

02/10/2023



west virginia department of environmental protection

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

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

Wednesday, February 8, 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-19HU  
47-051-02488-00-00

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-19HU  
Farm Name: ROBERT L SHIELDS ET AL  
U.S. WELL NUMBER: 47-051-02488-00-00  
Horizontal 6A: New Drill  
Date Issued: 2/8/2023

Promoting a healthy environment.

# 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

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1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. 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.

02/10/2023



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west virginia department of environmental protection

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

Randall M. Albert, Chairman  
dep.wv.gov

January 23, 2023

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

RE: Application for Deep Well Permit – API #47-051-02488

COMPANY: Tug Hill Operating, LLC

FARM: Robert L. Shields, et al

McMasters S-19HU

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'.

Susan Rose  
Administrator

\*\*Corley N-9HU 47-051-01983; Corley N-10HU 47-051-01998; Burch Ridge S-7HU 47-051-02194; Burch Ridge S-6HU 47-051-02193; Blake U-7H 47-051-01766; McMasters N-11HU 47-051-02317; McMasters N-12HU 47-051-02316; McMasters N-13HU 47-051-02332; McMasters N-14HU 47-051-02333; McMasters N-15HU 47-051-02334; McMasters S-16HU 47-051-02337; McMasters S-17HU 47-051-02338; McMasters S-18HU 47-051-02487; McMasters S-20HU 47-051-02489; Simms U-4H 47-051-01742; Hillrock S-15HU 47-051-02263; Hillrock S-13HU 47-051-02273; Hillrock S-12HU 47-051-02272; Hillrock S-14HU 47-051-02262; Simms U-5H 47-051-01731; Bryan N-14HU 47-051-02031; Bryan N-12HU 47-051-02029; Bryan N-13HU 47-051-02030; Woodford 10HU 47-051-02152; Elmer N-14HU 47-103-03502

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

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

2) Operator's Well Number: McMasters S-19HU Well Pad Name: Shields

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

4) Elevation, current ground: 1,206' Elevation, proposed post-construction: 1,206'

5) Well Type (a) Gas  Oil  Underground Storage

Other \_\_\_\_\_

(b) If Gas Shallow \_\_\_\_\_ Deep

Horizontal

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Point Pleasant is the target formation at a depth of 11,174' - 11,291', thickness of 117' and anticipated pressure of approx. 7,500 psi.

8) Proposed Total Vertical Depth: 11,441'

9) Formation at Total Vertical Depth: Trenton

10) Proposed Total Measured Depth: 18,789'

11) Proposed Horizontal Leg Length: 6,911.44'

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

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

14) Approximate Saltwater Depths: 1,306'

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

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

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

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

18)

**CASING AND TUBING PROGRAM**

<b>TYPE</b>	<b>Size (in)</b>	<b>New or Used</b>	<b>Grade</b>	<b>Weight per ft. (lb/ft)</b>	<b>FOOTAGE: For Drilling (ft)</b>	<b>INTERVALS: Left in Well (ft)</b>	<b>CEMENT: Fill-up (Cu. Ft.)/CTS</b>
Conductor	30"	NEW	BW	BW	120'	120'	259ft <sup>3</sup> (CTS)
Fresh Water/Coal	20"	NEW	J55	106.5#	900'	900'	1,463ft <sup>3</sup> (CTS)
Intermediate 1	13 3/8"	NEW	J55	54.5#	2,650'	2,650'	1,870ft <sup>3</sup> (CTS)
Intermediate 2	9 5/8"	NEW	HPP110	47#	10,240'	10,240'	3,338ft <sup>3</sup> (CTS)
Production	5 1/2"	NEW	P110	23#	18,789'	18,789'	4,478ft <sup>3</sup> (CTS)
Tubing	2 7/8"	NEW	P110	6.5#			
Liners							

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

**PACKERS**

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

18)

**CASING AND TUBING PROGRAM**

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	30"	NEW	BW	BW	120'	120'	259ft <sup>3</sup> (CTS)
Fresh Water/Coal	20"	NEW	J55	106.5#	900'	900'	1,463ft <sup>3</sup> (CTS)
Intermediate 1	13 3/8"	NEW	J55	54.5#	2,650'	2,650'	1,870ft <sup>3</sup> (CTS)
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Production	5 1/2"	NEW	P110	23#	18,789'	18,789'	4,478ft <sup>3</sup> (CTS)
Tubing	2 7/8"	NEW	P110	6.5#			
Liners							

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TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	WV Department of Environmental Protection Cement Type	Cement Yield (cu. ft./k)
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
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Tubing	2 7/8"			14,530	11,624		
Liners							

**PACKERS**

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

*John L. Gower*  
SPRADER GOWER  
12-1-2022

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(10,433'). 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 17,275,000 lb. proppant and 267,084 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.



WELL NAME: McMasters 5-19HLI  
 STATE: WV COUNTY: Marshall  
 DISTRICT: Franklin  
 OF Elev: 1,206' GL Elev: 1,206'  
 TD: 18,789'  
 TH Latitude: 39.76030368  
 TH Longitude: -80.78742948  
 BH Latitude: 39.745608  
 BH Longitude: -80.769812



FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	802'
Sewickley Coal	792'
Pittsburgh Coal	796'
Big Lime	1,388'
Berea	2,526'
Tully	6,363'
Marcellus	6,445'
Owondaga	6,495'
Salina	7,182'
Lockport	8,197'
Unio	10,839'
Point Pleasant	11,174'
Landing Depth	11,225'
Trenton	11,291'
Pilot Hole TD	11,441'

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'	8W	BW	Surface
Surface	24	20	900'	900'	106.5	J55	Surface
Intermediate 1	17 1/2	13 1/8	2,850'	2,646'	54.5	J55	Surface
Intermediate 2	12 1/4	9 5/8	10,240'	10,055'	47	HPP110	Surface
Production	8 1/2	5 1/2	18,789'	11,945'	23	HCP110	Surface

	CEMENT SUMMARY			DRILLING DETAILS	
	Sacks	Class	Density	Fluid Type	Centralizer Notes
Conductor	188	A	15.6	Air	None
Surface	1,576	A	15.6	Air	1 Centralizer at equal distance
Intermediate 1	1,027	A	15	Air	1 Centralizer every other jt
Intermediate 2	1,827	A	14.5	Air	1 Centralizer every other jt
Production	1,837	A	15	Air / SOBIM	1 every other joint in lateral, 1 per joint in curve, 1 every other jt to 1st

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Pilot Hole  
 PH TD @ 11,441'  
 PH TVD = 150' below Trenton Top  
 Landing Point @ 11,829' MD / 11,225' TVD

Lateral TD @ 18,789' 8 MD  
 11,945' 8 TVD

*Steve Lower*  
 STRADER LOWER  
 12-8-2022





**Tug Hill Operating, LLC Casing and Cement Program**  
**McMasters S-19HU**

**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"	2,650'	CTS
Intermediate 2	9 5/8"	HPP110	12 1/4"	10,240'	CTS
Production	5 1/2"	HCP110	8 1/2"	18,789'	CTS

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**Cement**

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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 15.6 ppg, Y=1.99

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 15.2ppg, Y = 1.18

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**Legend**

- Well Locations (ims.wvgs.wvnet.edu)
- McMasters S - 19HU
- Major Highways
- Major Roads
- 500 Ft. Buffer
- Marcellus Drilled Laterals
- Utica Drilled Laterals
- ▭ Counties
- ▭ Districts



McMasters S - 19HU  
Franklin District  
Marshall County, WV



Notes:

All locations are approximate and are for illustrative purposes only.



Map Created June 1, 2020

## Area of Review

### Sources of information to Support 35CSR8 - 5.11: 9.3 et seq.

Description of process to identify potential pathways for well communication during hydraulic fracturing activities.

#### Data Sources Reviewed:

1. IHS Well Data service: Public nationwide data service that pulls directly from State agency Oil and Gas databases
2. Farm Maps
3. Topo Maps: Recent and older (contact WVGES)
4. Check with DPS

Contacted Devin Ducoeur 724-705-0444, [dducoeur@dpslandservices.com](mailto:dducoeur@dpslandservices.com) DPS GIS (06/02/2020) to have him make maps of the wellbores with his information. DPS utilizes WVGES maps for their mapping seems it as the best publicly available. See attached map he provided.

#### Request maps for:

1. Wellbore with IHS All Wells Layer
2. Map with Farm lines overlain and any well spots identified on Farm Maps
3. More recent (1970s vintage) topos and older topos

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#### Discussion with Phil Dinterman WVGES GIS Department (7/15/2016)

- WVGES has plotted every well spot they have access to and are aware of with that contains a coordinate. 30000, 70000, and 90000 series wells are available via the WVGES online map. Some locations aren't great due to vintage and manipulation of maps through time
- 30000 series – any well drilled prior to 1929 – APIs were not assigned to original wells
- 70000 series – Well spots pulled from old Farm line maps that the WVGES has access to
- 90000 series – Any sources that the WVGES has access that shows a well spot but has no additional supporting information. DEP does not have 90000 series on their maps.
- There can be duplication between wells in the 3 series
- Phil indicated that other Operators are providing a screenshot of the WVGES map with their planned well and using that for permits

Permit well - McMasters 5-19HU

Wells within 500' Buffer

Note: Well counts displayed on view of Review map are derived from State field coordinates. This system uses APNs (not UTM) derived on the Well Plot because the Plot location represents actual field surveyed locations. Please refer to the Plot for surveyed well counts.

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
4705101533	Tug Hill Operating, LLC	5509' TVD, 3961' 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, 10360' 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.
4705107096	Manufacturers Light & Heat Co.	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Point Pleasant well.	State records are incomplete.
4705101452	Tug Hill Operating, LLC	6554' TVD, 11389' 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.
4705101468	Tug Hill Operating, LLC	6599' TVD, 12685' 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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4705101469	Tug Hill Operating, LLC	6631' TVD, 12825' 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.
4705101731	Tug Hill Operating, LLC	11492' TVD, 16804' MD	Point Pleasant	Unknown	Yes, this is a Point Pleasant well. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	Producing Point Pleasant horizontal well.
4705101742	Gastar Exploration USA, Inc.	-	None	None	No, cancelled permit.	Not drilled.
4705102055	Tug Hill Operating, LLC	6626' TVD	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.	Drilled uncompleted Marcellus horizontal well.
4705102061	Tug Hill Operating, LLC	6638' TVD	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.	Drilled uncompleted Marcellus horizontal well.
4705102062	Tug Hill Operating, LLC	6651' TVD	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.	Drilled uncompleted Marcellus horizontal well.
4705102063	Tug Hill Operating, LLC	6664' TVD	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.	Drilled uncompleted Marcellus horizontal well.
4705102064	Tug Hill Operating, LLC	6595' TVD	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.	Drilled uncompleted Marcellus horizontal well.
4705102066	Tug Hill Operating, LLC	6595' TVD	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.	Drilled uncompleted Marcellus horizontal well.
4705102173	Tug Hill Operating, LLC	6644' TVD	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.	Drilled uncompleted Marcellus horizontal well.
4705102262	Tug Hill Operating, LLC	11532' TVD	Point Pleasant	Unknown	Yes, this will be a Point Pleasant well. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	Currently a permit.
4705102263	Tug Hill Operating, LLC	11532' TVD	Point Pleasant	Unknown	Yes, this will be a Point Pleasant well. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	Currently a permit.
4705102272	Tug Hill Operating, LLC	11532' TVD	Point Pleasant	Unknown	Yes, this will be a Point Pleasant well. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	Currently a permit.
4705102273	Tug Hill Operating, LLC	11540' TVD	Point Pleasant	Unknown	Yes, this will be a Point Pleasant well. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	Currently a permit.

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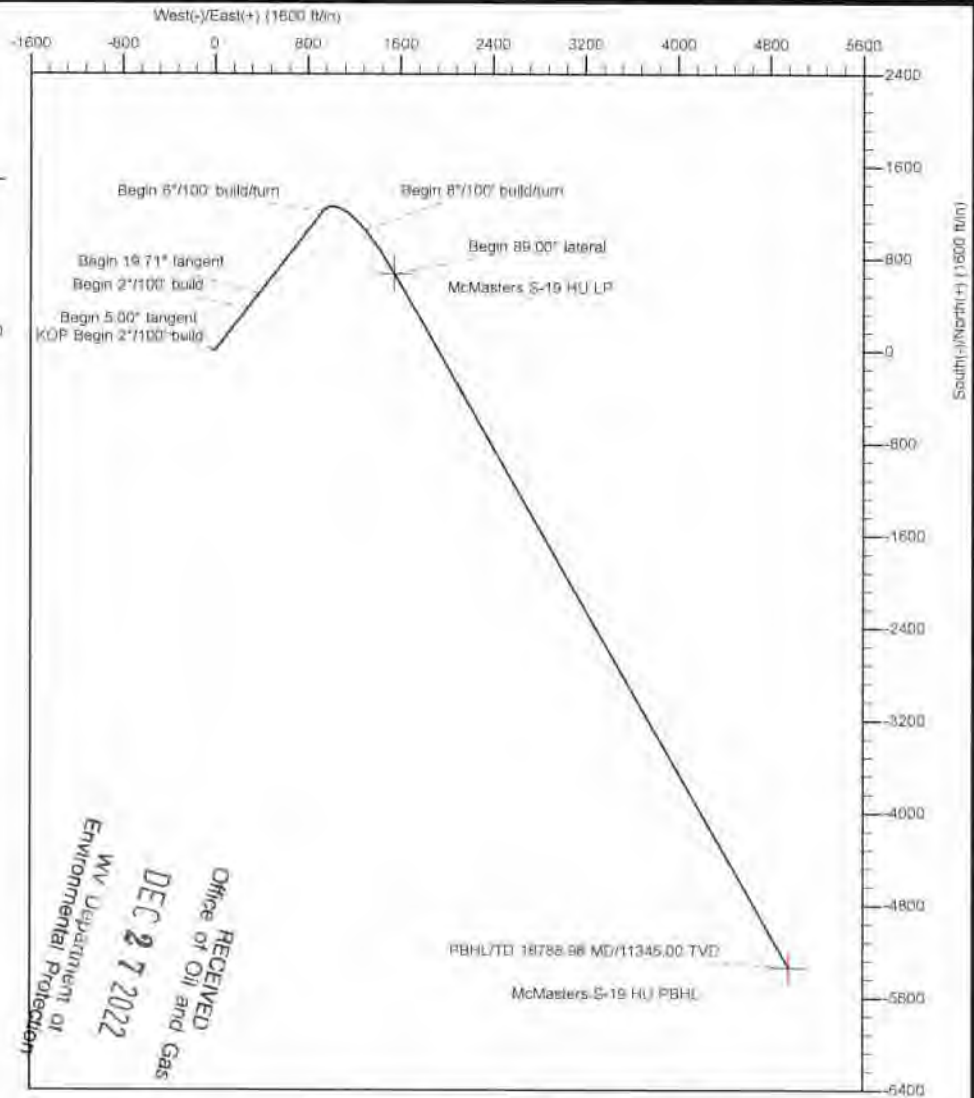
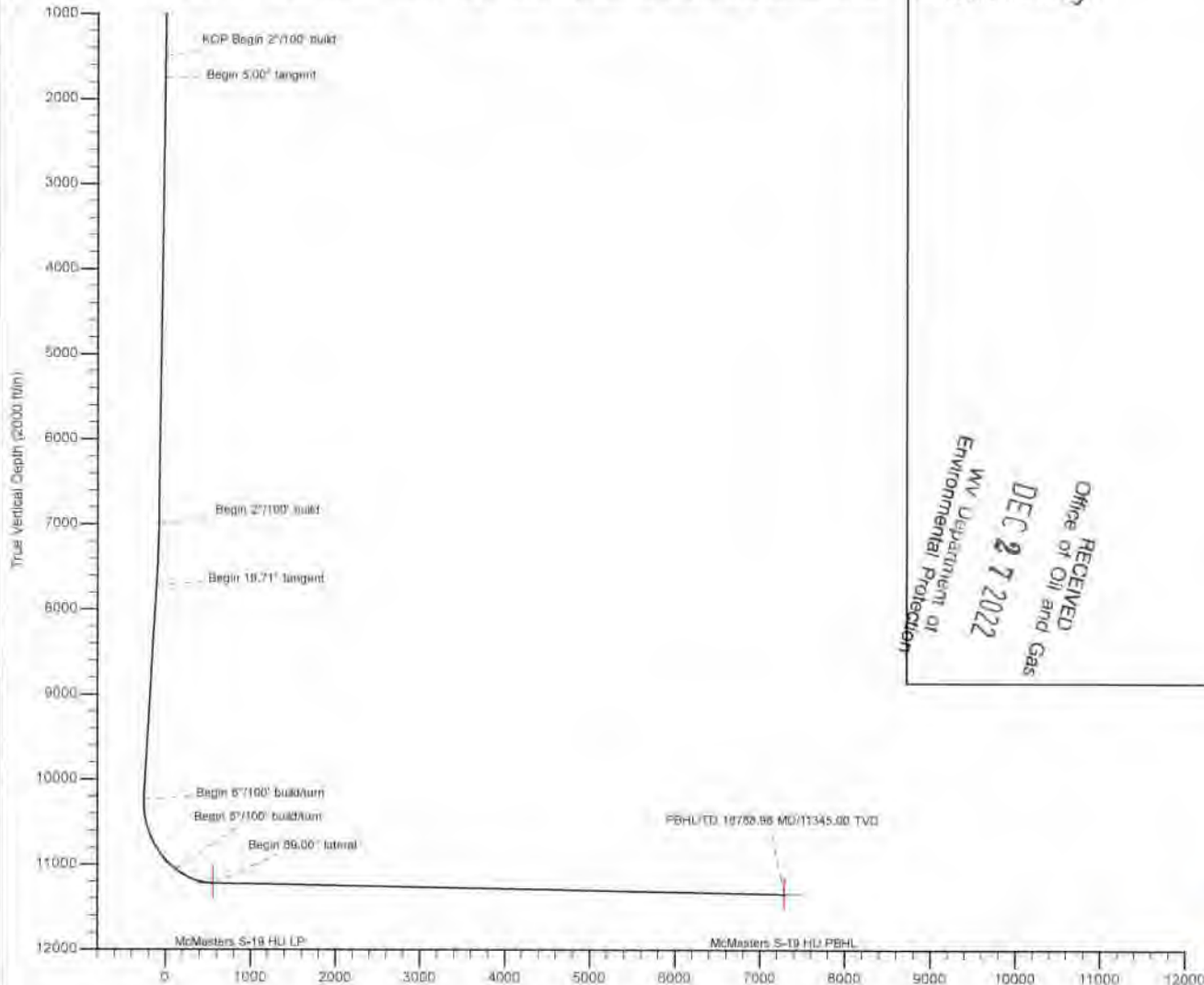




Well: **McMasters S-19 HU (slot I)**  
 Site: **McMasters Shields**  
 Project: **Marshall County, West Virginia**  
 Design: **rev2**  
 Rig:

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/S	+E/W	Dleg	TFace	VSect	Annotation
1	0.00	0.00	0.000	0.00	0.00	0.00	0.000	0.000	0.00	
2	1500.00	0.00	0.000	1500.00	0.00	0.00	0.000	0.000	0.00	KOP Begin 2°/100' build
3	1750.00	5.00	37.590	1749.68	8.64	6.65	2.00	37.590	-1.80	Begin 5.00° tangent
4	7020.37	5.00	37.590	7000.00	372.62	286.85	0.00	0.000	-77.57	Begin 2°/100' build
5	7755.00	19.71	37.590	7716.42	496.96	382.57	2.00	0.001	-103.46	Begin 19.71° tangent
6	10432.72	19.71	37.590	10236.54	1212.29	933.26	0.00	0.000	-252.37	Begin 8°/100' build/turn
7	11377.27	50.00	140.046	11052.34	1047.51	1292.53	8.00	116.460	112.94	Begin 8°/100' build/turn
8	11878.82	89.00	150.384	11229.00	686.58	1550.43	8.00	18.198	567.53	Begin 89.00° lateral
9	18788.88	89.00	150.384	11345.00	-5339.94	4964.77	0.00	0.000	7291.35	PBHL/TD 18788.88 MD/11345.00 TVD



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Geodetic System: Universal Transverse Mercator (U.S. Survey Feet)  
 Datum: NAD83 West Virginia - HARN  
 Ellipsoid: GRS 1980  
 Zone: Zone 17N (84 W to 78 W)

System Datum: Mean Sea Level  
 Depth Reference: GL @ 1206.00ft

Northing	Easting	Latitude	Longitude
14439522.32	1700154.90	39.76030168	-80.76742948

Total Cor (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.84°



Adjusts to Grid North  
 True North: -0.14°  
 Magnetic North: -8.84°

Magnetic Field  
 Strength: 51883.6nT  
 Dip Angle: 66.74°  
 Date: 12/9/2019  
 Model: IGRF2015





Planning Report - Geographic

Database:	DB_Aug1919_v14	Local Co-ordinate Reference:	Well McMasters S-19 HU (slot I)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1206.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1206.00ft
Site:	McMasters Shields	North Reference:	Grid
Well:	McMasters S-19 HU (slot I)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Project	Marshall County, West Virginia		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	NAD83 West Virginia - HARN		
Map Zone:	Zone 17N (84 W to 78 W)		

Site	McMasters Shields				
Site Position:		Northing:	14,439,441.76 usft	Latitude:	39.76008050
From:	Lat/Long	Easting:	1,700,145.18 usft	Longitude:	-80.78746471
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.136 °

Well	McMasters S-19 HU (slot I)					
Well Position	+N/-S	0.00 ft	Northing:	14,439,522.32 usft	Latitude:	39.76030168
	+E/-W	0.00 ft	Easting:	1,700,154.89 usft	Longitude:	-80.78742948
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	1,206.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	12/9/2019	-8.707	66.739	51,883.55035938

Design	rev2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	137.085

Plan Survey Tool Program	Date	5/28/2020		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
0.00	18,788.98	rev2 (Original Hole)	MWD	MWD - Standard

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate ("/100ft)	Turn Rate ("/100ft)	TFO (")	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,500.00	0.00	0.000	1,500.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,750.00	5.00	37.590	1,749.88	8.64	8.65	2.00	2.00	0.00	37.590	
7,020.37	5.00	37.590	7,000.00	372.62	286.85	0.00	0.00	0.00	0.000	
7,755.80	19.71	37.590	7,716.42	496.96	382.57	2.00	2.00	0.00	0.001	
10,432.72	19.71	37.590	10,236.54	1,212.29	933.26	0.00	0.00	0.00	0.000	
11,377.27	50.00	140.045	11,052.34	1,047.51	1,292.53	6.00	3.21	10.85	116.460	
11,878.82	89.00	150.384	11,225.00	686.58	1,550.43	8.00	7.78	2.06	16.168	
18,788.98	89.00	150.384	11,345.00	-5,338.94	4,964.77	0.00	0.00	0.00	0.000	McMasters S-19 HU F



