



west virginia department of environmental protection

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

Austin Caperton, Cabinet Secretary
www.dep.wv.gov

Thursday, January 23, 2020
WELL WORK PERMIT
Horizontal 6A / New Drill

TUG HILL OPERATING, LLC
380 SOUTHPOINTE BLVD

CANONSBURG, PA 15317

Re: Permit approval for HILLROCK S-14HU
47-051-02262-00-00

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: HILLROCK S-14HU
Farm Name: TERRY E. & DEBORAH SIMS
U.S. WELL NUMBER: 47-051-02262-00-00
Horizontal 6A New Drill
Date Issued: 1/23/2020

PERMIT CONDITIONS

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

CONDITIONS

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



west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street SE, Charleston, WV 25304
304-926-0499 Ext 1274

Randall M. Albert, Chairman
dep.wv.gov

November 18, 2019

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

RE: Application for Deep Well Permit – API #47-051-02262

COMPANY: Tug Hill Operating, LLC

FARM: Terry E. and Deborah Simms

Hillrock S-14HU

COUNTY: Marshall

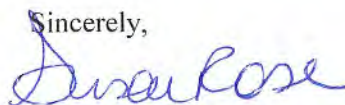
DISTRICT: Franklin

QUAD: New Martinsville

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

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

1. Comments to Notice of Deviation filed? No
2. Provided a certified copy of duly acknowledged and recorded consent and easement form from all surface owners? Yes
3. Provided a tabulation of all deep wells within one mile of the proposed location, including the API number of all deep wells: yes; Docket 290-288 Exception Location Hearing; Hillrock S-15HU 47-051-02263; Corley N-9HU 47-051-01983, Corley N-10HU 47-051-01998; Burch Ridge S-7HU 47-051-02194; Simms U-5H 47-051-01731
4. Provided a plat showing that the proposed location is a distance of 400+ feet from the nearest lease line or unit boundary and showing the following wells drilled to or capable of producing from the objective formation within 3,000 feet of the proposed location.

Sincerely,

Susan Rose
Administrator

WW-6B
(04/15)

4705702262

API NO. 47-051 -
OPERATOR WELL NO. Hillrock S-14HU
Well Pad Name: Simms

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 New Martinsville
Operator ID County District ~~Rowlston Point 7~~

2) Operator's Well Number: Hillrock S-14HU Well Pad Name: Simms

3) Farm Name/Surface Owner: Terry E. and Deborah Simms Public Road Access: Rines Ridge Road (County Route 76)

4) Elevation, current ground: 1219.50' Elevation, proposed post-construction: 1219.50'

5) Well Type (a) Gas Oil Underground Storage
Other

(b) If Gas Shallow Deep
Horizontal

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):

Point Pleasant is the target formation at a depth of 11,382' - 11,282' - thickness of 120' and anticipated pressure of approx. 9500 psi.

8) Proposed Total Vertical Depth: 11,532'

9) Formation at Total Vertical Depth: Trenton

10) Proposed Total Measured Depth: 22,346'

11) Proposed Horizontal Leg Length: 10,385.69'

12) Approximate Fresh Water Strata Depths: 70' ; 812'

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 - 706' ; Pittsburgh Coal - 806'

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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WW-6B
(04/15)

API NO. 47- 051 -
OPERATOR WELL NO. Hillrock S-14HU
Well Pad Name: Simms

18)

CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	30"	NEW	BW	BW	120'	120'	259FT^3(CTS)
Fresh Water	20"	NEW	J55	106.5#	920'	920'	1,493FT^3(CTS)
Coal	13 3/8"	NEW	J55	54.5#	2700'	2700'	1,913FT^3(CTS)
Intermediate	9 5/8"	NEW	HPP110	47#	10,312'	10,312'	3,364FT^3(CTS)
Production	5 1/2"	NEW	P110	23#	22,124'	22,124'	5,243FT^3(CTS)
Tubing	2 7/8"	NEW	P110	6.5#		11,426'	
Liners							

Jan 4/10/19

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
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"			11,385	11,624		
Liners							

PACKERS

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

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WW-6B
(10/14)

API NO. 47-051 -
OPERATOR WELL NO. Hillrock S-14HU
Well Pad Name: Simms

4/10/19

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. 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 25,437,500 lb proppant and 393,282 bbl of water. Max rate = 80 bpm; max psi = 12,000#.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 11.63 acres

22) Area to be disturbed for well pad only, less access road (acres): 3.19 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

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25) Proposed borehole conditioning procedures:

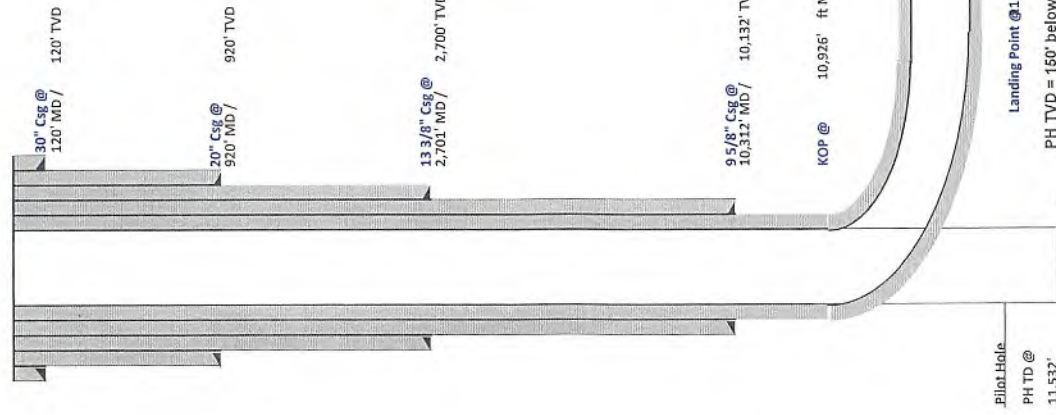
Will circulate a minimum of 3 hours at TD, short trip to curve, circulate bottoms up, check for flow, POOH

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*Note: Attach additional sheets as needed.



WELL NAME: Hillrock 15-14HU COUNTY: Marshall
 STATE: WV DISTRICT: Franklin
 DE Elev: 1,219' GL Elev: 1,219'
 TD: 22,124' TH Latitude: 39.74580412
 BH Longitude: -80.77026231
 BH Latitude: 39.72054556
 BH Longitude: -80.744698204



Formation	Depth TVD
Deepest Fresh Water	812'
Sewickley Coal	706'
Pittsburgh Coal	806'
Big Lime	1,984'
Berea	2,522'
Tully	6,392'
Marcellus	6,486'
Onondaga	6,520'
Salina	7,240'
Lockport	8,286'
Utica	11,001'
Point Pleasant	11,262'
Landing Depth	11,312'
Trenton	11,382'
Pilot Hole TD	11,532'

CASING SUMMARY						
Type	Hole Size (in)	Csg Size (in)	Depth (MD)	Depth (TVD)	Weight (lb/ft)	Top of Cement
Conductor	36	30	120'	120'	BW	Surface
Surface	26	20	920'	920'	106.5	Surface
Intermediate 1	17 1/2	13 3/8	2,701'	2,700'	54.5	Surface
Intermediate 2	12 1/4	9 5/8	10,312'	10,132'	47	Surface
Production	8 1/2	5 1/2	22,124'	11,471'	23	Surface

CEMENT SUMMARY				DRILLING DETAILS	
Sacks	Class	Density	Fluid Type	Centralizer Notes	
338	A	15.6	Air	None	
1,611	A	15.6	Air	3 Centralizers at equal distance	
2,071	A	15	Air	1 Centralizer every other jt	
2,840	A	14.5	Air	1 Centralizer every other jt	
4,638	A	15	Air / SOBMM	1 every other joint in lateral; 1 per joint in curve; 1 every other jt to sfc	

Handwritten signature and date: 6/12/19

Lateral TD @ 22,124' ft MD
 11,471' ft TVD

Landing Point @ 1,949' MD / 11,312' TVD
 PH TVD = 150' below Trenton Top

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Pilot Hole
 PH TD @
 11,532'



Tug Hill Operating, LLC Casing and Cement Program

Hillrock 1S-14HU

Casing

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	20"	J55	26"	920'	CTS
Intermediate 1	13 3/8"	J55	17 1/2"	2,701'	CTS
Intermediate 2	9 5/8"	HP110	12 1/4"	10,312'	CTS
Production	5 1/2"	P110	8 1/2"	22,124'	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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Area of Review

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

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

Data Sources Reviewed:

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

Contacted Devin Ducoeur 724-705-0444, dducoeur@dpslandservices.com DPS GIS (2/14/2019) to have him make maps of the wellbores with his information. DPS utilizes WVGES maps for their mapping seems it as the best publicly available. See attached map he provided.

Request maps for:

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

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

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

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4705102263

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
4705101452	Tug Hill Operating	6584' TVD 11386' MD	Marcellus	Unknown	No, existing Marcellus producer. Proper casing and cement should 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.
4705101468	Tug Hill Operating	6599' TVD 12685' MD	Marcellus	Unknown	No, existing Marcellus producer. Proper casing and cement should 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.
4705101469	Tug Hill Operating	6631' TVD 12825' MD	Marcellus	Unknown	No, existing Marcellus producer. Proper casing and cement should 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.
4705101731	Tug Hill Operating	11492' TVD 16804' MD	Point Pleasant	Unknown	Yes, existing Point Pleasant producer. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Producing Point Pleasant horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705102064	Tug Hill Operating	n/a	n/a	n/a	No	Permit
4705102066	Tug Hill Operating	n/a	n/a	n/a	No	Permit
4705102063	Tug Hill Operating	n/a	n/a	n/a	No	Permit
4705102062	Tug Hill Operating	n/a	n/a	n/a	No	Permit
4705102061	Tug Hill Operating	n/a	n/a	n/a	No	Permit
4705102055	Tug Hill Operating	n/a	n/a	n/a	No	Permit
4705170353	Unknown	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Marcellus well.	State records are incomplete
4705170348	Unknown	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Marcellus well.	State records are incomplete
4705170354	Unknown	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Marcellus well.	State records are incomplete
4705170458	Unknown	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Marcellus well.	State records are incomplete

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4705102263

Well Information

WELL ID: 4705102263

Well Name: 51-01452

County: Boone

Permit: 01452

Status: Active

Operator: G&E

Completion Date: 10/20/11

Well Type: Oil & Gas

Well Depth: 1175

Well Class: 1175

Well Status: Active

Well Location: 51-01452

Well Owner: G&E

Well Operator: G&E

Well Completion: 10/20/11

Well Production: 1175

Well Test: 1175

Well Flow: 1175

Well Water: 1175

Well Gas: 1175

Well Oil: 1175

Well Production: 1175

Well Test: 1175

Well Flow: 1175

Well Water: 1175

Well Gas: 1175

Well Oil: 1175

Well Production: 1175

Well Test: 1175

Well Flow: 1175

Well Water: 1175

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Well Oil: 1175

Well Production: 1175

Well Test: 1175

Well Flow: 1175

Well Water: 1175

Well Gas: 1175

Well Oil: 1175

Well Information

WELL ID: 4705102263

Well Name: 51-01460

County: Boone

Permit: 01460

Status: Active

Operator: G&E

Completion Date: 10/20/11

Well Type: Oil & Gas

Well Depth: 1175

Well Class: 1175

Well Status: Active

Well Location: 51-01460

Well Owner: G&E

Well Operator: G&E

Well Completion: 10/20/11

Well Production: 1175

Well Test: 1175

Well Flow: 1175

Well Water: 1175

Well Gas: 1175

Well Oil: 1175

Well Production: 1175

Well Test: 1175

Well Flow: 1175

Well Water: 1175

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Well Flow: 1175

Well Water: 1175

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WV Geological & Economic Survey

Well: County = 51 Permit = 01469

Location Information: Well Name: ...

Bottom Hole Location Information: ...

Owner Information: ...

Completion Information: ...

Table with columns: Well ID, Well Name, Section, Depth, etc. for well 01469.

4705102263

Production Gas Information (Volumes in MCF) table for well 01469.

Production Oil Information (Volumes in BO) table for well 01469.

Production Water Information (Volumes in Gallons) table for well 01469.

Stratigraphy Information table for well 01469.

WV Geological & Economic Survey

Well: County = 51 Permit = 01731

Location Information: Well Name: ...

Bottom Hole Location Information: ...

Owner Information: ...

Completion Information: ...

Table with columns: Well ID, Well Name, Section, Depth, etc. for well 01731.

Production Gas Information (Volumes in MCF) table for well 01731.

Production Oil Information (Volumes in BO) table for well 01731.

Production Water Information (Volumes in Gallons) table for well 01731.

Stratigraphy Information table for well 01731.

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4705102263

WV Geological & Economic Survey Well: County = 51 Permit = 70353

Location Information [View Map](#)
 ARI COUNTY PERMIT TAX DISTRICT QUAD_75 QUAD_13 LAT_DD LON_DD UTM_E UTM_N
 672472243 Morgan 70353 Francis New Martinsburg New Martinsburg 39.750000 -80.750000 420754 436207.1

There is no Bottom Hole Location data for this well

Owner Information
 ARI CMP_ID SUPFX STATUS SURFACE_OWNER WELL_NUM CO_NUM LEASE LEASE_NUM MINERAL_OWN OPERATOR_CAT COMPLETION PROJ_VD PROJ_TRGT_FM TRM_EST_PM
 672472243

Completion Information
 ARI CMP_ID SUPD_OT ELEV DATUM FIELD DEEPEST_FM DEEPEST_FWT INITIAL_CLASS FINAL_CLASS TYPE RO3 CMP_MTHD TUD TMD NEW_FTS ROD O_BSP O_APT O_BSP O_APT ROD_BSP ROD_BSP
 672472243

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 under Oil
 There is no Production NGL data for this well ** some operators may have reported NGL under Oil
 There is no Production Water data for this well
 There is no Stratigraphy data for this well
 There is no Wireline (E-Log) data for this well
 There is no Logging data for this well
 There is no Seismic data for this well

WV Geological & Economic Survey Well: County = 51 Permit = 70348

Location Information [View Map](#)
 ARI COUNTY PERMIT TAX DISTRICT QUAD_75 QUAD_13 LAT_DD LON_DD UTM_E UTM_N
 672472243 Morgan 70348 Francis New Martinsburg New Martinsburg 39.750000 -80.750000 420754 436207.1

There is no Bottom Hole Location data for this well

Owner Information
 ARI CMP_ID SUPFX STATUS SURFACE_OWNER WELL_NUM CO_NUM LEASE LEASE_NUM MINERAL_OWN OPERATOR_CAT COMPLETION PROJ_VD PROJ_TRGT_FM TRM_EST_PM
 672472243

Completion Information
 ARI CMP_ID SUPD_OT ELEV DATUM FIELD DEEPEST_FM DEEPEST_FWT INITIAL_CLASS FINAL_CLASS TYPE RO3 CMP_MTHD TUD TMD NEW_FTS ROD O_BSP O_APT O_BSP O_APT ROD_BSP ROD_BSP
 672472243

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 under Oil
 There is no Production NGL data for this well ** some operators may have reported NGL under Oil
 There is no Production Water data for this well
 There is no Stratigraphy data for this well
 There is no Wireline (E-Log) data for this well
 There is no Logging data for this well
 There is no Seismic data for this well

WV Geological & Economic Survey Well: County = 51 Permit = 70354

Location Information [View Map](#)
 ARI COUNTY PERMIT TAX DISTRICT QUAD_75 QUAD_13 LAT_DD LON_DD UTM_E UTM_N
 672472243 Morgan 70354 Francis New Martinsburg New Martinsburg 39.750000 -80.750000 420754 436207.1

There is no Bottom Hole Location data for this well

Owner Information
 ARI CMP_ID SUPFX STATUS SURFACE_OWNER WELL_NUM CO_NUM LEASE LEASE_NUM MINERAL_OWN OPERATOR_CAT COMPLETION PROJ_VD PROJ_TRGT_FM TRM_EST_PM
 672472243

Completion Information
 ARI CMP_ID SUPD_OT ELEV DATUM FIELD DEEPEST_FM DEEPEST_FWT INITIAL_CLASS FINAL_CLASS TYPE RO3 CMP_MTHD TUD TMD NEW_FTS ROD O_BSP O_APT O_BSP O_APT ROD_BSP ROD_BSP
 672472243

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 under Oil
 There is no Production NGL data for this well ** some operators may have reported NGL under Oil
 There is no Production Water data for this well

WV Geological & Economic Survey Well: County = 51 Permit = 70458

Location Information [View Map](#)
 ARI COUNTY PERMIT TAX DISTRICT QUAD_75 QUAD_13 LAT_DD LON_DD UTM_E UTM_N
 672472243 Morgan 70458 Lincoln Cambridge 39.800000 -80.800000 421272 436207.1

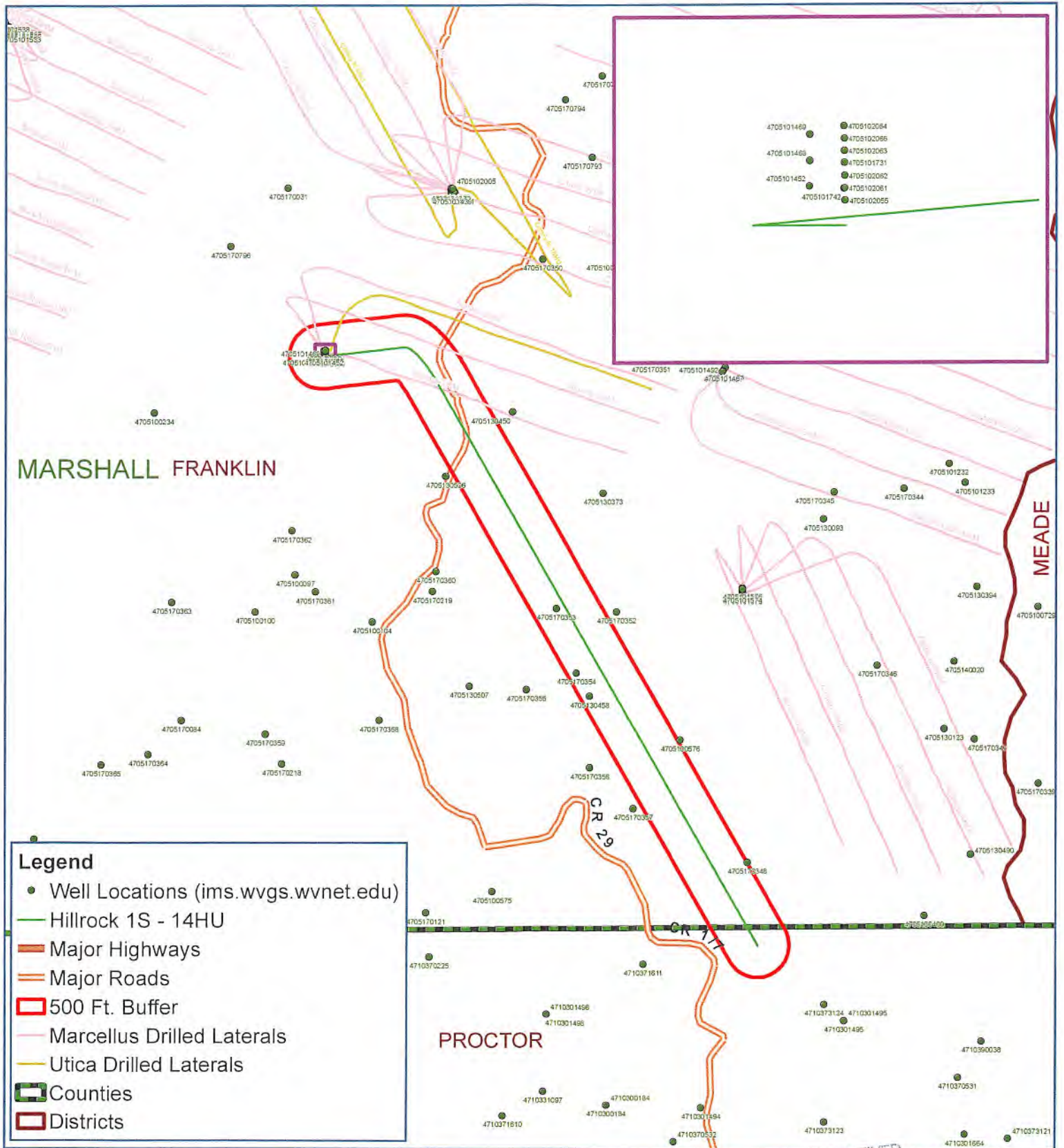
There is no Bottom Hole Location data for this well

Owner Information
 ARI CMP_ID SUPFX STATUS SURFACE_OWNER WELL_NUM CO_NUM LEASE LEASE_NUM MINERAL_OWN OPERATOR_CAT COMPLETION PROJ_VD PROJ_TRGT_FM TRM_EST_PM
 672472243

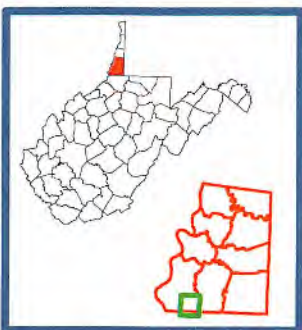
Completion Information
 ARI CMP_ID SUPD_OT ELEV DATUM FIELD DEEPEST_FM DEEPEST_FWT INITIAL_CLASS FINAL_CLASS TYPE RO3 CMP_MTHD TUD TMD NEW_FTS ROD O_BSP O_APT O_BSP O_APT ROD_BSP ROD_BSP
 672472243

