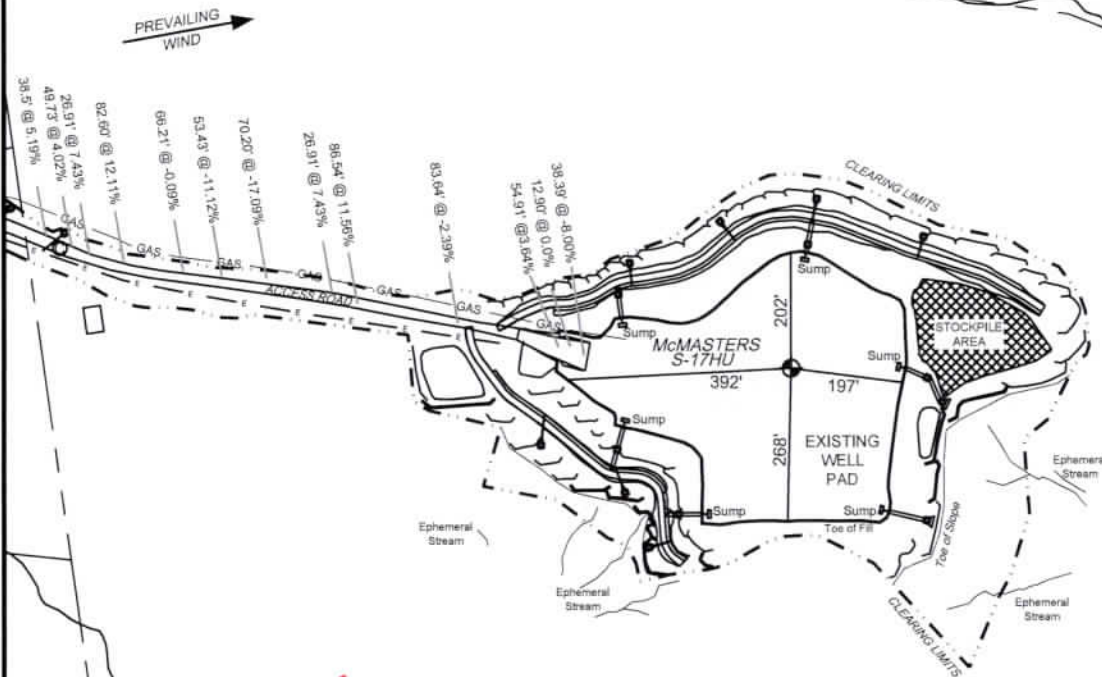
WW-9

**PROPOSED McMASTERS S-17HU**

SUPPLEMENT PG 1

DIANA HENRY HAYNES & CAROL C. HENRY  
05-18-1  
62.908 Ac.

OLAN V. & PATRICIA E. RUTAN  
05-18-3  
43.677 Ac.



REFERENCE IS HEREBY MADE TO THE WV D.E.P. OFFICE OF OIL & GAS, "EROSION AND SEDIMENT CONTROL FIELD MANUAL" FOR REQUIREMENTS AND BMPs FOR AVERAGE FIELD CONDITIONS CONCERNING THE MAINTENANCE OF EXISTING ROADS AND THE CONSTRUCTION OF PROPOSED ROADS. FIELD CONDITIONS MAY REQUIRE VARIANCE FROM THESE GUIDELINES AND THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION TO THE INSPECTOR AND THE OPERATOR SHOULD THESE CONDITIONS OCCUR.

INSTALL CULVERTS AS SHOWN ON RECLAMATION PLAN OR AS FIELD CONDITIONS REQUIRE.

ENTRANCES ONTO PUBLIC ROADS SHALL BE CONSTRUCTED OR MAINTAINED IN ACCORDANCE WITH WV D.O.T. REGULATIONS. ADDITIONAL PERMITS MAY BE REQUIRED. TEMPORARILY SEED AND MULCH ALL SLOPES UPON CONSTRUCTION OF LOCATION.

ALL CUT AND FILL SLOPES ARE 2H : 1V SLOPE.

ALL TREES 6-INCHES AND ABOVE ARE TO BE CUT AND STACKED. BRUSH SLASHINGS ARE TO UTILIZED DOWN SLOPE OF SITE AND STRUCTURES TO ACT AS A CONTROL BARRIER IF AVAILABLE.

ROBERT L. SHIELDS ET AL  
05-18-2  
104.11 Ac.

DUANE BRUNN  
05-18-24  
102 Ac.

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**LEGEND**

Note:

⊙ — Denotes existing culvert with appropriate sediment outlet control (Rip Rap splash pad).

— Silt Fence and or Sediment and Erosion Control Measure.  
- - - Surface Boundary



**Jackson Surveying Inc.**  
2418 E. Pike St. #118  
Clarksburg, WV 26301  
Phone: 204-628-5261

**TOPO SECTION:**

POWHATAN POINT 7.5'

COUNTY	DISTRICT
MARSHALL	FRANKLIN

DRAWN BY	JOB NO
J.D.C.	494510851

**OPERATOR:**

**PREPARED FOR:**

TUG HILL OPERATING, LLC  
380 SOUTHPOINTE BLVD  
SUITE 200  
CANONSBURG, PA 15317

DATE	SCALE
6-4-2020	NONE

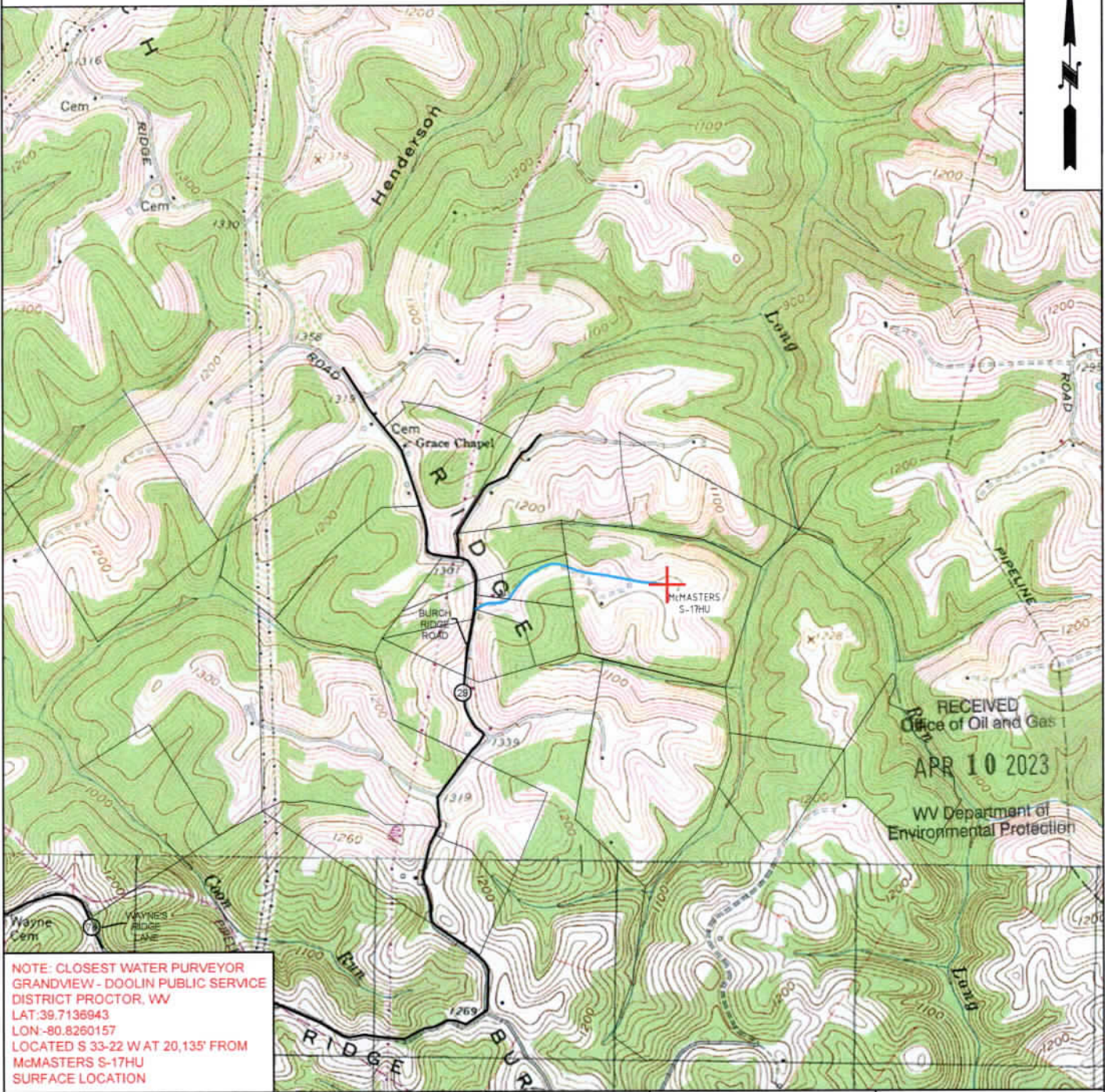


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# PROPOSED McMASTERS S-17HU

SUPPLEMENT PG 2



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NOTE: CLOSEST WATER PURVEYOR  
GRANDVIEW - DOOLIN PUBLIC SERVICE  
DISTRICT PROCTOR, WV  
LAT: 39.7136943  
LON: -80.8260157  
LOCATED S 33-22 W AT 20,135' FROM  
McMASTERS S-17HU  
SURFACE LOCATION



OPERATOR	494510851	TOPO SECTION	LEASE NAME
TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317		POWHATAN POINT 7.5'	McMASTERS
SCALE:		DATE:	
1" = 2000'		DATE: 6-4-2020	



**TUG HILL**  
**OPERATING**

**Well Site Safety Plan**  
**Part A – Site Specific Data and Figures**

**Well Name: McMasters S-17HU**

**Pad Name: Shields**

**County: Marshall**

UTM (meters), NAD83, Zone 17

Northing: 4,401,175.26

Easting: 518,200.94

**KEY CONTACT FOR WELL SITE SAFETY PLAN  
DEVELOPMENT AND MAINTENANCE**

**Jerry V. DeRosa, Director EH&S Affairs**

(724) 338-2029 (office)

(412) 736-5767 (cellular)

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APR 10 2023

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**24-HOUR EMERGENCY PHONE NUMBER**

**(800) 921-9745**

*[Handwritten signature]*  
3-22-2023

05/11/2023

4705102498



April 6, 2023

WV Department of Environmental Protection  
Office of Oil & Gas  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304  
Attention: Susan Rose

RE: McMasters S-17HU

Subject: Proposed Voluntary Pooling and Unitization

Dear Susan:

Tug Hill Operating, LLC is authorized through, either lease or other agreement, to unitize and pool all lands falling within the boundaries of the proposed voluntary unit included with this submission.

If your office has any questions or concerns regarding the contents of this letter, please do not hesitate to contact me directly at 304-376-0111, or by email at [amorris@tug-hillop.com](mailto:amorris@tug-hillop.com).

Sincerely,

A handwritten signature in blue ink that reads "Amy L. Morris".

**Amy L. Morris**  
Permitting Specialist – Appalachia Region  
Tug Hill Operating

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WV Department of  
Environmental Protection

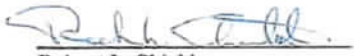
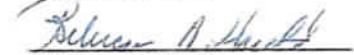
4705102498

**COPY**

CERTIFICATE OF CONSENT AND EASEMENT

The undersigned, for valuable consideration, the receipt and sufficiency of which is hereby acknowledged, being the owner of the surface of that certain lot, tract or parcel of land located in Franklin District, Marshall County, State of West Virginia, shown on the attached plat or survey, hereby consents and grants an easement, pursuant to West Virginia Code, Section 22C-9-7(b)(4) and Operating Rule 4.4 of the Rules and Regulations of the West Virginia Oil and Gas Conservation Commission, to TH Exploration, LLC, its successors or assigns, for the drilling and operation of a deep well for the production of oil or gas at the location shown on the attached plat or survey.

Executed this 20<sup>th</sup> day of <sup>November</sup> ~~October~~, 2019.

  
Robert L. Shields  
  
Rebecca A. Shields

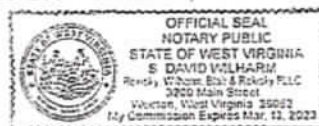
Marshall County  
Jan Pest, Clerk  
Instrument 1463767  
01/29/2020 @ 10:38:15 AM  
RIGHT OF WAY W/O CONSIDERATION  
Book 1072 @ Page 252  
Pages Recorded 2  
Recording Cost \$ 11.00

STATE OF WEST VIRGINIA  
COUNTY OF MARSHALL

SS:

On this, the 20<sup>th</sup> day of <sup>November</sup> ~~October~~, 2019, before me, a notary public, the undersigned officer, personally appeared Robert L. Shields and Rebecca A. Shields known to me (or satisfactorily proven) to be the person(s) who's name is subscribed to the within instrument, and acknowledged that he/she/they executed the same for proposed therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.



My Commission Expires: 3/13/2023  
Signature/Notary Public: David Valhalla  
Name/Notary Public (print): David Valhalla

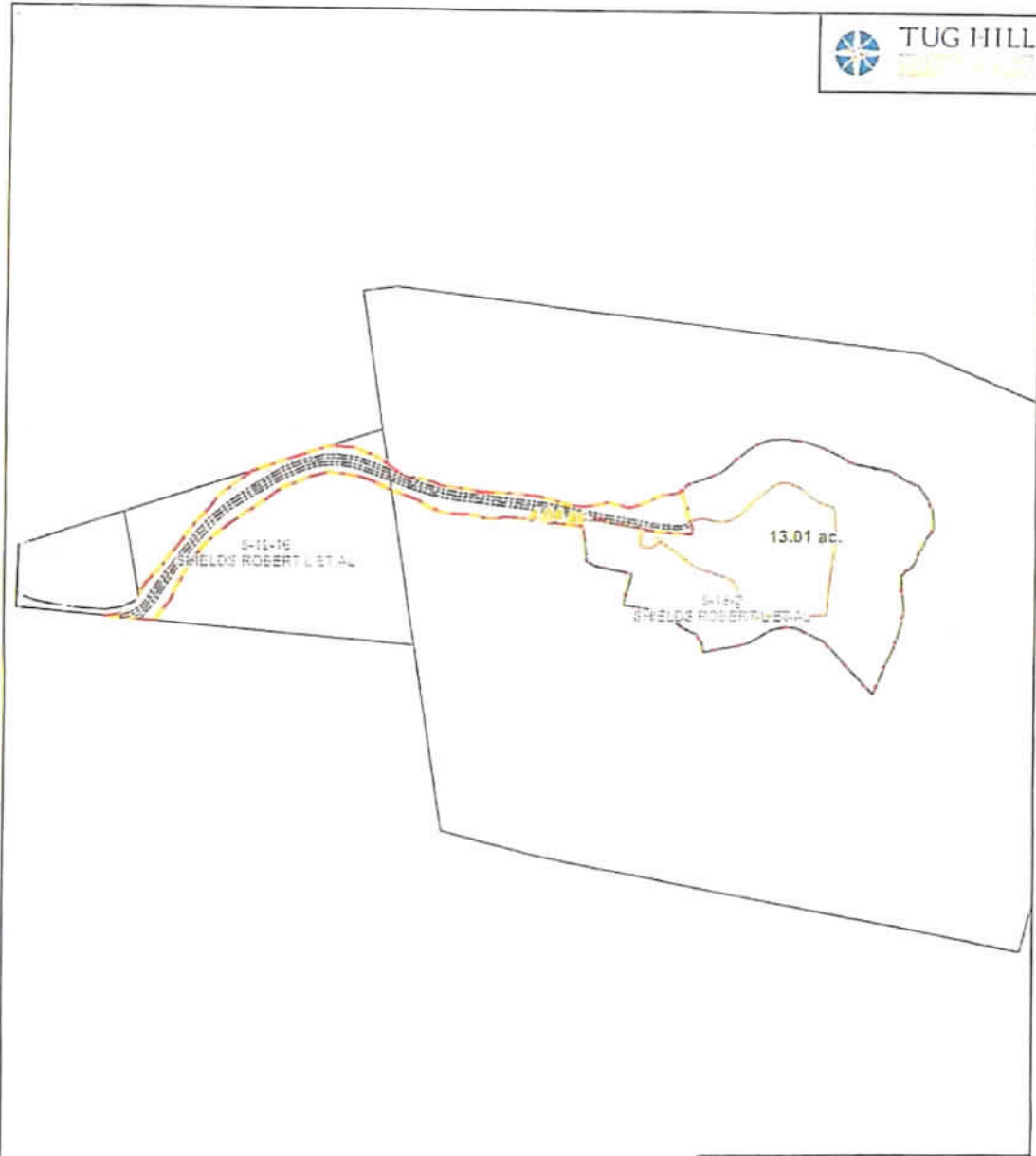
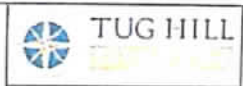
This instrument prepared by:  
WV Oil and Gas Conservation Commission  
601 57<sup>th</sup> Street  
Charleston, WV 25304

4838-2618-8605v2

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Office of Oil and Gas  
JUL 17 2020  
WV Department of  
Environmental Protection

05/11/2023

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1 inch: 435 feet

- Limit of Disturbance - Access Road
- Limit of Disturbance - Pad

0 125 250 500  
Feet

These drawings were prepared by Tug Hill Energy Services, Inc. for the purpose of showing the location of the proposed well pad and access road. The drawings do not constitute a warranty of any kind, and the user assumes all responsibility for the accuracy and completeness of the information shown. The drawings are based on the information provided to Tug Hill Energy Services, Inc. and are not to be used for any other purpose without the written consent of Tug Hill Energy Services, Inc.

"Plat"  
SHIELDS ROBERT L ET AL  
Marshall, WV

Date: 11/20/19  
Name:   
Name:



Draw: 10042019  
PCS: 1540 1542 UTM Zone 17N Feet US

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JUL 17 2020  
WV Department of  
Environmental Protection

05/11/2023



**COPY**

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CERTIFICATE OF CONSENT AND EASEMENT

The undersigned, for valuable consideration, the receipt and sufficiency of which is hereby acknowledged, being the owner of the surface of that certain lot, tract or parcel of land located in Franklin District, Marshall County, State of West Virginia, shown on the attached plat or survey, hereby consents and grants an easement, pursuant to West Virginia Code, Section 22C-9-7(b)(4) and Operating Rule 4.4 of the Rules and Regulations of the West Virginia Oil and Gas Conservation Commission, to TH Exploration, LLC, its successors or assigns, for the drilling and operation of a deep well for the production of oil or gas at the location shown on the attached plat or survey.

Executed this 20<sup>th</sup> day of November, 2019.

  
Donald Shields

Marshall County  
Jan Peet, Clerk  
Instrument 1463768  
01/29/2020 @ 10:38:16 AM  
RIGHT OF WAY W/O CONSIDERATION  
Book 1072 @ Page 254  
Pages Recorded 2  
Recording Cost \$ 11.00

STATE OF WEST VIRGINIA

SS:

COUNTY OF MARSHALL

On this, the 20<sup>th</sup> day of November, 2019, before me, a notary public, the undersigned officer, personally appeared Donald Shields known to me (or satisfactorily proven) to be the person(s) who's name is subscribed to the within instrument, and acknowledged that he/she/they executed the same for proposed therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.