Planning Report- Geographic

Database:	DB_Aug1919_V14	Local Co-ordinate Reference:	Well McMasters S-19 HU (slot I)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1206.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1206.00ft
Site:	McMasters Shields	North Reference:	Grid
Well:	McMasters S-19 HU (slot I)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.000	0.00	0.00	0.00	14,439,522.32	1,700,154.89	39.76030168	-80.78742948
100.00	0.00	0.000	100.00	0.00	0.00	14,439,522.32	1,700,154.89	39.76030168	-80.78742948
200.00	0.00	0.000	200.00	0.00	0.00	14,439,522.32	1,700,154.89	39.76030168	-80.78742948
300.00	0.00	0.000	300.00	0.00	0.00	14,439,522.32	1,700,154.89	39.76030168	-80.78742948
400.00	0.00	0.000	400.00	0.00	0.00	14,439,522.32	1,700,154.89	39.76030168	-80.78742948
500.00	0.00	0.000	500.00	0.00	0.00	14,439,522.32	1,700,154.89	39.76030168	-80.78742948
600.00	0.00	0.000	600.00	0.00	0.00	14,439,522.32	1,700,154.89	39.76030168	-80.78742948
700.00	0.00	0.000	700.00	0.00	0.00	14,439,522.32	1,700,154.89	39.76030168	-80.78742948
800.00	0.00	0.000	800.00	0.00	0.00	14,439,522.32	1,700,154.89	39.76030168	-80.78742948
900.00	0.00	0.000	900.00	0.00	0.00	14,439,522.32	1,700,154.89	39.76030168	-80.78742948
1,000.00	0.00	0.000	1,000.00	0.00	0.00	14,439,522.32	1,700,154.89	39.76030168	-80.78742948
1,100.00	0.00	0.000	1,100.00	0.00	0.00	14,439,522.32	1,700,154.89	39.76030168	-80.78742948
1,200.00	0.00	0.000	1,200.00	0.00	0.00	14,439,522.32	1,700,154.89	39.76030168	-80.78742948
1,300.00	0.00	0.000	1,300.00	0.00	0.00	14,439,522.32	1,700,154.89	39.76030168	-80.78742948
1,400.00	0.00	0.000	1,400.00	0.00	0.00	14,439,522.32	1,700,154.89	39.76030168	-80.78742948
1,500.00	0.00	0.000	1,500.00	0.00	0.00	14,439,522.32	1,700,154.89	39.76030168	-80.78742948
<b>KOP Begin 2°/100' build</b>									
1,600.00	2.00	37.590	1,599.98	1.38	1.06	14,439,523.70	1,700,155.86	39.76030547	-80.78742566
1,700.00	4.00	37.590	1,699.84	5.53	-4.26	14,439,527.85	1,700,159.15	39.76031684	-80.78741429
1,750.00	5.00	37.590	1,749.68	8.84	8.65	14,439,530.96	1,700,161.54	39.76032536	-80.78740575
<b>Begin 5.00° tangent</b>									
1,800.00	5.00	37.590	1,799.48	12.09	6.31	14,439,534.41	1,700,164.20	39.76033483	-80.78739826
1,900.00	5.00	37.590	1,899.11	19.00	14.62	14,439,541.32	1,700,169.52	39.76035376	-80.78737728
2,000.00	5.00	37.590	1,998.73	25.90	18.94	14,439,548.22	1,700,174.84	39.76037269	-80.78735630
2,100.00	5.00	37.590	2,098.35	32.81	25.28	14,439,555.13	1,700,180.15	39.76039162	-80.78733533
2,200.00	5.00	37.590	2,197.97	39.72	30.57	14,439,562.03	1,700,185.47	39.76041055	-80.78732035
2,300.00	5.00	37.590	2,297.59	46.62	35.89	14,439,568.94	1,700,190.79	39.76042948	-80.78730137
2,400.00	5.00	37.590	2,397.21	53.53	41.21	14,439,575.85	1,700,196.11	39.76044842	-80.78728240
2,500.00	5.00	37.590	2,496.83	60.43	46.52	14,439,582.75	1,700,201.42	39.76046735	-80.78726342
2,600.00	5.00	37.590	2,596.45	67.34	51.84	14,439,589.66	1,700,206.74	39.76048628	-80.78724445
2,700.00	5.00	37.590	2,696.07	74.25	57.15	14,439,596.57	1,700,212.05	39.76050521	-80.78722547
2,800.00	5.00	37.590	2,795.69	81.15	62.47	14,439,603.47	1,700,217.37	39.76052414	-80.78720649
2,900.00	5.00	37.590	2,895.31	88.06	67.79	14,439,610.38	1,700,222.68	39.76054308	-80.78718752
3,000.00	5.00	37.590	2,994.93	94.97	73.11	14,439,617.28	1,700,228.00	39.76056201	-80.78716854
3,100.00	5.00	37.590	3,094.55	101.87	78.42	14,439,624.19	1,700,233.32	39.76058094	-80.78714956
3,200.00	5.00	37.590	3,194.17	108.78	83.74	14,439,631.10	1,700,238.63	39.76059988	-80.78713058
3,300.00	5.00	37.590	3,293.78	115.68	89.06	14,439,638.00	1,700,243.95	39.76061880	-80.78711161
3,400.00	5.00	37.590	3,393.40	122.59	94.37	14,439,644.91	1,700,249.27	39.76063773	-80.78709263
3,500.00	5.00	37.590	3,493.02	129.50	99.69	14,439,651.81	1,700,254.58	39.76065667	-80.78707365
3,600.00	5.00	37.590	3,592.64	136.40	105.01	14,439,658.72	1,700,259.90	39.76067560	-80.78705468
3,700.00	5.00	37.590	3,692.26	143.31	110.32	14,439,665.63	1,700,265.22	39.76069453	-80.78703570
3,800.00	5.00	37.590	3,791.88	150.22	115.64	14,439,672.53	1,700,270.53	39.76071346	-80.78701673
3,900.00	5.00	37.590	3,891.50	157.12	120.96	14,439,679.44	1,700,275.85	39.76073239	-80.78699775
4,000.00	5.00	37.590	3,991.12	164.03	126.27	14,439,686.35	1,700,281.17	39.76075132	-80.78697877
4,100.00	5.00	37.590	4,090.74	170.93	131.59	14,439,693.25	1,700,286.48	39.76077026	-80.78695980
4,200.00	5.00	37.590	4,190.36	177.84	136.91	14,439,700.16	1,700,291.80	39.76078919	-80.78694082
4,300.00	5.00	37.590	4,289.98	184.75	142.22	14,439,707.06	1,700,297.12	39.76080812	-80.78692184
4,400.00	5.00	37.590	4,389.60	191.65	147.54	14,439,713.97	1,700,302.43	39.76082705	-80.78690287
4,500.00	5.00	37.590	4,489.22	198.56	152.86	14,439,720.88	1,700,307.75	39.76084598	-80.78688389
4,600.00	5.00	37.590	4,588.84	205.46	158.17	14,439,727.78	1,700,313.07	39.76086491	-80.78686491
4,700.00	5.00	37.590	4,688.46	212.37	163.49	14,439,734.69	1,700,318.38	39.76088384	-80.78684594
4,800.00	5.00	37.590	4,788.08	219.28	168.81	14,439,741.59	1,700,323.70	39.76090278	-80.78682696
4,900.00	5.00	37.590	4,887.70	226.18	174.12	14,439,748.50	1,700,329.02	39.76092171	-80.78680798
5,000.00	5.00	37.590	4,987.32	233.09	179.44	14,439,755.41	1,700,334.33	39.76094064	-80.78678901

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Planning Report - Geographic

Database:	DB_Aug1919_V14	Local Co-ordinate Reference:	Well McMasters S-19 HU (slot I)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1206.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1206.00ft
Site:	McMasters Shields	North Reference:	Grid
Well:	McMasters S-19 HU (slot I)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
5,100.00	5.00	37.590	5,086.94	240.00	184.75	14,439,762.31	1,700,339.65	39.76095957	-80.78677003	
5,200.00	5.00	37.590	5,186.55	246.90	190.07	14,439,769.22	1,700,344.96	39.76097850	-80.78675106	
5,300.00	5.00	37.590	5,286.17	253.81	195.39	14,439,776.13	1,700,350.28	39.76099743	-80.78673206	
5,400.00	5.00	37.590	5,385.79	260.71	200.70	14,439,783.03	1,700,355.60	39.76101637	-80.78671310	
5,500.00	5.00	37.590	5,485.41	267.62	206.02	14,439,789.94	1,700,360.91	39.76103530	-80.78669412	
5,600.00	5.00	37.590	5,585.03	274.53	211.34	14,439,796.84	1,700,366.23	39.76105423	-80.78667514	
5,700.00	5.00	37.590	5,684.65	281.43	216.65	14,439,803.75	1,700,371.55	39.76107316	-80.78665617	
5,800.00	5.00	37.590	5,784.27	288.34	221.97	14,439,810.66	1,700,376.86	39.76109209	-80.78663719	
5,900.00	5.00	37.590	5,883.89	295.24	227.29	14,439,817.56	1,700,382.18	39.76111102	-80.78661821	
6,000.00	5.00	37.590	5,983.51	302.15	232.60	14,439,824.47	1,700,387.50	39.76112995	-80.78659924	
6,100.00	5.00	37.590	6,083.13	309.06	237.92	14,439,831.38	1,700,392.81	39.76114889	-80.78658026	
6,200.00	5.00	37.590	6,182.75	315.96	243.24	14,439,838.28	1,700,398.13	39.76116782	-80.78656128	
6,300.00	5.00	37.590	6,282.37	322.87	248.55	14,439,845.19	1,700,403.45	39.76118675	-80.78654231	
6,400.00	5.00	37.590	6,381.99	329.78	253.87	14,439,852.09	1,700,408.76	39.76120568	-80.78652333	
6,500.00	5.00	37.590	6,481.61	336.68	259.19	14,439,858.99	1,700,414.08	39.76122461	-80.78650435	
6,600.00	5.00	37.590	6,581.23	343.59	264.50	14,439,865.91	1,700,419.40	39.76124354	-80.78648538	
6,700.00	5.00	37.590	6,680.85	350.49	269.82	14,439,872.81	1,700,424.71	39.76126248	-80.78646640	
6,800.00	5.00	37.590	6,780.47	357.40	275.14	14,439,879.72	1,700,430.03	39.76128141	-80.78644742	
6,900.00	5.00	37.590	6,880.09	364.31	280.45	14,439,886.62	1,700,435.35	39.76130034	-80.78642845	
7,000.00	5.00	37.590	6,979.71	371.21	285.77	14,439,893.53	1,700,440.66	39.76131927	-80.78640947	
7,020.37	5.00	37.590	7,000.00	372.62	286.85	14,439,894.94	1,700,441.75	39.76132313	-80.78640560	
<b>Begin 2"/100' build</b>										
7,100.00	6.59	37.590	7,079.22	378.99	291.75	14,439,901.31	1,700,446.65	39.76134059	-80.78638809	
7,200.00	8.59	37.590	7,178.34	389.46	299.82	14,439,911.78	1,700,454.71	39.76136929	-80.78635933	
7,300.00	10.59	37.590	7,278.93	402.67	309.98	14,439,924.88	1,700,464.88	39.76140549	-80.78632304	
7,400.00	12.59	37.590	7,374.89	418.59	322.24	14,439,940.90	1,700,477.13	39.76144914	-80.78627929	
7,500.00	14.59	37.590	7,472.08	437.21	336.58	14,439,959.53	1,700,491.47	39.76150016	-80.78622812	
7,600.00	16.59	37.590	7,568.40	458.51	352.97	14,439,980.82	1,700,507.86	39.76155856	-80.78616960	
7,700.00	18.59	37.590	7,663.72	482.46	371.41	14,440,004.77	1,700,526.30	39.76162421	-80.78610379	
7,755.80	19.71	37.590	7,716.42	496.96	382.57	14,440,019.28	1,700,537.47	39.76168397	-80.78606393	
<b>Begin 19.71° tangent</b>										
7,800.00	19.71	37.590	7,768.04	508.77	391.67	14,440,031.09	1,700,546.56	39.76169935	-80.78603148	
7,900.00	19.71	37.590	7,852.18	535.49	412.24	14,440,057.61	1,700,567.91	39.76176960	-80.78595805	
8,000.00	19.71	37.590	7,946.32	562.22	432.81	14,440,084.53	1,700,587.70	39.76184285	-80.78588462	
8,100.00	19.71	37.590	8,040.46	588.94	453.38	14,440,111.25	1,700,608.08	39.76191811	-80.78581119	
8,200.00	19.71	37.590	8,134.61	615.66	473.95	14,440,137.98	1,700,628.86	39.76199336	-80.78573776	
8,300.00	19.71	37.590	8,228.75	642.38	494.53	14,440,164.70	1,700,649.42	39.76206861	-80.78566432	
8,400.00	19.71	37.590	8,322.89	669.10	515.10	14,440,191.42	1,700,669.98	39.76214386	-80.78559089	
8,500.00	19.71	37.590	8,417.03	695.83	535.67	14,440,218.14	1,700,690.54	39.76221911	-80.78551746	
8,600.00	19.71	37.590	8,511.17	722.55	556.24	14,440,244.87	1,700,711.13	39.76229436	-80.78544403	
8,700.00	19.71	37.590	8,605.32	749.27	576.81	14,440,271.59	1,700,731.71	39.76236961	-80.78537060	
8,800.00	19.71	37.590	8,699.46	775.99	597.38	14,440,298.31	1,700,752.28	39.76244486	-80.78529717	
8,900.00	19.71	37.590	8,793.60	802.71	617.95	14,440,325.03	1,700,772.85	39.76252012	-80.78522374	
9,000.00	19.71	37.590	8,887.74	829.44	638.53	14,440,351.75	1,700,793.42	39.76259537	-80.78515031	
9,100.00	19.71	37.590	8,981.88	856.16	659.10	14,440,378.48	1,700,813.99	39.76267062	-80.78507688	
9,200.00	19.71	37.590	9,076.03	882.88	679.67	14,440,405.20	1,700,834.56	39.76274587	-80.78500344	
9,300.00	19.71	37.590	9,170.17	909.60	700.24	14,440,431.92	1,700,855.14	39.76282112	-80.78493001	
9,400.00	19.71	37.590	9,264.31	936.33	720.81	14,440,458.64	1,700,875.71	39.76289637	-80.78485658	
9,500.00	19.71	37.590	9,358.45	963.05	741.39	14,440,485.36	1,700,896.28	39.76297162	-80.78478315	
9,600.00	19.71	37.590	9,452.59	989.77	761.96	14,440,512.08	1,700,916.85	39.76304687	-80.78470971	
9,700.00	19.71	37.590	9,546.74	1,016.49	782.53	14,440,538.81	1,700,937.42	39.76312212	-80.78463628	
9,800.00	19.71	37.590	9,640.88	1,043.21	803.10	14,440,565.53	1,700,957.99	39.76319737	-80.78456285	
9,900.00	19.71	37.590	9,735.02	1,069.94	823.67	14,440,592.25	1,700,978.57	39.76327262	-80.78448942	
10,000.00	19.71	37.590	9,829.16	1,096.66	844.24	14,440,618.97	1,700,999.14	39.76334787	-80.78441599	

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Planning Report - Geographic

Database:	DB_Aug1819_v14	Local Co-ordinate Reference:	Well McMaster's S-19 HU (slot I)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1206.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1206.00ft
Site:	McMasters Sheds	North Reference:	Grid
Well:	McMasters S-19 HU (slot I)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,100.00	19.71	37.590	9,923.31	1,123.38	864.82	14,440,645.70	1,701,019.71	39.78338113	-80.78434255
10,200.00	19.71	37.590	10,017.45	1,150.10	885.38	14,440,672.42	1,701,040.28	39.78345438	-80.78428912
10,300.00	19.71	37.590	10,111.58	1,176.83	905.86	14,440,699.14	1,701,060.85	39.78352763	-80.78419568
10,400.00	19.71	37.590	10,205.73	1,203.55	926.53	14,440,725.86	1,701,081.42	39.78360088	-80.78412225
10,432.72	19.71	37.590	10,239.54	1,212.29	933.25	14,440,734.51	1,701,088.16	39.78362485	-80.78409822
<b>Begin 6°/100° build/tum</b>									
10,500.00	18.26	49.196	10,300.18	1,228.17	948.17	14,440,750.49	1,701,103.06	39.78368636	-80.78404505
10,600.00	17.60	88.658	10,395.41	1,243.93	974.13	14,440,766.24	1,701,129.02	39.78371145	-80.78395254
10,700.00	18.86	87.494	10,490.47	1,250.14	1,004.38	14,440,772.45	1,701,159.28	39.78372831	-80.78384481
10,800.00	21.72	102.790	10,584.32	1,246.75	1,038.61	14,440,789.06	1,701,193.50	39.78371877	-80.78372306
10,900.00	25.63	114.159	10,675.93	1,233.79	1,076.42	14,440,756.10	1,701,231.31	39.78368293	-80.78358861
11,000.00	30.20	122.486	10,764.31	1,211.40	1,117.41	14,440,733.71	1,701,272.30	39.78362117	-80.78344294
11,100.00	35.17	128.749	10,848.47	1,179.83	1,161.13	14,440,702.15	1,701,316.02	39.78353419	-80.78328765
11,200.00	40.39	133.599	10,927.50	1,139.43	1,207.09	14,440,661.78	1,701,361.98	39.78342292	-80.78312443
11,300.00	45.77	137.497	11,000.53	1,090.83	1,254.80	14,440,612.94	1,701,409.89	39.78328859	-80.78295508
11,377.27	50.00	140.045	11,052.34	1,047.51	1,292.33	14,440,569.83	1,701,447.42	39.78316992	-80.78282119
<b>Begin 8°/100° build/tum</b>									
11,400.00	51.75	140.890	11,066.66	1,033.93	1,303.78	14,440,556.25	1,701,458.67	39.78313255	-80.78278129
11,500.00	59.48	143.205	11,123.13	968.88	1,354.53	14,440,491.27	1,701,509.42	39.78295377	-80.78260124
11,600.00	67.24	145.347	11,167.94	896.42	1,406.63	14,440,418.73	1,701,581.52	39.78275422	-80.78241647
11,700.00	75.04	147.256	11,200.24	817.73	1,459.08	14,440,340.05	1,701,613.95	39.78253778	-80.78223058
11,800.00	82.85	149.031	11,219.41	734.43	1,510.90	14,440,256.74	1,701,665.89	39.78230866	-80.78204719
11,878.82	89.00	150.384	11,225.00	666.58	1,550.43	14,440,188.86	1,701,705.32	39.78212205	-80.78190675
<b>Begin 89.00° lateral</b>									
11,900.00	89.00	150.384	11,225.07	648.16	1,560.90	14,440,170.48	1,701,715.79	39.78207142	-80.78188967
12,000.00	89.00	150.384	11,227.11	591.24	1,610.31	14,440,083.58	1,701,785.20	39.78183237	-80.78169460
12,100.00	89.00	150.384	11,228.84	474.32	1,659.72	14,439,996.83	1,701,814.61	39.78159333	-80.78151953
12,200.00	89.00	150.384	11,230.58	387.39	1,709.13	14,439,909.71	1,701,864.02	39.78135428	-80.78134446
12,300.00	89.00	150.384	11,232.32	300.47	1,758.54	14,439,822.79	1,701,913.43	39.78111523	-80.78116840
12,400.00	89.00	150.384	11,234.05	213.55	1,807.95	14,439,735.87	1,701,962.84	39.78087619	-80.78099433
12,500.00	89.00	150.384	11,235.79	126.63	1,857.36	14,439,648.94	1,702,012.25	39.78063714	-80.78081927
12,600.00	89.00	150.384	11,237.53	39.70	1,906.77	14,439,562.02	1,702,061.66	39.78039809	-80.78064421
12,700.00	89.00	150.384	11,239.26	-47.22	1,956.18	14,439,475.10	1,702,111.07	39.78015905	-80.78046914
12,800.00	89.00	150.384	11,241.00	-134.14	2,005.59	14,439,388.18	1,702,160.48	39.77992000	-80.78029408
12,900.00	89.00	150.384	11,242.74	-221.07	2,055.00	14,439,301.25	1,702,209.89	39.77968095	-80.78011903
13,000.00	89.00	150.384	11,244.47	-307.99	2,104.41	14,439,214.33	1,702,259.30	39.77944190	-80.77994397
13,100.00	89.00	150.384	11,246.21	-394.91	2,153.82	14,439,127.41	1,702,308.71	39.77920285	-80.77976891
13,200.00	89.00	150.384	11,247.95	-481.83	2,203.23	14,439,040.49	1,702,358.12	39.77896380	-80.77959386
13,300.00	89.00	150.384	11,249.68	-568.76	2,252.64	14,438,953.56	1,702,407.53	39.77872476	-80.77941880
13,400.00	89.00	150.384	11,251.42	-655.68	2,302.05	14,438,866.64	1,702,456.94	39.77848571	-80.77924375
13,500.00	89.00	150.384	11,253.16	-742.60	2,351.46	14,438,779.72	1,702,506.35	39.77824666	-80.77906870
13,600.00	89.00	150.384	11,254.89	-829.53	2,400.87	14,438,692.79	1,702,555.76	39.77800761	-80.77889365
13,700.00	89.00	150.384	11,256.63	-916.45	2,450.28	14,438,605.87	1,702,605.17	39.77776856	-80.77871860
13,800.00	89.00	150.384	11,258.37	-1,003.37	2,499.70	14,438,518.95	1,702,654.58	39.77752951	-80.77854355
13,900.00	89.00	150.384	11,260.10	-1,090.30	2,549.11	14,438,432.02	1,702,703.99	39.77729046	-80.77836851
14,000.00	89.00	150.384	11,261.84	-1,177.22	2,598.52	14,438,345.10	1,702,753.40	39.77705141	-80.77819346
14,100.00	89.00	150.384	11,263.58	-1,264.14	2,647.93	14,438,258.16	1,702,802.82	39.77681235	-80.77801842
14,200.00	89.00	150.384	11,265.31	-1,351.06	2,697.34	14,438,171.26	1,702,852.23	39.77657330	-80.77784336
14,300.00	89.00	150.384	11,267.05	-1,437.99	2,746.75	14,438,084.33	1,702,901.64	39.77633425	-80.77766833
14,400.00	89.00	150.384	11,268.78	-1,524.91	2,796.16	14,437,997.41	1,702,951.05	39.77609520	-80.77749329
14,500.00	89.00	150.384	11,270.52	-1,611.83	2,845.57	14,437,910.49	1,703,000.46	39.77585615	-80.77731825
14,600.00	89.00	150.384	11,272.26	-1,698.76	2,894.98	14,437,823.57	1,703,049.87	39.77561710	-80.77714322
14,700.00	89.00	150.384	11,273.99	-1,785.68	2,944.39	14,437,736.64	1,703,099.28	39.77537804	-80.77696816
14,800.00	89.00	150.384	11,275.73	-1,872.60	2,993.80	14,437,649.72	1,703,148.69	39.77513899	-80.77679314

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Planning Report - Geographic

