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west virginia department of environmental protection

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

Austin Caperton, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Monday, October 26, 2020  
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 N-11HU  
47-051-02317-00-00

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 N-11HU  
Farm Name: ROBERT L. SHIELDS, ET AL  
U.S. WELL NUMBER: 47-051-02317-00-00  
Horizontal 6A New Drill  
Date Issued: 10/26/2020

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.

## PERMIT CONDITIONS

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](mailto:DEPOOGNotify@wv.gov).



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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

October 15, 2020

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

RE: Application for Deep Well Permit – API #47-051-02317

COMPANY: Tug Hill Operating, LLC

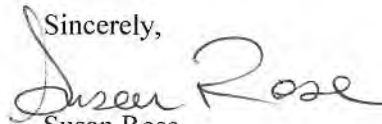
FARM: Robert L. Shields, et al McMasters N-11HU

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? Yes. Withdrawn prior to hearing.
2. Provided a certified copy of duly acknowledged and recorded consent and easement form from all surface owners? Yes
3. Provided a tabulation of all deep wells within one mile of the proposed location, including the API number of all deep wells: \*\*yes
4. Provided a plat showing that the productive interval of the well meets the requirements of the Rules of the Commission W. Va. C.S.R. § 39-1-4.2.

Sincerely,  
  
Susan Rose  
Administrator

\*\*Corley N-9HU 47-051-01983; Corley N-10HU 47-051-01998; Burch Ridge S-7HU 47-051-02194; Burch Ridge S-6HU 47-051-02193; Blake N-10HU 47-051-02204; Blake N-11HU 47-051-02205; Blake N-9HU 47-051-02203; Woodford 7HU 47-051-02147; Woodford 8HU 47-051-02149; Woodford 10HU 47-051-02152; Woodford 6HU 47-051-02143; Woodford 9HU 47-051-02150; Blake U-7H 47-051-01766; 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 47-051-02339; McMasters S-19HU 47-051-02340; McMasters S-20HU 47-051-02341; Armstrong 1N-14HU 47-051-02260; Armstrong 1S-12HU 47-051-02258; Armstrong 1S-10HU 47-051-02256; Armstrong 1S-11HU 47-051-02257

WW-6B  
(04/15)

API NO. 47- 051 -  
OPERATOR WELL NO. McMasters N-11HU  
Well Pad Name: Shields

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 Z  
Operator ID County District Quadrangle

2) Operator's Well Number: McMasters N-11HU Well Pad Name: Shields

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

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

5) Well Type (a) Gas  Oil  Underground Storage   
Other \_\_\_\_\_  
(b)If Gas Shallow  Deep   
Horizontal

*JW*  
*2/4/2020*

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 11,102' - 11,248' - thickness of 146' and anticipated pressure of approx. 9500 psi.

8) Proposed Total Vertical Depth: 11,398'

9) Formation at Total Vertical Depth: Trenton, plug back to Reedsville

10) Proposed Total Measured Depth: 27,178'

11) Proposed Horizontal Leg Length: 15,300.21'

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

13) Method to Determine Fresh Water Depths: Offset well reports or noticeable flow at the flowline or when need to start soaping

14) Approximate Saltwater Depths: 2,167'

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

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

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: \_\_\_\_\_

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18) **CASING AND TUBING PROGRAM**

<b>TYPE</b>	<u>Size (in)</u>	<u>New or Used</u>	<u>Grade</u>	<u>Weight per ft. (lb/ft)</u>	<u>FOOTAGE: For Drilling (ft)</u>	<u>INTERVALS: Left in Well (ft)</u>	<u>CEMENT: Fill-up (Cu. Ft.)/CTS</u>
Conductor	30"	NEW	BW	BW	120'	120'	259FT^3(CTS)
Fresh Water	20"	NEW	J55	106.5#	900'	900'	1,463FT^3(CTS)
Coal	13 3/8"	NEW	J55	54.5#	2600'	2600'	1,842FT^3(CTS)
Intermediate	9 5/8"	NEW	HPP110	47#	10,230'	10,230'	3,333FT^3(CTS)
Production	5 1/2"	NEW	P110	23#	27,178'	27,178'	5,137'FT^3(CTS)
Tubing	2 7/8"	NEW	P110	6.5#		10,987'	
Liners							

*JM* 9/23/2020

<b>TYPE</b>	<u>Size (in)</u>	<u>Wellbore Diameter (in)</u>	<u>Wall Thickness (in)</u>	<u>Burst Pressure (psi)</u>	<u>Anticipated Max. Internal Pressure (psi)</u>	<u>Cement Type</u>	<u>Cement Yield (cu. ft./k)</u>
Conductor	30"	36"	1.0	2,333	1,866	CLASS A	1.2
Fresh Water	20"	26"	.5	2,410	1,928	SEE # 24	1.2
Coal	13 3/8"	17 1/2"	.38	2,740	2,192	SEE #24	1.2
Intermediate	9 5/8"	12 1/4"	.472	10,730	6,968	SEE #24	1.99
Production	5 1/2"	8 1/2"	.415	16,510	10,864	SEE #24	1.18
Tubing	2 7/8"			11,624	11,385		
Liners							

**PACKERS**

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

WW-6B  
(10/14)

API NO. 47- 051 - \_\_\_\_\_  
OPERATOR WELL NO. McMasters N-11HU  
Well Pad Name: Shields

*JW*  
*2/4/2020*

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 (10,487'). 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 38,242,500 lb proppant and 591,257 bbl of water. Max rate = 80 bpm; max psi = 12,000#.

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 will have 1 centralizer every third joint. Production casing will have one centralizer every third joint in lateral, one centralizer every joint through curve, one centralizer every third joint to surface.

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

\*See Attachment

25) Proposed borehole conditioning procedures:

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

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\*Note: Attach additional sheets as needed.

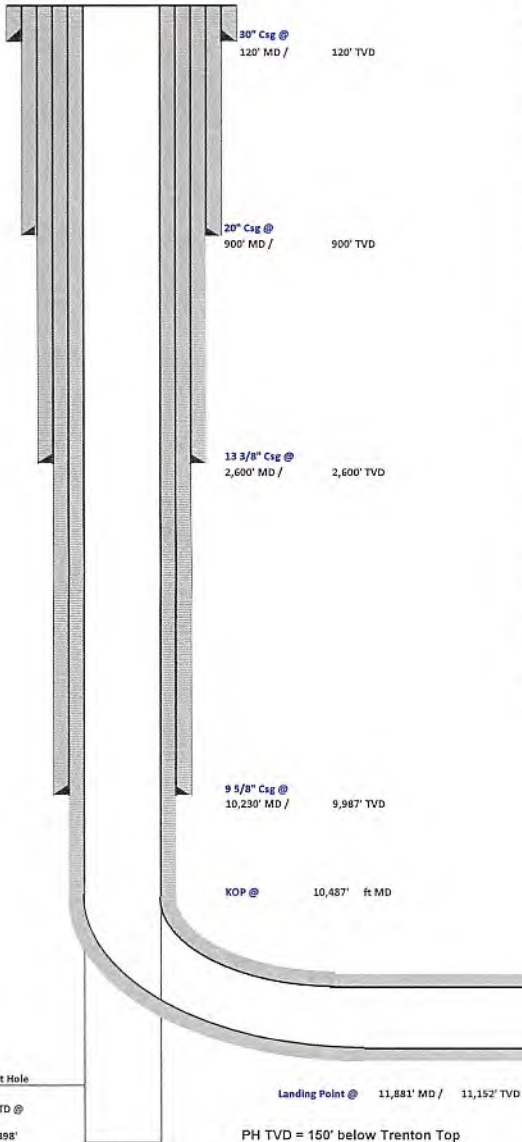


**WELL NAME:** McMasters N-11HU  
**STATE:** WV **COUNTY:** Marshall  
**DISTRICT:** Franklin  
**DF Elev:** 1,206' **GL Elev:** 1,206'  
**TD:** 27,178'  
**TH Latitude:** 39.760099  
**TH Longitude:** -80.78756  
**BH Latitude:** 39.794666  
**BH Longitude:** -80.821705

FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	802'
Sewickley Coal	701'
Pittsburgh Coal	796'
Big Lime	1,926'
Berea	2,464'
Tully	6,321'
Marcellus	6,414'
Onondaga	6,464'
Salina	7,155'
Lockport	8,182'
Utica	10,847'
Point Pleasant	11,102'
Landing Depth	11,152'
Trenton	11,248'
Pilot Hole TD	11,398'

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	26	20	900'	900'	106.5	J55	Surface
Intermediate 1	17 1/2	13 3/8	2,600'	2,600'	54.5	J55	Surface
Intermediate 2	12 1/4	9 5/8	10,230'	9,987'	47	HP110	Surface
Production	8 1/2	5 1/2	27,178'	10,885'	23	P110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
	Sacks	Class	Density	Fluid Type	Centralizer Notes
Conductor	338	A	15.6	Air	None
Surface	1,578	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	1,995	A	15	Air	1 Centralizer every other jt
Intermediate 2	2,827	A	14.5	Air	1 Centralizer every other jt
Production	5,708	A	15	Air / SOBIM	1 every other joint in lateral; 1 per joint in curve; 1 every other jt to s/c



*Handwritten signature/initials*

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4705 02317

Lateral TD @ 27,178' ft MD  
 10,885' ft TVD





## Tug Hill Operating, LLC Casing and Cement Program

### McMasters N-11HU

#### Casing

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	20"	J55	26"	900'	CTS
Intermediate 1	13 3/8"	J55	17 1/2"	2,600'	CTS
Intermediate 2	9 5/8"	HP110	12 1/4"	10,230'	CTS
Production	5 1/2"	P110	8 1/2"	27,178'	CTS

#### Cement

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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Well: **McMasters N-11 HU (slot B)**  
 Site: **McMasters Shields**  
 Project: **Marshall County, West Virginia**  
 Design: **rev1**  
 Rig:

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Annotation
1	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.000	0.00	
2	3000.00	0.00	0.000	3000.00	0.00	0.00	0.00	0.000	0.00	KOP Begin 2°/100' build
3	3772.31	15.45	227.501	3762.99	-69.90	-76.29	2.00	227.501	-9.13	Begin 15.45° tangent
4	10496.64	15.45	227.501	10234.81	-1278.01	-1394.74	0.00	0.000	-166.86	Begin 6°/100' build/turn
5	11347.17	50.00	317.180	10977.02	-1101.56	-1725.98	6.00	102.303	174.60	Begin 8°/100' build/turn
6	11880.69	91.00	330.162	11152.00	-701.64	-2010.88	8.00	19.350	665.34	Begin 91.00° lateral
7	27178.05	91.00	330.162	10885.00	12565.87	-9620.81	0.00	0.000	5825.96	PBHL/TD 27178.05 MD/10885.00 TVD

Geodetic System: Universal Transverse Mercator (US 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 14439448.43 Easting 1700118.39 Latitude 39.76009900 Longitude -80.78756000

Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.842°

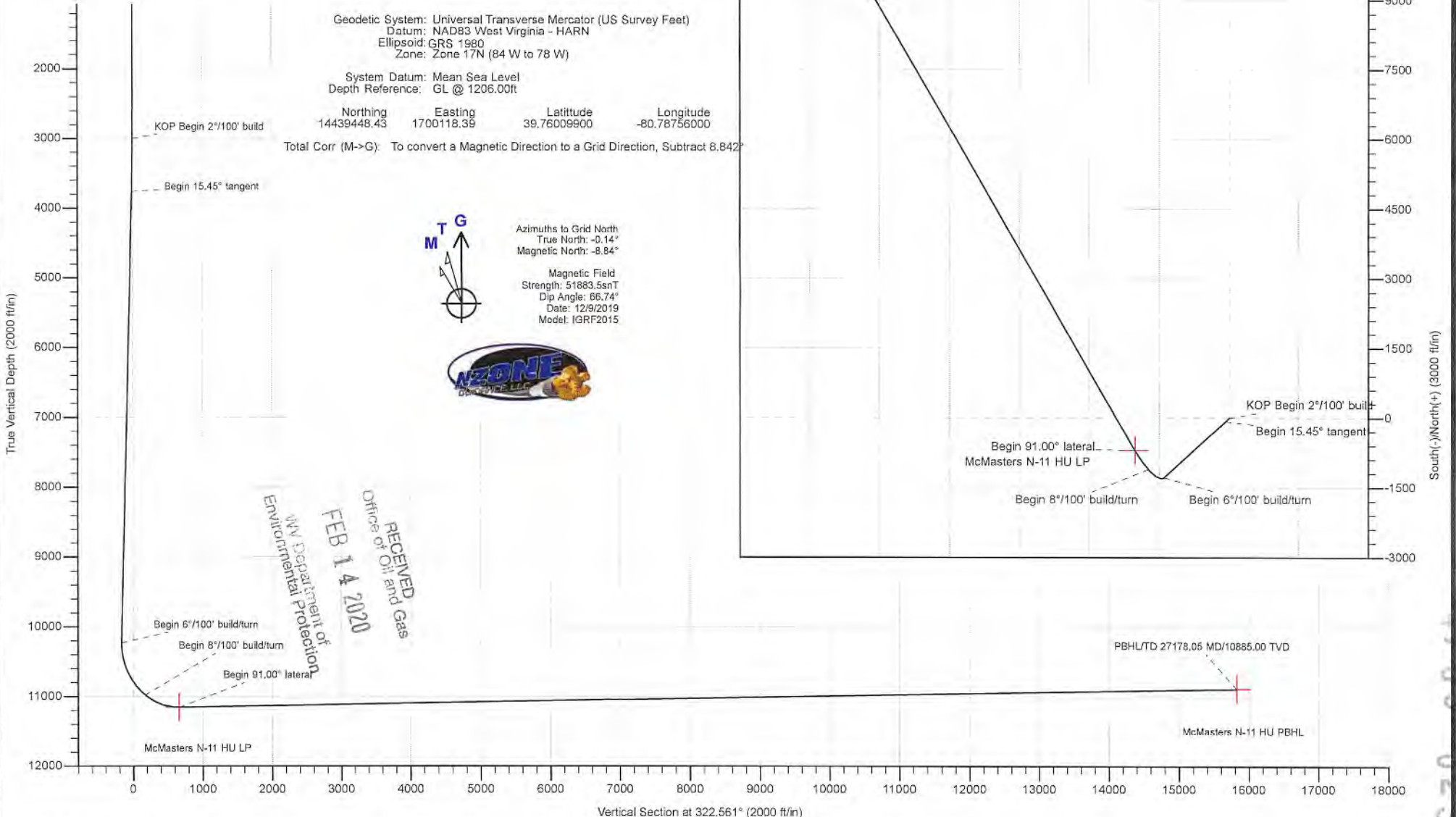


Azimuths to Grid North  
 True North: -0.14°  
 Magnetic North: -8.84°

Magnetic Field  
 Strength: 51883.5snT  
 Dip Angle: 66.74°  
 Date: 12/9/2019  
 Model: IGRF2015



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Vertical Section at 322.561° (2000 ft/in)

1705 0237

Permit well - McMasters N-11HU

Wells within 500' Buffer

Note: Well spots depicted on Area of Review map (page 3) are derived from State held coordinates. The spots may differ from those depicted on the Well Plat because the Plat locations represent actual field surveyed locations. Please refer to the Plat for surveyed well spots.

API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705101533	Tug Hill Operating	6509' TVD, 9961' MD	Marcellus	Unknown	No, existing Marcellus producer. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705101534	Tug Hill Operating	6514' TVD, 9890' MD	Marcellus	Unknown	No, existing Marcellus producer. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705101535	Tug Hill Operating	6519' TVD, 9890' MD	Marcellus	Unknown	No, existing Marcellus producer. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705101536	Tug Hill Operating	6526' TVD, 10185' MD	Marcellus	Unknown	No, existing Marcellus producer. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705101537	Tug Hill Operating	6527' TVD, 10560' MD	Marcellus	Unknown	No, existing Marcellus producer. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705101538	Tug Hill Operating	6494' TVD, 9541' MD	Marcellus	Unknown	No, existing Marcellus producer. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705101539	Tug Hill Operating	6588' TVD, 11480' MD	Marcellus	Unknown	No, existing Marcellus producer. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705101540	Tug Hill Operating	6490' TVD, 12101' MD	Marcellus	Unknown	No, existing Marcellus producer. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705101541	Tug Hill Operating	6485' TVD, 9612' MD	Marcellus	Unknown	No, existing Marcellus producer. Proper casing and cement should further prevent migration of fluids	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705101542	Tug Hill Operating	6487' TVD, 11281' MD	Marcellus	Unknown	No, existing Marcellus producer. Proper casing and cement should further prevent migration of fluids	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705170807	Unknown	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by	State records are incomplete
4705102053	Tug Hill Operating	6650' TVD	Marcellus	Unknown	No, existing Marcellus drilled well. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore	Drilled but not producing.

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4705101524	Tug Hill Operating	6612' TVD, 12508' MD	Marcellus	Unknown	No, existing Marcellus producer. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.

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West County # 01 Permit # 01003

Permit Information

Permit No: 01003

Permit Type: 01

Permit Status: Active

Permit Date: 01/15/2020

Permit Expiration: 01/15/2021

Permit Holder: [Name]

Permit Location: [Address]

Permit Description: [Description]

Permit Fee: [Amount]

Permit Conditions: [Conditions]

Permit Attachments: [Attachments]

Permit History: [History]

Permit Status: [Status]

Permit Notes: [Notes]

West County # 01 Permit # 01004

Permit Information

Permit No: 01004

Permit Type: 01

Permit Status: Active

Permit Date: 01/15/2020

Permit Expiration: 01/15/2021

Permit Holder: [Name]

Permit Location: [Address]

Permit Description: [Description]

Permit Fee: [Amount]

Permit Conditions: [Conditions]

Permit Attachments: [Attachments]

Permit History: [History]

Permit Status: [Status]

Permit Notes: [Notes]

West County # 01 Permit # 01005

Permit Information

Permit No: 01005

Permit Type: 01

Permit Status: Active

Permit Date: 01/15/2020

Permit Expiration: 01/15/2021

Permit Holder: [Name]

Permit Location: [Address]

Permit Description: [Description]

Permit Fee: [Amount]

Permit Conditions: [Conditions]

Permit Attachments: [Attachments]

Permit History: [History]

Permit Status: [Status]

Permit Notes: [Notes]

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WV: County = 51 Permit = 01021

APPLICANT: [redacted]  
 COUNTY: [redacted]  
 PERMIT: [redacted]

REGISTRATION INFORMATION

REGISTRATION NUMBER	REGISTRATION TYPE	REGISTRATION DATE	REGISTRATION FEE	REGISTRATION STATUS
0012101	REGISTRATION	01/15/2019	100.00	ACTIVE
0012102	REGISTRATION	01/15/2019	100.00	ACTIVE
0012103	REGISTRATION	01/15/2019	100.00	ACTIVE
0012104	REGISTRATION	01/15/2019	100.00	ACTIVE
0012105	REGISTRATION	01/15/2019	100.00	ACTIVE
0012106	REGISTRATION	01/15/2019	100.00	ACTIVE
0012107	REGISTRATION	01/15/2019	100.00	ACTIVE
0012108	REGISTRATION	01/15/2019	100.00	ACTIVE
0012109	REGISTRATION	01/15/2019	100.00	ACTIVE
0012110	REGISTRATION	01/15/2019	100.00	ACTIVE
0012111	REGISTRATION	01/15/2019	100.00	ACTIVE
0012112	REGISTRATION	01/15/2019	100.00	ACTIVE
0012113	REGISTRATION	01/15/2019	100.00	ACTIVE
0012114	REGISTRATION	01/15/2019	100.00	ACTIVE
0012115	REGISTRATION	01/15/2019	100.00	ACTIVE
0012116	REGISTRATION	01/15/2019	100.00	ACTIVE
0012117	REGISTRATION	01/15/2019	100.00	ACTIVE
0012118	REGISTRATION	01/15/2019	100.00	ACTIVE
0012119	REGISTRATION	01/15/2019	100.00	ACTIVE
0012120	REGISTRATION	01/15/2019	100.00	ACTIVE

REGISTRATION INFORMATION

REGISTRATION NUMBER	REGISTRATION TYPE	REGISTRATION DATE	REGISTRATION FEE	REGISTRATION STATUS
0012121	REGISTRATION	01/15/2019	100.00	ACTIVE
0012122	REGISTRATION	01/15/2019	100.00	ACTIVE
0012123	REGISTRATION	01/15/2019	100.00	ACTIVE
0012124	REGISTRATION	01/15/2019	100.00	ACTIVE
0012125	REGISTRATION	01/15/2019	100.00	ACTIVE
0012126	REGISTRATION	01/15/2019	100.00	ACTIVE
0012127	REGISTRATION	01/15/2019	100.00	ACTIVE
0012128	REGISTRATION	01/15/2019	100.00	ACTIVE
0012129	REGISTRATION	01/15/2019	100.00	ACTIVE
0012130	REGISTRATION	01/15/2019	100.00	ACTIVE
0012131	REGISTRATION	01/15/2019	100.00	ACTIVE
0012132	REGISTRATION	01/15/2019	100.00	ACTIVE
0012133	REGISTRATION	01/15/2019	100.00	ACTIVE
0012134	REGISTRATION	01/15/2019	100.00	ACTIVE
0012135	REGISTRATION	01/15/2019	100.00	ACTIVE
0012136	REGISTRATION	01/15/2019	100.00	ACTIVE
0012137	REGISTRATION	01/15/2019	100.00	ACTIVE
0012138	REGISTRATION	01/15/2019	100.00	ACTIVE
0012139	REGISTRATION	01/15/2019	100.00	ACTIVE
0012140	REGISTRATION	01/15/2019	100.00	ACTIVE

WV: County = 51 Permit = 01022

APPLICANT: [redacted]  
 COUNTY: [redacted]  
 PERMIT: [redacted]

REGISTRATION INFORMATION

REGISTRATION NUMBER	REGISTRATION TYPE	REGISTRATION DATE	REGISTRATION FEE	REGISTRATION STATUS
0012141	REGISTRATION	01/15/2019	100.00	ACTIVE
0012142	REGISTRATION	01/15/2019	100.00	ACTIVE
0012143	REGISTRATION	01/15/2019	100.00	ACTIVE
0012144	REGISTRATION	01/15/2019	100.00	ACTIVE
0012145	REGISTRATION	01/15/2019	100.00	ACTIVE
0012146	REGISTRATION	01/15/2019	100.00	ACTIVE
0012147	REGISTRATION	01/15/2019	100.00	ACTIVE
0012148	REGISTRATION	01/15/2019	100.00	ACTIVE
0012149	REGISTRATION	01/15/2019	100.00	ACTIVE
0012150	REGISTRATION	01/15/2019	100.00	ACTIVE
0012151	REGISTRATION	01/15/2019	100.00	ACTIVE
0012152	REGISTRATION	01/15/2019	100.00	ACTIVE
0012153	REGISTRATION	01/15/2019	100.00	ACTIVE
0012154	REGISTRATION	01/15/2019	100.00	ACTIVE
0012155	REGISTRATION	01/15/2019	100.00	ACTIVE
0012156	REGISTRATION	01/15/2019	100.00	ACTIVE
0012157	REGISTRATION	01/15/2019	100.00	ACTIVE
0012158	REGISTRATION	01/15/2019	100.00	ACTIVE
0012159	REGISTRATION	01/15/2019	100.00	ACTIVE
0012160	REGISTRATION	01/15/2019	100.00	ACTIVE
0012161	REGISTRATION	01/15/2019	100.00	ACTIVE
0012162	REGISTRATION	01/15/2019	100.00	ACTIVE
0012163	REGISTRATION	01/15/2019	100.00	ACTIVE
0012164	REGISTRATION	01/15/2019	100.00	ACTIVE
0012165	REGISTRATION	01/15/2019	100.00	ACTIVE
0012166	REGISTRATION	01/15/2019	100.00	ACTIVE
0012167	REGISTRATION	01/15/2019	100.00	ACTIVE
0012168	REGISTRATION	01/15/2019	100.00	ACTIVE
0012169	REGISTRATION	01/15/2019	100.00	ACTIVE
0012170	REGISTRATION	01/15/2019	100.00	ACTIVE

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UNLICENSED OPERATOR PERMIT INFORMATION      WEST VIRGINIA      COUNTY = 51      PERMIT = 0100

REGISTRATION INFORMATION      WEST VIRGINIA      COUNTY = 51      PERMIT = 0100

REGISTRATION INFORMATION      WEST VIRGINIA      COUNTY = 51      PERMIT = 0100

**REGISTRATION INFORMATION**

REGISTRATION ID	REGISTRATION TYPE	REGISTRATION DATE	REGISTRATION STATUS	REGISTRATION CLASSIFICATION	REGISTRATION CLASSIFICATION CODE	REGISTRATION CLASSIFICATION DESCRIPTION
WV-10101	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10102	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10103	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10104	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10105	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10106	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10107	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10108	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10109	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10110	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION

**REGISTRATION INFORMATION**

REGISTRATION ID	REGISTRATION TYPE	REGISTRATION DATE	REGISTRATION STATUS	REGISTRATION CLASSIFICATION	REGISTRATION CLASSIFICATION CODE	REGISTRATION CLASSIFICATION DESCRIPTION
WV-10111	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10112	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10113	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10114	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10115	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION

**REGISTRATION INFORMATION**

REGISTRATION ID	REGISTRATION TYPE	REGISTRATION DATE	REGISTRATION STATUS	REGISTRATION CLASSIFICATION	REGISTRATION CLASSIFICATION CODE	REGISTRATION CLASSIFICATION DESCRIPTION
WV-10116	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10117	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10118	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10119	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10120	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION

**REGISTRATION INFORMATION**

REGISTRATION ID	REGISTRATION TYPE	REGISTRATION DATE	REGISTRATION STATUS	REGISTRATION CLASSIFICATION	REGISTRATION CLASSIFICATION CODE	REGISTRATION CLASSIFICATION DESCRIPTION
WV-10121	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10122	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10123	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10124	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION

**REGISTRATION INFORMATION**

REGISTRATION ID	REGISTRATION TYPE	REGISTRATION DATE	REGISTRATION STATUS	REGISTRATION CLASSIFICATION	REGISTRATION CLASSIFICATION CODE	REGISTRATION CLASSIFICATION DESCRIPTION
WV-10125	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10126	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10127	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10128	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION

**REGISTRATION INFORMATION**

REGISTRATION ID	REGISTRATION TYPE	REGISTRATION DATE	REGISTRATION STATUS	REGISTRATION CLASSIFICATION	REGISTRATION CLASSIFICATION CODE	REGISTRATION CLASSIFICATION DESCRIPTION
WV-10129	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10130	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10131	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10132	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION

**REGISTRATION INFORMATION**

REGISTRATION ID	REGISTRATION TYPE	REGISTRATION DATE	REGISTRATION STATUS	REGISTRATION CLASSIFICATION	REGISTRATION CLASSIFICATION CODE	REGISTRATION CLASSIFICATION DESCRIPTION
WV-10133	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10134	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10135	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION
WV-10136	REGISTRATION	01/15/10	ACTIVE	REGISTRATION	0100	REGISTRATION

There is no further information available for this permit.

