



west virginia department of environmental protection

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

Harold D. Ward, Cabinet Secretary
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-16HU
47-051-02497-00-00

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-16HU
Farm Name: ROBERT L. SHIELDS
U.S. WELL NUMBER: 47-051-02497-00-00
Horizontal 6A New Drill
Date Issued: 5/12/23

Promoting a healthy environment.

05/11/2023

PERMIT CONDITIONS

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

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



west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th 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 #47-051-02497

COMPANY: Tug Hill Operating, LLC

FARM: Robert L. Shields, et al

McMasters S-16HU

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,

A handwritten signature in blue ink that reads "Susan Rose". The signature is written in a cursive, flowing style.

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

05/11/2023

18) **CASING AND TUBING PROGRAM**

TYPE	<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'	1,836FT^3(CTS)
Intermediate 2	9 5/8"	NEW	HPP110	47#	10,220'	10,220'	3,300FT^3(CTS)
Production	5 1/2"	NEW	HCP110	23#	22,277'	22,277'	5,277FT^3(CTS)
Tubing	2 7/8"	NEW	HCP110	6.5#		10,945'	
Liners							

TYPE	<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			RECEIVED Office of Oil and Gas
Sizes:	N/A			APR 10 2023
Depths Set:	N/A			WV Department of Environmental Protection

John Crump
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(10,445'). 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

*Note: Attach additional sheets as needed.

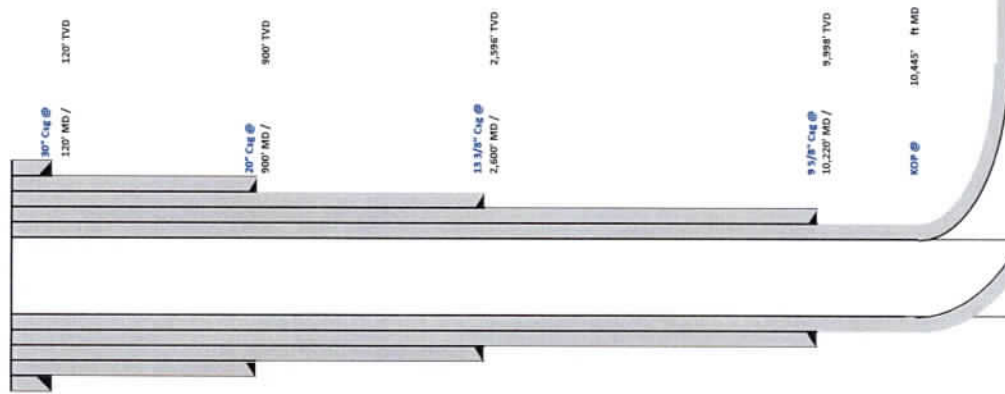
Shields
3/22/2023

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WELL NAME: McMasters S-16HU
 STATE: WV COUNTY: Marshall
 DISTRICT: Franklin
 DI Elev: 1,206' GI Elev: 1,206'
 TD: 22,277'
 TH Latitude: 39.76030273
 TH Longitude: -80.78755753
 BH Latitude: 39.732127
 BH Longitude: -80.775109



FORMATION TOPS

Formation	Depth TVD
Deepest Fresh Water	802'
Sewickley Coal	701'
Pittsburgh Coal	796'
Big Lime	1,878'
Berea	2,516'
Tully	6,353'
Marshall	6,435'
Onondaga	6,485'
Salina	7,172'
Lockport	8,178'
Utica	10,851'
Poist Pleasant	11,108'
Landing Depth	11,181'
Trenton	11,225'
Pilot Hole TD	11,379'

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'	10LS	J55	Surface
Intermediate 1	17 1/2	13 3/8	2,600'	2,996'	54.5	J55	Surface
Intermediate 2	12 1/4	9 5/8	10,250'	9,998'	47	HPP110	Surface
Production	8 1/2	5 1/2	22,277'	11,343'	23	HCP110	Surface

CEMENT SUMMARY

Type	Sacks	Class	Density (ppg)	Fluid Type	Centralizer Notes
Conductor	338	A	15.6	Air	None
Surface	1,276	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	1,889	A	15.6	Air	1 Centralizer every other joint
Intermediate 2	3,044	A	14.5	Air	1 Centralizer every other joint
Production	5,396	A	16.5	Air / SORM	1 every other joint in lateral; 1 per joint in curve; 1 every other joint to surface

PH TD @ 11,375'
 Lateral TD @ 22,277'
 H MD 11,343'
 H TVD 11,343'

Landing Point @ 11,165' MD / 11,165' TVD
 H MD = 150' below Trenton Top

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Handwritten signature and date: 3-22-2023

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Tug Hill Operating, LLC Casing and Cement Program

McMasters S-16HU

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"	10,220'	CTS
Production	5 1/2"	HCP110	8 1/2"	22,277'	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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Permit well - McMasters S-16HU

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
4705170363	McIntire, J.T.	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. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore.	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 Virginia State Office Building | Charleston, WV 25305

Application for a permit under the provisions of the West Virginia Surface Water Quality Standards Act, Chapter 20, Article 2, of the West Virginia Code, for the discharge of effluent from the following facility:

Facility Name	Address	County	Latitude	Longitude
...

Facility Name	Address	County	Latitude	Longitude
...

Facility Name	Address	County	Latitude	Longitude
...

Facility Name	Address	County	Latitude	Longitude
...

Facility Name	Address	County	Latitude	Longitude
...

Facility Name	Address	County	Latitude	Longitude
...

There is no facility at this location.

There is no facility at this location.

There is no facility at this location.

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WW-9
(4/16)

4705102497

API Number 47 - 051 - _____
Operator's Well No. McMasters S-16HU

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 ECR1386426), Chastrut 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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Subscribed and sworn before me this 21st day of March, 2023

[Signature] Notary Public

My commission expires 1/15/2025

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

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	Seed Type	lbs/acre
Annual Ryegrass	40	Orchard Grass	12
Spring Oats	96	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

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Field Reviewed?

Yes

No

WW-9

PROPOSED McMASTERS S-16HU

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.



DIANA HENRY
HAYNES &
CAROL C.
HENRY
05-18-1
62,908 Ac.

B. HENRY
18-1
62.9 Ac.

JAMES &
SHERRY
BEEGLE
05-19-14
18,356 Ac.



DAVID E. &
MARK E. YOHO
05-19-27
7,041 Ac.

ROBERT L.
REBECCA A.
SHIELDS
05-19-16.1
2,307 Ac.

ROBERT L.
SHIELDS &
DONALD
SHIELDS
05-19-16
11,612 Ac.

ROGER J. &
BETH E. JAMES
05-19-26
9,977 Ac.

DAVID E. &
MARK E. YOHO
05-19-25
9,976 Ac.

MARK E. YOHO
05-19-17
16,263 Ac.

MARK E. YOHO
05-19-24
15,436 Ac.

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MARK E. YOHO
05-19-18
55,948 Ac.