Database:	DB_Aug1819_v14	Local Co-ordinate Reference:	Well McMasters S-19 HU (slot I)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1206.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1206.00ft
Site:	McMasters Shields	North Reference:	Gnd
Well:	McMasters S-19 HU (slot I)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
14,000.00	89.00	150.384	11,277.47	-1,959.53	3,043.21	14,437,562.80	1,703,198.10	39.75489994	-80.77661811	
15,000.00	89.00	150.384	11,279.20	-2,046.45	3,092.62	14,437,475.87	1,703,247.51	39.75486088	-80.77644308	
16,100.00	89.00	150.384	11,280.94	-2,133.37	3,142.03	14,437,388.95	1,703,296.82	39.75442183	-80.77628804	
15,200.00	89.00	150.384	11,282.68	-2,220.29	3,191.44	14,437,302.03	1,703,346.33	39.75418277	-80.77609301	
15,300.00	89.00	150.384	11,284.41	-2,307.22	3,240.85	14,437,215.11	1,703,395.74	39.75394372	-80.77591798	
15,400.00	89.00	150.384	11,286.15	-2,394.14	3,290.26	14,437,128.18	1,703,445.15	39.75370467	-80.77574296	
15,500.00	89.00	150.384	11,287.89	-2,481.06	3,339.67	14,437,041.26	1,703,494.56	39.75346561	-80.77556793	
15,600.00	89.00	150.384	11,289.62	-2,567.99	3,389.08	14,436,954.34	1,703,543.97	39.75322656	-80.77539290	
15,700.00	89.00	150.384	11,291.36	-2,654.91	3,438.49	14,436,867.41	1,703,593.38	39.75298750	-80.77521788	
15,800.00	89.00	150.384	11,293.10	-2,741.83	3,487.90	14,436,780.49	1,703,642.79	39.75274844	-80.77504285	
15,900.00	89.00	150.384	11,294.83	-2,828.75	3,537.31	14,436,693.57	1,703,692.20	39.75250939	-80.77486783	
16,000.00	89.00	150.384	11,296.57	-2,915.68	3,586.72	14,436,606.65	1,703,741.61	39.75227033	-80.77469281	
16,100.00	89.00	150.384	11,298.31	-3,002.60	3,636.13	14,436,519.72	1,703,791.02	39.75203128	-80.77451778	
16,200.00	89.00	150.384	11,300.04	-3,089.52	3,685.54	14,436,432.80	1,703,840.43	39.75179222	-80.77434277	
16,300.00	89.00	150.384	11,301.78	-3,176.45	3,734.95	14,436,345.88	1,703,889.84	39.75155316	-80.77416776	
16,400.00	89.00	150.384	11,303.52	-3,263.37	3,784.37	14,436,258.96	1,703,939.25	39.75131411	-80.77399274	
16,500.00	89.00	150.384	11,305.25	-3,350.29	3,833.78	14,436,172.03	1,703,988.66	39.75107505	-80.77381772	
16,600.00	89.00	150.384	11,306.99	-3,437.22	3,883.19	14,436,085.11	1,704,038.07	39.75083599	-80.77364271	
16,700.00	89.00	150.384	11,308.72	-3,524.14	3,932.60	14,435,998.19	1,704,087.48	39.75059693	-80.77346770	
16,800.00	89.00	150.384	11,310.46	-3,611.06	3,982.01	14,435,911.26	1,704,136.89	39.75035787	-80.77329269	
16,900.00	89.00	150.384	11,312.20	-3,697.98	4,031.42	14,435,824.34	1,704,186.30	39.75011881	-80.77311768	
17,000.00	89.00	150.384	11,313.93	-3,784.91	4,080.83	14,435,737.42	1,704,235.71	39.74987976	-80.77294267	
17,100.00	89.00	150.384	11,315.67	-3,871.83	4,130.24	14,435,650.50	1,704,285.12	39.74964070	-80.77276765	
17,200.00	89.00	150.384	11,317.41	-3,958.75	4,179.65	14,435,563.57	1,704,334.53	39.74940164	-80.77259265	
17,300.00	89.00	150.384	11,319.14	-4,045.68	4,229.06	14,435,476.65	1,704,383.94	39.74916258	-80.77241765	
17,400.00	89.00	150.384	11,320.88	-4,132.60	4,278.47	14,435,389.73	1,704,433.35	39.74892352	-80.77224264	
17,500.00	89.00	150.384	11,322.62	-4,219.52	4,327.88	14,435,302.80	1,704,482.76	39.74868446	-80.77206764	
17,600.00	89.00	150.384	11,324.35	-4,306.44	4,377.29	14,435,215.88	1,704,532.17	39.74844540	-80.77189264	
17,700.00	89.00	150.384	11,326.09	-4,393.37	4,426.70	14,435,128.96	1,704,581.59	39.74820634	-80.77171764	
17,800.00	89.00	150.384	11,327.83	-4,480.29	4,476.11	14,435,042.04	1,704,631.00	39.74796727	-80.77154264	
17,900.00	89.00	150.384	11,329.56	-4,567.21	4,525.52	14,434,955.11	1,704,680.41	39.74772821	-80.77136764	
18,000.00	89.00	150.384	11,331.30	-4,654.14	4,574.93	14,434,868.19	1,704,729.82	39.74748914	-80.77119264	
18,100.00	89.00	150.384	11,333.04	-4,741.06	4,624.34	14,434,781.27	1,704,779.23	39.74725009	-80.77101765	
18,200.00	89.00	150.384	11,334.77	-4,827.98	4,673.75	14,434,694.35	1,704,828.64	39.74701103	-80.77084265	
18,300.00	89.00	150.384	11,336.51	-4,914.91	4,723.16	14,434,607.42	1,704,878.05	39.74677197	-80.77066766	
18,400.00	89.00	150.384	11,338.25	-5,001.83	4,772.57	14,434,520.50	1,704,927.46	39.74653290	-80.77049267	
18,500.00	89.00	150.384	11,339.98	-5,088.75	4,821.98	14,434,433.58	1,704,976.87	39.74629384	-80.77031768	
18,600.00	89.00	150.384	11,341.72	-5,175.67	4,871.39	14,434,346.65	1,705,026.28	39.74605478	-80.77014269	
18,700.00	89.00	150.384	11,343.46	-5,262.60	4,920.80	14,434,259.73	1,705,075.69	39.74581571	-80.76996770	
18,788.98	89.00	150.384	11,345.00	-5,339.94	4,964.77	14,434,162.39	1,705,119.65	39.74560300	-80.76981200	

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Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N-S (ft)	+E-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
McMasters S-19 HU LP - hit/miss target - Shape	0.00	0.000	11,225.00	866.56	1,550.38	14,440,188.87	1,701,705.25	39.76212200	-80.76190700	
- plan misses target center by 0.07ft at 11876.80ft MD (11225.00 TVD, 866.59 N, 1550.42 E)										
- Point										
McMasters S-19 HU FBI - plan hits target center - Point	0.00	0.000	11,345.00	-5,339.94	4,964.77	14,434,162.39	1,705,119.65	39.74560300	-80.76981200	



Planning Report - Geographic

<b>Database:</b>	DB_Aug1919_v14	<b>Local Co-ordinate Reference:</b>	Well McMasters S-19 HU (slot I)
<b>Company:</b>	Tug Hill Operating LLC	<b>TVD Reference:</b>	GL @ 1206.00ft
<b>Project:</b>	Marshall County, West Virginia	<b>MD Reference:</b>	GL @ 1206.00ft
<b>Site:</b>	McMasters Shields	<b>North Reference:</b>	Grid
<b>Well:</b>	McMasters S-19 HU (slot I)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev2		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,500.00	1,500.00	0.00	0.00	KOP Begin 2°/100' build
1,750.00	1,749.68	8.64	6.65	Begin 5.00° tangent
7,020.37	7,000.00	372.62	286.85	Begin 2°/100' build
7,755.80	7,716.42	496.96	382.57	Begin 19.71° tangent
10,432.72	10,236.54	1,212.29	933.26	Begin 6°/100' build/turn
11,377.27	11,052.34	1,047.51	1,292.53	Begin 8°/100' build/turn
11,878.82	11,225.00	666.58	1,550.43	Begin 89.00° lateral
18,788.98	11,345.00	-5,339.94	4,964.77	PBHL/TD 18788.98 MD/11345.00 TVD

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Environmental Protection

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WW-9  
(4/16)

API Number 47 - 051 -  
Operator's Well No. McMasters S-19HU

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 water for frac and flow back water

Will a synthetic liner be used in the pit? Yes  No  If so, what ml.? AST Tanks are equipped with liners

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number UIC 2459, UIC 365, UIC 359, UIC 2D0732540, UIC 2D0732523 )
- Reuse (at API Number \_\_\_\_\_)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain \_\_\_\_\_)

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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 / Oil for Horizontal

-If oil based, what type? Synthetic, petroleum, etc. Synthetic Oil Base

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 (Secretary Landfill (SWF-1024 / W0403183) and Westmoreland Secretary Landfill, LLC (SALFAD5 / PA DEP EDR188428)

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 Jim Pancake  
Company Official (Typed Name) Jim Pancake  
Company Official Title VP Geosciences

Subscribed and sworn before me this 5th day of December, 2022

Suzanne Delere

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

My commission expires 1/15/2025

02/10/2023

Form WW-9

Operator's Well No. McMasters S-19HU

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

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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: [Signature] STRADER GOVER 12-1-2022

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

Title: WVDEP Oil and Gas Inspector Date: \_\_\_\_\_

Field Reviewed? ( ) Yes ( ) No

WW-9

# PROPOSED McMASTERS S-19HU

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

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WV Department of Environmental Protection

DRAWING NOT TO SCALE

PREVAILING WIND

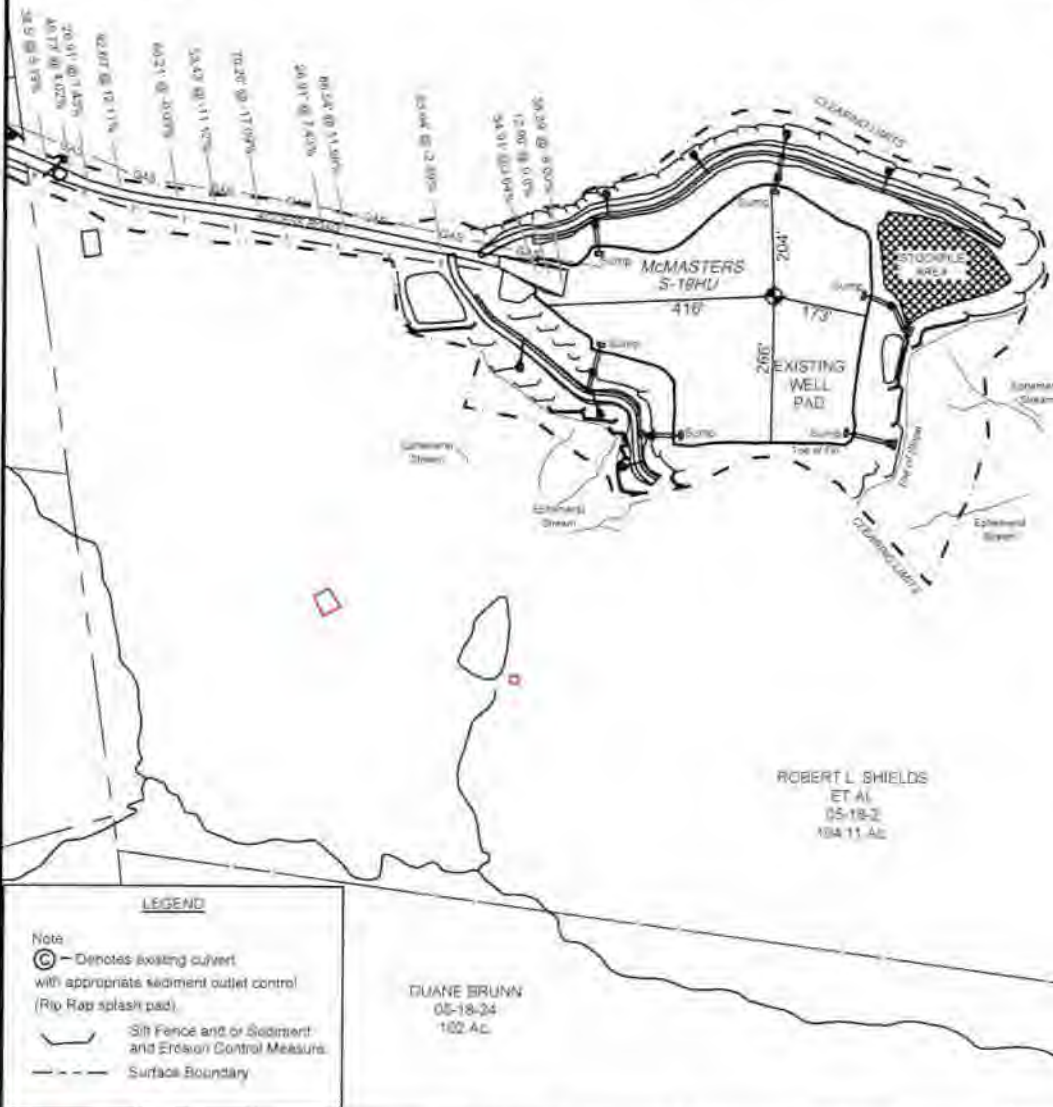
REFERENCE IS HEREBY MADE TO THE WV D.E.P. OFFICE OF OIL & GAS "EROSION AND SEDIMENT CONTROL FIELD MANUAL" FOR REQUIREMENTS AND BMPs FOR AVERAGE FIELD CONDITIONS CONCERNING THE MAINTENANCE OF EXISTING ROADS AND THE CONSTRUCTION OF PROPOSED ROADS. FIELD CONDITIONS MAY REQUIRE VARIANCE FROM THESE GUIDELINES 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.C.T. REGULATIONS. ADDITIONAL PERMITS MAY BE REQUIRED. TEMPORARILY SEED AND MULCH ALL SLOPES UPON CONSTRUCTION OF LOCATION.

ALL CUT AND FILL SLOPES ARE 24:1 V 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  
184.11 AC

DUANE BRUNN  
05-18-24  
102 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.**  
2012 E. Main St. #12  
Martinsburg, WV 26101  
Phone: 304-633-0211

TOPOG SECTION		OPERATOR	
POWhatan Point T-1		PREPARED FOR:	
COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
MARSHALL	FRANKLIN	345 SOUTHPOINT BLVD	
DEPARTMENT	JOB NO.	SUITE 240	
DEPT.	431-02850	DATE	SCALE
		6-4-2022	AS SHOWN

**TUG HILL OPERATING**

WV-9

**PROPOSED McMASTERS  
S-19HU**

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.

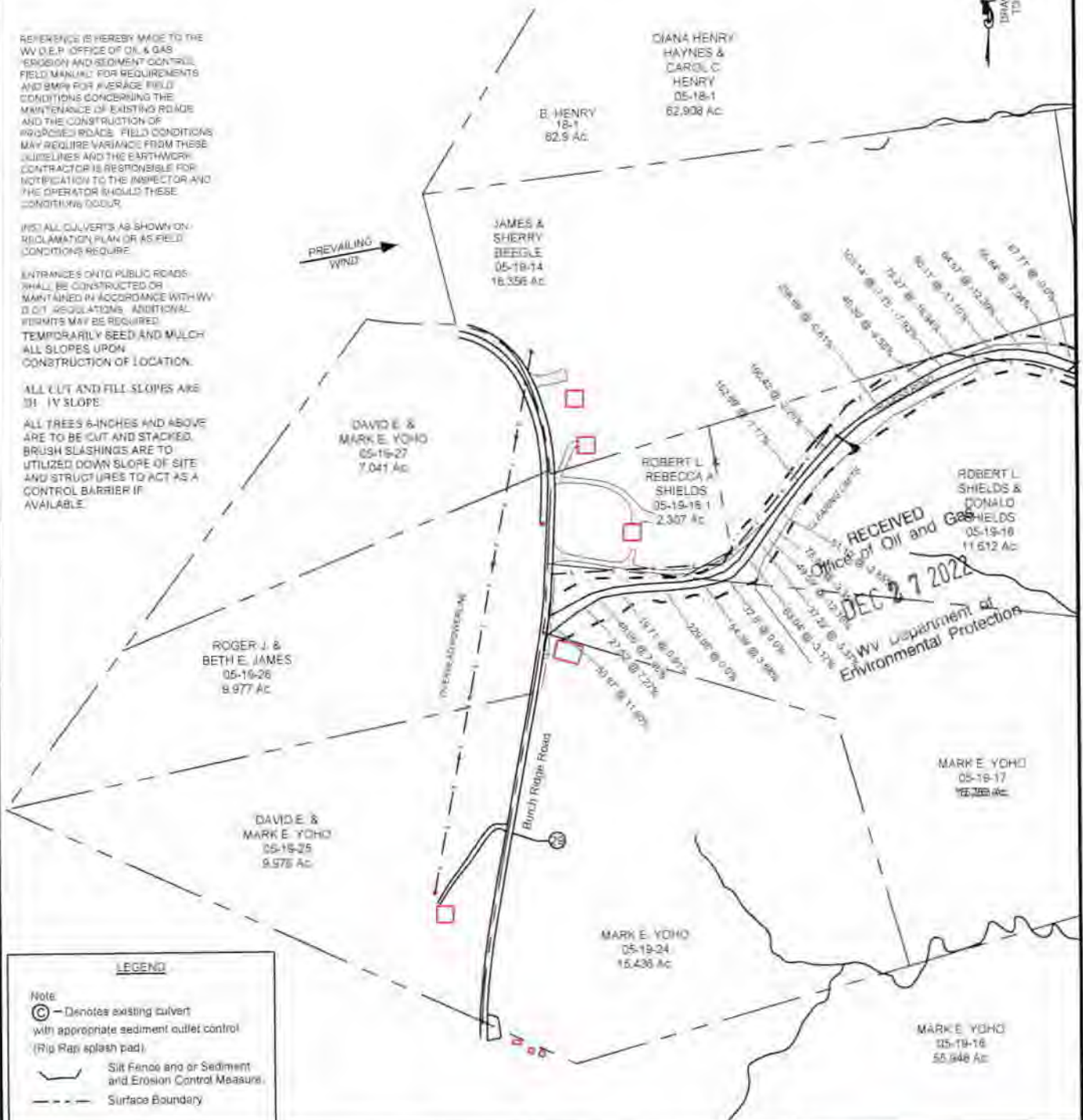
INSTALL ALL CULVERTS AS SHOWN ON RECLAMATION PLAN OR AS FIELD CONDITIONS REQUIRE.

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 3:1 V 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.

PREVAILING WIND



**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.**  
2015 E. Pike St. #112  
Charleston, WV 25301  
Phone: 304-523-5801

TOPG SECTION	
POWATAN POINT 15	
COUNTY	MARSHALL
DRAWN BY	JLLC
JOB NO.	424510851

OPERATOR	
PREPARED FOR:	
TUG HILL OPERATING, LLC 440 SOUTHGATE BLVD SUITE 100 CAMDEN, PA 17012	
DATE	SCALE
EA-2020	NONE



02/10/2023



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

**Well Name: McMasters S-19HU**

**Pad Name: Shields**

**County: Marshall**

UTM (meters), NAD83, Zone 17

Northing: 4,401,175.20

Easting: 518,208.25

**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**

*JV*  
12-1-2022

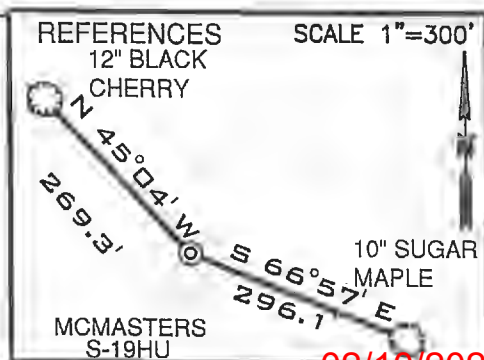
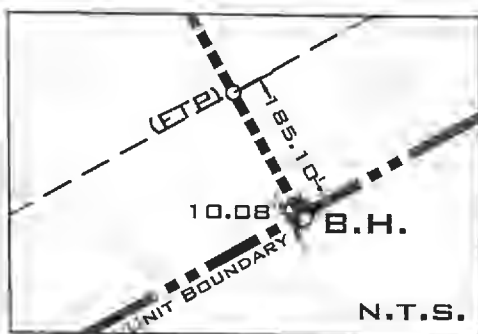


MCMASTERS S-19HU  
UTICA UNIT - 539.1576± ACRES  
TUG HILL OPERATING

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

SEE DETAIL "A"

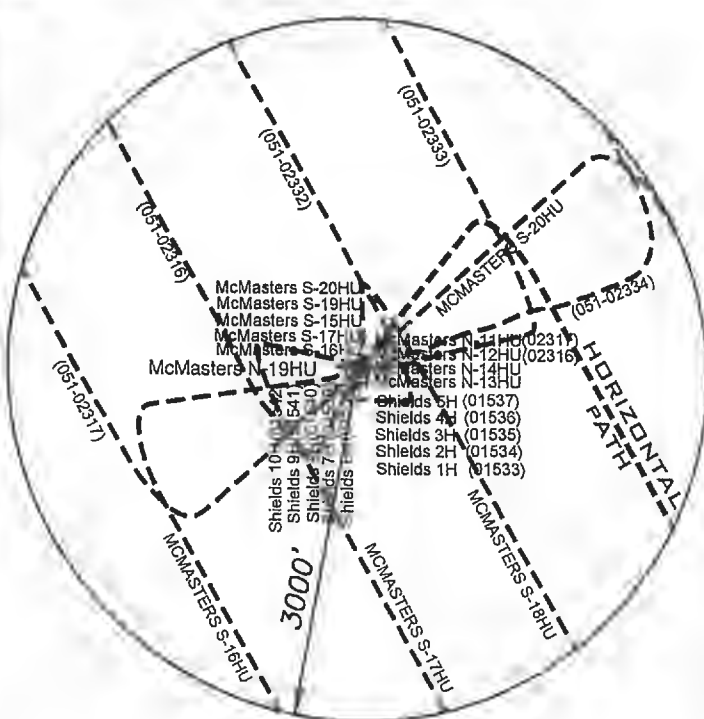
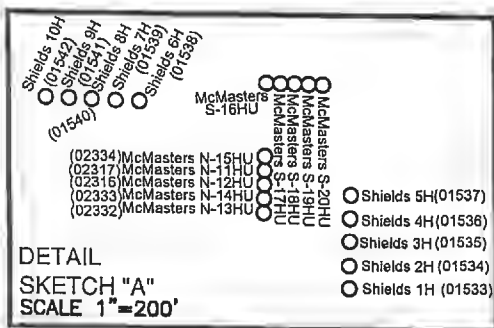
LINE	BEARING	DISTANCE
L1	N 74°15' W	1439.44'
L2	S 40°12' W	1365.44'
L3	N 38°33' E	1530.43'



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

(BH) 1,621'

(TH) 11,447'



SURFACE HOLE	
UTM. NAD83, ZONE 17 IN METERS	
N)	4,401,175.20
E)	518,208.25
LANDING POINT 1	
UTM. NAD83, ZONE 17 IN METERS	
N)	4,401,378.38
E)	518,680.82
BOTTOM HOLE	
UTM. NAD83, ZONE 17 IN METERS	
N)	4,399,547.59
E)	519,721.51

LEGEND

- LEASE 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

- NOTES
- BORE PATH BASED ON GRID NORTH.
  - NO WATER WELLS WITHIN 250' OF WELL WERE FOUND, NO DWELLINGS WITHIN 625' OF PAD CENTER WERE FOUND.
  - OWNERSHIP TAKEN FROM PUBLIC RECORDS OF MARSHALL COUNTY, WV IN MARCH, 2019. COORDINATES AND WELL TIES BASED UPON DIFFERENTIAL GPS MEASUREMENTS.
  - WELL LOCATION REFERENCES ARE BASED UPON THE MAGNETIC MERIDIAN.
  - ALL DEEP WELLS SHOWN ON THIS PLAT.
  - BOUNDARIES ALONG ROADWAYS ARE BASED UPON MEMORANDUM BY DICKIE, MCCAMEY & CHILCOTE, P.C. FILE 0058304.0401147

CURVE	CHORD BEARING	CHORD LENGTH	RADIUS	ARC LENGTH
C1	N 62°57' E	80.59'	92.01'	83.41'
C2	S 76°15' E	73.89'	161.04'	74.56'
C3	S 54°49' E	129.98'	429.96'	130.48'
C4	S 41°33' E	214.74'	1107.01'	215.08'
C5	S 32°27' E	402.49'	2674.49'	402.87'

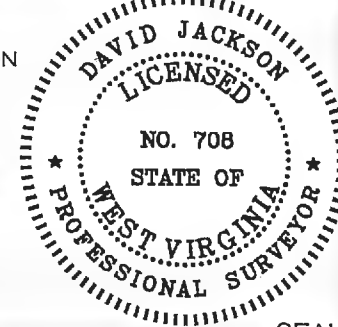
FILE NUMBER \_\_\_\_\_  
DRAWING NUMBER: MCMASTERS S-19HU\_REV2  
SCALE: 1" = 2000'  
MINIMUM DEGREE OF ACCURACY: 1/200  
PROVEN SOURCE OF ELEVATION: SUBMETER MAPPING  
GRADE GPS