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WV Statewide Assessment

WV: County # 51 Permit # 0190

Assessment Information

Assessment Agency

Assessment Status

Permit No.	Permit Type	Permit Class	Permit Status	Assessment No.	Assessment Status	Assessment Date	Assessment Type	Assessment Fee	Assessment Fee Paid	Assessment Fee Due
51-1000	...	...	...	...	...	...	...	...	...	...

WV Statewide Assessment

WV: County # 51 Permit # 0191

Assessment Information

Assessment Agency

Assessment Status

Permit No.	Permit Type	Permit Class	Permit Status	Assessment No.	Assessment Status	Assessment Date	Assessment Type	Assessment Fee	Assessment Fee Paid	Assessment Fee Due
51-1000	...	...	...	...	...	...	...	...	...	...

WV Statewide Assessment

WV: County # 51 Permit # 0192

Assessment Information

Assessment Agency

Assessment Status

Permit No.	Permit Type	Permit Class	Permit Status	Assessment No.	Assessment Status	Assessment Date	Assessment Type	Assessment Fee	Assessment Fee Paid	Assessment Fee Due
51-1000	...	...	...	...	...	...	...	...	...	...

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WV Department of Environmental Protection  
Well: County = 81 Permit = T0807

Operator Information: [View Data](#)  
WV Well ID: [View Data](#) | County: [View Data](#) | District: [View Data](#) | Status: [View Data](#) | Type: [View Data](#)  
Production: [View Data](#) | NGL: [View Data](#) | Gas: [View Data](#) | Water: [View Data](#) | Other: [View Data](#)

There is no Bottom Hole Location data for this well.

Current Information:  
Well: [View Data](#) | Status: [View Data](#) | Surface Control Well: [View Data](#) | Well ID: [View Data](#) | Well Name: [View Data](#) | Operator: [View Data](#) | Completion: [View Data](#) | Product: [View Data](#) | Production: [View Data](#)

Production Information:  
Date: [View Data](#) | Well ID: [View Data](#) | Well Name: [View Data](#) | District: [View Data](#) | Status: [View Data](#) | Type: [View Data](#) | Product: [View Data](#) | Production: [View Data](#) | NGL: [View Data](#) | Gas: [View Data](#) | Water: [View Data](#) | Other: [View Data](#)

There is no Pay data for this well.  
There is no Production Gas data for this well.  
There is no Production Oil data for this well. \*\* some operators may have reported NGL with Oil.  
There is no Production NGL data for this well. \*\* some operators may have reported NGL with Oil.  
There is no Production Other data for this well.  
There is no Stratigraphy data for this well.  
There is no Downhole (F-log) data for this well.  
There is no Logging data for this well.  
There is no Seismic data for this well.

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WV Department of Environmental Protection  
WV: County # 01 Permit # 00003

PERMIT NO.	ISSUE DATE	EXPIRES	STATUS
01-00003	01-01-2000	01-01-2001	Active

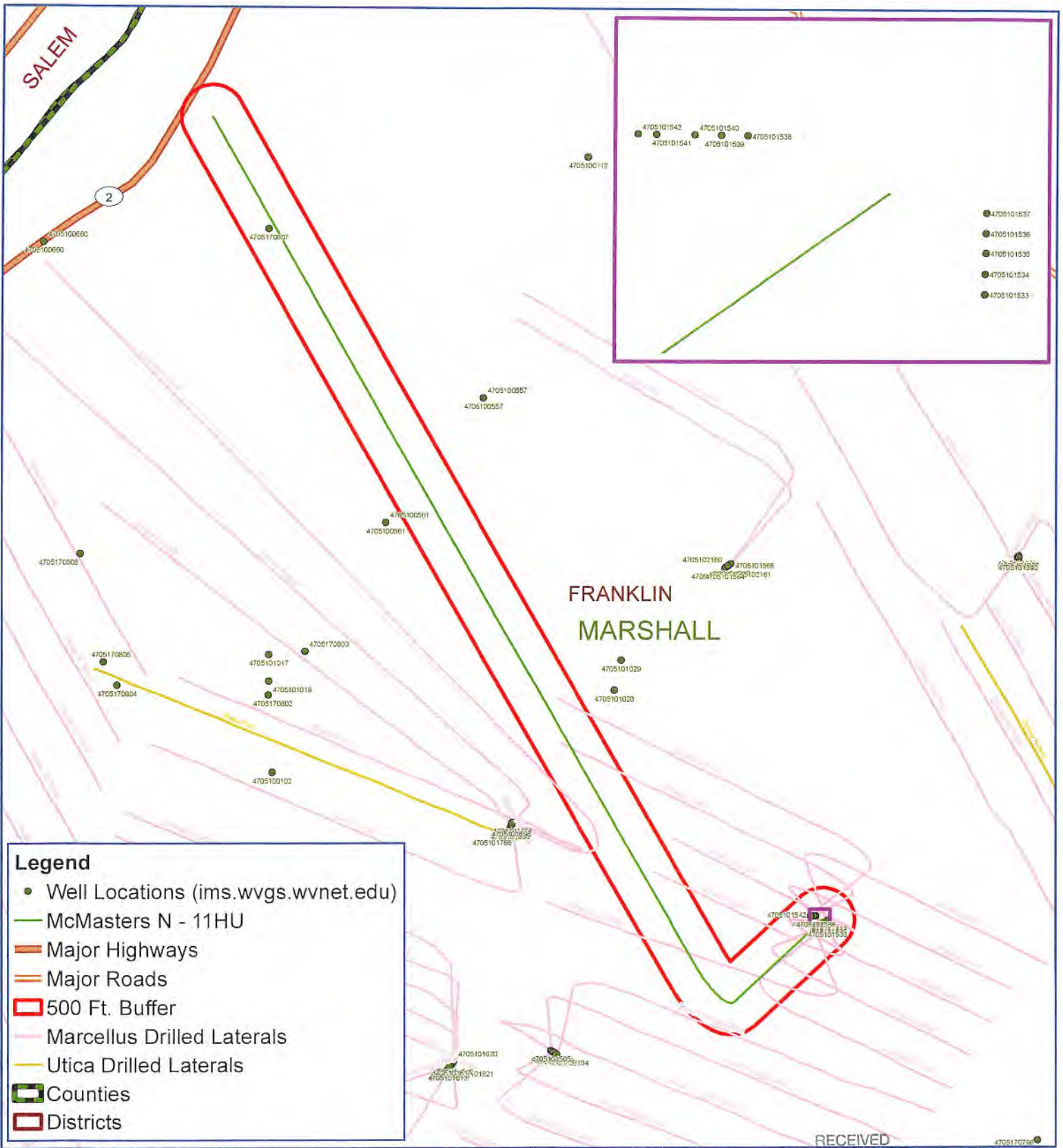
Production Data for this well:

DATE	TYPE	AMOUNT
01-01-2000	Oil	1000
01-01-2000	Gas	10000

WV Department of Environmental Protection  
WV: County # 01 Permit # 01004

WELL ID	WELL NAME	STATUS	PERMIT NO.	ISSUE DATE	EXPIRES
01-00004	01-00004	Active	01-00004	01-01-2000	01-01-2001
01-00005	01-00005	Active	01-00005	01-01-2000	01-01-2001
01-00006	01-00006	Active	01-00006	01-01-2000	01-01-2001
01-00007	01-00007	Active	01-00007	01-01-2000	01-01-2001
01-00008	01-00008	Active	01-00008	01-01-2000	01-01-2001
01-00009	01-00009	Active	01-00009	01-01-2000	01-01-2001
01-00010	01-00010	Active	01-00010	01-01-2000	01-01-2001
01-00011	01-00011	Active	01-00011	01-01-2000	01-01-2001
01-00012	01-00012	Active	01-00012	01-01-2000	01-01-2001
01-00013	01-00013	Active	01-00013	01-01-2000	01-01-2001
01-00014	01-00014	Active	01-00014	01-01-2000	01-01-2001
01-00015	01-00015	Active	01-00015	01-01-2000	01-01-2001
01-00016	01-00016	Active	01-00016	01-01-2000	01-01-2001
01-00017	01-00017	Active	01-00017	01-01-2000	01-01-2001
01-00018	01-00018	Active	01-00018	01-01-2000	01-01-2001
01-00019	01-00019	Active	01-00019	01-01-2000	01-01-2001
01-00020	01-00020	Active	01-00020	01-01-2000	01-01-2001

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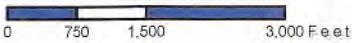
# McMasters N - 11HU Franklin District Marshall County, WV

FEB 14 2020

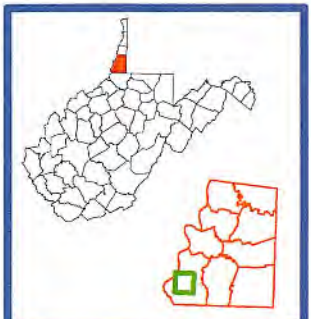
WV Department of  
Environmental Protection



Map Prepared by:



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



Map Created: January 2, 2020  
Map Current As Of: January 2, 2020



Planning Report - Geographic

4705 02317

Database:	DB_Aug1919_v14	Local Co-ordinate Reference:	Well McMasters N-11 HU (slot B)
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 N-11 HU (slot B)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

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 N-11 HU (slot B)					
Well Position	+N/-S	0.00 ft	Northing:	14,439,448.43 usft	Latitude:	39.76009900
	+E/-W	0.00 ft	Easting:	1,700,118.39 usft	Longitude:	-80.78756000
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	-8.706	66.739	51,883.46174103

Design	rev1			
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	322.561

Plan Survey Tool Program	Date	12/10/2019		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	27,178.05 rev1 (Original Hole)	MWD	MWD - Standard

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Plan Sections										
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	
3,000.00	0.00	0.000	3,000.00	0.00	0.00	0.00	0.00	0.00	0.000	
3,772.31	15.45	227.501	3,762.99	-69.90	-76.29	2.00	2.00	0.00	227.501	
10,486.64	15.45	227.501	10,234.81	-1,278.01	-1,394.74	0.00	0.00	0.00	0.000	
11,347.17	50.00	317.180	10,977.02	-1,101.56	-1,725.98	6.00	4.02	10.42	102.303	
11,880.69	91.00	330.162	11,152.00	-701.64	-2,010.88	8.00	7.68	2.43	19.350	
27,178.05	91.00	330.162	10,885.00	12,565.87	-9,620.81	0.00	0.00	0.00	0.000	McMasters N-11 HU F



Planning Report - Geographic

1705 02317

Database:	DB_Aug1919_v14	Local Co-ordinate Reference:	Well McMasters N-11 HU (slot B)
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 N-11 HU (slot B)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

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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	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
100.00	0.00	0.000	100.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
200.00	0.00	0.000	200.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
300.00	0.00	0.000	300.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
400.00	0.00	0.000	400.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
500.00	0.00	0.000	500.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
600.00	0.00	0.000	600.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
700.00	0.00	0.000	700.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
800.00	0.00	0.000	800.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
900.00	0.00	0.000	900.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
1,000.00	0.00	0.000	1,000.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
1,100.00	0.00	0.000	1,100.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
1,200.00	0.00	0.000	1,200.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
1,300.00	0.00	0.000	1,300.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
1,400.00	0.00	0.000	1,400.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
1,500.00	0.00	0.000	1,500.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
1,600.00	0.00	0.000	1,600.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
1,700.00	0.00	0.000	1,700.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
1,800.00	0.00	0.000	1,800.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
1,900.00	0.00	0.000	1,900.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
2,000.00	0.00	0.000	2,000.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
2,100.00	0.00	0.000	2,100.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
2,200.00	0.00	0.000	2,200.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
2,300.00	0.00	0.000	2,300.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
2,400.00	0.00	0.000	2,400.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
2,500.00	0.00	0.000	2,500.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
2,600.00	0.00	0.000	2,600.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
2,700.00	0.00	0.000	2,700.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
2,800.00	0.00	0.000	2,800.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
2,900.00	0.00	0.000	2,900.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
3,000.00	0.00	0.000	3,000.00	0.00	0.00	14,439,448.43	1,700,118.39	39.76009900	-80.78756000	
<b>KOP Begin 2°/100' build</b>										
3,100.00	2.00	227.501	3,099.98	-1.18	-1.29	14,439,447.25	1,700,117.10	39.76009577	-80.78756459	
3,200.00	4.00	227.501	3,199.84	-4.71	-5.15	14,439,443.72	1,700,113.24	39.76008609	-80.78757835	
3,300.00	6.00	227.501	3,299.45	-10.60	-11.57	14,439,437.83	1,700,106.82	39.76006996	-80.78760126	
3,400.00	8.00	227.501	3,398.70	-18.84	-20.56	14,439,429.60	1,700,097.83	39.76004741	-80.78763330	
3,500.00	10.00	227.501	3,497.47	-29.40	-32.09	14,439,419.03	1,700,086.30	39.76001846	-80.78767443	
3,600.00	12.00	227.501	3,595.62	-42.29	-46.16	14,439,406.14	1,700,072.23	39.75998315	-80.78772460	
3,700.00	14.00	227.501	3,693.06	-57.49	-62.74	14,439,390.94	1,700,055.65	39.75994153	-80.78778374	
3,772.31	15.45	227.501	3,762.99	-69.90	-76.29	14,439,378.53	1,700,042.10	39.75990752	-80.78783205	
<b>Begin 15.45° tangent</b>										
3,800.00	15.45	227.501	3,789.68	-74.89	-81.73	14,439,373.54	1,700,036.66	39.75989387	-80.78785144	
3,900.00	15.45	227.501	3,886.07	-92.88	-101.36	14,439,355.55	1,700,017.03	39.75984459	-80.78792147	
4,000.00	15.45	227.501	3,982.46	-110.87	-121.00	14,439,337.56	1,699,997.39	39.75979530	-80.78799149	
4,100.00	15.45	227.501	4,078.84	-128.87	-140.64	14,439,319.56	1,699,977.75	39.75974601	-80.78806151	
4,200.00	15.45	227.501	4,175.23	-146.86	-160.27	14,439,301.57	1,699,958.12	39.75969673	-80.78813154	
4,300.00	15.45	227.501	4,271.62	-164.85	-179.91	14,439,283.58	1,699,938.48	39.75964744	-80.78820156	
4,400.00	15.45	227.501	4,368.01	-182.84	-199.54	14,439,265.59	1,699,918.85	39.75959816	-80.78827158	
4,500.00	15.45	227.501	4,464.40	-200.84	-219.18	14,439,247.59	1,699,899.21	39.75954887	-80.78834161	
4,600.00	15.45	227.501	4,560.78	-218.83	-238.82	14,439,229.60	1,699,879.57	39.75949958	-80.78841163	
4,700.00	15.45	227.501	4,657.17	-236.82	-258.45	14,439,211.61	1,699,859.94	39.75945030	-80.78848165	
4,800.00	15.45	227.501	4,753.56	-254.82	-278.09	14,439,193.61	1,699,840.30	39.75940101	-80.78855168	
4,900.00	15.45	227.501	4,849.95	-272.81	-297.73	14,439,175.62	1,699,820.66	39.75935172	-80.78862170	
5,000.00	15.45	227.501	4,946.34	-290.80	-317.36	14,439,157.63	1,699,801.03	39.75930244	-80.78869172	



Planning Report - Geographic

4705 02317

Database: DB\_Aug1919\_v14  
 Company: Tug Hill Operating LLC  
 Project: Marshall County, West Virginia  
 Site: McMasters Shields  
 Well: McMasters N-11 HU (slot B)  
 Wellbore: Original Hole  
 Design: rev1

Local Co-ordinate Reference: Well McMasters N-11 HU (slot B)  
 TVD Reference: GL @ 1206.00ft  
 MD Reference: GL @ 1206.00ft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

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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	15.45	227.501	5,042.72	-308.79	-337.00	14,439,139.64	1,699,781.39	39.75925315	-80.78876174
5,200.00	15.45	227.501	5,139.11	-326.79	-356.64	14,439,121.64	1,699,761.75	39.75920387	-80.78883177
5,300.00	15.45	227.501	5,235.50	-344.78	-376.27	14,439,103.65	1,699,742.12	39.75915458	-80.78890179
5,400.00	15.45	227.501	5,331.89	-362.77	-395.91	14,439,085.66	1,699,722.48	39.75910529	-80.78897181
5,500.00	15.45	227.501	5,428.28	-380.77	-415.54	14,439,067.66	1,699,702.85	39.75905601	-80.78904183
5,600.00	15.45	227.501	5,524.67	-398.76	-435.18	14,439,049.67	1,699,683.21	39.75900672	-80.78911186
5,700.00	15.45	227.501	5,621.05	-416.75	-454.82	14,439,031.68	1,699,663.57	39.75895743	-80.78918188
5,800.00	15.45	227.501	5,717.44	-434.75	-474.45	14,439,013.69	1,699,643.94	39.75890815	-80.78925190
5,900.00	15.45	227.501	5,813.83	-452.74	-494.09	14,438,995.69	1,699,624.30	39.75885886	-80.78932192
6,000.00	15.45	227.501	5,910.22	-470.73	-513.73	14,438,977.70	1,699,604.66	39.75880957	-80.78939194
6,100.00	15.45	227.501	6,006.61	-488.72	-533.36	14,438,959.71	1,699,585.03	39.75876028	-80.78946196
6,200.00	15.45	227.501	6,102.99	-506.72	-553.00	14,438,941.71	1,699,565.39	39.75871100	-80.78953199
6,300.00	15.45	227.501	6,199.38	-524.71	-572.63	14,438,923.72	1,699,545.76	39.75866171	-80.78960201
6,400.00	15.45	227.501	6,295.77	-542.70	-592.27	14,438,905.73	1,699,526.12	39.75861242	-80.78967203
6,500.00	15.45	227.501	6,392.16	-560.70	-611.91	14,438,887.74	1,699,506.48	39.75856314	-80.78974205
6,600.00	15.45	227.501	6,488.55	-578.69	-631.54	14,438,869.74	1,699,486.85	39.75851385	-80.78981207
6,700.00	15.45	227.501	6,584.93	-596.68	-651.18	14,438,851.75	1,699,467.21	39.75846456	-80.78988209
6,800.00	15.45	227.501	6,681.32	-614.67	-670.82	14,438,833.76	1,699,447.57	39.75841528	-80.78995211
6,900.00	15.45	227.501	6,777.71	-632.67	-690.45	14,438,815.76	1,699,427.94	39.75836599	-80.79002213
7,000.00	15.45	227.501	6,874.10	-650.66	-710.09	14,438,797.77	1,699,408.30	39.75831670	-80.79009215
7,100.00	15.45	227.501	6,970.49	-668.65	-729.73	14,438,779.78	1,699,388.67	39.75826741	-80.79016217
7,200.00	15.45	227.501	7,066.88	-686.65	-749.36	14,438,761.79	1,699,369.03	39.75821813	-80.79023220
7,300.00	15.45	227.501	7,163.26	-704.64	-769.00	14,438,743.79	1,699,349.39	39.75816884	-80.79030222
7,400.00	15.45	227.501	7,259.65	-722.63	-788.63	14,438,725.80	1,699,329.76	39.75811955	-80.79037224
7,500.00	15.45	227.501	7,356.04	-740.62	-808.27	14,438,707.81	1,699,310.12	39.75807026	-80.79044226
7,600.00	15.45	227.501	7,452.43	-758.62	-827.91	14,438,689.81	1,699,290.48	39.75802098	-80.79051228
7,700.00	15.45	227.501	7,548.82	-776.61	-847.54	14,438,671.82	1,699,270.85	39.75797169	-80.79058230
7,800.00	15.45	227.501	7,645.20	-794.60	-867.18	14,438,653.83	1,699,251.21	39.75792240	-80.79065232
7,900.00	15.45	227.501	7,741.59	-812.60	-886.82	14,438,635.84	1,699,231.58	39.75787311	-80.79072234
8,000.00	15.45	227.501	7,837.98	-830.59	-906.45	14,438,617.84	1,699,211.94	39.75782383	-80.79079236
8,100.00	15.45	227.501	7,934.37	-848.58	-926.09	14,438,599.85	1,699,192.30	39.75777454	-80.79086238
8,200.00	15.45	227.501	8,030.76	-866.58	-945.72	14,438,581.86	1,699,172.67	39.75772525	-80.79093239
8,300.00	15.45	227.501	8,127.14	-884.57	-965.36	14,438,563.86	1,699,153.03	39.75767596	-80.79100241
8,400.00	15.45	227.501	8,223.53	-902.56	-985.00	14,438,545.87	1,699,133.39	39.75762667	-80.79107243
8,500.00	15.45	227.501	8,319.92	-920.55	-1,004.63	14,438,527.88	1,699,113.76	39.75757739	-80.79114245
8,600.00	15.45	227.501	8,416.31	-938.55	-1,024.27	14,438,509.89	1,699,094.12	39.75752810	-80.79121247
8,700.00	15.45	227.501	8,512.70	-956.54	-1,043.91	14,438,491.89	1,699,074.48	39.75747881	-80.79128249
8,800.00	15.45	227.501	8,609.09	-974.53	-1,063.54	14,438,473.90	1,699,054.85	39.75742952	-80.79135251
8,900.00	15.45	227.501	8,705.47	-992.53	-1,083.18	14,438,455.91	1,699,035.21	39.75738023	-80.79142253
9,000.00	15.45	227.501	8,801.86	-1,010.52	-1,102.82	14,438,437.91	1,699,015.58	39.75733095	-80.79149255
9,100.00	15.45	227.501	8,898.25	-1,028.51	-1,122.45	14,438,419.92	1,698,995.94	39.75728166	-80.79156257
9,200.00	15.45	227.501	8,994.64	-1,046.50	-1,142.09	14,438,401.93	1,698,976.30	39.75723237	-80.79163258
9,300.00	15.45	227.501	9,091.03	-1,064.50	-1,161.72	14,438,383.93	1,698,956.67	39.75718308	-80.79170260
9,400.00	15.45	227.501	9,187.41	-1,082.49	-1,181.36	14,438,365.94	1,698,937.03	39.75713379	-80.79177262
9,500.00	15.45	227.501	9,283.80	-1,100.48	-1,201.00	14,438,347.95	1,698,917.39	39.75708450	-80.79184264
9,600.00	15.45	227.501	9,380.19	-1,118.48	-1,220.63	14,438,329.96	1,698,897.76	39.75703522	-80.79191266
9,700.00	15.45	227.501	9,476.58	-1,136.47	-1,240.27	14,438,311.96	1,698,878.12	39.75698593	-80.79198268
9,800.00	15.45	227.501	9,572.97	-1,154.46	-1,259.91	14,438,293.97	1,698,858.49	39.75693664	-80.79205269
9,900.00	15.45	227.501	9,669.35	-1,172.46	-1,279.54	14,438,275.98	1,698,838.85	39.75688735	-80.79212271
10,000.00	15.45	227.501	9,765.74	-1,190.45	-1,299.18	14,438,257.98	1,698,819.21	39.75683806	-80.79219273
10,100.00	15.45	227.501	9,862.13	-1,208.44	-1,318.81	14,438,239.99	1,698,799.58	39.75678877	-80.79226275
10,200.00	15.45	227.501	9,958.52	-1,226.43	-1,338.45	14,438,222.00	1,698,779.94	39.75673948	-80.79233276
10,300.00	15.45	227.501	10,054.91	-1,244.43	-1,358.09	14,438,204.01	1,698,760.30	39.75669020	-80.79240278
10,400.00	15.45	227.501	10,151.30	-1,262.42	-1,377.72	14,438,186.01	1,698,740.67	39.75664091	-80.79247280