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.
2415 E. Pike St. #112
Martinsburg, WV 26101
Phone: 304-823-6801

TOPO SECTION:		OPERATOR:	
POWHATAN POINT 15'		PREPARED FOR:	
COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
MARSHALL	FRANKLIN	389 SOUTHPOINTE BLVD	
DRAWN BY	JOB NO.	DATE	SCALE
J.D.C.	494510851	6-4-2020	NONE



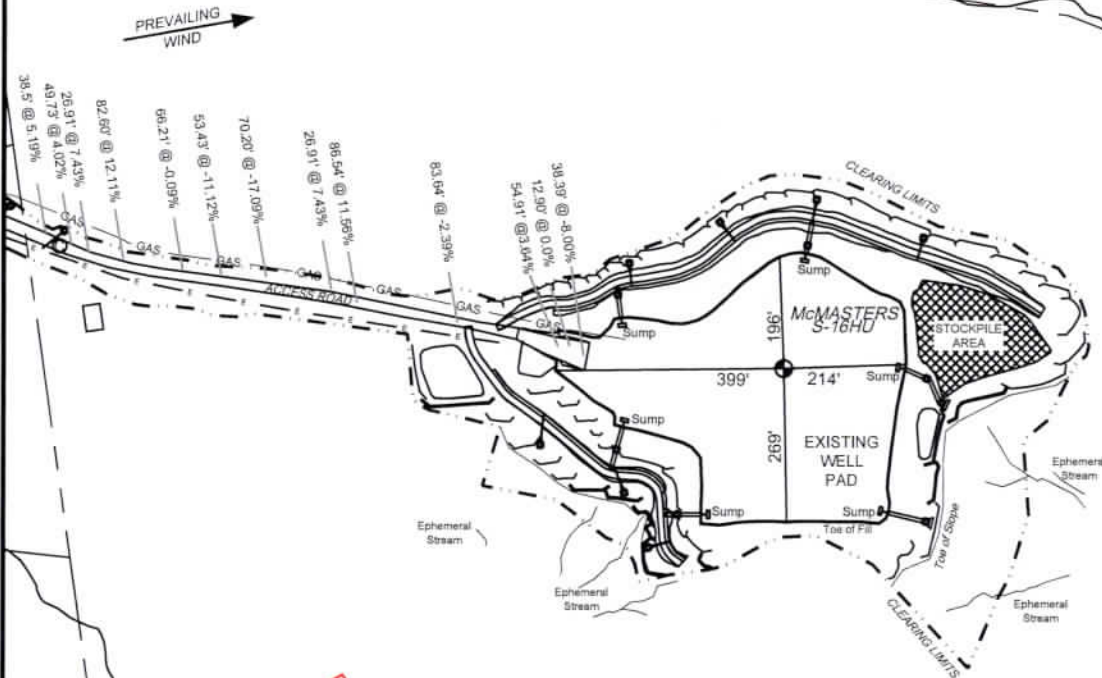
WW-9

**PROPOSED McMASTERS
S-16HU**

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:
 (C) — 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.
2419 E. Main St. #118
Clarksburg, WV 26301
Phone: 304-823-5881

TOPO SECTION:		OPERATOR:	
POWHATAN POINT 7.5'		PREPARED FOR:	
COUNTY:	DISTRICT:	TUG HILL OPERATING, LLC	
MARSHALL	FRANKLIN	380 SOUTHPOINTE BLVD	
DRAWN BY:	JOB NO.:	SUITE 200	
J.D.C.	494510851	CANONSBURG, PA 15317	
		DATE:	SCALE:
		6-4-2020	NONE



05/11/2023



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

Well Name: McMasters S-16HU

Pad Name: Shields

County: Marshall

UTM (meters), NAD83, Zone 17

Northing: 4,401,176.30

Easting: 518,197.28

**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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WV Department of
Environmental Protection

24-HOUR EMERGENCY PHONE NUMBER

(800) 921-9745

Steve Cron
3/22/2023

05/11/2023

4705102497



TUG HILL

April 6, 2023

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

RE: McMasters S-16HU

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.

Sincerely,

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

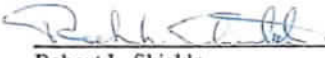

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APR 10 2023
WV Department of
Environmental Protection

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 20th day of November, 2019.


Robert L. Shields

Rebecca A. Shields

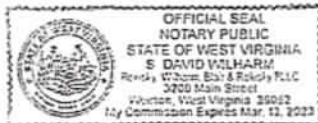
Marshall County
Jan Pest, Clerk
Instrument 1463767
01/29/2020 @ 10:58:15 AM
RIGHT OF WAY W/O CONSIDERATION
Book 1072 & Page 252
Pages Recorded 2
Recording Cost \$ 11.00

STATE OF WEST VIRGINIA
COUNTY OF MARSHALL

SS:

On this, the 20th day of November, 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 Wilharm
Name/Notary Public (print): David Wilharm

This instrument prepared by:
WV Oil and Gas Conservation Commission
601 57th 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



1 inch: 435 feet

0 125 250 500
Feet

N
A

THIS PLAN IS THE PROPERTY OF TUG HILL ENERGY SERVICES, L.P. AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF TUG HILL ENERGY SERVICES, L.P. THE INFORMATION CONTAINED HEREIN IS UNCLASSIFIED AND IS BEING MADE AVAILABLE TO THE PUBLIC FOR INFORMATIONAL PURPOSES ONLY. IT IS NOT TO BE USED FOR ANY OTHER PURPOSES. THE INFORMATION CONTAINED HEREIN IS UNCLASSIFIED AND IS BEING MADE AVAILABLE TO THE PUBLIC FOR INFORMATIONAL PURPOSES ONLY. IT IS NOT TO BE USED FOR ANY OTHER PURPOSES.

"Plat"

SHIELDS ROBERT L ET AL
Marshall, WV

Date: 11/20/19

Name: *Robert L. Shields*

Name: *Robert L. Shields*



Limit of Disturbance - Access Road

Limit of Disturbance - Pad

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

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 20th day of November, 2019.


Donald Shields

Marshall County
Jan Pest, Clerk
Instrument 1463768
01/29/2020 @ 10:58:16 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 20th 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: 3/12/2023
Signature/Notary Public: S David Wilburn
Name/Notary Public (print): S David Wilburn