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

P.S. 708

*David L Jackson*

JACKSON SURVEYING INC.  
P.O. Box 1480  
Clarksburg, WV 26302  
304-623-5851



SEAL

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

DATE: JANUARY 06, 2023  
OPERATORS WELL NO. MCMASTERS S-19HU  
API WELL NO. 47-051-02488  
STATE COUNTY PERMIT

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

SURFACE OWNER ROBERT L. SHIELDS ET AL ACREAGE 104.11  
OIL & GAS ROYALTY OWNER ROBERT L. SHIELDS ET AL LEASE ACREAGE 104.11  
PROPOSED WORK: DRILL X CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION \_\_\_  
PERFORATE NEW FORMATION \_\_\_ OTHER PHYSICAL CHANGE (SPECIFY) \_\_\_\_\_  
TARGET FORMATION POINT PLEASANT PLUG & ABANDON \_\_\_ CLEAN OUT & REPLUG \_\_\_  
WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DARREN BROWN, CT CORP  
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107 ADDRESS 5098 WASHINGTON STREET WEST, SUITE 407 CHARLESTON WV 25313-1561

COUNTY NAME PERMIT

# MCMASTERS S-19HU UTICA UNIT - 539.1576± ACRES TUG HILL OPERATING

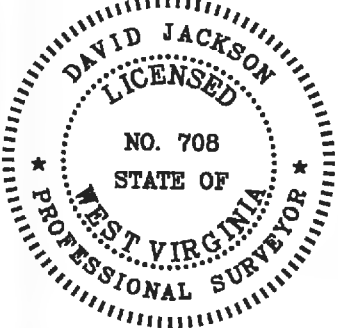
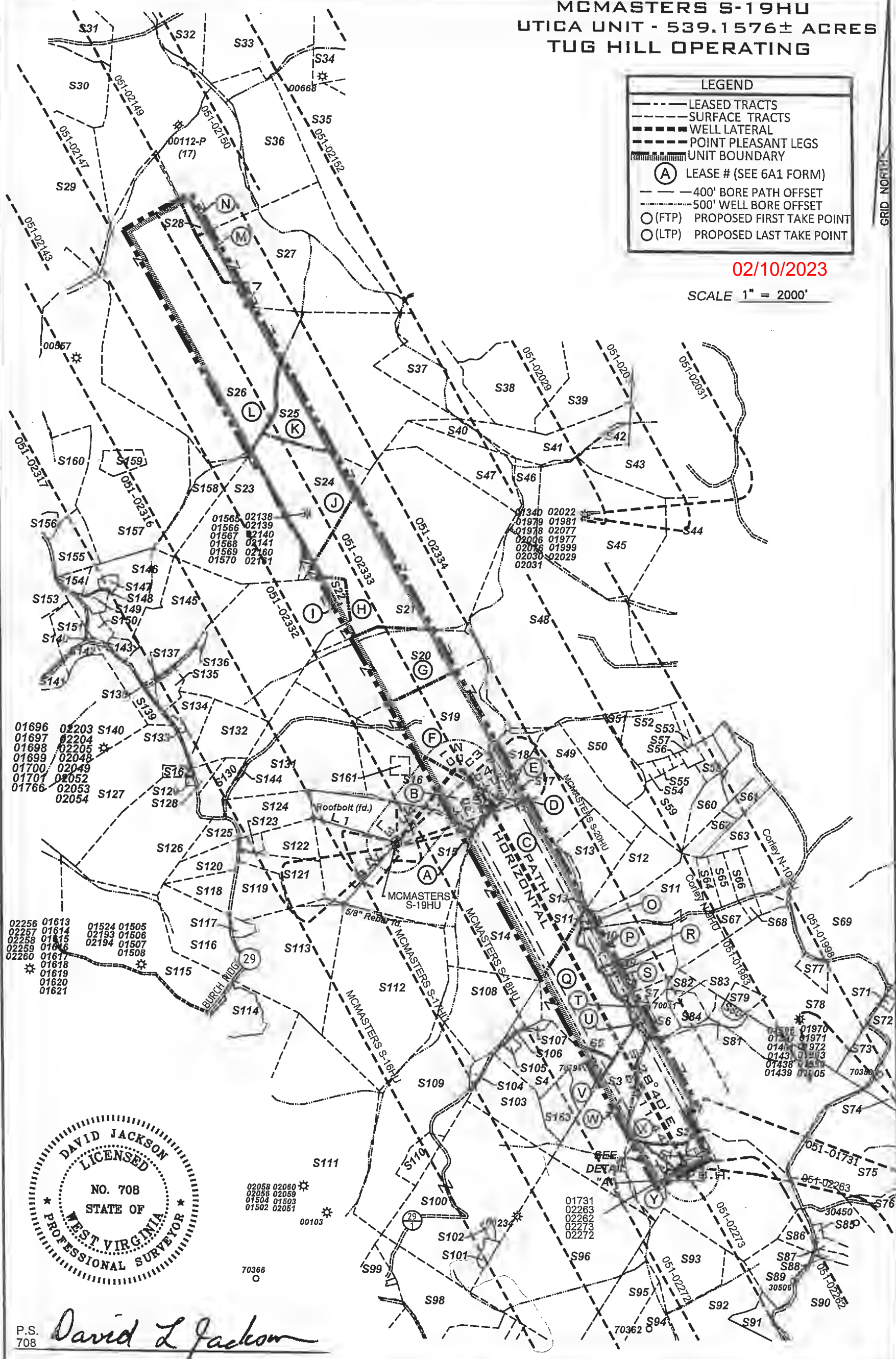
**LEGEND**

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

02/10/2023

SCALE 1" = 2000'

GRID NORTH



P.S. 708  
*David L Jackson*



**TUG HILL  
OPERATING**

OPERATOR'S  
WELL #: MCMASTER S-19HU  
DISTRICT: Franklin  
COUNTY: Marshall  
STATE: WV  
API #: 47-051-

**WELL PLAT**  
**PAGE 2 OF 4**  
**DATE: 12/21/2022**

**MCMASTERS S-19HU**  
**UTICA UNIT - 539.1576± ACRES**  
**TUG HILL OPERATING**

Parcels within Unit Boundary				
Trp	Number	Tax Map Parcel	Surface Owner	Acres
A	S15	05-18-02	ROBERT L. SHIELDS & DONALD SHIELDS	204.11
B	S16	05-18-03	OLAN V. & PATRICIA E. RUTAN	43.677
C	S14	05-18-25	XCL MIDSTREAM OPERATING, LLC	110.0
D	S17	05-18-05	ADAM & JESSE L. ROBINSON	26.0
E	S18	05-18-05	TERRY MELOTT	8.14
F	S19	05-18-04	OLAN V. & PATRICIA E. RUTAN	65.89
G	S20	05-15-11	DIANA HENRY HAYNES & CAROL HENRY	65.58
H	S21	05-15-12	JOHN DAVID PETROCK & THOMAS ANDREW PETROCK	150.23
I	S22	05-15-13	RONA LEE RICE & CHARLES FRANKLIN MCCARDLE	94.925
J	S24	05-15-15	ROBERT L. SHIELDS & DONALD SHIELDS	49
K	S25	05-15-01	MARCUS SHARP	121.0
L	S26	05-14-13	RALPH D. & SALLY JANE HOYT	222.18
M	S27	05-13-15	LIONEL L. PERSINGER, ET UX	93.0
N	S28	05-12-12.1	LIONEL L. PERSINGER, ET UX	148.09
O	S11	05-18-13	SOUTHERN COUNTRY FARMS, INC.	11.054
P	S10	05-18-59	SOUTHERN COUNTRY FARMS, INC.	35.79
Q	S5	05-18-20	WAYNE E. CHANNING, ET AL	44.47
R	S9	05-18-30	MARY & DANIEL ROBINSON	3.46
S	S8	05-18-13.10	CARL BERG	10.88
T	S7	05-18-29	CARL G. BERG	5.319
U	S6	05-18-31	JACOB RASTALL	6.94
V	S4	05-18-21	CLIRTIS E. & MICHELLE J. HALL	32.569
W	S3	05-23-06	JAMES A. CHANNING, ET AL	48.0
X	S2	05-17-11	KENNETH N. CORLEY, ET UX	120.0
Y	S1	05-23-07	TERRY E. SIMMS, ET UX	123.097

Adjoining Parcel Ownership Table			
Number	Tax Map Parcel	Surface Owner	Acres
S12	05-18-16	ADAM & JESSE L. ROBINSON	17.768
S13	05-18-07	ADAM & JESSE L. ROBINSON	24.22
S23	05-14-15	ROBERT L. SHIELDS & DONALD SHIELDS	53.0
S29	05-12-14	LINDA HAMILTON, ET AL	117.895
S30	05-12-13	LINDA HAMILTON, ET AL	61.887
S31	05-12-08	ANITA RAY MILLER-LIFE	200.95
S32	05-12-12	LIONEL L. PERSINGER, ET UX	45.0
S33	05-13-21	KAREN REED, ET AL	36.13
S34	05-11-17	KEVIN CORLEY, ET UX	36.13
S35	05-13-14	HIRAMS ESTATE FAMILY, LTD, LLP	158.054
S36	05-12-11	WESLEY R. BRYAN & WESLEY R. BRYAN II	52.478
S37	05-15-03	MARK S. & LINDA K. RUCKMAN	36.10
S38	05-15-05	MARK S. & LINDA K. RUCKMAN	35.0
S39	05-15-06	MARK S. & LINDA K. RUCKMAN	42.3
S40	05-15-02	JOHN DAVID PETROCK & THOMAS ANDREW PETROCK	5.0
S41	05-15-6.1	MARK S. & LINDA K. RUCKMAN	39.40
S42	05-15-07	XCL MIDSTREAM OPERATING, LLC	4.5
S43	05-15-08	XCL MIDSTREAM OPERATING, LLC	77.11
S44	05-15-23.5	MARSHALL COUNTY COAL RESOURCES, INC	15.09
S45	05-15-09	CNX LAND RESOURCES, INC	81.98
S46	05-15-13	CNX LAND RESOURCES, INC	11.0
S47	05-15-14	JOHN DAVID PETROCK & THOMAS ANDREW PETROCK	25.0
S48	05-15-10	MARK STANLEY RUCKMAN	153.75
S49	05-18-15.3	ADAM & JESSE L. ROBINSON	26.44
S50	05-18-15.4	DAVID R. ANDERSON	22.34
S51	05-18-15	NANCY MARIE ANDERSON & DAVID VESPER ANDERSON	2.495
S52	05-18-11.1	NANCY MARIE ANDERSON & DAVID VESPER ANDERSON	18.0
S53	05-18-11.2	EDWARD LEE BURGE JR.	2.0
S54	05-18-10.1	DAVID V. ANDERSON, ET UX	1.65
S55	05-18-10.2	DAVID ANDERSON, ET UX	1.377
S56	05-18-11	DAVID & NANCY ANDERSON	0.907
S57	05-18-12	JOSEPH E. SR. & MELANIE S. BECK	2.270
S58	05-18-15.3	JASON BLAIR	5.948
S59	05-18-15.5	DARRELL BOLEY	23.547
S60	05-18-13.3	ROBERT G. CLOSTERMAN	9.813
S61	05-18-14	MICHAEL FINCHAM & KEZIA WINTERS	6.385
S62	05-18-17	MICHAEL FINCHAM & KEZIA WINTERS	6.585
S63	05-18-13.1	CORY A. HOLT	9.248
S64	05-18-34	JODI A. & GARY A. HALL	3.002
S65	05-18-13.13	GLENN E. & SANDRA K. WHISLER	5.59
S66	05-18-13.6	GLENN EUGENE WHISLER, ET UX	5.384
S67	05-18-33	SANDRA & GLENN WHISLER	5.343
S68	05-18-13.14	GLENN E. & SANDRA K. WHISLER	2.11
S69	05-17-10.3	JAMES A. & JILL C. CORLEY	37.39
S70	05-17-09	LLOYD RICHARD OLIVER, ET UX	61.6
S71	05-17-8.1	JERI J. WHITE	1.0
S72	05-17-8.2	JERI J. WHITE	7.136
S73	05-17-8.3	JAMES A. CORLEY, ET UX	12.478
S74	05-17-9.4	VICKI L. BOWEN HRS. JEREMY S. BOWEN -LIFE	60.3
S75	05-17-11.1	RANDY W. FRANCIS, ET UX	67.0
S76	05-24-01	LINDA L. HENDRICKSON	175.0
S77	05-17-10.1	JAMES A. & JILL C. CORLEY	4.51
S78	05-17-10	JAMES A. CORLEY, ET AL	92.61

02/10/2023



P.S. 708 *David L Jackson*



**TUG HILL**  
**OPERATING**

OPERATOR'S  
 WELL #: MCMMASTER S-19HU  
 DISTRICT: Franklin  
 COUNTY: Marshall  
 STATE: WV  
 API #: 47-051-

**WELL PLAT**  
**PAGE 3 OF 4**  
**DATE: 12/21/2022**

**MCMASTERS S-19HU**  
**UTICA UNIT - 539.1576± ACRES**  
**TUG HILL OPERATING**

Lease ID	TMP	Tag	Grantor, Lessor, Etc.	Deed Book/Page
10*14116	5-18-2	A	DONALD SHIELDS, ET AL	669 367
10*14109	5-18-3	B	MARTHA M RUTAN, ET AL	668 836
10*14030	5-18-23	C	LORI V YOHO, ET AL	665 331
10*12454	5-18-6	D	MARGARET A BONNETT, ET AL	940 431
10*19140	5-18-5	F	TERRELL MELDITT	794 26
10*19093	5-18-4	F	IAN I ARNOLD MARSHA A ARNOLD, ET AL	813 111
10*19018	5-15-11	G	BENJAMIN FRANKLIN HENRY FREDRICK ALLEN HENRY	746 5
10*19337	5-15-12	H	JACK PETROCK HATTIE PETROCK	741 66
10*14110	5-19-13	I	RONA LEE MCCARDLE, ET AL	870 472
10*14116	5-19-15	J	DONALD SHIELDS, ET AL	869 367
10*14042	5-15-1	K	RALPH B TAYLOR, ET AL	665 487
10*14067	5-14-13	L	REVA FRANZE	866 31
10*14911	5-11-15	M	FORREST MILLER, ET AL	819 316
10*16918	5-12-12.1	N	LIONEL L AND MARY LEE PERSINGER	978 617
10*14099	5-18-13	O	SOUTHERN COUNTRY FARMS INC, ET AL	666 489
10*14099	5-18-13	P	SOUTHERN COUNTRY FARMS INC, ET AL	666 489
10*17145	5-18-20	Q	JAMES J. CAMPBELL AND BETTY J CAMPBELL, ET AL	683 458
10*17431	5-18-30	R	SOUTHERN COUNTRY FARMS INC	938 446
10*17431	5-18-13.10	S	SOUTHERN COUNTRY FARMS INC	938 446
10*17431	5-18-29	T	SOUTHERN COUNTRY FARMS INC	938 446
10*17780	5-18-31	U	KENNETH E RASTALL, ET AL	937 434
10*17145	5-18-21	V	JAMES J. CAMPBELL AND BETTY J CAMPBELL, ET AL	685 458
10*17186	5-23-5	W	ROBERT J HENRY	706 51
10*18126	5-17-11	X	SHARON MIDCAP	697 152
10*14140	5-23-7	Y	TERRY E SIMMS AND DEBORAH L SIMMS	686 528

RECEIVED  
 Office of Oil and Gas  
 DEC 27 2022  
 WV Department of  
 Environmental Protection



David L Jackson

Adjoining Parcels Ownership Table			
Number	Tax Map (Parcel)	Surface Owner	Acres
578	05-17-10.5	WILLIAMS OHIO VALLEY MIDSTREAM, LLC	8.74
580	05-17-12.1	WILLIAMS OHIO VALLEY MIDSTREAM, LLC	1.67
581	05-17-12	JAMES A. & JILL C. CORLEY	3.33
582	05-18-13.8	LORI D. CARPENTER	3.546
583	05-18-12.1	LORI D. CARPENTER	3.545
584	05-18-37	JACOB RASTALL	3.335
585	05-23-7.1	RANDY W. & JESSICA L. FRANCIS	0.549
586	05-17-7.2	FLORELLA LOU WEIGER	4.69
587	05-24-5.1	JAMES D. WATKINS, ET UX	3.151
588	05-24-5.2	JAMES D. WATKINS, ET UX	3.151
589	05-24-5.3	SONNY & LINDA TAGG	17.194
590	05-24-05	ROBERT C. FRANCIS, ET UX-LIFE	148.78
591	05-24-8.1	T.H. EXPLORATION II, LLC	5.50
592	05-24-5.4	THOMAS V. TUTTLE, ET LOI	38.224
593	05-23-6.1	WILLIAM & VIRGINIA ROUPE	34.0
594	05-23-6.3	LINDA D. GREATHOUSE	17.5
595	05-23-08	CARL DAVID & SUZANNE L. GUSEMAN	26.3
596	05-23-05	DANIEL D. RHYAND	118.5
597	05-23-16	ROY FRIEND YOHO SR.	18.03
598	05-23-18	PROCTOR RIDGE, LLC	35.34
599	05-25-18.1	MARK A. YOHO	7.6
5100	05-23-04	PROCTOR RIDGE, LLC	100.7
5101	05-23-4.1	XCL MIDSTREAM OPERATING, LLC	2.16
5102	05-23-4.2	XCL MIDSTREAM OPERATING, LLC	1.17
5103	05-23-03	PROCTOR RIDGE, LLC	50.0
5104	05-23-2.1	WILLIAM L. & JANICE M. WAYNE	2.564
5105	05-18-21.2	DAVID P. LASSAN - LIFE	1.0
5106	05-18-21.1	JASON PALERMO & WENDY MOORE	5.47
5107	05-18-21.3	XCL MIDSTREAM OPERATING, LLC	0.811
5108	05-18-22	JASON PALERMO & WENDY MOORE	30.345
5109	05-23-07	DANIEL J. & DANIELLE D. LILEY	70
5110	05-23-2.2	JESSICA N. & ANDREW L. JONES	7.436
5111	05-23-01	PATRICIA ACCETTOLLO, ET AL	146.86
5112	05-18-24	DUANE BRUNN	102.0
5113	05-19-18	MARK E. YOHO, ET UX	55.848
5114	05-22-5.1	WILLIAMS OHIO VALLEY MIDSTREAM, LLC	13.875
5115	05-22-05	CNX RCPC, LLC	134.425
5116	05-19-18.2	PAUL V. & CAROL NEELY	32.672
5117	05-19-18.1	MARK E. YOHO, ET UX	2.57
5118	05-19-25	DAVID E. YOHO & MARK E. YOHO	8.976
5119	05-19-24	DAVID E. YOHO	15.436
5120	05-19-26	ROGER J. & BETH E. JAMES	8.977
5121	05-19-17	MARK A. YOHO	15.263
5122	05-19-16	ROBERT L. SHIELDS & DONALD SHIELDS	11.612
5123	05-19-16.1	ROBERT L. SHIELDS, REBECCA A. SHIELDS & ROBERTA CAMPBELL	7.307
5124	05-19-14	JAMES & SHERRY BEEGLE	18.356
5125	05-19-17	DAVID E. YOHO	7.041
5126	05-19-28	DAVID E. YOHO	56.899
5127	05-19-19	RUSSELL & MARY BLAKE	54.148
5128	05-19-30.1	ERIC R.W. & ASHLEY A. HUGGINS	2.911
5129	05-19-32	JASPER N. BURCH, ET AL - TRUSTEES	0.397
5130	05-19-31	CHARLES F. & DIANA L. HAYNES	0.779
5131	05-18-01	DIANA HENRY HAYNES & CAROL C. HENRY	62.908
5132	05-19-30	ERNIE & TAMMY ANDERSON	19.037
5133	05-19-15	CARLY HERRAN	0.72
5134	05-19-29	ERNIE L. & TAMMY L. ANDERSON	10.961
5135	05-19-12	ERNIE L. ANDERSON, ET UX	5.33
5136	05-14-13.1	DONALD SHIELDS	0.8
5137	05-19-11	ERNIE L. ANDERSON, ET UX	0.08
5138	05-19-10	ERNIE L. ANDERSON, ET UX	0.8125
5139	05-19-09	FENNY ELAINE ASHCRAFT	10.44
5140	05-19-20	WILBERT H. BUNGARD, ET UX	114.889
5141	05-19-20.3	SIDNEY HARMON	1.715
5142	05-19-20.1	JOHN J. EBERT-LIFE	1.848
5143	05-19-7.2	ADAM T. & JESSE L. ROBINSON	2.64
5144	05-18-1.1	CHARLES F. & DIANA L. HAYNES	0.352
5145	05-19-08	CNX RCPC, LLC	40.0
5146	05-14-07	OLAN V. RUTAN, ET UX	37.4801
5147	05-19-7.4	OLAN V. RUTAN, ET UX	1.787
5148	05-19-7.3	OLAN V. RUTAN, ET UX	0.341
5149	05-19-7.2	OLAN V. RUTAN	2.783
5150	05-19-7.1	ROBERT L. SHIELDS, ET UX	3.398
5151	05-19-20.2	CASANDRA L. HARMON	7.848
5152	05-19-05	MARGRENE KEEFE	128.03
5153	05-19-08	BELUNDA KAY MEADOWS, REBECCA ANN SHIELDS & OLAN V. RUTAN	5.1099
5154	05-14-11	DALE R. GALLAHER & HARRY E. GALLAHER	11.0
5155	05-14-10.4	ADAM T. & JESSE L. ROBINSON	3.343
5157	05-14-12	DALE R. GALLAHER & HARRY E. GALLAHER	135.10
5158	05-14-1A	ROBERT L. SHIELDS & DONALD SHIELDS	29.05
5159	05-14-12.1	HENRY WILSON PLUNKERT JR.	5.0
5160	05-14-10	WANDA P. RINE-LIFE	107.873
5161	05-18-3.1	NIKO L. & JONATHAN STEVENS	2.223
5162	05-18-19.1	RUSSELL & MARY BLAKE	2.252
5163	05-18-21.4	DYLAN TYLAR HALL	10.55

02/10/2023



**TUG HILL**  
**OPERATING**

OPERATOR'S  
 WELL #: MCMMASTER S-19HU  
 DISTRICT: Franklin  
 COUNTY: Marshall  
 STATE: WV  
 API #: 47-051-