Planning Report - Geographic

4705 02317

Database: DB\_Aug1919\_v14  
 Company: Tug Hill Operating LLC  
 Project: Marshall County, West Virginia  
 Site: McMasters Shields  
 Well: McMasters N-11 HU (slot B)  
 Wellbore: Original Hole  
 Design: rev1

Local Co-ordinate Reference: Well McMasters N-11 HU (slot B)  
 TVD Reference: GL @ 1206.00ft  
 MD Reference: GL @ 1206.00ft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

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 FEB 14 2020

Planned Survey

WV Department of  
 Environmental Protection

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,486.64	15.45	227.501	10,234.81	-1,278.01	-1,394.74	14,438,170.42	1,698,723.66	39.75659820	-80.79253346
<b>Begin 6°/100' build/turn</b>									
10,500.00	15.29	230.471	10,247.69	-1,280.33	-1,397.41	14,438,168.10	1,698,720.98	39.75659184	-80.79254298
10,600.00	15.46	253.228	10,344.20	-1,292.58	-1,420.36	14,438,155.85	1,698,698.03	39.75655834	-80.79262476
10,700.00	17.73	272.804	10,440.10	-1,295.69	-1,448.36	14,438,152.75	1,698,670.03	39.75654999	-80.79272440
10,800.00	21.45	286.941	10,534.35	-1,289.61	-1,481.09	14,438,158.82	1,698,637.30	39.75656689	-80.79284081
10,900.00	26.00	296.709	10,625.91	-1,274.42	-1,518.19	14,438,174.02	1,698,600.20	39.75660885	-80.79297271
11,000.00	31.02	303.624	10,713.78	-1,250.27	-1,559.27	14,438,198.16	1,698,559.12	39.75667542	-80.79311866
11,100.00	36.31	308.737	10,796.99	-1,217.45	-1,603.86	14,438,230.99	1,698,514.53	39.75676585	-80.79327706
11,200.00	41.77	312.691	10,874.64	-1,176.29	-1,651.49	14,438,272.14	1,698,466.91	39.75687917	-80.79344618
11,300.00	47.35	315.873	10,945.87	-1,127.27	-1,701.62	14,438,321.16	1,698,416.78	39.75701413	-80.79362415
11,347.17	50.00	317.180	10,977.02	-1,101.56	-1,725.98	14,438,346.87	1,698,392.41	39.75708488	-80.79371063
<b>Begin 8°/100' build/turn</b>									
11,400.00	54.00	318.910	11,009.54	-1,070.60	-1,753.79	14,438,377.83	1,698,364.60	39.75717009	-80.79380933
11,500.00	61.63	321.754	11,062.77	-1,005.45	-1,807.70	14,438,442.98	1,698,310.69	39.75734934	-80.79400062
11,600.00	69.31	324.213	11,104.26	-932.84	-1,862.38	14,438,515.59	1,698,256.02	39.75754910	-80.79419458
11,700.00	77.03	326.434	11,133.20	-854.17	-1,916.76	14,438,594.27	1,698,201.63	39.75776550	-80.79438743
11,800.00	84.76	328.520	11,149.02	-770.97	-1,969.78	14,438,677.46	1,698,148.61	39.75799432	-80.79457543
11,880.69	91.00	330.162	11,152.00	-701.64	-2,010.88	14,438,746.79	1,698,107.51	39.75818498	-80.79472109
<b>Begin 91.00° lateral</b>									
11,900.00	91.00	330.162	11,151.87	-684.89	-2,020.48	14,438,763.54	1,698,097.91	39.75823102	-80.79475513
12,000.00	91.00	330.162	11,149.92	-598.16	-2,070.23	14,438,850.27	1,698,048.16	39.75846952	-80.79493143
12,100.00	91.00	330.162	11,146.17	-511.43	-2,119.98	14,438,937.00	1,697,998.42	39.75870802	-80.79510774
12,200.00	91.00	330.162	11,146.43	-424.70	-2,169.72	14,439,023.73	1,697,948.67	39.75894652	-80.79528404
12,300.00	91.00	330.162	11,144.68	-337.97	-2,219.47	14,439,110.46	1,697,898.92	39.75918502	-80.79546035
12,400.00	91.00	330.162	11,142.94	-251.24	-2,269.22	14,439,197.19	1,697,849.18	39.75942352	-80.79563666
12,500.00	91.00	330.162	11,141.19	-164.51	-2,318.96	14,439,283.92	1,697,799.43	39.75966202	-80.79581297
12,600.00	91.00	330.162	11,139.45	-77.78	-2,368.71	14,439,370.65	1,697,749.68	39.75990052	-80.79598928
12,700.00	91.00	330.162	11,137.70	8.95	-2,418.46	14,439,457.38	1,697,699.94	39.76013902	-80.79616559
12,800.00	91.00	330.162	11,135.96	95.68	-2,468.20	14,439,544.11	1,697,650.19	39.76037752	-80.79634191
12,900.00	91.00	330.162	11,134.21	182.41	-2,517.95	14,439,630.84	1,697,600.44	39.76061601	-80.79651822
13,000.00	91.00	330.162	11,132.47	269.14	-2,567.70	14,439,717.57	1,697,550.70	39.76085451	-80.79669454
13,100.00	91.00	330.162	11,130.72	355.87	-2,617.45	14,439,804.30	1,697,500.95	39.76109301	-80.79687086
13,200.00	91.00	330.162	11,128.98	442.61	-2,667.19	14,439,891.03	1,697,451.20	39.76133150	-80.79704717
13,300.00	91.00	330.162	11,127.23	529.34	-2,716.94	14,439,977.77	1,697,401.46	39.76157000	-80.79722349
13,400.00	91.00	330.162	11,125.48	616.07	-2,766.69	14,440,064.50	1,697,351.71	39.76180850	-80.79739982
13,500.00	91.00	330.162	11,123.74	702.80	-2,816.43	14,440,151.23	1,697,301.96	39.76204699	-80.79757614
13,600.00	91.00	330.162	11,121.99	789.53	-2,866.18	14,440,237.96	1,697,252.22	39.76228549	-80.79775246
13,700.00	91.00	330.162	11,120.25	876.26	-2,915.93	14,440,324.69	1,697,202.47	39.76252398	-80.79792878
13,800.00	91.00	330.162	11,118.50	962.99	-2,965.67	14,440,411.42	1,697,152.72	39.76276248	-80.79810511
13,900.00	91.00	330.162	11,116.76	1,049.72	-3,015.42	14,440,498.15	1,697,102.98	39.76300097	-80.79828144
14,000.00	91.00	330.162	11,115.01	1,136.45	-3,065.17	14,440,584.88	1,697,053.23	39.76323947	-80.79845777
14,100.00	91.00	330.162	11,113.27	1,223.18	-3,114.91	14,440,671.61	1,697,003.48	39.76347796	-80.79863410
14,200.00	91.00	330.162	11,111.52	1,309.91	-3,164.66	14,440,758.34	1,696,953.74	39.76371646	-80.79881043
14,300.00	91.00	330.162	11,109.78	1,396.64	-3,214.41	14,440,845.07	1,696,903.99	39.76395495	-80.79898676
14,400.00	91.00	330.162	11,108.03	1,483.37	-3,264.15	14,440,931.80	1,696,854.24	39.76419345	-80.79916309
14,500.00	91.00	330.162	11,106.28	1,570.10	-3,313.90	14,441,018.53	1,696,804.50	39.76443194	-80.79933942
14,600.00	91.00	330.162	11,104.54	1,656.84	-3,363.65	14,441,105.26	1,696,754.75	39.76467043	-80.79951576
14,700.00	91.00	330.162	11,102.79	1,743.57	-3,413.39	14,441,191.99	1,696,705.00	39.76490892	-80.79969210
14,800.00	91.00	330.162	11,101.05	1,830.30	-3,463.14	14,441,278.72	1,696,655.26	39.76514742	-80.79986843
14,900.00	91.00	330.162	11,099.30	1,917.03	-3,512.89	14,441,365.45	1,696,605.51	39.76538591	-80.80004477
15,000.00	91.00	330.162	11,097.56	2,003.76	-3,562.63	14,441,452.18	1,696,555.76	39.76562440	-80.80022111
15,100.00	91.00	330.162	11,095.81	2,090.49	-3,612.38	14,441,538.92	1,696,506.02	39.76586289	-80.80039746
15,200.00	91.00	330.162	11,094.07	2,177.22	-3,662.13	14,441,625.65	1,696,456.27	39.76610138	-80.80057380



Planning Report - Geographic

4705 02317

Database: DB\_Aug1919\_v14  
 Company: Tug Hill Operating LLC  
 Project: Marshall County, West Virginia  
 Site: McMasters Shields  
 Well: McMasters N-11 HU (slot B)  
 Wellbore: Original Hole  
 Design: rev1

Local Co-ordinate Reference: Well McMasters N-11 HU (slot B)  
 TVD Reference: GL @ 1206.00ft  
 MD Reference: GL @ 1206.00ft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

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Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,300.00	91.00	330.162	11,092.32	2,263.95	-3,711.87	14,441,712.38	1,696,406.52	39.76633988	-80.80075014
15,400.00	91.00	330.162	11,090.58	2,350.68	-3,761.62	14,441,799.11	1,696,356.78	39.76657837	-80.80092649
15,500.00	91.00	330.162	11,088.83	2,437.41	-3,811.37	14,441,885.84	1,696,307.03	39.76681686	-80.80110283
15,600.00	91.00	330.162	11,087.09	2,524.14	-3,861.11	14,441,972.57	1,696,257.28	39.76705535	-80.80127918
15,700.00	91.00	330.162	11,085.34	2,610.87	-3,910.86	14,442,059.30	1,696,207.54	39.76729384	-80.80145553
15,800.00	91.00	330.162	11,083.59	2,697.60	-3,960.61	14,442,146.03	1,696,157.79	39.76753233	-80.80163188
15,900.00	91.00	330.162	11,081.85	2,784.34	-4,010.35	14,442,232.76	1,696,108.04	39.76777082	-80.80180823
16,000.00	91.00	330.162	11,080.10	2,871.07	-4,060.10	14,442,319.49	1,696,058.30	39.76800931	-80.80198458
16,100.00	91.00	330.162	11,078.36	2,957.80	-4,109.85	14,442,406.22	1,696,008.55	39.76824779	-80.80216094
16,200.00	91.00	330.162	11,076.61	3,044.53	-4,159.59	14,442,492.95	1,695,958.80	39.76848628	-80.80233729
16,300.00	91.00	330.162	11,074.87	3,131.26	-4,209.34	14,442,579.68	1,695,909.06	39.76872477	-80.80251365
16,400.00	91.00	330.162	11,073.12	3,217.99	-4,259.09	14,442,666.41	1,695,859.31	39.76896326	-80.80269001
16,500.00	91.00	330.162	11,071.38	3,304.72	-4,308.83	14,442,753.14	1,695,809.57	39.76920175	-80.80286636
16,600.00	91.00	330.162	11,069.63	3,391.45	-4,358.58	14,442,839.87	1,695,759.82	39.76944023	-80.80304272
16,700.00	91.00	330.162	11,067.89	3,478.18	-4,408.33	14,442,926.60	1,695,710.07	39.76967872	-80.80321908
16,800.00	91.00	330.162	11,066.14	3,564.91	-4,458.07	14,443,013.34	1,695,660.33	39.76991721	-80.80339545
16,900.00	91.00	330.162	11,064.39	3,651.64	-4,507.82	14,443,100.07	1,695,610.58	39.77015570	-80.80357181
17,000.00	91.00	330.162	11,062.65	3,738.37	-4,557.57	14,443,186.80	1,695,560.83	39.77039418	-80.80374817
17,100.00	91.00	330.162	11,060.90	3,825.10	-4,607.31	14,443,273.53	1,695,511.09	39.77063267	-80.80392454
17,200.00	91.00	330.162	11,059.16	3,911.83	-4,657.06	14,443,360.26	1,695,461.34	39.77087115	-80.80410091
17,300.00	91.00	330.162	11,057.41	3,998.57	-4,706.81	14,443,446.99	1,695,411.59	39.77110964	-80.80427728
17,400.00	91.00	330.162	11,055.67	4,085.30	-4,756.55	14,443,533.72	1,695,361.85	39.77134812	-80.80445365
17,500.00	91.00	330.162	11,053.92	4,172.03	-4,806.30	14,443,620.45	1,695,312.10	39.77158661	-80.80463002
17,600.00	91.00	330.162	11,052.18	4,258.76	-4,856.05	14,443,707.18	1,695,262.35	39.77182509	-80.80480639
17,700.00	91.00	330.162	11,050.43	4,345.49	-4,905.79	14,443,793.91	1,695,212.61	39.77206358	-80.80498276
17,800.00	91.00	330.162	11,048.69	4,432.22	-4,955.54	14,443,880.64	1,695,162.86	39.77230206	-80.80515914
17,900.00	91.00	330.162	11,046.94	4,518.95	-5,005.29	14,443,967.37	1,695,113.11	39.77254055	-80.80533551
18,000.00	91.00	330.162	11,045.20	4,605.68	-5,055.03	14,444,054.10	1,695,063.37	39.77277903	-80.80551189
18,100.00	91.00	330.162	11,043.45	4,692.41	-5,104.78	14,444,140.83	1,695,013.62	39.77301751	-80.80568827
18,200.00	91.00	330.162	11,041.70	4,779.14	-5,154.53	14,444,227.56	1,694,963.87	39.77325600	-80.80586464
18,300.00	91.00	330.162	11,039.96	4,865.87	-5,204.27	14,444,314.29	1,694,914.13	39.77349448	-80.80604103
18,400.00	91.00	330.162	11,038.21	4,952.60	-5,254.02	14,444,401.02	1,694,864.38	39.77373296	-80.80621741
18,500.00	91.00	330.162	11,036.47	5,039.33	-5,303.77	14,444,487.75	1,694,814.63	39.77397145	-80.80639379
18,600.00	91.00	330.162	11,034.72	5,126.06	-5,353.51	14,444,574.49	1,694,764.89	39.77420993	-80.80657017
18,700.00	91.00	330.162	11,032.98	5,212.80	-5,403.26	14,444,661.22	1,694,715.14	39.77444841	-80.80674656
18,800.00	91.00	330.162	11,031.23	5,299.53	-5,453.01	14,444,747.95	1,694,665.39	39.77468689	-80.80692295
18,900.00	91.00	330.162	11,029.49	5,386.26	-5,502.75	14,444,834.68	1,694,615.65	39.77492537	-80.80709933
19,000.00	91.00	330.162	11,027.74	5,472.99	-5,552.50	14,444,921.41	1,694,565.90	39.77516385	-80.80727572
19,100.00	91.00	330.162	11,026.00	5,559.72	-5,602.25	14,445,008.14	1,694,516.15	39.77540233	-80.80745211
19,200.00	91.00	330.162	11,024.25	5,646.45	-5,651.99	14,445,094.87	1,694,466.41	39.77564081	-80.80762850
19,300.00	91.00	330.162	11,022.50	5,733.18	-5,701.74	14,445,181.60	1,694,416.66	39.77587929	-80.80780490
19,400.00	91.00	330.162	11,020.76	5,819.91	-5,751.49	14,445,268.33	1,694,366.91	39.77611777	-80.80798129
19,500.00	91.00	330.162	11,019.01	5,906.64	-5,801.23	14,445,355.06	1,694,317.17	39.77635625	-80.80815768
19,600.00	91.00	330.162	11,017.27	5,993.37	-5,850.98	14,445,441.79	1,694,267.42	39.77659473	-80.80833408
19,700.00	91.00	330.162	11,015.52	6,080.10	-5,900.73	14,445,528.52	1,694,217.67	39.77683321	-80.80851048
19,800.00	91.00	330.162	11,013.78	6,166.83	-5,950.47	14,445,615.25	1,694,167.93	39.77707169	-80.80868688
19,900.00	91.00	330.162	11,012.03	6,253.56	-6,000.22	14,445,701.98	1,694,118.18	39.77731017	-80.80886328
20,000.00	91.00	330.162	11,010.29	6,340.30	-6,049.97	14,445,788.71	1,694,068.43	39.77754865	-80.80903968
20,100.00	91.00	330.162	11,008.54	6,427.03	-6,099.71	14,445,875.44	1,694,018.69	39.77778713	-80.80921608
20,200.00	91.00	330.162	11,006.80	6,513.76	-6,149.46	14,445,962.17	1,693,968.94	39.77802560	-80.80939248
20,300.00	91.00	330.162	11,005.05	6,600.49	-6,199.21	14,446,048.90	1,693,919.19	39.77826408	-80.80956889
20,400.00	91.00	330.162	11,003.31	6,687.22	-6,248.95	14,446,135.64	1,693,869.45	39.77850256	-80.80974529
20,500.00	91.00	330.162	11,001.56	6,773.95	-6,298.70	14,446,222.37	1,693,819.70	39.77874103	-80.80992170
20,600.00	91.00	330.162	10,999.81	6,860.68	-6,348.45	14,446,309.10	1,693,769.95	39.77897951	-80.81009811
20,700.00	91.00	330.162	10,998.07	6,947.41	-6,398.19	14,446,395.83	1,693,720.21	39.77921799	-80.81027452

West Virginia Department of Environmental Protection



<b>Database:</b>	DB_Aug1919_v14	<b>Local Co-ordinate Reference:</b>	Well McMasters N-11 HU (slot B)
<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 N-11 HU (slot B)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev1		

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WV Department of Environmental Protection

**Planned Survey**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
20,800.00	91.00	330.162	10,996.32	7,034.14	-6,447.94	14,446,482.56	1,693,670.46	39.77945646	-80.81045093
20,900.00	91.00	330.162	10,994.58	7,120.87	-6,497.69	14,446,569.29	1,693,620.71	39.77969494	-80.81062734
21,000.00	91.00	330.162	10,992.83	7,207.60	-6,547.43	14,446,656.02	1,693,570.97	39.77993341	-80.81080375
21,100.00	91.00	330.162	10,991.09	7,294.33	-6,597.18	14,446,742.75	1,693,521.22	39.78017189	-80.81098017
21,200.00	91.00	330.162	10,989.34	7,381.06	-6,646.93	14,446,829.48	1,693,471.47	39.78041036	-80.81115658
21,300.00	91.00	330.162	10,987.60	7,467.79	-6,696.67	14,446,916.21	1,693,421.73	39.78064884	-80.81133300
21,400.00	91.00	330.162	10,985.85	7,554.53	-6,746.42	14,447,002.94	1,693,371.98	39.78088731	-80.81150942
21,500.00	91.00	330.162	10,984.11	7,641.26	-6,796.17	14,447,089.67	1,693,322.23	39.78112579	-80.81168584
21,600.00	91.00	330.162	10,982.36	7,727.99	-6,845.91	14,447,176.40	1,693,272.49	39.78136426	-80.81186226
21,700.00	91.00	330.162	10,980.61	7,814.72	-6,895.66	14,447,263.13	1,693,222.74	39.78160273	-80.81203888
21,800.00	91.00	330.162	10,978.87	7,901.45	-6,945.41	14,447,349.86	1,693,173.00	39.78184121	-80.81221510
21,900.00	91.00	330.162	10,977.12	7,988.18	-6,995.15	14,447,436.59	1,693,123.25	39.78207968	-80.81239153
22,000.00	91.00	330.162	10,975.38	8,074.91	-7,044.90	14,447,523.32	1,693,073.50	39.78231815	-80.81256795
22,100.00	91.00	330.162	10,973.63	8,161.64	-7,094.65	14,447,610.05	1,693,023.76	39.78255663	-80.81274438
22,200.00	91.00	330.162	10,971.89	8,248.37	-7,144.39	14,447,696.79	1,692,974.01	39.78279510	-80.81292081
22,300.00	91.00	330.162	10,970.14	8,335.10	-7,194.14	14,447,783.52	1,692,924.26	39.78303357	-80.81309724
22,400.00	91.00	330.162	10,968.40	8,421.83	-7,243.89	14,447,870.25	1,692,874.52	39.78327204	-80.81327367
22,500.00	91.00	330.162	10,966.65	8,508.56	-7,293.64	14,447,956.98	1,692,824.77	39.78351051	-80.81345010
22,600.00	91.00	330.162	10,964.91	8,595.29	-7,343.38	14,448,043.71	1,692,775.02	39.78374898	-80.81362653
22,700.00	91.00	330.162	10,963.16	8,682.02	-7,393.13	14,448,130.44	1,692,725.28	39.78398745	-80.81380297
22,800.00	91.00	330.162	10,961.42	8,768.76	-7,442.88	14,448,217.17	1,692,675.53	39.78422592	-80.81397940
22,900.00	91.00	330.162	10,959.67	8,855.49	-7,492.62	14,448,303.90	1,692,625.78	39.78446439	-80.81415584
23,000.00	91.00	330.162	10,957.92	8,942.22	-7,542.37	14,448,390.63	1,692,576.04	39.78470286	-80.81433227
23,100.00	91.00	330.162	10,956.18	9,028.95	-7,592.12	14,448,477.36	1,692,526.29	39.78494133	-80.81450871
23,200.00	91.00	330.162	10,954.43	9,115.68	-7,641.86	14,448,564.09	1,692,476.54	39.78517980	-80.81468515
23,300.00	91.00	330.162	10,952.69	9,202.41	-7,691.61	14,448,650.82	1,692,426.80	39.78541827	-80.81486159
23,400.00	91.00	330.162	10,950.94	9,289.14	-7,741.36	14,448,737.55	1,692,377.05	39.78565674	-80.81503804
23,500.00	91.00	330.162	10,949.20	9,375.87	-7,791.10	14,448,824.28	1,692,327.30	39.78589521	-80.81521448
23,600.00	91.00	330.162	10,947.45	9,462.60	-7,840.85	14,448,911.01	1,692,277.56	39.78613368	-80.81539092
23,700.00	91.00	330.162	10,945.71	9,549.33	-7,890.60	14,448,997.74	1,692,227.81	39.78637215	-80.81556737
23,800.00	91.00	330.162	10,943.96	9,636.06	-7,940.34	14,449,084.47	1,692,178.06	39.78661061	-80.81574382
23,900.00	91.00	330.162	10,942.22	9,722.79	-7,990.09	14,449,171.20	1,692,128.32	39.78684908	-80.81592027
24,000.00	91.00	330.162	10,940.47	9,809.52	-8,039.84	14,449,257.94	1,692,078.57	39.78708755	-80.81609672
24,100.00	91.00	330.162	10,938.72	9,896.26	-8,089.58	14,449,344.67	1,692,028.82	39.78732602	-80.81627317
24,200.00	91.00	330.162	10,936.98	9,982.99	-8,139.33	14,449,431.40	1,691,979.08	39.78756448	-80.81644962
24,300.00	91.00	330.162	10,935.23	10,069.72	-8,189.08	14,449,518.13	1,691,929.33	39.78780295	-80.81662607
24,400.00	91.00	330.162	10,933.49	10,156.45	-8,238.82	14,449,604.86	1,691,879.58	39.78804141	-80.81680253
24,500.00	91.00	330.162	10,931.74	10,243.18	-8,288.57	14,449,691.59	1,691,829.84	39.78827988	-80.81697898
24,600.00	91.00	330.162	10,930.00	10,329.91	-8,338.32	14,449,778.32	1,691,780.09	39.78851835	-80.81715544
24,700.00	91.00	330.162	10,928.25	10,416.64	-8,388.06	14,449,865.05	1,691,730.34	39.78875681	-80.81733190
24,800.00	91.00	330.162	10,926.51	10,503.37	-8,437.81	14,449,951.78	1,691,680.60	39.78899528	-80.81750836
24,900.00	91.00	330.162	10,924.76	10,590.10	-8,487.56	14,450,038.51	1,691,630.85	39.78923374	-80.81768482
25,000.00	91.00	330.162	10,923.02	10,676.83	-8,537.30	14,450,125.24	1,691,581.10	39.78947221	-80.81786128
25,100.00	91.00	330.162	10,921.27	10,763.56	-8,587.05	14,450,211.97	1,691,531.36	39.78971067	-80.81803774
25,200.00	91.00	330.162	10,919.53	10,850.29	-8,636.80	14,450,298.70	1,691,481.61	39.78994913	-80.81821421
25,300.00	91.00	330.162	10,917.78	10,937.02	-8,686.54	14,450,385.43	1,691,431.86	39.79018760	-80.81839067
25,400.00	91.00	330.162	10,916.03	11,023.75	-8,736.29	14,450,472.16	1,691,382.12	39.79042606	-80.81856714
25,500.00	91.00	330.162	10,914.29	11,110.49	-8,786.04	14,450,558.89	1,691,332.37	39.79066452	-80.81874361
25,600.00	91.00	330.162	10,912.54	11,197.22	-8,835.78	14,450,645.62	1,691,282.62	39.79090299	-80.81892008
25,700.00	91.00	330.162	10,910.80	11,283.95	-8,885.53	14,450,732.35	1,691,232.88	39.79114145	-80.81909655
25,800.00	91.00	330.162	10,909.05	11,370.68	-8,935.28	14,450,819.09	1,691,183.13	39.79137991	-80.81927302
25,900.00	91.00	330.162	10,907.31	11,457.41	-8,985.02	14,450,905.82	1,691,133.38	39.79161837	-80.81944949
26,000.00	91.00	330.162	10,905.56	11,544.14	-9,034.77	14,450,992.55	1,691,083.64	39.79185683	-80.81962596
26,100.00	91.00	330.162	10,903.82	11,630.87	-9,084.52	14,451,079.28	1,691,033.89	39.79209530	-80.81980244
26,200.00	91.00	330.162	10,902.07	11,717.60	-9,134.26	14,451,166.01	1,690,984.14	39.79233376	-80.81997892