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 under Oil
 There is no Production NGL data for this well ** some operators may have reported NGL under Oil

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- Legend**
- Well Locations (ims.wvgs.wvnet.edu)
 - Hillrock 1S - 14HU
 - Major Highways
 - Major Roads
 - ▭ 500 Ft. Buffer
 - Marcellus Drilled Laterals
 - Utica Drilled Laterals
 - ▭ Counties
 - ▭ Districts



Hillrock 1S - 14HU
Franklin District
Marshall County, WV

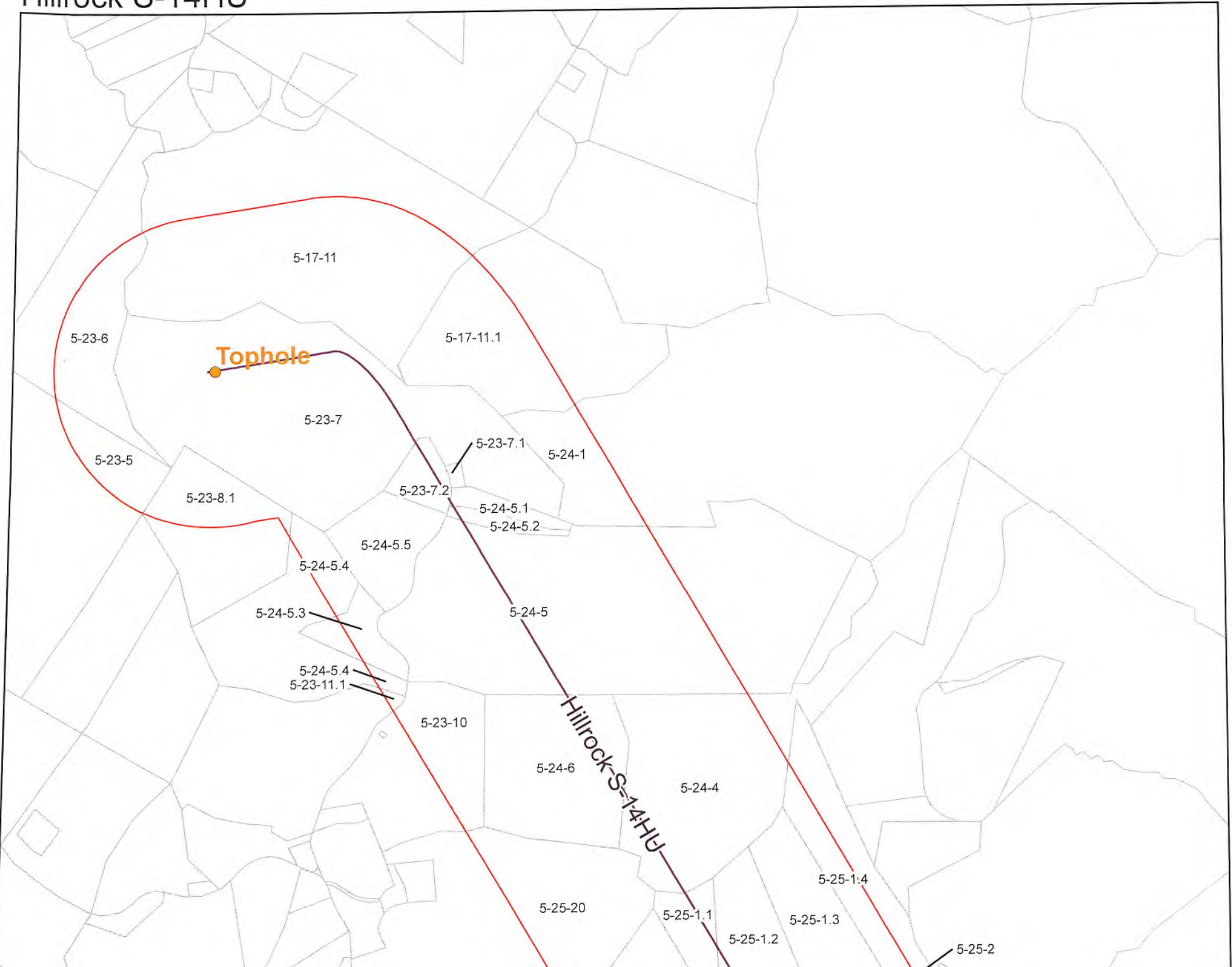


Notes:
All locations are approximate and are for visualization purposes only.

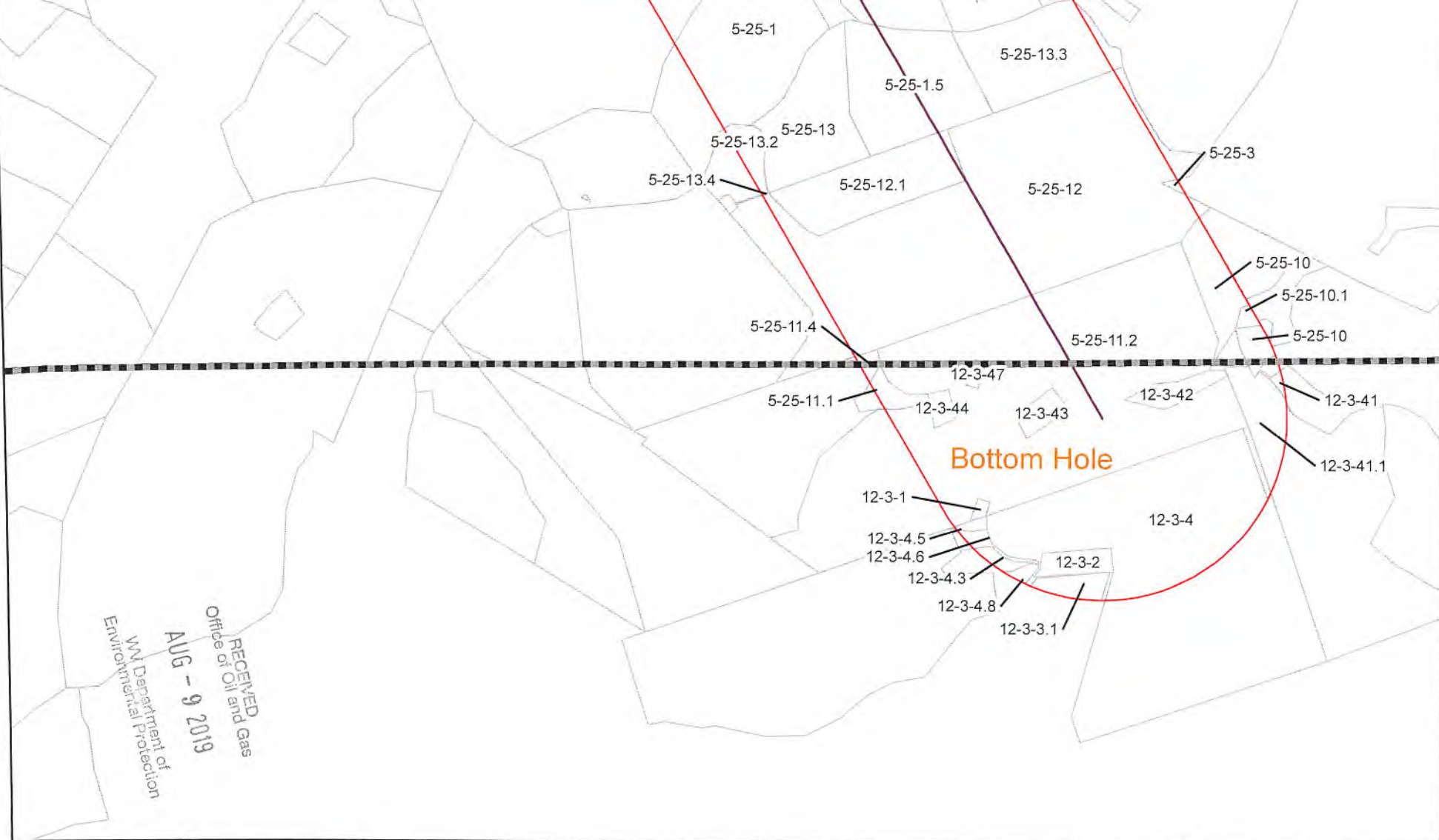
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Hillrock S-14HU



4705102262



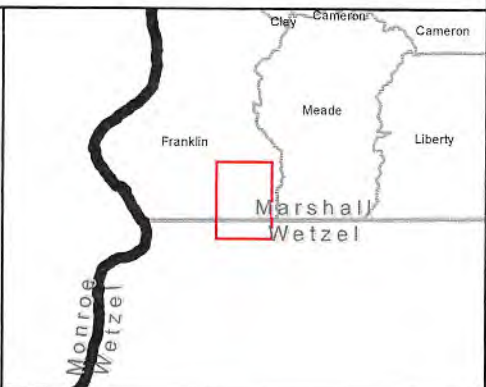
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Coordinate System: NAD 1983 UTM Zone 17N
 Projection: Transverse Mercator
 Datum: North American 1983
 False Easting: 1,640,416.6667
 False Northing: 0.0000
 Central Meridian: -81.0000
 Scale Factor: 0.9999
 Latitude at Origin: 0.0000
 Units: Feet US

CONFIDENTIAL



— Well of Interest
 □ 1500 Foot Buffer
 Hillrock S-14HU
 Operators within 1500 Feet of Well Borehole

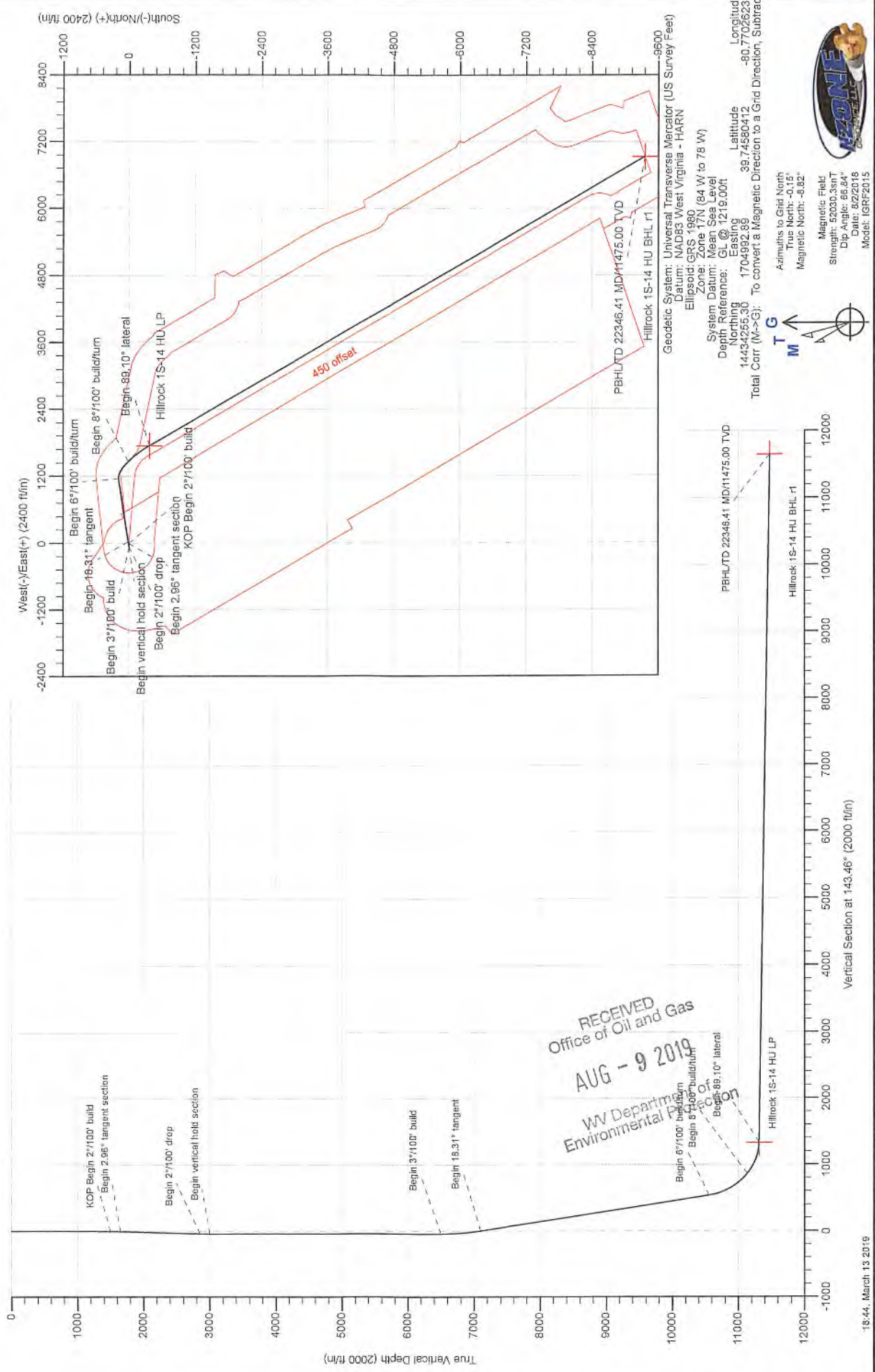




Well: Hillrock 1S-14 HU (F)
 Site: Hillrock/Simms
 Project: Marshall County, West Virginia
 Design: rev1

SECTION DETAILS

Sec	MD	INC	Azi	TVD	+N/S	+E/W	Dlsg	Trace	VSect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 2'100' build
3	1648.22	2.96	270.00	1648.15	0.00	-3.83	0.00	270.00	-2.28	Begin 2'96" tangent section
4	2853.52	2.96	270.00	2851.85	0.00	-66.17	0.00	0.00	-38.39	Begin 2'100' build
5	3001.75	0.00	0.00	3000.00	0.00	-70.00	2.00	180.00	-41.67	Begin vertical hold section
6	6501.75	0.00	0.00	6500.00	0.00	-70.00	0.00	0.00	-41.67	Begin 3'7100' build
7	7112.04	18.31	81.15	7099.96	14.87	25.53	3.00	81.15	3.25	Begin 18.31° tangent
8	10758.04	18.31	81.15	10561.39	191.07	1157.25	0.00	0.00	535.45	Begin 6'7100' build/tum
9	11445.95	50.00	135.19	11134.00	13.00	1463.04	6.00	70.04	860.58	Begin 8'7100' build/tum
10	11962.92	89.10	150.00	11312.01	-368.00	1744.13	8.00	22.76	1334.05	Begin 89.10° lateral
11	22346.41	89.10	150.00	11475.00	-6359.31	6935.14	0.00	0.00	1648.73	PBHLTD 22346.41 MD/11475.00 TVD



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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 @ 1219.00ft
 Northing: 14434255.30
 Easting: 1704992.89
 Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract
 Longitude: -80.7702623°
 Latitude: 39.74880412
 Azimuths to Grid North: True North: -0.15°
 Magnetic North: -8.82°
 Magnetic Field Strength: 52030.3nT
 Dip Angle: 66.84°
 Date: 02/20/16
 Model: IGRF2015



Planning Report - Geographic

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Hillrock 1S-14 HU (F)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1219.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1219.00ft
Site:	Hillrock/Simms	North Reference:	Grid
Well:	Hillrock 1S-14 HU (F)	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	Hillrock/Simms				
Site Position:		Northing:	14,434,279.29 usft	Latitude:	39.74587001
From:	Lat/Long	Easting:	1,704,992.60 usft	Longitude:	-80.77026312
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.15 °

Well	Hillrock 1S-14 HU (F)					
Well Position	+N-S	0.00 ft	Northing:	14,434,255.30 usft	Latitude:	39.74580412
	+E-W	0.00 ft	Easting:	1,704,992.89 usft	Longitude:	-80.77026231
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	1,219.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	8/2/2018	-8.67	66.84	52,030.32635916

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	143.46

Plan Survey Tool Program	Date	3/13/2019		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	22,346.41 rev1 (Original Hole)	MWD MWD - Standard	

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Planning Report - Geographic

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Hillrock 1S-14 HU (F)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1219.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1219.00ft
Site:	Hillrock/Simms	North Reference:	Grid
Well:	Hillrock 1S-14 HU (F)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,648.22	2.96	270.00	1,648.15	0.00	-3.83	2.00	2.00	0.00	270.00	
2,853.52	2.96	270.00	2,851.85	0.00	-66.17	0.00	0.00	0.00	0.00	
3,001.75	0.00	0.00	3,000.00	0.00	-70.00	2.00	-2.00	0.00	180.00	
6,501.75	0.00	0.00	6,500.00	0.00	-70.00	0.00	0.00	0.00	0.00	
7,112.04	18.31	81.15	7,099.96	14.87	25.53	3.00	3.00	0.00	81.15	
10,758.04	18.31	81.15	10,561.39	191.07	1,157.25	0.00	0.00	0.00	0.00	
11,445.95	50.00	135.19	11,134.00	13.00	1,463.04	6.00	4.61	7.86	70.04	
11,962.93	89.10	150.00	11,312.01	-368.00	1,744.13	8.00	7.56	2.86	22.76	
22,346.41	89.10	150.00	11,475.00	-9,359.31	6,935.14	0.00	0.00	0.00	0.00	Hillrock 1S-14 HU BH

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Planning Report - Geographic

Database: DB_Jul2216dt_v14
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: Hillrock/Simms
 Well: Hillrock 1S-14 HU (F)
 Wellbore: Original Hole
 Design: rev1

Local Co-ordinate Reference: Well Hillrock 1S-14 HU (F)
 TVD Reference: GL @ 1219.00ft
 MD Reference: GL @ 1219.00ft
 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	
0.00	0.00	0.00	0.00	0.00	0.00	14,434,255.30	1,704,992.89	39.74580412	-80.77026231	
100.00	0.00	0.00	100.00	0.00	0.00	14,434,255.30	1,704,992.89	39.74580412	-80.77026231	
200.00	0.00	0.00	200.00	0.00	0.00	14,434,255.30	1,704,992.89	39.74580412	-80.77026231	
300.00	0.00	0.00	300.00	0.00	0.00	14,434,255.30	1,704,992.89	39.74580412	-80.77026231	
400.00	0.00	0.00	400.00	0.00	0.00	14,434,255.30	1,704,992.89	39.74580412	-80.77026231	
500.00	0.00	0.00	500.00	0.00	0.00	14,434,255.30	1,704,992.89	39.74580412	-80.77026231	
600.00	0.00	0.00	600.00	0.00	0.00	14,434,255.30	1,704,992.89	39.74580412	-80.77026231	
700.00	0.00	0.00	700.00	0.00	0.00	14,434,255.30	1,704,992.89	39.74580412	-80.77026231	
800.00	0.00	0.00	800.00	0.00	0.00	14,434,255.30	1,704,992.89	39.74580412	-80.77026231	
900.00	0.00	0.00	900.00	0.00	0.00	14,434,255.30	1,704,992.89	39.74580412	-80.77026231	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,434,255.30	1,704,992.89	39.74580412	-80.77026231	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,434,255.30	1,704,992.89	39.74580412	-80.77026231	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,434,255.30	1,704,992.89	39.74580412	-80.77026231	
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,434,255.30	1,704,992.89	39.74580412	-80.77026231	
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,434,255.30	1,704,992.89	39.74580412	-80.77026231	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,434,255.30	1,704,992.89	39.74580412	-80.77026231	
KOP Begin 2°/100' build										
1,600.00	2.00	270.00	1,599.98	0.00	-1.75	14,434,255.30	1,704,991.14	39.74580413	-80.77026852	
1,648.22	2.96	270.00	1,648.15	0.00	-3.83	14,434,255.30	1,704,989.05	39.74580415	-80.77027595	
Begin 2.96° tangent section										
1,700.00	2.96	270.00	1,699.86	0.00	-6.51	14,434,255.30	1,704,986.38	39.74580417	-80.77028548	
1,800.00	2.96	270.00	1,799.73	0.00	-11.68	14,434,255.30	1,704,981.20	39.74580420	-80.77030387	
1,900.00	2.96	270.00	1,899.60	0.00	-16.85	14,434,255.30	1,704,976.03	39.74580424	-80.77032227	
2,000.00	2.96	270.00	1,999.46	0.00	-22.03	14,434,255.30	1,704,970.86	39.74580428	-80.77034067	
2,100.00	2.96	270.00	2,099.33	0.00	-27.20	14,434,255.30	1,704,965.69	39.74580431	-80.77035907	
2,200.00	2.96	270.00	2,199.20	0.00	-32.37	14,434,255.30	1,704,960.52	39.74580435	-80.77037747	
2,300.00	2.96	270.00	2,299.06	0.00	-37.54	14,434,255.30	1,704,955.35	39.74580439	-80.77039586	
2,400.00	2.96	270.00	2,398.93	0.00	-42.71	14,434,255.30	1,704,950.17	39.74580442	-80.77041426	
2,500.00	2.96	270.00	2,498.79	0.00	-47.88	14,434,255.30	1,704,945.00	39.74580446	-80.77043266	
2,600.00	2.96	270.00	2,598.66	0.00	-53.06	14,434,255.30	1,704,939.83	39.74580449	-80.77045106	
2,700.00	2.96	270.00	2,698.53	0.00	-58.23	14,434,255.30	1,704,934.66	39.74580453	-80.77046946	
2,800.00	2.96	270.00	2,798.39	0.00	-63.40	14,434,255.30	1,704,929.49	39.74580457	-80.77048786	
2,853.52	2.96	270.00	2,851.85	0.00	-66.17	14,434,255.30	1,704,926.72	39.74580459	-80.77049770	
Begin 2°/100' drop										
2,900.00	2.03	270.00	2,898.28	0.00	-68.19	14,434,255.30	1,704,924.69	39.74580460	-80.77050491	
3,000.00	0.03	270.00	2,998.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
3,001.75	0.00	0.00	3,000.00	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
Begin vertical hold section										
3,100.00	0.00	0.00	3,098.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
3,200.00	0.00	0.00	3,198.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
3,300.00	0.00	0.00	3,298.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
3,400.00	0.00	0.00	3,398.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
3,500.00	0.00	0.00	3,498.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
3,600.00	0.00	0.00	3,598.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
3,700.00	0.00	0.00	3,698.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
3,800.00	0.00	0.00	3,798.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
3,900.00	0.00	0.00	3,898.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
4,000.00	0.00	0.00	3,998.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
4,100.00	0.00	0.00	4,098.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
4,200.00	0.00	0.00	4,198.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
4,300.00	0.00	0.00	4,298.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
4,400.00	0.00	0.00	4,398.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
4,500.00	0.00	0.00	4,498.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
4,600.00	0.00	0.00	4,598.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	