WELL PLAT  
 PAGE 4 OF 4  
 DATE: 12/21/2022


WW-9

# PROPOSED McMASTERS S-19HU

SUPPLEMENT PG 2



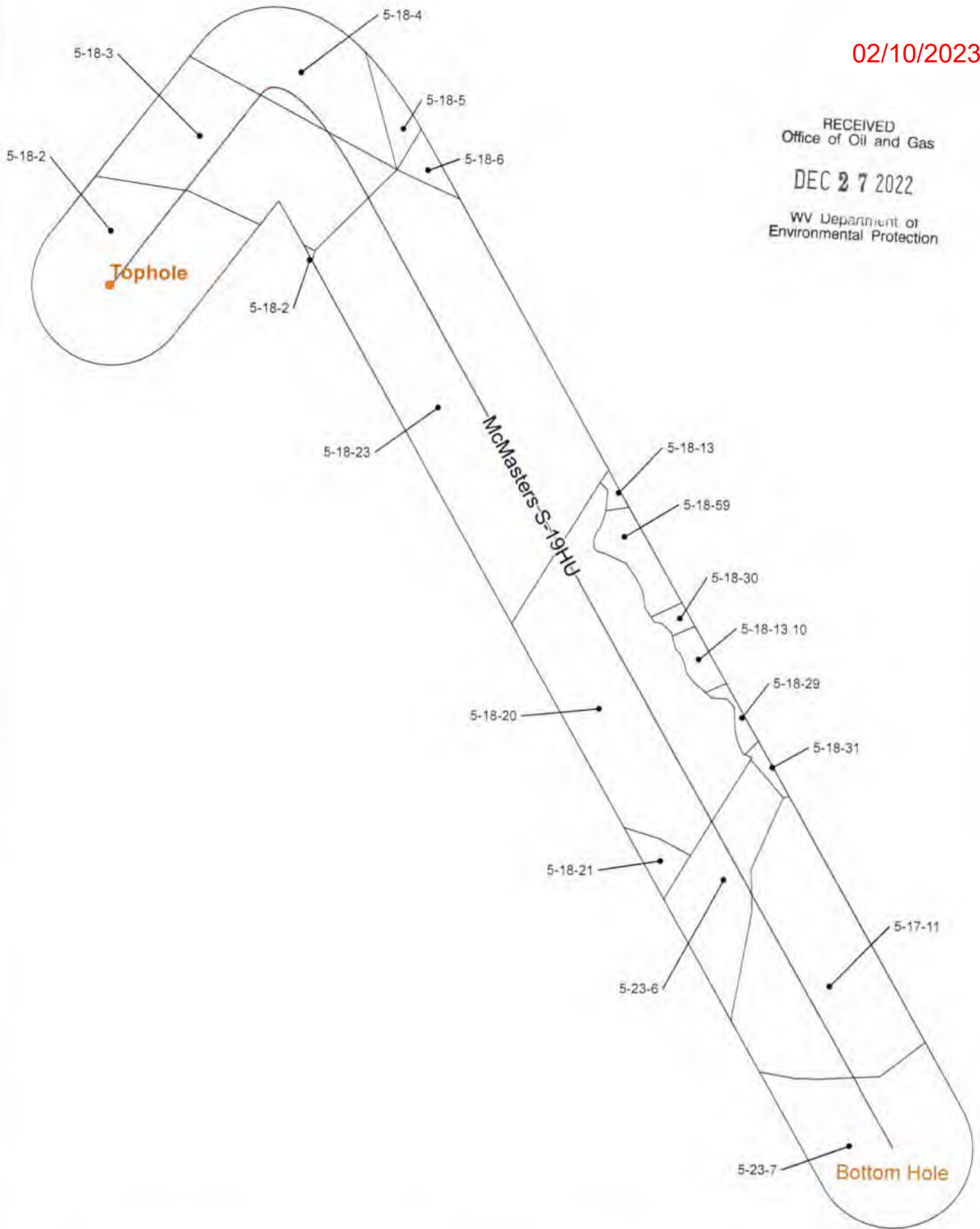
NOTE: CLOSEST WATER PURVEYOR  
GRANDVIEW - DOOLIN PUBLIC SERVICE  
DISTRICT PROCTOR, WV  
LAT 39 7138943  
LON -80.5220157  
LOCATED S 33-25 W AT 22.147 FROM  
McMASTERS S-19HU  
SURFACE LOCATION

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

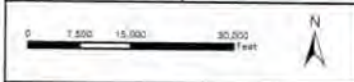
McMasters S-19HU

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**CONFIDENTIAL**



- Utica Well
- 500' Buffer
- Force Pool

McMasters S-19HU  
Operators within 500 Feet of Well Borehole



**Operator's Offset within 500'  
McMasters S - 19HU**

County	District	TMP	Owner	Address
Marshall	Franklin	5-17-11	TH EXPLORATION II, LLC*	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-18-2	TH EXPLORATION II, LLC*	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-18-3	TH EXPLORATION II, LLC*	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-18-3	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-18-4	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-18-5	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-18-6	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-18-13	TH EXPLORATION II, LLC*	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-18-13	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-18-13.10	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-18-20	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-18-21	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-18-23	TH EXPLORATION II, LLC*	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-18-29	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-18-30	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-18-31	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-18-59	TH EXPLORATION II, LLC*	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-18-59	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-6	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-23-7	TH EXPLORATION II, LLC*	1320 S. University Drive Suite 500 Fort Worth, TX 76107

02/10/2023

Office of Environmental Policy  
DEC 27 2022  
WV Department of Environmental Protection  
Office of Oil and Gas

\* 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.

02/10/2023



December 21, 2022

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

RECEIVED  
Office of Oil and Gas  
DEC 27 2022  
WV Department of  
Environmental Protection

RE: McMasters S-19HU

Subject: Proposed Voluntary Pooling and Unitization

Dear Susan:

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

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

Sincerely,

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

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



**COPY**

CERTIFICATE OF CONSENT AND EASEMENT

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

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

Robert L. Shields  
Robert L. Shields  
Rebecca A. Shields  
Rebecca A. Shields

Marshall County  
Jan Post, Clerk  
Instrument 1463967  
01/29/2020 @ 10:38:15 AM  
RIGHT OF WAY W/O CONSIDERATION  
Book 1072 @ Page 232  
Pages Recorded 2  
Recording Cost \$ 11.00

STATE OF WEST VIRGINIA

SS:

COUNTY OF MARSHALL

On this, the 20<sup>th</sup> day of November, 2019, before me, a notary public, the undersigned officer, personally appeared 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.



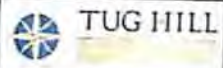
My Commission Expires: 3/13/2023  
Signature/Notary Public: David Wilborn  
Name/Notary Public (print): David Wilborn

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

4838-2618-8603v2

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

02/10/2023



1 inch: 435 feet

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

C 125 250 500 N  
 Feet  

 This map was prepared by Tug Hill Energy Services, Inc. for the purpose of showing the location of the proposed well pad and access road. It is not intended to be used for any other purpose. The user of this map assumes all liability for any errors or omissions.

### "Plat"

SHIELDS ROBERT L ET AL  
Marshall, WV

Date: 11/20/19  
 Name: *Robert L Shields*  
 Name: *Robert L Shields*



Date: 10/20/19  
 PCS: 1042 1192 UTM Zone 17N, Freq: 02

RECEIVED  
 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 20<sup>th</sup> November day of October, 2019.

Donald Shields  
Donald Shields

Marshall County  
Jan Pest, Clerk  
Instrument 1463768  
01/29/2020 @ 10:38:28 AM  
RIGHT OF WAY W/O COMPENSATION  
Book 1072 0 Page 254  
Pages Recorded 2  
Recording Cost: \$ 11.00

STATE OF WEST VIRGINIA  
COUNTY OF MARSHALL

SS:

On this, the 20<sup>th</sup> day of October, 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 57<sup>th</sup> Street  
Charleston, WV 25304

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



WW-6A1  
(5/13)

Operator's Well No. McMasters S-19HU

**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
----------------------	-----------------------	-----------------------	---------	-----------

\*See attached pages

RECEIVED  
Office of Oil and Gas  
  
DEC 27 2022  
  
WV Department of  
Environmental Protection

**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

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

Lease ID	TMP	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Led Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment
10*14116	5-18-2	A	DONALD SHIELDS	GASTAR EXPLORATION USA INC	1/8+	669 367	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	23/353 Gastar Exploration USA Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14109	5-18-3	B	MARTHA M RUTAN	GASTAR EXPLORATION USA INC	1/8+	668 636	NA	NA	NA	23/353 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14143	5-18-3	B	LOIS BARRETT	GASTAR EXPLORATION USA INC	1/8+	758 435	NA	NA	NA	23/353 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14144	5-18-3	B	RHONDA BARRETT	GASTAR EXPLORATION USA INC	1/8+	760 366	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14145	5-18-3	B	JAMES DONALD BARRETT (DECEASED)	GASTAR EXPLORATION USA INC	1/8+	760 372	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14146	5-18-3	B	JO ANNE BARRETT	GASTAR EXPLORATION USA INC	1/8+	760 375	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14147	5-18-3	B	INEZ DORNON	GASTAR EXPLORATION USA INC	1/8+	760 378	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14148	5-18-3	B	HAZEL L RITCHIE	GASTAR EXPLORATION USA INC	1/8+	760 381	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14149	5-18-3	B	MINNIE PFALZGRAF	GASTAR EXPLORATION USA INC	1/8+	760 369	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14150	5-18-3	B	ARLENE MCCORT	GASTAR EXPLORATION USA INC	1/8+	762 448	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14151	5-18-3	B	RICHARD D LEASURE	GASTAR EXPLORATION USA INC	1/8+	762 451	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14152	5-18-3	B	REBECCA LINN	GASTAR EXPLORATION USA INC	1/8+	762 98	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14153	5-18-3	B	RICHARD LINN	GASTAR EXPLORATION USA INC	1/8+	762 95	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14154	5-18-3	B	JANICE BROWN	GASTAR EXPLORATION USA INC	1/8+	762 92	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

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10*14155	5-18-3	B	GUY MCCORT	GASTAR EXPLORATION USA INC	1/8+	765	74	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14156	5-18-3	B	JODIE JOHNSON	GASTAR EXPLORATION USA INC	1/8+	765	80	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14157	5-18-3	B	HARLAN BARRETT	GASTAR EXPLORATION USA INC	1/8+	765	77	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14158	5-18-3	B	JAMES HOLLAND	GASTAR EXPLORATION USA INC	1/8+	765	421	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14159	5-18-3	B	ROSS BARRETT	GASTAR EXPLORATION USA INC	1/8+	765	424	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14160	5-18-3	B	KATHY BECHTLE	GASTAR EXPLORATION USA INC	1/8+	765	436	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14161	5-18-3	B	JANICE DODD	GASTAR EXPLORATION USA INC	1/8+	765	427	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14162	5-18-3	B	ALLEN L YEATER	GASTAR EXPLORATION USA INC	1/8+	768	555	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14163	5-18-3	B	MARGARET WILSON FITZSIMMONS	GASTAR EXPLORATION USA INC	1/8+	768	567	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14164	5-18-3	B	BARBARA YEATER PERSINGER	GASTAR EXPLORATION USA INC	1/8+	768	557	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14165	5-18-3	B	RACHEL A YEATER	GASTAR EXPLORATION USA INC	1/8+	768	559	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14166	5-18-3	B	TERI LEE YEATER PARRISH	GASTAR EXPLORATION USA INC	1/8+	768	563	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14167	5-18-3	B	KAREN YEATER JONES	GASTAR EXPLORATION USA INC	1/8+	768	565	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14168	5-18-3	B	JUDITH HANNAHS	GASTAR EXPLORATION USA INC	1/8+	770	468	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14169	5-18-3	B	LENA G BLOHM	GASTAR EXPLORATION USA INC	1/8+	770	471	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

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10*14170	5-18-3	B	JAMES C KLINE	GASTAR EXPLORATION USA INC	1/8+	772	405	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14171	5-18-3	B	MICHAEL GALE AIF JOSEPHINE GALE	GASTAR EXPLORATION USA INC	1/8+	775	23	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14172	5-18-3	B	JOHN R & LINDA WILSON	GASTAR EXPLORATION USA INC	1/8+	775	25	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14173	5-18-3	B	BARBARA L YEATER	GASTAR EXPLORATION USA INC	1/8+	775	27	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14174	5-18-3	B	CHARLES E YEATER JR	GASTAR EXPLORATION USA INC	1/8+	775	29	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14175	5-18-3	B	JANE LYNN SWINGLE	GASTAR EXPLORATION USA INC	1/8+	775	19	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14176	5-18-3	B	CONRAD S YEATER	GASTAR EXPLORATION USA INC	1/8+	775	368	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14177	5-18-3	B	CAROLYN LOWE WELLER	GASTAR EXPLORATION USA INC	1/8+	775	366	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14178	5-18-3	B	LEANETTE LONG	GASTAR EXPLORATION USA INC	1/8+	775	363	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14179	5-18-3	B	VERA SHIRLENE WORKMAN	GASTAR EXPLORATION USA INC	1/8+	775	361	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14180	5-18-3	B	DIANA S GRAFTON	GASTAR EXPLORATION USA INC	1/8+	776	303	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14181	5-18-3	B	DONALD BROOKS WESLEY	GASTAR EXPLORATION USA INC	1/8+	776	305	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14182	5-18-3	B	RICK WEEKLY	GASTAR EXPLORATION USA INC	1/8+	776	307	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14183	5-18-3	B	NANCY J FOTI	GASTAR EXPLORATION USA INC	1/8+	776	299	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14184	5-18-3	B	HESTER LORETTA DUGAN DIETRA L DUGAN POA	GASTAR EXPLORATION USA INC	1/8+	776	301	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

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10*14185	5-18-3	B	NICOLE WEEKLY	GASTAR EXPLORATION USA INC	1/8+	776	309	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14186	5-18-3	B	WILLIAM GLENN YEATER	GASTAR EXPLORATION USA INC	1/8+	776	311	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14187	5-18-3	B	GERALD E YEATER	GASTAR EXPLORATION USA INC	1/8+	776	323	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14188	5-18-3	B	WILMA M MILLER	GASTAR EXPLORATION USA INC	1/8+	776	321	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14189	5-18-3	B	BILLIE JO BETHEL	GASTAR EXPLORATION USA INC	1/8+	776	319	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14190	5-18-3	B	ELIZABETH LOUISE YEATER MORAN	GASTAR EXPLORATION USA INC	1/8+	776	317	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14191	5-18-3	B	LARRY W. YEATER	GASTAR EXPLORATION USA INC	1/8+	776	315	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14192	5-18-3	B	MYRA HEWITT	GASTAR EXPLORATION USA INC	1/8+	777	581	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14193	5-18-3	B	SONDRA R KING	GASTAR EXPLORATION USA INC	1/8+	777	579	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14194	5-18-3	B	SANDRA REID CUMPSTON	GASTAR EXPLORATION USA INC	1/8+	777	574	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14195	5-18-3	B	FREDERICK MAXWELL YEATER	GASTAR EXPLORATION USA INC	1/8+	777	583	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14196	5-18-3	B	ROSEMARY AGNES YEATER LUNEMANN	GASTAR EXPLORATION USA INC	1/8+	777	587	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14197	5-18-3	B	PHYLLIS YEATER GREGOSKY	GASTAR EXPLORATION USA INC	1/8+	777	585	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14198	5-18-3	B	MARY J YEATER EARNSHAW	GASTAR EXPLORATION USA INC	1/8+	777	590	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14199	5-18-3	B	MARY MARGARET WELLMAN BURLEY	GASTAR EXPLORATION USA INC	1/8+	779	488	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

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10*14200	5-18-3	B	RANDALL D MORRIS	GASTAR EXPLORATION USA INC	1/8+	779	490	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14201	5-18-3	B	WILLIAM J VEST TRUST AGMT LARRY W YEATER TRUSTEE	GASTAR EXPLORATION USA INC	1/8+	786	490	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14202	5-18-3	B	MAY H RUCKMAN	GASTAR EXPLORATION USA INC	1/8+	779	486	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14203	5-18-3	B	LINDA KAY MORRIS WILSON	GASTAR EXPLORATION USA INC	1/8+	781	541	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14204	5-18-3	B	JEANETTE SOUTH	GASTAR EXPLORATION USA INC	1/8+	781	537	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14205	5-18-3	B	ANN LOUISE YEATER MARTIN	GASTAR EXPLORATION USA INC	1/8+	781	533	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14206	5-18-3	B	COLLEEN MCCLAIN MOORE	GASTAR EXPLORATION USA INC	1/8+	781	535	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14207	5-18-3	B	FREDRIC & BETTY RICHTER	GASTAR EXPLORATION USA INC	1/8+	781	612	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14208	5-18-3	B	NANCY D TRUEX	GASTAR EXPLORATION USA INC	1/8+	782	202	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14209	5-18-3	B	MARY JANE BUNGARD	GASTAR EXPLORATION USA INC	1/8+	782	210	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14210	5-18-3	B	JANET E PERSONS	GASTAR EXPLORATION USA INC	1/8+	782	204	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14211	5-18-3	B	STEPHEN I YEATER	GASTAR EXPLORATION USA INC	1/8+	782	206	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14212	5-18-3	B	MARTHA ANN GAMBLE & DAN MIGLIORINI	GASTAR EXPLORATION USA INC	1/8+	782	609	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14213	5-18-3	B	SHIRLEY E GBUR	GASTAR EXPLORATION USA INC	1/8+	782	611	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14214	5-18-3	B	SIDNEY F YOHO JR	GASTAR EXPLORATION USA INC	1/8+	782	605	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

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10*14215	5-18-3	B	SCOTT K & KATHIE J RICHTER	GASTAR EXPLORATION USA INC	1/8+	782	607	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14216	5-18-3	B	DOUGLAS I GAMBLE	GASTAR EXPLORATION USA INC	1/8+	783	493	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14217	5-18-3	B	DONNA S AND DONALD S KIRCH	GASTAR EXPLORATION USA INC	1/8+	783	497	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14218	5-18-3	B	MICKEY L PORTER	GASTAR EXPLORATION USA INC	1/8+	783	506	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14219	5-18-3	B	SUSAN J BROWN	GASTAR EXPLORATION USA INC	1/8+	783	504	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14220	5-18-3	B	JANIS L & ROY T MILLER	GASTAR EXPLORATION USA INC	1/8+	783	502	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14221	5-18-3	B	DEANNA R LAMBERT	GASTAR EXPLORATION USA INC	1/8+	783	500	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14222	5-18-3	B	ORVILLE V & MADONNA R BLANTON	GASTAR EXPLORATION USA INC	1/8+	783	512	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14223	5-18-3	B	SARAH E HOLT	GASTAR EXPLORATION USA INC	1/8+	783	510	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14224	5-18-3	B	SAMUEL E ZUGARO	GASTAR EXPLORATION USA INC	1/8+	784	193	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14225	5-18-3	B	THOMAS FRANCIS YOHO	GASTAR EXPLORATION USA INC	1/8+	784	195	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14226	5-18-3	B	MONICA ANN RENN	GASTAR EXPLORATION USA INC	1/8+	784	197	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14227	5-18-3	B	HUBERT D MORRIS	GASTAR EXPLORATION USA INC	1/8+	784	199	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14228	5-18-3	B	KALFUS T DOUGHMAN	GASTAR EXPLORATION USA INC	1/8+	786	392	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14229	5-18-3	B	JEFFREY H WILSON & PRISCILLA S WILSON	GASTAR EXPLORATION USA INC	1/8+	786	375	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

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10*14230	5-18-3	B	JOSEPH P & BARBARA A WILSON	GASTAR EXPLORATION USA INC	1/8+	786	377	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14231	5-18-3	B	YVONNE MARIE SMITH	GASTAR EXPLORATION USA INC	1/8+	786	379	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14232	5-18-3	B	SANDRA L KELLY	GASTAR EXPLORATION USA INC	1/8+	786	400	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14233	5-18-3	B	THOMAS E PORTER	GASTAR EXPLORATION USA INC	1/8+	786	381	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14234	5-18-3	B	WILLIAM D ADAMS	GASTAR EXPLORATION USA INC	1/8+	786	373	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14235	5-18-3	B	JOHN C WILSON	GASTAR EXPLORATION USA INC	1/8+	786	386	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14236	5-18-3	B	RODNEY C LOWE	GASTAR EXPLORATION USA INC	1/8+	786	367	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14237	5-18-3	B	KELLY KERN	GASTAR EXPLORATION USA INC	1/8+	787	566	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14238	5-18-3	B	LYNN C LAMBERTSEN	GASTAR EXPLORATION USA INC	1/8+	789	283	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14239	5-18-3	B	JAMES S WILSON & ANN D WILSON	GASTAR EXPLORATION USA INC	1/8+	789	281	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14240	5-18-3	B	SHARON L YEATER	GASTAR EXPLORATION USA INC	1/8+	789	287	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14241	5-18-3	B	CAROL JUDY LANCH	GASTAR EXPLORATION USA INC	1/8+	789	305	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14242	5-18-3	B	PATTI J WILSON	GASTAR EXPLORATION USA INC	1/8+	789	581	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14243	5-18-3	B	JANET HILPERT	GASTAR EXPLORATION USA INC	1/8+	789	579	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14244	5-18-3	B	ANN M MARTINO SIMONE	GASTAR EXPLORATION USA INC	1/8+	790	580	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

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10*14245	5-18-3	B	ODETTE YEATER	GASTAR EXPLORATION USA INC	1/8+	790	503	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14246	5-18-3	B	SANDRA M WINSLOW	GASTAR EXPLORATION USA INC	1/8+	790	517	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14247	5-18-3	B	RICKEY ALLEN YEATER	GASTAR EXPLORATION USA INC	1/8+	790	513	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14248	5-18-3	B	TERRY W YEATER	GASTAR EXPLORATION USA INC	1/8+	790	515	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14249	5-18-3	B	CAROL VAN SCYOC	GASTAR EXPLORATION USA INC	1/8+	790	546	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14250	5-18-3	B	DONALD REX QUIGLEY	GASTAR EXPLORATION USA INC	1/8+	790	533	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14251	5-18-3	B	ELLEN IONA GORBY HEATH	GASTAR EXPLORATION USA INC	1/8+	792	108	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14252	5-18-3	B	THELMA VIRGINIA WHIPKEY YEATER	GASTAR EXPLORATION USA INC	1/8+	794	519	NA	NA	NA	806/1 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14253	5-18-3	B	PAGE D HUNT (DECEASED)	GASTAR EXPLORATION USA INC	1/8+	795	152	NA	NA	NA	806/1 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14254	5-18-3	B	PATRICIA A GULUTZ	GASTAR EXPLORATION USA INC	1/8+	796	72	NA	NA	NA	806/1 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14255	5-18-3	B	RUSSELL BARRETT	GASTAR EXPLORATION USA INC	1/8+	797	193	NA	NA	NA	806/1 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14256	5-18-3	B	MICHAEL JOHNSON	GASTAR EXPLORATION USA INC	1/8+	799	55	NA	NA	NA	806/1 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14257	5-18-3	B	KATHRYN L MILLER	GASTAR EXPLORATION USA INC	1/8+	799	534	NA	NA	NA	806/1 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14258	5-18-3	B	MARGUERITE HARBISON	GASTAR EXPLORATION USA INC	1/8+	799	532	NA	NA	NA	806/1 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14259	5-18-3	B	GEORGE MARTINO JR	GASTAR EXPLORATION USA INC	1/8+	803	146	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	31/184 Gastar Exploration USA Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

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10*14260	5-18-3	B	JOHN K OTTO	GASTAR EXPLORATION USA INC	1/8+	803	160	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	31/184 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14261	5-18-3	B	JEAN MARIE SHEPARD	GASTAR EXPLORATION USA INC	1/8+	804	249	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	31/184 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14262	5-18-3	B	MICHAEL B SHEPARD JENNIFER BRECKENRIDGE PERSONAL REP	GASTAR EXPLORATION USA INC	1/8+	804	251	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	31/184 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14263	5-18-3	B	LAURIE ANN SHEPARD	GASTAR EXPLORATION USA INC	1/8+	804	243	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	31/184 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14264	5-18-3	B	WILLIAM LEWIS OTTO	GASTAR EXPLORATION USA INC	1/8+	809	533	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	31/184 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14265	5-18-3	B	EDWARD F & KAREN SIMS	GASTAR EXPLORATION USA INC	1/8+	816	12	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	31/184 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14266	5-18-3	B	GREGORY STEINHART	GASTAR EXPLORATION USA INC	1/8+	818	564	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	31/184 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14267	5-18-3	B	NANCY WILKOFF SHEBISH	GASTAR EXPLORATION INC	1/8+	833	523	NA	NA	NA	32/428 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC	
10*14268	5-18-3	B	JACQUELINE M CASILLAS-DUKE	GASTAR EXPLORATION INC	1/8+	839	530	NA	NA	NA	33/308 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC	
10*14269	5-18-3	B	SHARON D SMITH	GASTAR EXPLORATION INC	1/8+	840	160	NA	NA	NA	33/308 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC	
10*14270	5-18-3	B	ANNA M BARRETT (DECEASED)	GASTAR EXPLORATION USA INC	1/8+	734	457	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC	
10*14271	5-18-3	B	RICHARD THOMAS BARRETT	GASTAR EXPLORATION USA INC	1/8+	745	582	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC	
10*14272	5-18-3	B	ROBERT CLARK ASPLEY	GASTAR EXPLORATION INC	1/8+	844	85	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC	
10*14273	5-18-3	B	MARY ANNE YEATER MACHAMER	GASTAR EXPLORATION INC	1/8+	852	258	NA	NA	NA	34/302 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC	
10*14274	5-18-3	B	LAURA L YEATER HILL	GASTAR EXPLORATION INC	1/8+	852	245	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC	
10*14275	5-18-3	B	CAROL RAE YEATER	GASTAR EXPLORATION INC	1/8+	852	247	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC	
10*14276	5-18-3	B	REBECCA MCPEEK NORRIS	GASTAR EXPLORATION INC	1/8+	854	595	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC	