<b>Database:</b>	DB_Aug1919_v14	<b>Local Co-ordinate Reference:</b>	Well McMasters N-11 HU (slot B)
<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 N-11 HU (slot B)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev1		

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Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
26,300.00	91.00	330.162	10,900.33	11,804.33	-9,184.01	14,451,252.74	1,690,934.40	39.79257222	-80.82015539	
26,400.00	91.00	330.162	10,898.58	11,891.06	-9,233.76	14,451,339.47	1,690,884.65	39.79281068	-80.82033187	
26,500.00	91.00	330.162	10,896.83	11,977.79	-9,283.50	14,451,426.20	1,690,834.90	39.79304914	-80.82050835	
26,600.00	91.00	330.162	10,895.09	12,064.52	-9,333.25	14,451,512.93	1,690,785.16	39.79328760	-80.82068483	
26,700.00	91.00	330.162	10,893.34	12,151.25	-9,383.00	14,451,599.66	1,690,735.41	39.79352606	-80.82086132	
26,800.00	91.00	330.162	10,891.60	12,237.98	-9,432.74	14,451,686.39	1,690,685.66	39.79376452	-80.82103780	
26,900.00	91.00	330.162	10,889.85	12,324.72	-9,482.49	14,451,773.12	1,690,635.92	39.79400298	-80.82121429	
27,000.00	91.00	330.162	10,888.11	12,411.45	-9,532.24	14,451,859.85	1,690,586.17	39.79424144	-80.82139077	
27,100.00	91.00	330.162	10,886.36	12,498.18	-9,581.98	14,451,946.58	1,690,536.43	39.79447989	-80.82156726	
27,178.05	91.00	330.162	10,885.00	12,565.87	-9,620.81	14,452,014.27	1,690,497.60	39.79466600	-80.82170500	

PBHL/TD 27178.05 MD/10885.00 TVD

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
McMasters N-11 HU PBI - hit/miss target - Shape - Point	0.00	0.000	10,885.00	12,565.87	-9,620.81	14,452,014.27	1,690,497.60	39.79466600	-80.82170500	
McMasters N-11 HU LP - plan misses target center by 0.03ft at 11880.69ft MD (11152.00 TVD, -701.64 N, -2010.88 E) - Point	0.00	0.000	11,152.00	-701.63	-2,010.85	14,438,746.80	1,698,107.54	39.75818500	-80.79472100	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
3,000.00	3,000.00	0.00	0.00	KOP Begin 2°/100' build	
3,772.31	3,762.99	-69.90	-76.29	Begin 15.45° tangent	
10,486.64	10,234.81	-1,278.01	-1,394.74	Begin 6°/100' build/turn	
11,347.17	10,977.02	-1,101.56	-1,725.98	Begin 8°/100' build/turn	
11,880.69	11,152.00	-701.64	-2,010.88	Begin 91.00° lateral	
27,178.05	10,885.00	12,565.87	-9,620.81	PBHL/TD 27178.05 MD/10885.00 TVD	

WW-9  
(4/16)

4705 02317

API Number 47 - 051

Operator's Well No. McMasters N-11HU

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 will be used with proper contain

Proposed Disposal Method For Treated Pit Wastes:

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

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

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Air for vertical / 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 Sanitary Landfill (SWF-1021 / WV0109185) and Westmoreland Sanitary Landfill, LLC (SAN1405 / PA DEP EC#1386426)

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 James A. Pancake  
Company Official (Typed Name) Jim Pancake  
Company Official Title VP Geosciences

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WV Department of  
Environmental Protection

Subscribed and sworn before me this 7 day of FEBRUARY, 20 20

Maureen A Stead

Notary Public

My commission expires 1/28/23

Commonwealth of Pennsylvania - Notary Seal  
MAUREEN A STEAD - Notary Public  
Washington County  
My Commission Expires Jan 28, 2023  
Commission Number 1259926

Tug Hill Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 17.76 Prevegetation pH 6.0

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch 2.5 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual Ryegrass	40	Orchard Grass	12
Spring Oats	96	Ladino	3
		White Clover	2

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: *Jim Unholzer*

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

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WV Department of  
Environmental Protection

Title: WVDEP Oil and Gas Inspector

Date: 1/23/2020

Field Reviewed?

Yes

No

WW-9

# PROPOSED McMASTERS N-11HU

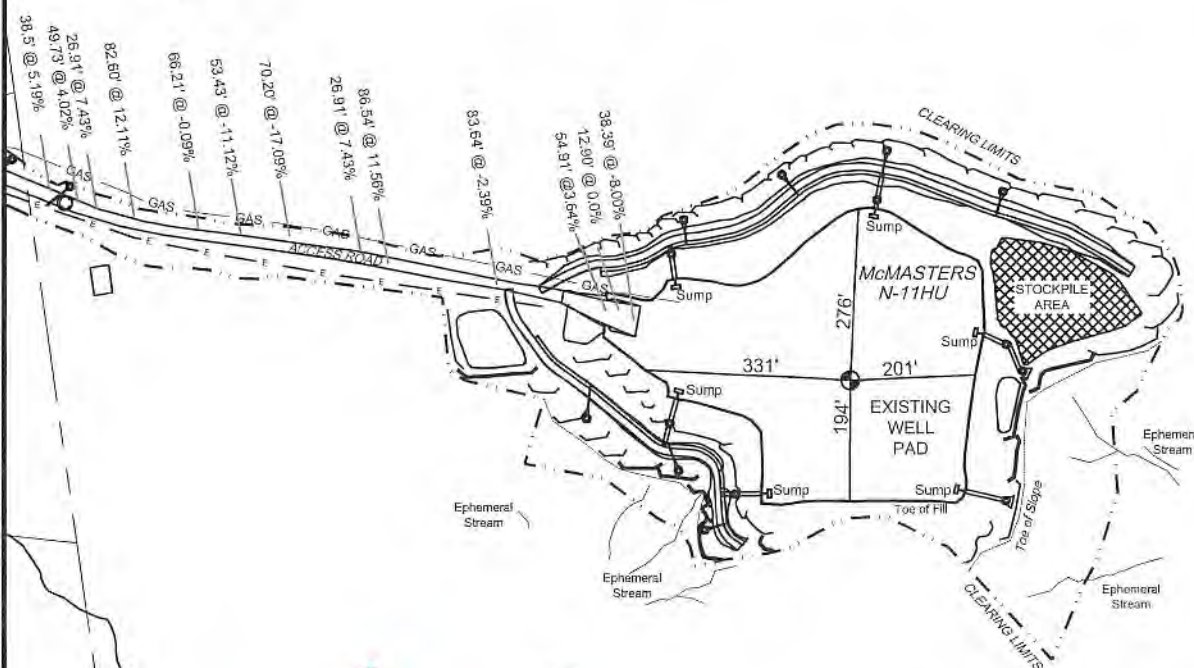
4703 02517  
**SUPPLEMENT PG 1**

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

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

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.O.T. REGULATIONS. ADDITIONAL PERMITS MAY BE REQUIRED.

TEMPORARILY SEED AND MULCH ALL SLOPES UPON CONSTRUCTION OF LOCATION.

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

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

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

DUANE BRUNN  
 05-18-24  
 102 Ac.

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 WV Department of  
 Environmental Protection

**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.**  
 2413 E. Pike St. #112  
 Charleston, WV 25301  
 Phone: 904-629-5861

TOPO SECTION:		OPERATOR:	
POWHATAN POINT 7.5'		PREPARED FOR:	
COUNTY	DISTRICT	TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317	
MARSHALL	FRANKLIN	DATE	SCALE
DRAWN BY	JOB NO.	1-7-2020	NONE
J.D.C	494510851		



WW-9

# PROPOSED McMASTERS N-1 1 HU

SUPPLEMENT PG 1

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

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

ENTRANCES ONTO PUBLIC ROADS SHALL BE CONSTRUCTED OR MAINTAINED IN ACCORDANCE WITH WV D.O.T. REGULATIONS. ADDITIONAL PERMITS MAY BE REQUIRED.

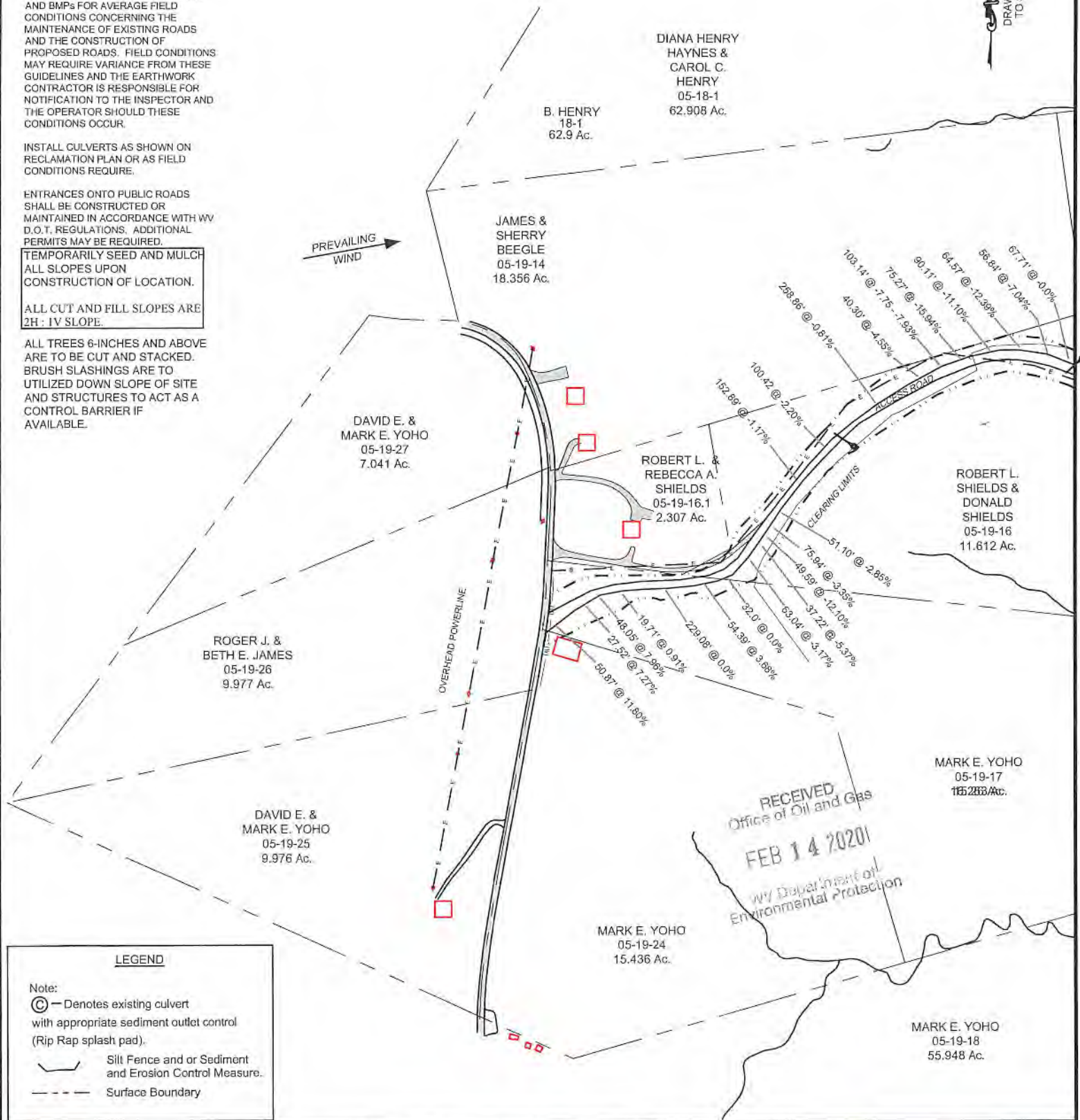
TEMPORARILY SEED AND MULCH ALL SLOPES UPON CONSTRUCTION OF LOCATION.

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

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

DRAWING NOT TO SCALE

PREVAILING WIND



**LEGEND**

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



**Jackson Surveying Inc.**  
2418 E. Pike St. #112  
Martinsburg, WV 26301  
Phone: 304-623-6861

TOPO SECTION:		OPERATOR:	
POWHATAN POINT 75'		TUG HILL OPERATING, LLC	
COUNTY	DISTRICT	380 SOUTHPOINTE BLVD.	
MARSHALL	FRANKLIN	SUITE 200	
DRAWN BY	JOB NO.	DATE	SCALE
J.D.C.	494510851	1-3-2020	NONE



1705 02317

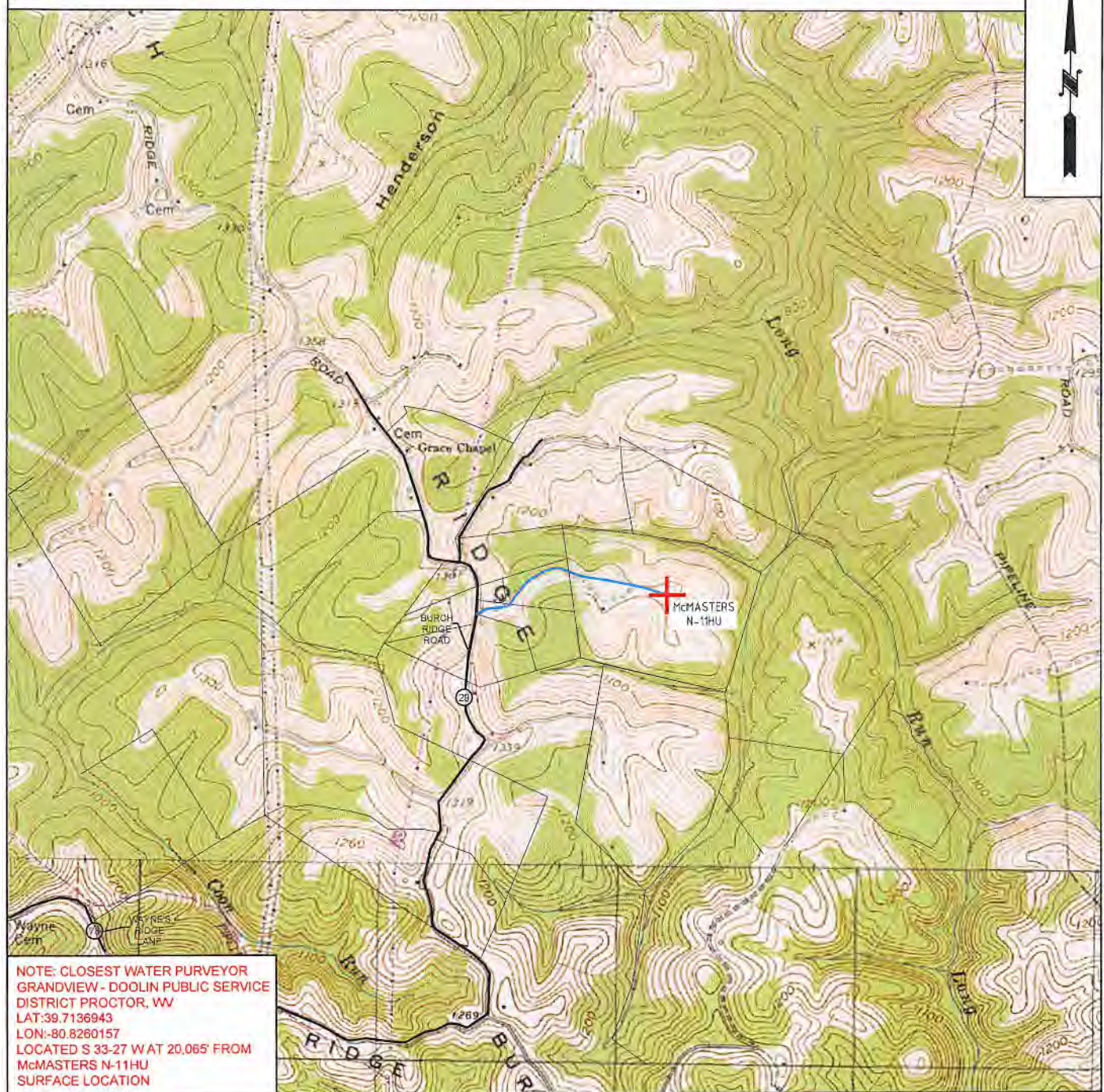
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FEB 14 2020

WW-9

# PROPOSED McMASTERS N-11HU

U.S. Department of Environmental Protection  
SUPPLEMENT PG 2



NOTE: CLOSEST WATER PURVEYOR  
 GRANDVIEW - DOOLIN PUBLIC SERVICE  
 DISTRICT PROCTOR, WW  
 LAT: 39.7136943  
 LON: -80.8260157  
 LOCATED S 33-27 W AT 20.065' FROM  
 McMASTERS N-11HU  
 SURFACE LOCATION



**TUG HILL**  
 OPERATING

OPERATOR	494510851	TOPO SECTION	LEASE NAME
TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317		POWHATAN POINT 7.5'	McMASTERS
		SCALE:	DATE:
		1" = 2000'	DATE: 1-7-2020



# Well Site Safety Plan

## Tug Hill Operating, LLC

*JM 1/23/2020*

Well Name: McMasters N-11HU

Pad Location: Shields Pad  
Marshall County, West Virginia

UTM (meters), NAD83, Zone 17:

Northing: 4,401,152.69

Easting: 518,197.09

January 2020

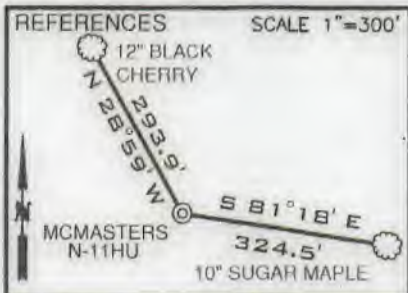
RECEIVED  
Office of Oil and Gas

FEB 14 2020

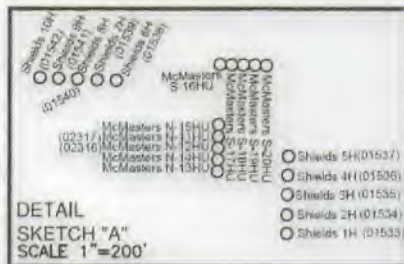
WV Department of  
Environmental Protection



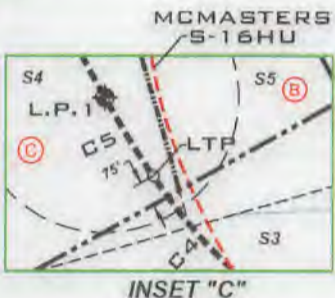
MCMASTERS LEASE  
WELL N-11HU  
539.4997± ACRES



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

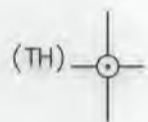


(BH) BOTTOM HOLE LONGITUDE: 80°47'30"  
(TH) TOP HOLE LONGITUDE: 80°45'00"



(BH) 14,106'  
(TH) 11,521'

(+) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS



LINE	BEARING	DISTANCE
L1	S 71°00' E	1425.18'
L2	S 41°01' W	1285.18'
L3	S 48°27' W	1892.30'

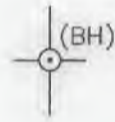
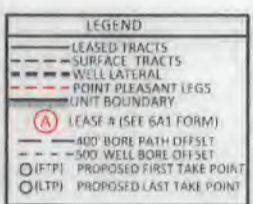
**SURFACE HOLE**  
UTM. NAD83, ZONE 17  
IN METERS  
N) 4,401,152.69  
E) 518,197.09

**LANDING POINT 1**  
UTM. NAD83, ZONE 17  
IN METERS  
N) 4,400,938.82  
E) 517,584.21

**BOTTOM HOLE**  
UTM. NAD83, ZONE 17  
IN METERS  
N) 4,404,982.76  
E) 515,264.70

NOTES

- BORE PATH BASED ON GRID NORTH.
- NO WATER WELLS WITHIN 120' 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

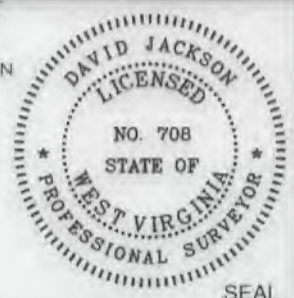


CURVE	CHORD BEARING	CHORD LENGTH	RADIUS	ARC LENGTH
C1	S 67°05' W	42.68'	66.96'	43.43'
C2	N 78°31' W	86.51'	136.18'	87.19'
C3	N 56°57' W	123.68'	426.80'	124.12'
C4	N 44°36' W	209.94'	1238.04'	210.19'
C5	N 33°55' W	440.85'	2275.62'	450.58'

FILE NUMBER \_\_\_\_\_  
DRAWING NUMBER: MCMASTERS\_N-11HU\_REV1  
SCALE: 1" = 2000'  
MINIMUM DEGREE OF ACCURACY: 1/200  
PROVEN SOURCE OF ELEVATION: SUBMETER MAPPING  
GRADE GPS

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

*David L Jackson*



JACKSON SURVEYING INC.  
P.O. Box 1460  
Clarksburg, WV 26302  
304-623-5851

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

DATE: FEBRUARY 12, 2020  
REVISED: SEPTEMBER 17, 2020  
OPERATORS WELL NO. MCMASTERS N-11HU  
API WELL NO. 47-051-02317H6A  
STATE COUNTY PERMIT U

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 ESTIMATED DEPTH TVD: 11,398' TMD: 27,178'  
WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DIANNA STAMPER  
CT CORPORATION SYSTEM  
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 ADDRESS 5400 D BIG TYLER ROAD  
FORT WORTH, TX 76107 CHARLESTON, WV 25313

COUNTY NAME PERMIT

form wv6

MCMASTERS LEASE  
WELL N-11HU  
539.4997± ACRES

**LEGEND**

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

SCALE 1" = 2000'

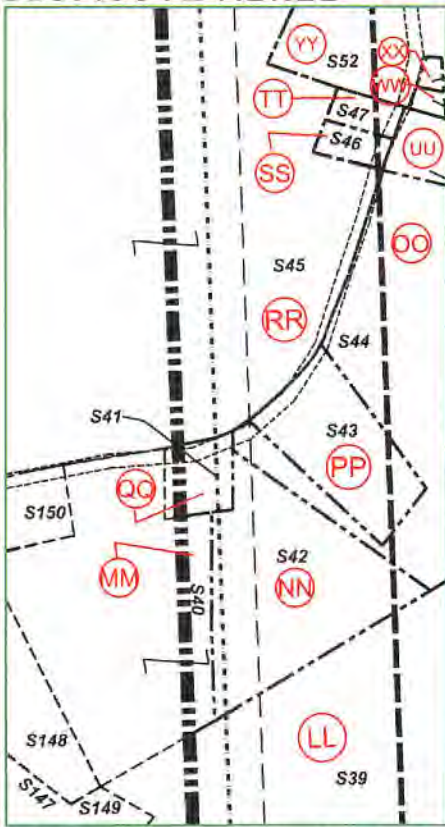


P.S. 708 *David L Jackson*

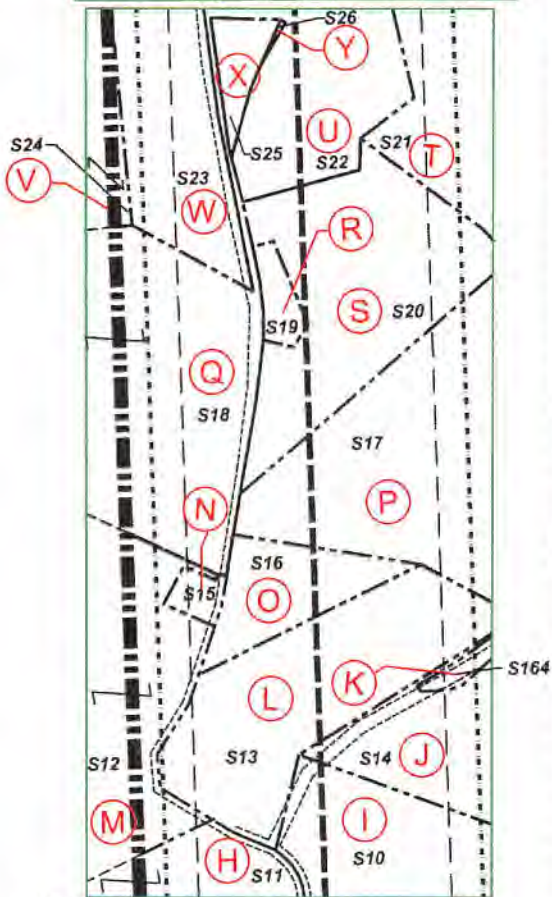
47-051-02317 H6A

 <p><b>TUG HILL OPERATING</b></p>	OPERATOR'S	WELL PLAT
	WELL #: MCMASTERS N-11HU	PAGE 2 OF 4
	DISTRICT: Franklin	DATE: 02/12/2020
	COUNTY: Marshall	REVISED: 09/17/2020
	STATE: WV	
API #: 47-051-02317		