My Commission Expires: 3/13/2023  
Signature/Notary Public: S David Wilborn  
Name/Notary Public (print): S David Wilborn

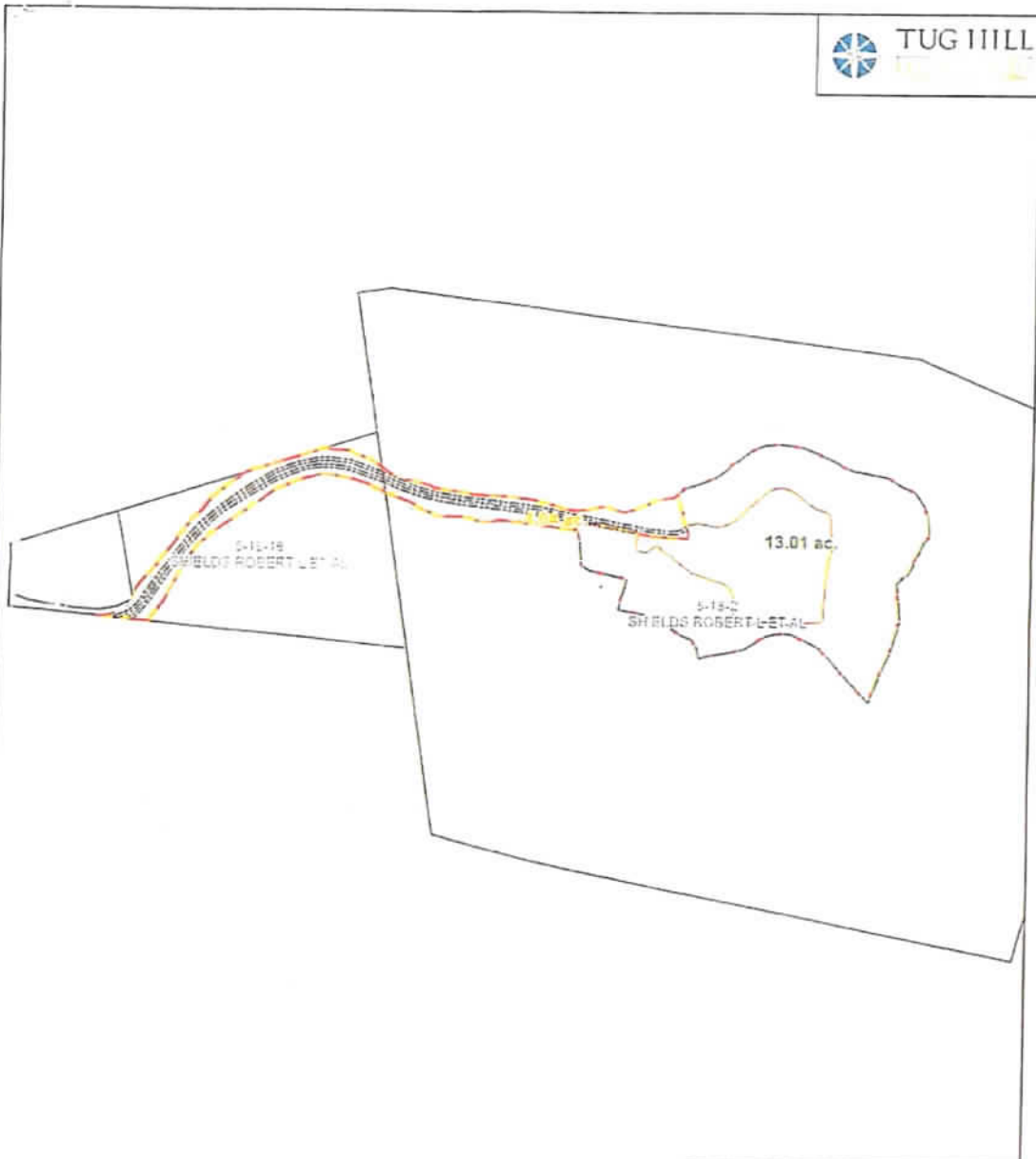
This instrument prepared by:  
WV Oil and Gas Conservation Commission  
601 57<sup>th</sup> Street  
Charleston, WV 25304

4838-2618-8605v2

RECEIVED  
Office of Oil and Gas  
JUL 17 2020  
WV Department of  
Environmental Protection

05/11/2023

4705102498



1 inch: 435 feet

- Limit of Disturbance - Access Road
- Limit of Disturbance - Pad

0 125 250 500  
Feet

N

THIS DOCUMENT IS A PRELIMINARY PLAT. IT IS NOT TO BE USED FOR ANY PURPOSES WITHOUT THE WRITTEN CONSENT OF THE ENGINEER. THE ENGINEER'S LIABILITY IS LIMITED TO THE PROFESSIONAL SERVICES PROVIDED. THE USER OF THIS DOCUMENT ASSUMES ALL LIABILITY FOR ANY AND ALL DAMAGES, INCLUDING REASONABLE ATTORNEY'S FEES, ARISING FROM THE USE OF THIS DOCUMENT. THE USER OF THIS DOCUMENT AGREES TO HOLD THE ENGINEER HARMLESS FROM AND AGAINST ALL SUCH DAMAGES, INCLUDING REASONABLE ATTORNEY'S FEES, ARISING FROM THE USE OF THIS DOCUMENT.

"Plat"  
SHIELDS ROBERT L ET AL  
Marshall, WV

Date: Nov 30 2019  
Name: Donald D. Wild  
Name: \_\_\_\_\_



RECEIVED  
Office of Oil and Gas

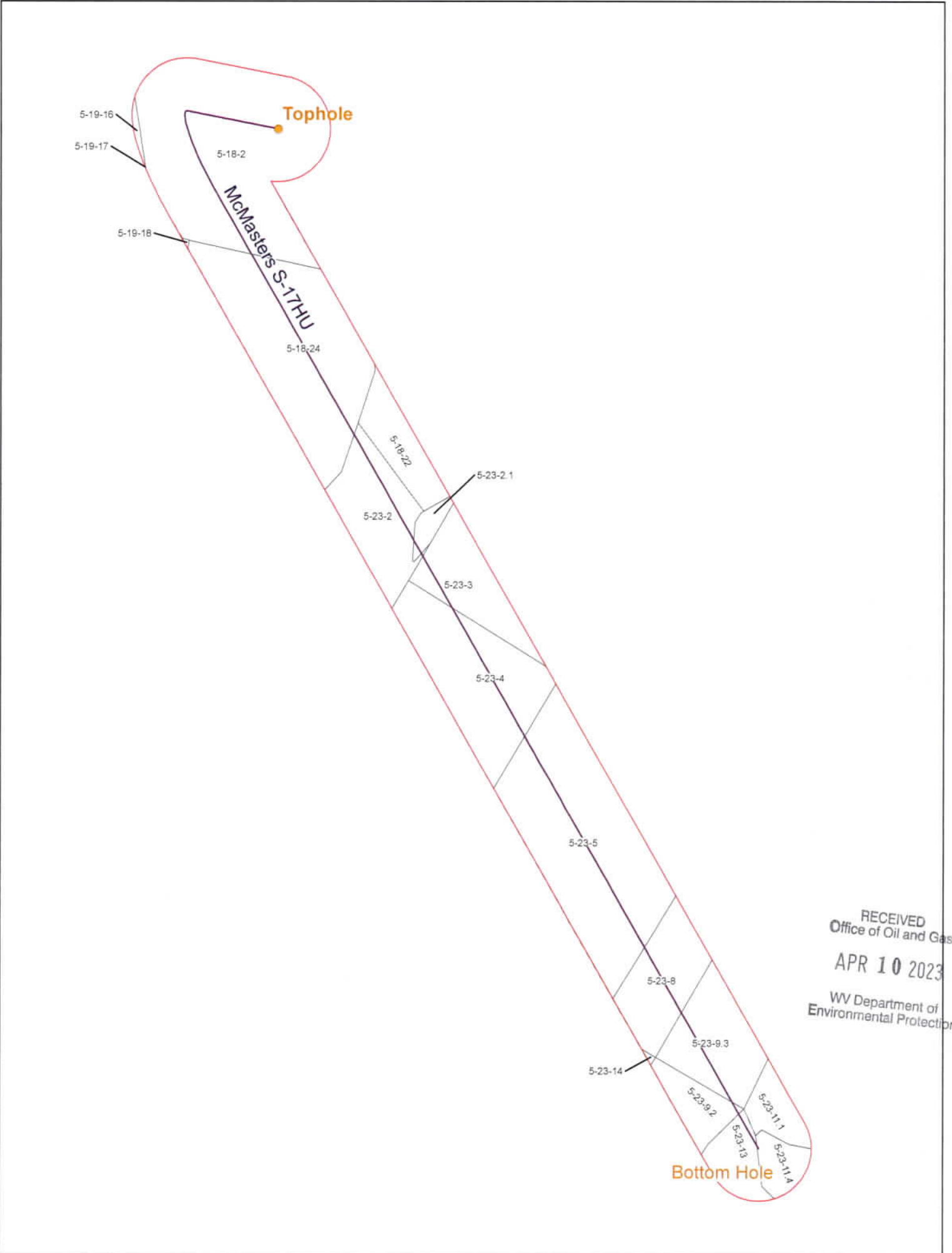
JUL 17 2020

WV Department of  
Environmental Protection

Date: 10-24-2019  
P22 1602 1512 0711 Draw 17N.Fem.42

05/11/2023

McMasters S-17HU



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 APR 10 2023  
 WV Department of  
 Environmental Protection

Coordinate System: NAD 1983 UTM Zone 17N  
 Projection: Transverse Mercator  
 Datum: North American 1983  
 Spheroid: GRS 1912  
 Prime Meridian: 0  
 False Easting: 500000  
 False Northing: 0  
 Scale Factor: 0.999603  
 False Origin: 0  
 Units: Feet US

**CONFIDENTIAL**



- Utica Well
- 500' Buffer

McMasters S-17HU  
 Operators within 500 Feet of Well Borehole



4705102498

Operators within 500' of Well Boreholes

McMasters S - 17HU

COUNTY	DISTRICT	PARCEL	OWNER	ADDRESS
Marshall	Franklin	5-18-2	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-18-22	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-18-24	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-19-16	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-19-17	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-19-18	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-2	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-2.1	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-3	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-3	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-4	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-4	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-5	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-5	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-8	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-8	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-9.2	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-9.3	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107

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Texas Department of  
Environmental Protection

05/11/2023

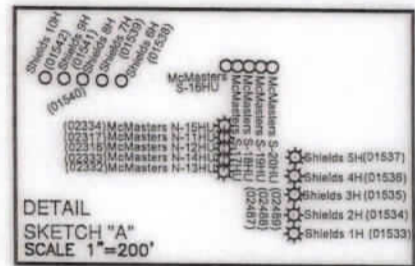
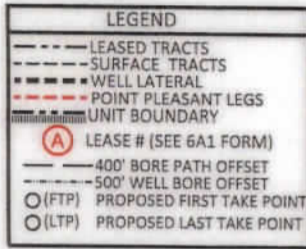
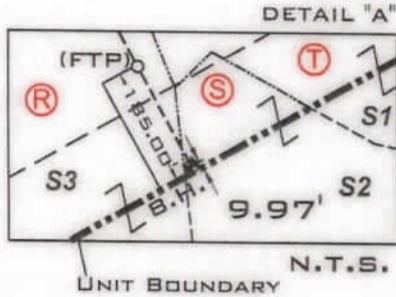
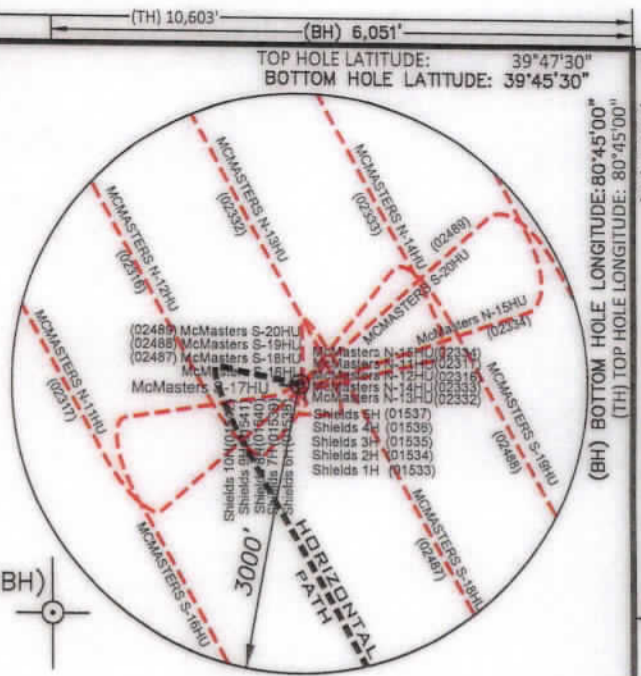
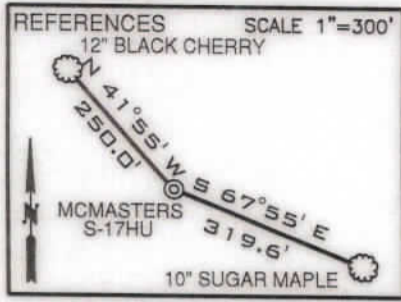
**Operators within 500' of Well Boreholes  
McMasters S - 17HU**

Marshall	Franklin	5-23-11.1	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-11.1	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-11.4	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-11.4	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-13	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-14	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
<p>* TH Exploration II, LLC is a wholly owned subsidiary of THQ Appalachia I, LLC. Tug Hill Operating, LLC provides oil and gas operations services to THQ Appalachia I, LLC under that certain Operating Services Agreement dated July 23, 2014. For further info please see the recorded affidavit submitted as part of the permit package.</p>				

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**APR 10 2023**  
WV Department of  
Environmental Protection

MCMASTERS S-17HU  
UTICA UNIT - 300.3926± ACRES  
TUG HILL OPERATING, LLC

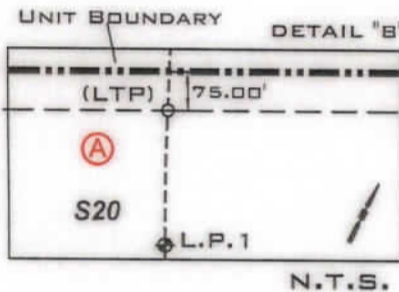
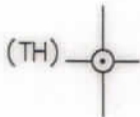
LINE	BEARING	DISTANCE
L1	N 74°01' W	1416.19'
L2	S 39°24' W	1350.54'
L3	N 79°02' W	34.93'
L4	N 77°59' W	834.91'



(\*) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

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, 2023. 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
- THE FTP AND LTP ARE OVER 500' PERPENDICULAR FROM THE UNIT BOUNDARY LINE.



CURVE	CHORD BEARING	CHORD LENGTH	RADIUS	ARC LENGTH
C1	S 86°00' W	25.26'	19.09'	27.59'
C2	S 09°59' W	32.08'	77.14'	32.31'
C3	S 09°10' E	97.47'	398.12'	97.71'
C4	S 18°56' E	265.41'	1946.44'	265.61'
C5	S 25°53' E	405.99'	3575.21'	406.20'

<b>SURFACE HOLE</b> UTM. NAD83, ZONE 17 IN METERS N) 4,401,175.26 E) 518,200.94
<b>LANDING POINT 1</b> UTM. NAD83, ZONE 17 IN METERS N) 4,400,997.32 E) 518,020.85
<b>BOTTOM HOLE</b> UTM. NAD83, ZONE 17 IN METERS N) 4,398,241.30 E) 519,596.24

FILE NUMBER \_\_\_\_\_  
DRAWING NUMBER: MCMASTERS\_S-17HU\_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

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: APRIL 06, 2023

OPERATORS WELL NO. MCMASTERS S-17HU  
API WELL NO. \_\_\_\_\_

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

47-051-02498 HGA  
STATE COUNTY PERMIT

LOCATION ELEVATION 1207.50' 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 104.11

OIL & GAS ROYALTY OWNER ROBERT L. SHIELDS, ET AL LEASE ACREAGE 104.11

PROPOSED WORK: DRILL X CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION \_\_\_  
PERFORATE NEW FORMATION \_\_\_ OTHER PHYSICAL CHANGE (SPECIFY) \_\_\_\_\_

PLUG & ABANDON \_\_\_ CLEAN OUT & REPLUG \_\_\_

TARGET FORMATION POINT PLEASANT ESTIMATED DEPTH TVD: 11,396' TMD: 22,100'

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

05/11/2023

COUNTY NAME PERMIT

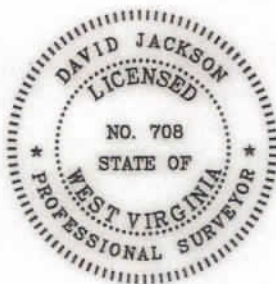
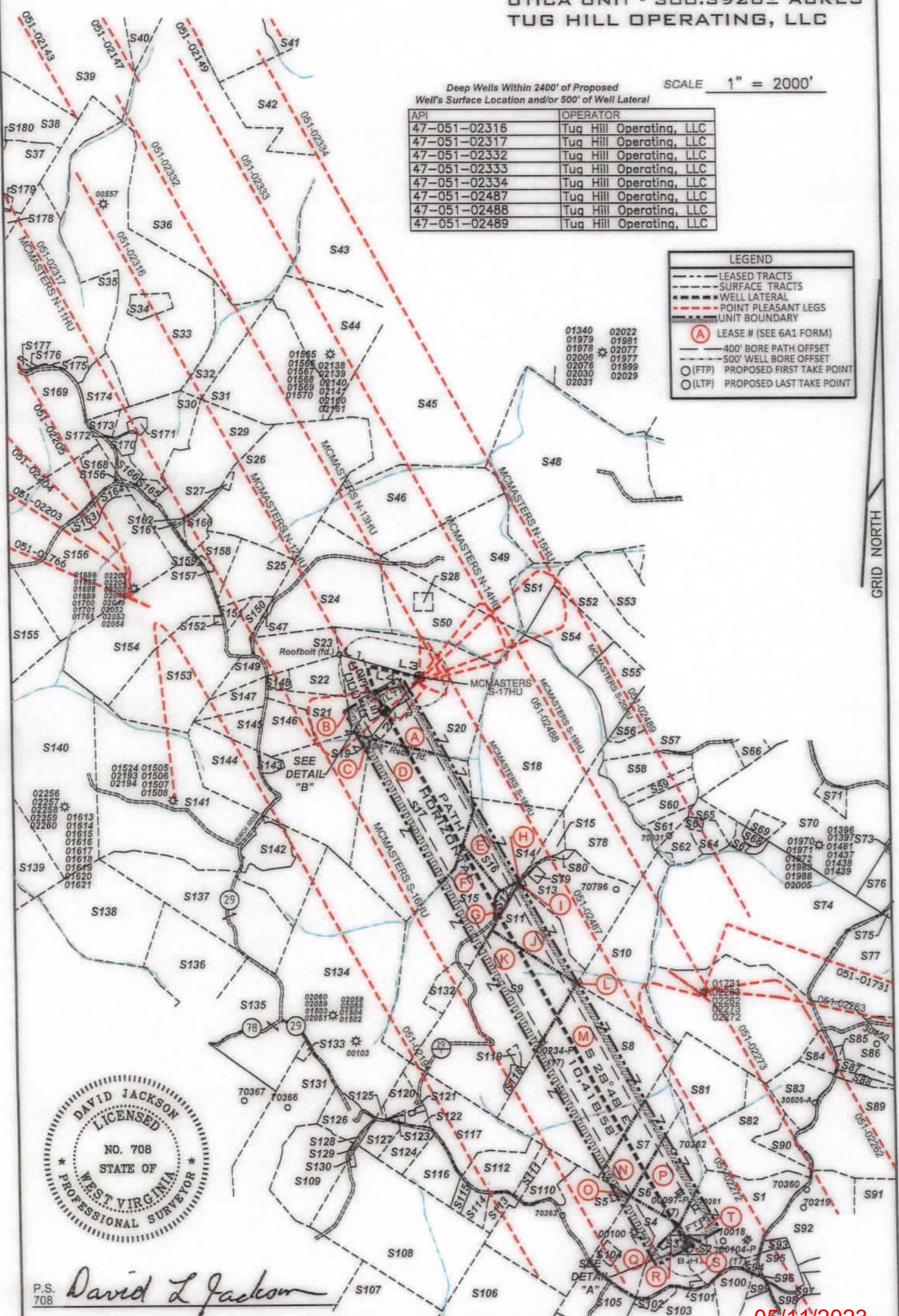
MCMASTERS S-17HU  
UTICA UNIT - 300.3926± ACRES  
TUG HILL OPERATING, LLC

Deep Wells Within 2400' of Proposed  
Well's Surface Location and/or 500' of Well Lateral

SCALE 1" = 2000'

API	OPERATOR
47-051-02316	Tug Hill Operating, LLC
47-051-02317	Tug Hill Operating, LLC
47-051-02332	Tug Hill Operating, LLC
47-051-02333	Tug Hill Operating, LLC
47-051-02334	Tug Hill Operating, LLC
47-051-02487	Tug Hill Operating, LLC
47-051-02488	Tug Hill Operating, LLC
47-051-02489	Tug Hill Operating, LLC

LEGEND	
---	LEASED TRACTS
---	SURFACE TRACTS
---	WELL LATERAL
---	POINT PLEASANT LEGS
---	UNIT BOUNDARY
(A)	LEASE # (SEE 6A1 FORM)
---	400' BORE PATH OFFSET
---	500' WELL BORE OFFSET
(O) (FTP)	PROPOSED FIRST TAKE POINT
(O) (LTP)	PROPOSED LAST TAKE POINT