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10*14277	5-18-3	B	KATHLEEN L YEATER	GASTAR EXPLORATION INC	1/8+	854	593	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14278	5-18-3	B	DAVID GALE	GASTAR EXPLORATION INC	1/8+	854	591	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14279	5-18-3	B	WILLIAM BERNARD YEATER	GASTAR EXPLORATION INC	1/8+	854	589	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14280	5-18-3	B	PAUL EDWARD YEATER	GASTAR EXPLORATION INC	1/8+	854	587	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14281	5-18-3	B	DAWN MCPEEK WREZINSKI	GASTAR EXPLORATION INC	1/8+	860	426	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14282	5-18-3	B	CHERYL VAN PELT	GASTAR EXPLORATION INC	1/8+	860	428	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14283	5-18-3	B	MARY JO BARRETT	GASTAR EXPLORATION INC	1/8+	862	438	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14284	5-18-3	B	JULIE BRIGGS	GASTAR EXPLORATION INC	1/8+	862	435	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14285	5-18-3	B	EARL C BARRETT JR	GASTAR EXPLORATION INC	1/8+	862	432	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14286	5-18-3	B	EMMA LEE NEWHOUSE	GASTAR EXPLORATION INC	1/8+	864	315	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14287	5-18-3	B	LAWRENCE AUGUSTIN MCPEEK	GASTAR EXPLORATION INC	1/8+	864	317	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14288	5-18-3	B	REBECCA LYNN LASH	GASTAR EXPLORATION INC	1/8+	864	319	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14289	5-18-3	B	MARYANN RACHEL VANCE	GASTAR EXPLORATION INC	1/8+	864	321	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14290	5-18-3	B	MELISSA ELAINE SCHROTH	GASTAR EXPLORATION INC	1/8+	872	213	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14291	5-18-3	B	MARK DAVID HUNT	GASTAR EXPLORATION INC	1/8+	872	215	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14292	5-18-3	B	JOHN BARRETT	GASTAR EXPLORATION INC	1/8+	875	603	NA	NA	NA	NA	35/144 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14293	5-18-3	B	LEONARD O HABERBOSCH	GASTAR EXPLORATION INC	1/8+	878	647	NA	NA	NA	NA	35/144 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14294	5-18-3	B	MARY ELLEN EVANS	GASTAR EXPLORATION INC	1/8+	885	585	NA	NA	NA	NA	35/575 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*15697	5-18-3	B	JILL A STANLEY AND WILLIAM D STANLEY USE 113571	TH EXPLORATION LLC	1/8+	908	587	NA	NA	NA	NA	NA	NA	NA
10*16059	5-18-3	B	CAROL SUE BLACKWELL AND TERRY LEE BLACKWELL	TH EXPLORATION LLC	1/8+	908	591	NA	NA	NA	NA	NA	NA	NA
10*16060	5-18-3	B	JOSEPH LEROY KITTLE AND BARBARA G KITTLE	TH EXPLORATION LLC	1/8+	908	593	NA	NA	NA	NA	NA	NA	NA

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10*16061	5-18-3	B	GAIL L YEATER AND JUDITH A YEATER TERRY WAYNE KITTLE AND DEBORAH S KITTLE	TH EXPLORATION LLC	1/8+	908	595	NA	NA	NA	NA	NA	NA	NA	NA
10*16062	5-18-3	B	EDWARD D YEATER	TH EXPLORATION LLC	1/8+	908	597	NA	NA	NA	NA	NA	NA	NA	NA
10*16063	5-18-3	B	GENE O JOHNSON AND KATHIE L JOHNSON	TH EXPLORATION LLC	1/8+	908	599	NA	NA	NA	NA	NA	NA	NA	NA
10*16064	5-18-3	B	CHARLES ARTHUR ANDERSON AND CORRINE ANDERSON	TH EXPLORATION LLC	1/8+	908	601	NA	NA	NA	NA	NA	NA	NA	NA
10*16065	5-18-3	B	HOWARD DWIGHT JOHNSON	TH EXPLORATION LLC	1/8+	908	639	NA	NA	NA	NA	NA	NA	NA	NA
10*16067	5-18-3	B	MACKIE R ROBERTS AND CHERYL A ROBERTS	TH EXPLORATION LLC	1/8+	908	641	NA	NA	NA	NA	NA	NA	NA	NA
10*16162	5-18-3	B	CHRISTINA CAIN	TH EXPLORATION LLC	1/8+	908	643	NA	NA	NA	NA	NA	NA	NA	NA
10*16163	5-18-3	B	JENNIFER YEATER BRECKENRIDGE	TH EXPLORATION LLC	1/8+	908	645	NA	NA	NA	NA	NA	NA	NA	NA
10*16164	5-18-3	B	MARILYN S EDWARDS AND JAMES M EDWARDS	TH EXPLORATION LLC	1/8+	908	647	NA	NA	NA	NA	NA	NA	NA	NA
10*16196	5-18-3	B	REBECCA ANN HALEY AND RUSSELL L HALEY	TH EXPLORATION LLC	1/8+	908	649	NA	NA	NA	NA	NA	NA	NA	NA
10*16197	5-18-3	B	TERRIE L LAUSIN	TH EXPLORATION LLC	1/8+	909	1	NA	NA	NA	NA	NA	NA	NA	NA
10*16198	5-18-3	B	DAVID ELLIS LOWE AND SHARON K LOWE	TH EXPLORATION LLC	1/8+	909	3	NA	NA	NA	NA	NA	NA	NA	NA
10*16248	5-18-3	B	SANDRA CAROL KOONTZ	TH EXPLORATION LLC	1/8+	909	5	NA	NA	NA	NA	NA	NA	NA	NA
10*16249	5-18-3	B	MICHAEL E LAUSIN AND SHARON G LAUSIN	TH EXPLORATION LLC	1/8+	909	7	NA	NA	NA	NA	NA	NA	NA	NA
10*16250	5-18-3	B	GEORGE W YEATER II	TH EXPLORATION LLC	1/8+	909	55	NA	NA	NA	NA	NA	NA	NA	NA
10*16252	5-18-3	B	KYLAND MICHAEL EVANS	TH EXPLORATION LLC	1/8+	909	57	NA	NA	NA	NA	NA	NA	NA	NA
10*16253	5-18-3	B	DAVID JOHNSON AND TAMMY JOHNSON	TH EXPLORATION LLC	1/8+	925	235	NA	NA	NA	NA	NA	NA	NA	NA
10*16254	5-18-3	B	MAX D YEATER	TH EXPLORATION LLC	1/8+	925	235	NA	NA	NA	NA	NA	NA	NA	NA
10*16255	5-18-3	B	TIMOTHY WAYNE ANDERSON AND SUSAN A ANDERSON	TH EXPLORATION LLC	1/8+	909	59	NA	NA	NA	NA	NA	NA	NA	NA
10*16300	5-18-3	B	LYNN M HELINSKI AND THOMAS A HELINSKI	TH EXPLORATION LLC	1/8+	909	61	NA	NA	NA	NA	NA	NA	NA	NA
10*16302	5-18-3	B	PATRICK T WELLS AND DEBORAH S WELLS	TH EXPLORATION LLC	1/8+	925	243	NA	NA	NA	NA	NA	NA	NA	NA
10*16303	5-18-3	B	TIMOTHY RUSSELL HINKLE AND SHANNON L HINKLE	TH EXPLORATION LLC	1/8+	925	237	NA	NA	NA	NA	NA	NA	NA	NA
10*16401	5-18-3	B	LAUREL I AND PAUL J DUBECK, JR	TH EXPLORATION LLC	1/8+	908	589	NA	NA	NA	NA	NA	NA	NA	NA
10*16433	5-18-3	B	TERRY V STONE	TH EXPLORATION LLC	1/8+	945	241	NA	NA	NA	NA	NA	NA	NA	NA
10*16434	5-18-3	B	BEATRICE IOAN YEATER KNIGHT	TH EXPLORATION LLC	1/8+	925	239	NA	NA	NA	NA	NA	NA	NA	NA
10*16452	5-18-3	B	THE ESTATE OF JOHN E YEATER, DEC'D AND SHARON L YEATER, INDIV. & AS EXECUTRIX	TH EXPLORATION LLC	1/8+	925	247	NA	NA	NA	NA	NA	NA	NA	NA
10*16453	5-18-3	B	CARLENE KAY CUNNINGHAM AND JAMES HOWARD CUNNINGHAM	TH EXPLORATION LLC	1/8+	925	245	NA	NA	NA	NA	NA	NA	NA	NA
10*16455	5-18-3	B	EMILY K RULONG AND WILLIAM F RULONG SR	TH EXPLORATION LLC	1/8+	925	271	NA	NA	NA	NA	NA	NA	NA	NA
10*16456	5-18-3	B	LISA ANN MARQUART AND GREGORY F MARQUART	TH EXPLORATION LLC	1/8+	925	249	NA	NA	NA	NA	NA	NA	NA	NA
10*16457	5-18-3	B	NANCY JANE HOLLOWAY AND CHESTER K HOLLOWAY	TH EXPLORATION LLC	1/8+	925	331	NA	NA	NA	NA	NA	NA	NA	NA
10*16458	5-18-3	B	ELIZABETH JANE SNYDER AND HARRY B SNYDER	TH EXPLORATION LLC	1/8+	909	64	NA	NA	NA	NA	NA	NA	NA	NA
10*16492	5-18-3	B	JAMES JEFFREY YEATER AND DONNA L YEATER	TH EXPLORATION LLC	1/8+	925	273	NA	NA	NA	NA	NA	NA	NA	NA
10*16493	5-18-3	B	SUSAN Y INCLAN AND JOSEPH C INCLAN	TH EXPLORATION LLC	1/8+	925	275	NA	NA	NA	NA	NA	NA	NA	NA
10*16494	5-18-3	B	JAMES W AND NANCY C SHEPARD	TH EXPLORATION LLC	1/8+	925	277	NA	NA	NA	NA	NA	NA	NA	NA
10*16495	5-18-3	B	GERALD B JONES	TH EXPLORATION LLC	1/8+	925	279	NA	NA	NA	NA	NA	NA	NA	NA
10*16496	5-18-3	B	MARY B JONES	TH EXPLORATION LLC	1/8+	925	281	NA	NA	NA	NA	NA	NA	NA	NA
10*16497	5-18-3	B	SHELLEY YEATER	TH EXPLORATION LLC	1/8+	925	289	NA	NA	NA	NA	NA	NA	NA	NA
10*16498	5-18-3	B		TH EXPLORATION LLC	1/8+	925	283	NA	NA	NA	NA	NA	NA	NA	NA

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10*16499	5-18-3	B	SCOTT C HARRIS AND CAROLYN R HARRIS	TH EXPLORATION LLC	1/8+	925	287	NA	NA	NA	NA	NA	NA	NA	NA
10*16500	5-18-3	B	JOHN KLINE C/O CINDY KLINE CORBETT	TH EXPLORATION LLC	1/8+	925	285	NA	NA	NA	NA	NA	NA	NA	NA
10*16521	5-18-3	B	FREDA F QUIGLEY	TH EXPLORATION LLC	1/8+	925	251	NA	NA	NA	NA	NA	NA	NA	NA
10*16547	5-18-3	B	ANGELA D HARTON	TH EXPLORATION LLC	1/8+	925	231	NA	NA	NA	NA	NA	NA	NA	NA
10*16564	5-18-3	B	JEFFREY A LAUSIN AND KATHLEEN R LAUSIN	TH EXPLORATION LLC	1/8+	909	66	NA	NA	NA	NA	NA	NA	NA	NA
10*16654	5-18-3	B	BRETT J LAUSIN SR	TH EXPLORATION LLC	1/8+	925	253	NA	NA	NA	NA	NA	NA	NA	NA
10*16660	5-18-3	B	RUTH ANN YEATER	TH EXPLORATION LLC	1/8+	925	297	NA	NA	NA	NA	NA	NA	NA	NA
10*16702	5-18-3	B	HAROLD P AND DONNA SUE RICHMOND	TH EXPLORATION LLC	1/8+	925	333	NA	NA	NA	NA	NA	NA	NA	NA
10*16703	5-18-3	B	YOHNA J MCPEEK	TH EXPLORATION LLC	1/8+	925	255	NA	NA	NA	NA	NA	NA	NA	NA
10*16704	5-18-3	B	COREENA A JOHNSON AND BRADLEY L JOHNSON	TH EXPLORATION LLC	1/8+	925	257	NA	NA	NA	NA	NA	NA	NA	NA
10*16705	5-18-3	B	LINDA SUE FRAIL AND TODD E FRAIL	TH EXPLORATION LLC	1/8+	925	259	NA	NA	NA	NA	NA	NA	NA	NA
10*16717	5-18-3	B	JAMES L REID AND SHERRY L REID	TH EXPLORATION LLC	1/8+	925	265	NA	NA	NA	NA	NA	NA	NA	NA
10*16723	5-18-3	B	KATHY N HAWKINS ALBRIGHT AND GEOFFREY A ALBRIGHT	TH EXPLORATION LLC	1/8+	925	263	NA	NA	NA	NA	NA	NA	NA	NA
10*16724	5-18-3	B	ROBERT W MOCK	TH EXPLORATION LLC	1/8+	925	291	NA	NA	NA	NA	NA	NA	NA	NA
10*16725	5-18-3	B	RICHARD J LEASURE	TH EXPLORATION LLC	1/8+	925	261	NA	NA	NA	NA	NA	NA	NA	NA
10*16727	5-18-3	B	JOHN C FRAME	TH EXPLORATION LLC	1/8+	925	269	NA	NA	NA	NA	NA	NA	NA	NA
10*16773	5-18-3	B	CASEY L COUCH AND MARIAN BLAIR COUCH	TH EXPLORATION LLC	1/8+	925	267	NA	NA	NA	NA	NA	NA	NA	NA
10*16774	5-18-3	B	KIM L HAWKINS	TH EXPLORATION LLC	1/8+	925	293	NA	NA	NA	NA	NA	NA	NA	NA
10*16775	5-18-3	B	WILLIAM CHARLES AND VANITA G ATWELL	TH EXPLORATION LLC	1/8+	925	303	NA	NA	NA	NA	NA	NA	NA	NA
10*16776	5-18-3	B	MARTHA C GRIMES	TH EXPLORATION LLC	1/8+	925	295	NA	NA	NA	NA	NA	NA	NA	NA
10*16816	5-18-3	B	BETH ANN AND CHRISTOPHER D ZINKEN	TH EXPLORATION LLC	1/8+	925	299	NA	NA	NA	NA	NA	NA	NA	NA
10*16901	5-18-3	B	BRIAN LEE STONE	TH EXPLORATION LLC	1/8+	925	301	NA	NA	NA	NA	NA	NA	NA	NA
10*17225	5-18-3	B	RUTH ARLENE AND WILLIAM A WYER	TH EXPLORATION LLC	1/8+	925	305	NA	NA	NA	NA	NA	NA	NA	NA
10*17337	5-18-3	B	ANNETTE M JOHNSON AND ARTHUR Q JOHNSON	TH EXPLORATION LLC	1/8+	925	307	NA	NA	NA	NA	NA	NA	NA	NA
10*17411	5-18-3	B	IRENE HOLLAND AND JOHN HOLLAND	TH EXPLORATION LLC	1/8+	927	151	NA	NA	NA	NA	NA	NA	NA	NA
10*17460	5-18-3	B	THOMAS V HAUCK	TH EXPLORATION LLC	1/8+	925	310	NA	NA	NA	NA	NA	NA	NA	NA
10*17819	5-18-3	B	GEORGE T GALE JR AND CAROLE A GALE	TH EXPLORATION LLC	1/8+	925	335	NA	NA	NA	NA	NA	NA	NA	NA
10*18631	5-18-3	B	LINDA K STARR AND GEORGE E STARR	TH EXPLORATION LLC	1/8+	927	153	NA	NA	NA	NA	NA	NA	NA	NA
10*18632	5-18-3	B	RICHARD HOLLAND	TH EXPLORATION LLC	1/8+	927	155	NA	NA	NA	NA	NA	NA	NA	NA
10*18633	5-18-3	B	BREYLYNN LEE SPAIN	TH EXPLORATION LLC	1/8+	927	96	NA	NA	NA	NA	NA	NA	NA	NA
10*27684	5-18-3	B	WVSTO UNCLAIMED PROPERTY *	TH EXPLORATION LLC	1/8+	1060	233	NA	NA	NA	NA	NA	NA	NA	NA
10*27959	5-18-3	B	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1063	594	NA	NA	NA	NA	NA	NA	NA	NA
10*28158	5-18-3	B	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1068	140	NA	NA	NA	NA	NA	NA	NA	NA
10*39822	5-18-3	B	DAVID E MITCHELL AND AMY L MITCHELL	TH EXPLORATION LLC	1/8+	927	94	NA	NA	NA	NA	NA	NA	NA	NA
10*39823	5-18-3	B	SHELLY L SMITH AND JOSHUA W SMITH	TH EXPLORATION LLC	1/8+	927	157	NA	NA	NA	NA	NA	NA	NA	NA
10*14030	5-18-23	C	LOIS V YOHO	GASTAR EXPLORATION USA INC	1/8+	665	551	NA	NA	NA	23/353 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC	
10*14031	5-18-23	C	CHARLES H BASSETT JR & WIFE RUBY D BASSETT	GASTAR EXPLORATION USA INC	1/8+	665	491	NA	NA	NA	23/353 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC	
10*14032	5-18-23	C	WILBER E AND BARBARA KAY EWING	GASTAR EXPLORATION USA INC	1/8+	665	481	NA	NA	NA	23/353 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC	

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10*19032	5-18-4	F	JAN I ARNOLD MARSHA A ARNOLD	CHEVRON USA INC	1/8+	813	111	NA	NA	NA	NA	NA	NA	40/127 Chevron USA Inc to TH Exploration LLC
10*19033	5-18-4	F	MARTHA J TAMBLYN	CHEVRON USA INC	1/8+	811	637	NA	NA	NA	NA	NA	NA	40/127 Chevron USA Inc to TH Exploration LLC
10*19042	5-18-4	F	JOHN MATTHEW ARNOLD AILEEN GAY ARNOLD	CHEVRON USA INC	1/8+	814	346	NA	NA	NA	NA	NA	NA	40/127 Chevron USA Inc to TH Exploration LLC
10*19044	5-18-4	F	CYNTHIA GAYLOR	CHEVRON USA INC	1/8+	814	367	NA	NA	NA	NA	NA	NA	40/127 Chevron USA Inc to TH Exploration LLC
10*19051	5-18-4	F	JEFFREY L ARNOLD	CHEVRON USA INC	1/8+	813	600	NA	NA	NA	NA	NA	NA	40/127 Chevron USA Inc to TH Exploration LLC
10*19053	5-18-4	F	JAMES LLOYD ARNOLD DARCY L ARNOLD	CHEVRON USA INC	1/8+	815	140	NA	NA	NA	NA	NA	NA	40/127 Chevron USA Inc to TH Exploration LLC
10*19058	5-18-4	F	REBECCA E KINKOPF	CHEVRON USA INC	1/8+	818	1	NA	NA	NA	NA	NA	NA	40/127 Chevron USA Inc to TH Exploration LLC
10*19065	5-18-4	F	STEVEN LLOYD ARNOLD AND DONNA RAE ARNOLD	CHEVRON USA INC	1/8+	817	467	NA	NA	NA	NA	NA	NA	40/127 Chevron USA Inc to TH Exploration LLC
10*19078	5-18-4	F	SCOTT LANE ARNOLD LAURA J ARNOLD	CHEVRON USA INC	1/8+	829	437	NA	NA	NA	NA	NA	NA	40/127 Chevron USA Inc to TH Exploration LLC
10*19100	5-18-4	F	GARY GLENN CRAEMER	CHEVRON USA INC	1/8+	837	344	NA	NA	NA	NA	NA	NA	40/127 Chevron USA Inc to TH Exploration LLC
10*19106	5-18-4	F	A. J. CHASE AND BETSY R. CHASE, HUSBAND AND WIFE	AB RESOURCES LLC	1/8+	692	447	NA	NA	NA	24/382 AB Resources LLC to Chief Exploration & Development LLC and Radler 2000 Limited Partnership	24/490 AB Resources LLC & NPAR LLC to Chief Expl & Devt LLC & Radler 2000 Ltd Partnership - Corrective	25/1 & 25/105 Chief Expl & Devt LLC, Radler 2000 Ltd Partnership & Enerplus Resources USA Corp to Chevron USA Inc	40/127 Chevron USA Inc to TH Exploration LLC
10*19110	5-18-4	F	DONNA SMITH CHASE	AB RESOURCES LLC	1/8+	692	451	NA	NA	NA	24/382 AB Resources LLC to Chief Exploration & Development LLC and Radler 2000 Limited Partnership	24/490 AB Resources LLC & NPAR LLC to Chief Expl & Devt LLC & Radler 2000 Ltd Partnership - Corrective	25/1 & 25/105 Chief Expl & Devt LLC, Radler 2000 Ltd Partnership & Enerplus Resources USA Corp to Chevron USA Inc	40/127 Chevron USA Inc to TH Exploration LLC
10*19111	5-18-4	F	MARJORIE L. CHASE	AB RESOURCES LLC	1/8+	692	453	NA	NA	NA	24/382 AB Resources LLC to Chief Exploration & Development LLC and Radler 2000 Limited Partnership	24/490 AB Resources LLC & NPAR LLC to Chief Expl & Devt LLC & Radler 2000 Ltd Partnership - Corrective	25/1 & 25/105 Chief Expl & Devt LLC, Radler 2000 Ltd Partnership & Enerplus Resources USA Corp to Chevron USA Inc	40/127 Chevron USA Inc to TH Exploration LLC
10*24308	5-18-4	F	BARBARA ELLIS AND JEFFREY ELLIS	TH EXPLORATION LLC	1/8+	1017	449	NA	NA	NA	NA	NA	NA	NA
10*24311	5-18-4	F	KATE CRAEMER ALDEN AND NOEL ALDEN	TH EXPLORATION LLC	1/8+	1019	485	NA	NA	NA	NA	NA	NA	NA
10*24312	5-18-4	F	JILL CRAEMER	TH EXPLORATION LLC	1/8+	1017	448	NA	NA	NA	NA	NA	NA	NA
10*17145	5-18-20	Q	JAMES J. CAMPBELL AND BETTY J CAMPBELL	CHESAPEAKE APPALACHIA LLC	1/8+	685	458	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17146	5-18-20	Q	CAROLYN CAMPBELL BRITTON AND ROBERT C. BRITTON	CHESAPEAKE APPALACHIA LLC	1/8+	685	464	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17147	5-18-20	Q	JOANN J PARSONS AND GARY D PARSONS	CHESAPEAKE APPALACHIA LLC	1/8+	685	470	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17148	5-18-20	Q	JUNE L CAMPBELL	CHESAPEAKE APPALACHIA LLC	1/8+	685	476	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17149	5-18-20	Q	WANDA M. BLAKE	CHESAPEAKE APPALACHIA LLC	1/8+	685	482	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration LLC

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10*17150	5-18-20	Q	IDA L. CAMPBELL	CHESAPEAKE APPALACHIA LLC	1/8+	685	488	NA	NA	23/127 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*21147	5-18-20	Q	JAMES A CHANNING & ALICE E CHANNING	TH EXPLORATION LLC	1/8+	951	634	NA	NA	NA	NA	NA	NA	NA
10*21148	5-18-20	Q	WAYNE E CHANNING AND MYRNA J CHANNING	TH EXPLORATION LLC	1/8+	953	84	NA	NA	NA	NA	NA	NA	NA
10*21149	5-18-20	Q	DARALD L CHANNING & PATRICIA A CHANNING	TH EXPLORATION LLC	1/8+	952	186	NA	NA	NA	NA	NA	NA	NA
10*21435	5-18-20	Q	KILEY J RADESKI AND TODD A CARR	TH EXPLORATION LLC	1/8+	957	25	NA	NA	NA	NA	NA	NA	NA
10*17186	5-23-6	W	ROBERT J HENRY	CHESAPEAKE APPALACHIA LLC	1/8+	708	51	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*14125	5-17-11	X	SHARON MIDCAP	GASTAR EXPLORATION USA INC	1/8+	697	152	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	23/353 Gastar Exploration USA Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14140	5-23-7	Y	TERRY E SIMMS AND DEBORAH L SIMMS	TRIENERGY HOLDINGS, LLC	1/8+	666	529	20/348 TriEnergy Inc to AB Resources LLC	21/491 AB Resources LLC to Chief Exploration & Development LLC and Radler 2000 Limited Partnership	685/643 Chief Exploration & Development LLC and Radler 2000 Limited Partnership to Enerplus Resources USA	24/39 AB Resources, Chief Expl & Devt LLC, Radler 2000 Ltd Partnership & Enerplus Resources USA to Gastar Exploration USA Inc & Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

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STATE OF WEST VIRGINIA     §  
  §  
COUNTY OF MARSHALL       §

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**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."