Planning Report - Geographic

Database: DB_Jul2216dt_v14
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: Hillrock/Simms
 Well: Hillrock 1S-14 HU (F)
 Wellbore: Original Hole
 Design: rev1

Local Co-ordinate Reference: Well Hillrock 1S-14 HU (F)
 TVD Reference: GL @ 1219.00ft
 MD Reference: GL @ 1219.00ft
 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	
4,700.00	0.00	0.00	4,698.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
4,800.00	0.00	0.00	4,798.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
4,900.00	0.00	0.00	4,898.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
5,000.00	0.00	0.00	4,998.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
5,100.00	0.00	0.00	5,098.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
5,200.00	0.00	0.00	5,198.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
5,300.00	0.00	0.00	5,298.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
5,400.00	0.00	0.00	5,398.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
5,500.00	0.00	0.00	5,498.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
5,600.00	0.00	0.00	5,598.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
5,700.00	0.00	0.00	5,698.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
5,800.00	0.00	0.00	5,798.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
5,900.00	0.00	0.00	5,898.25	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
6,000.00	0.00	0.00	5,998.26	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
6,100.00	0.00	0.00	6,098.26	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
6,200.00	0.00	0.00	6,198.26	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
6,300.00	0.00	0.00	6,298.26	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
6,400.00	0.00	0.00	6,398.26	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
6,500.00	0.00	0.00	6,498.26	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
6,501.75	0.00	0.00	6,500.00	0.00	-70.00	14,434,255.30	1,704,922.89	39.74580461	-80.77051134	
Begin 3°/100' build										
6,600.00	2.95	81.15	6,598.21	0.39	-67.50	14,434,255.69	1,704,925.38	39.74580566	-80.77050246	
6,700.00	5.95	81.15	6,697.90	1.58	-59.84	14,434,256.88	1,704,933.05	39.74580889	-80.77047519	
6,800.00	8.95	81.15	6,797.04	3.58	-47.04	14,434,258.87	1,704,945.85	39.74581427	-80.77042961	
6,900.00	11.95	81.15	6,895.38	6.36	-29.12	14,434,261.66	1,704,963.77	39.74582181	-80.77036585	
7,000.00	14.95	81.15	6,992.62	9.94	-6.14	14,434,265.24	1,704,986.74	39.74583147	-80.77028408	
7,100.00	17.95	81.15	7,088.52	14.30	21.83	14,434,269.60	1,705,014.72	39.74584323	-80.77018452	
7,112.04	18.31	81.15	7,099.96	14.87	25.53	14,434,270.17	1,705,018.42	39.74584479	-80.77017134	
Begin 18.31° tangent										
7,200.00	18.31	81.15	7,183.47	19.12	52.83	14,434,274.42	1,705,045.72	39.74585627	-80.77007417	
7,300.00	18.31	81.15	7,278.41	23.96	83.87	14,434,279.26	1,705,076.76	39.74586932	-80.76996370	
7,400.00	18.31	81.15	7,373.34	28.79	114.91	14,434,284.09	1,705,107.80	39.74588238	-80.76985323	
7,500.00	18.31	81.15	7,468.28	33.62	145.95	14,434,288.92	1,705,138.84	39.74589543	-80.76974276	
7,600.00	18.31	81.15	7,563.22	38.46	176.99	14,434,293.75	1,705,169.88	39.74590848	-80.76963229	
7,700.00	18.31	81.15	7,658.16	43.29	208.03	14,434,298.59	1,705,200.92	39.74592154	-80.76952182	
7,800.00	18.31	81.15	7,753.10	48.12	239.07	14,434,303.42	1,705,231.96	39.74593459	-80.76941134	
7,900.00	18.31	81.15	7,848.03	52.95	270.11	14,434,308.25	1,705,263.00	39.74594764	-80.76930087	
8,000.00	18.31	81.15	7,942.97	57.79	301.15	14,434,313.08	1,705,294.04	39.74596069	-80.76919040	
8,100.00	18.31	81.15	8,037.91	62.62	332.19	14,434,317.92	1,705,325.08	39.74597375	-80.76907993	
8,200.00	18.31	81.15	8,132.85	67.45	363.23	14,434,322.75	1,705,356.12	39.74598680	-80.76896946	
8,300.00	18.31	81.15	8,227.78	72.28	394.27	14,434,327.58	1,705,387.16	39.74599985	-80.76885899	
8,400.00	18.31	81.15	8,322.72	77.12	425.31	14,434,332.41	1,705,418.20	39.74601290	-80.76874851	
8,500.00	18.31	81.15	8,417.66	81.95	456.35	14,434,337.25	1,705,449.24	39.74602595	-80.76863804	
8,600.00	18.31	81.15	8,512.60	86.78	487.39	14,434,342.08	1,705,480.28	39.74603901	-80.76852757	
8,700.00	18.31	81.15	8,607.53	91.61	518.43	14,434,346.91	1,705,511.32	39.74605206	-80.76841710	
8,800.00	18.31	81.15	8,702.47	96.45	549.47	14,434,351.75	1,705,542.36	39.74606511	-80.76830663	
8,900.00	18.31	81.15	8,797.41	101.28	580.51	14,434,356.58	1,705,573.40	39.74607816	-80.76819616	
9,000.00	18.31	81.15	8,892.35	106.11	611.55	14,434,361.41	1,705,604.44	39.74609121	-80.76808568	
9,100.00	18.31	81.15	8,987.29	110.95	642.59	14,434,366.24	1,705,635.48	39.74610426	-80.76797521	
9,200.00	18.31	81.15	9,082.22	115.78	673.63	14,434,371.08	1,705,666.52	39.74611731	-80.76786474	
9,300.00	18.31	81.15	9,177.16	120.61	704.67	14,434,375.91	1,705,697.56	39.74613036	-80.76775427	
9,400.00	18.31	81.15	9,272.10	125.44	735.71	14,434,380.74	1,705,728.60	39.74614342	-80.76764380	
9,500.00	18.31	81.15	9,367.04	130.28	766.75	14,434,385.57	1,705,759.64	39.74615647	-80.76753332	
9,600.00	18.31	81.15	9,461.97	135.11	797.79	14,434,390.41	1,705,790.68	39.74616952	-80.76742285	



Planning Report - Geographic

Database: DB_Jul2216dt_v14
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: Hillrock/Simms
 Well: Hillrock 1S-14 HU (F)
 Wellbore: Original Hole
 Design: rev1

Local Co-ordinate Reference: Well Hillrock 1S-14 HU (F)
 TVD Reference: GL @ 1219.00ft
 MD Reference: GL @ 1219.00ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

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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
9,700.00	18.31	81.15	9,556.91	139.94	828.83	14,434,395.24	1,705,821.72	39.74618257	-80.76731238
9,800.00	18.31	81.15	9,651.85	144.77	859.87	14,434,400.07	1,705,852.76	39.74619562	-80.76720191
9,900.00	18.31	81.15	9,746.79	149.61	890.91	14,434,404.91	1,705,883.80	39.74620867	-80.76709143
10,000.00	18.31	81.15	9,841.73	154.44	921.95	14,434,409.74	1,705,914.84	39.74622172	-80.76698096
10,100.00	18.31	81.15	9,936.66	159.27	952.99	14,434,414.57	1,705,945.88	39.74623477	-80.76687049
10,200.00	18.31	81.15	10,031.60	164.10	984.03	14,434,419.40	1,705,976.92	39.74624782	-80.76676002
10,300.00	18.31	81.15	10,126.54	168.94	1,015.07	14,434,424.24	1,706,007.96	39.74626087	-80.76664954
10,400.00	18.31	81.15	10,221.48	173.77	1,046.11	14,434,429.07	1,706,039.00	39.74627392	-80.76653907
10,500.00	18.31	81.15	10,316.41	178.60	1,077.15	14,434,433.90	1,706,070.04	39.74628697	-80.76642860
10,600.00	18.31	81.15	10,411.35	183.44	1,108.19	14,434,438.73	1,706,101.08	39.74630002	-80.76631813
10,700.00	18.31	81.15	10,506.29	188.27	1,139.23	14,434,443.57	1,706,132.12	39.74631307	-80.76620765
10,758.04	18.31	81.15	10,561.39	191.07	1,157.25	14,434,448.37	1,706,150.13	39.74632064	-80.76614354
Begin 6°/100' build/tum									
10,800.00	19.31	88.32	10,601.12	192.29	1,170.69	14,434,447.59	1,706,163.58	39.74632389	-80.76609568
10,900.00	22.63	102.36	10,694.54	188.65	1,206.04	14,434,443.95	1,706,198.93	39.74631364	-80.76596996
11,000.00	26.85	112.60	10,785.38	175.84	1,245.72	14,434,431.14	1,706,238.60	39.74627818	-80.76582892
11,100.00	31.62	120.09	10,872.65	154.01	1,289.29	14,434,409.31	1,706,282.17	39.74621790	-80.76567412
11,200.00	36.71	125.74	10,955.39	123.38	1,336.28	14,434,378.68	1,706,329.16	39.74613346	-80.76550725
11,300.00	42.02	130.16	11,032.68	84.30	1,386.16	14,434,339.60	1,706,379.05	39.74602577	-80.76533013
11,400.00	47.47	133.75	11,103.70	37.20	1,438.40	14,434,292.49	1,706,431.29	39.74589603	-80.76514472
11,445.95	50.00	135.19	11,134.00	13.00	1,463.04	14,434,268.30	1,706,455.93	39.74582940	-80.76505729
Begin 8°/100' build/tum									
11,500.00	54.01	137.26	11,167.27	-17.76	1,492.49	14,434,237.54	1,706,485.37	39.74574471	-80.76495283
11,600.00	61.50	140.58	11,220.60	-81.52	1,547.94	14,434,173.78	1,706,540.82	39.74556922	-80.76475616
11,700.00	69.06	143.46	11,262.40	-153.10	1,603.73	14,434,102.20	1,706,596.61	39.74537224	-80.76455834
11,800.00	76.66	146.06	11,291.85	-231.11	1,658.78	14,434,024.19	1,706,651.67	39.74515760	-80.76436321
11,900.00	84.29	148.50	11,308.38	-314.03	1,712.03	14,433,941.27	1,706,704.91	39.74492949	-80.76417457
11,962.92	89.10	150.00	11,312.01	-368.00	1,744.13	14,433,887.30	1,706,737.01	39.74478105	-80.76406087
Begin 89.10° lateral									
12,000.00	89.10	150.00	11,312.59	-400.11	1,762.67	14,433,855.19	1,706,755.55	39.74469274	-80.76399522
12,100.00	89.10	150.00	11,314.16	-486.70	1,812.66	14,433,768.60	1,706,805.54	39.74445457	-80.76381819
12,200.00	89.10	150.00	11,315.73	-573.29	1,862.65	14,433,682.01	1,706,855.54	39.74421640	-80.76364115
12,300.00	89.10	150.00	11,317.30	-659.88	1,912.64	14,433,595.42	1,706,905.53	39.74397823	-80.76346411
12,400.00	89.10	150.00	11,318.87	-746.48	1,962.64	14,433,508.82	1,706,955.52	39.74374006	-80.76328707
12,500.00	89.10	150.00	11,320.44	-833.07	2,012.63	14,433,422.23	1,707,005.51	39.74350189	-80.76311004
12,600.00	89.10	150.00	11,322.01	-919.66	2,062.62	14,433,335.64	1,707,055.51	39.74326372	-80.76293301
12,700.00	89.10	150.00	11,323.58	-1,006.25	2,112.62	14,433,249.05	1,707,105.50	39.74302555	-80.76275598
12,800.00	89.10	150.00	11,325.15	-1,092.85	2,162.61	14,433,162.46	1,707,155.49	39.74278737	-80.76257894
12,900.00	89.10	150.00	11,326.72	-1,179.44	2,212.60	14,433,075.86	1,707,205.48	39.74254920	-80.76240191
13,000.00	89.10	150.00	11,328.29	-1,266.03	2,262.60	14,432,989.27	1,707,255.48	39.74231103	-80.76222489
13,100.00	89.10	150.00	11,329.86	-1,352.62	2,312.59	14,432,902.68	1,707,305.47	39.74207286	-80.76204786
13,200.00	89.10	150.00	11,331.43	-1,439.22	2,362.58	14,432,816.09	1,707,355.46	39.74183469	-80.76187083
13,300.00	89.10	150.00	11,333.00	-1,525.81	2,412.57	14,432,729.49	1,707,405.46	39.74159651	-80.76169381
13,400.00	89.10	150.00	11,334.57	-1,612.40	2,462.57	14,432,642.90	1,707,455.45	39.74135834	-80.76151679
13,500.00	89.10	150.00	11,336.14	-1,698.99	2,512.56	14,432,556.31	1,707,505.44	39.74112017	-80.76133976
13,600.00	89.10	150.00	11,337.71	-1,785.58	2,562.55	14,432,469.72	1,707,555.43	39.74088200	-80.76116274
13,700.00	89.10	150.00	11,339.28	-1,872.18	2,612.55	14,432,383.13	1,707,605.43	39.74064382	-80.76098572
13,800.00	89.10	150.00	11,340.85	-1,958.77	2,662.54	14,432,296.53	1,707,655.42	39.74040565	-80.76080870
13,900.00	89.10	150.00	11,342.42	-2,045.36	2,712.53	14,432,209.94	1,707,705.41	39.74016747	-80.76063169
14,000.00	89.10	150.00	11,343.99	-2,131.95	2,762.52	14,432,123.35	1,707,755.41	39.73992930	-80.76045467
14,100.00	89.10	150.00	11,345.55	-2,218.55	2,812.52	14,432,036.76	1,707,805.40	39.73969112	-80.76027766
14,200.00	89.10	150.00	11,347.12	-2,305.14	2,862.51	14,431,950.16	1,707,855.39	39.73945295	-80.76010064
14,300.00	89.10	150.00	11,348.69	-2,391.73	2,912.50	14,431,863.57	1,707,905.38	39.73921477	-80.75992363
14,400.00	89.10	150.00	11,350.26	-2,478.32	2,962.50	14,431,776.98	1,707,955.38	39.73897660	-80.75974662



Planning Report - Geographic

Database: DB_Jul2216dt_v14
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: Hillrock/Simms
 Well: Hillrock 1S-14 HU (F)
 Wellbore: Original Hole
 Design: rev1

Local Co-ordinate Reference: Well Hillrock 1S-14 HU (F)
 TVD Reference: GL @ 1219.00ft
 MD Reference: GL @ 1219.00ft
 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	
14,500.00	89.10	150.00	11,351.83	-2,564.92	3,012.49	14,431,690.39	1,708,005.37	39.73873842	-80.75956961	
14,600.00	89.10	150.00	11,353.40	-2,651.51	3,062.48	14,431,603.80	1,708,055.36	39.73850025	-80.75939260	
14,700.00	89.10	150.00	11,354.97	-2,738.10	3,112.47	14,431,517.20	1,708,105.36	39.73826207	-80.75921559	
14,800.00	89.10	150.00	11,356.54	-2,824.69	3,162.47	14,431,430.61	1,708,155.35	39.73802389	-80.75903858	
14,900.00	89.10	150.00	11,358.11	-2,911.29	3,212.46	14,431,344.02	1,708,205.34	39.73778572	-80.75886158	
15,000.00	89.10	150.00	11,359.68	-2,997.88	3,262.45	14,431,257.43	1,708,255.33	39.73754754	-80.75868458	
15,100.00	89.10	150.00	11,361.25	-3,084.47	3,312.45	14,431,170.83	1,708,305.33	39.73730936	-80.75850757	
15,200.00	89.10	150.00	11,362.82	-3,171.06	3,362.44	14,431,084.24	1,708,355.32	39.73707118	-80.75833057	
15,300.00	89.10	150.00	11,364.39	-3,257.66	3,412.43	14,430,997.65	1,708,405.31	39.73683301	-80.75815357	
15,400.00	89.10	150.00	11,365.96	-3,344.25	3,462.43	14,430,911.06	1,708,455.31	39.73659483	-80.75797657	
15,500.00	89.10	150.00	11,367.53	-3,430.84	3,512.42	14,430,824.46	1,708,505.30	39.73635665	-80.75779957	
15,600.00	89.10	150.00	11,369.10	-3,517.43	3,562.41	14,430,737.87	1,708,555.29	39.73611847	-80.75762258	
15,700.00	89.10	150.00	11,370.67	-3,604.03	3,612.40	14,430,651.28	1,708,605.28	39.73588029	-80.75744558	
15,800.00	89.10	150.00	11,372.24	-3,690.62	3,662.40	14,430,564.69	1,708,655.28	39.73564211	-80.75726859	
15,900.00	89.10	150.00	11,373.81	-3,777.21	3,712.39	14,430,478.10	1,708,705.27	39.73540393	-80.75709159	
16,000.00	89.10	150.00	11,375.38	-3,863.80	3,762.38	14,430,391.50	1,708,755.26	39.73516575	-80.75691460	
16,100.00	89.10	150.00	11,376.95	-3,950.39	3,812.38	14,430,304.91	1,708,805.25	39.73492757	-80.75673761	
16,200.00	89.10	150.00	11,378.52	-4,036.99	3,862.37	14,430,218.32	1,708,855.25	39.73468939	-80.75656062	
16,300.00	89.10	150.00	11,380.09	-4,123.58	3,912.36	14,430,131.73	1,708,905.24	39.73445121	-80.75638363	
16,400.00	89.10	150.00	11,381.66	-4,210.17	3,962.35	14,430,045.13	1,708,955.23	39.73421303	-80.75620665	
16,500.00	89.10	150.00	11,383.23	-4,296.76	4,012.35	14,429,958.54	1,709,005.23	39.73397485	-80.75602966	
16,600.00	89.10	150.00	11,384.80	-4,383.36	4,062.34	14,429,871.95	1,709,055.22	39.73373667	-80.75585268	
16,700.00	89.10	150.00	11,386.37	-4,469.95	4,112.33	14,429,785.36	1,709,105.21	39.73349848	-80.75567569	
16,800.00	89.10	150.00	11,387.94	-4,556.54	4,162.33	14,429,698.77	1,709,155.20	39.73326030	-80.75549871	
16,900.00	89.10	150.00	11,389.51	-4,643.13	4,212.32	14,429,612.17	1,709,205.20	39.73302212	-80.75532173	
17,000.00	89.10	150.00	11,391.08	-4,729.73	4,262.31	14,429,525.58	1,709,255.19	39.73278394	-80.75514475	
17,100.00	89.10	150.00	11,392.65	-4,816.32	4,312.30	14,429,438.99	1,709,305.18	39.73254575	-80.75496777	
17,200.00	89.10	150.00	11,394.22	-4,902.91	4,362.30	14,429,352.40	1,709,355.18	39.73230757	-80.75479079	
17,300.00	89.10	150.00	11,395.79	-4,989.50	4,412.29	14,429,265.80	1,709,405.17	39.73206939	-80.75461382	
17,400.00	89.10	150.00	11,397.36	-5,076.10	4,462.28	14,429,179.21	1,709,455.16	39.73183120	-80.75443684	
17,500.00	89.10	150.00	11,398.93	-5,162.69	4,512.28	14,429,092.62	1,709,505.15	39.73159302	-80.75425987	
17,600.00	89.10	150.00	11,400.50	-5,249.28	4,562.27	14,429,006.03	1,709,555.15	39.73135483	-80.75408290	
17,700.00	89.10	150.00	11,402.06	-5,335.87	4,612.26	14,428,919.44	1,709,605.14	39.73111665	-80.75390593	
17,800.00	89.10	150.00	11,403.63	-5,422.47	4,662.26	14,428,832.84	1,709,655.13	39.73087847	-80.75372896	
17,900.00	89.10	150.00	11,405.20	-5,509.06	4,712.25	14,428,746.25	1,709,705.13	39.73064028	-80.75355199	
18,000.00	89.10	150.00	11,406.77	-5,595.65	4,762.24	14,428,659.66	1,709,755.12	39.73040209	-80.75337502	
18,100.00	89.10	150.00	11,408.34	-5,682.24	4,812.23	14,428,573.07	1,709,805.11	39.73016391	-80.75319805	
18,200.00	89.10	150.00	11,409.91	-5,768.84	4,862.23	14,428,486.47	1,709,855.10	39.72992572	-80.75302109	
18,300.00	89.10	150.00	11,411.48	-5,855.43	4,912.22	14,428,399.88	1,709,905.10	39.72968754	-80.75284413	
18,400.00	89.10	150.00	11,413.05	-5,942.02	4,962.21	14,428,313.29	1,709,955.09	39.72944935	-80.75266716	
18,500.00	89.10	150.00	11,414.62	-6,028.61	5,012.21	14,428,226.70	1,710,005.08	39.72921116	-80.75249020	
18,600.00	89.10	150.00	11,416.19	-6,115.21	5,062.20	14,428,140.11	1,710,055.08	39.72897298	-80.75231324	
18,700.00	89.10	150.00	11,417.76	-6,201.80	5,112.19	14,428,053.51	1,710,105.07	39.72873479	-80.75213628	
18,800.00	89.10	150.00	11,419.33	-6,288.39	5,162.18	14,427,966.92	1,710,155.06	39.72849660	-80.75195932	
18,900.00	89.10	150.00	11,420.90	-6,374.98	5,212.18	14,427,880.33	1,710,205.05	39.72825841	-80.75178237	
19,000.00	89.10	150.00	11,422.47	-6,461.57	5,262.17	14,427,793.74	1,710,255.05	39.72802022	-80.75160541	
19,100.00	89.10	150.00	11,424.04	-6,548.17	5,312.16	14,427,707.14	1,710,305.04	39.72778204	-80.75142846	
19,200.00	89.10	150.00	11,425.61	-6,634.76	5,362.16	14,427,620.55	1,710,355.03	39.72754385	-80.75125150	
19,300.00	89.10	150.00	11,427.18	-6,721.35	5,412.15	14,427,533.96	1,710,405.03	39.72730566	-80.75107455	
19,400.00	89.10	150.00	11,428.75	-6,807.94	5,462.14	14,427,447.37	1,710,455.02	39.72706747	-80.75089760	
19,500.00	89.10	150.00	11,430.32	-6,894.54	5,512.13	14,427,360.78	1,710,505.01	39.72682928	-80.75072065	
19,600.00	89.10	150.00	11,431.89	-6,981.13	5,562.13	14,427,274.18	1,710,555.00	39.72659109	-80.75054370	
19,700.00	89.10	150.00	11,433.46	-7,067.72	5,612.12	14,427,187.59	1,710,605.00	39.72635290	-80.75036676	
19,800.00	89.10	150.00	11,435.03	-7,154.31	5,662.11	14,427,101.00	1,710,654.99	39.72611471	-80.75018981	
19,900.00	89.10	150.00	11,436.60	-7,240.91	5,712.11	14,427,014.41	1,710,704.98	39.72587652	-80.75001287	