P.S. 708 *David L Jackson*

05/11/2023



**TUG HILL**  
**OPERATING**

OPERATOR'S  
WELL #: MCMASTERS S-17HU  
DISTRICT: Franklin  
COUNTY: Marshall  
STATE: WV  
API #: 47-051-02498

WELL PLAT  
PAGE 2 OF 4  
DATE: 04/06/2023

**MCMASTERS S-17HU**  
**UTICA UNIT - 300.3926± ACRES**  
**TUG HILL OPERATING, LLC**

Lease ID	TMP	Tag	Grantor, Lessor, Etc.	Book	Page
10*14116	5-18-2	A	DONALD SHIELDS, ET AL	669	367
10*14295	5-19-17	B	MARK E. YOHO AND MARY YOHO	655	546
10*14295	5-19-18	C	MARK E. YOHO AND MARY YOHO	655	546
10*14295	5-18-24	D	MARK E. YOHO AND MARY YOHO, ET AL	655	546
10*14022	5-18-22	E	DENISE D WAYNE AND HOWARD N WAYNE SR	665	384
10*14022	5-23-2	F	DENISE D WAYNE AND HOWARD N WAYNE SR	665	384
10*19145	5-23-2.1	G	WILLIAM L WAYNE & JANICE M WAYNE	706	87
10*17145	5-18-21.1	H	JAMES J. CAMPBELL AND BETTY J CAMPBELL, ET AL	685	458
10*17145	5-18-21	I	JAMES J. CAMPBELL AND BETTY J CAMPBELL, ET AL	685	458
10*17145	5-23-3	J	JAMES J. CAMPBELL AND BETTY J CAMPBELL, ET AL	685	458
10*14849	5-23-4	K	DAVID GUSTELY, ET AL	806	265
10*17186	5-23-6	L	ROBERT J HENRY	708	51
10*14847	5-23-5	M	LETHA RUCKMAN, ET AL	806	270
10*17192	5-23-8	N	ROBERT J HENRY, ET AL	716	193
10*18343	5-23-14	O	DOMINION ENERGY TRANSMISSION INC	936	79
10*17189	5-23-9.3	P	ROBERT J HENRY	716	197
10*17189	5-23-9.2	Q	ROBERT J HENRY	716	197
10*14786	5-23-13	R	TWILA O WHIPKEY, ET AL	799	61
10*14786	5-23-11.4	S	TWILA O WHIPKEY, ET AL	799	61
10*14786	5-23-11.1	T	TWILA O WHIPKEY, ET AL	799	61

Parcels within Unit Boundary				
Tags	Number	Tax Map -Parcel	Surface Owner	Acres
A	S20	05-18-02	ROBERT L SHIELDS & DONALD SHIELDS	104.11
B	S21	05-19-17	MARK A. YOHO	15.263
C	S19	05-19-18	DAVID E. YOHO	55.948
D	S17	05-18-24	DUANE BRUNN	102.0
E	S16	05-18-22	JASON PALERMO & WENDY MOORE	30.345
F	S15	05-23-02	DANIEL J. LILLEY	70
G	S12	05-23-2.1	WILLIAM L & JANICE M WAYBE	2.364
H	S14	05-18-21.1	JASON PALERMO & WENDY MOORE	5.47
I	S13	05-18-21	CURTIS E. & MICHELLE J. HALL	32.569
J	S11	05-23-03	PROCTOR RIDGE, LLC	50.0
K	S9	05-23-04	PROCTOR RIDGE, LLC	100.7
L	S10	05-23-06	JAMES A. CHANNING, ET AL	48.0
M	S8	05-23-05	DANIEL D. RHYAND	118.5
N	S7	05-23-08	CARL DAVID & SUZANNE L. GUSEMAN	29.5
O	S5	05-23-14	DOMINION TRANSMISSION, INC.	59.5
P	S6	05-23-9.3	LINDA D. GREATHOUSE	17.5
Q	S4	05-23-9.2	LINDA D. GREATHOUSE	25.58
R	S3	05-23-13	LINDA D. GREATHOUSE	14.24
S	S2	05-23-11.4	KENNETH L. LEMON, TRUSTEE FOR JEFFREY G. HUDSON	10.879
T	S1	05-17-11.1	JOHN H. & SONYA D. HOLLIDAY	67.0
Adjoining Parcels Ownership Table				
Number	Tax Map -Parcel	Surface Owner	Acres	
S18	05-18-23	XCL MIDSTREAM OPERATING, LLC	110.0	
S22	05-19-16	ROBERT L. SHIELDS & DONALD SHIELDS	11.61	
S23	05-19-14	JAMES A. & SHERRY BEEGLE	18.356	
S24	05-18-01	DIANA HENRY HAYNES & CAROL C. HENRY	62.908	
S25	05-19-30	ERNIE & TAMMY ANDERSON	19.037	
S26	05-19-13	RONA LEE RICE & CHARLES FRANKLIN MCCARDLE	94.925	
S27	05-19-13.1	DONALD SHIELDS	0.800	
S28	05-18-3.1	NIKKI L. & JONATHAN STEVENS	2.223	
S29	05-19-8	CNX RCPC LLC	40.00	
S30	05-19-07	OLAN V RUTAN ET UX	32.4801	
S31	05-14-15	ROBERT L. SHIELDS ET AL	53.00	
S32	05-14-14	ROBERT L. SHIELDS & DONALD SHIELDS	29.05	
S33	05-14-12	DALE E. GALLAGHER & HARRY E. GALLAGHER	135.10	
S34	05-14-12.1	HENRY WILSON PLUNKERT JR.	5.0	
S35	05-14-10	WANDA P. RINE - LIFE	107.37	
S36	05-14-13	RALPH D. & SALLY JANE HOYT	222.18	
S37	05-14-9.2	MARIA T. FLORES	25.00	
S38	05-12-21	EDWARD L. GIBSON - LIFE	73.436	
S39	05-12-14	LINDA HAMILTON ET AL	117.495	
S40	05-12-12.1	LIONEL L. PERSINGER ET UX	117.23	



P.S. 708

*David L Jackson*

05/11/2023



**TUG HILL**  
**OPERATING**

OPERATOR'S  
 WELL #: MCMASTERS S-17HU  
 DISTRICT: Franklin  
 COUNTY: Marshall  
 STATE: WV  
 API #: 47-051-

**WELL PLAT**  
**PAGE 3 OF 4**  
**DATE: 04/06/2023**

4705102498



**MCMASTERS S-17HU  
UTICA UNIT - 300.3926± ACRES  
TUG HILL OPERATING, LLC**

Adjoining Parcels Ownership Table			
Number	Tax Map -Parcel	Surface Owner	Acres
S41	05-12-11	WESLEY R. BRYAN & WESLEY R. BRYAN II	52.478
S42	05-11-15	LIONEL L. PERSINGER ET UX	93.0
S43	05-15-01	MARCUS SHARP	121.0
S44	05-15-15	ROBERT L. SHIELDS & DONALD SHIELDS	49
S45	05-15-12	JOHN DAVID PETROCK & THOMAS ANDREW PETROCK	150.23
S46	05-15-11	DIANA HENRY HAYNES & CAROL HENRY	65.59
S47	05-18-1.1	CHARLES F. & DIANA L. HAYNES	0.392
S48	05-15-10	MARK STANLEY RUCKMAN	153.75
S49	05-18-04	OLAN & PATRICIA RUTAN	65.89
S50	05-18-03	OLAN & PATRICIA RUTAN	43.677
S51	05-18-05	TERRY MELOTT	8.14
S52	05-18-15.3	ADAM & JESSIE L. ROBINSON	26.44
S53	05-18-15.4	DAVID R. ANDERSON	22.34
S54	05-18-06	ADAM & JESSIE L. ROBINSON	26.0
S55	05-18-07	ADAM & JESSIE L. ROBINSON	24.2
S56	05-18-16	ADAM & JESSIE L. ROBINSON	17.788
S57	05-18-13	SOUTHERN COUNTRY FARMS, INC.	11.054
S58	05-18-59	SOUTHERN COUNTRY FARMS, INC.	15.79
S59	05-18-30	MARY & DANIEL ROBINSON	5.46
S60	05-18-13.10	CARL BERG	10.88
S61	05-18-29	CARL G. BERG	5.319
S62	05-18-31	JACOB RASTALL	6.94
S63	05-18-32.1	LORI D. CARPENTER	1.16
S64	05-18-32	JACOB RASTALL	5.335
S65	05-18-13.8	LORI D. CARPENTER	5.54
S66	05-18-33	SANDRA & GLENN WHISLER	5.343
S67	05-17-12	JAMES A. & JILL C. CORLEY	3.33
S68	05-17-12.1	WILLIAMS OHIO VALLEY MIDSTREAM, LLC	1.67
S69	05-17-10.5	WILLIAMS OHIO VALLEY MIDSTREAM, LLC	4.24
S70	05-17-10	JAMES A. CORLEY ET AL	92.61
S71	05-17-10.1	JAMES A. & JILL C. CORLEY	4.51
S72	05-17-9.1	JERI J. WHITE	1.0
S73	05-17-9.2	JERI J. WHITE	7.136
S74	05-17-11	KENNETH N. CORLEY, ET UX	120.0
S75	05-17-9.4	VICKI L. BOWEN HRS., JEREMY S. BOWEN - LIFE	60.3
S76	05-17-9.3	JAMES A. CORLEY ET UX	12.478
S77	05-17-11.1	RANDY W. FRANCIS, ET UX	67.0
S78	05-18-20	WAYNE E. CHANNING ET AL	44.7
S79	05-18-21.2	DAVID P. LASSAN -LIFE	1.0
S80	05-18-21.3	XCL MIDSTREAM OPERATING, LLC	0.811
S81	05-23-8.1	WILLIAM & VIRGINIA ROUPE	34.0
S82	05-24-5.4	THOMAS V. TUTTLE, ET UX	38.244
S83	05-24-5.5	SONNY & LINDA TAGG	17.194
S84	05-23-7.2	FLORELLA LOU WEIGAND	6.354
S85	05-23-7.1	RANDY W. & JESSICA L. FRANCIS	0.549
S86	05-23-07	TERRY E. SIMMS, ET UX	123.097
S87	05-24-5.1	JAMES D. WATKINS, ET UX	4.60
S88	05-24-5.2	JAMES D. WATKINS, ET UX	3.151
S89	05-24-5	ROBERT C. FRANCIS, ET UX (LIFE)	145.78
S90	05-24-3.1	T.H. EXPLORATION III, LLC	5.50
S91	05-24-06	TERRY E. SIMMS, ET UX	42.84
S92	05-23-10	TERRY E. SIMMS, ET UX	37.95
S93	05-23-11.7	BRYAN L. HUGGINS	1.835
S94	05-23-11.2	KENNETH L. LEMON, TRUSTEE FOR JEFFREY G. HUDSON	1.154
S95	05-23-11	ROY F. YOHO	9.475
S96	05-23-11.6	T.H. EXPLORATION III, LLC	0.094
S97	05-25-20.2	JAMES M. ZOMBOTTI	1.347
S98	05-25-20.3	JAMES A. & JO C. ESTEP	4.49
S99	05-23-11.5	ZACHARY R. STEVEY	7
S100	05-23-11.3	COLIN R. YOHO	11.29
S101	05-23-13.1	JAMES R. & PAMELA J. FERRELL	0.75
S102	05-23-12	MARK A. YOHO	3.05
S103	05-26-11	MARK A. YOHO	89.25
S104	05-23-9.4	JACKSON R. DAVIS SR. HRS.	2.087
S105	05-23-9.1	JOHN W. VAN ORDEN, ET UX	23.376
S106	05-26-07	DOMINION TRANSMISSION, INC.	71.0
S107	05-26-05	MICHAEL J. WILEY ET AL	65.0
S108	05-23-26	MICHAEL J WILEY ET AL	101.57
S109	05-23-27	MICHAEL J WILEY ET AL	33.14
S110	05-23-15	VIRGINIA ETHEL HENRY, ESTATE	15.5

Adjoining Parcels Ownership Table			
Number	Tax Map -Parcel	Surface Owner	Acres
S111	05-23-16.1	DONALD B. HENRY	1.97
S112	05-23-16	ROY FRIEND YOHO SR.	18.03
S113	05-23-17.3	TROY W. THOMAS & ERIN M. AMOS-THOMAS	5.01
S114	05-23-17	TAMMY & THOMAS E. BROWN	4.62
S115	05-23-17.4	TAMMY D. MEADOWS	2.605
S116	05-23-17.2	DICK ROWAN JR.	14.92
S117	05-23-18	PROCTOR RIDGE, LLC	35.38
S118	05-23-4.1	XCL MIDSTREAM OPERATING, LLC	2.16
S119	05-23-4.2	XCL MIDSTREAM OPERATING, LLC	1.17
S120	05-23-18.1	MARK A. YOHO	7.80
S121	05-23-19	DOTY CEMETERY	1.0
S122	05-23-20	CHRISTIAN CHURCH	0.19
S123	05-23-21	MARK A. YOHO & MARK E. YOHO	0.588
S124	05-23-17.1	CURTIS E. HALL, ET UX	10.051
S125	05-23-29	MICHAEL J. WILEY & MICHELLE BAKER	0.25
S126	05-23-28.2	GEORGE THOMAS THARP IV	10.8
S127	05-23-22	DANIEL D. RHYAND	6.25
S128	05-23-23	MICHAEL J. WILEY, ET AL	1.0
S129	05-23-24	MICHAEL J. WILEY, ET AL	0.25
S130	05-23-25	ARTHUR A. WILEY	0.43
S131	05-23-28	GREGG D. MINOR	39.43
S132	05-23-2.2	JESSICA N. & ANDREW L. JONES	7.636
S133	05-23-28.1	CODY A. AMOS	1.0
S134	05-23-01	PATRICIA ACCETTOLO, ET AL	146.66
S135	05-22-7.1	T.H.EXPLORATION II, LLC & XCL MIDSTREAM OPERATING, LLC	20.68
S136	05-22-08	T.H.EXPLORATION III, LLC	48.44
S137	05-22-06	CNX RCPC, LLC	64.70
S138	05-22-10	T.H.EXPLORATION III, LLC	58.40
S139	05-22-17	CNX RCPC, LLC	137.50
S140	05-22-04	CNX RCPC, LLC	159.05
S141	05-22-05	CNX RCPC, LLC	134.425
S142	05-22-5.1	WILLIAMS OHIO VALLEY MIDSTREAM, LLC	12.875
S143	05-19-18.1	PENNY ASHCRAFT	2.57
S144	05-19-18.2	PAUL V. & CAROL NEELY	32.672
S145	05-19-25	DAVID E. YOHO	9.976
S146	05-19-24	DAVID E. YOHO	15.436
S147	05-19-26	ROGER J. & BETH E. JAMES	9.977
S148	05-19-16.1	ROBERT L. & REBECCA A SHIELDS & ROBERTA CAMPBELL	2.307
S149	05-19-27	DAVID E. YOHO	7.041
S150	05-19-31	CHARLES F. & DIANA L. HAYNES	8.779
S151	05-19-30.1	ERIC R. W. & ASHLEY A. HUGGINS	2.911
S152	05-19-32	JASPER N. BURCH ET AL - TRUSTEES	0.397
S153	05-19-28	DAVID E. YOHO	56.899
S154	05-19-19	RUSSELL & MARY BLAKE	66.148
S155	05-19-21	SAMMY E. WHITLATCH ET AL	116.45
S156	05-19-20	WILBERT H. BUNGARD ET UX	114.99
S157	05-19-28	DAVID E. YOHO	56.899
S158	05-19-15	CARLY HERRAN	0.72
S159	05-19-29	ERNIE L. & TAMMY L. ANDERSON	10.961
S160	05-19-09	PENNY ELAINE ASHCRAFT	10.44
S161	05-19-12	ERNIE L. ANDERSON ET UX	5.33
S162	05-19-10	ERNIE L. ANDERSON ET UX	2.5
S163	05-19-11	ERNIE L. ANDERSON ET UX	0.08
S164	05-19-20.3	SIDNEY HARMON	3.715
S165	05-19-7.5	ADAM T. & JESSE L. ROBINSON	2.64
S166	05-19-7.1	ROBERT L. SHIELDS ET UX	3.399
S168	05-19-20.2	CASSANDRA L. HARMON	7.448
S169	05-19-05	MARGIRENE KEEFE	126.03
S170	05-19-7.2	OLAN RUTAN	2.783
S171	05-19-7.5	ADAM T. & JESSE L. ROBINSON	2.64
S172	05-19-7.4	OLAN V. RUTAN ET UX	1.787
S173	05-19-7.3	OLAN V. RUTAN ET UX	0.341
S174	05-14-11	DALE R. GALLAHER & HARRY E. GALLAGHER	12.0
S175	05-14-10.4	ADAM T. ROBINSON & JESSE L. ROBINSON	3.343
S176	05-14-10.2	RALPH RANDY HOYT	0.495
S177	05-14-10.1	RALPH R. HOYT	0.5
S178	05-14-9.5	MARIA T. FLORES	6.024
S179	05-14-9.1	MARIA T. FLORES	2.882
S180	05-12-17	HILDA DELORIS BAXTER	0.752



P.S. 708

*David L Jackson*

4705102498

05/11/2023



**TUG HILL  
OPERATING**

OPERATOR'S  
WELL #: MCMASTERS S-17HU  
DISTRICT: Franklin  
COUNTY: Marshall  
STATE: WV  
API #: 47-051-

**WELL PLAT**  
**PAGE 4 OF 4**  
**DATE: 04/06/2023**

WW-6A1  
(5/13)

Operator's Well No. McMasters S-17HU

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE  
Chapter 22, Article 6A, Section 5(a)(5)  
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
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\*See attached pages

**Acknowledgement of Possible Permitting/Approval  
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

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The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: Tug Hill Operating, LLC  
 By: Amy L. Morris *Amy L. Morris*  
 Its: Permitting Specialist - Appalachia Region

05/17/2023

Lease ID	TMP	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Book	Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment
10*14116	5-18-2	A	DONALD SHIELDS	GASTAR EXPLORATION USA INC	1/8*	669	367	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	23/353 Gaster Exploration USA Inc to Athlum Marcellus LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Athlum Marcellus I, LLC to TH Exploration II, LLC
10*14117	5-18-2	A	ROBERT I SHIELDS AND REBECCA A SHIELDS	GASTAR EXPLORATION USA INC	1/8*	669	360	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	23/353 Gaster Exploration USA Inc to Athlum Marcellus LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Athlum Marcellus I, LLC to TH Exploration II, LLC
10*14295	5-18-24	D	MARR E YOHO AND MARY YOHO	TRIENERGY, INC.	1/8*	655	546	19/623 Trienergy Inc to AB Resources LLC	666/40 AB Resources LLC to Chief Exploration & Development LLC	21/148 Trienergy Inc and AB Resources LLC to Trienergy Holdings LLC	21/520 Chief Exploration & Development LLC and Radler 2000 Limited Partnership to Enerplus Resources USA	720/214 Trienergy Holdings LLC to AB Resources LLC	24/29 Trienergy Holdings LLC to AB Resources LLC	21/41 Gaster Exploration USA Inc and Athlum Marcellus LLC
10*14296	5-18-24	D	DUANE BRUNN	TRIENERGY HOLDINGS, LLC	1/8*	705	484	NA	NA	NA	24/29 Trienergy Holdings LLC to AB Resources LLC	23/353 Gaster Exploration USA Inc to Athlum Marcellus LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14022	5-23-2	F	DENISE D WAYNE AND HOWARD N WAYNE SR	GASTAR EXPLORATION USA INC	1/8*	665	384	NA	NA	NA	23/353 Gaster Exploration USA Inc to Athlum Marcellus LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Athlum Marcellus I LLC to TH Exploration II LLC
10*19145	5-23-2.1	G	WILLIAM L WAYNE & JANICE M WAYNE	TRIENERGY HOLDINGS, LLC	1/8*	706	87	NA	NA	NA	23/353 Gaster Exploration USA Inc to Athlum Marcellus LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Athlum Marcellus I LLC to TH Exploration II LLC
10*17145	5-23-3	J	JAMES J CAMPBELL AND BETTY J CAMPBELL	CHESAPEAKE APPALACHIA LLC	1/8*	685	458	NA	NA	NA	33/110 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration
10*17146	5-23-3	J	CAROLYN CAMPBELL BRITTON AND ROBERT C BRITTON	CHESAPEAKE APPALACHIA LLC	1/8*	685	464	NA	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration
10*17147	5-23-3	J	JOANN J PARSONS AND GARY D PARSONS	CHESAPEAKE APPALACHIA LLC	1/8*	685	470	NA	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC
10*17148	5-23-3	J	JUNE L CAMPBELL	CHESAPEAKE APPALACHIA LLC	1/8*	685	476	NA	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC
10*17149	5-23-3	J	WANDA M BLAKE	CHESAPEAKE APPALACHIA LLC	1/8*	685	482	NA	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC
10*17150	5-23-3	J	IDA L CAMPBELL	CHESAPEAKE APPALACHIA LLC	1/8*	685	488	NA	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC
10*21415	5-23-3	J	AGEI HOCHSTETLER AND ANNA E HOCHSTETLER	TH EXPLORATION LLC	1/8*	957	7	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Athlum Marcellus LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Athlum Marcellus I, LLC to TH Exploration II, LLC
10*14849	5-23-4	K	DAVID GUSTEY	GASTAR EXPLORATION USA INC	1/8*	806	265	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Athlum Marcellus LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Athlum Marcellus I, LLC to TH Exploration II, LLC
10*14853	5-23-4	K	DURWOOD WRIGHT BY CATHERINE HUMMEL AIF	GASTAR EXPLORATION USA INC	1/8*	809	507	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Athlum Marcellus LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Athlum Marcellus I, LLC to TH Exploration II, LLC
10*14861	5-23-4	K	NANCY WHITLATCH	GASTAR EXPLORATION USA INC	1/8*	809	526	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Athlum Marcellus LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Athlum Marcellus I, LLC to TH Exploration II, LLC