PG 3 OF 4 MCMASTERS LEASE  
WELL N-1 1HU  
539.4997± ACRES



INSET  
"B"



INSET  
"A"



P.S. 708 *David L Jackson*

Number	TAX MAP - PARCEL	ADJOINER OWNER	ACRES
S1	05-18-02	Robert L. Shields, Et Al	104.11
S2	05-18-24	Duane Brunn	102.0
S3 A	05-19-18	Mark E. Yoho, Et Ux	55.948
S4 C	05-19-24	Mark E. Yoho	15.436
S5 B	05-19-17	Mark A. Yoho	15.263
S6 D	05-19-25	David E. Yoho & Mark E. Yoho	9.976
S7 E	05-19-26	Roger J. & Beth E. James	9.977
S8 F	05-19-16.1	Robert L. & Rebecca A. Shields	2.307
S9 G	05-19-16	Robert L. Shields & Donald Shields	11.612
S10 I	05-19-14	James & Sherry Beagle	18.356
S11 H	05-19-27	David E. Yoho & Mark E. Yoho	7.041
S12 M	05-19-28	David E. Yoho & Mark E. Yoho	56.899
S13 L	05-19-31	Charles F. & Diana L. Haynes	8.779
S14 J	05-18-01	Diana Henry Haynes & Carol C. Henry	62.908
S15 N	05-19-32	Jasper N. Burch, Et Al-Trustees	0.397
S16 O	05-19-30.1	Eric R.W. & Ashley A. Huggins	2.911
S17 P	05-19-30	Ernie & Tammy Anderson	19.037
S18 Q	05-19-19	Russell Blake, Et Ux	66.4
S19 R	05-19-15	Carly Herran	0.72
S20 S	05-19-29	Ernie L. & Tammy L. Anderson	10.961
S21 T	05-19-13	Rona Lee Rice & Charles Franklin Mccardle	94.925
S22 U	05-19-12	Ernie L. Anderson, Et Ux	5.33
S23 W	05-19-09	Penny Elaine Ashcraft	10.44
S24 V	05-19-20	Wilbert H. Bungard, Et Ux	114.989
S25 X	05-19-10	Ernie L. Anderson, Et Ux	0.8125
S26 Y	05-19-11	Ernie L. Anderson, Et Ux	0.08
S27 Z	05-19-08	CNX Gas Company LLC	40.0
S28 AA	05-19-7.5	Adam T. & Jesse L. Anderson	2.64
S29 CC	05-19-7.1	Robert L. Shields, Et Ux	3.399
S30 DD	05-19-7.2	Olan Rutan	2.783
S31 FF	05-19-7.3	Olan V. Rutan	0.341
S32 BB	05-19-07	Olan V. Rutan, Et Ux	32.4801
S33 GG	05-19-7.4	Olan V. Rutan, Et Ux	1.787
S34 EE	05-19-06	Belinda Kay Meadows, Rebecca Ann Shields & Olan V. Rutan	5.1099
S35 II	05-19-05	Margirene Keefe	126.03
S36 HH	05-14-11	Dale R. Gallaher, Et Al	12.0
S37 JJ	05-14-12	Dale R. Gallaher, Et Al	135.10
S38 KK	05-14-10.4	Adam R. & Jesse L. Robinson	3.343
S39 LL	05-14-10	Wanda P. Rine, Life	107.372
S40 MM	05-14-09	Walter W. Streight Jr. Et Ux.	9.311
S41 QQ	05-14-19	Brian A. & Charlotte Mull	0.92
S42 NN	05-14-9.5	Maria T. Flores	6.024
S43 PP	05-14-9.1	Maria T. Flores	2.882
S44 OO	05-14-9.2	Maria T. Flores	25.0
S45 RR	05-14-05	Donna K. & Leroy Anderson	110.5
S46 SS	05-12-19	Joni Lyn Leon	0.457
S47 TT	05-12-20	Joni Lyn Leon	0.457
S48 WW	05-12-17	Joni Lyn Leon	0.752
S49 UU	05-12-18	Joni Lyn Leon	1.018
S50 WW	05-12-16.1	Gary E. Gibson, Et Al	0.146
S51 XX	05-12-16	Gary E. Gibson, Et Al	0.104
S52 YY	05-12-21	Edward L. Gibson-Life	73.436
S53 ZZ	05-12-14	Linda Hamilton, Et Al	117.495
S54 AAA	05-12-15	Woodland Hill Church of God TRS	0.375
S55 BBB	05-12-21.1	Robert W. Jr. & Wendy L. Riggerbach	14.222
S56 DDD	05-12-07	Robert WM Riggerbach, Et Ux	104.231
S57 CCC	05-12-23	CNX Land Resources Inc.	236.1
S58 EEE	05-12-06	CNX Land Resources Inc.	70.81
S59 FFF	05-12-05	CNX Land Resources Inc.	61.883
S60	05-12-04	CNX Land Resources Inc.	0.93
S61	05-12-5.1	CNX Land Resources Inc.	0.52
S62	05-12-03	CNX Land Resources Inc.	62.30
S63	05-12-01	United States of America	1.68
S64	05-12-2.1	Consolidation Coal Company/ Murray Energy	22.0
S65	05-12-02	CNX Land Resources Inc.	60.68
S66	05-12-08	Anita Ray Miller-Life	100.35
S67	05-12-13	Linda Hamilton, Et Al	41.887
S68	05-12-7.2	Raymond K. Miller	4.66
S69	05-12-7.1	Raymond K. Miller	1.609
S70	05-12-13.1	Raymond K. Miller	0.113
S71	05-11-15	Lionel L. Persinger, Et Ux	93.0
S72	05-14-13	Ralph D. & Sally Jane Hoyt	222.18
S73	05-15-01	Marcus Sharp & Anglea R. Schlach	121.0
S74	05-14-12.1	Henry Wilson Plunkert Jr.	5.0
S75	05-14-14	Robert L. Shields, Et Al	29.05
S76	05-14-15	Robert L. Shields, Et Al	53.0
S78	05-19-13.1	Donald Shields	0.80
S79	05-15-15	Robert L. Shields, Et Al	49.0
S80	05-15-12	John David Petrock & Thomas Andrew Petrock	150.23
S81	05-15-11	Diana Henry Haynes & Carol Henry	65.59
S82	05-18-03	Olan V. & Patricia E. Rutan	43.677
S83	05-18-04	Olan & Patricia Rutan	65.89
S84	05-15-10	Mark Stanley Ruckman	153.75
S85	05-18-11.1	Edward Lee Burge, Jr.	18.0
S86	05-18-15	Edward Lee Burge, Jr.	2.495
S87	05-18-15.4	Edward Lee Burge, Jr.	22.34
S88	05-18-15.3	Charles Yeater	26.44
S89	05-18-05	Terry Melott	8.14
S90	05-18-23	XCL Midstream Operating LLC	110.0
S91	05-18-06	Charles Yeater	26.0
S92	05-18-07	Charles Yeater	24.22

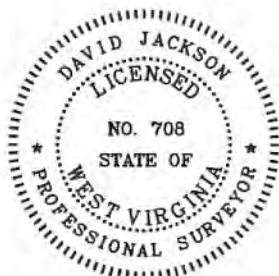
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	OPERATOR'S	WELL PLAT
	WELL #: MCMASTERS N-11HU	PAGE 3 OF 4
	DISTRICT: Franklin	DATE: 02/12/2020
	COUNTY: Marshall	REVISED: 09/17/2020
	STATE: WV	
API #: 47-051-02317		

PG 4 OF 4 **MCMASTERS LEASE**  
**WELL N-11HU**  
**539.4997± ACRES**

Lease No.	Tags	Parcel	Lessor
10*14295	A	5-19-18	MARK E. YOHO AND MARY YOHO, HUSBAND AND WIFE
10*14295	AA	5-19-7-5	SAMANTHA A RADER
Pending	AAA	5-12-15	MARGIERE KEFE, TRUSTEE OF WOODLAND HILL CHURCH OF GOD
10*14295	B	5-19-17	MARK E. YOHO AND MARY YOHO, HUSBAND AND WIFE
10*14423	BB	5-19-7	OLAN V & PATRICIA E RUTAN
10*29270	BBB	5-12-21-1	ROBERT W & WENDY L RIGGENBACH JR
10*14295	C	5-19-24	MARK E YOHO AND MARY YOHO, HUSBAND AND WIFE
10*16735	CC	5-19-7-1	ROBERT L SHIELDS AND REBECCA A SHIELDS
10*14698	CCC	5-12-23	CNX GAS COMPANY LLC CONSOL MINING COMPANY & CNX RCPG LLC, ET AL
10*14297	D	5-19-25	MARK E YOHO AND DAVID E YOHO
10*14423	DD	5-19-7-2	OLAN V & PATRICIA E RUTAN
10*19255	DDD	5-12-3	ROBERT W. RIGGENBACH & SHARON RIGGENBACH, HUSBAND AND WIFE
10*14501	E	5-19-26	ROGER J & BETH E JAMES
10*16994	EE	5-19-6	MARITHA M RUTAN
624146	EEE	5-12-6	OHIO POWDER COMPANY
10*16716	F	5-19-16-1	ROBERT L SHIELDS AND REBECCA A SHIELDS
10*14423	FF	5-19-7-3	OLAN V & PATRICIA E RUTAN
041112	FFF	5-12-5	COLUMBIAN CHEMICALS COMPANY
10*14116	G	5-19-18	DONALD SHIELDS, ET AL
10*14423	GG	5-19-7-4	OLAN V & PATRICIA E RUTAN
10*14297	H	5-19-27	MARK E YOHO AND DAVID E YOHO
10*14928	HH	5-14-11	JOSEPH D. PARRIOTT & NELLIE B. PARRIOTT, HUSBAND AND WIFE
10*14227	I	5-19-14	JAMES & SHERRY BEEGLE ET AL
10*14925	II	5-19-5	MOUNTAIN TOP PRODUCTIONS LLC
10*14141	I	5-18-1	LOIS BARRETT
10*14928	JJ	5-14-12	JOSEPH D. PARRIOTT & NELLIE B. PARRIOTT, HUSBAND AND WIFE
10*14141	K	5-18-1-3	LOIS BARRETT, ET AL
10*14420	KK	5-14-10-4	ELLIS V & WANDA P RINE
10*14938	L	5-19-31	CHARLES F AND DIANA L HAYNES
10*14420	LL	5-14-10	ELLIS V & WANDA P RINE
10*14297	M	5-19-28	MARK E YOHO AND DAVID E YOHO
10*14619	MM	5-14-9	SHIRLEY R MILLER, ET AL
10*18124	N	5-19-37	DAVID E YOHO
10*14619	NN	5-14-9-5	SHIRLEY R MILLER, ET AL
10*14579	O	5-19-30-3	ERNIE LANDERSON & TAMMEY L ANDERSON
10*14619	OO	5-14-9-2	SHIRLEY R MILLER, ET AL
10*14579	P	5-19-30	ERNIE LANDERSON & TAMMEY L ANDERSON
10*14619	PP	5-14-9-3	SHIRLEY R MILLER, ET AL
10*14634	Q	5-19-35	RUSSELL & MARY BLAKE
10*14619	QQ	5-14-9	SHIRLEY R MILLER, ET AL
10*26901	R	5-19-45	CARLY HERRAN
10*14619	RR	5-14-5	SHIRLEY R MILLER, ET AL
10*14579	S	5-19-29	ERNIE LANDERSON & TAMMEY L ANDERSON
10*14619	SS	5-12-39	SHIRLEY R MILLER, ET AL
10*14110	T	5-19-33	RONA LEE MCCARDLE, ET AL
10*14619	TT	5-14-9-1	SHIRLEY R MILLER, ET AL
10*14580	U	5-19-12	ERIN LANTIERON & TAMMEY L ANDERSON
10*14619	UU	5-12-28	SHIRLEY R MILLER, ET AL
10*14141	V	5-19-20	DAVID & DEBORAH TAKACH
10*14619	VV	5-17-17	SHIRLEY R MILLER, ET AL
10*26995	W	5-19-9	STONE HILL MINERALS HOLDINGS LLC, ET AL
0075905000	WW	5-12-16-1	GARY E GIBSON AND RANDALL D GIBSON, ET AL
10*14580	X	5-19-10	ERNIE LANDERSON & TAMMEY L ANDERSON
0075905000	XX	5-12-16	GARY E GIBSON AND RANDALL D GIBSON
10*14580	Y	5-19-11	ERNIE LANDERSON & TAMMEY L ANDERSON
10*24492	YY	5-12-21	EDWARD L GIBSON AND VIOLET L GIBSON ET AL
10*14571	Z	5-19-8	MATTHEW S & BRENDA S ANDERSON
10*21769	ZZ	5-12-14	BETTY HAMILTON, ET AL

Number	TAX MAP - PARCEL	ADJOINER OWNER	ACRES
S93	05-18-15.5	Darrell & Teresa Boley	23.547
S94	05-18-10.1	David V Anderson, Et Ux	1.65
S95	05-18-10.2	David V Anderson, Et Ux	1.377
S96	05-18-10	David & Nancy Anderson	0.907
S97	05-18-12	William L. Wayne, Et Ux	2.270
S98	05-18-16	Charles Yeater	17.768
S99	05-18-13	Southern Sountry Farms Inc.	11.054
S100	05-18-59	Southern Country Farms Inc.	15.79
S101	05-18-30	Jon Schmidt, Et Al	5.46
S102	05-18-13.10	Carl Berg	10.88
S103	05-18-29	Carl G. Berg	5.319
S104	05-18-31	Kenneth E Rastall	6.94
S105	05-18-32	Kenneth E. Rastall	5.335
S106	05-18-32.1	Lori D. Carpenter	5.545
S107	05-18-13.8	Lori D. Carpenter	5.545
S108	05-18-20	Wayne E. Channing, Et Al	75.6
S109	05-18-21	Curtis E. & Michelle J. Hall	43.119
S110	05-18-21.3	Stone Hill Minerals Holdings, LLC	0.811
S111	05-18-21.2	David P. Lissan	1.0
S112	05-18-21.1	Rodney & Rhonda Jackson	5.47
S113	05-18-22	Rodney & Rhonda Jackson	30.345
S114	05-23-2.1	William L. & Janice M. Wayne	2.364
S115	05-23-0.3	Abe J. Hochstetler	50.0
S116	05-23-0.2	Danielle D. Lilley	77.636
S117	05-23-0.4	Abe J. Hochstetler	100.70
S118	05-23-0.1	Patricia Accettolo, Et Al	146.66
S119	05-22-0.5	CNX Gas Company LLC	134.425
S120	05-22-5.1	Williams Ohio Valley Midstream LLC	12.875
S121	05-22-0.6	CNX Gas Company LLC	64.70
S122	05-22-0.8	T.H. Exploration III LLC	48.44
S123	05-22-1.0	T.H. Exploration III LLC	58.40
S125	05-22-1.6	Edward R. Yoho Jr.	57.0
S126	05-22-1.7	CNX Gas Company LLC	37.5
S127	05-22-0.4	CNX Gas Company LLC	159.05
S128	05-19-18.2	Paul V. & Carol Neely	32.672
S129	05-19-18.1	Mark E. Yoho, Et Ux	2.57
S131	05-19-2.1	Sammy E. Whittatch, Et Al	116.45
S133	05-19-20.3	Sidney Harmon	3.715
S134	05-19-20.1	John J. Ebert-Life	3.848
S135	05-19-2.0	Wilbert H. Bungard, Et Ux	114.989
S136	05-19-20.2	Cassandra L. Harmon	7.448
S137	05-14-10.1	Ida Belle Rutan-Life, Ralph R. Hoyt	0.5
S138	05-14-10.2	Ida Belle Rutan-Life, Ralph R. Hoyt	0.495
S139	05-19-0.4	Justin Rine	82.75
S140	05-19-0.3	Milton R. & Linda L. Neal	72.01
S141	05-19-2.2	George A. Knuth & Kelly A. Knuth	71.0
S142	05-19-2.3	WSD Properties LLC	28.4
S143	05-19-0.2	Milton R. & Linda L. Neal	63.1
S144	05-14-0.2	John B. Williams, Et Al	20.71
S145	05-14-0.3	Leroy & Donna K. Anderson	130.0
S146	05-14-0.8	Lawrence Eugene Anderson	18.29
S147	05-14-9.3	Vernie A. Rine, Et Ux	4.118
S148	05-14-9.4	Vernie A. Rine, Et Ux	3.404
S149	05-14-10.3	Vernie A. & Jody K. Rine	1.54
S150	05-14-1.7	Justin E. & Jody Rine	1.1044
S151	05-14-1.6	George E. Knuth	1.6386
S152	05-14-0.7	Donna K. & Leroy Anderson	4.60
S153	05-14-0.4	Leroy & Donna K. Anderson	29.29
S154	05-13-3.2	C. Patricia Wobig	103.66
S155	05-12-2.2	CNX Land Resources Inc.	0.944
S156	05-12-24.3	CNX Land Resources Inc.	18.523
S157	05-12-24.1	WV DOH	0.994
S158	05-12-23.1	James N. Daugherty	0.28
S159	05-12-23.3	WV DOH	0.11
S160	05-12-23.2	Consolidation Coal Co./Murray Energy & CNX Land Resources Inc.	12.5
S161	05-12-6.1	WV DOH	0.31
S162	05-12-6.2	Consolidation Coal Company/ Murray Energy	25.5
S163	05-18-3.1	Nikki L. & Jonathan Stevens	2.22
S164 K	05-18-1.1	Charles F. & Diana L. Haynes	0.392



P.S. 708 *David L Jackson*

47-051-02317



**TUG HILL**  
OPERATING

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

WELL PLAT  
 PAGE 4 OF 4  
 DATE: 02/12/2020  
 REVISED: 09/17/2020

51-02317

WW-6A1  
(5/13)

Operator's Well No. McMasters N-11HU

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

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

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

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

**\*Co-tenancy utilization – At least 7 mineral owners in tract. At least 75% of the royalty owners have executed a lease on the tract. The interests of the remaining co-tenants were acquired pursuant to the Co-tenancy Modernization and Majority Protection Act.**

**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

WW-6A1 Well Bore Tracts

Operator's Well No. McMasters N-11HU

Lease No.	Tags	Parcel	Lessor	Lessee	Royalty	Book	Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment		
10*14295	A	5-19-18	MARK E. YOHO AND MARY YOHO, HUSBAND AND WIFE	TRIENERGY, INC.	1/8+	655	546	NA	19/623 TriEnergy Inc to AB Resources LLC	666/40 AB Resources LLC to Chief Exploration & Development LLC	21/148 TriEnergy Inc and AB Resources LLC to TriEnergy Holdings LLC	21/520 Chief Exploration & Development LLC and Radler 2000 Limited Partnership to Enerplus Resources USA	720/214 TriEnergy Holdings LLC to AB Resources LLC	24/39 AB Resources LLC, Chief Exploration & Development LLC, Radler 2000 Limited Partnership and Enerplus Resources USA to Gastar Exploration USA Inc and 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	
10*14295	B	5-19-17	MARK E. YOHO AND MARY YOHO, HUSBAND AND WIFE	TRIENERGY, INC.	1/8+	655	546	NA	19/623 TriEnergy Inc to AB Resources LLC	666/40 AB Resources LLC to Chief Exploration & Development LLC	21/148 TriEnergy Inc and AB Resources LLC to TriEnergy Holdings LLC	21/520 Chief Exploration & Development LLC and Radler 2000 Limited Partnership to Enerplus Resources USA	720/214 TriEnergy Holdings LLC to AB Resources LLC	24/39 AB Resources LLC, Chief Exploration & Development LLC, Radler 2000 Limited Partnership and Enerplus Resources USA to Gastar Exploration USA Inc and 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	
10*14423	BB	5-19-7	OLAN V & PATRICIA E RUTAN	GASTAR EXPLORATION USA INC	1/8+	727	1	NA	NA	NA	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC
10*29270	BBB	5-12-21.1	ROBERT W & WENDY L RIGGENBACH JR	TH EXPLORATION LLC	1/8+	1090	139	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*14295	C	5-19-24	MARK E. YOHO AND MARY YOHO, HUSBAND AND WIFE	TRIENERGY, INC.	1/8+	655	546	NA	19/623 TriEnergy Inc to AB Resources LLC	666/40 AB Resources LLC to Chief Exploration & Development LLC	21/148 TriEnergy Inc and AB Resources LLC to TriEnergy Holdings LLC	21/520 Chief Exploration & Development LLC and Radler 2000 Limited Partnership to Enerplus Resources USA	720/214 TriEnergy Holdings LLC to AB Resources LLC	24/39 AB Resources LLC, Chief Exploration & Development LLC, Radler 2000 Limited Partnership and Enerplus Resources USA to Gastar Exploration USA Inc and 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	
10*14699	CCC	5-12-23	CNX GAS COMPANY LLC CONSOL MINING COMPANY & CNX RCPC LLC	GASTAR EXPLORATION INC AND ATINUM	1/8+	833	514	NA	NA	NA	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration Inc to TH Exploration II LLC
10*26711	CCC	5-12-23	CNX GAS COMPANY LLC	TH EXPLORATION, LLC	1/8+	1039	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
624146	EEE	5-12-6	OHIO POWER COMPANY ROBERT L SHIELDS AND REBECCA A SHIELDS	PITTSBURGH CONSOLIDATION COAL COMPANY	1/8+	321	319	646/493 CNX Land Resources, Consolidation Coal Company, Consol Pennsylvania Coal Company, Conrheir Coal Company, McElroy Coal Company, Reserve Coal Properties Company and CNX Gas Company LLC	745/117 CNX Land Resources Inc to CNX Gas Company	752/66 CNX Gas Company LLC to Noble Energy Inc	909/94 CNX Gas Company LLC to Noble Energy Inc	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
10*16736	F	5-19-16.1	OHIO POWER COMPANY ROBERT L SHIELDS AND REBECCA A SHIELDS	TH EXPLORATION, LLC	1/8+	942	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	
10*14116	G	5-19-16	DONALD SHIELDS	GASTAR EXPLORATION USA INC	1/8+	669	367	NA	NA	NA	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	

WW-6A1 Well Bore Tracts

Operator's Well No. McMasters N-11HU

10*14117	G	5-19-16	ROBERT L SHIELDS AND REBECCA A SHIELDS	GASTAR EXPLORATION USA INC	1/8+	669	360	NA	NA	NA	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
10*14423	GG	5-19-7.4	OLAN V & PATRICIA E RUTAN	GASTAR EXPLORATION USA INC	1/8+	727	1	NA	NA	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC
10*14928	HH	5-14-11	JOSEPH D. PARRIOTT & NELLIE B. PARRIOTT, HUSBAND AND WIFE	TRIENERGY, INC.	1/8+	660	517	19/623 TriEnergy Inc to AB Resources LLC	666/40 AB Resources LLC to Chief Exploration & Development LLC	21/148 TriEnergy Inc to TriEnergy Holdings LLC	25/1 Chief Exploration & Development, Radler 2000 Limited Partnership and Enerplus Resources USA Corp to Chevron USA Inc	25/105 Chief Exploration & Development, Radler 2000 Limited Partnership and Enerplus Resources USA Corp to Chevron USA Inc	24/319 AB Resources LLC to Chief Exploration & Development and Radler 2000 Limited Partnership	756/397 AB Resources LLC to Chevron USA Inc	32/355 Chevron USA Inc to Gastar Exploration Inc and Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC
10*14127	I	5-19-14	JAMES & SHERRY BEEGLE ET AL	GASTAR EXPLORATION USA INC	1/8+	699	218	NA	NA	NA	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
10*14143	J	5-18-1	LOIS BARRETT	GASTAR EXPLORATION USA INC	1/8+	758	435	NA	NA	NA	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
10*14144	J	5-18-1	RHONDA BARRETT	GASTAR EXPLORATION USA INC	1/8+	760	366	NA	NA	NA	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
10*14145	J	5-18-1	JAMES DONALD BARRETT	GASTAR EXPLORATION USA INC	1/8+	760	372	NA	NA	NA	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
10*14146	J	5-18-1	JO ANNE BARRETT	GASTAR EXPLORATION USA INC	1/8+	760	375	NA	NA	NA	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
10*14147	J	5-18-1	INEZ DORNON	GASTAR EXPLORATION USA INC	1/8+	760	378	NA	NA	NA	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
10*14148	J	5-18-1	HAZEL L RITCHIE	GASTAR EXPLORATION USA INC	1/8+	760	381	NA	NA	NA	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
10*14149	J	5-18-1	MINNIE PFALZGRAF	GASTAR EXPLORATION USA INC	1/8+	760	369	NA	NA	NA	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
10*14150	J	5-18-1	ARLENE MCCORT	GASTAR EXPLORATION USA INC	1/8+	762	448	NA	NA	NA	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