Planning Report - Geographic

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Hillrock 1S-14 HU (F)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1219.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1219.00ft
Site:	Hillrock/Simms	North Reference:	Grid
Well:	Hillrock 1S-14 HU (F)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
20,000.00	89.10	150.00	11,438.17	-7,327.50	5,762.10	14,426,927.81	1,710,754.97	39.72563833	-80.74983592	
20,100.00	89.10	150.00	11,439.74	-7,414.09	5,812.09	14,426,841.22	1,710,804.97	39.72540014	-80.74965898	
20,200.00	89.10	150.00	11,441.31	-7,500.68	5,862.09	14,426,754.63	1,710,854.96	39.72516194	-80.74948204	
20,300.00	89.10	150.00	11,442.88	-7,587.28	5,912.08	14,426,668.04	1,710,904.95	39.72492375	-80.74930510	
20,400.00	89.10	150.00	11,444.45	-7,673.87	5,962.07	14,426,581.45	1,710,954.95	39.72468556	-80.74912816	
20,500.00	89.10	150.00	11,446.02	-7,760.46	6,012.06	14,426,494.85	1,711,004.94	39.72444737	-80.74895123	
20,600.00	89.10	150.00	11,447.59	-7,847.05	6,062.06	14,426,408.26	1,711,054.93	39.72420917	-80.74877429	
20,700.00	89.10	150.00	11,449.16	-7,933.65	6,112.05	14,426,321.67	1,711,104.92	39.72397098	-80.74859736	
20,800.00	89.10	150.00	11,450.73	-8,020.24	6,162.04	14,426,235.08	1,711,154.92	39.72373279	-80.74842042	
20,900.00	89.10	150.00	11,452.30	-8,106.83	6,212.04	14,426,148.48	1,711,204.91	39.72349459	-80.74824349	
21,000.00	89.10	150.00	11,453.87	-8,193.42	6,262.03	14,426,061.89	1,711,254.90	39.72325640	-80.74806656	
21,100.00	89.10	150.00	11,455.44	-8,280.02	6,312.02	14,425,975.30	1,711,304.90	39.72301821	-80.74788963	
21,200.00	89.10	150.00	11,457.00	-8,366.61	6,362.01	14,425,888.71	1,711,354.89	39.72278001	-80.74771270	
21,300.00	89.10	150.00	11,458.57	-8,453.20	6,412.01	14,425,802.12	1,711,404.88	39.72254182	-80.74753577	
21,400.00	89.10	150.00	11,460.14	-8,539.79	6,462.00	14,425,715.52	1,711,454.87	39.72230362	-80.74735885	
21,500.00	89.10	150.00	11,461.71	-8,626.38	6,511.99	14,425,628.93	1,711,504.87	39.72206543	-80.74718192	
21,600.00	89.10	150.00	11,463.28	-8,712.98	6,561.99	14,425,542.34	1,711,554.86	39.72182723	-80.74700500	
21,700.00	89.10	150.00	11,464.85	-8,799.57	6,611.98	14,425,455.75	1,711,604.85	39.72158904	-80.74682808	
21,800.00	89.10	150.00	11,466.42	-8,886.16	6,661.97	14,425,369.15	1,711,654.85	39.72135084	-80.74665115	
21,900.00	89.10	150.00	11,467.99	-8,972.75	6,711.96	14,425,282.56	1,711,704.84	39.72111264	-80.74647423	
22,000.00	89.10	150.00	11,469.56	-9,059.35	6,761.96	14,425,195.97	1,711,754.83	39.72087445	-80.74629731	
22,100.00	89.10	150.00	11,471.13	-9,145.94	6,811.95	14,425,109.38	1,711,804.82	39.72063625	-80.74612040	
22,200.00	89.10	150.00	11,472.70	-9,232.53	6,861.94	14,425,022.79	1,711,854.82	39.72039805	-80.74594348	
22,300.00	89.10	150.00	11,474.27	-9,319.12	6,911.94	14,424,936.19	1,711,904.81	39.72015986	-80.74576657	
22,346.41	89.10	150.00	11,475.00	-9,359.31	6,935.14	14,424,896.01	1,711,928.01	39.72004931	-80.74568446	

PBHL/TD 22346.41 MD/11475.00 TVD

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Hillrock 1S-14 HU LP - hit/miss target - Shape - Point	0.00	0.00	11,312.00	-368.02	1,744.01	14,433,887.28	1,706,736.90	39.74478099	-80.76406128	
- plan misses target center by 0.11ft at 11962.88ft MD (11312.01 TVD, -367.96 N, 1744.11 E)										
Hillrock 1S-14 HU BHL r - plan hits target center - Point	0.00	0.00	11,475.00	-9,359.31	6,935.14	14,424,896.01	1,711,928.01	39.72004931	-80.74568446	

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Planning Report - Geographic

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Hillrock 1S-14 HU (F)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1219.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1219.00ft
Site:	Hillrock/Simms	North Reference:	Grid
Well:	Hillrock 1S-14 HU (F)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,500.00	1,500.00	0.00	0.00	KOP Begin 2°/100' build
1,648.22	1,648.15	0.00	-3.83	Begin 2.96° tangent section
2,853.52	2,851.85	0.00	-66.17	Begin 2°/100' drop
3,001.75	3,000.00	0.00	-70.00	Begin vertical hold section
6,501.75	6,500.00	0.00	-70.00	Begin 3°/100' build
7,112.04	7,099.96	14.87	25.53	Begin 18.31° tangent
10,758.04	10,561.39	191.07	1,157.25	Begin 6°/100' build/turn
11,445.95	11,134.00	13.00	1,463.04	Begin 8°/100' build/turn
11,962.92	11,312.01	-368.00	1,744.13	Begin 89.10° lateral
22,346.41	11,475.00	-9,359.31	6,935.14	PBHL/TD 22346.41 MD/11475.00 TVD

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WW-9
(4/16)

API Number 47 - 051 - _____
Operator's Well No. Hillrock S-14HU

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 New Martinsville 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 *Jim Pancake*
Company Official (Typed Name) Jim Pancake
Company Official Title Vice President - Geoscience

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Subscribed and sworn before me this 10 day of April, 2019

[Signature]

Notary Public COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
Matthew W. Reese, Notary Public
Cranberry Twp., Butler County
My Commission Expires June 30, 2019
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

My commission expires 6-30-2019

Tug Hill Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 11.63 Prevegetation pH 6.0

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch 2.5 Tons/acre

Seed Mixtures

Temporary

Permanent

Seed Type	lbs/acre
Annual Ryegrass	40
Spring Oats	96

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

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by:

Jim Kuloke

Comments:

Title: Oil and Gas Inspector

Date: 4/10/19

Field Reviewed? Yes No

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WW-9

PROPOSED HILLROCK S-14HU

SUPPLEMENT PG 1

DRAWING NOT TO SCALE

KENNETH N. CORLEY et ux.
T.M. 17/11
120 Acres

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.

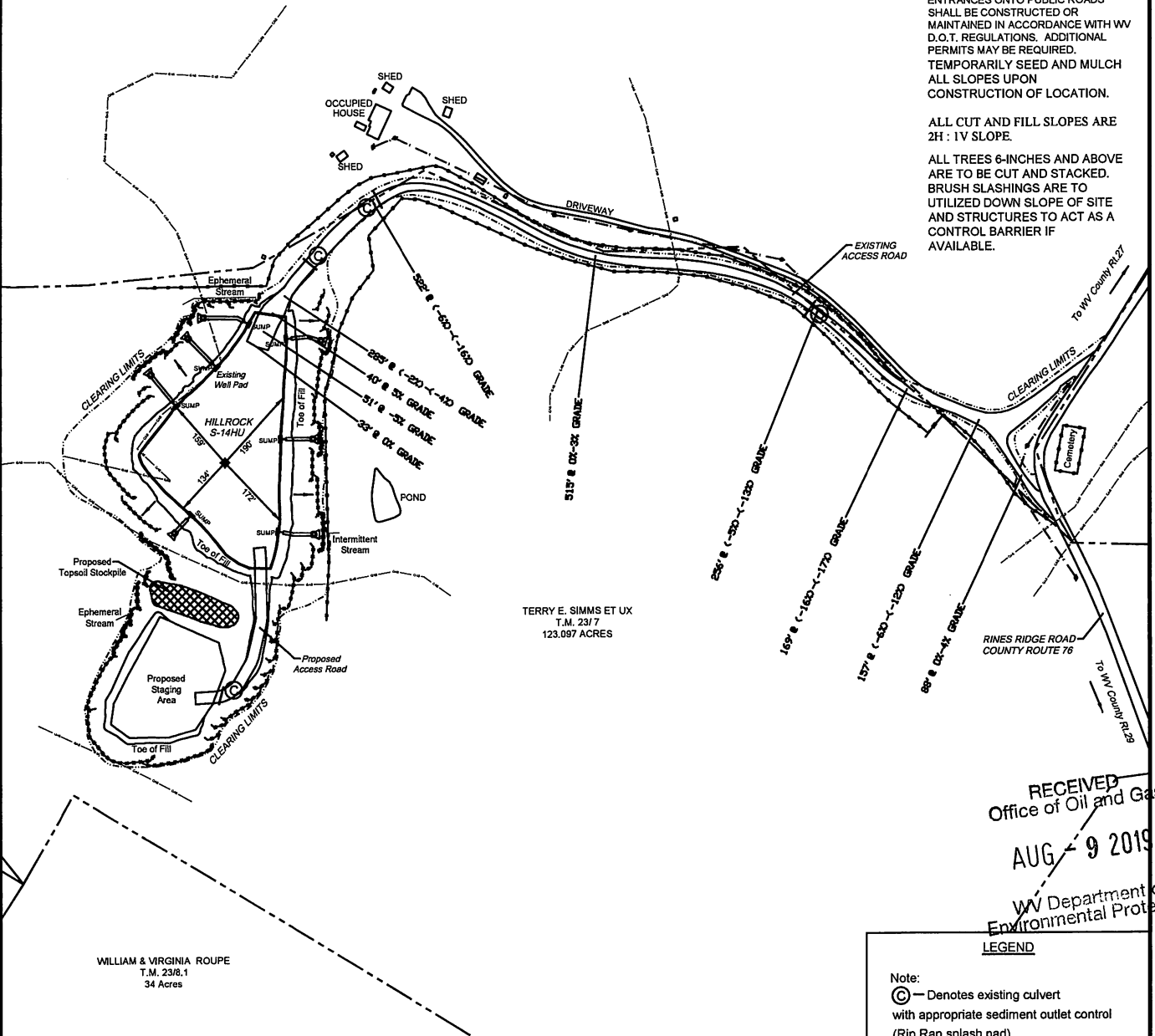
INSTALL CULVERTS AS SHOWN ON RECLAMATION PLAN OR AS FIELD CONDITIONS REQUIRE.

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.



TERRY E. SIMMS ET UX
T.M. 23/7
123.097 ACRES

WILLIAM & VIRGINIA ROUPE
T.M. 23/8.1
34 Acres

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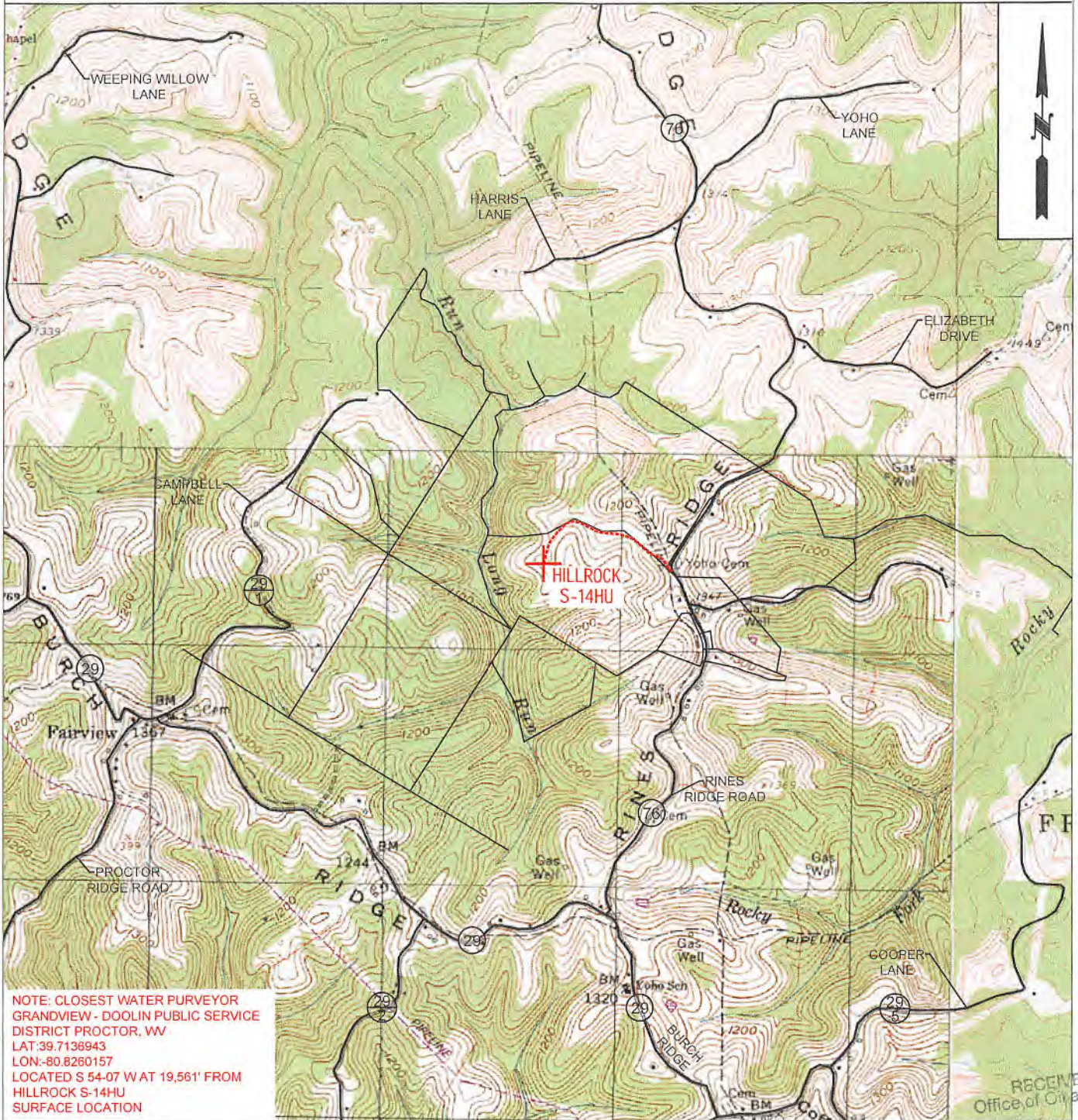
LEGEND

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

WW-9

PROPOSED HILLROCK S-14HU

SUPPLEMENT PG 2



NOTE: CLOSEST WATER PURVEYOR
GRANDVIEW - DOOLIN PUBLIC SERVICE
DISTRICT PROCTOR, WV
LAT: 39.7138943
LON: -80.8260157
LOCATED S 54-07 W AT 19,561' FROM
HILLROCK S-14HU
SURFACE LOCATION

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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		NEW MARTINSVILLE 7.5'	HILLROCK
		SCALE:	DATE:
		1" = 2000'	DATE: 03-13-2019

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4705102262



Well Site Safety Plan

Tug Hill Operating, LLC

J. Hill
4/12/19

Well Name: Hillrock S-14HU

Pad Location: Simms

Marshall County, West

Virginia

UTM (meters), NAD83, Zone 17:

NORTHING -4,399,569.81

EASTING -519,682.87

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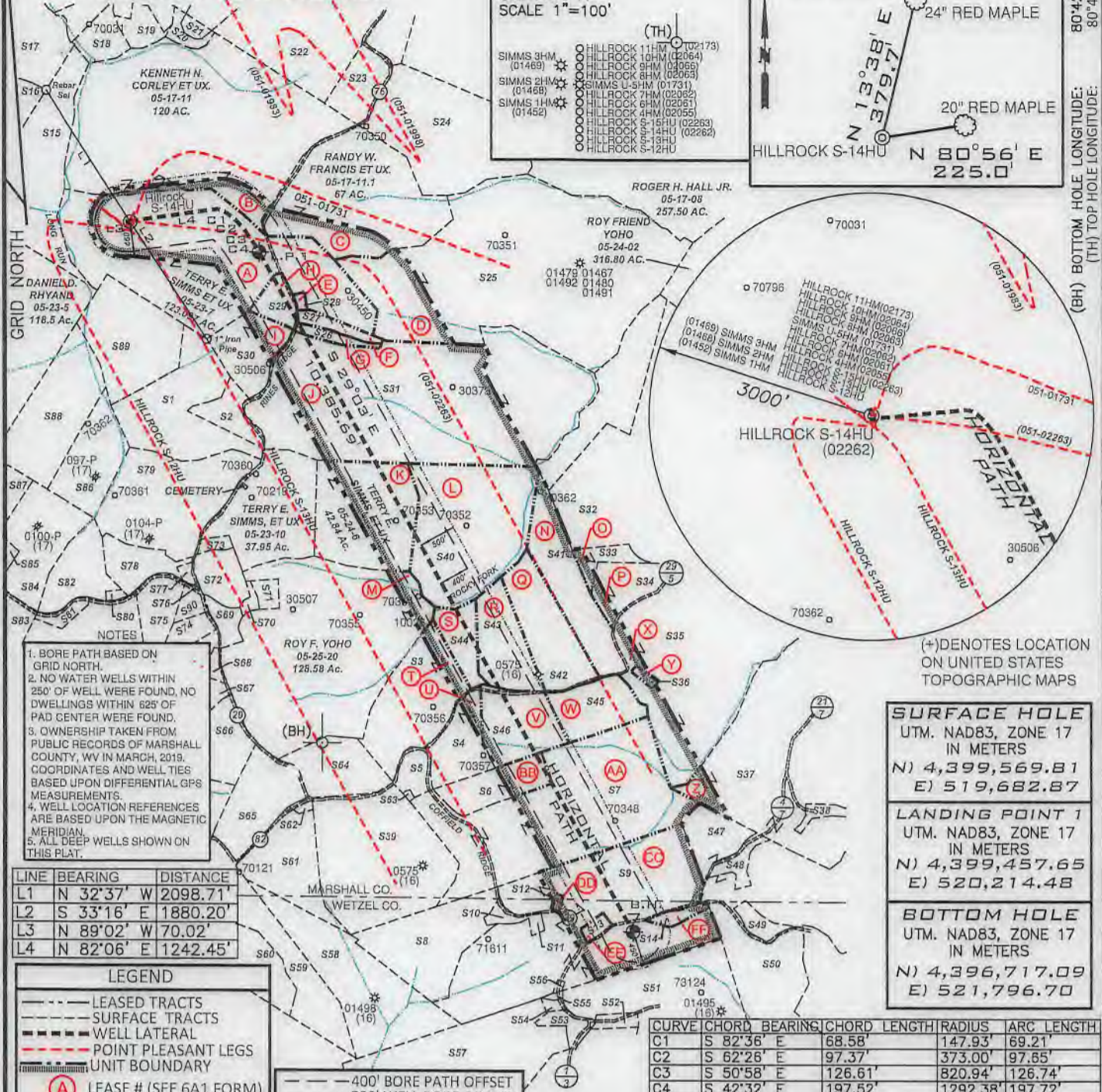
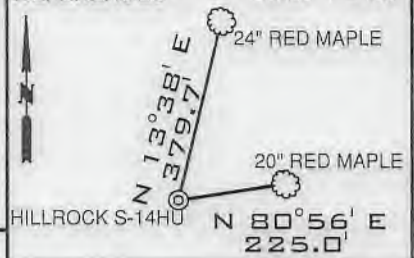
HILLROCK LEASE WELL S-14HU 635.5719± ACRES

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

DETAIL
SKETCH "A"
SCALE 1"=100'

REFERENCES SCALE 1"=400'

- HILLROCK 11HM (02173)
- HILLROCK 10HM (02064)
- HILLROCK 9HM (02063)
- HILLROCK 8HM (02055)
- HILLROCK 7HM (02062)
- HILLROCK 6HM (02051)
- HILLROCK 4HM (02055)
- HILLROCK 15HU (02263)
- HILLROCK 14HU (02262)
- HILLROCK 13HU
- HILLROCK S-14HU



- BORE PATH BASED ON GRID NORTH.
- NO WATER WELLS WITHIN 250' OF WELL WERE FOUND, NO DWELLINGS WITHIN 625' OF PAD CENTER WERE FOUND.
- OWNERSHIP TAKEN FROM PUBLIC RECORDS OF MARSHALL COUNTY, WV IN MARCH, 2019. COORDINATES AND WELL TIES BASED UPON DIFFERENTIAL GPS MEASUREMENTS.
- WELL LOCATION REFERENCES ARE BASED UPON THE MAGNETIC MERIDIAN.
- ALL DEEP WELLS SHOWN ON THIS PLAT.