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10*14862	5-23-4	K	ANN GUSTEY	GASTAR EXPLORATION USA INC	1/8+	809	568	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Atrium Marcellus I LLC to TH Exploration II LLC
10*14864	5-23-4	K	CAROLYN DURWAY	GASTAR EXPLORATION USA INC	1/8+	810	330	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Atrium Marcellus I LLC to TH Exploration II LLC
10*14868	5-23-4	K	WOODROW CAMPBELL JR	GASTAR EXPLORATION USA INC	1/8+	813	454	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Atrium Marcellus I LLC to TH Exploration II LLC
10*14869	5-23-4	K	RALPH VAUGHN TAYLOR	GASTAR EXPLORATION USA INC	1/8+	813	561	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Atrium Marcellus I LLC to TH Exploration II LLC
10*14870	5-23-4	K	DAVID CARMICHAEL	GASTAR EXPLORATION USA INC	1/8+	816	16	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Atrium Marcellus I LLC to TH Exploration II LLC
10*14872	5-23-4	K	DWG OIL AND GAS ACQUISITIONS LLC WILLIAM H GASTON	GASTAR EXPLORATION USA INC	1/8+	817	312	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Atrium Marcellus I LLC to TH Exploration II LLC
10*14873	5-23-4	K	RAYMOND MILLER	GASTAR EXPLORATION USA INC	1/8+	821	44	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Atrium Marcellus I LLC to TH Exploration II LLC
10*14874	5-23-4	K	RICHARD MILLER	GASTAR EXPLORATION USA INC	1/8+	822	260	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Atrium Marcellus I LLC to TH Exploration II LLC
10*14876	5-23-4	K	SHIRLEY LARGENT	GASTAR EXPLORATION USA INC	1/8+	827	228	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Atrium Marcellus I LLC to TH Exploration II LLC
10*14877	5-23-4	K	GARY F OBLUY AND DENISE I OBLUY	GASTAR EXPLORATION USA INC	1/8+	835	112	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Atrium Marcellus I LLC to TH Exploration II LLC
10*14878	5-23-4	K	ARTHUR BRUCE COULTER	GASTAR EXPLORATION USA INC	1/8+	839	519	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Atrium Marcellus I LLC to TH Exploration II LLC
10*14879	5-23-4	K	THERESA RINE	GASTAR EXPLORATION USA INC	1/8+	840	162	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Atrium Marcellus I LLC to TH Exploration II LLC
10*14880	5-23-4	K	IBIS LUCAS	GASTAR EXPLORATION USA INC	1/8+	849	545	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Atrium Marcellus I LLC to TH Exploration II LLC
10*14881	5-23-4	K	MARY WHITLATCH POA DEBBY A ANDERSON	GASTAR EXPLORATION USA INC	1/8+	849	548	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Atrium Marcellus I LLC to TH Exploration II LLC
10*14882	5-23-4	K	GARY RINE	GASTAR EXPLORATION USA INC	1/8+	849	551	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Atrium Marcellus I LLC to TH Exploration II LLC

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10*18042	5-23-4	K	JOSEPH J ONORE	TH EXPLORATION LLC	1/8+	927	101	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18043	5-23-4	K	JAMES M ONORE AND CINDY L ONORE	TH EXPLORATION LLC	1/8+	927	105	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18176	5-23-4	K	CRYSTAL M HOOKER AND JAMES HOOKER	TH EXPLORATION LLC	1/8+	929	568	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18329	5-23-4	K	COLLEEN HAGERTY DINO WALTER C	TH EXPLORATION LLC	1/8+	929	560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18367	5-23-4	K	SCHUBERT AND BARBARA A SCHUBERT DO NOT USE SEE 1341 BARBARA INDIVIDUALLY	TH EXPLORATION LLC	1/8+	931	377	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18368	5-23-4	K	ROBERTA K MILLER	TH EXPLORATION LLC	1/8+	931	457	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18386	5-23-4	K	JOSEPH R RINE AND JENNIFER M RINE	TH EXPLORATION LLC	1/8+	932	492	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18598	5-23-4	K	MARK E GUSTEY GASTON FAMILY INVESTMENTS LLC	TH EXPLORATION LLC	1/8+	935	52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18795	5-23-4	K	SHIRLEY ANN DRAKE	TH EXPLORATION LLC	1/8+	959	502	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18994	5-23-4	K	DOROTHY HILKA DUKE	TH EXPLORATION LLC	1/8+	940	137	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*19736	5-23-4	K	KEITH JAY FISCHER AND DAWN M FISCHER	TH EXPLORATION LLC	1/8+	944	571	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21217	5-23-4	K	PATRICAL SHAW KELLER	TH EXPLORATION LLC	1/8+	952	643	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21222	5-23-4	K	ABE HOCHSTETLER AND ANNA E HOCHSTETLER	TH EXPLORATION LLC	1/8+	946	43	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21415	5-23-4	K	DNU ORIE N YOUNG AND BERNIE A YOUNG	TH EXPLORATION LLC	1/8+	957	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21425	5-23-4	K	FRANCIS R SMITH BY POA HUSTON A SMITH & ANNA M SMITH	TH EXPLORATION LLC	1/8+	957	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21428	5-23-4	K	CATHERINE HUMMEL	TH EXPLORATION LLC	1/8+	957	37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21434	5-23-4	K	RICHARD RICH AND KAREN RICH	TH EXPLORATION LLC	1/8+	954	254	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21451	5-23-4	K	KIMBERLY COX WARREN T COULTER AND ROSLINA A COULTER	TH EXPLORATION LLC	1/8+	954	262	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21457	5-23-4	K	HUSTON A SMITH JR AND ANN C SMITH	TH EXPLORATION LLC	1/8+	954	249	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21458	5-23-4	K	JAMES L CHURCH	TH EXPLORATION LLC	1/8+	957	45	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21459	5-23-4	K	MAABEL SHILINGBURG AND CLIFFORD SHILINGBURG AND MATTHEW COULTER AND	TH EXPLORATION LLC	1/8+	957	41	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21498	5-23-4	K	SIMONE COULTER	TH EXPLORATION LLC	1/8+	954	258	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21500	5-23-4	K	EUGENIA E HOUSER	TH EXPLORATION LLC	1/8+	954	245	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21501	5-23-4	K	DEBRA MURIN	TH EXPLORATION LLC	1/8+	954	241	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21502	5-23-4	K	CLARENCE RANDALL EMERY AND PAULA LEAN EMERY	TH EXPLORATION LLC	1/8+	954	237	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21503	5-23-4	K	JOHN ABLES EMERY	TH EXPLORATION LLC	1/8+	954	233	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21632	5-23-4	K	JOHN ABLES EMERY	TH EXPLORATION LLC	1/8+	958	344	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21635	5-23-4	K	STANLEY GUSTEY	TH EXPLORATION LLC	1/8+	959	339	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21656	5-23-4	K	JOHN ORLOY AND JANET L ORLOY	TH EXPLORATION LLC	1/8+	965	206	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21657	5-23-4	K	RONALD J SAKOVICK II & SANDRA SAKOVICK	TH EXPLORATION LLC	1/8+	959	331	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21774	5-23-4	K	JOYCE KAY BURTON AND SAMUEL C BURTON	TH EXPLORATION LLC	1/8+	958	373	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21813	5-23-4	K	STUART WHITE AND BETTY WHITE	TH EXPLORATION LLC	1/8+	957	467	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21815	5-23-4	K	JAMES EARL EMERY AND RENEE R EMERY	TH EXPLORATION LLC	1/8+	958	352	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21816	5-23-4	K	CINDY GREEN AND LARRY GREEN	TH EXPLORATION LLC	1/8+	958	348	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21817	5-23-4	K	MARY LOU HILKA AND RICHARD G HILKA SR	TH EXPLORATION LLC	1/8+	958	356	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21819	5-23-4	K	MARY CATHERINE THOMAS OTT	TH EXPLORATION LLC	1/8+	959	514	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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10*21820	5-23-4	K	MARION DAVID OTT & JANICE L OTT	TH EXPLORATION LLC	1/8+	959	506	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21822	5-23-4	K	MARROUJIA CLYBURN	TH EXPLORATION LLC	1/8+	959	510	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21948	5-23-4	K	BARBARA H COAKLEY	TH EXPLORATION LLC	1/8+	960	66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21949	5-23-4	K	ROBIN ADAIR GUMP AND LOUIS M GUMP	TH EXPLORATION LLC	1/8+	960	70	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21951	5-23-4	K	CHARLES DOUGLAS LANE	TH EXPLORATION LLC	1/8+	960	77	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22013	5-23-4	K	CHARLES J KNOX	TH EXPLORATION LLC	1/8+	966	112	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22014	5-23-4	K	SHERMAN E KNOX JR	TH EXPLORATION LLC	1/8+	966	108	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22018	5-23-4	K	KATHELEN ROBERTSON	TH EXPLORATION LLC	1/8+	960	539	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22026	5-23-4	K	KEVIN D CHURCH	TH EXPLORATION LLC	1/8+	957	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22027	5-23-4	K	STEPHEN C EMERY AND CATHY J EMERY	TH EXPLORATION LLC	1/8+	954	310	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22093	5-23-4	K	TODD LEARN AND KENDA LEARN	TH EXPLORATION LLC	1/8+	954	314	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22102	5-23-4	K	BONNIE LOU GRUBER	TH EXPLORATION LLC	1/8+	954	302	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22128	5-23-4	K	BETTY PSYELL	TH EXPLORATION LLC	1/8+	961	433	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22144	5-23-4	K	WICKY STRAUSS AND DENNIS A STRAUSS	TH EXPLORATION LLC	1/8+	961	429	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22165	5-23-4	K	DEBRA L LYESKI AND GERALD A LYESKI	TH EXPLORATION LLC	1/8+	954	306	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22178	5-23-4	K	ANGELA HENTHORN AND WILLIAM R HENTHORN	TH EXPLORATION LLC	1/8+	972	58	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22332	5-23-4	K	DORIS WEST AND ROBERT WEST	TH EXPLORATION LLC	1/8+	962	542	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22339	5-23-4	K	BETTY LEE HOWARD LOV	TH EXPLORATION LLC	1/8+	963	392	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22443	5-23-4	K	TERSEAN FAMILY REVOCABLE TRUST	TH EXPLORATION LLC	1/8+	963	626	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22503	5-23-4	K	GATHA CHAMBERS	TH EXPLORATION LLC	1/8+	963	622	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22505	5-23-4	K	KENNETH R SHAW AND DONNA K SHAW	TH EXPLORATION LLC	1/8+	966	518	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22505	5-23-4	K	JAMES D DRAKE AND DONNA K DRAKE	TH EXPLORATION LLC	1/8+	964	425	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22594	5-23-4	K	JAMES A WADE SR	TH EXPLORATION LLC	1/8+	965	481	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22609	5-23-4	K	KATHY JO GULLIAM	TH EXPLORATION LLC	1/8+	966	514	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22613	5-23-4	K	JEWEL L CAMPBELL	TH EXPLORATION LLC	1/8+	966	510	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22779	5-23-4	K	STEVEN WADE	TH EXPLORATION LLC	1/8+	968	424	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22809	5-23-4	K	MARGARET C MCMURRY & WILLIAM F MCMURRY	TH EXPLORATION LLC	1/8+	972	54	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22812	5-23-4	K	JOSEPH F GOBOWSKY	TH EXPLORATION LLC	1/8+	968	428	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22861	5-23-4	K	LAURINE C CURTIS & EDGAR A CURTIS III	TH EXPLORATION LLC	1/8+	976	147	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23166	5-23-4	K	JAMES DAVID GRANDALL	TH EXPLORATION LLC	1/8+	984	48	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23168	5-23-4	K	JASON WADE	TH EXPLORATION LLC	1/8+	966	506	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23368	5-23-4	K	ROSE MARIE CAMPBELL	TH EXPLORATION LLC	1/8+	988	447	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23371	5-23-4	K	JONNA MARNE AND ERIC MAPPLE	TH EXPLORATION LLC	1/8+	988	442	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23398	5-23-4	K	ION GUSTEY AND MARLYN NILE	TH EXPLORATION LLC	1/8+	1008	12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23410	5-23-4	K	JENNA WADE	TH EXPLORATION LLC	1/8+	1008	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23505	5-23-4	K	RENEE KELLAR	TH EXPLORATION LLC	1/8+	971	633	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23647	5-23-4	K	**DNV** MARLYN W ROBINSON DO NOT USE																
10*23648	5-23-4	K	TRANSFERRED 17731 17733 17734																
10*23727	5-23-4	K	PAUL D RINE JR & 17735	TH EXPLORATION LLC	1/8+	1009	309	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23756	5-23-4	K	LESA TUCKER AND FRANCIS TUCKER	TH EXPLORATION LLC	1/8+	1011	525	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23757	5-23-4	K	KAREN DRAKE AND JEFF DRAKE	TH EXPLORATION LLC	1/8+	1012	182	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23767	5-23-4	K	DAVID DRAKE	TH EXPLORATION LLC	1/8+	1012	187	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23792	5-23-4	K	MARK ALAN SLATEN	TH EXPLORATION LLC	1/8+	1014	481	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23792	5-23-4	K	STEVEN W SLATEN AND RHONDA SLATEN	TH EXPLORATION LLC	1/8+	1014	488	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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10*14870	5-23-5	M	DAVID CARMICHAEL	GASTAR EXPLORATION USA INC	1/8+	816	16	NA	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Athunum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Athunum Marcellus I LLC to TH Exploration II LLC
10*14872	5-23-5	M	DWG OIL AND GAS ACQUISITIONS LLC WILLIAM H GASTON	GASTAR EXPLORATION USA INC	1/8+	817	312	NA	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Athunum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Athunum Marcellus I LLC to TH Exploration II LLC
10*14873	5-23-5	M	RAYMOND MILLER	GASTAR EXPLORATION USA INC	1/8+	821	44	NA	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Athunum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Athunum Marcellus I LLC to TH Exploration II LLC
10*14874	5-23-5	M	RICHARD MILLER	GASTAR EXPLORATION USA INC	1/8+	822	260	NA	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Athunum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Athunum Marcellus I LLC to TH Exploration II LLC
10*14876	5-23-5	M	SHIRLEY LARGENT	GASTAR EXPLORATION USA INC	1/8+	827	228	NA	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Athunum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Athunum Marcellus I LLC to TH Exploration II LLC
10*14877	5-23-5	M	GARY F OBLLOY AND DENISE I OBLLOY	GASTAR EXPLORATION USA INC	1/8+	836	132	NA	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Athunum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Athunum Marcellus I LLC to TH Exploration II LLC
10*14878	5-23-5	M	ARTHUR BRUCE COULTER	GASTAR EXPLORATION USA INC	1/8+	839	519	NA	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Athunum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Athunum Marcellus I LLC to TH Exploration II LLC
10*14879	5-23-5	M	THERESE RINE	GASTAR EXPLORATION USA INC	1/8+	840	162	NA	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Athunum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Athunum Marcellus I LLC to TH Exploration II LLC
10*14880	5-23-5	M	JRIS LUCAS	GASTAR EXPLORATION USA INC	1/8+	849	545	NA	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Athunum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Athunum Marcellus I LLC to TH Exploration II LLC
10*14881	5-23-5	M	MARY WHITLATCH POA DEBBY A ANDERSON	GASTAR EXPLORATION USA INC	1/8+	849	548	NA	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Athunum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Athunum Marcellus I LLC to TH Exploration II LLC
10*14882	5-23-5	M	GARY RINE	GASTAR EXPLORATION USA INC	1/8+	849	551	NA	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Athunum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Athunum Marcellus I LLC to TH Exploration II LLC
10*14884	5-23-5	M	RENEE HAGERTY	GASTAR EXPLORATION USA INC	1/8+	852	255	NA	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Athunum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Athunum Marcellus I LLC to TH Exploration II LLC
10*14885	5-23-5	M	HOWARD RINE	GASTAR EXPLORATION USA INC	1/8+	854	601	NA	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Athunum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Athunum Marcellus I LLC to TH Exploration II LLC
10*14886	5-23-5	M	JODI YOHIO SMITH	GASTAR EXPLORATION USA INC	1/8+	854	604	NA	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Athunum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Athunum Marcellus I LLC to TH Exploration II LLC
10*14887	5-23-5	M	CHRISTINA ROBERTS	GASTAR EXPLORATION USA INC	1/8+	867	392	NA	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Athunum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Athunum Marcellus I LLC to TH Exploration II LLC

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10*14888	5-23-5	M	DARLENE BUTLER	GASTAR EXPLORATION USA INC	1/8+	867	395	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Atrium Marcellus LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Atrium Marcellus LLC to TH Exploration II LLC	
10*14899	5-23-5	M	HAROLD YOHO	GASTAR EXPLORATION USA INC	1/8+	870	37	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Atrium Marcellus LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Atrium Marcellus LLC to TH Exploration II LLC	
10*14890	5-23-5	M	HENRY MALONE JR	GASTAR EXPLORATION USA INC	1/8+	870	40	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Atrium Marcellus LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Atrium Marcellus LLC to TH Exploration II LLC	
10*14891	5-23-5	M	NANCY F FRYE & STEPHEN M FRYE	GASTAR EXPLORATION USA INC	1/8+	885	606	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	31/184 Gaster Exploration Inc to Atrium Marcellus LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC	43/563 Atrium Marcellus LLC to TH Exploration II LLC	
10*17145	5-23-5	M	JAMES J CAMPBELL AND BETTY J CAMPBELL	CHESAPEAKE APPALACHIA LLC	1/8+	685	458	NA	NA	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration II LLC
10*17146	5-23-5	M	CAROLYN CAMPBELL BRITTON AND ROBERT C BRITTON	CHESAPEAKE APPALACHIA LLC	1/8+	685	464	NA	NA	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration II LLC
10*17147	5-23-5	M	JOANN J PARSONS AND GARY D PARSONS	CHESAPEAKE APPALACHIA LLC	1/8+	685	470	NA	NA	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration II LLC
10*17148	5-23-5	M	JUNE L CAMPBELL	CHESAPEAKE APPALACHIA LLC	1/8+	685	476	NA	NA	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration II LLC
10*17149	5-23-5	M	WANDA M. BLAKE	CHESAPEAKE APPALACHIA LLC	1/8+	685	482	NA	NA	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration II LLC
10*17150	5-23-5	M	IDA L CAMPBELL	CHESAPEAKE APPALACHIA LLC	1/8+	685	488	NA	NA	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration II LLC
10*17502	5-23-5	M	PATRICIA E GUSTEY	TH EXPLORATION LLC	1/8+	942	334	NA	NA	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration II LLC
10*17532	5-23-5	M	DOLORES J BOBONNIK AND RONALD L MAYER AND DEBRA A MAYER	TH EXPLORATION LLC	1/8+	942	346	NA	NA	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration II LLC
10*17535	5-23-5	M	JOANN HAGERTY	TH EXPLORATION LLC	1/8+	929	580	NA	NA	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration II LLC
10*17539	5-23-5	M	MONTE ESTE	TH EXPLORATION LLC	1/8+	942	342	NA	NA	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration II LLC
10*17540	5-23-5	M	ROBERT D STRAWN AND TAMMY J STRAWN	TH EXPLORATION LLC	1/8+	942	624	NA	NA	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration II LLC
10*17541	5-23-5	M	JEFFREY G HAZEL AND SHEILA M HAZEL	TH EXPLORATION LLC	1/8+	942	21	NA	NA	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration II LLC
10*17542	5-23-5	M	CARL EDWARD MCCOY AND CAROLYN SUE MCCOY	TH EXPLORATION LLC	1/8+	942	12	NA	NA	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration II LLC
10*17544	5-23-5	M	DEBORAH LYNN SCHWING	TH EXPLORATION LLC	1/8+	942	15	NA	NA	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration II LLC
10*17545	5-23-5	M	LINDA SWOPE	TH EXPLORATION LLC	1/8+	942	377	NA	NA	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration II LLC
10*17546	5-23-5	M	SAANUEL EARL FRANCIS AND ALICE L FRANCIS	TH EXPLORATION LLC	1/8+	942	24	NA	NA	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration II LLC
10*17593	5-23-5	M	REBECCA HAGERTY	TH EXPLORATION LLC	1/8+	942	374	NA	NA	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration II LLC
10*17594	5-23-5	M	MEGAN HAGERTY	TH EXPLORATION LLC	1/8+	942	350	NA	NA	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration II LLC
10*17595	5-23-5	M	THOMAS E RINE AND MARY P RINE	TH EXPLORATION LLC	1/8+	929	382	NA	NA	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration II LLC
10*17640	5-23-5	M	PATRICIA A GARGAR	TH EXPLORATION LLC	1/8+	942	572	NA	NA	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration II LLC