Department of  
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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;

MICHAEL MORAN  
BRIGHTON RESOURCES  
5851 ELLSWORTH AVENUE, #1  
PITTSBURGH PA 15232-1707

02/10/2023  
BOOK 0040 PAGE 0127

STATE OF WEST VIRGINIA §  
§  
COUNTY OF MARSHALL §

Marshall County  
Jan Pest, Clerk  
Instrument 1428356  
08/16/2017 @ 12:08:49 PM  
ASSIGNMENTS  
Book 40 @ Page 127  
Pages Recorded 25  
Recording Cost \$ 33.00

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ASSIGNMENT AND CONVEYANCE

THIS ASSIGNMENT AND CONVEYANCE (the "Assignment") is made and entered into this 1 day of August, 2017 (the "Effective Date"), by and between CHEVRON U.S.A. INC. (hereinafter "Assignor") and TH EXPLORATION, LLC (hereinafter "Assignee") pursuant to the terms of that certain Acreage Trade Agreement between the Assignor and the Assignee dated the 1st day of August, 2017 (the "Acreage Trade Agreement"). Capitalized terms used but not defined herein and defined in the Acreage Trade Agreement shall have the meanings given to such terms in the Acreage Trade Agreement.

WITNESSETH:

**WHEREAS**, Assignor desires to assign, set over, and transfer to Assignee all of Assignor's right, title, and interest in and to those certain Oil and Gas Leases situated in Marshall County, West Virginia, as described in Exhibit "A", attached hereto and made a part hereof (hereinafter the "Leases"), less and except certain overriding royalty interests and exclusions; and

**WHEREAS**, Assignor desires to assign, set over, and transfer to Assignee all of Assignor's right, title, and interest in and to the Leases as described below, subject to certain overriding royalty interests and less and except certain exclusions.

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

1. Assignment. Assignor does hereby grant, bargain, sell, convey, deliver, assign, set over and transfer, as of the Effective Date, to Assignee, its respective successors and assigns, forever, all of Assignor's right, title and interest in and to the Leases, and the lands covered thereby, together with all rights incident thereto and appurtenances thereon, except that Assignor excepts and reserves from this Assignment the following:

A. The Chevron ORRI previously conveyed to Assignor and as described in that certain Memorandum of Assignment of Oil and Gas Lease Interests dated November 6, 2012 by and between Cornell Holdings Incorporated and Chevron U.S.A. Inc., which is recorded at Book 0028, Page 0239 in the Office of the County Clerk of Marshall County, West Virginia, and

B. As to each of the Leases and all oil, gas, and associated hydrocarbons produced, saved and sold thereunder, an overriding royalty interest equal to the difference between 82% and the

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").

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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

02/10/2023



December 21, 2022

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

RE: McMasters S-19HU

Subject: Road Crossing Letter

Dear Taylor:

Tug Hill Operating, LLC will not be drilling, extracting or producing any minerals under any WV County or State Routes in the area reflected on the McMasters S-19HU well plat.

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](mailto:amorris@tug-hilop.com).

Sincerely,

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

Amy L. Morris  
Permitting Specialist – Appalachia Region

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

Date of Notice Certification: 12/21/2022

API No. 47- 051  
Operator's Well No. McMasters S-19HU  
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>518,208.25</u>
County:	<u>Marshall</u>		Northing:	<u>4,401,175.20</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 checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input checked="" 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><b>OOG OFFICE USE ONLY</b></p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input 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>
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**Required Attachments:**

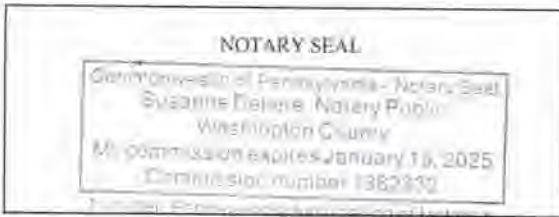
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication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



**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-hillop.com</u>



Subscribed and sworn before me this 21<sup>st</sup> day of December 2022  
*Suzanne 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](mailto: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:** 12/20/2022 **Date Permit Application Filed:** 12/21/2022

**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  
Address: 1000 Consol Drive  
Canonsburg, PA 15317

COAL OPERATOR

Name: CONSOL Energy  
Address: 1000 Consol Drive  
Canonsburg, PA 15317

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 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

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**Well Location Restrictions**

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

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

**Water Well Testing:**

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

**Water Testing Laboratories:**

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

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

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

**Written Comment:**

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

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

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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.**

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

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

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

**Comment Requirements**

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

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

**Permit Denial or Condition**

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

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

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

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

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WW-6A  
(8-13)

API NO. 47- 051 - **02/10/2023**  
OPERATOR WELL NO. McMasters S-19HU  
Well Pad Name: Shields

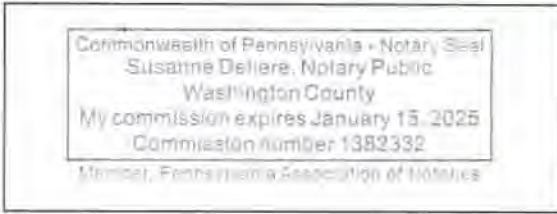
**Notice is hereby given by:**

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

Address: 380 Southpointe Boulevard, Plaza II, Suite 200  
Canonsburg, PA 15317  
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](mailto:depprivacyofficer@wv.gov).



Subscribed and sworn before me this 14<sup>th</sup> day of December, 2022  
Susanne Deliere Notary Public  
My Commission Expires 1/15/2025

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WW-6A

Supplement Pg. 1A

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

**WATER WELL REPORT**

Well: MCMASTERS S-19HU  
District: Franklin  
County: Marshall  
State: WV

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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 ©		

WW-6A

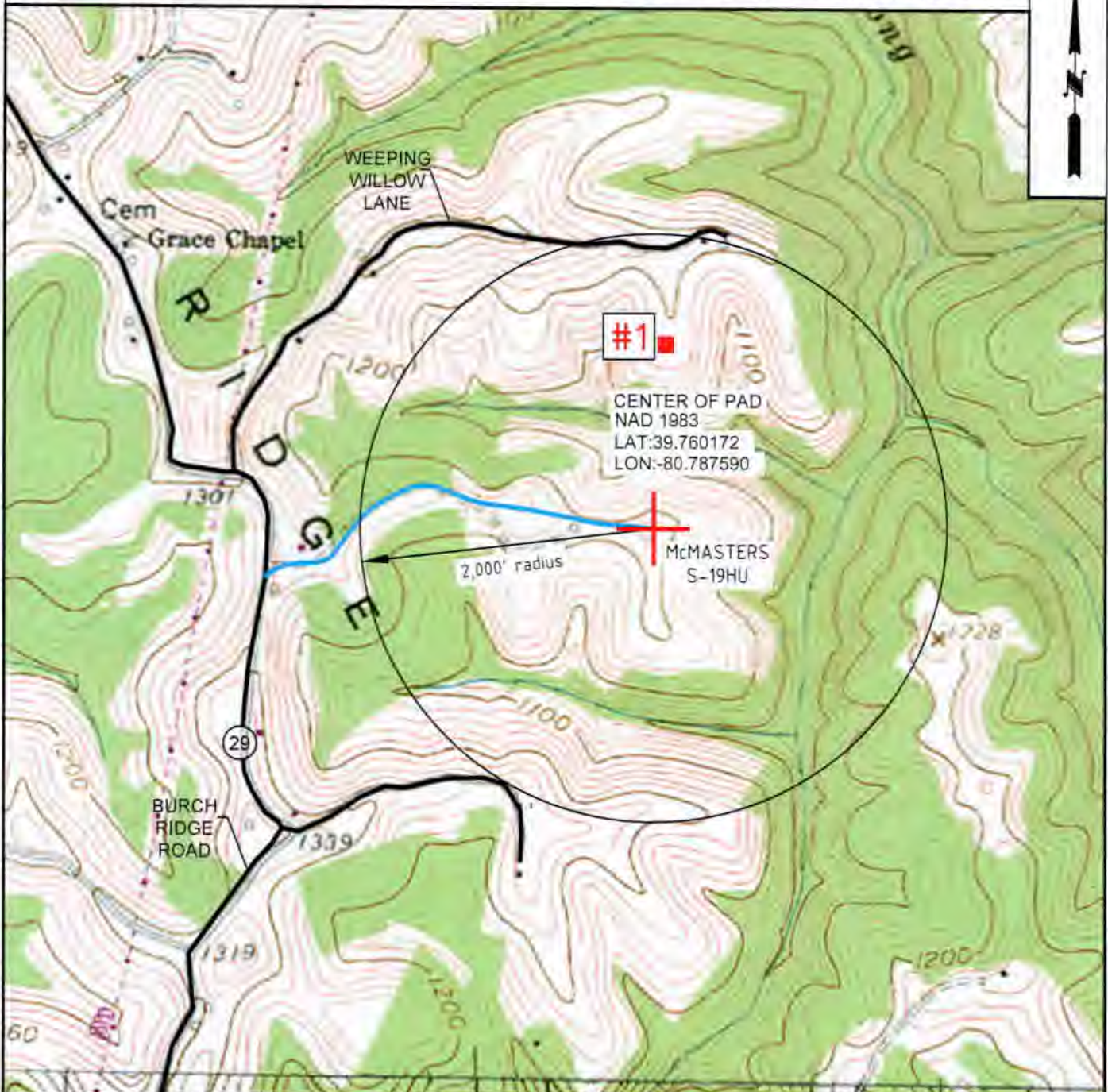
# PROPOSED McMASTERS S-19HU

SUPPLEMENT PG 1

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There appears to be one (1) possible water source within 2,000' WV Department of Environmental Protection



**TUG HILL**  
OPERATING

**OPERATOR** 494510851  
TUG HILL OPERATING, LLC  
380 SOUTHPONTE BLVD  
SUITE 200  
CANONSBURG, PA 15317

TOPO SECTION	LEASE NAME
POWHATAN POINT 7.5'	McMASTERS
SCALE:	DATE:
1" = 1000'	DATE: 6-4-2020





02/10/2023

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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**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:** 11/20/2022      **Date Permit Application Filed:** 12/01/2022

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

- CERTIFIED MAIL                                       HAND DELIVERY  
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.

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**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  
Prater, WV 26055

Name: Robert and Rebecca Shields  
Address: 2756 Birch Ridge Road  
Prater, 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	Eastings:	<u>518,208.25</u>
County:	<u>Marshall</u>		Northing:	<u>8,401,175.20</u>
District:	<u>Franklin</u>	Public Road Access:	<u>Birch Ridge Road (GR 29)</u>	
Quadrangle:	<u>Powhatan Point 7.5</u>	Generally used farm name:	<u>Robert L. Shields, et al</u>	
Watershed:	<u>Fish Creek (HUC 10)</u>			

**This Notice Shall Include:**

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

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

Address: 360 Southpointe Boulevard, Plaza U, Suite 205  
Canonburg, 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 of your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

02/10/2023

**ADDITIONAL PARTIES TO NOTICE**

**McMasters Pad**

**WW-6A5**

Additional Surface Owner:

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

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

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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 57<sup>th</sup> Street, SE  
Charleston, WV 25304

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Subject: DOH Permit for the Shields Pad, Marshall County  
McMasters S-19HU 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,

Handwritten signature of Gary K. Clayton in blue ink.

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**

Shields Well Pad

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

OPERATOR: Tug Hill Operating, LLC WELL NO: McMasters S-19HU

PAD NAME: Shields

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

### WELL RESTRICTIONS CHECKLIST

#### HORIZONTAL 6A WELL

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#### 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

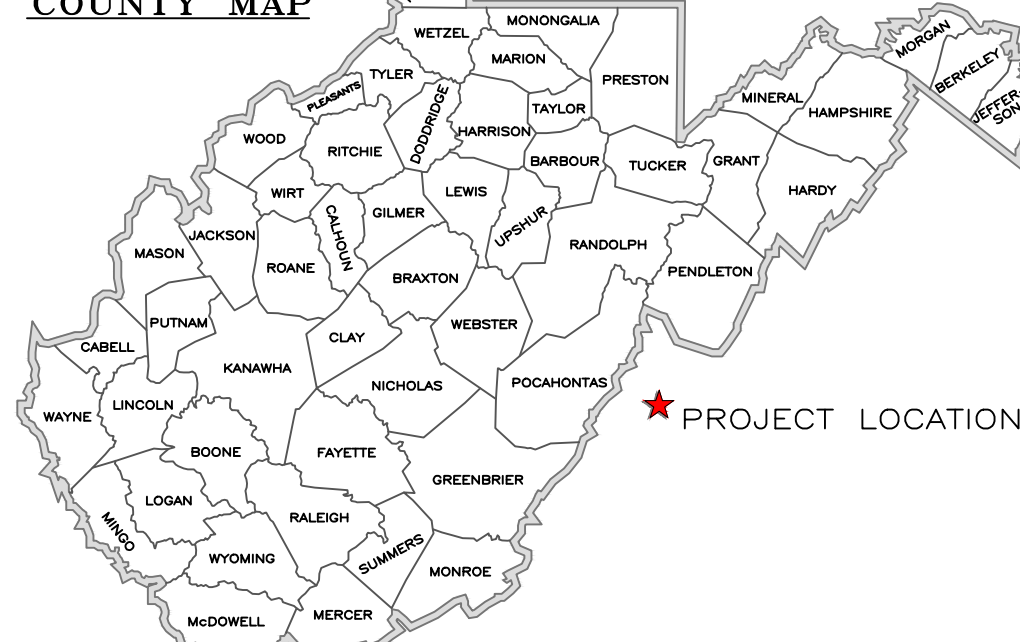
# Shields Well Site

## Site Design, Construction Plan, & Erosion and Sediment Control Plans

### Tug Hill Operating Marshall County Franklin District Latitude 39.76017192° Longitude -80.78759031° Lower Fish Creek Watershed

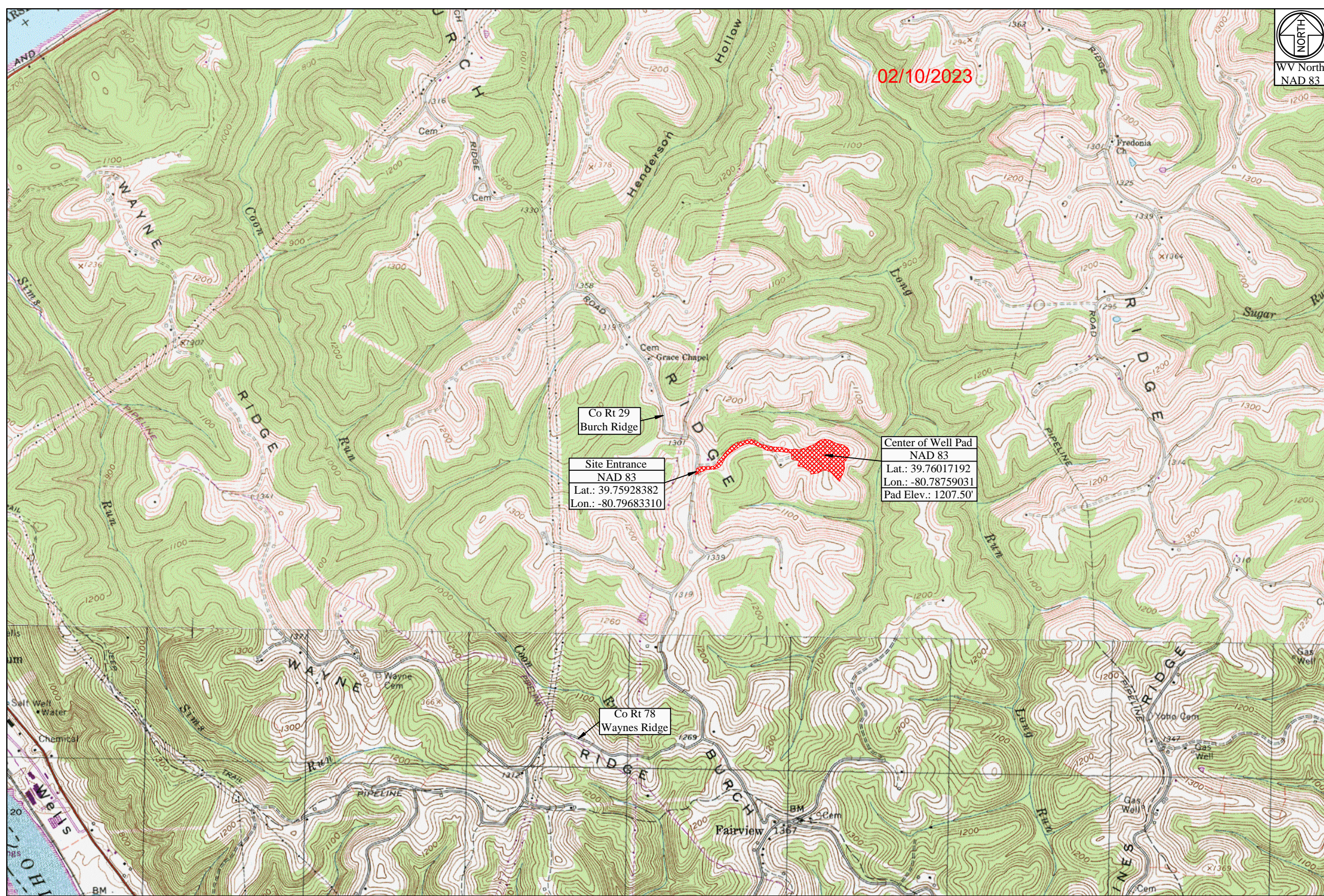
**Pertinent Site Information**  
**Shields Well Site**  
 Emergency Number: 304-845-1920  
 Franklin District, Marshall County, WV  
 Watershed: Lower Fish Creek Watershed  
 Tug Hill Contact Number: 1-817-632-3400

#### WEST VIRGINIA COUNTY MAP



Property Owner Information - Shields Well Site						
Franklin District - Marshall County						
Owner	TM - Parcel	Well Pad	Borrow	Access Road	Topsoil/Excess	Add. Clearing
M. Yoho	19-24	0.00	0.00	0.00	0.00	0.02
M. Yoho	19-17	0.00	0.00	0.19	0.00	0.50
R. Shields	19-16	0.00	0.00	0.48	0.00	1.65
R. Shields	18-2	5.84	0.70	1.44	0.23	6.71
<b>Site Totals (Ac)</b>	<b>5.84</b>	<b>0.70</b>	<b>2.11</b>	<b>0.23</b>	<b>8.88</b>	<b>17.76</b>

## Exhibit A: As-Built



WV State Plane Coordinate System  
 North Zone, NAD 83  
 Elevations Based on NAV88  
 Established by Survey Grade GPS  
 and OPUS Post-Processing

Access Road			
Surface Owner	TM - Parcel	Road Length	Type
M. Yoho	19-17	417.45'	Existing Access Road
R. Shields	19-16	1,099.06'	Existing Access Road
R. Shields	18-2	3,062.70'	Access Road Construction

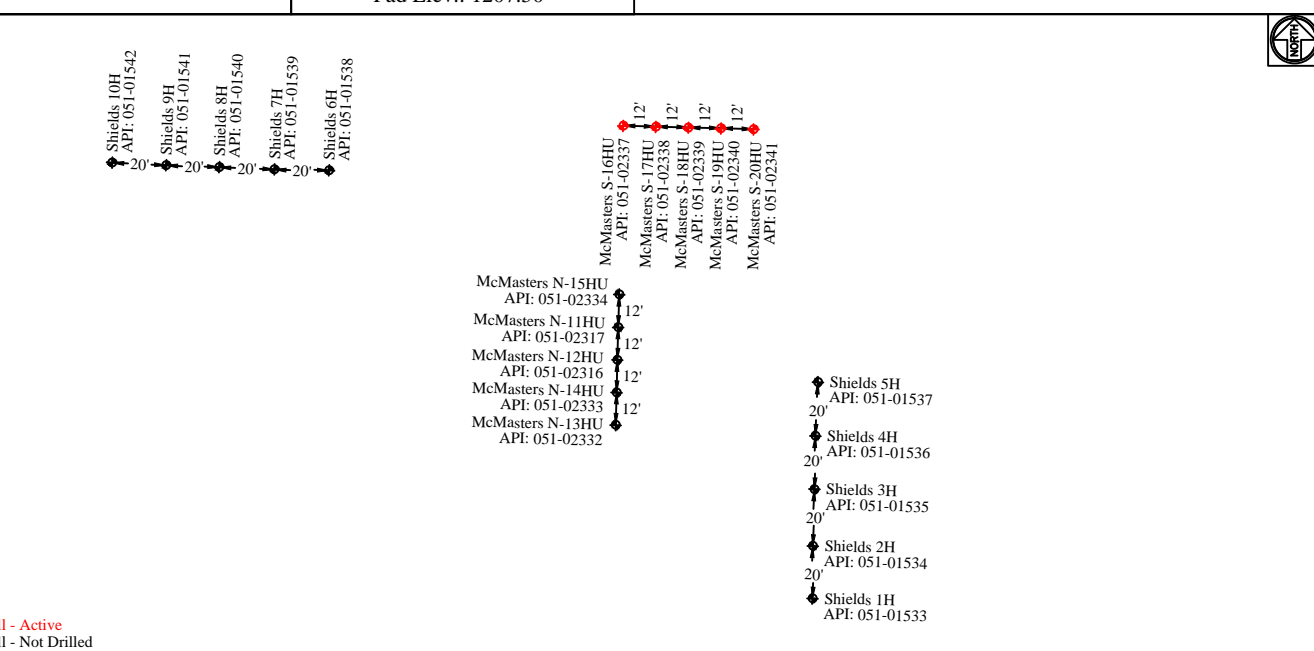
Disturbed Area	
Well Pad Area	5.84 Ac
Access Road Area	2.11 Ac
Borrow Area	0.70 Ac
Topsoil / Excess Material	0.23 Ac
Additional Clearing	8.88 Ac
<b>Total Disturbed Area</b>	<b>17.76 Ac</b>
Additional Information	
Total Wooded Acres Disturbed	2.74 Ac
Total Linear Feet of Access Road	4,161.76'