(+) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

SURFACE HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,399,569.81
E) 519,682.87

LANDING POINT 1
UTM. NAD83, ZONE 17
IN METERS
N) 4,399,457.65
E) 520,214.48

BOTTOM HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,396,717.09
E) 521,796.70

LINE	BEARING	DISTANCE
L1	N 32°37' W	2098.71'
L2	S 33°16' E	1880.20'
L3	N 89°02' W	70.02'
L4	N 82°06' E	1242.45'

LEGEND

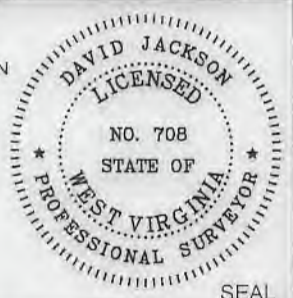
- LEASED TRACTS
- SURFACE TRACTS
- WELL LATERAL
- POINT PLEASANT LEGS
- UNIT BOUNDARY
- (A) LEASE # (SEE 6A1 FORM)
- 400' BORE PATH OFFSET
- 500' WELL BORE OFFSET

CURVE	CHORD BEARING	CHORD LENGTH	RADIUS	ARC LENGTH
C1	S 82°36' E	68.58'	147.93'	69.21'
C2	S 62°28' E	97.37'	373.00'	97.65'
C3	S 50°58' E	126.61'	820.94'	126.74'
C4	S 42°32' E	197.52'	1292.38'	197.72'
C5	S 34°55' E	235.20'	2076.81'	235.33'

FILE NUMBER _____
 DRAWING NUMBER: HILLROCK_S-14HU_REV 1
 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

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS") PRODUCTION X STORAGE ___ DEEP X SHALLOW ___
 LOCATION ELEVATION 1219.5' WATERSHED (HUC 10) FISH CREEK
 DISTRICT FRANKLIN COUNTY MARSHALL
 QUADRANGLE NEW MARTINSVILLE 7.5' LEASE NUMBER SEE WW-6A1 Form

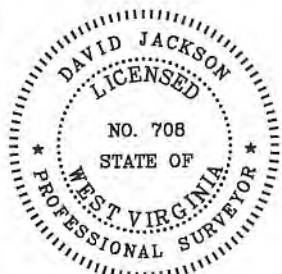
SURFACE OWNER TERRY E. & DEBORAH SIMMS ACREAGE 123.09
 OIL & GAS ROYALTY OWNER TERRY E. & DEBORAH L. SIMMS, ET AL LEASE ACREAGE 123.09
 PROPOSED WORK: DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION ___
 PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE (SPECIFY) _____
 PLUG & ABANDON ___ CLEAN OUT & REPLUG ___
 TARGET FORMATION POINT PLEASANT ESTIMATED DEPTH TVD: 11,532' TMD: 22,346'
 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

**HILLROCK LEASE
WELL S-14HU
635.5719± ACRES**

Number	TAX MAP-PARCEL	SURFACE OWNER	ACRES
S1	05-24-5.4	Thomas V. Tuttle, et ux	38.224
S2	05-24-5.3	Thomas V. Tuttle, et ux	8.543
S3 T	05-25-01	Michael L. Mason	35.43
S4 U	05-25-13	William M. Ferda, Jr. & Stephanie Palicka	16.014
S5	05-25-13.2	David A. Klug	5.89
S6 BB	05-25-12.1	Kent & Betty Mason	15.0
S7 AA	05-25-12	Marion Parsons Jr., et al	85.16
S8	05-25-11.4	Edward W. & Dianna Klug	32.787
S9 CC	05-25-11.2	James W. Klug	114.305
S10	05-25-11.1	Edward W. Klug & Dianna Klug	2.343
S11	12-03-44	James A. & Jo C. Estep	1.10
S12 DD	12-03-47	Wetzel County Emergency Ambulance	0.50
S13 EE	12-03-43	Adam W. Ferrell & Brittany M. Loy	1.97
S14 FF	12-03-42	J. M. Klug	2.617
S15	05-23-06	James A. Channing, et al	48.0
S16	05-18-21	Curtis E. & Michelle J. Hall	43.119
S17	05-18-20	Wayne E. Channing, et al	75.60
S18	05-18-31	Kenneth E. Rastall	6.94
S19	05-18-32	Kenneth E. Rastall	5.335
S20	05-17-12	James A. & Jill C. Corley	3.33
S21	05-17-12.1	Williams Ohio Valley Midstream, LLC	1.67
S22	05-17-10	James A. Corley, et al	92.61
S23	05-17-9.3	James A. Corley, et ux	12.478
S24	05-17-9.4	Vicki L. Bowen	60.3
S25 D	05-24-1	Linda L. Hendrickson & Donald Ray Pickering	175.0
S26 G	05-24-5.2	James D. Watkins, et ux	3.151
S27 F	05-24-5.1	James D. Watkins, et ux	4.60
S28 E	05-23-7.1	Lisa Ann Nelson	0.549
S29 H	05-23-7.2	Lisa Ann Nelson	6.354
S30 I	05-24-5.5	Linda Lou Tagg	17.194
S31 J	05-24-5	Robert C. Francis et ux (Life)	145.788
S32	05-24-3.2	T.H. Exploration II, LLC	49.0
S33 O	05-24-3.1	T.H. Exploration II, LLC	5.50
S34 P	05-25-2.2	John G. Klug, Sr. et ux	10.0
S35 X	05-25-2	James W. Klug	122.3
S36 Y	05-25-2.1	Nancy Jackson	1.0
S37 Z	05-25-3	S.D. Fertitta, et ux	181.548
S38	05-25-3.1	S.D. Fertitta, et ux	3.022
S39	05-25-14.1	Judith L. Weigand	65.0
S40 L	05-24-04	Terry E. Simms, et ux	84.05
S41 N	05-25-1.4	Samantha J. & Philip A. Namlik	24.44
S42 Q	05-25-1.3	Michael E. & Annie A. Chapman	26.2
S43 R	05-25-1.2	William Jr. & Andrea J. Dubiel	20.10
S44 S	05-25-1.1	Ryan A. & Jacqueline E. Layman	9.79
S45 W	05-25-13.3	William M. Sr. & Cynthia A. Ferda	17.21

Number	TAX MAP-PARCEL	SURFACE OWNER	ACRES
S46 v	05-25-1.5	Ryan J. Bratton	21.35
S47	05-25-10	Terry L. & Tammy J. Kirkland as Trustees of the Terry L. & Tammy J. Kirkland Living Trust	18.75
S48	05-25-10.1	Terry L. & Tammy J. Kirkland (Life)	5.250
S49	12-03-41	Carl L. Kirkland	4.102
S50	12-03-41.1	Terry L. & Tammy J. Kirkland as Trustees of the Terry L. & Tammy J. Kirkland Living Trust	74.138
S51	12-03-04	Albert L. & Mary Hohman et al	85.0
S52	12-03-02	Robert Lee & Diana G. Smith	2.48
S53	12-03-4.3	Joseph P. & Barbara A. Cain	3.619
S54	12-03-4.6	Steven P. Wayman	1.009
S55	12-03-4.5	Hazel M. Blair	0.451
S56	12-03-01	James W. Klug	0.375
S57	12-03-4.7	Joseph P. & Barbara A. Cain	67.3
S58	12-02-14	David L. Cunningham	56.23
S59	12-02-14.2	John G. Jr. & Geraldine M. Rogers	25.1
S60	12-02-14.1	Sammy J. Greathouse, Jr. Sammy J. Greathouse, Sr. (L/E)	18.67
S61	05-25-16.1	David L. Cunningham	6.34
S62	05-25-16.2	Rodney J. Loy	1.087
S63	05-25-13.4	Parsons Cemetery	0.38
S64	05-25-14	Roy F. Yoho	23.0
S65	05-25-16	Craig R. & Ashley Ferrell	23.5
S66	05-25-17	Craig R. & Ashley Ferrell	22.790
S67	05-25-18	Joseph Johnson, et ux (Life)	37.746
S68	05-25-19	Joseph Johnson, et ux (Life)	1.973
S69	05-25-20.3	James A. & Jo C. Estep	4.49
S70	05-25-20.2	James M. Zombotti	1.347
S71	05-25-20.1	James M. Zombotti	2.746
S72	05-23-11	Roy F. Yoho	9.475
S73	05-23-11.7	Bryan L. Huggins	1.835
S74	05-23-11.5	Roy F. Yoho	2.25
S75	05-23-11.3	Colin R. Yoho	11.29
S76	05-23-11.6	T.H. Exploration II, LLC & Atinum Marcellus I, LLC	0.094
S77	05-23-11.2	Evelyn Hudson	1.154
S78	05-23-11.4	Evelyn Hudson	10.879
S79	05-23-11.1	John H. & Sonya D. Holliday	46.482
S80	05-23-13.1	James R. & Pamela J. Ferrell	0.7625
S81	05-23-12	Mark A. Yoho	3.05
S82	05-23-13	Linda D. Greathouse	14.24
S83	05-23-9.1	John W. Van Orden et ux	23.376
S84	05-23-9.2	Linda D. Greathouse	25.58
S85	05-23-9.4	Jackson R. Sr. & Deanna L. Davis	2.087
S86	05-23-9.3	Linda D. Greathouse	17.5
S87	05-23-14	Dominion Transmission, Inc.	59.5
S88	05-23-08	Carl David & Suzanne L. Guseman	29.5
S89	05-23-8.1	William & Virginia Roupe	34.0
S90	05-23-11.8	Zachary R. Stevey	7.0



P.S. 708

David L Jackson

47-051-02262H6A



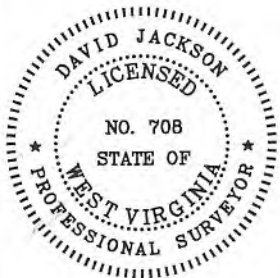
**TUG HILL
OPERATING**

OPERATOR'S
WELL #: HILLROCK S-14HU
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV
API: 047-051-02262

WELL PLAT
PAGE 2 OF 3
DATE: 08/07/2019
REVISED DATE:
8/14/2019

**HILLROCK LEASE
WELL S-14HU
635.5719± ACRES**

Lease ID	Tags	Parcel	Grantor, Lessor, Etc.	Deed Book	Page
10*14140	A	5-23-7	TERRY E SIMMS AND DEBORAH L SIMMS	666	529
10*14126	B	5-17-11	SHARON MIDCAP	697	152
10*14126	C	5-17-11.1	SHARON MIDCAP	697	152
10*14138	D	5-24-1	LINDA AND DONALD HENDRICKSON	666	528
10*14130	E	5-23-7.1	JANE ELLEN MARCUM ET AL	708	185
10*14797	F	5-24-5.1	ORVILLE YOUNG ET AL	800	598
10*14797	G	5-24-5.2	ORVILLE YOUNG ET AL	800	598
10*14130	H	5-23-7.2	JANE ELLEN MARCUM ET AL	708	185
10*14797	I	5-24-5.5	ORVILLE YOUNG ET AL	800	598
10*14797	J	5-24-5	ORVILLE YOUNG ET AL	800	598
10*14558	K	5-24-6	KLOVA ANN MORRIS ET AL	765	434
10*14462	L	5-24-4	JERRY ELDON RICHMOND ET AL	744	57
10*14786	M	5-25-20	TWILA O WHIPKEY EL AL	799	61
10*14728	N	5-25-1.4	IRIS K MOELLENDICK ET AL	839	509
10*14068	O	5-24-3.1	ROHN JEAN MARTIN ET AL	666	552
10*14525	P	5-25-2.2	IMA LEE YOHO	757	192
10*14728	Q	5-25-1.3	IRIS K MOELLENDICK ET AL	839	509
10*14661	R	5-25-1.2	ANDREA & WILLIAM DUBIEL JR ET AL	777	563
10*14728	S	5-25-1.1	IRIS K MOELLENDICK ET AL	839	509
10*14728	T	5-25-1	IRIS K MOELLENDICK ET AL	839	509
10*14728	U	5-25-13	IRIS K MOELLENDICK ET AL	839	509
10*14728	V	5-25-1.5	IRIS K MOELLENDICK ET AL	839	509
10*14664	W	5-25-13.3	CHRISTINA L MILLER ET AL	779	496
10*14525	X	5-25-2	IMA LEE YOHO	757	192
10*14525	Y	5-25-2.1	IMA LEE YOHO	757	192
10*14524	Z	5-25-3	IMA LEE YOHO	757	194
10*14926	AA	5-25-12	NILA JUNE MASON ET AL	842	394
10*18120	BB	5-25-12.1	KENT & BETTY MASON	927	75
10*22496	CC	5-25-11.2	JAMES W KLUG	923	543
10*22984	DD	12-3-47	WETZEL COUNTY EMERGENCY AMBULANCE AUTHORITY INC	209A	748
10*24576	EE	12-3-43	ADAM W FERRELL AND BRITTANY M FERRELL	218A	837
10*22496	FF	12-3-42	JAMES W KLUG	923	543



P.S.
708

David L Jackson

47-051-02262H6A



**TUG HILL
OPERATING**

OPERATOR'S
WELL #: HILLROCK S-14HU
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV
API: 047-051-02262

WELL PLAT
PAGE 3 OF 3
DATE: 08/07/2019
REVISED DATE:
8/14/2019

WW-6A1
(5/13)

Operator's Well No. Hillrock S-14HU

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

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

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

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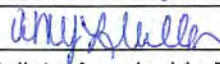
*See attached pages

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

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

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

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. Miller 
 Its: Permitting Specialist - Appalachia Region

Base No.	Tags	Parcel	Lessor	Lessee	Royalty	Book	Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment
10*14140	A	5-23-7	TERRY E SIMMS AND DEBORAH L SIMMS	TRIENERGY HOLDINGS, LLC	1/8+	666	529	NA	20/348 TriEnergy Inc to AB Resources LLC	21/148 TriEnergy Inc to TriEnergy Holdings LLC	21/491 AB Resources LLC to Chief Exploration & Development LLC and Radler 2000 Limited Partnership	685/643 Chief Exploration & Development LLC and Radler 2000 Limited Partnership to Enerplus Resources (USA)	720/214 TriEnergy Holdings LLC to AB Resources (USA)	24/39 AB Resources LLC, Chief Exploration & Development LLC, Radler 2000 Limited Partnership and Enerplus Resources (USA) to Gaster Exploration USA Inc and Atrium Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II, LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14126	B	5-17-11	SHARON MIDCAP	GASTAR EXPLORATION USA INC	1/8+	697	152	NA	NA	NA	23/353 Gaster Exploration USA Inc to Atrium Marcellus I LLC	26/419 Gaster Exploration USA Inc and Atrium Marcellus I LLC stipulation of interest	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II, LLC	40/552 TH Exploration II LLC to TH Exploration LLC		
10*14126	C	5-17-11.1	SHARON MIDCAP	GASTAR EXPLORATION USA INC	1/8+	697	152	NA	NA	NA	23/353 Gaster Exploration USA Inc to Atrium Marcellus I LLC	26/419 Gaster Exploration USA Inc and Atrium Marcellus I LLC stipulation of interest	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II, LLC	40/552 TH Exploration II LLC to TH Exploration LLC		
10*14138	D	5-24-1	LINDA AND DONALD HENDRICKSON	TRIENERGY, INC.	1/8+	666	528	NA	20/348 TriEnergy Inc to AB Resources LLC	21/148 TriEnergy Inc to TriEnergy Holdings LLC	21/491 AB Resources LLC to Chief Exploration & Development LLC and Radler 2000 Limited Partnership	685/643 Chief Exploration & Development LLC and Radler 2000 Limited Partnership to Enerplus Resources (USA)	720/214 TriEnergy Holdings LLC to AB Resources LLC	21/41 Gaster Exploration USA, Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC	40/552 TH Exploration II LLC to TH Exploration LLC	
10*14130	E	5-23-7.1	JANE ELLEN MARCUM	GASTAR EXPLORATION USA INC	1/8+	708	185	NA	NA	NA	23/353 Gaster Exploration USA Inc to Atrium Marcellus I LLC	26/419 Gaster Exploration USA Inc and Atrium Marcellus I LLC stipulation of interest	21/41 Gaster Exploration USA, Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC	40/552 TH Exploration II LLC to TH Exploration LLC		
10*14131	E	5-23-7.1	NOEL S YOHO	GASTAR EXPLORATION USA INC	1/8+	708	191	NA	NA	NA	23/353 Gaster Exploration USA Inc to Atrium Marcellus I LLC	26/419 Gaster Exploration USA Inc and Atrium Marcellus I LLC stipulation of interest	21/41 Gaster Exploration USA, Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC	40/552 TH Exploration II LLC to TH Exploration LLC		
10*14132	E	5-23-7.1	CHRISTA JO DAVIES	GASTAR EXPLORATION USA INC	1/8+	710	65	NA	NA	NA	24/335 Gaster Exploration USA Inc to Atrium Marcellus I LLC	26/419 Gaster Exploration USA Inc and Atrium Marcellus I LLC stipulation of interest	21/41 Gaster Exploration USA, Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC	40/552 TH Exploration II LLC to TH Exploration LLC		
10*14133	E	5-23-7.1	THOMAS S YOHO	GASTAR EXPLORATION USA INC	1/8+	708	199	NA	NA	NA	24/335 Gaster Exploration USA Inc to Atrium Marcellus I LLC	26/419 Gaster Exploration USA Inc and Atrium Marcellus I LLC stipulation of interest	21/41 Gaster Exploration USA, Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC	40/552 TH Exploration II LLC to TH Exploration LLC		
10*14797	F	5-24-5.1	ORVILLE YOUNG	GASTAR EXPLORATION USA INC	1/8+	800	598	NA	NA	NA	806/1 Gaster Exploration USA Inc to Atrium Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC	40/552 TH Exploration II LLC to TH Exploration LLC			

2025-05-07

10*14817	F	5-24-5.1	DONNA V YOHO	GASTAR EXPLORATION INC	1/8+	874	351	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23/353 Gaster Exploration USA Inc to Athium Marcellus I LLC	27/311 Gaster Exploration USA Inc and Athium Marcellus I LLC	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titlesholder LLC	19/624 SWN Exchange Titlesholder LLC and SWN Production Company	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14818	F	5-24-5.1	DEWEY A MILICIA AND ROBIN MILICIA	GASTAR EXPLORATION INC	1/8+	875	591	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35/144 Gaster Exploration Inc to Athium Marcellus I LLC	35/144 Gaster Exploration Inc to Athium Marcellus I LLC	35/144 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titlesholder LLC	19/624 SWN Exchange Titlesholder LLC and SWN Production Company	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14819	F	5-24-5.1	NICOLETTA MILICIA BLOODWORTH	GASTAR EXPLORATION INC	1/8+	875	593	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35/144 Gaster Exploration Inc to Athium Marcellus I LLC	35/144 Gaster Exploration Inc to Athium Marcellus I LLC	35/144 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titlesholder LLC	19/624 SWN Exchange Titlesholder LLC and SWN Production Company	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14820	F	5-24-5.1	DANA MILICIA HUMPHREYS	GASTAR EXPLORATION INC	1/8+	875	595	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35/144 Gaster Exploration Inc to Athium Marcellus I LLC	35/144 Gaster Exploration Inc to Athium Marcellus I LLC	35/144 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titlesholder LLC	19/624 SWN Exchange Titlesholder LLC and SWN Production Company	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14821	F	5-24-5.1	JANICE N HAUDENSCHILT	GASTAR EXPLORATION INC	1/8+	875	597	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35/144 Gaster Exploration Inc to Athium Marcellus I LLC	35/144 Gaster Exploration Inc to Athium Marcellus I LLC	35/144 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titlesholder LLC	19/624 SWN Exchange Titlesholder LLC and SWN Production Company	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14822	F	5-24-5.1	ONWARD E BURGE TRUST STEPHEN W BURGE AS TRUSTEE	GASTAR EXPLORATION INC	1/8+	876	463	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35/144 Gaster Exploration Inc to Athium Marcellus I LLC	35/144 Gaster Exploration Inc to Athium Marcellus I LLC	35/144 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titlesholder LLC	19/624 SWN Exchange Titlesholder LLC and SWN Production Company	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14823	F	5-24-5.1	SARAH L BURGE TRUST STEPHEN W BURGE AS TRUSTEE	GASTAR EXPLORATION INC	1/8+	876	459	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35/144 Gaster Exploration Inc to Athium Marcellus I LLC	35/144 Gaster Exploration Inc to Athium Marcellus I LLC	35/144 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titlesholder LLC	19/624 SWN Exchange Titlesholder LLC and SWN Production Company	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*17181	F	5-24-5.1	PAUL F HAMMERS	CHESAPEAKE APPALACHIA LLC	1/8+	705	593	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titlesholder LLC	19/624 SWN Exchange Titlesholder LLC and SWN Production Company	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17182	F	5-24-5.1	TWILA ORA WHIPKEY	CHESAPEAKE APPALACHIA LLC	1/8+	715	505	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titlesholder LLC	19/624 SWN Exchange Titlesholder LLC and SWN Production Company	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17195	F	5-24-5.1	PATRICIA HARTMAN	GASTAR EXPLORATION USA INC	1/8+	695	317	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23/353 Gaster Exploration USA Inc to Athium Marcellus I LLC	27/311 Gaster Exploration USA Inc and Athium Marcellus I LLC	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titlesholder LLC	19/624 SWN Exchange Titlesholder LLC and SWN Production Company	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17196	F	5-24-5.1	DELBERT R. MONTGOMERY	GASTAR EXPLORATION USA INC	1/8+	695	311	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23/353 Gaster Exploration USA Inc to Athium Marcellus I LLC	27/311 Gaster Exploration USA Inc and Athium Marcellus I LLC	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titlesholder LLC	19/624 SWN Exchange Titlesholder LLC and SWN Production Company	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17197	F	5-24-5.1	GLORIA J. SIMMONS HAROLD SIMMONS	GASTAR EXPLORATION USA INC	1/8+	695	313	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23/353 Gaster Exploration USA Inc to Athium Marcellus I LLC	27/311 Gaster Exploration USA Inc and Athium Marcellus I LLC	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titlesholder LLC	19/624 SWN Exchange Titlesholder LLC and SWN Production Company	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC