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10*14151	J	5-18-1	RICHARD D LEASURE	GASTAR EXPLORATION USA INC	1/8+	762	451	NA	NA	NA	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
10*14152	J	5-18-1	REBECCA LINN	GASTAR EXPLORATION USA INC	1/8+	762	98	NA	NA	NA	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
10*14153	J	5-18-1	RICHARD LINN	GASTAR EXPLORATION USA INC	1/8+	762	95	NA	NA	NA	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
10*14154	J	5-18-1	JANICE BROWN	GASTAR EXPLORATION USA INC	1/8+	762	92	NA	NA	NA	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
10*14155	J	5-18-1	GUY MCCORT	GASTAR EXPLORATION USA INC	1/8+	765	74	NA	NA	NA	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
10*14156	J	5-18-1	JODIE JOHNSON	GASTAR EXPLORATION USA INC	1/8+	765	80	NA	NA	NA	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
10*14157	J	5-18-1	HARLAN BARRETT	GASTAR EXPLORATION USA INC	1/8+	765	77	NA	NA	NA	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
10*14158	J	5-18-1	JAMES HOLLAND	GASTAR EXPLORATION USA INC	1/8+	765	421	NA	NA	NA	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
10*14159	J	5-18-1	ROSS BARRETT	GASTAR EXPLORATION USA INC	1/8+	765	424	NA	NA	NA	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
10*14160	J	5-18-1	KATHY BECHTLE	GASTAR EXPLORATION USA INC	1/8+	765	436	NA	NA	NA	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
10*14161	J	5-18-1	JANICE DODD	GASTAR EXPLORATION USA INC	1/8+	765	427	NA	NA	NA	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
10*14162	J	5-18-1	ALLEN L YEATER	GASTAR EXPLORATION USA INC	1/8+	768	555	NA	NA	NA	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
10*14163	J	5-18-1	MARGARET WILSON FITZSIMMONS	GASTAR EXPLORATION USA INC	1/8+	768	567	NA	NA	NA	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



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10*14164	J	5-18-1	BARBARA YEATER PERSINGER	GASTAR EXPLORATION USA INC	1/8+	768	557	NA	NA	NA	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
10*14165	J	5-18-1	RACHEL A YEATER	GASTAR EXPLORATION USA INC	1/8+	768	559	NA	NA	NA	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
10*14166	J	5-18-1	TERI LEE YEATER PARRISH	GASTAR EXPLORATION USA INC	1/8+	768	563	NA	NA	NA	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
10*14167	J	5-18-1	KAREN YEATER JONES	GASTAR EXPLORATION USA INC	1/8+	768	565	NA	NA	NA	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
10*14168	J	5-18-1	JUDITH HANNAHS	GASTAR EXPLORATION USA INC	1/8+	770	468	NA	NA	NA	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
10*14169	J	5-18-1	LENA G BLOHM	GASTAR EXPLORATION USA INC	1/8+	770	471	NA	NA	NA	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
10*14170	J	5-18-1	JAMES C KLINE	GASTAR EXPLORATION USA INC	1/8+	772	405	NA	NA	NA	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
10*14171	J	5-18-1	MICHAEL GALE AIF JOSEPHINE GALE	GASTAR EXPLORATION USA INC	1/8+	775	23	NA	NA	NA	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
10*14172	J	5-18-1	JOHN R & LINDA WILSON	GASTAR EXPLORATION USA INC	1/8+	775	25	NA	NA	NA	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
10*14173	J	5-18-1	BARBARA L YEATER	GASTAR EXPLORATION USA INC	1/8+	775	27	NA	NA	NA	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
10*14174	J	5-18-1	CHARLES E YEATER JR	GASTAR EXPLORATION USA INC	1/8+	775	29	NA	NA	NA	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
10*14175	J	5-18-1	JANE LYNN SWINGLE	GASTAR EXPLORATION USA INC	1/8+	775	19	NA	NA	NA	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
10*14176	J	5-18-1	CONRAD S YEATER	GASTAR EXPLORATION USA INC	1/8+	775	368	NA	NA	NA	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

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10*14177	J	5-18-1	CAROLYN LOWE WELLER	GASTAR EXPLORATION USA INC	1/8+	775	366	NA	NA	NA	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
10*14178	J	5-18-1	LEANETTE LONG	GASTAR EXPLORATION USA INC	1/8+	775	363	NA	NA	NA	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
10*14179	J	5-18-1	VERA SHIRLENE & ARTHUR WORKMAN	GASTAR EXPLORATION USA INC	1/8+	775	361	NA	NA	NA	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
10*14180	J	5-18-1	DIANA S GRAFTON	GASTAR EXPLORATION USA INC	1/8+	776	303	NA	NA	NA	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
10*14181	J	5-18-1	DONALD BROOKS WESLEY	GASTAR EXPLORATION USA INC	1/8+	776	305	NA	NA	NA	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
10*14182	J	5-18-1	RICK WEEKLY	GASTAR EXPLORATION USA INC	1/8+	776	307	NA	NA	NA	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
10*14183	J	5-18-1	NANCY J FOTI	GASTAR EXPLORATION USA INC	1/8+	776	299	NA	NA	NA	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
10*14184	J	5-18-1	HESTER LORETTA DUGAN	GASTAR EXPLORATION USA INC	1/8+	776	301	NA	NA	NA	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
10*14185	J	5-18-1	NICOLE WEEKLY	GASTAR EXPLORATION USA INC	1/8+	776	309	NA	NA	NA	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
10*14186	J	5-18-1	WILLIAM GLENN YEATER	GASTAR EXPLORATION USA INC	1/8+	776	311	NA	NA	NA	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
10*14187	J	5-18-1	GERALD E YEATER	GASTAR EXPLORATION USA INC	1/8+	776	323	NA	NA	NA	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
10*14188	J	5-18-1	WILMA M MILLER	GASTAR EXPLORATION USA INC	1/8+	776	321	NA	NA	NA	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
10*14189	J	5-18-1	BILLIE JO BETHEL	GASTAR EXPLORATION USA INC	1/8+	776	319	NA	NA	NA	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

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10*14190	J	5-18-1	ELIZABETH LOUISE YEATER MORAN	GASTAR EXPLORATION USA INC	1/8+	776	317	NA	NA	NA	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC
10*14191	J	5-18-1	LARRY W. YEATER	GASTAR EXPLORATION USA INC	1/8+	776	315	NA	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC
10*14192	J	5-18-1	MYRA HEWITT	GASTAR EXPLORATION USA INC	1/8+	777	581	NA	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC
10*14193	J	5-18-1	SONDRA R KING	GASTAR EXPLORATION USA INC	1/8+	777	579	NA	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC
10*14194	J	5-18-1	SANDRA REID CUMPSTON	GASTAR EXPLORATION USA INC	1/8+	777	574	NA	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC
10*14195	J	5-18-1	FREDERICK MAXWELL YEATER	GASTAR EXPLORATION USA INC	1/8+	777	583	NA	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC
10*14196	J	5-18-1	ROSEMARY AGNES YEATER LUNEMANN	GASTAR EXPLORATION USA INC	1/8+	777	587	NA	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC
10*14197	J	5-18-1	PHYLLIS YEATER GREGOSKY	GASTAR EXPLORATION USA INC	1/8+	777	585	NA	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC
10*14198	J	5-18-1	MARY J YEATER EARNSHAW	GASTAR EXPLORATION USA INC	1/8+	777	590	NA	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC
10*14199	J	5-18-1	MARY MARGARET WELLMAN BURLEY	GASTAR EXPLORATION USA INC	1/8+	779	488	NA	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC
10*14200	J	5-18-1	RANDALL D MORRIS	GASTAR EXPLORATION USA INC	1/8+	779	490	NA	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC
10*14201	J	5-18-1	WILLIAM J VEST TRUST AGMT LARRY W YEATER TRUSTEE	GASTAR EXPLORATION USA INC	1/8+	786	490	NA	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC
10*14202	J	5-18-1	MAY H RUCKMAN	GASTAR EXPLORATION USA INC	1/8+	779	486	NA	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC

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10*14203	J	5-18-1	LINDA KAY MORRIS WILSON	GASTAR EXPLORATION USA INC	1/8+	781	541	NA	NA	NA	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
10*14204	J	5-18-1	JEANETTE SOUTH	GASTAR EXPLORATION USA INC	1/8+	781	537	NA	NA	NA	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
10*14205	J	5-18-1	ANN LOUISE YEATER MARTIN	GASTAR EXPLORATION USA INC	1/8+	781	533	NA	NA	NA	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
10*14206	J	5-18-1	COLLEEN MCCLAIN MOORE	GASTAR EXPLORATION USA INC	1/8+	781	535	NA	NA	NA	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
10*14207	J	5-18-1	FREDRIC & BETTY RICHTER	GASTAR EXPLORATION USA INC	1/8+	781	612	NA	NA	NA	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
10*14208	J	5-18-1	NANCY D TRUEX	GASTAR EXPLORATION USA INC	1/8+	782	202	NA	NA	NA	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
10*14209	J	5-18-1	MARY JANE BUNGARD	GASTAR EXPLORATION USA INC	1/8+	782	210	NA	NA	NA	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
10*14210	J	5-18-1	JANET E PERSONS	GASTAR EXPLORATION USA INC	1/8+	782	204	NA	NA	NA	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
10*14211	J	5-18-1	STEPHEN L YEATER	GASTAR EXPLORATION USA INC	1/8+	782	206	NA	NA	NA	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
10*14212	J	5-18-1	MARTHA ANN GAMBLE & DAN MIGLIORINI	GASTAR EXPLORATION USA INC	1/8+	782	609	NA	NA	NA	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
10*14213	J	5-18-1	SHIRLEY E GBUR	GASTAR EXPLORATION USA INC	1/8+	782	611	NA	NA	NA	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
10*14214	J	5-18-1	SIDNEY F YOHO JR	GASTAR EXPLORATION USA INC	1/8+	782	605	NA	NA	NA	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
10*14215	J	5-18-1	SCOTT K & KATHIE J RICHTER	GASTAR EXPLORATION USA INC	1/8+	782	607	NA	NA	NA	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

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10*14216	J	5-18-1	DOUGLAS I GAMBLE	GASTAR EXPLORATION USA INC	1/8+	783	493	NA	NA	NA	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
10*14217	J	5-18-1	DONNA S AND DONALD S KIRCH	GASTAR EXPLORATION USA INC	1/8+	783	497	NA	NA	NA	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
10*14218	J	5-18-1	MICKEY L PORTER	GASTAR EXPLORATION USA INC	1/8+	783	506	NA	NA	NA	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
10*14219	J	5-18-1	SUSAN J BROWN	GASTAR EXPLORATION USA INC	1/8+	783	504	NA	NA	NA	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
10*14220	J	5-18-1	JANIS L & ROY T MILLER	GASTAR EXPLORATION USA INC	1/8+	783	502	NA	NA	NA	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
10*14221	J	5-18-1	DEANNA R LAMBERT	GASTAR EXPLORATION USA INC	1/8+	783	500	NA	NA	NA	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
10*14222	J	5-18-1	ORVILLE V & MADONNA R BLANTON	GASTAR EXPLORATION USA INC	1/8+	783	512	NA	NA	NA	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
10*14223	J	5-18-1	SARAH E HOLT	GASTAR EXPLORATION USA INC	1/8+	783	510	NA	NA	NA	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
10*14224	J	5-18-1	SAMUEL E ZUGARO	GASTAR EXPLORATION USA INC	1/8+	784	193	NA	NA	NA	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
10*14225	J	5-18-1	THOMAS FRANCIS YOHO	GASTAR EXPLORATION USA INC	1/8+	784	195	NA	NA	NA	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
10*14226	J	5-18-1	MONICA ANN RENN	GASTAR EXPLORATION USA INC	1/8+	784	197	NA	NA	NA	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
10*14227	J	5-18-1	HUBERT D MORRIS	GASTAR EXPLORATION USA INC	1/8+	784	199	NA	NA	NA	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
10*14228	J	5-18-1	KALFUS T DOUGHMAN	GASTAR EXPLORATION USA INC	1/8+	786	392	NA	NA	NA	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

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10*14229	J	5-18-1	JEFFREY H WILSON & PRISCILLA S WILSON	GASTAR EXPLORATION USA INC	1/8+	786	375	NA	NA	NA	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
10*14230	J	5-18-1	JOSEPH P & BARBARA A WILSON	GASTAR EXPLORATION USA INC	1/8+	786	377	NA	NA	NA	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
10*14231	J	5-18-1	YVONNE MARIE SMITH	GASTAR EXPLORATION USA INC	1/8+	786	379	NA	NA	NA	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
10*14232	J	5-18-1	SANDRA L KELLY	GASTAR EXPLORATION USA INC	1/8+	786	400	NA	NA	NA	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
10*14233	J	5-18-1	THOMAS E PORTER	GASTAR EXPLORATION USA INC	1/8+	786	381	NA	NA	NA	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
10*14234	J	5-18-1	WILLIAM D ADAMS	GASTAR EXPLORATION USA INC	1/8+	786	373	NA	NA	NA	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
10*14235	J	5-18-1	JOHN C WILSON	GASTAR EXPLORATION USA INC	1/8+	786	386	NA	NA	NA	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
10*14236	J	5-18-1	RODNEY C LOWE	GASTAR EXPLORATION USA INC	1/8+	786	367	NA	NA	NA	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
10*14237	J	5-18-1	KELLY KERN	GASTAR EXPLORATION USA INC	1/8+	787	566	NA	NA	NA	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
10*14238	J	5-18-1	LYNN C LAMBERTSEN	GASTAR EXPLORATION USA INC	1/8+	789	283	NA	NA	NA	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
10*14239	J	5-18-1	JAMES S WILSON & ANN D WILSON	GASTAR EXPLORATION USA INC	1/8+	789	281	NA	NA	NA	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
10*14240	J	5-18-1	SHARON L YEATER	GASTAR EXPLORATION USA INC	1/8+	789	287	NA	NA	NA	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
10*14241	J	5-18-1	CAROL JUDY LANCH	GASTAR EXPLORATION USA INC	1/8+	789	305	NA	NA	NA	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

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10*14242	J	5-18-1	PATTI J WILSON	GASTAR EXPLORATION USA INC	1/8+	789	581	NA	NA	NA	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
10*14243	J	5-18-1	JANET HILPERT	GASTAR EXPLORATION USA INC	1/8+	789	579	NA	NA	NA	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
10*14244	J	5-18-1	ANN M MARTINO SIMONE	GASTAR EXPLORATION USA INC	1/8+	790	580	NA	NA	NA	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
10*14245	J	5-18-1	ODETTE YEATER	GASTAR EXPLORATION USA INC	1/8+	790	503	NA	NA	NA	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
10*14246	J	5-18-1	SANDRA M WINSLOW	GASTAR EXPLORATION USA INC	1/8+	790	517	NA	NA	NA	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
10*14247	J	5-18-1	RICKEY ALLEN YEATER	GASTAR EXPLORATION USA INC	1/8+	790	513	NA	NA	NA	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
10*14248	J	5-18-1	TERRY W YEATER	GASTAR EXPLORATION USA INC	1/8+	790	515	NA	NA	NA	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
10*14249	J	5-18-1	CAROL VAN SCYOC	GASTAR EXPLORATION USA INC	1/8+	790	546	NA	NA	NA	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
10*14250	J	5-18-1	DONALD REX QUIGLEY	GASTAR EXPLORATION USA INC	1/8+	790	533	NA	NA	NA	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
10*14251	J	5-18-1	ELLEN IONA GORBY HEATH	GASTAR EXPLORATION USA INC	1/8+	792	108	NA	NA	NA	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
10*14252	J	5-18-1	THELMA VIRGINIA WHIPKEY YEATER	GASTAR EXPLORATION USA INC	1/8+	794	519	NA	NA	NA	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
10*14253	J	5-18-1	PAGE D HUNT	GASTAR EXPLORATION USA INC	1/8+	795	152	NA	NA	NA	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
10*14254	J	5-18-1	PATRICIA A GULUTZ	GASTAR EXPLORATION USA INC	1/8+	796	72	NA	NA	NA	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

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10*14255	J	5-18-1	RUSSELL BARRETT	GASTAR EXPLORATION USA INC	1/8+	797	193	NA	NA	NA	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
10*14256	J	5-18-1	MICHAEL JOHNSON	GASTAR EXPLORATION USA INC	1/8+	799	55	NA	NA	NA	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
10*14257	J	5-18-1	KATHRYN L. MILLER	GASTAR EXPLORATION USA INC	1/8+	799	534	NA	NA	NA	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
10*14258	J	5-18-1	MARGUERITE HARBISON	GASTAR EXPLORATION USA INC	1/8+	799	532	NA	NA	NA	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
10*14259	J	5-18-1	GEORGE MARTINO JR	GASTAR EXPLORATION USA INC	1/8+	803	146	NA	NA	NA	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
10*14260	J	5-18-1	JOHN K OTTO	GASTAR EXPLORATION USA INC	1/8+	803	160	NA	NA	NA	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
10*14261	J	5-18-1	JEAN MARIE SHEPARD	GASTAR EXPLORATION USA INC	1/8+	804	249	NA	NA	NA	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
10*14262	J	5-18-1	MICHAEL B SHEPARD	GASTAR EXPLORATION USA INC	1/8+	804	251	NA	NA	NA	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
10*14263	J	5-18-1	LAURIE ANN SHEPARD	GASTAR EXPLORATION USA INC	1/8+	804	243	NA	NA	NA	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
10*14264	J	5-18-1	WILLIAM LEWIS OTTO	GASTAR EXPLORATION USA INC	1/8+	809	533	NA	NA	NA	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
10*14265	J	5-18-1	EDWARD F & KAREN SIMS	GASTAR EXPLORATION USA INC	1/8+	816	12	NA	NA	NA	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
10*14266	J	5-18-1	GREGORY STEINHART	GASTAR EXPLORATION USA INC	1/8+	818	564	NA	NA	NA	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
10*14267	J	5-18-1	NANCY WILKOFF SHEBISH	GASTAR EXPLORATION INC	1/8+	833	523	NA	NA	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration Inc to TH Exploration II LLC
10*14268	J	5-18-1	JACQUELINE M CASILLAS-DUKE	GASTAR EXPLORATION INC	1/8+	839	530	NA	NA	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration Inc to TH Exploration II LLC



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10*14269	J	5-18-1	SHARON D SMITH	GASTAR EXPLORATION INC	1/8+	840	160	NA	NA	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration Inc to TH Exploration II LLC
10*14270	J	5-18-1	ANNA M. BARRETT	GASTAR EXPLORATION USA INC	1/8+	734	457	NA	NA	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration Inc to TH Exploration II LLC
10*14271	J	5-18-1	RICHARD THOMAS BARRETT	GASTAR EXPLORATION USA INC	1/8+	745	582	NA	NA	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration Inc to TH Exploration II LLC
10*14272	J	5-18-1	ROBERT CLARK ASPLEY	GASTAR EXPLORATION INC	1/8+	844	85	NA	NA	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration Inc to TH Exploration II LLC
10*14273	J	5-18-1	MARY ANNE YEATER MACHAMER	GASTAR EXPLORATION INC	1/8+	852	258	NA	NA	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration Inc to TH Exploration II LLC
10*14274	J	5-18-1	LAURA L YEATER HILL	GASTAR EXPLORATION INC	1/8+	852	245	NA	NA	NA	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC
10*14275	J	5-18-1	CAROL RAE YEATER	GASTAR EXPLORATION INC	1/8+	852	247	NA	NA	NA	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC
10*14276	J	5-18-1	REBECCA MCPEEK NORRIS	GASTAR EXPLORATION INC	1/8+	854	595	NA	NA	NA	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC
10*14277	J	5-18-1	KATHLEEN L YEATER	GASTAR EXPLORATION INC	1/8+	854	593	NA	NA	NA	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC
10*14278	J	5-18-1	DAVID GALE	GASTAR EXPLORATION INC	1/8+	854	591	NA	NA	NA	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC
10*14279	J	5-18-1	WILLIAM BERNARD YEATER	GASTAR EXPLORATION INC	1/8+	854	589	NA	NA	NA	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC
10*14280	J	5-18-1	PAUL EDWARD YEATER	GASTAR EXPLORATION INC	1/8+	854	587	NA	NA	NA	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC
10*14281	J	5-18-1	DAWN MCPEEK WREZINSKI	GASTAR EXPLORATION INC	1/8+	860	426	NA	NA	NA	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC
10*14282	J	5-18-1	CHERYL VAN PELT	GASTAR EXPLORATION INC	1/8+	860	428	NA	NA	NA	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC
10*14283	J	5-18-1	MARY JO BARRETT	GASTAR EXPLORATION INC	1/8+	862	438	NA	NA	NA	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC
10*14284	J	5-18-1	JULIE BRIGGS	GASTAR EXPLORATION INC	1/8+	862	435	NA	NA	NA	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC
10*14285	J	5-18-1	EARL BARRETT JR	GASTAR EXPLORATION INC	1/8+	862	432	NA	NA	NA	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC





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10*16717	J	5-18-1	JAMES L REID AND SHERRY L REID	TH EXPLORATION, LLC	1/8+	925	265	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*16723	J	5-18-1	KATHY N HAWKINS ALBRIGHT AND GEOFFREY A ALBRIGHT	TH EXPLORATION, LLC	1/8+	925	263	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*16724	J	5-18-1	ROBERT W MOCK	TH EXPLORATION, LLC	1/8+	925	291	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*16725	J	5-18-1	RICHARD J LEASURE	TH EXPLORATION, LLC	1/8+	925	261	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*16727	J	5-18-1	JOHN C FRAME	TH EXPLORATION, LLC	1/8+	925	269	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*16773	J	5-18-1	CASEY L COUCH AND MARIAN BLAIR COUCH	TH EXPLORATION, LLC	1/8+	925	267	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*16774	J	5-18-1	KIM L HAWKINS	TH EXPLORATION, LLC	1/8+	925	293	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*16775	J	5-18-1	WILLIAM CHARLES AND VANITA G ATWELL	TH EXPLORATION, LLC	1/8+	925	303	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*16776	J	5-18-1	MARTHA C GRIMES	TH EXPLORATION, LLC	1/8+	925	295	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*16816	J	5-18-1	BETH ANN AND CHRISTOPHER D ZINKEN	TH EXPLORATION, LLC	1/8+	925	299	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*16901	J	5-18-1	BRIAN LEE STONE	TH EXPLORATION, LLC	1/8+	925	301	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*17225	J	5-18-1	RUTH ARLENE AND WILLIAM A WYER	TH EXPLORATION, LLC	1/8+	925	305	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*17337	J	5-18-1	ANNETTE M JOHNSON AND ARTHUR Q JOHNSON	TH EXPLORATION, LLC	1/8+	925	307	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*17411	J	5-18-1	IRENE HOLLAND AND JOHN HOLLAND	TH EXPLORATION, LLC	1/8+	927	151	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*17460	J	5-18-1	THOMAS V HAUCK	TH EXPLORATION, LLC	1/8+	925	310	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*17819	J	5-18-1	GEORGE T GALE JR AND CAROLE A GALE	TH EXPLORATION, LLC	1/8+	925	335	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18631	J	5-18-1	LINDA K STARR AND GEORGE E STARR	TH EXPLORATION, LLC	1/8+	927	153	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18632	J	5-18-1	RICHARD HOLLAND	TH EXPLORATION, LLC	1/8+	927	155	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18633	J	5-18-1	BREYLIANN LEE SPAIN	TH EXPLORATION, LLC	1/8+	927	96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*27959	J	5-18-1	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION, LLC	1/8+	1063	594	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*14142	J	5-18-1	BENJAMIN FRANKLIN HENRY	GASTAR EXPLORATION USA INC	1/8+	718	498	NA	NA	NA	NA	NA	NA	735/263 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	
10*27684	J	5-18-1	VICTORIA MCPHEE ET AL*	TH EXPLORATION, LLC	1/8+	1060	233	NA	NA	NA	NA	NA	NA	NA	NA	NA	
10*14938	L	5-19-31	CHARLES F AND DIANA L HAYNES	TRIENERGY HOLDINGS, LLC	1/8+	711	306	NA	NA	24/430 TriEnergy Holdings LLC to NPAR	24/466 NPAR to Chief Exploration & Development LLC and Radler 2000 Limited Partnership	25/1 Chief Exploration & Development LLC, Radler 2000 Limited Partnership and Enerplus Resources USA Corp to Chevron USA Inc	25/105 Chief Exploration & Development LLC, Radler 2000 Limited Partnership and Enerplus Resources USA Corp to Chevron USA Inc	756/332 NPAR to Chevron USA Inc	32/355 Chevron USA Inc to Gastar Exploration Inc and Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	
10*14420	LL	5-14-10	FIJIS V & WANDA P RINE	GASTAR EXPLORATION USA INC	1/8+	725	141	NA	NA	NA	NA	NA	NA	735/263 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	
10*14619	NN	5-14-9.5	SHIRLEY R MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715	414	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA Inc and 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	