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10*21498	5-23-5	M	MABEL SHILLINGBURG AND CLIFFORD SHILLINGBURG	TH EXPLORATION LLC	1/8+	954	258	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21500	5-23-5	M	MATTHEW COLTLER AND SIMONE COLTLER	TH EXPLORATION LLC	1/8+	954	245	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21501	5-23-5	M	EUGENIA E HOUSER	TH EXPLORATION LLC	1/8+	954	241	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21502	5-23-5	M	DEBRA MURIN	TH EXPLORATION LLC	1/8+	954	237	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21503	5-23-5	M	DARLENE M DAVIS	TH EXPLORATION LLC	1/8+	954	233	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21562	5-23-5	M	MARY ETTA TAYLOR AND GARY W TAYLOR	TH EXPLORATION LLC	1/8+	958	414	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21563	5-23-5	M	DAVID R TAYLOR AND MARIA TAYLOR	TH EXPLORATION LLC	1/8+	958	422	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21565	5-23-5	M	KORENE SUE LANZ	TH EXPLORATION LLC	1/8+	957	462	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21566	5-23-5	M	HERBERT M TAYLOR AND LENOVA E TAYLOR	TH EXPLORATION LLC	1/8+	958	418	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21615	5-23-5	M	GARY PARSONS AND JOANN J PARSONS	TH EXPLORATION LLC	1/8+	959	347	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21626	5-23-5	M	CLARENCE RANDALL EMERY AND PAULA JEAN EMERY	TH EXPLORATION LLC	1/8+	958	344	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21632	5-23-5	M	JOHN ARLES EMERY	TH EXPLORATION LLC	1/8+	959	339	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21655	5-23-5	M	STANLEY GUSTEY	TH EXPLORATION LLC	1/8+	965	206	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21656	5-23-5	M	JOHN ORLOY AND JANET LOBLDY	TH EXPLORATION LLC	1/8+	959	331	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21657	5-23-5	M	RONALD J SALKOVICK II R SANDRA SALKOVICK	TH EXPLORATION LLC	1/8+	958	373	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21774	5-23-5	M	JOYCE KAY BURTON AND SAMUEL C BURTON	TH EXPLORATION LLC	1/8+	957	467	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21813	5-23-5	M	STUART WHITE AND BETTY WHITE	TH EXPLORATION LLC	1/8+	958	352	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21815	5-23-5	M	JAMES NEAL EMERY AND RENE R EMERY	TH EXPLORATION LLC	1/8+	958	348	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21816	5-23-5	M	CINDY GREEN AND LARRY GREEN	TH EXPLORATION LLC	1/8+	958	356	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21817	5-23-5	M	MARY LOU HINKA AND RICHARD G HINKA SR	TH EXPLORATION LLC	1/8+	959	514	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21819	5-23-5	M	MARY CATHERINE THOMS OTT	TH EXPLORATION LLC	1/8+	958	360	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21820	5-23-5	M	MARION DAVID OTT & JANICE L OTT	TH EXPLORATION LLC	1/8+	959	506	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21832	5-23-5	M	MARQUITA CLYBURN	TH EXPLORATION LLC	1/8+	959	510	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21848	5-23-5	M	BARBARA H COXLEY	TH EXPLORATION LLC	1/8+	960	66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21949	5-23-5	M	ROBIN ADAIR GUMP AND LOUIS M GUMP	TH EXPLORATION LLC	1/8+	960	70	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21951	5-23-5	M	CHARLES DOUGLAS LANE	TH EXPLORATION LLC	1/8+	960	77	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22013	5-23-5	M	CHARLES KNOX	TH EXPLORATION LLC	1/8+	966	112	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22014	5-23-5	M	SHERMAN E KNOX JR	TH EXPLORATION LLC	1/8+	966	108	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22018	5-23-5	M	KATHLEEN ROBERTSON	TH EXPLORATION LLC	1/8+	960	539	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22026	5-23-5	M	KEVIN D CHURCH	TH EXPLORATION LLC	1/8+	957	49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22027	5-23-5	M	STEPHEN C EMERY AND CATHY J EMERY	TH EXPLORATION LLC	1/8+	954	310	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22093	5-23-5	M	TODD LEARN AND KENDA LEARN	TH EXPLORATION LLC	1/8+	954	314	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22102	5-23-5	M	BONNIE LOU GRUBER	TH EXPLORATION LLC	1/8+	954	302	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22128	5-23-5	M	BETTY PYSSEL	TH EXPLORATION LLC	1/8+	961	433	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22142	5-23-5	M	CHEVY L HILL	TH EXPLORATION LLC	1/8+	961	423	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22143	5-23-5	M	WANDA I RIDING AND GERALD R RIDING	TH EXPLORATION LLC	1/8+	961	426	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22144	5-23-5	M	VICKY STRAUSS AND DENNIS A STRAUSS	TH EXPLORATION LLC	1/8+	961	429	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22165	5-23-5	M	DEBRA L IYESKI AND GERALD A IYESKI	TH EXPLORATION LLC	1/8+	954	306	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22178	5-23-5	M	ANGELA HENTHORN AND WILLIAM R HENTHORN	TH EXPLORATION LLC	1/8+	972	58	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22392	5-23-5	M	DORIS WEST AND ROBERT WEST	TH EXPLORATION LLC	1/8+	962	542	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22399	5-23-5	M	BETTY LEE HOWARD LOY	TH EXPLORATION LLC	1/8+	963	392	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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WW-6A1 Supplement

WELL BORE PARCELS

4705102490

Operator's Well No. McMasters S-17HU

Table with 14 columns: Well ID, Date, Status, Operator, Parcel Name, Fraction, Well ID, GCS, Meters, Acreage, B/L, GCS, Meters, Acreage, and Lease ID. Contains data for 50 different well parcels.

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10*23446	5-23-13	R	NICOLETTA MILUCA	TH EXPLORATION, LLC	1/8+	1008	316	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23669	5-23-13	R	LINDA K TOTTEN AND JERRY STEPHEN TOTTEN	TH EXPLORATION, LLC	1/8+	1010	358	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*24003	5-23-13	R	CHARLES SIBURT AND PAULA SIBURT	TH EXPLORATION, LLC	1/8+	1020	193	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*24491	5-23-13	R	DEWIS A GALE	TH EXPLORATION, LLC	1/8+	1008	324	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*24890	5-23-13	R	DEBRA JANE GALE	TH EXPLORATION, LLC	1/8+	1021	122	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*27959	5-23-13	R	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION, LLC	1/8+	1063	594	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*14786	5-23-11.4	S	TWILA O WHIPKEY	GASTAR EXPLORATION USA INC	1/8+	799	61	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*14792	5-23-11.4	S	TIMOTHY YOHG	GASTAR EXPLORATION USA INC	1/8+	799	536	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*14797	5-23-11.4	S	ORVILLE YOUNG	GASTAR EXPLORATION USA INC	1/8+	800	598	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*14822	5-23-11.4	S	OWNAARD E BURGE TRUST STEPHEN W BURGE AS TRUSTEE	GASTAR EXPLORATION INC	1/8+	876	463	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*14823	5-23-11.4	S	SARAH L BURGE TRUST STEPHEN W BURGE AS TRUSTEE	GASTAR EXPLORATION INC	1/8+	876	459	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*14969	5-23-11.4	S	REBECCA S WOOD	GASTAR EXPLORATION INC	1/8+	872	219	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*14970	5-23-11.4	S	GRACE EXLINE	GASTAR EXPLORATION, INC	1/8+	872	623	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*17195	5-23-11.4	S	PATRICIA HARTMAN	GASTAR EXPLORATION USA INC	1/8+	695	317	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*17196	5-23-11.4	S	DELBERT R. MONTGOMERY	GASTAR EXPLORATION USA INC	1/8+	695	311	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*17197	5-23-11.4	S	GLORIA J. SIMMONS HAROLD SIMMONS	GASTAR EXPLORATION USA INC	1/8+	695	313	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*17199	5-23-11.4	S	PAMELA L DRAZIC AND JEFFREY DRAZIC	GASTAR EXPLORATION USA INC	1/8+	695	315	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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10*17200	5-23-11.4	S	STEPHANIE L BATES	GASTAR EXPLORATION USA INC	1/8+	697	156	NA	WV Department of Environmental Protection 23/353 Gastar Exploration USA Inc to Athum Marcellus LLC	27/311 Gastar Exploration USA Inc and Athum Marcellus LLC to Chesapeake Appalachia LLC and Statoli Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoli Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoli Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17201	5-23-11.4	S	DENISE A GALE	GASTAR EXPLORATION USA INC	1/8+	697	395	NA	23/353 Gastar Exploration USA Inc to Athum Marcellus LLC	27/311 Gastar Exploration USA Inc and Athum Marcellus LLC to Chesapeake Appalachia LLC and Statoli Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoli Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	21/238 Statoli USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17202	5-23-11.4	S	JANE GALE	GASTAR EXPLORATION USA INC	1/8+	697	385	NA	23/353 Gastar Exploration USA Inc to Athum Marcellus LLC	27/311 Gastar Exploration USA Inc and Athum Marcellus LLC to Chesapeake Appalachia LLC and Statoli Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoli Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	21/238 Statoli USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17203	5-23-11.4	S	BARRY RAY MOORE	GASTAR EXPLORATION USA INC	1/8+	697	387	NA	23/353 Gastar Exploration USA Inc to Athum Marcellus LLC	27/311 Gastar Exploration USA Inc and Athum Marcellus LLC to Chesapeake Appalachia LLC and Statoli Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoli Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	21/238 Statoli USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17204	5-23-11.4	S	CLARENCE RICHARD ZESIGER & MARY ZESIGER	GASTAR EXPLORATION USA INC	1/8+	697	391	NA	23/353 Gastar Exploration USA Inc to Athum Marcellus LLC	27/311 Gastar Exploration USA Inc and Athum Marcellus LLC to Chesapeake Appalachia LLC and Statoli Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoli Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	21/238 Statoli USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17206	5-23-11.4	S	M VIRGINIA & EDWARD C MARSH	GASTAR EXPLORATION USA INC	1/8+	697	399	NA	23/353 Gastar Exploration USA Inc to Athum Marcellus LLC	27/311 Gastar Exploration USA Inc and Athum Marcellus LLC to Chesapeake Appalachia LLC and Statoli Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoli Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	21/238 Statoli USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17207	5-23-11.4	S	DEBORAH K. KLIMASZEWSKI FRANK KLIMASZEWSKI, SR.	GASTAR EXPLORATION USA INC	1/8+	697	389	NA	23/353 Gastar Exploration USA Inc to Athum Marcellus LLC	27/311 Gastar Exploration USA Inc and Athum Marcellus LLC to Chesapeake Appalachia LLC and Statoli Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoli Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	21/238 Statoli USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC

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10*17210	5-23-11.4	S	MARLYN NOEL	GASTAR EXPLORATION USA INC	1/8+	697	393	NA	23/353 Gaster Exploration USA Inc to Atinum Marcellus LLC	27/311 Gaster Exploration USA Inc and Atinum Marcellus LLC to Chesapeake Appalachia LLC and Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	21/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17211	5-23-11.4	S	GARY WAYNE ZESIGER & VICTORINA ZESIGER	GASTAR EXPLORATION USA INC	1/8+	697	397	NA	23/353 Gaster Exploration USA Inc to Atinum Marcellus LLC	27/311 Gaster Exploration USA Inc and Atinum Marcellus LLC to Chesapeake Appalachia LLC and Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	21/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17212	5-23-11.4	S	DARRELL NEWLAND LYDIA NEWLAND	GASTAR EXPLORATION USA INC	1/8+	697	158	NA	23/353 Gaster Exploration USA Inc to Atinum Marcellus LLC	27/311 Gaster Exploration USA Inc and Atinum Marcellus LLC to Chesapeake Appalachia LLC and Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	21/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17213	5-23-11.4	S	CAROL GREEN GARDNER	GASTAR EXPLORATION USA INC	1/8+	697	154	NA	23/353 Gaster Exploration USA Inc to Atinum Marcellus LLC	27/311 Gaster Exploration USA Inc and Atinum Marcellus LLC to Chesapeake Appalachia LLC and Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	21/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*18114	5-23-11.4	S	ANTOINETTE E GERAUD	TH EXPLORATION LLC	1/8+	943	560	NA	NA	NA	NA	NA	NA	NA	NA
10*18114	5-23-11.4	S	DARRELL NEWLAND	TH EXPLORATION LLC	1/8+	927	56	NA	NA	NA	NA	NA	NA	NA	NA
10*18115	5-23-11.4	S	DONALD R NEWLAND AND SUZANNE NEWLAND	TH EXPLORATION LLC	1/8+	927	73	NA	NA	NA	NA	NA	NA	NA	NA
10*18275	5-23-11.4	S	BETTY LEAN NEELY MARYLOU WILSON AND STANLEY D WILSON MICHAEL WILSON ATTORNEY IN FACT	TH EXPLORATION, LLC	1/8+	929	60	NA	NA	NA	NA	NA	NA	NA	NA
10*18366	5-23-11.4	S	WILSON ALAN YOHIO AND DONNA CRAIG ALAN YOHIO AND DONNA	TH EXPLORATION, LLC	1/8+	931	311	NA	NA	NA	NA	NA	NA	NA	NA
10*18369	5-23-11.4	S	M. YOHIO	TH EXPLORATION LLC	1/8+	931	303	NA	NA	NA	NA	NA	NA	NA	NA
10*18370	5-23-11.4	S	SAMUEL D YOHIO	TH EXPLORATION LLC	1/8+	931	300	NA	NA	NA	NA	NA	NA	NA	NA
10*18379	5-23-11.4	S	DAVID N DEWICK TRUSTEE OF THE TOMI LO MASON LIVING TRUST	TH EXPLORATION, LLC	1/8+	932	439	NA	NA	NA	NA	NA	NA	NA	NA
10*18541	5-23-11.4	S	PATRICK P MCHENRY	TH EXPLORATION, LLC	1/8+	933	649	NA	NA	NA	NA	NA	NA	NA	NA
10*18818	5-23-11.4	S	LUCILLE R MCHENRY	TH EXPLORATION, LLC	1/8+	937	624	NA	NA	NA	NA	NA	NA	NA	NA
10*19486	5-23-11.4	S	BARBARA ANN MAYNARD	TH EXPLORATION, LLC	1/8+	941	229	NA	NA	NA	NA	NA	NA	NA	NA
10*19540	5-23-11.4	S	ERICA M MASON	TH EXPLORATION, LLC	1/8+	942	53	NA	NA	NA	NA	NA	NA	NA	NA
10*19543	5-23-11.4	S	ROBERT I BOWMAN SR	TH EXPLORATION, LLC	1/8+	942	61	NA	NA	NA	NA	NA	NA	NA	NA
10*19640	5-23-11.4	S	MARGARET F RICHMOND DEBORAH FEDOR POA	TH EXPLORATION, LLC	1/8+	944	120	NA	NA	NA	NA	NA	NA	NA	NA
10*19641	5-23-11.4	S	DEBORAH LOWERY & BRADFORD D LOWERY	TH EXPLORATION, LLC	1/8+	944	122	NA	NA	NA	NA	NA	NA	NA	NA
10*19650	5-23-11.4	S	CLAUDIA LOWERY MALLOY	TH EXPLORATION, LLC	1/8+	944	99	NA	NA	NA	NA	NA	NA	NA	NA
10*19652	5-23-11.4	S	JACK R HAMMERS	TH EXPLORATION, LLC	1/8+	944	108	NA	NA	NA	NA	NA	NA	NA	NA
10*19657	5-23-11.4	S	JANET LEE SPARKS	TH EXPLORATION, LLC	1/8+	964	440	NA	NA	NA	NA	NA	NA	NA	NA
10*19732	5-23-11.4	S	CARL M MCHENRY AND PAMELA MOHENRY	TH EXPLORATION, LLC	1/8+	944	469	NA	NA	NA	NA	NA	NA	NA	NA
10*19858	5-23-11.4	S	JAMES MICHAEL YOHIO	TH EXPLORATION, LLC	1/8+	960	188	NA	NA	NA	NA	NA	NA	NA	NA
10*19903	5-23-11.4	S	PAUL F HAMMERS	TH EXPLORATION, LLC	1/8+	948	236	NA	NA	NA	NA	NA	NA	NA	NA
10*19956	5-23-11.4	S	CHARLES D WOOD	TH EXPLORATION, LLC	1/8+	947	589	NA	NA	NA	NA	NA	NA	NA	NA