10*17199	F	5-24-5.1	PAMELA L DRAZIC AND JEFFREY DRAZIC	GASTAR EXPLORATION USA INC	1/8+	695	315	NA	NA	23/353 Gastar Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17200	F	5-24-5.1	STEPHANIE L HALL	GASTAR EXPLORATION USA INC	1/8+	697	156	NA	NA	23/353 Gastar Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17201	F	5-24-5.1	DENISE A GALE	GASTAR EXPLORATION USA INC	1/8+	697	395	NA	NA	23/353 Gastar Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17202	F	5-24-5.1	JANE GALE	GASTAR EXPLORATION USA INC	1/8+	697	385	NA	NA	23/353 Gastar Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17203	F	5-24-5.1	BARRY RAY MOORE	GASTAR EXPLORATION USA INC	1/8+	697	387	NA	NA	23/353 Gastar Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17204	F	5-24-5.1	CLARENCE RICHARD ZESIGER & MARY ZESIGER	GASTAR EXPLORATION USA INC	1/8+	697	391	NA	NA	23/353 Gastar Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17206	F	5-24-5.1	M VIRGINIA & EDWARD C MARSH	GASTAR EXPLORATION USA INC	1/8+	697	399	NA	NA	23/353 Gastar Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17207	F	5-24-5.1	DEBORAH K. KLIMASZEWSKI FRANK KLIMASZEWSKI, SR.	GASTAR EXPLORATION USA INC	1/8+	697	389	NA	NA	23/353 Gastar Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC

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10*21183	F	5-24-5.1	DONALD R NEWLAND AND SUZANNE NEWLAND	TH EXPLORATION, LLC	1/8+	952	205	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14797	G	5-24-5.2	ORVILLE YOUNG	GASTAR EXPLORATION USA INC	1/8+	800	598	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35/144 Gaster Exploration Inc to Aitnum Marcellus I LLC merger	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14817	G	5-24-5.2	DONNA V YOHO	GASTAR EXPLORATION INC	1/8+	874	351	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35/144 Gaster Exploration Inc to Aitnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14818	G	5-24-5.2	DEWEY A MILICIA AND ROBIN MILICIA	GASTAR EXPLORATION INC	1/8+	875	591	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35/144 Gaster Exploration Inc to Aitnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14819	G	5-24-5.2	NICOLETTA MILICIA BLOODWORTH	GASTAR EXPLORATION INC	1/8+	875	593	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35/144 Gaster Exploration Inc to Aitnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14820	G	5-24-5.2	DANA MILICIA HUMPHREYS	GASTAR EXPLORATION INC	1/8+	875	595	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35/144 Gaster Exploration Inc to Aitnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14821	G	5-24-5.2	JANICE N HAUDENSCHILT	GASTAR EXPLORATION INC	1/8+	875	597	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35/144 Gaster Exploration Inc to Aitnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14822	G	5-24-5.2	ONWARD E BURGE TRUST STEPHEN W BURGE AS TRUSTEE	GASTAR EXPLORATION INC	1/8+	876	463	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35/144 Gaster Exploration Inc to Aitnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14823	G	5-24-5.2	SARAH L BURGE TRUST STEPHEN W BURGE AS TRUSTEE	GASTAR EXPLORATION INC	1/8+	876	459	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35/144 Gaster Exploration Inc to Aitnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*17181	G	5-24-5.2	PAUL F HAMMERS	CHESAPEAKE APPALACHIA LLC	1/8+	705	593	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC
10*17182	G	5-24-5.2	TWILA ORA WHIPKEY	CHESAPEAKE APPALACHIA LLC	1/8+	715	505	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC
10*17195	G	5-24-5.2	PATRICIA HARTMAN	GASTAR EXPLORATION USA INC	1/8+	695	317	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/311 Gaster Exploration USA Inc and Aitnum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC
10*17196	G	5-24-5.2	DEIBERT R. MONTGOMERY	GASTAR EXPLORATION USA INC	1/8+	695	311	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/311 Gaster Exploration USA Inc and Aitnum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	41/256 SWN Production Company LLC to TH Exploration LLC

10*17197	G	5-24-5.2	GLORIA J. SIMMONS HAROLD SIMMONS	GASTAR EXPLORATION USA INC	1/8+	695	313	NA	NA	23/353 Gastar Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties to SWN Exchange Titelholder LLC	19/624 SWN Exchange Titelholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17199	G	5-24-5.2	PAMELA L DRAZIC AND JEFFREY DRAZIC	GASTAR EXPLORATION USA INC	1/8+	695	315	NA	NA	23/353 Gastar Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties to SWN Exchange Titelholder LLC	19/624 SWN Exchange Titelholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17200	G	5-24-5.2	STEPHANIE L. HALL	GASTAR EXPLORATION USA INC	1/8+	697	156	NA	NA	23/353 Gastar Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties to SWN Exchange Titelholder LLC	19/624 SWN Exchange Titelholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17201	G	5-24-5.2	DENISE A GALE	GASTAR EXPLORATION USA INC	1/8+	697	395	NA	NA	23/353 Gastar Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties to SWN Exchange Titelholder LLC	19/624 SWN Exchange Titelholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17202	G	5-24-5.2	JANE GALE	GASTAR EXPLORATION USA INC	1/8+	697	385	NA	NA	23/353 Gastar Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties to SWN Exchange Titelholder LLC	19/624 SWN Exchange Titelholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17203	G	5-24-5.2	BARRY RAY MOORE	GASTAR EXPLORATION USA INC	1/8+	697	387	NA	NA	23/353 Gastar Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties to SWN Exchange Titelholder LLC	19/624 SWN Exchange Titelholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17204	G	5-24-5.2	CLARENCE RICHARD ZESIGER & MARY ZESIGER	GASTAR EXPLORATION USA INC	1/8+	697	391	NA	NA	23/353 Gastar Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties to SWN Exchange Titelholder LLC	19/624 SWN Exchange Titelholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17206	G	5-24-5.2	M VIRGINIA & EDWARD C MARSH	GASTAR EXPLORATION USA INC	1/8+	697	399	NA	NA	23/353 Gastar Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties to SWN Exchange Titelholder LLC	19/624 SWN Exchange Titelholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC

10*17207	G	5-24-5-2	DEBORAH K. KLIMASZEWSKI FRANK KLIMASZEWSKI, SR.	GASTAR EXPLORATION USA INC	1/8+	697	389	NA	NA	23/353 Gastar Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titledholder LLC	19/624 SWN Exchange Titledholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17210	G	5-24-5-2	MARILYN NOEL	GASTAR EXPLORATION USA INC	1/8+	697	393	NA	NA	23/353 Gastar Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titledholder LLC	19/624 SWN Exchange Titledholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17211	G	5-24-5-2	GARY WAYNE ZESIGER & VICKIE ZESIGER	GASTAR EXPLORATION USA INC	1/8+	697	397	NA	NA	23/353 Gastar Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titledholder LLC	19/624 SWN Exchange Titledholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17212	G	5-24-5-2	DARRELL NEWLAND LVDIA NEWLAND	GASTAR EXPLORATION USA INC	1/8+	697	158	NA	NA	23/353 Gastar Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titledholder LLC	19/624 SWN Exchange Titledholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17213	G	5-24-5-2	CAROL DEEN GARDNER	GASTAR EXPLORATION USA INC	1/8+	697	154	NA	NA	23/353 Gastar Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titledholder LLC	19/624 SWN Exchange Titledholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*18275	G	5-24-5-2	BETTY JEAN NEELY MARY LOU WILSON AND STANLEY D WILSON MICHAEL WILSON AIF	TH EXPLORATION, LLC	1/8+	929	60	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18366	G	5-24-5-2	CRAIG ALAN YOHO AND DONNA M YOHO	TH EXPLORATION, LLC	1/8+	931	311	NA	NA	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titledholder LLC	19/624 SWN Exchange Titledholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*18369	G	5-24-5-2	DAVID N DEVICK TRUSTEE OF THE TONI JO MASON LIVING TRUST	TH EXPLORATION, LLC	1/8+	931	303	NA	NA	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titledholder LLC	19/624 SWN Exchange Titledholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*18370	G	5-24-5-2	ERICA M MASON	TH EXPLORATION, LLC	1/8+	942	53	NA	NA	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titledholder LLC	19/624 SWN Exchange Titledholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*19652	G	5-24-5-2	JACK R HAMMERS	TH EXPLORATION, LLC	1/8+	944	108	NA	NA	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titledholder LLC	19/624 SWN Exchange Titledholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*23325	G	5-24-5-2	BRADLEY W YOHO	TH EXPLORATION, LLC	1/8+	966	482	NA	NA	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titledholder LLC	19/624 SWN Exchange Titledholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*25627	G	5-24-5-2	CHESTNUT HOLDINGS LLC	TH EXPLORATION, LLC	1/8+	1034	548	NA	NA	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titledholder LLC	19/624 SWN Exchange Titledholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC

10*21436	G	5-24-5-2	CECILIA D NEWLAND DAPHNE HUFFMAN AND CHARLES HUFFMAN	TH EXPLORATION, LLC	1/8+	957	55	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties Inc to SWN Exchange	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*21419	G	5-24-5-2	DONALD R NEWLAND AND SUZANNE NEWLAND	TH EXPLORATION, LLC	1/8+	957	59	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties Inc to SWN Exchange	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*21183	G	5-24-5-2	JANE ELLEN MARCUM	TH EXPLORATION, LLC	1/8+	952	205	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties Inc to SWN Exchange	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*14130	H	5-23-7-2	NOEL S YOHO	GASTAR EXPLORATION USA INC	1/8+	708	185	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties Inc to SWN Exchange	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*14131	H	5-23-7-2	CHRISTA JO DAVIES	GASTAR EXPLORATION USA INC	1/8+	710	65	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties Inc to SWN Exchange	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*14132	H	5-23-7-2	THOMAS S YOHO	GASTAR EXPLORATION USA INC	1/8+	708	199	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties Inc to SWN Exchange	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*14133	H	5-23-7-2	ORVILLE YOUNG	GASTAR EXPLORATION USA INC	1/8+	800	598	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties Inc to SWN Exchange	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*14817	I	5-24-5-5	DEWEY A MILICIA AND ROBIN MILICIA	GASTAR EXPLORATION INC	1/8+	874	351	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties Inc to SWN Exchange	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*14818	I	5-24-5-5	NICOLETTA MILICIA BLOODWORTH	GASTAR EXPLORATION INC	1/8+	875	591	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties Inc to SWN Exchange	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*14819	I	5-24-5-5	DANA MILICIA HUMPHREYS	GASTAR EXPLORATION INC	1/8+	875	593	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties Inc to SWN Exchange	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*14820	I	5-24-5-5	JANICE N HAUDENSCHILT	GASTAR EXPLORATION INC	1/8+	875	597	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties Inc to SWN Exchange	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*14821	I	5-24-5-5	TRUST STEPHEN W BURGE AS TRUSTEE	GASTAR EXPLORATION INC	1/8+	876	463	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties Inc to SWN Exchange	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*14822	I	5-24-5-5	SARAH L BURGE TRUST STEPHEN W BURGE AS TRUSTEE	GASTAR EXPLORATION INC	1/8+	876	459	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties Inc to SWN Exchange	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17181	I	5-24-5-5	PAUL F HAMMERS	CHESAPEAKE APPALACHIA LLC	1/8+	705	593	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties Inc to SWN Exchange	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC

10*17182	1	5-24-5-5	TWILA ORA WHIPKEY	CHESAPEAKE APPALACHIA LLC	1/8+	715	505	NA	NA	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17195	1	5-24-5-5	PATRICIA HARTMAN	GASTAR EXPLORATION USA INC	1/8+	695	317	NA	NA	23/353 Gastar Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17196	1	5-24-5-5	DELBERT R. MONTGOMERY	GASTAR EXPLORATION USA INC	1/8+	695	311	NA	NA	23/353 Gastar Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17197	1	5-24-5-5	GLORIA J. SIMMONS HAROLD SIMMONS	GASTAR EXPLORATION USA INC	1/8+	695	313	NA	NA	23/353 Gastar Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17199	1	5-24-5-5	PAMELA L DRAZIC AND JEFFREY DRAZIC	GASTAR EXPLORATION USA INC	1/8+	695	315	NA	NA	23/353 Gastar Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17200	1	5-24-5-5	STEPHANIE L. HALL	GASTAR EXPLORATION USA INC	1/8+	697	156	NA	NA	23/353 Gastar Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17201	1	5-24-5-5	DENISE A GALE	GASTAR EXPLORATION USA INC	1/8+	697	395	NA	NA	23/353 Gastar Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC

10*17181	J	5-24-5	PAUL F HAMMERS	CHESAPEAKE APPALACHIA LLC	1/8+	705	593	NA	NA	NA	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titheholder LLC	19/624 SWN Exchange Titheholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17182	J	5-24-5	TWILA ORA WHIPKEY	CHESAPEAKE APPALACHIA LLC	1/8+	715	505	NA	NA	NA	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titheholder LLC	19/624 SWN Exchange Titheholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17195	J	5-24-5	PATRICIA HARTMAN	GASTAR EXPLORATION USA INC	1/8+	695	317	NA	NA	NA	23/353 Gaster Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gaster Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties to SWN Exchange Titheholder LLC	19/624 SWN Exchange Titheholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17196	J	5-24-5	DELBERT R. MONTGOMERY	GASTAR EXPLORATION USA INC	1/8+	695	311	NA	NA	NA	23/353 Gaster Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gaster Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties to SWN Exchange Titheholder LLC	19/624 SWN Exchange Titheholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17197	J	5-24-5	GLORIA J. SIMMONS HAROLD SIMMONS	GASTAR EXPLORATION USA INC	1/8+	695	313	NA	NA	NA	23/353 Gaster Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gaster Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties to SWN Exchange Titheholder LLC	19/624 SWN Exchange Titheholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17199	J	5-24-5	PAMELA L DRAZIC AND JEFFREY DRAZIC	GASTAR EXPLORATION USA INC	1/8+	695	315	NA	NA	NA	23/353 Gaster Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gaster Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties to SWN Exchange Titheholder LLC	19/624 SWN Exchange Titheholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17200	J	5-24-5	STEPHANIE L HALL	GASTAR EXPLORATION USA INC	1/8+	697	156	NA	NA	NA	23/353 Gaster Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gaster Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties to SWN Exchange Titheholder LLC	19/624 SWN Exchange Titheholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17201	J	5-24-5	DENISE A GALE	GASTAR EXPLORATION USA INC	1/8+	697	395	NA	NA	NA	23/353 Gaster Exploration USA Inc to Atrium Marcellus I LLC	27/311 Gaster Exploration USA Inc and Atrium Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties to SWN Exchange Titheholder LLC	19/624 SWN Exchange Titheholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC

10*18369	J	5-24-5	CRAIG ANTHONY DONNA M YOHO	TH EXPLORATION, LLC	1/8+	931	303	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/639 Gastar Exploration USA Inc to Athnum Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*18370	J	5-24-5	SAMUEL D YOHO	TH EXPLORATION, LLC	1/8+	931	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/639 Gaster Exploration USA Inc to Athnum Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*18379	J	5-24-5	DAVID N DEVICK TRUSTEE OF THE TONI JO MASON LIVING TRUST	TH EXPLORATION, LLC	1/8+	932	439	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	28/499 Gaster Exploration USA Inc to Athnum Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*19540	J	5-24-5	ERICA M MASON	TH EXPLORATION, LLC	1/8+	942	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/639 Gaster Exploration USA Inc to Athnum Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*19652	J	5-24-5	JACK R HAMMERS	TH EXPLORATION, LLC	1/8+	944	108	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/639 Gaster Exploration USA Inc to Athnum Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*23325	J	5-24-5	BRADLEY W YOHO	TH EXPLORATION, LLC	1/8+	966	482	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/639 Gaster Exploration USA Inc to Athnum Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*25627	J	5-24-5	CHESTNUT HOLDINGS LLC	TH EXPLORATION, LLC	1/8+	1034	548	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/639 Gaster Exploration USA Inc to Athnum Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*21436	J	5-24-5	CECILIA D NEWLAND	TH EXPLORATION, LLC	1/8+	957	55	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/639 Gaster Exploration USA Inc to Athnum Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*21419	J	5-24-5	DAPHNE HUFFMAN AND CHARLES HUFFMAN	TH EXPLORATION, LLC	1/8+	957	59	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/639 Gaster Exploration USA Inc to Athnum Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*21183	J	5-24-5	DONALD R NEWLAND AND SUZANNE NEWLAND	TH EXPLORATION, LLC	1/8+	952	205	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/639 Gaster Exploration USA Inc to Athnum Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14558	K	5-24-6	KLOVA ANN MORRIS	GASTAR EXPLORATION USA INC	1/8+	765	434	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/639 Gaster Exploration USA Inc to Athnum Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14559	K	5-24-6	WILLIAM L LITMAN	GASTAR EXPLORATION USA INC	1/8+	767	258	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/639 Gaster Exploration USA Inc to Athnum Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14560	K	5-24-6	AARON DEAN LITMAN	GASTAR EXPLORATION USA INC	1/8+	767	262	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/639 Gaster Exploration USA Inc to Athnum Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14561	K	5-24-6	THE ESTATE OF MERNA NELSON C/O ULA NELSON	GASTAR EXPLORATION USA INC	1/8+	770	474	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	28/499 Gaster Exploration USA Inc to Athnum Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14562	K	5-24-6	MARY VOLTZ	GASTAR EXPLORATION USA INC	1/8+	773	575	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	28/499 Gaster Exploration USA Inc to Athnum Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14563	K	5-24-6	JACK MICHAEL FOREMAN	GASTAR EXPLORATION USA INC	1/8+	796	44	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	806/1 Gaster Exploration USA Inc to Athnum Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC

10*14564	K	5-24-6	JULIE SPRINGWATER	GASTAR EXPLORATION USA INC	1/8+	799	57	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	806/1 Gastar Exploration USA Inc to Athnum 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*17597	K	5-24-6	JOHN P ICARD AND REVA J ICARD VICKI LYNN AND RICHARD FRANKLIN WOOD	TH EXPLORATION, LLC	1/8+	957	129	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*17626	K	5-24-6	THE ESTATE OF ROY JOSEPH LEACH	TH EXPLORATION, LLC	1/8+	927	647	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18174	K	5-24-6	MELISSA MILLER GIBSON AND JAMES GIBSON	TH EXPLORATION, LLC	1/8+	953	308	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21455	K	5-24-6	JERRY ELDON RICHMOND	GASTAR EXPLORATION USA INC	1/8+	744	57	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	26/639 Gastar Exploration USA Inc to Athnum 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*14463	L	5-24-4	CHERYL ANN COCHRAN	GASTAR EXPLORATION USA INC	1/8+	744	231	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	26/639 Gastar Exploration USA Inc to Athnum 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*14464	L	5-24-4	NIKA JEAN COCHRAN	GASTAR EXPLORATION USA INC	1/8+	744	59	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	26/639 Gastar Exploration USA Inc to Athnum 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*14465	L	5-24-4	LARRY RICHMOND	GASTAR EXPLORATION USA INC	1/8+	744	61	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	26/639 Gastar Exploration USA Inc to Athnum 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*14466	L	5-24-4	BETTY ROSE YOHO	GASTAR EXPLORATION USA INC	1/8+	749	580	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	26/639 Gastar Exploration USA Inc to Athnum 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*14467	L	5-24-4	DANA MILICIA HUMPHREYS	CHESAPEAKE APPALACHIA LLC	1/8+	694	351	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Athnum 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*14468	L	5-24-4	TWILA ORA WHIPKEY	CHESAPEAKE APPALACHIA LLC	1/8+	692	416	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	24/338 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	21/41 Gastar Exploration USA Inc and Athnum Marcellus I LLC merger	36/9 Gastar Exploration Inc to TH Exploration II LLC