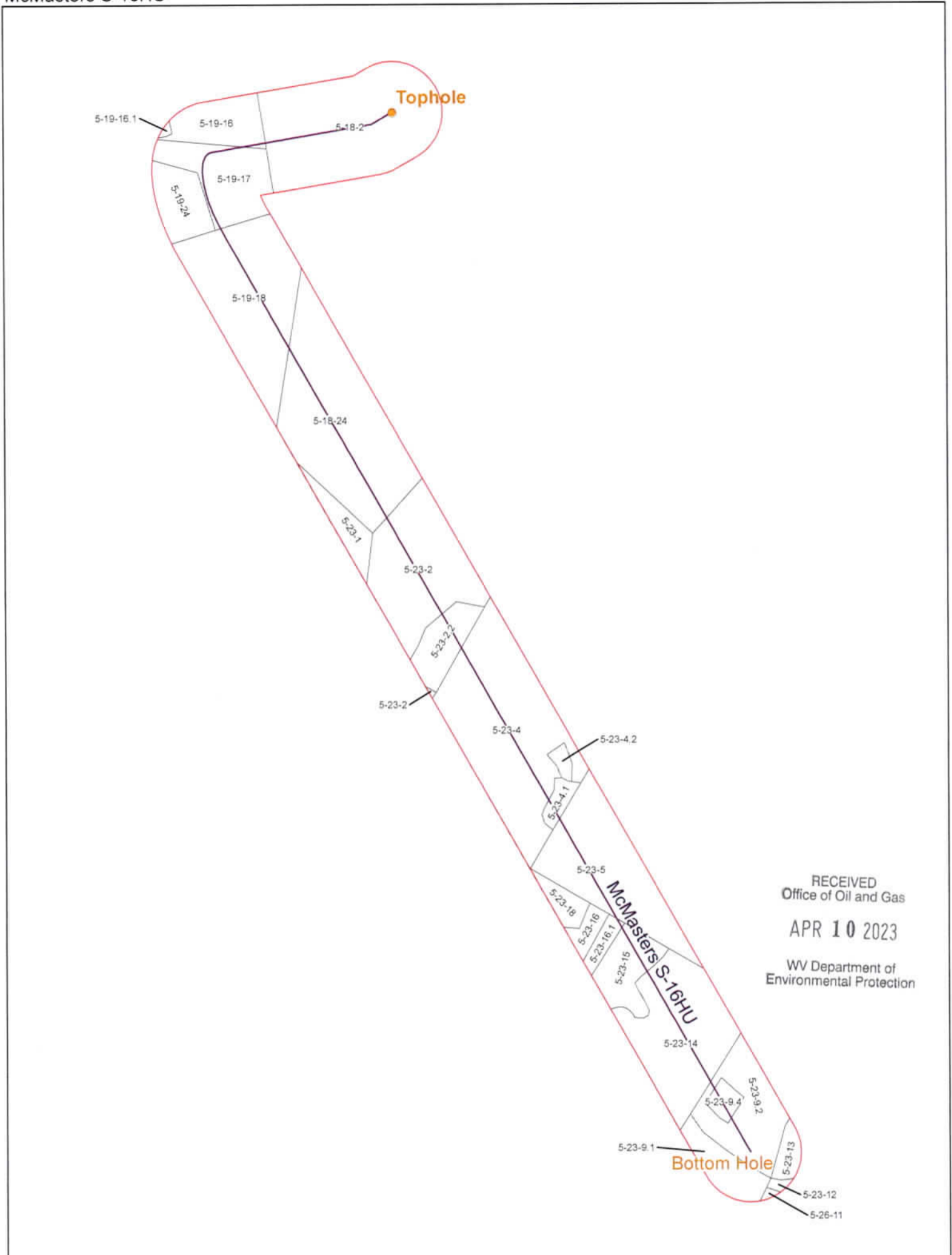
This instrument prepared by:
WV Oil and Gas Conservation Commission
601 57th Street
Charleston, WV 25304

4838-2618-8605v2

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WV Department of
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05/11/2023

McMasters S-16HU



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Coordinate System: NAD 83 UTM Zone 18N
 Project: Transverse Mercator
 Datum: North American 1983
 False Easting: 100,000.0000
 False Northing: 0.0000
 Central Meridian: -81.0000
 Scale Factor: 0.9999
 Latitude Of Origin: 39.8333
 UTM Zone: 18N

CONFIDENTIAL



- Utica Well
- 500' Buffer

McMasters S-16HU
Operators within 500 Feet of Well Borehole



**Operators within 500' of Well Boreholes
McMasters S - 16HU**

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	5-18-24	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	5-19-16.1	TH EXPLORATION, 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	5-19-24	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-1	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	5-23-2.2	TH EXPLORATION II, 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	5-23-4.1	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-4.1	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-4.2	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-4.2	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

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Environmental Protection

05/11/2023

**Operators within 500' of Well Boreholes
McMasters S - 16HU**

Marshall	Franklin	5-23-5	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-9.1	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	5-23-9.4	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-12	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-12	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-13	TH EXPLORATION II, LLC *	1 Riverway Suite 710 Houston, TX 77056
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
Marshall	Franklin	5-23-15	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-15	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-16	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-16	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-16.1	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-16.1	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-18	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-18	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-26-11	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107

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Tarrant County
Department of
Environmental Protection

Operators within 500' of Well Boreholes
McMasters S - 16HU

Marshall	Franklin	5-26-11	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>				

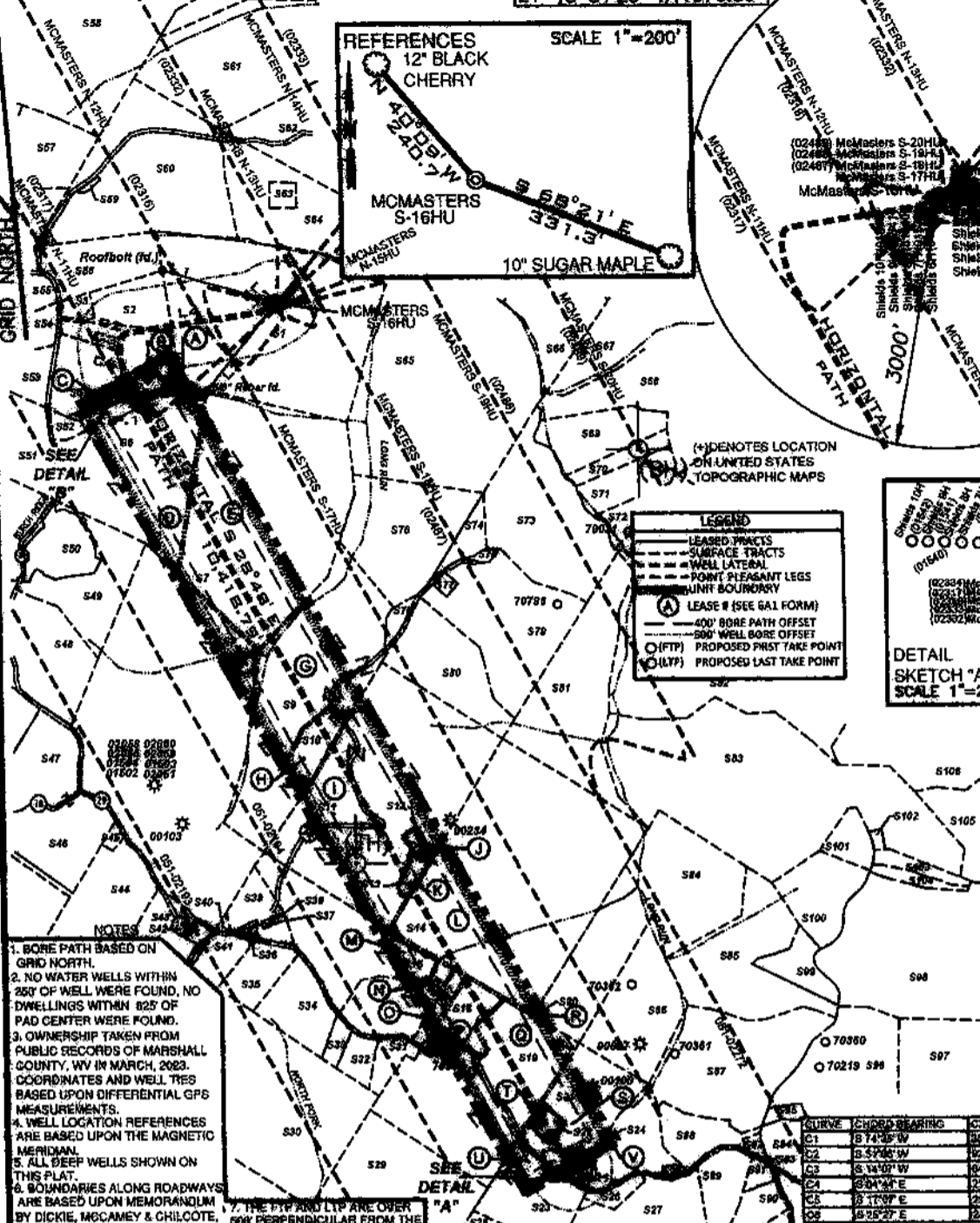
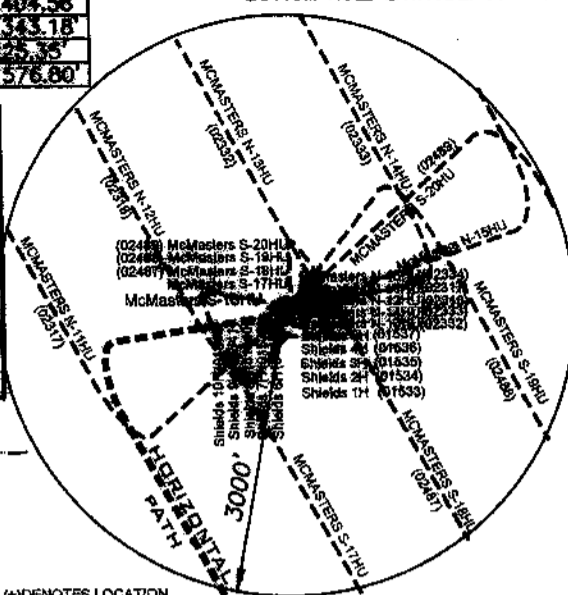
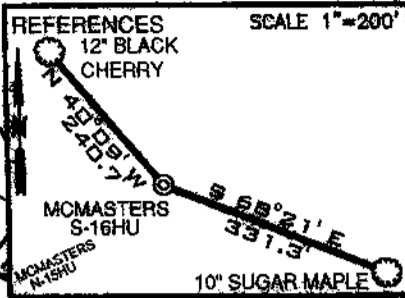
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APR 10 2023
WV Department of
Environmental Protection