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10*21073	5-23-11.4	5	ARDITH R ROSE AND TOMMY E ROSE	TH EXPLORATION LLC	1/8+	931	608	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21074	5-23-11.4	5	MALCOLM E WOOD AND JOAN J WOOD	TH EXPLORATION LLC	1/8+	951	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21174	5-23-11.4	5	SHAWN M WOOD	TH EXPLORATION LLC	1/8+	952	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21419	5-23-11.4	5	DAPHNE HUFFMAN AND CHARLES HUFFMAN	TH EXPLORATION LLC	1/8+	957	59	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21431	5-23-11.4	5	GARY WAYNE ZESIGER & VICTORIA ZESIGER	TH EXPLORATION LLC	1/8+	957	57	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21436	5-23-11.4	5	CECILIA D NIEMUND	TH EXPLORATION LLC	1/8+	957	55	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21439	5-23-11.4	5	M VIRGINIA & EDWARD C MARSH	TH EXPLORATION LLC	1/8+	957	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21469	5-23-11.4	5	KIMBERLY S DENNY AND JAMES E DENNY	TH EXPLORATION LLC	1/8+	957	244	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21471	5-23-11.4	5	RICHARD ROSS WILSON	TH EXPLORATION LLC	1/8+	960	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21620	5-23-11.4	5	ROBERT CRAIG MONTGOMERY AND CYNTHIA R MONTGOMERY	TH EXPLORATION LLC	1/8+	959	496	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21621	5-23-11.4	5	MARILYN NOEL	TH EXPLORATION LLC	1/8+	959	494	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21636	5-23-11.4	5	CLARENCE RICHARD ZESIGER & MARY ZESIGER	TH EXPLORATION LLC	1/8+	959	490	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21659	5-23-11.4	5	DEBORAH BLOUGH	TH EXPLORATION LLC	1/8+	958	392	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21660	5-23-11.4	5	PAMELA L DRACIC AND JEFFREY DRACIC	TH EXPLORATION LLC	1/8+	958	390	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21880	5-23-11.4	5	MARRISSA MASON	TH EXPLORATION LLC	1/8+	960	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21891	5-23-11.4	5	MATTHEW MASON	TH EXPLORATION LLC	1/8+	966	122	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21894	5-23-11.4	5	GEORGE DANIEL KRUGER	TH EXPLORATION LLC	1/8+	960	204	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21947	5-23-11.4	5	JILL A BECK	TH EXPLORATION LLC	1/8+	960	101	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21947	5-23-11.4	5	WALLACE LYNN WENDEL	TH EXPLORATION LLC	1/8+	965	59	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22007	5-23-11.4	5	DEBORAH K KLIMASZEWSKI AND FRANK KLIMASZEWSKI	TH EXPLORATION LLC	1/8+	959	492	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22008	5-23-11.4	5	COLIN R YOHIO AND NORMAN L YOHIO	TH EXPLORATION LLC	1/8+	953	304	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22025	5-23-11.4	5	MARK EUGENE YOHIO & MARY YOHIO	TH EXPLORATION LLC	1/8+	960	544	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22031	5-23-11.4	5	PHILIP YOHIO AND PATRICIA YOHIO	TH EXPLORATION LLC	1/8+	960	535	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22032	5-23-11.4	5	JOANNE E RAY	TH EXPLORATION LLC	1/8+	960	537	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22106	5-23-11.4	5	BARRY RAY WOOD	TH EXPLORATION LLC	1/8+	954	643	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22129	5-23-11.4	5	JANICE M HAUBENSCHULTZ	TH EXPLORATION LLC	1/8+	961	459	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22137	5-23-11.4	5	CONNIE L NEELY	TH EXPLORATION LLC	1/8+	961	466	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22285	5-23-11.4	5	DONALD JAMES WILSON AND SANDY L WILSON	TH EXPLORATION LLC	1/8+	962	193	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22334	5-23-11.4	5	JOHN BRYANT	TH EXPLORATION LLC	1/8+	962	540	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22434	5-23-11.4	5	EDWIN NELSON WOOD	TH EXPLORATION LLC	1/8+	963	637	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22510	5-23-11.4	5	DONNA V YOHIO	TH EXPLORATION LLC	1/8+	964	432	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22561	5-23-11.4	5	MARY ROSE YOHIO	TH EXPLORATION LLC	1/8+	968	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22562	5-23-11.4	5	HAROLD C SIMMONS	TH EXPLORATION LLC	1/8+	966	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22563	5-23-11.4	5	KIMBERLY D STRAUH	TH EXPLORATION LLC	1/8+	966	522	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22585	5-23-11.4	5	CYNTHIA L CHICK	TH EXPLORATION LLC	1/8+	966	102	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22718	5-23-11.4	5	WILLIAM R RICHMOND AND CONNIE S RICHMOND	TH EXPLORATION LLC	1/8+	963	389	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23332	5-23-11.4	5	DEVEMY A MILICIA	TH EXPLORATION LLC	1/8+	1008	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23373	5-23-11.4	5	DAVA MILICIA HUMPHREYS	TH EXPLORATION LLC	1/8+	988	429	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23446	5-23-11.4	5	NICOLETTA MILICIA	TH EXPLORATION LLC	1/8+	1008	316	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23669	5-23-11.4	5	BLOODYCORTH LINDA K TOTTEN AND JERRY STEPHEN TOTTEN	TH EXPLORATION LLC	1/8+	1010	358	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*24003	5-23-11.4	5	CHARLES SIBURT AND PAULIA SIBURT	TH EXPLORATION LLC	1/8+	1020	193	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*24291	5-23-11.4	5	TIMOTHY R LINDOUS GENERAL RECEIVER FOR MARY MARTHA BELLE DOYLE & ALL UNK HEIRS	TH EXPLORATION LLC	1/8+	1024	285	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*24491	5-23-11.4	5	DENISE A GALE	TH EXPLORATION LLC	1/8+	1008	324	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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10*24890	5-23-11.4	S	DEBRA JANE GALE	TH EXPLORATION LLC	1/8+	1021	122	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*25065	5-23-11.4	S	COLBY G WOOD	TH EXPLORATION LLC	1/8+	1027	103	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*25066	5-23-11.4	S	RODGER A HENDERSON JR	TH EXPLORATION LLC	1/8+	1027	97	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*25627	5-23-11.4	S	CHESTNUT HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1034	548	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*27714	5-23-11.4	S	PIKEWOOD ENERGY CORPORATION AN OHIO CORPORATION	TH EXPLORATION LLC	1/8+	1060	572	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*7959	5-23-11.4	S	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1063	594	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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STATE OF WEST VIRGINIA     §  
   §  
COUNTY OF MARSHALL       §

**ASSIGNMENT, BILL OF SALE AND CONVEYANCE**

THIS ASSIGNMENT, BILL OF SALE AND CONVEYANCE (this "*Assignment*"), dated effective as of 7:00 A.M., local time, where the respective Assets are located, on July 1, 2020 (the "*Effective Time*"), is between **Atinum Marcellus I, LLC**, a Delaware limited liability company ("*Assignor*"), whose mailing address is One Riverway, Suite 710, Houston, TX 77056-1988, and **TH Exploration II, LLC**, a Texas limited liability company, whose mailing address is 1320 S. University Drive, Suite 500, Fort Worth, Texas 76107 ("*Assignee*"). Assignor and Assignee are each, individually, referred to herein as a "*Party*" and, collectively, as the "*Parties*."

Capitalized terms used but not defined herein shall have the respective meanings set forth in that certain Asset Purchase Agreement dated as of November 13, 2020, by and among Assignor and Assignee (the "*Purchase Agreement*").

Section 1. Assignment. The conveyance and assignment herein shall be deemed effective as of the Effective Time.

For Ten Dollars (\$10.00) and other good and valuable consideration (the receipt and sufficiency of which are hereby acknowledged), Assignor does hereby forever GRANT, BARGAIN, SELL, CONVEY, ASSIGN, TRANSFER, SET OVER AND DELIVER unto Assignee, and Assignee does hereby acquire, the undivided interests in the Leases (as defined below) set forth on Exhibit A-1, and all other of Assignor's right, title and interest in and to the interests and properties described in subsections (a) through (k) of this Section 1 (without duplication) (such right, title and interest, less and except the Excluded Assets, collectively, the "*Assets*");

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(a) The oil and gas leases, mineral leases and Royalties located in the Covered Counties (which Covered Counties include, for the avoidance of doubt, the county in which this Assignment is filed of record), including those described on Exhibit A-1 together with any and all other right, title and interest in and to the leasehold estates created thereby, subject to the terms, conditions, covenants and obligations set forth in such leases or other instrument creating such rights or interests or on Exhibit A-1 (such leases, Royalties, and mineral interests, collectively, the "*Leases*"), together with any related interest in the lands covered by the Leases or lands unitized, pooled, communitized or consolidated therewith (the "*Lands*");

(b) All of the oil and/or gas wells identified on Exhibit A-2 hereto (the "*Wells*"), and any other oil, gas, or other wells located on any of the Leases or the Lands, in each case, whether producing, non-producing, shut-in, temporarily or permanently abandoned or otherwise;

(c) All rights, titles and interests arising under any unitization, pooling and/or communitization agreements, declarations or designations for drilling, spacing and/or production units related to any of the Leases, Wells or Lands, including the units described on Exhibit A-4;

Jan Pest  
MARSHALL County 01:22:39 PM  
Instrument No 1403489  
Date Recorded 04/27/2016  
Document Type ASB  
Pages Recorded 77  
Book-Page 36-9  
Recording Fee \$77.00  
Additional \$13.00

WHEN RECORDED RETURN TO:  
TH Exploration II, LLC  
1320 South University Drive, Suite 500  
Fort Worth, Texas 76107  
Attn: David Kalish

Execution Version

ASSIGNMENT AND BILL OF SALE

4705102498

STATE OF WV §  
COUNTY OF MARSHALL § KNOW ALL MEN BY THESE PRESENTS:  
§

THIS ASSIGNMENT AND BILL OF SALE (this "Assignment"), dated April 7, 2016, but effective as of 7:00 A.M. Houston time on January 1, 2016 (the "Effective Time"), is between Gastar Exploration Inc., a Delaware corporation, whose address is 1331 Lamar Street, Suite 650 Houston, Texas 77010 ("Assignor"), and TH Exploration II, LLC, a Texas limited liability company, whose address is 1320 South University Drive, Suite 500, Fort Worth, Texas 76107 ("Assignee"). Assignor and Assignee are each, individually, referred to herein as a "Party" and, collectively, as the "Parties".

Capitalized terms used but not defined herein shall have the respective meanings set forth in that certain Purchase and Sale Agreement (the "Purchase Agreement"), dated as of February 19, 2016, by and between Assignor and Assignee (as successor-in-interest).

Section 1. Assignment. The conveyance and assignment herein shall be deemed effective as of the Effective Time.

For Ten Dollars (\$10.00) and other good and valuable consideration (the receipt and sufficiency of which are hereby acknowledged), Assignor does hereby forever GRANT, BARGAIN, SELL, CONVEY, ASSIGN, TRANSFER, SET OVER AND DELIVER unto Assignee, all of Assignor's right, title and interest in and to the following interests and properties (such right, title and interest described in subsections (a) through (k) of this Section 1, less and except the Excluded Assets, collectively, the "Conveyed Interests"):

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(a) all oil, gas and/or mineral leases of Assignor, together with any and all other right, title and interest of Assignor in and to the leasehold estates created thereby, including subleases, royalties, overriding royalties, net profits interest, carried interests or similar rights or interests in such leases, and together with all rights, privileges, benefits and powers conferred upon Assignor with respect to the use and occupation of the lands covered thereby that may be necessary, convenient or incidental to the possession and enjoyment of such leases, located in Marshall, Wetzel, Doddridge, Harrison, Lewis, Marion, and Monongalia Counties, West Virginia and Greene, Butler, Fayette, Somerset, and Clearfield Counties, Pennsylvania, including those described on Exhibit A—Part 1 attached hereto (subject to any reservations, limitations or depth restrictions described on Exhibit A—Part 1), (Assignor's interest in such leases and other right, title and interest as so limited, the "Leases");

(b) all rights and interests in, under or derived from all unitization agreements in effect with respect to any of the Leases and the units created thereby, including those described

STATE OF WEST VIRGINIA           §  
  §  
COUNTIES OF MARSHALL AND WETZEL §

ASSIGNMENT AND CONVEYANCE

THIS ASSIGNMENT AND CONVEYANCE (the "Assignment") is made and entered into this 30<sup>th</sup> day of April, 2019 (the "Effective Date"), by and between Atinum Marcellus I, LLC (hereinafter "Assignor") and TH Exploration II, LLC, (hereinafter "Assignee" and, together with Assignor, the "Parties"). Capitalized terms used but not defined herein shall have the meanings commonly given to such terms in the industry.

WITNESSETH:

WHEREAS, Assignor desires to assign, set over, and transfer to Assignee all of Assignor's right, title, and interest in and to one hundred feet (100 ft.) above the formation commonly referred to as the Marcellus Shale formation down to one hundred feet (100 ft.) below the same, in those certain Oil and Gas Leases, or the portions of those certain Oil and Gas Leases, situated in Marshall and Wetzel Counties, West Virginia, as described in Exhibit "A-1" and limited and described in Exhibit "A-2", attached hereto and made a part hereof. It being the Parties intention to assign all of Assignor's interest in each unit as described in Exhibit "A-1", including any changes, revisions, or amendments to the same, now or at any time in the future. (hereinafter the "Leases"); and

WHEREAS, Assignor desires to assign, set over, and transfer to Assignee all of Assignor's right, title, and interest in and to the Leases as described below.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and subject to the limited warranties, restrictions and conditions hereinafter mentioned, the parties hereto, intending to be legally bound, do covenant and agree as follows:

1. Assignment. Assignor does hereby grant, bargain, sell, convey, deliver, assign, set over and transfer, as of the Effective Date, to Assignee, its respective successors and assigns, forever, all of Assignor's right, title, and interest in and to one hundred feet (100 ft.) above the formation commonly referred to as the Marcellus Shale formation down to one hundred feet (100 ft.) below the same, in the Leases, and the lands covered thereby, together with all rights incident thereto and appurtenances thereon. It being the Parties intention to assign all of Assignor's interest in each unit as described in Exhibit "A-1", including any changes, revisions, or amendments to the same, now or at any time in the future.

TO HAVE AND TO HOLD such right, title and interest in and to the Leases unto Assignee or its designee, and their respective successors and assigns, forever, in accordance with the provisions of this Assignment.

2. Special Warranty. Assignor represents and warrants that Assignor has not conveyed or otherwise encumbered (other than permits or easements, rights of way, surface leases and other rights with respect to surface operations that do not materially interfere with, impair or prohibit the operation of the affected Leases, hereinafter "Permitted Encumbrances") its interest in the Leases since the time that Assignor obtained its interests in the Leases. Assignor does covenant, promise and agree, to and with the

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## ASSIGNMENT AND CONVEYANCE

This Assignment and Conveyance (this "*Assignment*") is from SWN PRODUCTION COMPANY, LLC, a Texas limited liability company ("*Assignor*"), to TH Exploration, LLC, a Texas limited liability company ("*Assignee*"), and is executed on December 18, 2017 (the "*Effective Date*"). Assignor and Assignee may be referred to herein collectively as the "*Parties*," or individually as a "*Party*." Capitalized terms used herein but not otherwise defined herein (including in Section 3.7) shall have the meanings given such terms in that certain Acreage Trade Agreement between the Assignor and the Assignee dated August 24, 2017 (the "*Acreage Trade Agreement*").

ARTICLE 1  
ASSIGNMENT OF ASSETS

**Section 1.1 Assignment.** For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignor hereby GRANTS, BARGAINS, ASSIGNS, CONVEYS AND TRANSFERS unto Assignee all of Assignor's right, title and interest in and to (i) the oil and gas leases described in more detail on Exhibit A attached hereto (the "*Leases*") INsofar AND ONLY INsofar as they cover those lands described on Exhibit A (the "*Leasehold Rights*") and (ii) any surface use agreements that relate to such Leasehold Rights (collectively with the Leasehold Rights, the "*Conveyed Assets*").

**TO HAVE AND TO HOLD** the Conveyed Assets, together with all and singular the rights, privileges, contracts and appurtenances, in any way appertaining or belonging thereto, unto Assignee, its successors and assigns, forever, subject, to the terms and conditions of this Assignment.

**Section 1.2 Assignment Subject to Acreage Trade Agreement.** This Assignment is made in accordance with and is subject to the terms, covenants and conditions contained in that certain Acreage Trade Agreement. In the event of a conflict between the provisions of the Acreage Trade Agreement and this Assignment, the provisions of the Acreage Trade Agreement shall control. The execution and delivery of this Assignment by Assignor, and the execution and acceptance of this Assignment by Assignee, shall not operate to release or impair any surviving rights or obligations of either Party with respect to the other under the Acreage Trade Agreement.

ARTICLE 2  
SPECIAL WARRANTY OF TITLE AND DISCLAIMERS

**Section 2.1 Special Warranty of Title.** Assignor hereby agrees to warrant and defend Defensible Title to the Leases unto Assignee, its successors and assigns, against every Person whomsoever lawfully claiming or to claim the same or any part thereof by, through or under Assignor or any of its Affiliates, but not otherwise.

**Section 2.2 Disclaimers of Warranties and Representations.**

(a) EXCEPT AS EXPRESSLY REPRESENTED OTHERWISE IN SECTION VI OF THE ACREAGE TRADE AGREEMENT OR THIS ASSIGNMENT, ASSIGNOR MAKES NO, AND HEREBY EXPRESSLY DISCLAIMS, ANY REPRESENTATION OR

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March 23, 2023

WV Department of Environmental Protection  
Office of Oil & Gas  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304  
Attention: Charles T. Brewer

RE: McMasters S-17HU

Subject: Marshall County Route 29/1 Road Crossing Letter

Dear Taylor:

Tug Hill Operating, LLC (THO) hereby submits this letter as confirmation that THO has obtained the right to drill, extract and produce the minerals under Marshall County Route 29/1 in the area reflected on the McMasters S-17HU well plat. THO has conducted a full title search in the relevant Court House to confirm its ownership under said County Routes and is not currently aware of any recorded document that would suggest an ownership other than THO.

If your office has any questions or concerns regarding the contents of this letter, please do not hesitate to contact me directly at 304-376-0111, or by email at amorris@tug-hilop.com.

Sincerely,

Amy Morris  
Permit Specialist – Appalachia Region  
Cell 304-376-0111  
Email: amorris@tug-hilop.com

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STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE CERTIFICATION

Date of Notice Certification: 03/23/2023

API No. 47- 051 -

Operator's Well No. McMasters S-17HU

Well Pad Name: Shields

Notice has been given:

Pursuant to the provisions in West Virginia Code § 22-6A, the Operator has provided the required parties with the Notice Forms listed below for the tract of land as follows:

State:	West Virginia	UTM NAD 83	Easting:	518,200.94
County:	Marshall		Northing:	4,401,175.26
District:	Franklin	Public Road Access:	Burch Ridge Road (CR 29)	
Quadrangle:	Powhatan Point 7.5'	Generally used farm name:	Robert L. Shields, et al	
Watershed:	Lower Fish Creek			

Pursuant to West Virginia Code § 22-6A-7(b), every permit application filed under this section shall be on a form as may be prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:  *PLEASE CHECK ALL THAT APPLY  <input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED  <input type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED  <input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or  <input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)  <input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION  <input checked="" type="checkbox"/> 5. PUBLIC NOTICE  <input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION		<b>OOG OFFICE USE ONLY</b>  <input type="checkbox"/> RECEIVED/ NOT REQUIRED  <input type="checkbox"/> RECEIVED  <input checked="" type="checkbox"/> RECEIVED/ NOT REQUIRED  <input checked="" type="checkbox"/> RECEIVED  <input checked="" type="checkbox"/> RECEIVED  <input checked="" type="checkbox"/> RECEIVED
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Required Attachments:

The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

05/11/2023

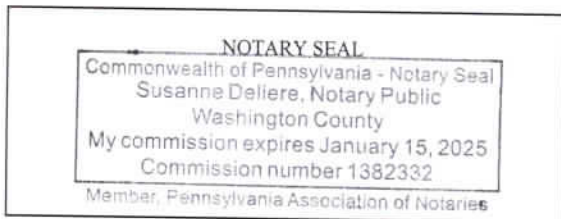
4705102498

**Certification of Notice is hereby given:**

THEREFORE, I Amy L. Morris, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator: Tug Hill Operating, LLC  
By: Amy L. Morris *[Signature]*  
Its: Permitting Specialist - Appalachia Region  
Telephone: 724-749-8388

Address: 380 Southpointe Boulevard, Plaza II, Suite 200  
Canonsburg, PA 15317  
Facsimile: 724-338-2030  
Email: amorris@tug-hillop.com



Subscribed and sworn before me this 23<sup>rd</sup> day of March, 2023.  
Susanne Deliere Notary Public  
My Commission Expires 1/15/2025

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [deprivacyofficer@wv.gov](mailto:deprivacyofficer@wv.gov).

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STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE OF APPLICATION

Notice Time Requirement: notice shall be provided no later than the filing date of permit application.

Date of Notice: 4/6/2023 Date Permit Application Filed: 4/7/2023

Notice of:

- [X] PERMIT FOR ANY WELL WORK [ ] CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

Delivery method pursuant to West Virginia Code § 22-6A-10(b)

- [ ] PERSONAL SERVICE [ ] REGISTERED MAIL [X] METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

[X] Application Notice [ ] WSSP Notice [ ] E&S Plan Notice [ ] Well Plat Notice is hereby provided to:

[X] SURFACE OWNER(s)  
Name: Donald Shields (Pad and Access Road)  
Address: 231 Lonesome Ln.  
Proctor, WV 26055

Name: Robert and Rebecca Shields (Pad and Access Road)  
Address: 2756 Burch Ridge Road  
Proctor, WV 26055

[X] SURFACE OWNER(s) (Road and/or Other Disturbance)  
Name: Mark A. Yoho  
Address: 6701 Burch Ridge Road  
Proctor, WV 26055

Name: Mark E. Yoho  
Address: 3998 Burch Ridge Road  
Proctor, WV 26055

[ ] SURFACE OWNER(s) (Impoundments or Pits)  
Name: n/a  
Address:

[X] COAL OWNER OR LESSEE  
Name: CONSOL Energy Attn: Casey Saunders  
Address: 275 Technology Drive, Suite 101  
Canonsburg, PA 15317-9565

[X] COAL OPERATOR  
Name: CONSOL Energy  
Address: 275 Technology Drive, Suite 101  
Canonsburg, PA 15317-9565

[X] SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)  
Name: Nikki L. & Jonathan Stevens  
Address: 757 Weeping Willow Lane  
Proctor, WV 26055

[ ] OPERATOR OF ANY NATURAL GAS STORAGE FIELD  
Name: n/a  
Address:

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\*Please attach additional forms if necessary

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-10(b), notice is hereby given that the undersigned well operator has applied for a permit for well work or for a certificate of approval for the construction of an impoundment or pit.

**This Notice Shall Include:**

Pursuant to W. Va. Code § 22-6A-10(b), this notice shall include: (1) copies of the application; (2) the erosion and sediment control plan required by section seven of this article; and (3) the well plat.