Shields Well Site Quantities						
Description	Cut (CY)	Fill (CY)	Spoil (CY)	Borrow (CY)	Max. Slope	Length of Slope
Well Pad Grading	199.66	5,958.99	-	5,759.33	N/A	N/A
Well Pad Berm	33.20	1,679.37	-	1,646.17	N/A	N/A
Well Pad Access Road	0.70	230.06	-	230.06	17.09%	70.20'
Landowner Access Road #1	965.74	967.51	-	1.77	17.89%	61.50'
Landowner Access Road #2	242.93	158.40	84.53	-	15.22%	65.71'
Borrow Area	7,500.74	7,500.74	-	-	N/A	N/A
Topsoil/Excess Material Stockpile	8,942.97	1,500.00	1,500.00	1,500.00	N/A	N/A
<b>Totals</b>	<b>8,942.97</b>	<b>10,494.47</b>	<b>7,585.13</b>	<b>8,907.27</b>		
Total Spoil (CY) =	-1,551.50	(Excess Spoil Capacity)				

#### Stream Note

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

Site Entrance	Center of Well Pad
WV-N NAD 83 N: 461301.16 WV-N NAD 83 E: 1603936.06 WV-N NAD 27 N: 461265.09 WV-N NAD 27 E: 1635373.75 Lat. NAD 83: 39.75928382 Lon. NAD 83: -80.79683310 Lat. NAD 27: 39.75920697 Lon. NAD 27: -80.79701944 UTM 17 NAD 83 N: 4401060.37 UTM 17 NAD 83 E: 517403.01	WV-N NAD 83 N: 461587.24 WV-N NAD 83 E: 1606538.84 WV-N NAD 27 N: 461551.11 WV-N NAD 27 E: 1637976.47 Lat. NAD 83: 39.76017192 Lon. NAD 83: -80.78759031 Lat. NAD 27: 39.76009494 Lon. NAD 27: -80.78777110 UTM 17 NAD 83 N: 4401160.77 UTM 17 NAD 83 E: 518194.51 Pad Elev.: 1207.50'



Well Table				
Shields 1H	Shields 2H	Shields 3H	Shields 4H	Shields 5H
WV-N NAD 83 N: 461460.56 WV-N NAD 83 E: 1606618.31 WV-N NAD 27 N: 461424.43 WV-N NAD 27 E: 1638055.95 Lat. NAD 83: 39.7598273 Lon. NAD 83: -80.7873012 Lat. NAD 27: 39.7597503 Lon. NAD 27: -80.7874880 UTM 17 NAD 83 (m) N: 4401122.58 UTM 17 NAD 83 (m) E: 518219.36	WV-N NAD 83 N: 461480.50 WV-N NAD 83 E: 1606618.56 WV-N NAD 27 N: 461444.37 WV-N NAD 27 E: 1638056.20 Lat. NAD 83: 39.7598273 Lon. NAD 83: -80.7873012 Lat. NAD 27: 39.7598051 Lon. NAD 27: -80.7874881 UTM 17 NAD 83 (m) N: 4401128.66 UTM 17 NAD 83 (m) E: 518219.34	WV-N NAD 83 N: 461501.10 WV-N NAD 83 E: 1606619.10 WV-N NAD 27 N: 461444.37 WV-N NAD 27 E: 1638056.74 Lat. NAD 83: 39.7599386 Lon. NAD 83: -80.7872996 Lat. NAD 27: 39.7598616 Lon. NAD 27: -80.7874882 UTM 17 NAD 83 (m) N: 4401134.93 UTM 17 NAD 83 (m) E: 518219.40	WV-N NAD 83 N: 461520.89 WV-N NAD 83 E: 1606619.61 WV-N NAD 27 N: 461484.76 WV-N NAD 27 E: 1638057.64 Lat. NAD 83: 39.7599930 Lon. NAD 83: -80.7872992 Lat. NAD 27: 39.7599160 Lon. NAD 27: -80.7874864 UTM 17 NAD 83 (m) N: 4401140.97 UTM 17 NAD 83 (m) E: 518219.45	WV-N NAD 83 N: 461540.18 WV-N NAD 83 E: 1606620.00 WV-N NAD 27 N: 461504.05 WV-N NAD 27 E: 1638057.64 Lat. NAD 83: 39.7600459 Lon. NAD 83: -80.7872992 Lat. NAD 27: 39.7599689 Lon. NAD 27: -80.7874860 UTM 17 NAD 83 (m) N: 4401146.85 UTM 17 NAD 83 (m) E: 518219.48
Shields 6H	Shields 7H	Shields 8H	Shields 9H	Shields 10H
WV-N NAD 83 N: 461618.58 WV-N NAD 83 E: 1606640.39 WV-N NAD 27 N: 461582.46 WV-N NAD 27 E: 1637878.03 Lat. NAD 83: 39.7602541 Lon. NAD 83: -80.7879421 Lat. NAD 27: 39.7601771 Lon. NAD 27: -80.7881288 UTM 17 NAD 83 (m) N: 4401169.82 UTM 17 NAD 83 (m) E: 518164.36	WV-N NAD 83 N: 461619.03 WV-N NAD 83 E: 1606620.01 WV-N NAD 27 N: 461582.91 WV-N NAD 27 E: 1637878.62 Lat. NAD 83: 39.7602545 Lon. NAD 83: -80.7880146 Lat. NAD 27: 39.7601775 Lon. NAD 27: -80.7882013 UTM 17 NAD 83 (m) N: 4401169.85 UTM 17 NAD 83 (m) E: 518158.14	WV-N NAD 83 N: 461619.75 WV-N NAD 83 E: 1606630.60 WV-N NAD 27 N: 461583.62 WV-N NAD 27 E: 1637878.62 Lat. NAD 83: 39.7602557 Lon. NAD 83: -80.7880858 Lat. NAD 27: 39.7601803 Lon. NAD 27: -80.7883416 UTM 17 NAD 83 (m) N: 4401170.13 UTM 17 NAD 83 (m) E: 518146.13	WV-N NAD 83 N: 461620.61 WV-N NAD 83 E: 1606360.61 WV-N NAD 27 N: 461584.48 WV-N NAD 27 E: 1637798.25 Lat. NAD 83: 39.7602585 Lon. NAD 83: -80.7882260 Lat. NAD 27: 39.7601818 Lon. NAD 27: -80.7884127 UTM 17 NAD 83 (m) N: 4401170.28 UTM 17 NAD 83 (m) E: 518140.03	WV-N NAD 83 N: 461621.45 WV-N NAD 83 E: 1606360.61 WV-N NAD 27 N: 461585.33 WV-N NAD 27 E: 1637798.25 Lat. NAD 83: 39.7602588 Lon. NAD 83: -80.7882260 Lat. NAD 27: 39.7601818 Lon. NAD 27: -80.7884127 UTM 17 NAD 83 (m) N: 4401170.28 UTM 17 NAD 83 (m) E: 518140.03
McMasters N-11HU	McMasters N-12HU	McMasters N-13HU	McMasters N-14HU	McMasters N-15HU
WV-N NAD 83 N: 461560.91 WV-N NAD 83 E: 1606546.45 WV-N NAD 27 N: 461524.78 WV-N NAD 27 E: 1637983.09 Lat. NAD 83: 39.7600999 Lon. NAD 83: -80.7875619 Lat. NAD 27: 39.7600229 Lon. NAD 27: -80.7874487 UTM 17 NAD 83 (m) N: 4401152.78 UTM 17 NAD 83 (m) E: 518196.96	WV-N NAD 83 N: 461548.88 WV-N NAD 83 E: 1606546.31 WV-N NAD 27 N: 461512.75 WV-N NAD 27 E: 1637983.95 Lat. NAD 83: 39.7600669 Lon. NAD 83: -80.7875618 Lat. NAD 27: 39.7599899 Lon. NAD 27: -80.7877485 UTM 17 NAD 83 (m) N: 4401149.12 UTM 17 NAD 83 (m) E: 518200.94	WV-N NAD 83 N: 461525.01 WV-N NAD 83 E: 1606545.45 WV-N NAD 27 N: 461488.89 WV-N NAD 27 E: 1637983.09 Lat. NAD 83: 39.7600014 Lon. NAD 83: -80.7875636 Lat. NAD 27: 39.7599244 Lon. NAD 27: -80.7877499 UTM 17 NAD 83 (m) N: 4401141.85 UTM 17 NAD 83 (m) E: 518196.84	WV-N NAD 83 N: 461536.70 WV-N NAD 83 E: 1606545.75 WV-N NAD 27 N: 461500.57 WV-N NAD 27 E: 1637983.56 Lat. NAD 83: 39.7600334 Lon. NAD 83: -80.7875631 Lat. NAD 27: 39.7599565 Lon. NAD 27: -80.7877504 UTM 17 NAD 83 (m) N: 4401145.41 UTM 17 NAD 83 (m) E: 518196.99	WV-N NAD 83 N: 461572.48 WV-N NAD 83 E: 1606546.73 WV-N NAD 27 N: 461536.35 WV-N NAD 27 E: 1637984.56 Lat. NAD 83: 39.7601317 Lon. NAD 83: -80.7875615 Lat. NAD 27: 39.7600547 Lon. NAD 27: -80.7877483 UTM 17 NAD 83 (m) N: 4401156.31 UTM 17 NAD 83 (m) E: 518196.99
McMasters S-16HU	McMasters S-17HU	McMasters S-18HU	McMasters S-19HU	McMasters S-20HU
WV-N NAD 83 N: 461634.75 WV-N NAD 83 E: 1606548.73 WV-N NAD 27 N: 461598.63 WV-N NAD 27 E: 1637986.37 Lat. NAD 83: 39.7603023 Lon. NAD 83: -80.7875573 Lat. NAD 27: 39.76022575 Lon. NAD 27: -80.78774432 UTM 17 NAD 83 (m) N: 4401175.29 UTM 17 NAD 83 (m) E: 518197.28	WV-N NAD 83 N: 461644.45 WV-N NAD 83 E: 1606560.73 WV-N NAD 27 N: 461598.33 WV-N NAD 27 E: 1637998.36 Lat. NAD 83: 39.7603028 Lon. NAD 83: -80.78751484 Lat. NAD 27: 39.76022505 Lon. NAD 27: -80.78770164 UTM 17 NAD 83 (m) N: 4401175.26 UTM 17 NAD 83 (m) E: 518200.94	WV-N NAD 83 N: 461644.15 WV-N NAD 83 E: 1606572.73 WV-N NAD 27 N: 461598.02 WV-N NAD 27 E: 1638010.36 Lat. NAD 83: 39.7603028 Lon. NAD 83: -80.78747216 Lat. NAD 27: 39.76022505 Lon. NAD 27: -80.78765896 UTM 17 NAD 83 (m) N: 4401175.23 UTM 17 NAD 83 (m) E: 518204.59	WV-N NAD 83 N: 461633.85 WV-N NAD 83 E: 1606584.72 WV-N NAD 27 N: 461597.73 WV-N NAD 27 E: 1638022.36 Lat. NAD 83: 39.7603028 Lon. NAD 83: -80.7874948 Lat. NAD 27: 39.76022470 Lon. NAD 27: -80.78761628 UTM 17 NAD 83 (m) N: 4401175.20 UTM 17 NAD 83 (m) E: 518208.25	WV-N NAD 83 N: 461633.55 WV-N NAD 83 E: 1606596.72 WV-N NAD 27 N: 461597.42 WV-N NAD 27 E: 1638034.35 Lat. NAD 83: 39.7603033 Lon. NAD 83: -80.78738679 Lat. NAD 27: 39.76022470 Lon. NAD 27: -80.78757360 UTM 17 NAD 83 (m) N: 4401175.17 UTM 17 NAD 83 (m) E: 518211.91

#### Project Contacts

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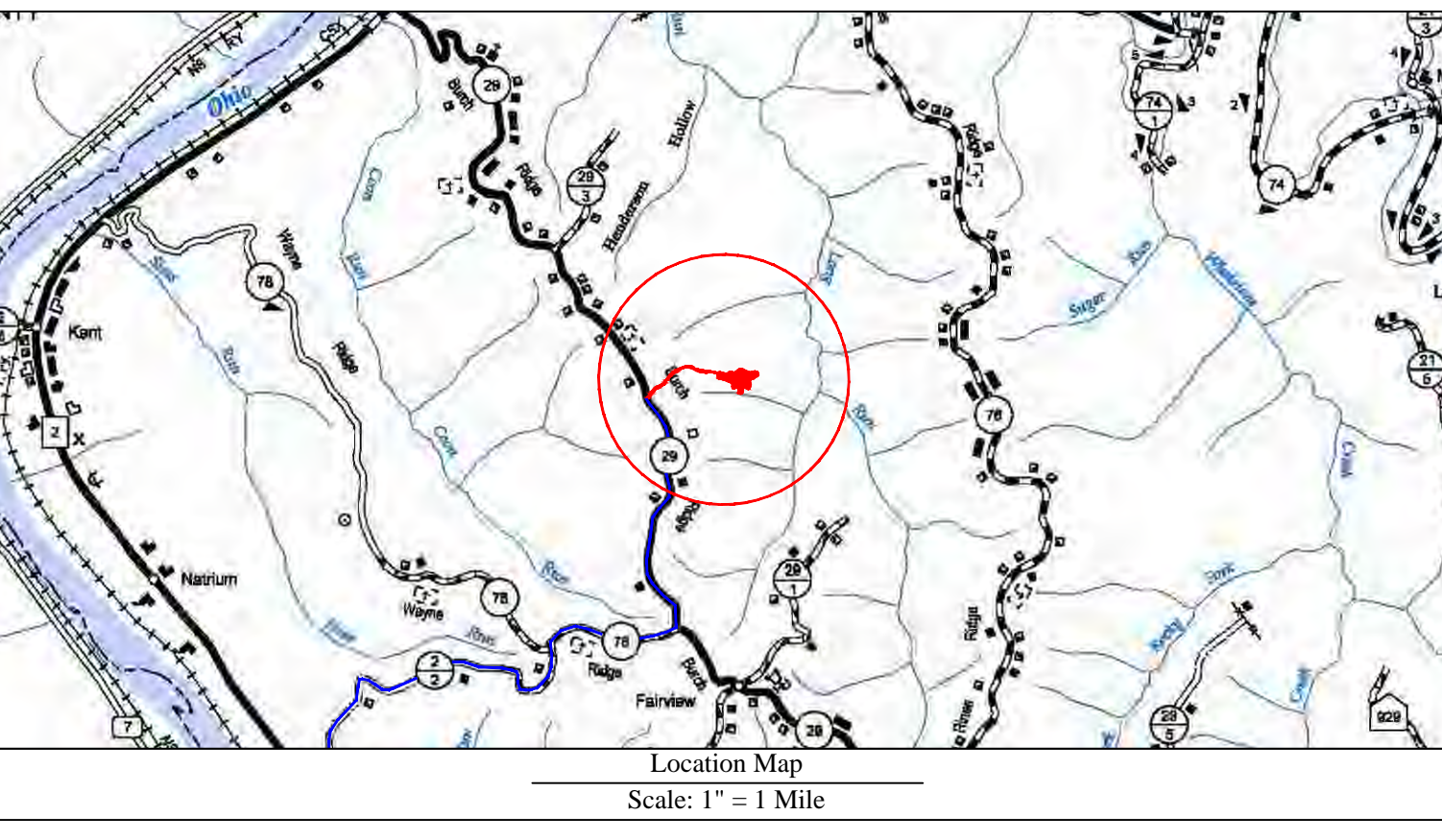
John P. See  
 304-442-0220 Off.

**Tug Hill Operating, LLC**  
 380 Southpointe Blvd  
 Southpointe Plaza II, Suite 200  
 Canonsburg, PA 15317

Zachary Summerfield  
 304-338-6987 Off.

#### Approach Routes:

From the intersection of WV Rt 2 and OH Rt 7 in New Martinsville, WV. Travel North on WV Rt 2 for 6.6 mi. Turn Right onto Co Rt 7 (Wells Hill Rd). Follow Co Rt 7 for 2.3 mi. Turn Right onto Co Rt 78 (Waynes Ridge). Follow Co Rt 78 for 0.8 mi. Turn Left onto Co Rt 29 (Burch Ridge Rd). Follow Co Rt 29 North for 1.2 miles. The site entrance will be on the Right (East) side of the road.



Site Locations (NAD 27)			Site Locations (NAD 83)		
Structure	Latitude (DD)	Longitude (DD)	Structure	Latitude (DD)	Longitude (DD)
Site Entrance	39.75920697	-80.79701944	Site Entrance	39.75928382	-80.79683310
Center of Well Pad	39.76009494	-80.78777110	Center of Well Pad	39.76017192	-80.78759031

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

**Well Location Restrictions**

All Pad construction complies with the following restrictions.

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

(Well Location Restrictions of WV Code 22-6A-12)

As-Built Certification

The drawings, construction notes and reference diagrams attached hereto have been prepared in accordance with the West Virginia Code of State Rules, Division of Environmental Protection, Office of Oil and Gas Section 20.

All Plans, Sheets, and/or Reference Diagrams included in this design constitute a complete set of plans. A complete set of plans is necessary to construct the site in accordance with the design.

Zachary C. Summerfield  
 RPE 22214  
 Kelly Surveying PLLC  
 COA: 04232-09

Date: 11-17-2022

**Environmental:**  
 Wetland Delineations as provided by Allstar Ecology dated December 6, 2019

**Topographic Information:**  
 The topographic information shown herein is based on aerial photography by Blue Mountain Aerial Mapping, Burton, WV

**MISS UTILITY OF WEST VIRGINIA**  
 1-800-245-4848  
 West Virginia State Law  
 Section XIV, Chapter 24-C requires that you call two business days before you dig in the state of West Virginia.  
**IT'S THE LAW**  
 Know what's Below.  
 Call before you dig.

Tug Hill Operating will obtain an Encroachment Permit (Form MM-109) from the WV Department of Transportation, Division of Highways, prior to the commencement of any construction activities

The WV Mines Website was consulted. Previous (Current) mining activities are not within the AOI

WVDEP Website files show that there are active and/or abandoned gas wells within the AOI

Floodplain Conditions	
Do site construction activities take place in a floodplain:	NO
Permit needed from county floodplain coordinator:	NO
Flood Hazard Zone:	X
HEC-RAS Study completed:	N/A
Floodplain shown on drawings:	N/A
FIRM Map Number(s) for site:	54051C 0145E
Acres of construction in floodplain:	N/A

Revision  
 As-Built

Date  
 11-17-2022

**TUG HILL OPERATING**

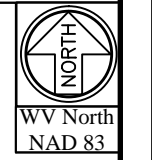
THIS DOCUMENT PREPARED FOR  
 TUG HILL OPERATING

**Kelly Surveying**  
 22214  
 2000 W. 24th St.  
 Canonsburg, WV 26029  
 724-633-6985

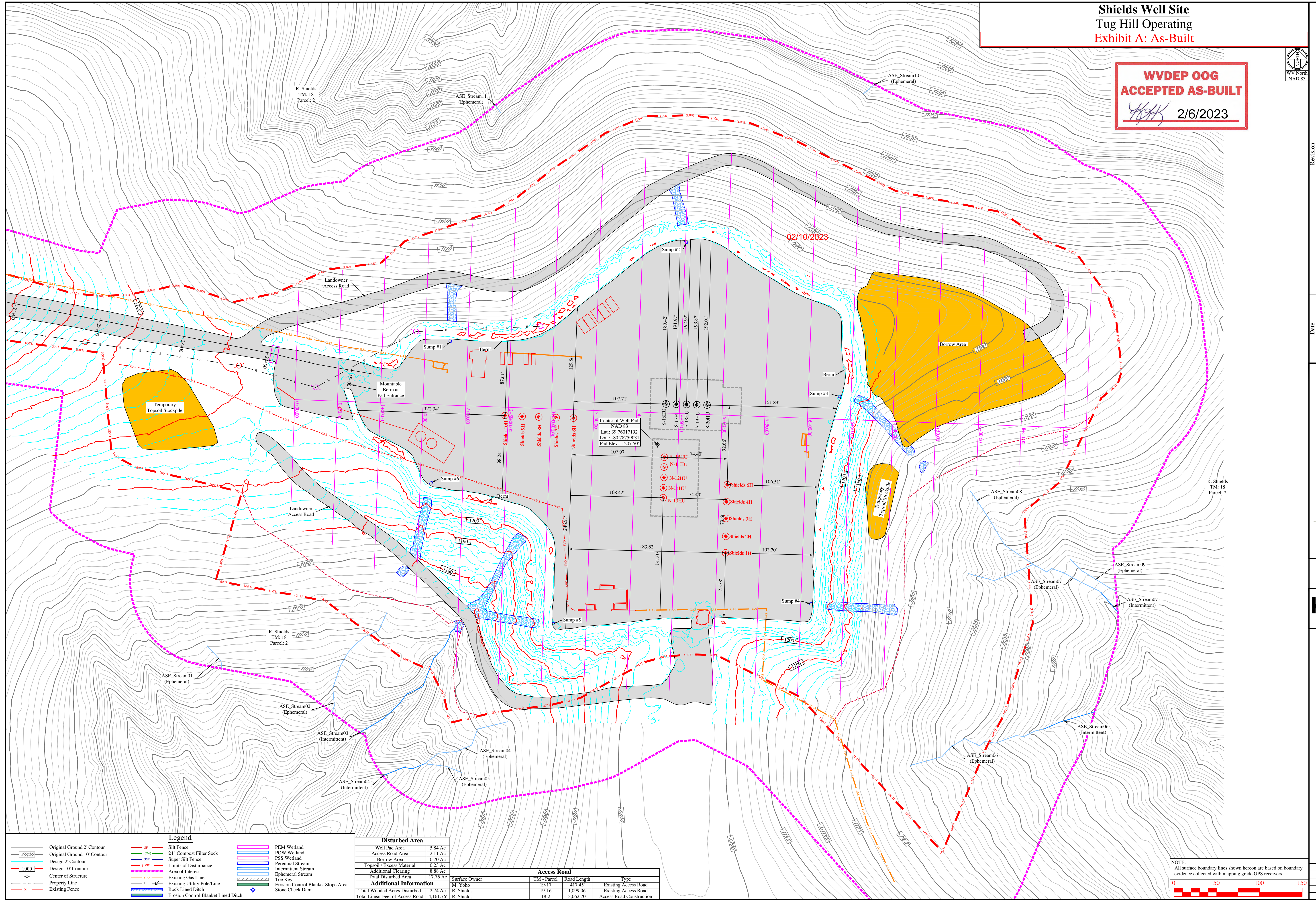
Cover Sheet  
**Shields Well Site**  
 Franklin District  
 Marshall County, WV

Date: 11/17/2022  
 Scale: As Shown  
 Designed by: ZS  
 File No.  
 Sheet 1 of 10





**WVDEP OOG  
ACCEPTED AS-BUILT**  
*[Signature]* 2/6/2023



**Legend**

	Original Ground 2' Contour		Silt Fence		PEM Wetland
	Original Ground 10' Contour		24' Composite Filter Sock		POW Wetland
	Design 2' Contour		Super Silt Fence		PSS Wetland
	Design 10' Contour		Limits of Disturbance		Perennial Stream
	Center of Structure		Area of Interest		Intermittent Stream
	Property Line		Existing Gas Line		Ephemeral Stream
	Existing Fence		Existing Utility Pole Line		Toe Key
			Rock Lined Ditch		Erosion Control Blanket Slope Area
			Erosion Control Blanket Lined Ditch		Stone Check Dam

**Disturbed Area**

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

**Additional Information**

Surface Owner	TM - Parcel	Road Length	Type
M. Yoho	19-17	417.45'	Existing Access Road
R. Shields	19-16	1,099.16'	Existing Access Road
R. Shields	18-2	3,062.70'	Access Road Construction

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

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

**TUG HILL OPERATING**

THIS DOCUMENT PREPARED FOR TUG HILL OPERATING

**Kelly Surveying**  
1000 254  
Dunbar, WV 26039  
304-338-6985

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

Date: 11/17/2022  
Scale: As Shown  
Designed By: ZS  
File No.  
Sheet 7 of 10