MCMASTERS S-16HU
UTICA UNIT - 314.2124± ACRES
TUG HILL OPERATING, LLC

LINE	BEARING	DISTANCE
L1	N 73°34' W	1404.56'
L2	S 30°00' W	1343.18'
L3	S 60°00' W	925.35'
L4	S 81°23' W	1576.80'

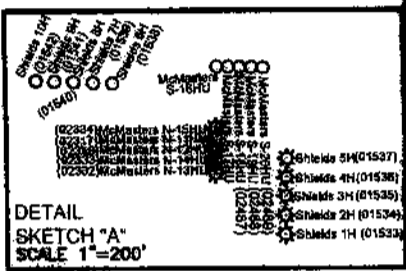
TOP HOLE LATITUDE: 39°47'30"
BOTTOM HOLE LATITUDE: 39°45'00"

(BH) BOTTOM HOLE LONGITUDE: 80°45'00"
(TH) TOP HOLE LONGITUDE: 80°45'00"



LEGEND

- LEASING TRACTS
- SURFACE TRACTS
- WELL LATERAL
- POINT PLEASANT LEGS
- UNIT BOUNDARY
- LEASE # (SEE GA1 FORM)
- 400' BORE PATH OFFSET
- 500' WELL BORE OFFSET
- (FTP) PROPOSED FIRST TAKE POINT
- (LTP) PROPOSED LAST TAKE POINT



SURFACE HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,401,176.30
E) 518,197.28

LANDING POINT 1
UTM. NAD83, ZONE 17
IN METERS
N) 4,400,806.89
E) 517,690.91

BOTTOM HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,398,050.79
E) 519,266.30

- NOTES
- BORE PATH BASED ON GRID NORTH.
 - NO WATER WELLS WITHIN 250' OF WELL WERE FOUND, NO DWELLINGS WITHIN 825' OF PAD CENTER WERE FOUND.
 - OWNERSHIP TAKEN FROM PUBLIC RECORDS OF MARSHALL COUNTY, WV IN MARCH, 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 082804-0001147.
 - THE FTP AND LTP ARE OVER 500' PERPENDICULAR FROM THE UNIT BOUNDARY.

CURVE	CHORD BEARING	CHORD LENGTH	RADIUS	ARC LENGTH
C1	S 74°35' W	35.85'	124.47'	36.10'
C2	S 57°05' W	62.85'	64.55'	68.12'
C3	S 15°07' W	104.44'	241.43'	64.62'
C4	S 04°24' E	126.17'	377.82'	126.07'
C5	N 1°00' E	253.42'	1259.84'	253.42'
C6	S 25°27' E	234.11'	210.13'	244.27'

FILE NUMBER _____
DRAWING NUMBER MCMASTERS S-16HU REV2
SCALE 1" = 2000'
MINIMUM DEGREE OF ACCURACY 1/200
PROVEN SOURCE OF ELEVATION SUBMETER MAPPING GRADE GPS

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

David L Jackson



JACKSON SURVEYING INC.
P.O. Box 1460
Clarksburg, WV 26302
304-823-5851



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

DATE: APRIL 06, 2023
OPERATORS WELL NO. MCMASTERS S-16HU

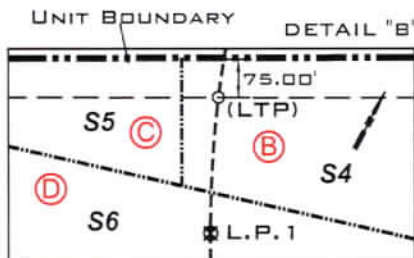
WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF "GAS") PRODUCTION STORAGE DEEP SHALLOW
LOCATION ELEVATION 1207.50' WATERSHED (HUC 10) FISH CREEK (HUC-10)
DISTRICT FRANKLIN COUNTY MARSHALL
QUADRANGLE POWATAN POINT 7.5' LEASE NUMBER SEE WW-6A1 FORM

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 CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE (SPECIFY) _____
PLUG & ABANDON CLEAN OUT & REPLUG
TARGET FORMATION POINT PLEASANT ESTIMATED DEPTH TVD: 11,375' TMD: 22,277'
WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DARREN BROWN, CT CORP
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107 ADDRESS 5008 WASHINGTON STREET WEST, SUITE 407 CHARLESTON, WV 25313-1561

COUNTY NAME PERMIT

MCMASTERS S-16HU
UTICA UNIT - 314.2124± ACRES
TUG HILL OPERATING, LLC

Parcels within Unit Boundary				
Tags	Number	Tax Map -Parcel	Surface Owner	Acres
A	S1	05-18-02	ROBERT L. SHIELDS & DONALD SHIELDS	104.11
B	S4	05-19-17	MARK A. YOHO	15.263
C	S5	05-19-24	DAVID E. YOHO	15.436
D	S6	05-19-18	DAVID E. YOHO	55.948
E	S7	05-18-24	DUANE BRUNN	102.0
F	S8	05-23-01	PATRICIA ACCETTOLO, ET AL	146.66
G	S9	05-23-02	DANIEL J. LILLEY	70
H	S10	05-23-2.2	JESSICA N. & ANDREW L. JONES	7.636
I	S11	05-23-04	PROCTOR RIDGE, LLC	100.7
J	S12	05-23-4.2	XCL MIDSTREAM OPERATING, LLC	1.17
K	S13	05-23-4.1	XCL MIDSTREAM OPERATING, LLC	2.16
L	S14	05-23-05	DANIEL D. RHYAND	118.5
M	S15	05-23-18	PROCTOR RIDGE, LLC	35.38
N	S16	05-23-16	ROY FRIEND YOHO SR.	18.03
O	S17	05-23-16.1	DONALD B. HENRY	1.97
P	S18	05-23-15	VIRGINIA ETHEL HENRY, ESTATE	15.5
Q	S19	05-23-14	DOMINION TRANSMISSION, INC.	59.5
R	S20	05-23-08	CARL DAVID & SUZANNE L. GUSEMAN	29.5
S	S21	05-23-9.2	LINDA D. GREATHOUSE	25.58
T	S22	05-23-9.4	JACKSON R. DAVIS SR. HRS	2.087
U	S23	05-23-9.1	JOHN W. VAN ORDEN, ET UX	23.376
V	S24	05-23-13	LINDA D. GREATHOUSE	14.24



N.T.S.