Pursuant to W. Va. Code § 22-6A-10(f), this notice shall include: (1) a statement of the time limits for filing written comments; (2) who may file written comments; (3) the name and address of the secretary for the purpose of filing the comments and obtaining additional information; and (4) a statement that the persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Pursuant to W. Va. Code R. § 35-8-5.7.a, the operator shall provide the Well Site Safety Plan to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Pursuant to W. Va. Code R. § 35-8-15.2.c, this notice shall: (1) contain a statement of the surface owner's and water purveyor's right to request sampling and analysis; (2) advise the surface owner and water purveyor of the rebuttable presumption for contamination or deprivation of a fresh water source or supply; advise the surface owner and water purveyor that refusal to allow the operator to conduct a pre-drilling water well test constitutes a method to rebut the presumption of liability; (3) advise the surface owner and water purveyor of his or her independent right to sample and analyze any water supply at his or her own expense; advise the surface owner and water purveyor whether or not the operator will utilize an independent laboratory to analyze any sample; and (4) advise the surface owner and water purveyor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and qualified to test water supplies in accordance with standard acceptable methods.

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Well Location Restrictions**

Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items

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examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such factors, if necessary.

#### **Water Well Testing:**

Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well. The operator shall provide an analysis to such surface landowner or water purveyor at their request.

#### **Water Testing Laboratories:**

Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments. A surface owner and water purveyor has an independent right to sample and analyze any water supply at his or her own expense. The laboratory utilized by the operator shall be approved by the agency as being certified and capable of performing sample analyses in accordance with this section.

#### **Rebuttable Presumption for Contamination or Deprivation of a Fresh Water Source or Supply:**

W. Va. Code § 22-6A-18 requires that (b) unless rebutted by one of the defenses established in subsection (c) of this section, in any action for contamination or deprivation of a fresh water source or supply within one thousand five hundred feet of the center of the well pad for horizontal well, there is a rebuttable presumption that the drilling and the oil or gas well or either was the proximate cause of the contamination or deprivation of the fresh water source or supply. (c) In order to rebut the presumption of liability established in subsection (b) of this section, the operator must prove by a preponderance of the evidence one of the following defenses: (1) The pollution existed prior to the drilling or alteration activity as determined by a predrilling or prealteration water well test. (2) The landowner or water purveyor refused to allow the operator access to the property to conduct a predrilling or prealteration water well test. (3) The water supply is not within one thousand five hundred feet of the well. (4) The pollution occurred more than six months after completion of drilling or alteration activities. (5) The pollution occurred as the result of some cause other than the drilling or alteration activity. (d) Any operator electing to preserve its defenses under subdivision (1), subsection (c) of this section shall retain the services of an independent certified laboratory to conduct the predrilling or prealteration water well test. A copy of the results of the test shall be submitted to the department and the surface owner or water purveyor in a manner prescribed by the secretary. (e) Any operator shall replace the water supply of an owner of interest in real property who obtains all or part of that owner's supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source with a comparable water supply where the secretary determines that the water supply has been affected by contamination, diminution or interruption proximately caused by the oil or gas operation, unless waived in writing by that owner. (f) The secretary may order the operator conducting the oil or gas operation to: (1) Provide an emergency drinking water supply within twenty-four hours; (2) Provide temporary water supply within seventy-two hours; (3) Within thirty days begin activities to establish a permanent water supply or submit a proposal to the secretary outlining the measures and timetables to be used in establishing a permanent supply. The total time in providing a permanent water supply may not exceed two years. If the operator demonstrates that providing a permanent replacement water supply cannot be completed within two years, the secretary may extend the time frame on case-by-case basis; and (4) Pay all reasonable costs incurred by the real property owner in securing a water supply. (g) A person as described in subsection (b) of this section aggrieved under the provisions of subsections (b), (e) or (f) of this section may seek relief in court... (i) Notwithstanding the denial of the operator of responsibility for the damage to the real property owner's water supply or the status of any appeal on determination of liability for the damage to the real property owner's water supply, the operator may not discontinue providing the required water service until authorized to do so by the secretary or a court of competent jurisdiction.

#### **Written Comment:**

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

Chief, Office of Oil and Gas  
Department of Environmental Protection  
601 57<sup>th</sup> St. SE  
Charleston, WV 25304  
(304) 926-0450

Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water. **NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.**

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**Time Limits and Methods for Filing Comments.**

The law requires these materials to be served on or before the date the operator files its Application. You have **THIRTY (30) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Pursuant to West Virginia Code § 22-6A-11(c)(2), Any objections of the affected coal operators and coal seam owners and lessees shall be addressed through the processes and procedures that exist under sections fifteen, seventeen and forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article. The written comments filed by the parties entitled to notice under subdivisions (1), (2), (4), (5) and (6), subsection (b), section ten of this article shall be considered by the secretary in the permit issuance process, but the parties are not entitled to participate in the processes and proceedings that exist under sections fifteen, seventeen or forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article.

**Comment Requirements**

Your comments must be in writing and include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

Disclaimer: All comments received will be placed on our web site <http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx> and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

**Permit Denial or Condition**

The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access roads prior to issuance if the director determines that:

- (1) The proposed well work will constitute a hazard to the safety of persons;
- (2) The plan for soil erosion and sediment control is not adequate or effective;
- (3) Damage would occur to publicly owned lands or resources; or
- (4) The proposed well work fails to protect fresh water sources or supplies.

A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

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WW-6A  
(8-13)

4705102498  
API NO. 47-051  
OPERATOR WELL NO. McMasters S-17HU  
Well Pad Name: Shields

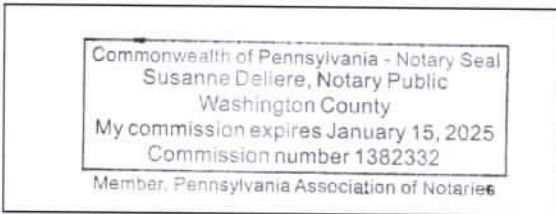
**Notice is hereby given by:**

Well Operator: Tug Hill Operating, LLC  
Telephone: 724-749-8388  
Email: amorris@tug-hilltop.com *amorris*

Address: 380 Southpointe Boulevard, Plaza II, Suite 200  
Canonsburg, PA 15317  
Facsimile: 724-338-2030

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).



Subscribed and sworn before me this 27<sup>th</sup> day of March 2023.  
Susanne Deliere Notary Public  
My Commission Expires 1/15/2025

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Environmental Protection

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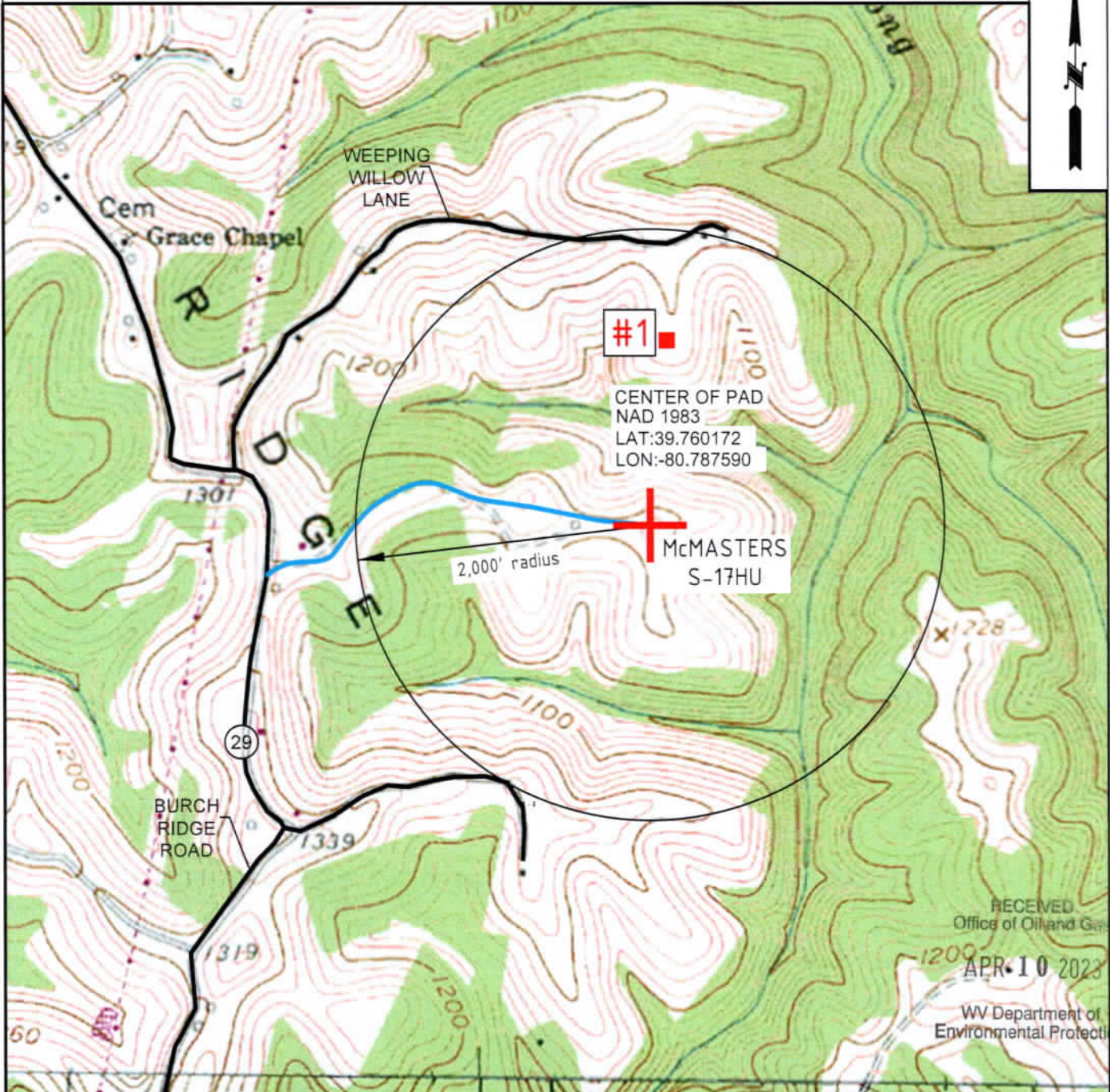


WW-6A


# PROPOSED McMASTERS S-17HU

SUPPLEMENT PG 1

*There appears to be one ( 1 ) possible water source within 2,000'.*



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 <b>TUG HILL OPERATING</b>	<b>OPERATOR</b> 494510851 TUG HILL OPERATING, LLC 380 SOUTHPONTE BLVD SUITE 200 CANONSBURG, PA 15317	<b>TOPO SECTION</b> POWHATAN POINT 7.5'	<b>LEASE NAME</b> McMASTERS
	<b>SCALE:</b> 1" = 1000'	<b>DATE:</b> DATE: 6-4-2020	

WW-6A

Supplement Pg. 1A

Tug Hill Operating, LLC  
380 Southpointe BLVD, Suite 200  
Canonsburg, PA 15317

**WATER WELL REPORT**

Well: MCMASTERS S-17HU  
District: Franklin  
County: Marshall  
State: WV

There appears to be One ( 1 ) possible water source within 2,000 feet of the above referenced well location.

Topo Spot # 1 (House/Cabin) TM 5-18-3.1 Nikki L. & Jonathan Stevens 757 Weeping Willow Ln. Proctor, WV 26055 304-771-0630 © 740-255-3620 © 336-239-2605 ©		

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**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**NOTICE OF INTENT TO DRILL**

Pursuant to W. Va. Code § 22-6A-16(b), the Notice of Intent to Drill is only required if the notice requirements of W. Va. Code § 22-6A-10(a) have NOT been met or if the Notice of Intent to Drill requirement has NOT been waived in writing by the surface owner.

**Notice Time Requirement:** Notice shall be provided at least **TEN (10)** days prior to filing a permit application.

**Date of Notice:** 11/14/2022      **Date Permit Application Filed:** 11/28/2022

**Delivery method pursuant to West Virginia Code § 22-6A-16(b)**

HAND DELIVERY       CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: *Provided*, That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: *Provided, however*, That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

**Notice is hereby provided to the SURFACE OWNER(s):**

Name: Donald Shields  
Address: 231 Lonesome Ln.  
Proctor, WV 26055

Name: Robert and Rebecca Shields  
Address: 2756 Burch Ridge Road  
Proctor, WV 26055

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-16(b), notice is hereby given that the undersigned well operator has an intent to enter upon the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State:	<u>West Virginia</u>	UTM NAD 83 Easting:	<u>518,200.94</u>
County:	<u>Marshall</u>	UTM NAD 83 Northing:	<u>4,401,175.26</u>
District:	<u>Franklin</u>	Public Road Access:	<u>Burch Ridge Road (County Route 29)</u>
Quadrangle:	<u>Powhatan Point 7.5'</u>	Generally used farm name:	<u>Robert L. Shields, Et Al</u>
Watershed:	<u>Lower Fish Creek</u>		

**This Notice Shall Include:**

Pursuant to West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Notice is hereby given by:**

Well Operator: Tug Hill Operating, LLC  
Address: 380 Southpointe Boulevard, Plaza II, Suite 200  
Canonsburg, PA 15317  
Telephone: 724-749-8388  
Email: amorris@tug-hillop.com  
Facsimile: \_\_\_\_\_

Authorized Representative: Darren Brown  
Address: 5098 Washington Street W, Suite 407  
Charleston, WV 25313-1561  
Telephone: 877-467-3525  
Email: cl-statecommunications@wolterskluwer.com  
Facsimile: \_\_\_\_\_

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APR 10 2023

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

05/11/2023

4705102498

WW-6A4 Additional Parties to Notice

Mark A. Yoho  
6701 Burch Ridge Road  
Proctor, WV 26055

Mark E. Yoho  
3998 Burch Ridge Road  
Proctor, WV 26055

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Office of Oil and Gas  
APR 10 2023  
WV Department of  
Environmental Protection

05/11/2023

**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**NOTICE OF PLANNED OPERATION**

**4705102498**

**Notice Time Requirement:** notice shall be provided no later than the **filing date of permit application.**

**Date of Notice:** 04/06/2023      **Date Permit Application Filed:** 04/07/2023

**Delivery method pursuant to West Virginia Code § 22-6A-16(c)**

- CERTIFIED MAIL                                       HAND  
RETURN RECEIPT REQUESTED                                      DELIVERY

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

**Notice is hereby provided to the SURFACE OWNER(s)**

(at the address listed in the records of the sheriff at the time of notice):

Name: Donald Shields  
Address: 231 Lonesome Ln.  
Proctor, WV 26055

Name: Robert and Rebecca Shields  
Address: 2756 Burch Ridge Road  
Proctor, WV 26055

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: <u>West Virginia</u>	UTM NAD 83	Easting: <u>518,197.18</u>
County: <u>Marshall</u>		Northing: <u>4,401,163.66</u>
District: <u>Franklin</u>	Public Road Access: <u>Burch Ridge Road (CR 29)</u>	
Quadrangle: <u>Powhatan Point 7.5'</u>	Generally used farm name: <u>Robert L. Shields, et al</u>	
Watershed: <u>Fish Creek (HUC 10)</u>		

**This Notice Shall Include:**

Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1) A copy of this code section; (2) The information required to be provided by **W. Va. Code § 22-6A-10(b)** to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

Well Operator: Tug Hill Operating, LLC  
Telephone: 724-749-8388  
Email: amorris@tug-hillop.com

Address: 380 Southpointe Boulevard, Plaza II, Suite 200  
Canonsburg, PA 15317  
Facsimile: 724-338-2030

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

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4705102498

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION  
**Division of Highways**

1900 Kanawha Boulevard East • Building Five • Room 110  
Charleston, West Virginia 25305-0430 • (304) 558-3505

D. Alan Reed, P.E.  
State Highway Engineer

Jimmy Wriston, P. E.  
Secretary of Transportation  
Commissioner of Highways

December 7, 2022

James A. Martin, Chief  
Office of Oil and Gas  
Department of Environmental Protection  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304

Subject: DOH Permit for the Shields Pad, Marshall County  
McMasters S-17HU Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2011-0693 which has been issued to Tug Hill Operating for access to the State Road for a well site located off Marshall County Route 29 SLS MP 3.91.

This operator is in compliance with §22-6A-20 of the WV Code. Operator has signed a DISTRICT WIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated October 1, 2018. This letter is valid for permitting purposes for one year from the date of this letter.

Very Truly Yours,

Gary K. Clayton, P.E.  
Regional Operations Engineer  
Central Office O&G Coordinator

Cc: Amy Morris  
Tug Hill Operating  
CH, OM, D-6  
File

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Office of Oil and Gas

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Environmental Protection

05/11/2023



**PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION**

**McMasters S-17HU**

<b>PRODUCT NAME:</b>	<b>CHEMICAL DESCRIPTION:</b>	<b>PRODUCT USE:</b>	<b>HAZARDOUS COMPONENT:</b>
GBW-20C	Hemicellulase Breaker	Breaker - Water	None
ALPHA 1427		Biocide	Glutaraldehyde – CAS#000111-30-8 Quaternary ammonium chloride CAS# 007173-51-5 Alky dimethyl benzyl ammonium Chloride (C12-16) – CAS#068424-85-1 Ethanol – CAS# 000064-17-5 Water – CAS# 007732-18-5
FRAC SAND	Silica Sand (various Mesh sizes)	Proppant	Crystalline silica (quartz) CAS# 14808-60-7
S-8C, Sand	Silica Sand (100 mesh)	Sand	Silica – CAS# 14808-60-7
GW-3LDF		Gellant - Water	Petroleum Distillate Blend – Proprietary, (Not Associated with Diesel Fuel) Guar gum – CAS# 009000-30-0
FRW-18		Friction Reducer	Hydrotreated light distillate CAS# 064742-47-8
Scaletrol		Scale Inhibitor	Ethylene glycol – CAS# 000107-21-1 Diethylene glycol – CAS# 000111-46-6

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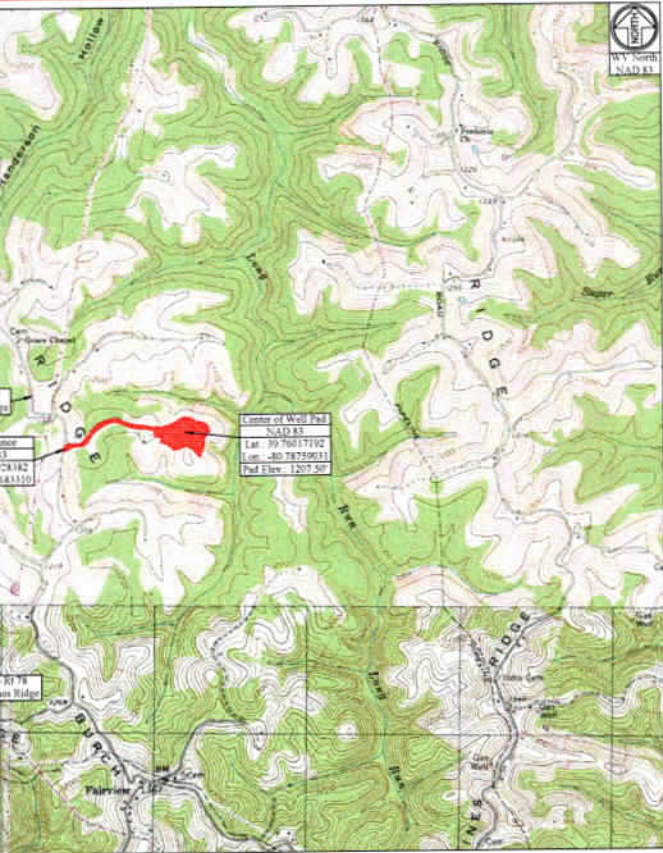
**Well Site**  
 Construction Plan, &  
 Erosion Control Plans  
 for All Operating  
 Wells in Franklin County  
 Marshall District  
 Coordinates: 39.76017192°  
 -80.78759031°  
 Lower Fish Creek Watershed

**Pertinent Site Information**  
 Shields Well Site  
 Emergency Number: 304-845-1920  
 Franklin District, Marshall County, WV  
 Watershed: Lower Fish Creek Watershed  
 Tug Hill Contact Number: 1-817-632-3400

**Property Owner Information - Shields Well Site**

Franklin District - Marshall County							
Owner	TSM - Parcel	Well Pad	Borrow	Access Road	Topsoil/Excavate	Add. Clearing	Total Disturbed
M. Yoho	16-24	0.90	0.00	0.00	0.00	0.02	0.92
M. Yoho	16-17	0.00	0.00	0.19	0.00	0.30	0.39
R. Shields	16-18	1.00	0.00	0.48	0.00	1.65	2.13
R. Shields	16-2	5.84	0.00	1.44	0.23	6.71	14.02
<b>Site Totals (Ac)</b>		<b>5.84</b>	<b>0.00</b>	<b>2.11</b>	<b>0.23</b>	<b>8.68</b>	<b>17.76</b>

**A: As-Built**



WV State Plane Coordinate System  
 North Zone, NAD 83  
 Elevations Based on NAV 88  
 Established By Survey Grade GPS  
 and OPLS Post-Processing

**Access Road**

Surface Owner	TSM - Parcel	Road Length	Type
M. Yoho	16-17	417.45'	Existing Access Road
R. Shields	16-18	1,099.86'	Existing Access Road
R. Shields	16-2	3,065.70'	Access Road Construction

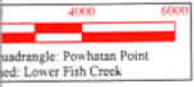
**Disturbed Area**

Well Pad Area	1.84 Ac
Access Road Area	2.11 Ac
Borrow Area	0.70 Ac
Topsoil / Excavate Material	0.23 Ac
Additional Clearing	8.88 Ac
<b>Total Disturbed Area</b>	<b>17.76 Ac</b>
<b>Additional Information</b>	
Total Wooded Areas Disturbed	2.74 Ac
Total Linear Feet of Access Road	4,163.76'

**Shields Well Site Quantities**

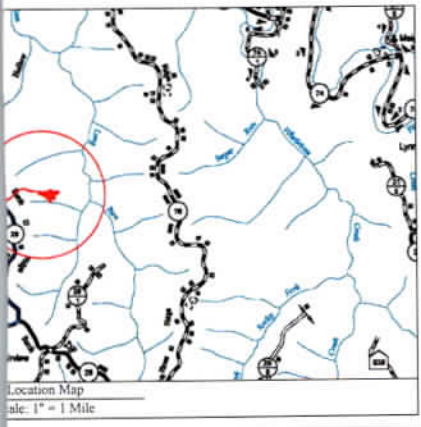
Description	Cut (CY)	Fill (CY)	Spill (CY)	Borrow (CY)	Max. Slope	Length of Slope
Well Pad Grading	199.26	5,958.99	-	5,759.73	N/A	N/A
Well Pad Berms	33.20	1,679.37	-	1,346.17	N/A	N/A
Well Pad Access Road	0.00	2,913.66	-	2,913.66	17.09%	30.20'
Landowner Access Road #1	965.74	967.31	-	1.77	17.89%	61.30'
Landowner Access Road #2	242.93	158.40	-	84.53	11.22%	65.71'
Borrow Area	7,500.74	-	7,500.74	-	N/A	N/A
Topsoil/Excavate Material Stockpile	-	1,500.00	-	1,500.00	N/A	N/A
<b>Totals</b>	<b>8,942.29</b>	<b>10,044.29</b>	<b>7,543.13</b>	<b>8,907.29</b>		
			<b>-1,351.50</b>			(Excavate Spill Capacity)

**Stream Note**  
 The Limits of Disturbance (LOD) shown is the originally permitted boundary. There will be no disturbance to streams within the LOD. Disturbance within the LOD shall be limited to the clearing limits.