10*14469	L	5-24-4	JACK R HAMMERS	CHESAPEAKE APPALACHIA LLC	1/8+	690	547	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/321 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*14470	L	5-24-4	DONNA V YOHO	CHESAPEAKE APPALACHIA LLC	1/8+	690	645	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/321 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*14471	L	5-24-4	JANICE N HAUDENSCHILT	CHESAPEAKE APPALACHIA LLC	1/8+	691	501	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/321 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*14472	L	5-24-4	O E BURGE AND SARAH L BURGE	CHESAPEAKE APPALACHIA LLC	1/8+	692	582	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/321 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*14473	L	5-24-4	IMA LEE YOHO	CHESAPEAKE APPALACHIA LLC	1/8+	693	293	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/321 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*14474	L	5-24-4	ROY FRIEND YOHO	CHESAPEAKE APPALACHIA LLC	1/8+	693	298	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/321 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*14475	L	5-24-4	LAWRENCE E YOHO	CHESAPEAKE APPALACHIA LLC	1/8+	693	303	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/321 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*14476	L	5-24-4	MARK W YOHO	CHESAPEAKE APPALACHIA LLC	1/8+	693	308	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/321 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*14477	L	5-24-4	NICOLETTA MILICIA BLOODWORTH	CHESAPEAKE APPALACHIA LLC	1/8+	694	117	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/321 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*14478	L	5-24-4	DEWEY A MILICIA	CHESAPEAKE APPALACHIA LLC	1/8+	694	347	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/321 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*14479	L	5-24-4	PAUL F HAMMERS	CHESAPEAKE APPALACHIA LLC	1/8+	697	148	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/321 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*18379	L	5-24-4	DAVID N DEVICK TRUSTEE OF THE TONI JO MASON LIVING TRUST	TH EXPLORATION, LLC	1/8+	932	439	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*19540	L	5-24-4	ERICA M MASON	TH EXPLORATION, LLC	1/8+	942	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*14786	M	5-25-20	TWILA O WHIRKEY	GASTAR EXPLORATION USA INC	1/8+	799	61	NA	NA	NA	NA	NA	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*14792	M	5-25-20	TIMOTHY YOHO	GASTAR EXPLORATION USA INC	1/8+	799	536	NA	NA	NA	NA	NA	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*14797	M	5-25-20	ORVILLE YOUNG	GASTAR EXPLORATION USA INC	1/8+	800	598	NA	NA	NA	NA	NA	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*14815	M	5-25-20	CHESTNUT HOLDINGS INC	GASTAR EXPLORATION INC	1/8+	827	535	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	32/428 Gastar Exploration to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC

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10*14822	M	5-25-20	ONWARD E BURGE TRUST STEPHEN W BURGE AS TRUSTEE	GASTAR EXPLORATION USA INC	1/8+	876	463	NA	NA	NA	NA	NA	23/353 Gaster Exploration USA Inc to Atinum Marcellus I LLC	27/311 Gaster Exploration USA Inc and Atinum Marcellus I LLC	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	35/144 Gaster Exploration Inc to Atinum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14823	M	5-25-20	SARAH L BURGE TRUST STEPHEN W BURGE AS TRUSTEE	GASTAR EXPLORATION USA INC	1/8+	876	459	NA	NA	NA	NA	NA	23/353 Gaster Exploration USA Inc to Atinum Marcellus I LLC	27/311 Gaster Exploration USA Inc and Atinum Marcellus I LLC	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	35/144 Gaster Exploration Inc to Atinum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*17195	M	5-25-20	PATRICIA HARTMAN	GASTAR EXPLORATION USA INC	1/8+	695	317	NA	NA	NA	NA	NA	23/353 Gaster Exploration USA Inc to Atinum Marcellus I LLC	27/311 Gaster Exploration USA Inc and Atinum Marcellus I LLC	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17196	M	5-25-20	DELBERT R. MONTGOMERY	GASTAR EXPLORATION USA INC	1/8+	695	311	NA	NA	NA	NA	NA	23/353 Gaster Exploration USA Inc to Atinum Marcellus I LLC	27/311 Gaster Exploration USA Inc and Atinum Marcellus I LLC	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17197	M	5-25-20	GLORIA J. SIMMONS HAROLD SIMMONS	GASTAR EXPLORATION USA INC	1/8+	695	313	NA	NA	NA	NA	NA	23/353 Gaster Exploration USA Inc to Atinum Marcellus I LLC	27/311 Gaster Exploration USA Inc and Atinum Marcellus I LLC	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17199	M	5-25-20	PAMELA L DRAZIC AND JEFFREY DRAZIC	GASTAR EXPLORATION USA INC	1/8+	695	315	NA	NA	NA	NA	NA	23/353 Gaster Exploration USA Inc to Atinum Marcellus I LLC	27/311 Gaster Exploration USA Inc and Atinum Marcellus I LLC	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17200	M	5-25-20	STEPHANIE L HALL	GASTAR EXPLORATION USA INC	1/8+	697	156	NA	NA	NA	NA	NA	23/353 Gaster Exploration USA Inc to Atinum Marcellus I LLC	27/311 Gaster Exploration USA Inc and Atinum Marcellus I LLC	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17201	M	5-25-20	DENISE A GALE	GASTAR EXPLORATION USA INC	1/8+	697	395	NA	NA	NA	NA	NA	23/353 Gaster Exploration USA Inc to Atinum Marcellus I LLC	27/311 Gaster Exploration USA Inc and Atinum Marcellus I LLC	33/110 Chesapeake Appalachia LLC to SWN Production Company	33/424 Statoil USA Onshore Properties to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC

10*17202	M	5-25-20	JANE GALE	GASTAR EXPLORATION USA INC	1/8+	697	385	NA	NA	23/353 Gastar Exploration USA Inc to Atinum Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17203	M	5-25-20	BARRY RAY MOORE	GASTAR EXPLORATION USA INC	1/8+	697	387	NA	NA	23/353 Gastar Exploration USA Inc to Atinum Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17204	M	5-25-20	CARENCE RICHARD ZESIGER & MARY ZESIGER	GASTAR EXPLORATION USA INC	1/8+	697	391	NA	NA	23/353 Gastar Exploration USA Inc to Atinum Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17206	M	5-25-20	M VIRGINIA & EDWARD C MARSH	GASTAR EXPLORATION USA INC	1/8+	697	399	NA	NA	23/353 Gastar Exploration USA Inc to Atinum Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17207	M	5-25-20	DEBORAH K. KLIMASZEWSKI FRANK KLIMASZEWSKI, SR.	GASTAR EXPLORATION USA INC	1/8+	697	389	NA	NA	23/353 Gastar Exploration USA Inc to Atinum Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17210	M	5-25-20	MARILYN NOEL	GASTAR EXPLORATION USA INC	1/8+	697	393	NA	NA	23/353 Gastar Exploration USA Inc to Atinum Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17211	M	5-25-20	GARY WAYNE ZESIGER & VICKIE ZESIGER	GASTAR EXPLORATION USA INC	1/8+	697	397	NA	NA	23/353 Gastar Exploration USA Inc to Atinum Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC
10*17212	M	5-25-20	DARRELL NEWLAND LVIDIA NEWLAND	GASTAR EXPLORATION USA INC	1/8+	697	158	NA	NA	23/353 Gastar Exploration USA Inc to Atinum Marcellus I LLC	27/311 Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC	33/110 Chesapeake Appalachia LLC to SWN Production Company LLC	33/424 Statoil USA Onshore Properties Inc to SWN Titleholder LLC	19/624 SWN Exchange Titleholder LLC and SWN Production Company LLC merger	41/238 Statoil USA Onshore Properties Inc to TH Exploration LLC	41/256 SWN Production Company LLC to TH Exploration LLC

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10*14737	N	5-25-1.4	MARION PARSONS JR	GASTAR EXPLORATION INC	1/8+	844	83	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	24/335 Gaster Athnum Marcellus I LLC	33/308 Gaster Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC						
10*18284	N	5-25-1.4	RODNEY & RHONDA JACKSON	TH EXPLORATION, LLC	1/8+	929	62	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	24/335 Gaster Athnum Marcellus I LLC	NA	NA		
10*18284	N	5-25-1.4	RODNEY & RHONDA JACKSON	TH EXPLORATION, LLC	1/8+	929	62	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
10*14068	O	5-24-3.1	ROHN JEAN MARTIN	GASTAR EXPLORATION USA INC	1/8+	666	552	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23/353 Gaster Athnum Marcellus I LLC	21/41 Gaster Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14069	O	5-24-3.1	SHARON E YOHO	GASTAR EXPLORATION USA INC	1/8+	708	193	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23/353 Gaster Athnum Marcellus I LLC	21/41 Gaster Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14070	O	5-24-3.1	CLAUDIA R SCHEHLE	GASTAR EXPLORATION USA INC	1/8+	708	197	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23/353 Gaster Athnum Marcellus I LLC	21/41 Gaster Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14071	O	5-24-3.1	SHIRLEY M DORSEY AND WILLIAM DORSEY	GASTAR EXPLORATION USA INC	1/8+	708	187	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23/353 Gaster Athnum Marcellus I LLC	21/41 Gaster Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14072	O	5-24-3.1	CHARLES ROBERT MYERS	GASTAR EXPLORATION USA INC	1/8+	708	189	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23/353 Gaster Athnum Marcellus I LLC	21/41 Gaster Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14073	O	5-24-3.1	RICHARD WHITE II & GIORIA J WHITE	GASTAR EXPLORATION USA INC	1/8+	708	195	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23/353 Gaster Athnum Marcellus I LLC	21/41 Gaster Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14074	O	5-24-3.1	JANE N FISHER AND LEX FISHER	GASTAR EXPLORATION USA INC	1/8+	710	604	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	735/263 Gaster Athnum Marcellus I LLC	21/41 Gaster Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14075	O	5-24-3.1	SHIRLEY K WHITE	GASTAR EXPLORATION USA INC	1/8+	708	201	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	24/335 Gaster Athnum Marcellus I LLC	21/41 Gaster Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14076	O	5-24-3.1	PATRICIA CROW AGENT & AIF FOR VERLA SHUTTER	GASTAR EXPLORATION USA INC	1/8+	710	63	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	24/335 Gaster Athnum Marcellus I LLC	21/41 Gaster Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14077	O	5-24-3.1	WILLIAM FRANK TORRES	GASTAR EXPLORATION USA INC	1/8+	710	72	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	24/335 Gaster Athnum Marcellus I LLC	21/41 Gaster Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14078	O	5-24-3.1	CAROL VASS	GASTAR EXPLORATION USA INC	1/8+	710	74	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	24/335 Gaster Athnum Marcellus I LLC	21/41 Gaster Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC

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10*14079	0	5-24-3.1	ION & SUSAN NEWMAN	GASTAR EXPLORATION USA INC	1/8+	710	76	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	24/335 Gastar Exploration USA Inc to Atrium 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*14080	0	5-24-3.1	EDITH OBLINGER	GASTAR EXPLORATION USA INC	1/8+	714	133	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	735/263 Gastar Exploration USA Inc to Atrium 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*14081	0	5-24-3.1	STEVEN L & CAROL J NEWMAN	GASTAR EXPLORATION USA INC	1/8+	724	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	735/263 Gastar Exploration USA Inc to Atrium 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*14082	0	5-24-3.1	PAUL E & LYNN E BARCUS JR	GASTAR EXPLORATION USA INC	1/8+	734	455	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	26/183 Gastar Exploration USA Inc to Atrium 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*14083	0	5-24-3.1	JAN L O'DONNELL	GASTAR EXPLORATION USA INC	1/8+	739	415	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	26/183 Gastar Exploration USA Inc to Atrium 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*14084	0	5-24-3.1	ROGER A & LAURA J MAY	GASTAR EXPLORATION USA INC	1/8+	741	643	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	26/639 Gastar Exploration USA Inc to Atrium 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*14085	0	5-24-3.1	BRAD EYMON	GASTAR EXPLORATION USA INC	1/8+	741	645	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	26/639 Gastar Exploration USA Inc to Atrium 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*14086	0	5-24-3.1	BRUCE BAILEY	GASTAR EXPLORATION USA INC	1/8+	741	647	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23/353 Gastar Exploration USA Inc to Atrium 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*14090	0	5-24-3.1	CATHERINE R KLUG PAUL FOX - POWER OF ATTORNEY	GASTAR EXPLORATION USA INC	1/8+	762	454	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atrium 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*14091	0	5-24-3.1	AGNES C KLUG	GASTAR EXPLORATION USA INC	1/8+	762	456	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atrium Marcellus I LLC	33/308 Gastar Exploration Inc to Atrium Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC
10*14094	0	5-24-3.1	GUV J INGRASSELLINO	GASTAR EXPLORATION INC	1/8+	839	528	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23467	0	5-24-3.1	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION, LLC	1/8+	1010	228	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*25630	0	5-24-3.1	CHESTNUT HOLDINGS LLC	TH EXPLORATION, LLC	1/8+	1034	544	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*14525	P	5-25-2.2	INA LEE YOHO	GASTAR EXPLORATION USA INC	1/8+	757	192	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	26/639 Gastar Exploration USA Inc to Atrium 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*14728	Q	5-25-13	IRIS K MOELLENDICK	GASTAR EXPLORATION INC	1/8+	839	509	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14729	Q	5-25-13	BONNIE S SHANNON, INDIVIDUALLY	GASTAR EXPLORATION INC	1/8+	839	511	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14730	Q	5-25-13	CATHIE K LAKE	GASTAR EXPLORATION USA INC	1/8+	839	513	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14731	Q	5-25-13	RICHARD KLUG CLARENCE BAXTER BY RODNEY C BAXTER, AGENT AND AIF	GASTAR EXPLORATION USA INC	1/8+	839	515	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14734	Q	5-25-13	GLENNALEE COZART	GASTAR EXPLORATION USA INC	1/8+	842	376	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14735	Q	5-25-13	GLENNALEE COZART	GASTAR EXPLORATION USA INC	1/8+	842	378	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14737	Q	5-25-13	MARION PARSONS JR	GASTAR EXPLORATION USA INC	1/8+	844	83	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14738	Q	5-25-13	MICHAEL E & ANNIE A CHAPMAN	GASTAR EXPLORATION USA INC	1/8+	787	627	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29/157 Gaster Exploration USA Inc to Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14661	R	5-25-12	ANDREA & WILLIAM DUBIEL JR	GASTAR EXPLORATION USA INC	1/8+	777	563	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	28/499 Gaster Exploration USA Inc to Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14728	R	5-25-12	IRIS K MOELLENDICK	GASTAR EXPLORATION INC	1/8+	839	509	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14729	R	5-25-12	BONNIE S SHANNON, INDIVIDUALLY	GASTAR EXPLORATION INC	1/8+	839	511	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14730	R	5-25-12	CATHIE K LAKE	GASTAR EXPLORATION USA INC	1/8+	839	513	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14731	R	5-25-12	RICHARD KLUG CLARENCE BAXTER BY RODNEY C BAXTER, AGENT AND AIF	GASTAR EXPLORATION USA INC	1/8+	839	515	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14734	R	5-25-12	GLENNALEE COZART	GASTAR EXPLORATION USA INC	1/8+	842	376	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14735	R	5-25-12	GLENNALEE COZART	GASTAR EXPLORATION USA INC	1/8+	842	378	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14737	R	5-25-12	MARION PARSONS JR	GASTAR EXPLORATION USA INC	1/8+	844	83	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14728	S	5-25-1.1	IRIS K MOELLENDICK	GASTAR EXPLORATION INC	1/8+	839	509	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athnum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC

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10*14729	S	5-25-11	BONNIE S SHANNON, INDIVIDUALLY	GASTAR EXPLORATION INC	1/8+	839	511	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14730	S	5-25-11	CATHIE K LAKE	GASTAR EXPLORATION USA INC	1/8+	839	513	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14731	S	5-25-11	RICHARD KLUG CLARENCE BAXTER BY RODNEY C BAXTER, AGENT AND AIF	GASTAR EXPLORATION USA INC	1/8+	839	515	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14734	S	5-25-11	RICHARD KLUG	GASTAR EXPLORATION USA INC	1/8+	842	376	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14735	S	5-25-1.1	GLENNALEE COZART	GASTAR EXPLORATION USA INC	1/8+	842	378	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14736	S	5-25-1.1	RYAN A & JACQUELINE E LAYMAN	GASTAR EXPLORATION USA INC	1/8+	842	380	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14737	S	5-25-1.1	MARION PARSONS JR	GASTAR EXPLORATION USA INC	1/8+	844	83	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14728	T	5-25-1	IRIS K MOELLENDICK	GASTAR EXPLORATION INC	1/8+	839	509	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14729	T	5-25-1	BONNIE S SHANNON, INDIVIDUALLY	GASTAR EXPLORATION INC	1/8+	839	511	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14730	T	5-25-1	CATHIE K LAKE	GASTAR EXPLORATION USA INC	1/8+	839	513	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14731	T	5-25-1	RICHARD KLUG CLARENCE BAXTER BY RODNEY C BAXTER, AGENT AND AIF	GASTAR EXPLORATION USA INC	1/8+	839	515	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14734	T	5-25-1	AGENT AND AIF	GASTAR EXPLORATION USA INC	1/8+	842	376	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14735	T	5-25-1	GLENNALEE COZART	GASTAR EXPLORATION USA INC	1/8+	842	378	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14737	T	5-25-1	MARION PARSONS JR	GASTAR EXPLORATION USA INC	1/8+	844	83	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*19914	T	5-25-1	MICHAEL L MASON	TH EXPLORATION, LLC	1/8+	945	436	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*14728	U	5-25-13	IRIS K MOELLENDICK	GASTAR EXPLORATION INC	1/8+	839	509	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14729	U	5-25-13	BONNIE S SHANNON, INDIVIDUALLY	GASTAR EXPLORATION INC	1/8+	839	511	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14730	U	5-25-13	CATHIE K LAKE	GASTAR EXPLORATION USA INC	1/8+	839	513	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Atrium Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC

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10*14733	U	5-25-13	NICHOLAS J KLUG & DEBRA L KLUG	GASTAR EXPLORATION USA INC	1/8+	842	374	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athinum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14734	U	5-25-13	CLARENCE BAXTER BY RODNEY C BAXTER, AGENT AND AIF	GASTAR EXPLORATION USA INC	1/8+	842	376	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athinum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14735	U	5-25-13	GLENNALLEE COZART	GASTAR EXPLORATION USA INC	1/8+	842	378	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athinum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14737	U	5-25-13	MARION PARSONS JR	GASTAR EXPLORATION USA INC	1/8+	844	83	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athinum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14728	V	5-25-15	IRIS K MOELLENDICK	GASTAR EXPLORATION INC	1/8+	839	509	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athinum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14729	V	5-25-15	BONNIE S SHANNON, INDIVIDUALLY	GASTAR EXPLORATION INC	1/8+	839	511	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athinum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14730	V	5-25-15	CATHIE K LAKE	GASTAR EXPLORATION USA INC	1/8+	839	513	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athinum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14731	V	5-25-15	RICHARD KLUG	GASTAR EXPLORATION USA INC	1/8+	839	515	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athinum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14734	V	5-25-15	CLARENCE BAXTER BY RODNEY C BAXTER, AGENT AND AIF	GASTAR EXPLORATION USA INC	1/8+	842	376	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athinum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14735	V	5-25-15	GLENNALLEE COZART	GASTAR EXPLORATION USA INC	1/8+	842	378	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athinum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14737	V	5-25-15	MARION PARSONS JR	GASTAR EXPLORATION USA INC	1/8+	844	83	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athinum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*24001	V	5-25-15	RYAN BRATTON	TH EXPLORATION, LLC	1/8+	1019	468	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14664	W	5-25-13.3	CHRISTINA L MILLER	GASTAR EXPLORATION USA INC	1/8+	779	496	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29/499 Gaster Exploration USA Inc to Athinum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14728	W	5-25-13.3	IRIS K MOELLENDICK	GASTAR EXPLORATION INC	1/8+	839	509	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athinum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14729	W	5-25-13.3	BONNIE S SHANNON, INDIVIDUALLY	GASTAR EXPLORATION INC	1/8+	839	511	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athinum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14730	W	5-25-13.3	CATHIE K LAKE	GASTAR EXPLORATION USA INC	1/8+	839	513	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athinum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14731	W	5-25-13.3	RICHARD KLUG	GASTAR EXPLORATION USA INC	1/8+	839	515	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athinum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC
10*14734	W	5-25-13.3	CLARENCE BAXTER BY RODNEY C BAXTER, AGENT AND AIF	GASTAR EXPLORATION USA INC	1/8+	842	376	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33/308 Gaster Exploration Inc to Athinum Marcellus I LLC	36/9 Gaster Exploration Inc to TH Exploration II LLC

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Operator's Well No. Hillrock S - 14HU

10*24785	AA	5-25-12	JOHN R RYBKOSKI AND LINDA RYBKOSKI	TH EXPLORATION, LLC	1/8+	1027	109	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
10*18120	BB	5-25-12.1	KENT & BETTY MASON	TH EXPLORATION, LLC	1/8+	927	75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	42/109 American Petroleum Partners Operating LLC to TH Exploration LLC
10*22496	CC	5-25-11.2	JAMES W KLUG	AMERICAN PETROLEUM PARTNERS LLC	1/8+	923	543	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	42/109 American Petroleum Partners Operating LLC to TH Exploration LLC
10*22984	DD	12-3-47	WETZEL COUNTY EMERGENCY AMBULANCE AUTHORITY INC	TH EXPLORATION, LLC	1/8+	209A	748	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*24576	EE	12-3-43	ADAM W FERRELL AND BRITTANY M FERRELL	TH EXPLORATION, LLC	1/8+	218A	837	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	42/109 American Petroleum Partners Operating LLC to TH Exploration LLC
10*22496	FF	12-3-42	JAMES W KLUG	AMERICAN PETROLEUM PARTNERS LLC	1/8+	923	543	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	42/109 American Petroleum Partners Operating LLC to TH Exploration LLC

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 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

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ASSIGNMENT OF OIL AND GAS LEASES

This ASSIGNMENT OF OIL AND GAS LEASES (the "**Assignment**") is made and entered into this 29th day of November, 2017 (the "**Effective Date**"), from **TH Exploration II, LLC**, a Texas limited liability company, having an address at 1320 S. University Drive, Suite 500, Fort Worth, TX 76107 (hereinafter "**Assignor**"), and **TH Exploration, LLC**, a Texas limited liability company, having an address at 1320 S. University Drive, Suite 500, Fort Worth, TX 76107 (hereinafter "**Assignee**").