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

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



P.S. 708

David L Jackson

Adjoining Parcels Ownership Table			
Number	Tax Map -Parcel	Surface Owner	Acres
52	05-19-16	ROBERT L. SHIELDS & DONALD SHIELDS	11.612
53	05-19-16.1	ROBERT L. SHIELDS, REBECCA A SHIELDS & ROBERTA CAMPBELL	2.307
525	05-23-13.1	JAMES R. & PAMELA J. FERRELL	0.75
526	05-23-12	MARK A. YOHO	3.05
527	05-26-11	MARK A. YOHO	89.25
528	05-26-22	RICHARD JOSEPH OTTE	8.30
529	05-26-07	DOMINION TRANSMISSION, INC.	71.0
530	05-23-26	MICHAEL J WILEY ET AL	101.57
531	05-23-17.3	TROY W. THOMAS & ERIN M. AMOS-THOMAS	5.018
532	05-23-17	TAMMY & THOMAS E. BROWN	4.62
533	05-23-17.4	TAMMY D. MEADOWS	2.605
534	05-23-17.2	DICK ROWAN JR.	14.920
535	05-23-17.1	CURTIS E. HALL, ET UX	10.051
536	05-23-21	MARK A. YOHO & MARK E. YOHO	0.588
537	05-23-20	CHRISTIAN CHURCH	0.19
538	05-23-19	DOTY CEMETERY	1.0
539	05-23-18.1	MARK A. YOHO	7.8
540	05-23-29	MICHAEL J. WILEY & MICHELLE BAKER	0.25
541	05-23-22	DANIEL D. RHYAND	6.25
542	05-23-23	MICHAEL J. WILEY, ET AL	1.0
543	05-23-28.2	GEORGE THOMAS THARP IV	10.8
544	05-23-28	GREGG D. MINOR	39.43
545	05-23-28.1	CODY A. AMOS	1.0
546	05-22-07	PATRICIA ACCETTOLO, ET AL	25.02
547	05-22-7.1	T.H. EXPLORATION II, LLC & XCL MIDSTREAM OPERATING, LLC	20.68
548	05-22-06	CNX RCPC, LLC	64.70
549	05-22-04	CNX RCPC, LLC	159.05
550	05-22-5.1	WILLIAMS OHIO VALLEY MIDSTREAM, LLC	12.875
551	05-19-18.2	PAUL V. & CAROL NEELY	32.672
552	05-19-18.1	PENNY ASHCRAFT	2.57
553	05-19-25	DAVID E. YOHO	9.976
554	05-19-26	ROGER J. & BETH E. JAMES	9.977
555	05-19-27	DAVID E. YOHO	7.041
556	05-19-14	JAMES A. & SHERRY BEEGLE	18.356
557	05-19-30	ERNIE & TAMMY ANDERSON	19.037
558	05-19-13	RONA LEE RICE & CHARLES FRANKLIN MCCARDLE	94.925
559	05-18-1.1	CHARLES F. & DIANA L. HAYNES	0.392
560	05-18-01	DIANA HENRY HAYNES & CAROL C. HENRY	62.908
561	05-15-11	DIANA HENRY HAYNES & CAROL C. HENRY	65.59
562	05-18-04	OLAN & PATRICIA RUTAN	65.89
563	05-18-3.1	NIKKI L. & JONATHAN STEVENS	2.223
564	05-18-03	OLAN V. & PATRICIA E. RUTAN	43.677
565	05-18-23	XCL MAINSTREAM OPERATING LLC	110
566	05-18-07	ADAM & JESSIE L. ROBINSON	24.22
567	05-18-16	ADAM & JESSIE L. ROBINSON	17.768
568	05-18-13	SOUTHERN COUNTRY FARMS, INC.	11.054
569	05-18-59	SOUTHERN COUNTRY FARMS, INC.	15.79
570	05-18-30	MARY & DANIEL ROBINSON	5.46
571	05-18-13.10	CARL BERG	10.88
573	05-18-20	WAYNE E. CHANNING ET AL	44.47
574	05-18-21.1	JASON PALERMO & WENDY MOORE	5.47
575	05-18-21.3	XCL MIDSTREAM OPERATING, LLC	0.811
576	05-18-22	JASON PALERMO & WENDY MOORE	30.345
577	05-18-21.2	DAVID P. LASSAN -LIFE	1.0
578	05-23-2.1	WILLIAM L. & JANICE M. WAYNE	2.364
580	05-23-03	PROCTOR RIDGE, LLC	50.0
581	05-23-06	JAMES A. CHANNING, ET AL	48.0
582	05-17-11	KENNETH N. CORLEY, ET UX	120.0
583	05-23-07	TERRY E. SIMMS, ET UX	123.09
584	05-23-8.1	WILLIAM & VIRGINIA ROUPE	34.0
585	05-24-5.4	THOMAS V. TUTTLE, ET UX	38.244
586	05-23-9.3	LINDA D. GREATHOUSE	17.5
587	05-17-11.1	JOHN H. & SONYA D. HOLIDAY	67.0
588	05-23-11.4	KENNETH L. LEMON, TRUSTEE FOR JEFFREY G. HUDSON	10.879
589	05-23-11.3	COLIN R. YOHO	11.29
590	05-23-11.8	ROY F. YOHO	2.25
591	05-23-11.5	ZACHARY R. STEVEY	7.00
592	05-23-11.2	KENNETH L. LEMON, TRUSTEE FOR JEFFREY G. HUDSON	1.154
593	05-23-11.6	T.H. EXPLORATION II, LLC	0.094
594	05-23-11	ROY F. YOHO	9.475
595	05-23-11.7	BRYAN L. HUGGINS	1.835
596	05-23-10	TERRY E. SIMMS, ET UX	37.95
597	05-24-06	TERRY E. SIMMS, ET UX	42.84
598	05-24-5	ROBERT C. FRANCIS, ET UX (LIFE)	145.78
599	05-24-3.1	T.H. EXPLORATION II, LLC	5.50
5100	05-24-5.5	SONNY & LINDA TAGG	17.194
5101	05-23-7.2	FLORELLA LOU WEIGAND	6.354
5102	05-23-7.1	RANDY W. & JESSICA L. FRANCIS	0.549
5103	05-24-5.1	JAMES D. WATKINS, ET UX	4.6
5104	05-24-5.2	JAMES D. WATKINS, ET UX	3.151
5105	05-24-01	LINDA L. PICKERING	175.0
5106	05-17-11.1	RANDY W. FRANCIS, ET UX	67.0

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05/11/2023

OPERATOR'S
 WELL #: McMasters S-16HU
 DISTRICT: Franklin
 COUNTY: Marshall
 STATE: WV
 API #: 47-051-