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10*14620	NN	5-14-9.5	ANITA RAE MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715	416	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14621	NN	5-14-9.5	WILLIAM DALE MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715	415	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14622	NN	5-14-9.5	KELLY D MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	713	606	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14623	NN	5-14-9.5	DUANE D MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	717	149	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14624	NN	5-14-9.5	DOUGLAS E MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	725	559	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14625	NN	5-14-9.5	JACQUELYN J JOHNSON AND SAMMY R JOHNSON	CHESAPEAKE APPALACHIA LLC	1/8+	715	616	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14626	NN	5-14-9.5	STEVEN POND	CHESAPEAKE APPALACHIA LLC	1/8+	715	622	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14627	NN	5-14-9.5	BRIAN & LENA POND	CHESAPEAKE APPALACHIA LLC	1/8+	717	51	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14628	NN	5-14-9.5	TEXYN L MILLER AND GEORGIA A MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715	514	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14629	NN	5-14-9.5	GERALD R MILLER AND LEE ANNE MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	717	1	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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



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10*23896	NN	5-14-9.5	MOLLY JO MORROW MCMAHON AND JOHN D MCMAHON	TH EXPLORATION, LLC	1/8+	1017	489	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23969	NN	5-14-9.5	MARK A JOHNSON ET AL JONATHAN E TURAK, SPECIAL COMMISSIONER	TH EXPLORATION, LLC	1/8+	1020	195	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*26440	NN	5-14-9.5	MARIA T FLORES	TH EXPLORATION, LLC	1/8+	1035	161	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*26995	NN	5-14-9.5	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION, LLC	1/8+	1046	145	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q083768116	NN	5-14-9.5	SUSANNE S QUARTERMAN	NOBLE ENERGY INC	1/8+	890	606	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551007	NN	5-14-9.5	RODNEY F PETERSON	NOBLE ENERGY INC	1/8+	870	380	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551012	NN	5-14-9.5	NORA K POWDERLY	NOBLE ENERGY INC	1/8+	873	83	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551021	NN	5-14-9.5	NORA K POWDERLY	NOBLE ENERGY INC	1/8+	881	32	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551003	NN	5-14-9.5	MURIEL ANNE MILLER AND ALAN POWELL	NOBLE ENERGY INC	1/8+	860	541	NA	NA	NA	35/172 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768114	NN	5-14-9.5	MARY S SCHOLL	NOBLE ENERGY INC	1/8+	890	572	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551014	NN	5-14-9.5	MARY F WEILAND	NOBLE ENERGY INC	1/8+	873	126	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768113	NN	5-14-9.5	KEVIN M POWDERLY	NOBLE ENERGY INC	1/8+	890	515	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC

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Q076551004	NN	5-14-9.5	KATHLEEN A SULLIVAN AND THOMAS SULLIVAN	NOBLE ENERGY INC	1/8+	870	364	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551015	NN	5-14-9.5	JANE H BARNSTEINER AND JOANNE M DISCH	NOBLE ENERGY INC	1/8+	873	132	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551017	NN	5-14-9.5	JAMES T SCHOLL	NOBLE ENERGY INC	1/8+	878	365	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551010	NN	5-14-9.5	JAMES E HERMAN	NOBLE ENERGY INC	1/8+	873	130	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768091	NN	5-14-9.5	HARRIET C VENTURA AND ROCCO VENTURA	NOBLE ENERGY INC	1/8+	894	541	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551009	NN	5-14-9.5	HARRIET C HERMAN AND JOSEPH H WILKINSON	NOBLE ENERGY INC	1/8+	873	122	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551005	NN	5-14-9.5	FRANCIS FISCHER AND JACQUELINE FISCHER	NOBLE ENERGY INC	1/8+	870	366	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551013	NN	5-14-9.5	EUGENIA A KERR	NOBLE ENERGY INC	1/8+	873	120	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551008	NN	5-14-9.5	EILEEN T POWDERLY	NOBLE ENERGY INC	1/8+	873	81	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC



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Q076551011	NN	5-14-9.5	EDWARD P POWDERLY AND MARILYN POWDERLY	NOBLE ENERGY INC	1/8+	873	85	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551007	NN	5-14-9.5	DENNIS FISCHER AND SHARRON A FISCHER	NOBLE ENERGY INC	1/8+	870	358	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551002	NN	5-14-9.5	DAVID LEE EVANS JR AND NOVELLA EVANS	NOBLE ENERGY INC	1/8+	864	180	NA	NA	NA	35/172 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551020	NN	5-14-9.5	BRIDGET A POWDERLY	NOBLE ENERGY INC	1/8+	881	26	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768115	NN	5-14-9.5	BRIAN P POWDERLY AND ANITA POWDERLY	NOBLE ENERGY INC	1/8+	890	566	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768080	NN	5-14-9.5	ANTHONY T POWDERLY AND BARBARA M POWDERLY	NOBLE ENERGY INC	1/8+	878	363	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551017	NN	5-14-9.5	ANNE GALBALLY AND JAMES F GALBALLY	NOBLE ENERGY INC	1/8+	878	373	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
10*14579	O	5-19-30.1	ERNIE L ANDERSON & TAMMEY L ANDERSON	CHESAPEAKE APPALACHIA LLC	1/8+	681	507	NA	NA	NA	NA	NA	22/200 Chesapeake Appalachia LLC to StatOil Onshore Properties Inc	27/321 Chesapeake Appalachia LLC and StatOil Onshore Properties Inc to Gastar Exploration USA Inc and 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
10*14619	OO	5-14-9.2	SHIRLEY R MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715	414	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA Inc and 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	

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10*14620	OO	5-14-9.2	ANITA RAE MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715	416	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14621	OO	5-14-9.2	WILLIAM DALE MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715	415	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14622	OO	5-14-9.2	KELLY D MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	713	606	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14623	OO	5-14-9.2	DUANE D MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	717	149	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14624	OO	5-14-9.2	DOUGLAS E MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	725	559	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14625	OO	5-14-9.2	JACQUELYN J JOHNSON AND SAMMY R JOHNSON	CHESAPEAKE APPALACHIA LLC	1/8+	715	616	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14626	OO	5-14-9.2	STEVEN POND	CHESAPEAKE APPALACHIA LLC	1/8+	715	622	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14627	OO	5-14-9.2	BRIAN & LENA POND	CHESAPEAKE APPALACHIA LLC	1/8+	717	51	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14628	OO	5-14-9.2	TEXYN L MILLER AND GEORGIA A MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715	514	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14629	OO	5-14-9.2	GERALD R MILLER AND LEE ANNE MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	717	1	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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



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10*23896	OO	5-14-9.2	MOLLY JO MORROW MCMAHON AND JOHN D MCMAHON	TH EXPLORATION, LLC	1/8+	1017	489	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23969	OO	5-14-9.2	MARK A JOHNSON ET AL JONATHAN E TURAK, SPECIAL COMMISSIONER	TH EXPLORATION, LLC	1/8+	1020	195	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*26440	OO	5-14-9.2	MARIA T FLORES	TH EXPLORATION, LLC	1/8+	1035	161	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q083768116	OO	5-14-9.2	SUSANNE S QUARTERMAN	NOBLE ENERGY INC	1/8+	890	606	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551007	OO	5-14-9.2	RODNEY F PETERSON	NOBLE ENERGY INC	1/8+	870	380	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551012	OO	5-14-9.2	NORA K POWDERLY	NOBLE ENERGY INC	1/8+	873	83	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551021	OO	5-14-9.2	NORA K POWDERLY	NOBLE ENERGY INC	1/8+	881	32	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551003	OO	5-14-9.2	MURIEL ANNE MILLER AND ALAN POWELL	NOBLE ENERGY INC	1/8+	860	541	NA	NA	NA	35/172 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768114	OO	5-14-9.2	MARY S SCHOLL	NOBLE ENERGY INC	1/8+	890	572	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551014	OO	5-14-9.2	MARY F WEILAND	NOBLE ENERGY INC	1/8+	873	126	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768113	OO	5-14-9.2	KEVIN M POWDERLY	NOBLE ENERGY INC	1/8+	890	515	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC

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Q076551004	OO	5-14-9.2	KATHLEEN A SULLIVAN AND THOMAS SULLIVAN	NOBLE ENERGY INC	1/8+	870	364	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551015	OO	5-14-9.2	JANE H BARNSTEINER AND JOANNE M DISCH	NOBLE ENERGY INC	1/8+	873	132	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551017	OO	5-14-9.2	JAMES T SCHOLL	NOBLE ENERGY INC	1/8+	878	365	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551010	OO	5-14-9.2	JAMES E HERMAN	NOBLE ENERGY INC	1/8+	873	130	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768091	OO	5-14-9.2	HARRIET C VENTURA AND ROCCO VENTURA	NOBLE ENERGY INC	1/8+	894	541	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551009	OO	5-14-9.2	HARRIET C HERMAN AND JOSEPH H WILKINSON	NOBLE ENERGY INC	1/8+	873	122	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551005	OO	5-14-9.2	FRANCIS FISCHER AND JACQUELINE FISCHER	NOBLE ENERGY INC	1/8+	870	366	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q07551013	OO	5-14-9.2	EUGENIA A KERR	NOBLE ENERGY INC	1/8+	873	120	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551008	OO	5-14-9.2	EILEEN T POWDERLY	NOBLE ENERGY INC	1/8+	873	81	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC

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Q076551011	OO	5-14-9.2	EDWARD P POWDERLY AND MARILYN POWDERLY	NOBLE ENERGY INC	1/8+	873	85	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551007	OO	5-14-9.2	DENNIS FISCHER AND SHARRON A FISCHER	NOBLE ENERGY INC	1/8+	870	358	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551002	OO	5-14-9.2	DAVID LEE EVANS JR AND NOVELLA EVANS	NOBLE ENERGY INC	1/8+	864	180	NA	NA	NA	35/172 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551020	OO	5-14-9.2	BRIDGET A POWDERLY	NOBLE ENERGY INC	1/8+	881	26	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768115	OO	5-14-9.2	BRIAN P POWDERLY AND ANITA POWDERLY	NOBLE ENERGY INC	1/8+	890	566	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768080	OO	5-14-9.2	ANTHONY T POWDERLY AND BARBARA M POWDERLY	NOBLE ENERGY INC	1/8+	878	363	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551017	OO	5-14-9.2	ANNE GALBALLY AND JAMES F GALBALLY	NOBLE ENERGY INC	1/8+	878	373	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
10*14579	P	5-19-30	ERNIE L ANDERSON & TAMMEY L ANDERSON	CHESAPEAKE APPALACHIA LLC	1/8+	681	507	NA	NA	NA	NA	NA	22/200 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and 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
10*14619	PP	5-14-9.1	SHIRLEY R MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715	414	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA Inc and 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	

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10*14620	PP	5-14-9.1	ANITA RAE MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715	416	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14621	PP	5-14-9.1	WILLIAM DALE MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715	415	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14622	PP	5-14-9.1	KELLY D MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	713	606	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14623	PP	5-14-9.1	DUANE D MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	717	149	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14624	PP	5-14-9.1	DOUGLAS E MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	725	559	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14625	PP	5-14-9.1	JACQUELYN J JOHNSON AND SAMMY R JOHNSON	CHESAPEAKE APPALACHIA LLC	1/8+	715	616	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14626	PP	5-14-9.1	STEVEN POND	CHESAPEAKE APPALACHIA LLC	1/8+	715	622	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14627	PP	5-14-9.1	BRIAN & LENA POND	CHESAPEAKE APPALACHIA LLC	1/8+	717	51	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14628	PP	5-14-9.1	TEXYN L MILLER AND GEORGIA A MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715	514	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14629	PP	5-14-9.1	GERALD R MILLER AND LEE ANNE MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	717	1	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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





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10*23896	PP	5-14-9.1	MOLLY JO MORROW MCMAHON AND JOHN D MCMAHON	TH EXPLORATION, LLC	1/8+	1017	489	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23969	PP	5-14-9.1	MARK A JOHNSON ET AL JONATHAN E TURAK, SPECIAL COMMISSIONER	TH EXPLORATION, LLC	1/8+	1020	195	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*26440	PP	5-14-9.1	MARIA T FLORES	TH EXPLORATION, LLC	1/8+	1035	161	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*26995	PP	5-14-9.1	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION, LLC	1/8+	1046	145	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q083768116	PP	5-14-9.1	SUSANNE S QUARTERMAN	NOBLE ENERGY INC	1/8+	890	606	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551007	PP	5-14-9.1	RODNEY F PETERSON	NOBLE ENERGY INC	1/8+	870	380	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551021	PP	5-14-9.1	NORA K POWDERLY	NOBLE ENERGY INC	1/8+	881	32	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551003	PP	5-14-9.1	MURIEL ANNE MILLER AND ALAN POWELL	NOBLE ENERGY INC	1/8+	860	541	NA	NA	NA	35/172 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768114	PP	5-14-9.1	MARY S SCHOLL	NOBLE ENERGY INC	1/8+	890	572	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551014	PP	5-14-9.1	MARY F WEILAND	NOBLE ENERGY INC	1/8+	873	126	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768113	PP	5-14-9.1	KEVIN M POWDERLY	NOBLE ENERGY INC	1/8+	890	515	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551004	PP	5-14-9.1	KATHLEEN A SULLIVAN AND THOMAS SULLIVAN	NOBLE ENERGY INC	1/8+	870	364	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC

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Q076551015	PP	5-14-9.1	JANE H BARNSTEINER AND JOANNE M DISCH	NOBLE ENERGY INC	1/8+	873	132	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551017	PP	5-14-9.1	JAMES T SCHOLL	NOBLE ENERGY INC	1/8+	878	365	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551010	PP	5-14-9.1	JAMES E HERMAN	NOBLE ENERGY INC	1/8+	873	130	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768091	PP	5-14-9.1	HARRIET C VENTURA AND ROCCO VENTURA	NOBLE ENERGY INC	1/8+	894	541	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551009	PP	5-14-9.1	HARRIET C HERMAN AND JOSEPH H WILKINSON	NOBLE ENERGY INC	1/8+	873	122	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551005	PP	5-14-9.1	FRANCIS FISCHER AND JACQUELINE FISCHER	NOBLE ENERGY INC	1/8+	870	366	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q07551013	PP	5-14-9.1	EUGENIA A KERR	NOBLE ENERGY INC	1/8+	873	120	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551008	PP	5-14-9.1	EILEEN T POWDERLY	NOBLE ENERGY INC	1/8+	873	81	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551011	PP	5-14-9.1	EDWARD P POWDERLY AND MARILYN POWDERLY	NOBLE ENERGY INC	1/8+	873	85	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC

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Q076551007	PP	5-14-9.1	DENNIS FISCHER AND SHARRON A FISCHER	NOBLE ENERGY INC	1/8+	870	358	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551002	PP	5-14-9.1	DAVID LEE EVANS JR AND NOVELLA EVANS	NOBLE ENERGY INC	1/8+	864	180	NA	NA	NA	35/172 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551020	PP	5-14-9.1	BRIDGET A POWDERLY	NOBLE ENERGY INC	1/8+	881	26	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768115	PP	5-14-9.1	BRIAN P POWDERLY AND ANITA POWDERLY	NOBLE ENERGY INC	1/8+	890	566	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768080	PP	5-14-9.1	ANTHONY T POWDERLY AND BARBARA M POWDERLY	NOBLE ENERGY INC	1/8+	878	363	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551017	PP	5-14-9.1	ANNE GALBALLY AND JAMES F GALBALLY	NOBLE ENERGY INC	1/8+	878	373	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551012	PP	5-14-9.1	NORA K POWDERLY	NOBLE ENERGY INC	1/8+	873	83	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
10*26901	R	5-19-15	CARLY HERRAN	TH EXPLORATION, LLC	1/8+	1040	527	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*14619	RR	5-14-5	SHIRLEY R MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715	414	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA Inc and 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

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10*14620	RR	5-14-5	ANITA RAE MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715	416	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14621	RR	5-14-5	WILLIAM DALE MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715	415	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14622	RR	5-14-5	KELLY D MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	713	606	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14623	RR	5-14-5	DUANE D MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	717	149	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14624	RR	5-14-5	DOUGLAS E MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	725	559	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14625	RR	5-14-5	JACQUELYN J JOHNSON AND SAMMY R JOHNSON	CHESAPEAKE APPALACHIA LLC	1/8+	715	616	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14626	RR	5-14-5	STEVEN POND	CHESAPEAKE APPALACHIA LLC	1/8+	715	622	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14627	RR	5-14-5	BRIAN & LENA POND	CHESAPEAKE APPALACHIA LLC	1/8+	717	51	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14628	RR	5-14-5	TEXYN L MILLER AND GEORGIA A MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715	514	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14629	RR	5-14-5	GERALD R MILLER AND LEE ANNE MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	717	1	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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



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10*23896	RR	5-14-5	MOLLY JO MORROW MCMAHON AND JOHN D MCMAHON	TH EXPLORATION, LLC	1/8+	1017	489	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23969	RR	5-14-5	MARK A JOHNSON ET AL JONATHAN E TURAK, SPECIAL COMMISSIONER	TH EXPLORATION, LLC	1/8+	1020	195	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*26995	RR	5-14-5	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION, LLC	1/8+	1046	145	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*14568	RR	5-14-5	LEROY ANDERSON AND DONNA KAY ANDERSON	GASTAR EXPLORATION USA INC	1/8+	772	69	NA	NA	NA	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
10*14579	S	5-19-29	ERNIE L ANDERSON & TAMMEY L ANDERSON	CHESAPEAKE APPALACHIA LLC	1/8+	681	507	NA	NA	NA	NA	NA	22/200 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc to Gastar Exploration USA Inc and 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	
10*14619	SS	5-12-19	SHIRLEY R MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715	414	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA Inc and 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	
10*14620	SS	5-12-19	ANITA RAE MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715	416	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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	
10*14621	SS	5-12-19	WILLIAM DALE MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715	415	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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	
10*14622	SS	5-12-19	KELLY D MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	713	606	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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	
10*14623	SS	5-12-19	DUANE D MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	717	149	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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	
10*14624	SS	5-12-19	DOUGLAS E MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	725	559	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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	
10*14625	SS	5-12-19	JACQUELYN J JOHNSON AND SAMMY R JOHNSON	CHESAPEAKE APPALACHIA LLC	1/8+	715	616	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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	
10*14626	SS	5-12-19	STEVEN POND	CHESAPEAKE APPALACHIA LLC	1/8+	715	622	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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	
10*14627	SS	5-12-19	BRIAN & LENA POND	CHESAPEAKE APPALACHIA LLC	1/8+	717	51	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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	



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10*21223	SS	5-12-19	EUGENE C GRIEB AND SHIRLEY K GRIEB JODI A SHAW POA	TH EXPLORATION, LLC	1/8+	961	468	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21924	SS	5-12-19	BEVERLY A MILLER	TH EXPLORATION, LLC	1/8+	953	533	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21926	SS	5-12-19	VIOLA JANE BREON AND JAMES RONALD BREON	TH EXPLORATION, LLC	1/8+	953	360	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21930	SS	5-12-19	JAMES A GRENOBLE AND MARY JANE GRENOBLE	TH EXPLORATION, LLC	1/8+	953	263	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21938	SS	5-12-19	SEAN M GRENOBLE AND CHERYL A GRENOBLE	TH EXPLORATION, LLC	1/8+	960	91	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22442	SS	5-12-19	SANDRA J HARMON AND WALTER D HARMON	TH EXPLORATION, LLC	1/8+	966	106	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22449	SS	5-12-19	MARGARET CLICKNER	TH EXPLORATION, LLC	1/8+	963	644	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22511	SS	5-12-19	SHERLEY R STOWE & KAREN M STOWE	TH EXPLORATION, LLC	1/8+	966	104	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22645	SS	5-12-19	STANLEY EUGENE STOWE	TH EXPLORATION, LLC	1/8+	968	204	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22744	SS	5-12-19	BRIDGET A POWDERLY	TH EXPLORATION, LLC	1/8+	968	206	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23896	SS	5-12-19	MOLLY JO MORROW MCMAHON AND JOHN D MCMAHON	TH EXPLORATION, LLC	1/8+	1017	489	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23969	SS	5-12-19	MARK A JOHNSON ET AL JONATHAN E TURAK, SPECIAL COMMISSIONER	TH EXPLORATION, LLC	1/8+	1020	195	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*26995	SS	5-12-19	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION, LLC	1/8+	1046	145	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q083768116	SS	5-12-19	SUSANNE S QUARTERMAN	NOBLE ENERGY INC	1/8+	890	606	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
Q076551007	SS	5-12-19	RODNEY F PETERSON	NOBLE ENERGY INC	1/8+	870	380	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
Q076551012	SS	5-12-19	NORA K POWDERLY	NOBLE ENERGY INC	1/8+	873	83	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
Q076551021	SS	5-12-19	NORA K POWDERLY	NOBLE ENERGY INC	1/8+	881	32	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
Q076551003	SS	5-12-19	MURIEL ANNE MILLER AND ALAN POWELL	NOBLE ENERGY INC	1/8+	860	541	NA	NA	35/172 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	



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Q083768114	SS	5-12-19	MARY S SCHOLL	NOBLE ENERGY INC	1/8+	890	572	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551014	SS	5-12-19	MARY F WEILAND	NOBLE ENERGY INC	1/8+	873	126	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768113	SS	5-12-19	KEVIN M POWDERLY	NOBLE ENERGY INC	1/8+	890	515	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551004	SS	5-12-19	KATHLEEN A SULLIVAN AND THOMAS SULLIVAN	NOBLE ENERGY INC	1/8+	870	364	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551015	SS	5-12-19	JANE H BARNSTEINER AND JOANNE M DISCH	NOBLE ENERGY INC	1/8+	873	132	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551017	SS	5-12-19	JAMES T SCHOLL	NOBLE ENERGY INC	1/8+	878	365	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551010	SS	5-12-19	JAMES E HERMAN	NOBLE ENERGY INC	1/8+	873	130	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768091	SS	5-12-19	HARRIET C VENTURA AND ROCCO VENTURA	NOBLE ENERGY INC	1/8+	894	541	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551009	SS	5-12-19	HARRIET C HERMAN AND JOSEPH H WILKINSON	NOBLE ENERGY INC	1/8+	873	122	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC

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Q076551005	SS	5-12-19	FRANCIS FISCHER AND JACQUELINE FISCHER	NOBLE ENERGY INC	1/8+	870	366	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q07551013	SS	5-12-19	EUGENIA A KERR	NOBLE ENERGY INC	1/8+	873	120	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551008	SS	5-12-19	EILEEN T POWDERLY	NOBLE ENERGY INC	1/8+	873	81	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551011	SS	5-12-19	EDWARD P POWDERLY AND MARILYN POWDERLY	NOBLE ENERGY INC	1/8+	873	85	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551007	SS	5-12-19	DENNIS FISCHER AND SHARRON A FISCHER	NOBLE ENERGY INC	1/8+	870	358	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551002	SS	5-12-19	DAVID LEE EVANS JR AND NOVELLA EVANS	NOBLE ENERGY INC	1/8+	864	180	NA	NA	NA	35/172 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551020	SS	5-12-19	BRIDGET A POWDERLY	NOBLE ENERGY INC	1/8+	881	26	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768115	SS	5-12-19	BRIAN P POWDERLY AND ANITA POWDERLY	NOBLE ENERGY INC	1/8+	890	566	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768080	SS	5-12-19	ANTHONY T POWDERLY AND BARBARA M POWDERLY	NOBLE ENERGY INC	1/8+	878	363	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC

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Q076551017	SS	5-12-19	ANNE GALBALLY AND JAMES F GALBALLY	NOBLE ENERGY INC	1/8+	878	373	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
10*14619	TT	5-12-20	SHIRLEY R MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715	414	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA Inc and 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
10*14620	TT	5-12-20	ANITA RAE MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715	416	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14621	TT	5-12-20	WILLIAM DALE MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715	415	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14622	TT	5-12-20	KELLY D MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	713	606	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14623	TT	5-12-20	DUANE D MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	717	149	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14624	TT	5-12-20	DOUGLAS E MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	725	559	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14625	TT	5-12-20	JACQUELYN J JOHNSON AND SAMMY R JOHNSON	CHESAPEAKE APPALACHIA LLC	1/8+	715	616	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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
10*14626	TT	5-12-20	STEVEN POND	CHESAPEAKE APPALACHIA LLC	1/8+	715	622	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Gastar Exploration USA In and 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