**Site Locations (NAD 83)**

Structure	Latitude (DD)	Longitude (DD)
Site Entrance	39.75928182	-80.79683310
Center of Well Pad	39.76017192	-80.78759031



**Well Location Restrictions**  
 All Pad construction complies with the following restrictions:  
 \*250' from an existing well or developed spring used for human or domestic animals  
 \*625' from an occupied dwelling or barn greater than 2,500 SF used for poultry or dairy measured from the center of the pad.  
 \*100' from the edge of disturbance to wetlands, perennial streams, natural or artificial lakes, pond or reservoir.  
 \*300' from the edge of disturbance to a naturally reproducing trout stream.  
 \*1,000' of a surface or ground water intake to a public water supply



The drawings, construction notes and reference diagrams attached hereto have been prepared in accordance with the West Virginia Code of State Rules, Division of Environmental Protection, Title of Oil and Gas 99C30.04.  
 All Plans, Sheets, and/or Reference Diagrams included in this design constitute a complete set of plans. A complete set of plans is necessary to construct the site in accordance with the design.  
 Zachary C. Sumnerfield  
 RPE 22214  
 Earth Services, PLLC  
 OIA, (294)2300  
 Date: 11/15/2022

Sheet	Description
1	Cover Sheet
V1	Schedule of Quantities
N1-N4	Site Notes
2	Pre-Construction Site Conditions
3	Site Soil Map
4	Overall Plan View
5-7	Plan View
8-9	Cross Sections - Well Pad
10	Cross Sections - Well Pad Access Road
G1-G2	Geotechnical Exhibit
L1	Landowner Disturbed Area Exhibit
S1	Site Reclamation
M1-M3	Production Exhibit
D1-D2	Erosion and Sediment Control Details
R1	Access Road Details
P1	Pad Details

**WVDEP OOG**  
**ACCEPTED AS-BUILT**  
 2/6/2023

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 Office of Oil and Gas  
 APR 10 2023  
 WV Department of  
 Environmental Protection

Revision  
 As-Built  
 Date: 11-17-2022



THIS DOCUMENT  
 PREPARED FOR  
 TUG HILL  
 OPERATING



Cover Sheet  
**Shields Well Site**  
 Franklin District  
 Marshall County, WV

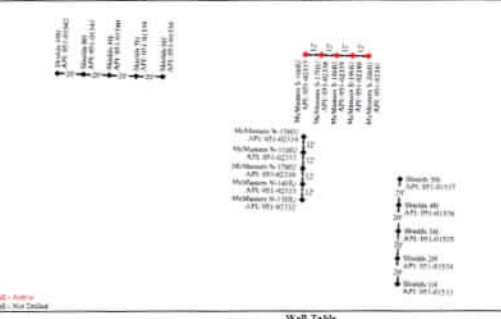
Date: 11/17/2022  
 Scale: As Shown  
 Designed By: ZS  
 File No.  
 11/17/2022

05/11/2023

WEST VIRGINIA COUNTY MAP

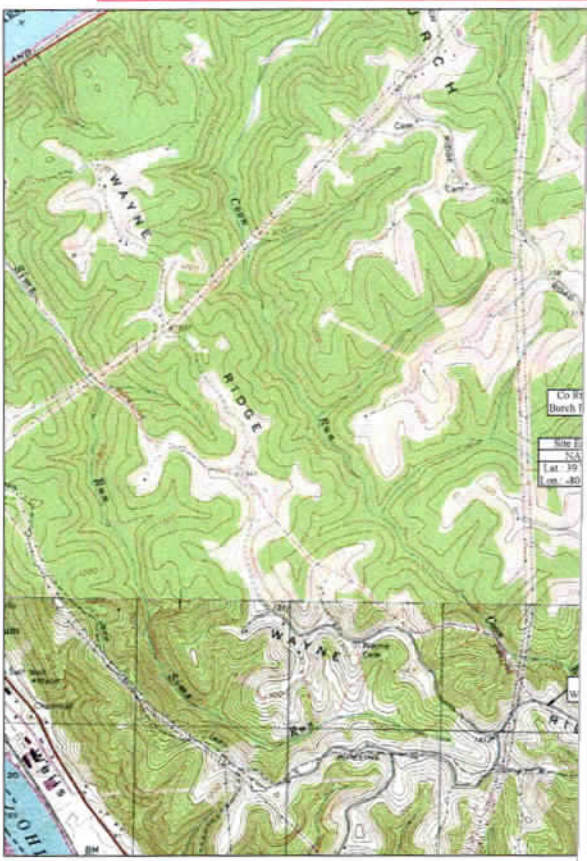


Site Entrance	Center of Well Pad
WV-NAD 83 N: 401301.16	WV-NAD 83 N: 401387.24
WV-NAD 83 E: 160936.06	WV-NAD 83 E: 1606518.84
WV-NAD 27 N: 461205.09	WV-NAD 27 N: 461551.11
WV-NAD 27 E: 163573.73	WV-NAD 27 E: 1637976.47
Lat. NAD 83: 39.75928382	Lat. NAD 83: 39.76017192
Lon. NAD 83: -80.79683310	Lon. NAD 83: -80.78759031
Lat. NAD 27: 39.75929677	Lat. NAD 27: 39.76009494
Lon. NAD 27: -80.79701844	Lon. NAD 27: -80.78777110
UTM 17 NAD 83 N: 4401060.57	UTM 17 NAD 83 N: 4401160.77
UTM 17 NAD 83 E: 517403.01	UTM 17 NAD 83 E: 518194.51
	Pad Elev: 1207.50



Well Table																																																							
<table border="1"> <thead> <tr> <th>Shield# III</th> <th>Shield# XII</th> <th>Shield# III</th> <th>Shield# XII</th> <th>Shield# XII</th> </tr> </thead> <tbody> <tr> <td>WV-NAD 83 N: 401400.56</td> <td>WV-NAD 83 N: 401400.50</td> <td>WV-NAD 83 N: 401501.10</td> <td>WV-NAD 83 N: 401520.89</td> <td>WV-NAD 83 N: 401540.18</td> </tr> <tr> <td>WV-NAD 83 E: 1606618.51</td> <td>WV-NAD 83 E: 1606618.56</td> <td>WV-NAD 83 E: 1606619.10</td> <td>WV-NAD 83 E: 1606619.61</td> <td>WV-NAD 83 E: 1606620.00</td> </tr> <tr> <td>WV-NAD 27 N: 461424.43</td> <td>WV-NAD 27 N: 461444.37</td> <td>WV-NAD 27 N: 461464.97</td> <td>WV-NAD 27 N: 461484.76</td> <td>WV-NAD 27 N: 461504.05</td> </tr> <tr> <td>WV-NAD 27 E: 163805.95</td> <td>WV-NAD 27 E: 163805.20</td> <td>WV-NAD 27 E: 163805.74</td> <td>WV-NAD 27 E: 163805.24</td> <td>WV-NAD 27 E: 163805.64</td> </tr> <tr> <td>Lat. NAD 83: 39.7592733</td> <td>Lat. NAD 83: 39.75928382</td> <td>Lat. NAD 83: 39.75929386</td> <td>Lat. NAD 83: 39.75929386</td> <td>Lat. NAD 83: 39.75929386</td> </tr> <tr> <td>Lon. NAD 83: -80.7875012</td> <td>Lon. NAD 83: -80.7875012</td> <td>Lon. NAD 83: -80.7875004</td> <td>Lon. NAD 83: -80.7875004</td> <td>Lon. NAD 83: -80.7875004</td> </tr> <tr> <td>Lat. NAD 27: 39.7592733</td> <td>Lat. NAD 27: 39.7592733</td> <td>Lat. NAD 27: 39.7592733</td> <td>Lat. NAD 27: 39.7592733</td> <td>Lat. NAD 27: 39.7592733</td> </tr> <tr> <td>Lon. NAD 27: -80.7874880</td> <td>Lon. NAD 27: -80.7874880</td> <td>Lon. NAD 27: -80.7874872</td> <td>Lon. NAD 27: -80.7874864</td> <td>Lon. NAD 27: -80.7874856</td> </tr> <tr> <td>UTM 17 NAD 83 (m) N: 4401128.58</td> <td>UTM 17 NAD 83 (m) N: 4401128.66</td> <td>UTM 17 NAD 83 (m) N: 4401134.95</td> <td>UTM 17 NAD 83 (m) N: 4401140.97</td> <td>UTM 17 NAD 83 (m) N: 4401146.85</td> </tr> <tr> <td>UTM 17 NAD 83 (m) E: 518219.36</td> <td>UTM 17 NAD 83 (m) E: 518219.34</td> <td>UTM 17 NAD 83 (m) E: 518219.40</td> <td>UTM 17 NAD 83 (m) E: 518219.45</td> <td>UTM 17 NAD 83 (m) E: 518219.48</td> </tr> </tbody> </table>	Shield# III	Shield# XII	Shield# III	Shield# XII	Shield# XII	WV-NAD 83 N: 401400.56	WV-NAD 83 N: 401400.50	WV-NAD 83 N: 401501.10	WV-NAD 83 N: 401520.89	WV-NAD 83 N: 401540.18	WV-NAD 83 E: 1606618.51	WV-NAD 83 E: 1606618.56	WV-NAD 83 E: 1606619.10	WV-NAD 83 E: 1606619.61	WV-NAD 83 E: 1606620.00	WV-NAD 27 N: 461424.43	WV-NAD 27 N: 461444.37	WV-NAD 27 N: 461464.97	WV-NAD 27 N: 461484.76	WV-NAD 27 N: 461504.05	WV-NAD 27 E: 163805.95	WV-NAD 27 E: 163805.20	WV-NAD 27 E: 163805.74	WV-NAD 27 E: 163805.24	WV-NAD 27 E: 163805.64	Lat. NAD 83: 39.7592733	Lat. NAD 83: 39.75928382	Lat. NAD 83: 39.75929386	Lat. NAD 83: 39.75929386	Lat. NAD 83: 39.75929386	Lon. NAD 83: -80.7875012	Lon. NAD 83: -80.7875012	Lon. NAD 83: -80.7875004	Lon. NAD 83: -80.7875004	Lon. NAD 83: -80.7875004	Lat. NAD 27: 39.7592733	Lat. NAD 27: 39.7592733	Lat. NAD 27: 39.7592733	Lat. NAD 27: 39.7592733	Lat. NAD 27: 39.7592733	Lon. NAD 27: -80.7874880	Lon. NAD 27: -80.7874880	Lon. NAD 27: -80.7874872	Lon. NAD 27: -80.7874864	Lon. NAD 27: -80.7874856	UTM 17 NAD 83 (m) N: 4401128.58	UTM 17 NAD 83 (m) N: 4401128.66	UTM 17 NAD 83 (m) N: 4401134.95	UTM 17 NAD 83 (m) N: 4401140.97	UTM 17 NAD 83 (m) N: 4401146.85	UTM 17 NAD 83 (m) E: 518219.36	UTM 17 NAD 83 (m) E: 518219.34	UTM 17 NAD 83 (m) E: 518219.40	UTM 17 NAD 83 (m) E: 518219.45	UTM 17 NAD 83 (m) E: 518219.48
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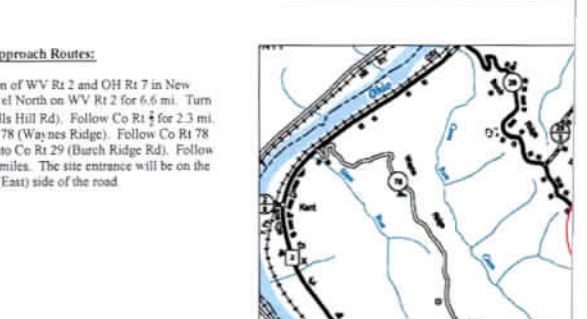
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Project Contacts
<p><b>Tug Hill Operating</b></p> <p>Jonathan White - Regulatory Analyst 724-485-2008 Ext. 304-689-7676 Cell</p> <p>Geoff Radler - V.P. Production 817-632-5200 Off.</p> <p><b>Tug Hill Operating, LLC</b> 380 Southpointe Blvd Southpointe Plaza II, Suite 200 Cammeshurg, PA 15317</p>
<p><b>Survey and Engineer</b></p> <p>Kenneth Kelly 304-338-6983 Off.</p> <p>John P. Nee 304-442-0220 Off.</p> <p>Zachary Summerfield 304-338-6987 Off.</p>
<p><b>Environmental:</b></p> <p>Wetland Delineations as provided by Allstar Ecology dated December 8, 2019</p> <p><b>Topographic Information:</b></p> <p>The topographic information shown herein is based on aerial photography by Blue Mountain Aerial Mapping, Burton, WV</p>

Site Locations (NAD 27)									
<table border="1"> <thead> <tr> <th>Structure</th> <th>Latitude (DD)</th> <th>Longitude (DD)</th> </tr> </thead> <tbody> <tr> <td>Site Entrance</td> <td>39.75929677</td> <td>-80.79683310</td> </tr> <tr> <td>Center of Well Pad</td> <td>39.76009494</td> <td>-80.78777110</td> </tr> </tbody> </table>	Structure	Latitude (DD)	Longitude (DD)	Site Entrance	39.75929677	-80.79683310	Center of Well Pad	39.76009494	-80.78777110
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Approach Routes:
From the intersection of WV Rt 2 and OH Rt 7 in New Martinsville, WV. Travel North on WV Rt 2 for 6.6 mi. Turn Right onto Co Rt 7 (Wells Hill Rd). Follow Co Rt 7 for 2.3 mi. Turn Right onto Co Rt 78 (Waynes Ridge). Follow Co Rt 78 for 0.8 mi. Turn Left onto Co Rt 29 (Burch Ridge Rd). Follow Co Rt 29 North for 1.2 miles. The site entrance will be on the Right (East) side of the road.



MISS UTILITY OF WEST VIRGINIA  
1-800-245-4848  
West Virginia State Law Section 21F, Chapter 21C requires that you call two hours before.

Know what's Below. Call before you dig.

Floodplain Conditions	NO	NO
Do site construction activities take place in a floodplain?	NO	NO
Permit needed from county floodplain coordinator?	NO	NO
Flood Hazard Zone	X	NO
HEC-RAS Study completed	NO	NO
Floodplain shown on drawings	NO	NO
FIRM Map Number(s) for site	1401C	1143E
Acres of construction in floodplain	NO	NO

Project Contacts
<p>Tug Hill Operating will obtain an Encroachment Permit (Form MM-109) from the WV Department of Transportation, Division of Highways, prior to the commencement of any construction activities</p> <p>The WV Mines Website was consulted. Previous (Current) mining activities are not within the AOI.</p> <p>WVDEP Website files show that there are active and/or abandoned gas wells within the AOI</p>

05/11/2023

Shields Well Site  
Tug Hill Operating  
Exhibit A: As-Built



**WVDEP OOG  
ACCEPTED AS-BUILT**  
*KSH* 2/6/2023



Date: 11/17/2022  
Revision: As-Built

**TUG HILL  
OPERATING**



THIS DOCUMENT  
PREPARED FOR  
TUG HILL  
OPERATING



Site Plan  
**Shields Well Site**  
Franklin District  
Marshall County, WV

NOTE:  
All surface boundary lines shown herein are based on boundary evidence collected with mapping grade GPS receivers.

Date: 11/17/2022  
Scale: As Shown  
Designed By: ZS  
File No:  
Sheet 10 of 10

05/11/2023



**Legend**


Disturbed Area	
Well Pad Area	5.84 Ac
Access Road Area	2.11 Ac
Borrow Area	0.70 Ac
Topsoil Excise Material	0.23 Ac
Additional Clearing	8.88 Ac
<b>Total Disturbed Area</b>	<b>17.76 Ac</b>

Access Road		
TM - Parcel	Road Length	Type
TM - Parcel	15'-17'	417.45'
Existing Access Road		

Additional Information	
Total Wetland Area Impacted	7.74 Ac
R. Shields	
R. Shields	
Total Linear Feet of Access Road	4,161.70'

05/11/2023

OPERATOR: Tug Hill Operating, LLC WELL NO: McMasters S-17HU

PAD NAME: Shields

REVIEWED BY: Amy L. Morris SIGNATURE: *Amy L. Morris*

### WELL RESTRICTIONS CHECKLIST

#### HORIZONTAL 6A WELL

#### Well Restrictions

- At Least 100 Feet from Pad and LOD (including any E&S Control Feature) to any Perennial Stream, Lake, Pond, Reservoir or Wetland; OR  
 DEP Waiver and Permit Conditions
- At Least 300 Feet from Pad and LOD (including any E&S Control Feature) to any Naturally Producing Trout Stream; OR  
 DEP Waiver and Permit Conditions
- At Least 1000 Feet from Pad and LOD (including any E&S Control Feature) to any Groundwater Intake or Public Water Supply; OR  
 DEP Waiver and Permit Conditions
- At Least 250 Feet from an Existing Water Well or Developed Spring to Well Being Drilled; OR  
 Surface Owner Waiver and Recorded with County Clerk, OR  
 DEP Variance and Permit Conditions
- At Least 625 Feet from an Occupied Dwelling Structure to Center of the Pad; OR  
 Surface Owner Waiver and Recorded with County Clerk, OR  
 DEP Variance and Permit Conditions
- At Least 625 Feet from Agricultural Buildings Larger than 2500 Square Feet to the Center of the Pad; OR  
 Surface Owner Waiver and Recorded with County Clerk, OR  
 DEP Variance and Permit Conditions

RECEIVED  
Office of Oil and Gas  
APR 10 2023  
WV Department of  
Environmental Protection

05/11/2023