WELL PLAT
 PAGE 2 OF 3
 DATE: 04/06/23



TUG HILL
OPERATING

MCMASTERS S-16HU
UTICA UNIT - 314.2124± ACRES
TUG HILL OPERATING, LLC

Lease ID	TMP	Tag	Lessor, Grantor, 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, HUSBAND AND WIFE	655	546
10*14295	5-19-24	C	MARK E. YOHO AND MARY YOHO, HUSBAND AND WIFE	655	546
10*14295	5-19-18	D	MARK E. YOHO AND MARY YOHO, HUSBAND AND WIFE	655	546
10*14295	5-18-24	E	MARK E. YOHO AND MARY YOHO, HUSBAND AND WIFE, ET AL	655	546
10*14129	5-23-1	F	LOUIS J ACCETTOLO & PATRICIA ACCETTOLO	703	283
10*14022	5-23-2	G	DENISE D WAYNE AND HOWARD N WAYNE SR	665	384
10*14022	5-23-2.2	H	DENISE D WAYNE AND HOWARD N WAYNE SR	665	384
10*14849	5-23-4	I	DAVID GUSTELY, ET AL	806	265
10*14849	5-23-4.2	J	DAVID GUSTELY, ET AL	806	265
10*14849	5-23-4.1	K	DAVID GUSTELY, ET AL	806	265
10*14847	5-23-5	L	LETHA RUCKMAN, ET AL	806	270
10*14849	5-23-18	M	DAVID GUSTELY, ET AL	806	265
10*14847	5-23-16	N	LETHA RUCKMAN, ET AL	806	270
10*14847	5-23-16.1	O	LETHA RUCKMAN, ET AL	806	270
10*14665	5-23-15	P	DOROTHY TEDROW, ET AL	781	539
10*18343	5-23-14	Q	DOMINION ENERGY TRANSMISSION INC	936	79
10*17192	5-23-8	R	ROBERT J HENRY, ET AL	716	193
10*17189	5-23-9.2	S	ROBERT J HENRY	716	197
10*17189	5-23-9.4	T	ROBERT J HENRY	716	197
10*17189	5-23-9.1	U	ROBERT J HENRY	716	197
10*14786	5-23-13	V	TWILA O WHIPKEY, ET AL	799	61

P.S.
708

David L Jackson

4705102497

05/11/2023



TUG HILL
OPERATING

OPERATOR'S
 WELL #: McMasters S-16HU
 DISTRICT: Franklin
 COUNTY: Marshall
 STATE: WV
 API #: 47-051-

WELL PLAT
PAGE 3 OF 3
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WW-6A1
(5/13)

Operator's Well No. McMasters S-16HU

**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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WV Department of
Environmental Protection