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10*18215	TT	5-12-20	MARGARET J WHITFORD AND LANCE W WHITFORD	TH EXPLORATION, LLC	1/8+	929	103	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18218	TT	5-12-20	ERIN E SCHOLL	TH EXPLORATION, LLC	1/8+	929	106	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18806	TT	5-12-20	E SHIELA PAVLOVICH	TH EXPLORATION, LLC	1/8+	929	576	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21223	TT	5-12-20	EUGENE C GRIEB AND SHIRLEY K GRIEB JODI A SHAW POA	TH EXPLORATION, LLC	1/8+	961	468	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21924	TT	5-12-20	BEVERLY A MILLER	TH EXPLORATION, LLC	1/8+	953	533	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21926	TT	5-12-20	VIOLA JANE BREON AND JAMES RONALD BREON	TH EXPLORATION, LLC	1/8+	953	360	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21930	TT	5-12-20	JAMES A GRENOBLE AND MARY JANE GRENOBLE	TH EXPLORATION, LLC	1/8+	953	263	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21938	TT	5-12-20	SEAN M GRENOBLE AND CHERYL A GRENOBLE	TH EXPLORATION, LLC	1/8+	960	91	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22442	TT	5-12-20	SANDRA J HARMON AND WALTER D HARMON	TH EXPLORATION, LLC	1/8+	966	106	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22449	TT	5-12-20	MARGARET CLICKNER	TH EXPLORATION, LLC	1/8+	963	644	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22511	TT	5-12-20	SHERLEY R STOWE & KAREN M STOWE	TH EXPLORATION, LLC	1/8+	966	104	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22645	TT	5-12-20	STANLEY EUGENE STOWE	TH EXPLORATION, LLC	1/8+	968	204	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22744	TT	5-12-20	BRIDGET A POWDERLY	TH EXPLORATION, LLC	1/8+	968	206	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23896	TT	5-12-20	MOLLY JO MORROW MCMAHON AND JOHN D MCMAHON	TH EXPLORATION, LLC	1/8+	1017	489	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23969	TT	5-12-20	MARK A JOHNSON ET AL JONATHAN E TURAK, SPECIAL COMMISSIONER	TH EXPLORATION, LLC	1/8+	1020	195	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*26995	TT	5-12-20	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION, LLC	1/8+	1046	145	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q083768116	TT	5-12-20	SUSANNE S QUARTERMAN	NOBLE ENERGY INC	1/8+	890	606	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
Q076551007	TT	5-12-20	RODNEY F PETERSON	NOBLE ENERGY INC	1/8+	870	380	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
Q076551012	TT	5-12-20	NORA K POWDERLY	NOBLE ENERGY INC	1/8+	873	83	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
Q076551021	TT	5-12-20	NORA K POWDERLY	NOBLE ENERGY INC	1/8+	881	32	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
Q076551003	TT	5-12-20	MURIEL ANNE MILLER AND ALAN POWELL	NOBLE ENERGY INC	1/8+	860	541	NA	NA	35/172 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	

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Q083768114	TT	5-12-20	MARY S SCHOLL	NOBLE ENERGY INC	1/8+	890	572	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551014	TT	5-12-20	MARY F WEILAND	NOBLE ENERGY INC	1/8+	873	126	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768113	TT	5-12-20	KEVIN M POWDERLY	NOBLE ENERGY INC	1/8+	890	515	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551004	TT	5-12-20	KATHLEEN A SULLIVAN AND THOMAS SULLIVAN	NOBLE ENERGY INC	1/8+	870	364	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551015	TT	5-12-20	JANE H BARNSTEINER AND JOANNE M DISCH	NOBLE ENERGY INC	1/8+	873	132	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551017	TT	5-12-20	JAMES T SCHOLL	NOBLE ENERGY INC	1/8+	878	365	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551010	TT	5-12-20	JAMES E HERMAN	NOBLE ENERGY INC	1/8+	873	130	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768091	TT	5-12-20	HARRIET C VENTURA AND ROCCO VENTURA	NOBLE ENERGY INC	1/8+	894	541	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551009	TT	5-12-20	HARRIET C HERMAN AND JOSEPH H WILKINSON	NOBLE ENERGY INC	1/8+	873	122	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC

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Q076551005	TT	5-12-20	FRANCIS FISCHER AND JACQUELINE FISCHER	NOBLE ENERGY INC	1/8+	870	366	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q07551013	TT	5-12-20	EUGENIA A KERR	NOBLE ENERGY INC	1/8+	873	120	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551008	TT	5-12-20	EILEEN T POWDERLY	NOBLE ENERGY INC	1/8+	873	81	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551011	TT	5-12-20	EDWARD P POWDERLY AND MARILYN POWDERLY	NOBLE ENERGY INC	1/8+	873	85	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551007	TT	5-12-20	DENNIS FISCHER AND SHARRON A FISCHER	NOBLE ENERGY INC	1/8+	870	358	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551002	TT	5-12-20	DAVID LEE EVANS JR AND NOVELLA EVANS	NOBLE ENERGY INC	1/8+	864	180	NA	NA	NA	35/172 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551020	TT	5-12-20	BRIDGET A POWDERLY	NOBLE ENERGY INC	1/8+	881	26	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768115	TT	5-12-20	BRIAN P POWDERLY AND ANITA POWDERLY	NOBLE ENERGY INC	1/8+	890	566	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768080	TT	5-12-20	ANTHONY T POWDERLY AND BARBARA M POWDERLY	NOBLE ENERGY INC	1/8+	878	363	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC

WW-6A1 Well Bore Tracts

Operator's Well No. McMasters N-11HU

Q076551017	TT	5-12-20	ANNE GALBALLY AND JAMES F GALBALLY	NOBLE ENERGY INC	1/8+	878	373	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	First Amendment to Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC - not recorded	1073/211 Second Amendment Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
10*14580	U	5-19-12	ERNIE L ANDERSON & TAMMEY L ANDERSON	CHESAPEAKE APPALACHIA LLC	1/8+	681	515	NA	NA	NA	NA	NA	27/235 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	27/321 Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA Inc and 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
10*24492	YY	5-12-21	EDWARD L GIBSON AND VIOLET L GIBSON ETAL	AMERICAN PETROLEUM PARTNERS LLC	1/8+	920	112	NA	NA	NA	NA	NA	NA	NA	42-549 American Petroleum Partners Operating LLC and TH Exploration LLC	43-503 American Petroleum Partners Operating LLC and TH Exploration LLC
10*14571	Z	5-19-8	MATTHEW S & BRENDA S ANDERSON	GASTAR EXPLORATION USA INC	1/8+	840	165	NA	NA	NA	NA	NA	NA	NA	33/308 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC

\*Co-tenancy utilization - At least 7 mineral owners in tract. At least 75% of the royalty owners have executed a lease on the tract. The interests of th remaining co-tenants were aquired pursuant to the Co-tenancy Moderniztion and Majority Protection Act.  
 \*\*Force Pool Tracts



51-02317

Jan Pest  
MARSHALL County 01:22:38 PM  
Instrument No 1405489  
Date Recorded 04/27/2016  
Document Type ASH  
Pages Recorded 77  
Book-Page 36-9  
Recording Fee \$77.00  
Additional \$13.00

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

*Execution Version*

**ASSIGNMENT AND BILL OF SALE**

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

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

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

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

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

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

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

**SECOND AMENDMENT TO OPERATING AGREEMENT**

**THIS SECOND AMENDMENT TO OPERATING AGREEMENT** (this "Amendment") is entered into this 31<sup>st</sup> day of January, 2020 (the "Effective Date"), by and among:

**OPERATOR:**

**TH EXPLORATION, LLC**  
1320 S. University Drive, Suite 500  
Fort Worth, Texas 76107

**NON-OPERATORS:**

**HG ENERGY II APPALACHIA, LLC**  
5260 Dupont Road  
Parkersburg, WV 26101

**TH EXPLORATION II, LLC**  
1320 S. University Drive, Suite 500  
Fort Worth, Texas 76107

**WITNESSETH:**

**WHEREAS**, Operator and Non-Operators entered into that certain Operating Agreement regarding the Utica formation in Moundsville dated July 1, 2018 (the "JOA") with respect to the Contract Area (as that term is defined in the JOA), located in Marshall County, West Virginia; and

**WHEREAS**, a Memorandum of Operating Agreement and Financing Statement was recorded in the records of Marshall County, West Virginia on July 19, 2018, at Book 988, Page 351; and

**WHEREAS**, Operator and Non-Operators entered into that certain unrecorded First Amendment to Operating Agreement dated February 19, 2019 and for all purposes made effective as of July 1, 2018; and

**WHEREAS**, it has become necessary to further define the boundaries of the Contract Area and Operator and Non-Operators desire to amend the JOA to reflect and incorporate these changes all upon the terms, and subject to the conditions, set forth in this Amendment.

**NOW, THEREFORE**, in consideration of the mutual covenants and agreements set forth herein, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties, intending to be legally bound hereby, agree as follows:

**Section 1. Incorporation of Recitals.** The foregoing recitals are true and correct and are expressly incorporated herein by this reference.

**Section 2. JOA Amendment.** Effective for all purposes as of the Effective Date, the JOA is hereby amended by deleting Exhibit "A-1" in its entirety, and replacing said Exhibit "A-1" attached hereto and made a part hereof.

**Section 3. Adoption and Ratification of JOA.** The parties hereby adopt, ratify, affirm and agree that the JOA, as amended by this Amendment, is and has been a valid and subsisting agreement and agree that it has been and shall remain in full force and effect according to the term and tenor thereof and hereof, for all purposes under the JOA.

**Section 4. JOA to Remain Effective.** Except as modified by this Amendment, the terms and conditions set forth in the JOA shall remain unchanged and in full force and effect.

**Section 5. Counterpart Signatures.** This Amendment may be executed in one or more counterparts, each of which shall be deemed to be an original and all of which, when taken together, shall constitute one and the same instrument.

[THE REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK]

[SIGNATURE AND ACKNOWLEDGMENT PAGES FOLLOW]

51-02317

MARSHALL County 01:22:38 PM  
Instrument No 1403489  
Date Recorded 04/27/2016  
Document Type ASN  
Pages Recorded 77  
Book-Page 36-9  
Recording Fee \$77.00  
Additional \$13.00

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

**Execution Version**

**ASSIGNMENT AND BILL OF SALE**

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

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

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

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

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

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

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

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

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

**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

**SECOND AMENDMENT TO OPERATING AGREEMENT**

**THIS SECOND AMENDMENT TO OPERATING AGREEMENT** (this "Amendment") is entered into this 31<sup>st</sup> day of January, 2020 (the "Effective Date"), by and among:

**OPERATOR:**

**TH EXPLORATION, LLC**  
1320 S. University Drive, Suite 500  
Fort Worth, Texas 76107

**NON-OPERATORS:**

**HG ENERGY II APPALACHIA, LLC**  
5260 Dupont Road  
Parkersburg, WV 26101

**TH EXPLORATION II, LLC**  
1320 S. University Drive, Suite 500  
Fort Worth, Texas 76107

**WITNESSETH:**

**WHEREAS**, Operator and Non-Operators entered into that certain Operating Agreement regarding the Utica formation in Moundsville dated July 1, 2018 (the "JOA") with respect to the Contract Area (as that term is defined in the JOA), located in Marshall County, West Virginia; and

**WHEREAS**, a Memorandum of Operating Agreement and Financing Statement was recorded in the records of Marshall County, West Virginia on July 19, 2018, at Book 988, Page 351; and

**WHEREAS**, Operator and Non-Operators entered into that certain unrecorded First Amendment to Operating Agreement dated February 19, 2019 and for all purposes made effective as of July 1, 2018; and

**WHEREAS**, it has become necessary to further define the boundaries of the Contract Area and Operator and Non-Operators desire to amend the JOA to reflect and incorporate these changes all upon the terms, and subject to the conditions, set forth in this Amendment.

**NOW, THEREFORE**, in consideration of the mutual covenants and agreements set forth herein, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties, intending to be legally bound hereby, agree as follows:

**Section 1. Incorporation of Recitals.** The foregoing recitals are true and correct and are expressly incorporated herein by this reference.

**Section 2. JOA Amendment.** Effective for all purposes as of the Effective Date, the JOA is hereby amended by deleting Exhibit "A-1" in its entirety, and replacing said Exhibit "A-1" attached hereto and made a part hereof.

**Section 3. Adoption and Ratification of JOA.** The parties hereby adopt, ratify, affirm and agree that the JOA, as amended by this Amendment, is and has been a valid and subsisting agreement and agree that it has been and shall remain in full force and effect according to the term and tenor thereof and hereof, for all purposes under the JOA.

**Section 4. JOA to Remain Effective.** Except as modified by this Amendment, the terms and conditions set forth in the JOA shall remain unchanged and in full force and effect.

**Section 5. Counterpart Signatures.** This Amendment may be executed in one or more counterparts, each of which shall be deemed to be an original and all of which, when taken together, shall constitute one and the same instrument.

**[THE REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK]**

**[SIGNATURE AND ACKNOWLEDGMENT PAGES FOLLOW]**



February 6, 2020

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

RE: McMasters N-11HU

Subject: Marshall County Route 29/3 and 29 Road Crossing Letter

Dear Laura:

Tug Hill Operating, LLC (THO) hereby submits this letter as confirmation that THO has obtained the right to drill, extract and produce the minerals under Marshall County Route 29/3 and 29 in the area reflected on the McMasters N-11HU well plat. THO has conducted a full title search in the relevant Court House to confirm its ownership under said County Routes and is not currently aware of any recorded document that would suggest an ownership other than THO.

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

Sincerely,

Amy Miller  
Permit Specialist – Appalachia Region  
Cell 304-376-0111  
Email: [amiller@tug-hilop.com](mailto:amiller@tug-hilop.com)

RECEIVED  
Office of Oil and Gas  
FEB 14 2020  
WV Department of  
Environmental Protection

4705 02347

WW-6AC  
(1/12)

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

Date of Notice Certification: 02/06/2020

API No. 47- 051 -

Operator's Well No. McMasters N-11HU

Well Pad Name: Shields

**Notice has been given:**

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

State: <u>West Virginia</u>	UTM NAD 83	Easting: <u>518,197.09</u>
County: <u>Marshall</u>		Northing: <u>4,401,152.69</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: 150px;"><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 type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p>
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RECEIVED  
Office of Oil and Gas  
**FEB 14 2020**  
WV Department of  
Environmental Protection

**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.

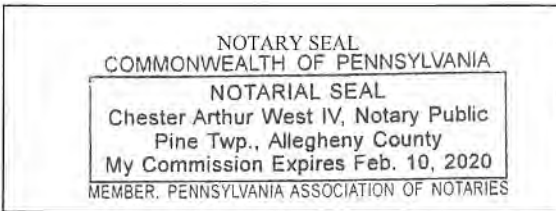
4705 02317

WW-6AC  
(1/12)

**Certification of Notice is hereby given:**

THEREFORE, I Amy L. Miller, 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. Miller <i>Amy Miller</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>amiller@tug-hillop.com</u>



Subscribed and sworn before me this 6<sup>th</sup> day of February 2020.

*[Signature]* Notary Public

My Commission Expires 2-10-2020

**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).

RECEIVED  
Office of Oil and Gas  
FEB 14 2020  
WV Department of  
Environmental Protection



WW-6A  
(9-13)

API NO. 47- 051 - 205 920 17  
OPERATOR WELL NO. McMasters N-11HU  
Well Pad Name: Shields

**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:** 2/4/2020 **Date Permit Application Filed:** 2/6/2020

**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: CNX Land Resources Attn: Casey Saunders  
Address: 1000 Consol Drive  
Canonsburg, PA 15317

COAL OPERATOR

Name: CNX Land Resources Attn: Casey Saunders  
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

RECEIVED  
Office of Oil and Gas

FEB 14 2020

Department of  
Environmental Protection

**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).

**Well Location Restrictions**

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

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WW-6A  
(8-13)

API NO. 47-051 -  
OPERATOR WELL NO. McMasters N-11HU  
Well Pad Name: Shields

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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(8-13)

API NO. 47-051 -  
OPERATOR WELL NO. McMasters N-11HU  
Well Pad Name: Shields

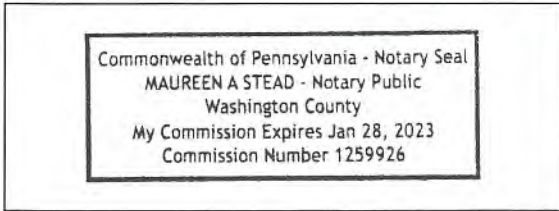
**Notice is hereby given by:**

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

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

**Oil and Gas Privacy Notice:**

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



Subscribed and sworn before me this 4 day of FEBRUARY, 2020  
*Maureen Stead* Notary Public  
My Commission Expires 1/28/23

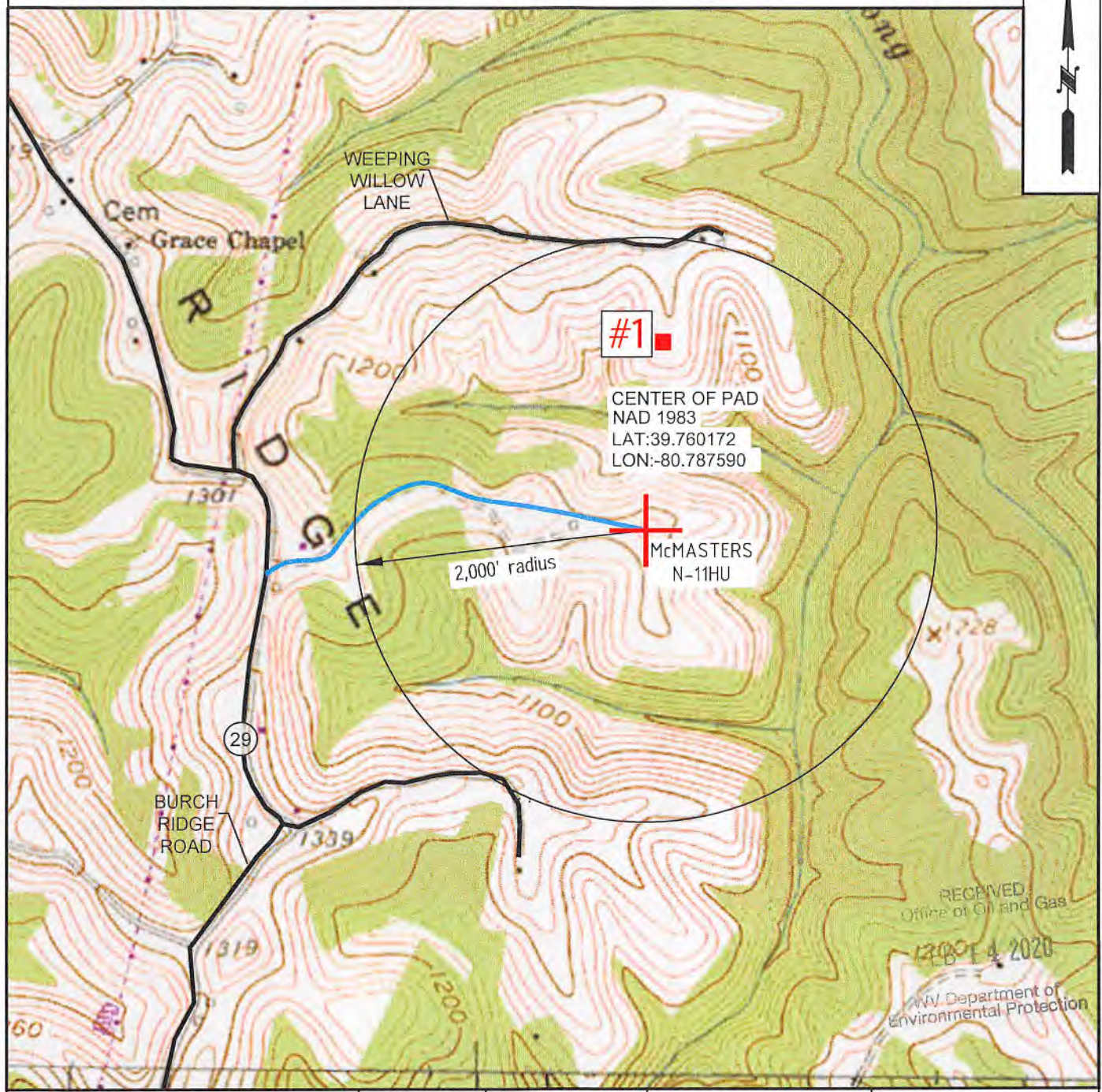
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WW-6A

# PROPOSED McMASTERS N-11HU

SUPPLEMENT PG 1

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



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**TUG HILL**  
OPERATING

OPERATOR	494510851	TOPO SECTION	LEASE NAME
TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317		POWHATAN POINT 7.5'	McMASTERS
		SCALE	DATE
		1" = 1000'	DATE: 1-7-2020

WW-6A

Supplement Pg. 1A

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

**WATER WELL REPORT**

Well: MCMASTERS N-11HU  
District: Franklin  
County: Marshall  
State: WV

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

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

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**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**NOTICE OF ENTRY FOR PLAT SURVEY**

**Notice Time Requirement:** Notice shall be provided at least **SEVEN (7)** days but no more than **FORTY-FIVE (45)** days prior to entry

**Date of Notice:** 11/27/2019      **Date of Planned Entry:** 12/4/2019

**Delivery method pursuant to West Virginia Code § 22-6A-10a**

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

Pursuant to West Virginia Code § 22-6A-10(a), Prior to filing a permit application, the operator shall provide notice of planned entry on to the surface tract to conduct any plat surveys required pursuant to this article. Such notice shall be provided at least seven days but no more than forty-five days prior to such entry to: (1) The surface owner of such tract; (2) to any owner or lessee of coal seams beneath such tract that has filed a declaration pursuant to section thirty-six, article six, chapter twenty-two of this code; and (3) any owner of minerals underlying such tract in the county tax records. The notice shall include a statement that copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, which statement shall include contact information, including the address for a web page on the Secretary's web site, to enable the surface owner to obtain copies from the secretary.

**Notice is hereby provided to:**

SURFACE OWNER(S)

Name: Mark A. Yoho  
Address: 6701 Burch Ridge Rd.  
Proctor, WV 26055

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

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

COAL OWNER OR LESSEE

Name: CNX Land Resources  
Address: 1000 Consol Dr.  
Canonsburg, PA 15317

MINERAL OWNER(S)

Name: Robert & Rebecca Shields  
Address: 2756 Burch Ridge Rd.  
Proctor, WV 26055

\*please attach additional forms if necessary

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-10(a), notice is hereby given that the undersigned well operator is planning entry to conduct a plat survey on the tract of land as follows:

State:	<u>West Virginia</u>	Approx. Latitude & Longitude:	<u>39.760262; -80.788083</u>
County:	<u>Marshall</u>	Public Road Access:	<u>Burch Ridge Road (County Route 29)</u>
District:	<u>Franklin</u>	Watershed:	<u>Lower Fish Creek</u>
Quadrangle:	<u>Powhatan Point 7.5'</u>	Generally used farm name:	<u>Donald L. Shields, et al</u>

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production 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). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Notice is hereby given by:**

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

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

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**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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**ADDITIONAL PARTIES TO NOTICE**

**McMasters Pad**

**WW-6A3**

Additional Surface Owner:

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

Additional Mineral Owner:

Donald Shields  
231 Lonesome Ln.  
Proctor, WV 26055

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WW-6A5  
(1/12)

Operator Well No. McMasters N-11HU

**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:** 02/04/2020      **Date Permit Application Filed:** 02/06/2020

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

CERTIFIED MAIL                                       HAND  
RETURN RECEIPT REQUESTED                                      DELIVERY

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

**Notice is hereby provided to the SURFACE OWNER(s)**  
(at the address listed in the records of the sheriff at the time of notice):

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

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

**Notice is hereby given:**

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

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>518,197.09</u>
County:	<u>Marshall</u>		Northing:	<u>4,401,152.69</u>
District:	<u>Franklin</u>	Public Road Access:	<u>Burch Ridge Road (CR 29)</u>	
Quadrangle:	<u>Powhatan Point 7.5'</u>	Generally used farm name:	<u>Robert L. Shields, et al</u>	
Watershed:	<u>Fish Creek (HUC 10)</u>			

**This Notice Shall Include:**

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

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

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

**Oil and Gas Privacy Notice:**

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

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**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

Byrd E. White, III  
Secretary of Transportation/  
Commissioner of Highways

January 28, 2020 ✓

Jimmy Wriston, P. E.  
Deputy Secretary/  
Deputy Commissioner

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

Subject: DOH Permit for the Shields Pad, Marshall County

McMasters N-11HU  
McMasters N-14HU  
McMasters S-17HU  
McMasters S-20HU

McMasters N-12HU  
McMasters N-15HU  
McMasters S-18HU

McMasters N-13HU  
McMasters S-16HU  
McMasters S-19HU

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2012-0250 which has been transferred to Tug Hill Operating for access to the State Road for a well site located off Marshall County Route 29 SLS.

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.

Very Truly Yours,

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

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

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

**Well No. McMasters N-11HU**

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

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Shields Well Site  
Tug Hill Operating  
Exhibit A: Final Design: Issue for Permitting



ASCE 28000  
11/15/19

DATE: 8/14/2020

TUG HILL  
OPERATING



THIS DOCUMENT  
PREPARED FOR  
TUG HILL  
OPERATING

K&S  
Engineering  
INCORPORATED  
1000 N. STATE ST.  
PO BOX 200  
MARSHALL, WV 24601

Site Plan  
Shields Well Site  
Franklin District  
Marshall County, WV

Date: 12/18/2019  
Scale: As Shown  
Designed By: JS  
File No:  
Sheet 18 of 15