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

4705102497

05/11/2023

Well No.	Owner Name	Address	City	State	Zip	Acres	County	Section	Township	Range	Block	Subsection	Notes
1072428	FRANCIS S SMITH BY POA HISTORIA SMITH & ANNA M			IA	523161	1.84	W	32	NA	NA	NA	NA	
1072429	SMITH			IA	523161	1.84	W	32	NA	NA	NA	NA	
1072430	CATHERINE HINMAN			IA	523161	1.84	W	33	NA	NA	NA	NA	
1072431	JACQUES NICOLE AND GARET RECH			IA	523161	1.84	W	34	NA	NA	NA	NA	
1072432	WARRANT COO			IA	523161	1.84	W	35	NA	NA	NA	NA	
1072433	WARRON COULTER AND ROSALVA A COULTER			IA	523161	1.84	W	36	NA	NA	NA	NA	
1072434	WARRON COULTER AND ANNE COULTER			IA	523161	1.84	W	37	NA	NA	NA	NA	
1072435	ANNE COULTER			IA	523161	1.84	W	38	NA	NA	NA	NA	
1072436	HERBERT M TAYLOR AND LINDA K TAYLOR			IA	523161	1.84	W	39	NA	NA	NA	NA	
1072437	HERBERT M TAYLOR AND LINDA K TAYLOR			IA	523161	1.84	W	40	NA	NA	NA	NA	
1072438	GARY PARSONS AND GAYL PARSONS			IA	523161	1.84	W	41	NA	NA	NA	NA	
1072439	GARY PARSONS AND GAYL PARSONS			IA	523161	1.84	W	42	NA	NA	NA	NA	
1072440	JOHN ARLES EMERY			IA	523161	1.84	W	43	NA	NA	NA	NA	
1072441	JOHN ARLES EMERY			IA	523161	1.84	W	44	NA	NA	NA	NA	
1072442	JOHN ARLES EMERY			IA	523161	1.84	W	45	NA	NA	NA	NA	
1072443	JOHN ARLES EMERY			IA	523161	1.84	W	46	NA	NA	NA	NA	
1072444	JOHN ARLES EMERY			IA	523161	1.84	W	47	NA	NA	NA	NA	
1072445	JOHN ARLES EMERY			IA	523161	1.84	W	48	NA	NA	NA	NA	
1072446	JOHN ARLES EMERY			IA	523161	1.84	W	49	NA	NA	NA	NA	
1072447	JOHN ARLES EMERY			IA	523161	1.84	W	50	NA	NA	NA	NA	
1072448	JOHN ARLES EMERY			IA	523161	1.84	W	51	NA	NA	NA	NA	
1072449	JOHN ARLES EMERY			IA	523161	1.84	W	52	NA	NA	NA	NA	
1072450	JOHN ARLES EMERY			IA	523161	1.84	W	53	NA	NA	NA	NA	
1072451	JOHN ARLES EMERY			IA	523161	1.84	W	54	NA	NA	NA	NA	
1072452	JOHN ARLES EMERY			IA	523161	1.84	W	55	NA	NA	NA	NA	
1072453	JOHN ARLES EMERY			IA	523161	1.84	W	56	NA	NA	NA	NA	
1072454	JOHN ARLES EMERY			IA	523161	1.84	W	57	NA	NA	NA	NA	
1072455	JOHN ARLES EMERY			IA	523161	1.84	W	58	NA	NA	NA	NA	
1072456	JOHN ARLES EMERY			IA	523161	1.84	W	59	NA	NA	NA	NA	
1072457	JOHN ARLES EMERY			IA	523161	1.84	W	60	NA	NA	NA	NA	
1072458	JOHN ARLES EMERY			IA	523161	1.84	W	61	NA	NA	NA	NA	
1072459	JOHN ARLES EMERY			IA	523161	1.84	W	62	NA	NA	NA	NA	
1072460	JOHN ARLES EMERY			IA	523161	1.84	W	63	NA	NA	NA	NA	
1072461	JOHN ARLES EMERY			IA	523161	1.84	W	64	NA	NA	NA	NA	
1072462	JOHN ARLES EMERY			IA	523161	1.84	W	65	NA	NA	NA	NA	
1072463	JOHN ARLES EMERY			IA	523161	1.84	W	66	NA	NA	NA	NA	
1072464	JOHN ARLES EMERY			IA	523161	1.84	W	67	NA	NA	NA	NA	
1072465	JOHN ARLES EMERY			IA	523161	1.84	W	68	NA	NA	NA	NA	
1072466	JOHN ARLES EMERY			IA	523161	1.84	W	69	NA	NA	NA	NA	
1072467	JOHN ARLES EMERY			IA	523161	1.84	W	70	NA	NA	NA	NA	
1072468	JOHN ARLES EMERY			IA	523161	1.84	W	71	NA	NA	NA	NA	
1072469	JOHN ARLES EMERY			IA	523161	1.84	W	72	NA	NA	NA	NA	
1072470	JOHN ARLES EMERY			IA	523161	1.84	W	73	NA	NA	NA	NA	
1072471	JOHN ARLES EMERY			IA	523161	1.84	W	74	NA	NA	NA	NA	
1072472	JOHN ARLES EMERY			IA	523161	1.84	W	75	NA	NA	NA	NA	
1072473	JOHN ARLES EMERY			IA	523161	1.84	W	76	NA	NA	NA	NA	
1072474	JOHN ARLES EMERY			IA	523161	1.84	W	77	NA	NA	NA	NA	
1072475	JOHN ARLES EMERY			IA	523161	1.84	W	78	NA	NA	NA	NA	
1072476	JOHN ARLES EMERY			IA	523161	1.84	W	79	NA	NA	NA	NA	
1072477	JOHN ARLES EMERY			IA	523161	1.84	W	80	NA	NA	NA	NA	
1072478	JOHN ARLES EMERY			IA	523161	1.84	W	81	NA	NA	NA	NA	
1072479	JOHN ARLES EMERY			IA	523161	1.84	W	82	NA	NA	NA	NA	
1072480	JOHN ARLES EMERY			IA	523161	1.84	W	83	NA	NA	NA	NA	
1072481	JOHN ARLES EMERY			IA	523161	1.84	W	84	NA	NA	NA	NA	
1072482	JOHN ARLES EMERY			IA	523161	1.84	W	85	NA	NA	NA	NA	
1072483	JOHN ARLES EMERY			IA	523161	1.84	W	86	NA	NA	NA	NA	
1072484	JOHN ARLES EMERY			IA	523161	1.84	W	87	NA	NA	NA	NA	
1072485	JOHN ARLES EMERY			IA	523161	1.84	W	88	NA	NA	NA	NA	
1072486	JOHN ARLES EMERY			IA	523161	1.84	W	89	NA	NA	NA	NA	
1072487	JOHN ARLES EMERY			IA	523161	1.84	W	90	NA	NA	NA	NA	
1072488	JOHN ARLES EMERY			IA	523161	1.84	W	91	NA	NA	NA	NA	
1072489	JOHN ARLES EMERY			IA	523161	1.84	W	92	NA	NA	NA	NA	
1072490	JOHN ARLES EMERY			IA	523161	1.84	W	93	NA	NA	NA	NA	
1072491	JOHN ARLES EMERY			IA	523161	1.84	W	94	NA	NA	NA	NA	
1072492	JOHN ARLES EMERY			IA	523161	1.84	W	95	NA	NA	NA	NA	
1072493	JOHN ARLES EMERY			IA	523161	1.84	W	96	NA	NA	NA	NA	
1072494	JOHN ARLES EMERY			IA	523161	1.84	W	97	NA	NA	NA	NA	
1072495	JOHN ARLES EMERY			IA	523161	1.84	W	98	NA	NA	NA	NA	
1072496	JOHN ARLES EMERY			IA	523161	1.84	W	99	NA	NA	NA	NA	
1072497	JOHN ARLES EMERY			IA	523161	1.84	W	100	NA	NA	NA	NA	
1072498	JOHN ARLES EMERY			IA	523161	1.84	W	101	NA	NA	NA	NA	
1072499	JOHN ARLES EMERY			IA	523161	1.84	W	102	NA	NA	NA	NA	
1072500	JOHN ARLES EMERY			IA	523161	1.84	W	103	NA	NA	NA	NA	
1072501	JOHN ARLES EMERY			IA	523161	1.84	W	104	NA	NA	NA	NA	
1072502	JOHN ARLES EMERY			IA	523161	1.84	W	105	NA	NA	NA	NA	
1072503	JOHN ARLES EMERY			IA	523161	1.84	W	106	NA	NA	NA	NA	
1072504	JOHN ARLES EMERY			IA	523161	1.84	W	107	NA	NA	NA	NA	
1072505	JOHN ARLES EMERY			IA	523161	1.84	W	108	NA	NA	NA	NA	
1072506	JOHN ARLES EMERY			IA	523161	1.84	W	109	NA	NA	NA	NA	
1072507	JOHN ARLES EMERY			IA	523161	1.84	W	110	NA	NA	NA	NA	
1072508	JOHN ARLES EMERY			IA	523161	1.84	W	111	NA	NA	NA	NA	
1072509	JOHN ARLES EMERY			IA	523161	1.84	W	112	NA	NA	NA	NA	
1072510	JOHN ARLES EMERY			IA	523161	1.84	W	113	NA	NA	NA	NA	
1072511	JOHN ARLES EMERY			IA	523161	1.84	W	114	NA	NA	NA	NA	
1072512	JOHN ARLES EMERY			IA	523161	1.84	W	115	NA	NA	NA	NA	
1072513	JOHN ARLES EMERY			IA	523161	1.84	W	116	NA	NA	NA	NA	
1072514	JOHN ARLES EMERY			IA	523161	1.84	W	117	NA	NA	NA	NA	
1072515	JOHN ARLES EMERY			IA	523161	1.84	W	118	NA	NA	NA	NA	
1072516	JOHN ARLES EMERY			IA	523161	1.84	W	119	NA	NA	NA	NA	
1072517	JOHN ARLES EMERY			IA	523161	1.84	W	120	NA	NA	NA	NA	
1072518	JOHN ARLES EMERY			IA	523161	1.84	W	121	NA	NA	NA	NA	
1072519	JOHN ARLES EMERY			IA	523161	1.84	W	122	NA	NA	NA	NA	
1072520	JOHN ARLES EMERY			IA	523161	1.84	W	123	NA	NA	NA	NA	
1072521	JOHN ARLES EMERY			IA	523161	1.84	W	124	NA	NA	NA	NA	
1072522	JOHN ARLES EMERY			IA	523161	1.84	W	125	NA	NA	NA	NA	
1072523	JOHN ARLES EMERY			IA	523161	1.84	W	126	NA	NA	NA	NA	
1072524	JOHN ARLES EMERY			IA	523161	1.84	W	127	NA	NA	NA	NA	
1072525	JOHN ARLES EMERY			IA	523161	1.84	W	128	NA	NA	NA	NA	
1072526	JOHN ARLES EMERY			IA	523161	1.84	W	129	NA	NA	NA	NA	
1072527	JOHN ARLES EMERY			IA	523161	1.84	W	130	NA	NA	NA	NA	
1072													

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*"):

(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;

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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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APR 10 2023
WV Department of
Environmental Protection



TUG HILL

4705102497

March 23, 2023

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

RE: McMasters S-16HU

Subject: Marshall County Route 21/9 and 29 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 21/9 and 29 in the area reflected on the McMasters S-16HU 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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APR 10 2023

WV Department of
Environmental Protection

**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-16HU
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: <u>West Virginia</u>	UTM NAD 83 Easting: <u>518,197.28</u>
County: <u>Marshall</u>	UTM NAD 83 Northing: <u>4,401,175.30</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>Lower Fish Creek</u>	

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.

<p>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:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><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</p> <p style="padding-left: 100px;"><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p>OOG OFFICE USE ONLY</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p>
<p>RECEIVED Office of Oil and Gas APR 10 2023</p> <p>WV Department of Environmental Protection</p>	

Required Attachments:

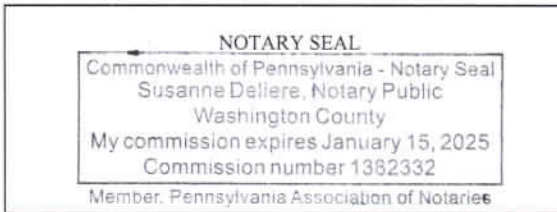
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication 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

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:	<u>Tug Hill Operating, LLC</u>	Address:	<u>380 Southpointe Boulevard, Plaza II, Suite 200</u>
By:	<u>Amy L. Morris <i>Amy L. Morris</i></u>		<u>Canonsburg, PA 15317</u>
Its:	<u>Permitting Specialist - Appalachia Region</u>	Facsimile:	<u>724-338-2030</u>
Telephone:	<u>724-749-8388</u>	Email:	<u>amorris@tug-hilop.com</u>



Subscribed and sworn before me this 23rd 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 depprivacyofficer@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:** 4/4/7/2023

Notice of:

- 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
- 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.

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

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

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: _____

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

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

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: _____

*Please attach additional forms if necessary

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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 or 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 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting 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. (c) 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. (d) 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. (e) 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. (f) 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 57th St. SE
Charleston, WV 25304
(304) 926-0450

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WV Department of
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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.**

05/11/2023

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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05/11/2023

WW-6A
(8-13)

API NO. 47-051 **4705102497**
OPERATOR WELL NO. McMasters S-16HU
Well Pad Name: Shields

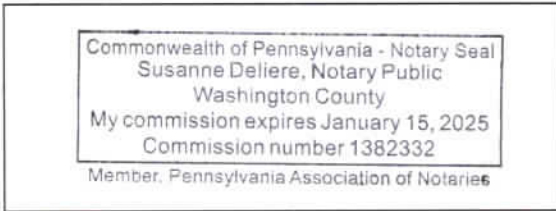
Notice is hereby given by:

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

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 deprivacyofficer@wv.gov.



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

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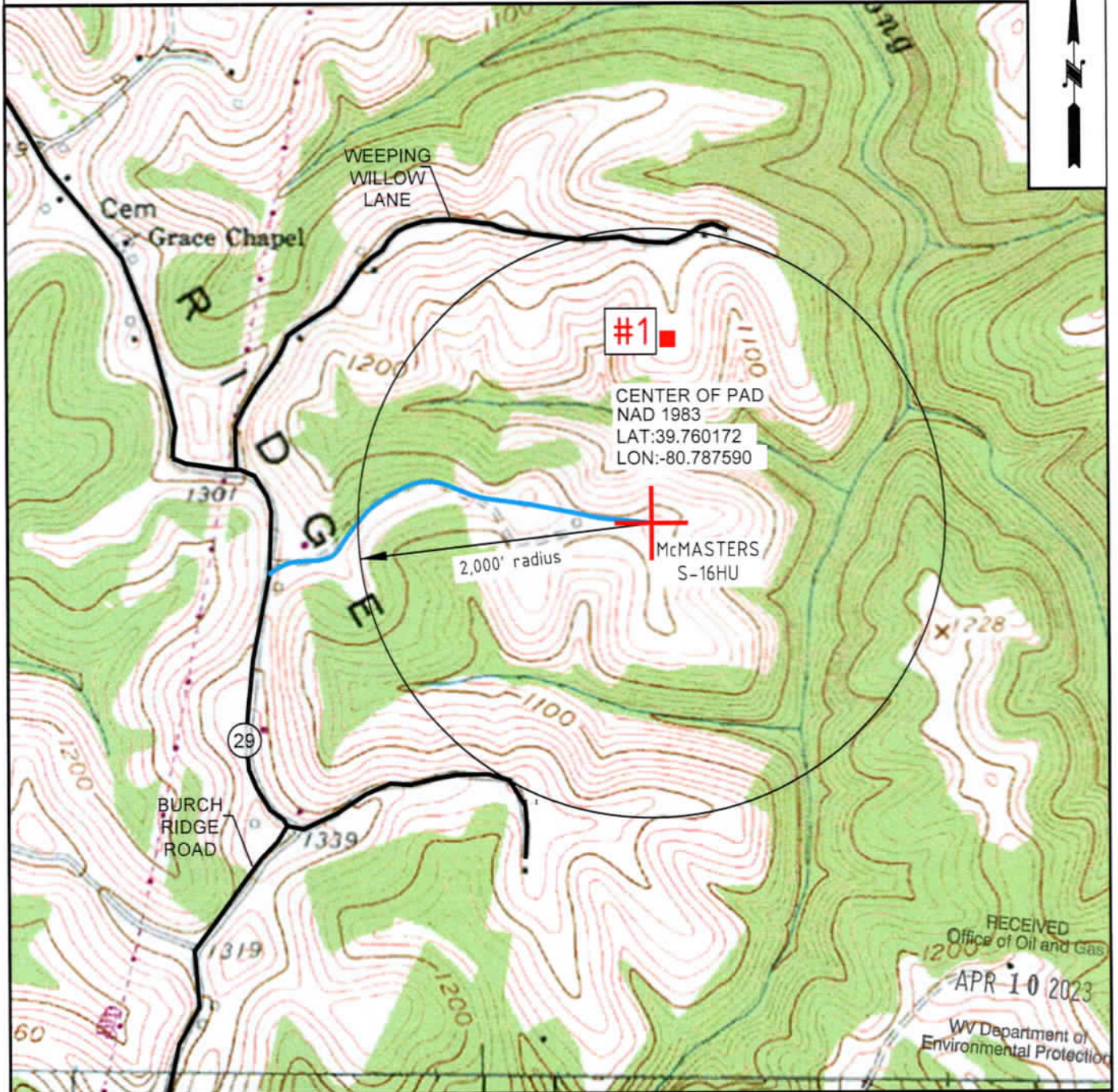
05/11/2023

WW-6A

PROPOSED McMASTERS S-16HU

SUPPLEMENT PG 1

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



TUG HILL
OPERATING

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" = 1000'		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-16HU
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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4705102497

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: West Virginia UTM NAD 83 Easting: 518,197.28
County: Marshall Northing: 4,401,176.30
District: Franklin Public Road Access: Burch Ridge Road (County Route 29)
Quadrangle: Powhatan Point 7.5' Generally used farm name: Robert L. Shields, Et Al
Watershed: Lower Fish Creek

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 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting 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-hilltop.com
Facsimile: _____

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

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.

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4705102497

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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WW-6A5
(1/12)

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

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 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting 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.

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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 57th Street, SE
 Charleston, WV 25304

Subject: DOH Permit for the Shields Pad, Marshall County
 McMasters S-16HU 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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PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION

McMasters S-16HU

PRODUCT NAME:	CHEMICAL DESCRIPTION:	PRODUCT USE:	HAZARDOUS COMPONENT:
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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WW-6A7
(6-12)

OPERATOR: Tug Hill Operating, LLC WELL NO: McMasters S-16HU

PAD NAME: Shields

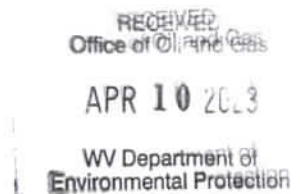
REVIEWED BY: Amy L. Morris SIGNATURE: *Amy L. Morris*

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



05/11/2023