WITNESSETH:

WHEREAS, Assignor is the owner of the right, title, and interest in those certain Oil and Gas Leases situated in Marshall County, West Virginia, which are described in Exhibit "A" and Exhibit "A-1" attached hereto and made a part hereof (hereinafter the "**Leases**"); and

WHEREAS, subject to the exceptions and reservations herein contained, Assignor desires to assign, set over, and transfer to Assignee all of Assignor's right, title, and interest in and to the Leases.

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, subject to the terms, reservations, waivers and provisions as hereinafter set forth, an undivided interest of all of Assignor's right, title and interest in and to the Leases and all oil, natural gas, natural gas liquids, condensate, casinghead gas and other liquefied or gaseous hydrocarbons or products ("**Hydrocarbons**") thereby held, in any and all depths and formations ("**Assigned Formations**"), together with any and all other rights that are reasonably necessary or convenient to explore for and produce Hydrocarbons from the Assigned Formations, including, but not limited to, the right of surface access, use and occupancy, the right of ingress and egress, the right to conduct geophysical and other exploratory activities, the right to lay pipeline, the right to drill through, but not perforate or stimulate, all other depths and formations necessary for the purpose of reaching the Assigned Formations and to conduct operations therein.

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

2. **Representations and Warranties.** Assignor represents and warrants that such Assignor has not conveyed or otherwise encumbered its interest in the Leases since the time that Assignor obtained its interests in the Leases.

Assignor represents and warrants that, as to its interests in the Leases, Assignor has paid all royalties, overriding royalties, and other payments required by the Leases which were due for the period in which Assignor held its interests in the Leases, including, but not limited to, the interests assigned hereunder, and that Assignor has fully performed all conditions necessary to maintain the Leases in full force and effect during such period.

Assignor represents and warrants that, as to its interests in the Leases, Assignor shall not, by virtue of this Assignment or otherwise, retain any interest in the Assigned Formations, including, without limitation, any overriding royalty interest or working interest therein or with respect thereto.

3. **Successors and Assigns.** The terms of this Assignment shall be binding upon and inure to the benefit of the parties hereto and each of their respective successors

DPS LAND SERVICES CORP-JESSICA LEMON
6000 TOWN CENTER BLVD STE 145
CANDONSBURG PA 15317-5870

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Environmental Protection

ASSIGNMENT AND CONVEYANCE

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

**ARTICLE 1
ASSIGNMENT OF ASSETS**

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

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

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

**ARTICLE 2
SPECIAL WARRANTY OF TITLE AND DISCLAIMERS**

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

Section 2.2 Disclaimers of Warranties and Representations.

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

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ASHLEY FAVINGER
AMERICAN PETROLEUM PARTNERS OPERATING LLC
4600 J BARRY COURT STE 310
CANONSBURG PA 15317-5854

BOOK 0042 PAGE 0109

STATE OF WEST VIRGINIA §
§
COUNTY OF MARSHALL §

ASSIGNMENT AND CONVEYANCE

THIS ASSIGNMENT AND CONVEYANCE (the "Assignment") is made and entered into this 18th day of May, 2018, and made effective December 12, 2017 (the "Effective Date"), by and between AMERICAN PETROLEUM PARTNERS OPERATING, LLC, (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 December 12, 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"); and

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

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

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

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

2. Special Warranty. Assignor represents and warrants that Assignor has not conveyed or otherwise encumbered (other than Permitted Encumbrances) its interest in the

Marshall County
Jan Pest, Clerk
Instrument 1440860
05/25/2018 @ 02:36:09 PM
ASSIGNMENTS
Book 42 @ Page 109
Pages Recorded 9
Recording Cost \$ 15.00

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WV-AGIR-0009



July 30, 2019

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

RE: Hillrock S-14HU

Subject: 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 Routes 4/7, 29/5 and 76 in the area reflected on the Hillrock S-14HU 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.

Sincerely,

A handwritten signature in blue ink that reads "Amy Miller".

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

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(1/12)

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

Date of Notice Certification: 07/30/2019

API No. 47- 051 -
Operator's Well No. Hillrock S-14HU
Well Pad Name: Simms

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>519,682.87</u>
County:	<u>Marshall</u>	UTM NAD 83 Northing:	<u>4,399,569.81</u>
District:	<u>Franklin</u>	Public Road Access:	<u>Rines Ridge Road (County Route 76)</u>
Quadrangle:	<u>New Martinsville 7.5'</u>	Generally used farm name:	<u>Terry E. and Deborah Simms</u>
Watershed:	<u>Fish Creek (HUC 10)</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.

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

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Required Attachments:

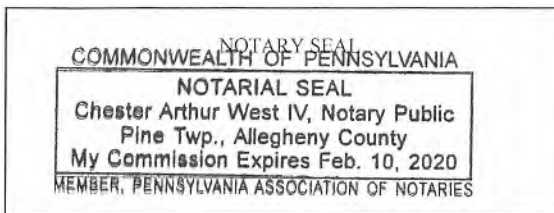
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication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

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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</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 30th day of July 2019.

[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 deprivacyofficer@wv.gov.

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4705102262
API NO. 47-051
OPERATOR WELL NO. Hillrock S-14HU
Well Pad Name: Simms

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: 8/23/2019 **Date Permit Application Filed:** 8/24/2019

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: Terry and Deborah Simms (Access Road and Well Pad)
Address: 7175 Rines Ridge Road
Proctor, WV 26055

Name: Kenneth and Nadine Corley (Access Road)
Address: 7069 Rines Ridge Road
Proctor, WV 26055

SURFACE OWNER(s) (Road and/or Other Disturbance)

Name: _____
Address: _____

Name: _____
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)

Name: _____
Address: _____

COAL OWNER OR LESSEE

Name: CNX Land Attn: Casey Saunders
Address: 1000 CONSOL Energy Drive
Canonsburg, PA 15317

COAL OPERATOR

Name: _____
Address: _____

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)

Name: See attached list
Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: _____
Address: _____

*Please attach additional forms if necessary

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Notice is hereby given:

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

This Notice Shall Include:

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

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

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

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

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

Well Location Restrictions

Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. 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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API NO. 47- 051 -
OPERATOR WELL NO. Hillrock S-14HU
Well Pad Name: Simms

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

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

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Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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

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API NO. 47-051 -
OPERATOR WELL NO. Hillrock S-14HU
Well Pad Name: Simms

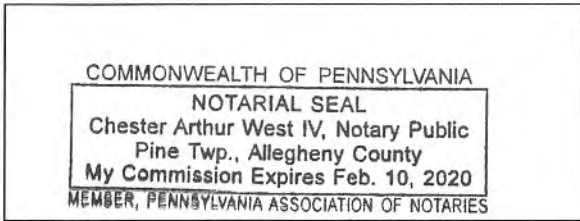
Notice is hereby given by:

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

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

Oil and Gas Privacy Notice:

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



Subscribed and sworn before me this 23rd day of July, 2019.

[Signature]

Notary Public

My Commission Expires 2-10-2020

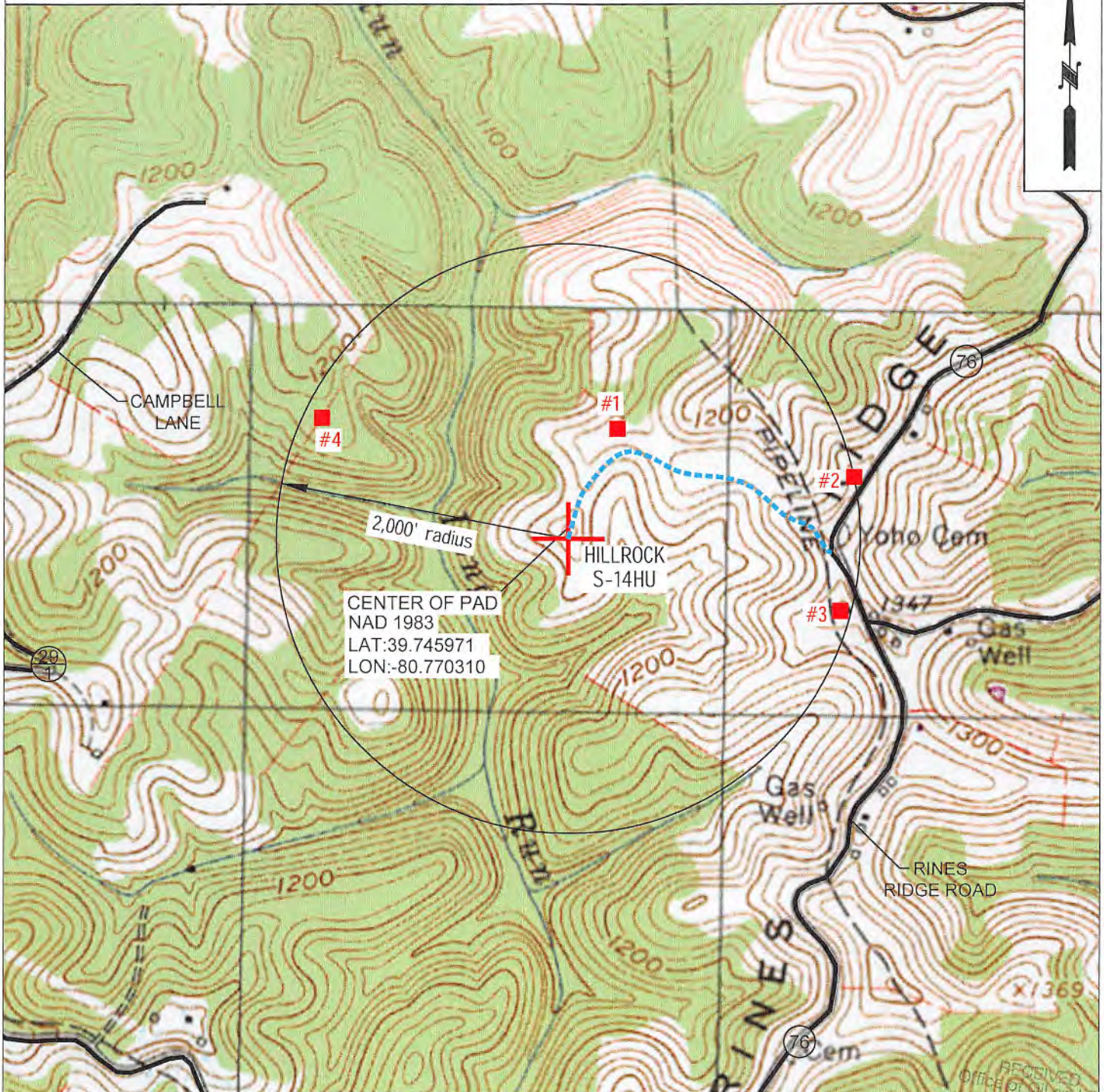
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Environmental Protection

WW-6A

PROPOSED HILLROCK S-14HU

SUPPLEMENT PG 1

There appears to be Four (4) possible water sources within 2,000'.



 TUG HILL OPERATING	OPERATOR 494510851	TOPO SECTION	LEASE NAME HUG - 9 2019
	TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317	NEW MARTINSVILLE 7.5'	HILLROCK
	SCALE:	1" = 1000'	DATE:
	DATE: 03-13-2019		

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PA Department of Environmental Protection

WW-6A

Supplement Pg. 1A

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

WATER WELL REPORT

Well: HILLROCK S-14HU
 District: Franklin
 County: Marshall
 State: WV

There appears to be Four (4) possible water sources within 2,000 feet of the above referenced well location.

Topo Spot #1 TM 17 Par.11 Kenneth N. Corley et ux 304-455-4983 7069 Rines Ridge Rd. Proctor, WV 26055	Topo spot #2 TM 17 Par.11 Kenneth N. & Deborah Corley 304-455-5670(H), 304-455-3844(C) 7069 Rines Ridge Rd. Proctor, WV 26055	Topo spot #3 TM 23 Par.7 Terry E. & Deborah Simms 304-455-1439 7175 Rines Ridge Rd. Proctor, WV 26055
Topo Spot #4 TM 23 Par.6 James A. Channing, et al 304-797-0119 c/o James Channing 3954 Clarimont Pl. Weirton, WV 26026		

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WW-6A3
(1/12)Operator Well No. Hillrock 14HU

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: 1/8/2018 **Date of Planned Entry:** 1/15/2018

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: Kenneth and Nadine Corley (Access Road)
 Address: 7069 Rines Ridge Road
Proctor, WV 26055

Name: Terry and Deborah Simms (Access Road and Well Pad)
 Address: 7175 Rines Ridge Road
Proctor, WV 26055

Name: _____
 Address: _____

COAL OWNER OR LESSEE

Name: CNX Land Attn: Casey Saunders
 Address: 1000 CONSOL Energy Drive
Canonsburg, PA 15317

MINERAL OWNER(s)

Name: Terry and Deborah L. Simms
 Address: 7175 Rines Ridge Road
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: West Virginia
 County: Marshall
 District: Franklin
 Quadrangle: New Martinsville 7.5'

Approx. Latitude & Longitude: 39.7459021; -80.7702658
 Public Road Access: Rines Ridge Road (County Route 76)
 Watershed: Fish Creek (HUC 10)
 Generally used farm name: Simms, Terry E. and Deborah

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 57th 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.

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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WW-6A5
(1/12)

Operator Well No. Hillrock S-14HU

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: 07/23/2019 **Date Permit Application Filed:** 07/30/2019

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: Terry and Deborah Simms (Access Road and Well Pad)

Address: 7175 Rines Ridge Road

Proctor, WV 26055

Name: Kenneth and Nadine Corley (Access Road)

Address: 7069 Rines 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>519,682.87</u>
County: <u>Marshall</u>	Northing: <u>4,399,569.81</u>
District: <u>Franklin</u>	Public Road Access: <u>Rines Ridge Road (County Route 76)</u>
Quadrangle: <u>New Martinsville 7.5'</u>	Generally used farm name: <u>Simms, Terry E. and Deborah</u>
Watershed: <u>Fish Creek (HUC 10)</u>	

This Notice Shall Include:

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

Well Operator: Tug Hill Operating, LLC

Telephone: 724-749-8388

Email: amiller@tug-hillop.com

Address: 380 Southpointe Boulevard, Plaza II, Suite 200

Canonsburg, PA 15317

Facsimile: 724-338-2030

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Environmental Protection

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.



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
Division of Highways

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

Thomas J. Smith, P. E.
 Secretary of Transportation/
 Commissioner of Highways

January 11, 2019

Jill M. Newman
 Deputy Commissioner

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

Subject: DOH Permits for the Simms Well Pad, Marshall County
 Hillrock 14HU Well

Dear Mr. Martin,

This well site will be accessed from Permit #06-2011-0123 transferred to Tug Hill Operating for access to the State Road for a well site located off of Marshall County Route 76 SLS.

The 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 January 3, 2012.

Very Truly Yours,

A handwritten signature in blue ink that reads "Gary K. Clayton".

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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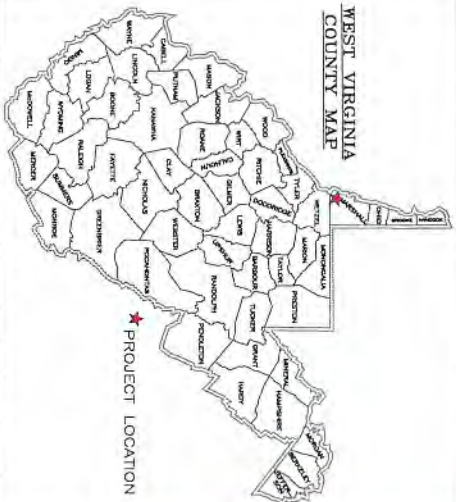


PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION

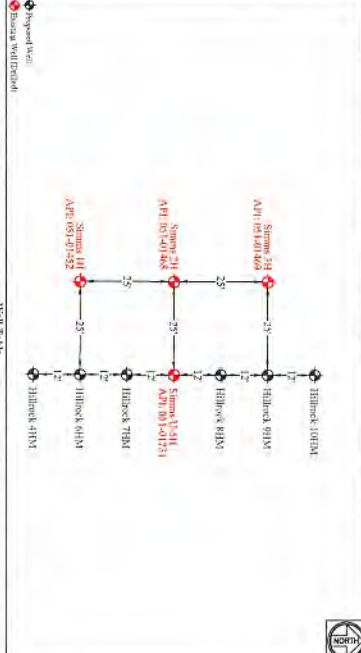
PRODUCT NAME:	CHEMICAL DESCRIPTION:	PRODUCT USE:	HAZARDOUS COMPONENT:
GBW-20C	Hemicellulase Breaker	Breaker - Water	None
ALPHA 1427		Biocide	Glutaraldehyde – CAS#000111-30-8 Quaternary ammonium chloride CAS# 007173-51-5 Alky dimethyl benzyl ammonium Chloride (C12-16) – CAS#068424-85-1 Ethanol – CAS#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

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Environmental Protection

WEST VIRGINIA
COUNTY MAP



Site Address	Center of Structure Line	Center of Structure Line
WV.N.NAD 81 E. 161134.70	WV.N.NAD 81 E. 161134.70	WV.N.NAD 81 E. 161213.56
WV.N.NAD 27 N. 462909.67	WV.N.NAD 27 N. 462909.67	WV.N.NAD 27 N. 462970.54
WV.N.NAD 27 E. 164418.34	WV.N.NAD 27 E. 164418.34	WV.N.NAD 27 E. 164581.66
WV.N.NAD 81 E. 164765.61	WV.N.NAD 81 E. 164765.61	WV.N.NAD 81 E. 164770.09
WV.N.NAD 81 E. 164765.61	WV.N.NAD 81 E. 164765.61	WV.N.NAD 27 S. 407700.92
Lm. NAD 27. 3074553214	Lm. NAD 27. 3074553214	Lm. NAD 27. 3074480888
Lm. NAD 27. 3074553214	Lm. NAD 27. 3074553214	Lm. NAD 27. 3074553214
Lm. NAD 27. 3074553214	Lm. NAD 27. 3074553214	Lm. NAD 27. 3074553214
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UTM 17 NAD 81 (m). 319682.59	UTM 17 NAD 81 (m). 319682.59	UTM 17 NAD 81 (m). 319682.59
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UTM 17 NAD 81 (m). 319682.59	UTM 17 NAD 81 (m). 319682.59	UTM 17 NAD 81 (m). 319682.59



WVDEP DOG
ACCEPTED AS-BUILT
WJD
7 / 3 / 2018

Exhibit A: Final De

Site Design, C
Erosion and Se
Tug H
Mars
Fran
Latitude
Longitude
Lower Fis

Site Address	Center of Structure Line	Center of Structure Line
WV.N.NAD 81 E. 161134.70	WV.N.NAD 81 E. 161134.70	WV.N.NAD 81 E. 161213.56
WV.N.NAD 27 N. 462909.67	WV.N.NAD 27 N. 462909.67	WV.N.NAD 27 N. 462970.54
WV.N.NAD 27 E. 164418.34	WV.N.NAD 27 E. 164418.34	WV.N.NAD 27 E. 164581.66
WV.N.NAD 81 E. 164765.61	WV.N.NAD 81 E. 164765.61	WV.N.NAD 81 E. 164770.09
WV.N.NAD 81 E. 164765.61	WV.N.NAD 81 E. 164765.61	WV.N.NAD 27 S. 407700.92
Lm. NAD 27. 3074553214	Lm. NAD 27. 3074553214	Lm. NAD 27. 3074480888
Lm. NAD 27. 3074553214	Lm. NAD 27. 3074553214	Lm. NAD 27. 3074553214
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UTM 17 NAD 81 (m). 319682.59	UTM 17 NAD 81 (m). 319682.59	UTM 17 NAD 81 (m). 319682.59
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UTM 17 NAD 81 (m). 319682.59	UTM 17 NAD 81 (m). 319682.59	UTM 17 NAD 81 (m). 319682.59

Site Locations (NAD 27)

Structure	1: 1m/100'	1: 1000'
Structure	1397325577	307764775
Site Entrance	397325577	307764775
Center of A01 Well	397414088	307764775
Center of 25" Structure	397414088	307764775

Approach Routes:

From the Intersection of OH R7 and WV R1 2 near New Martins, WV. Follow WV R1 2 North for 4.5 mi. Right on Co. R 89. Drive Crank Rd. Follow Co. R 89 for 5.9 mi. Turn Left onto Co. R 127 (Coffield Ridge). Follow Co. R 127 for 1.7 mi. Co. R 127 becomes Co R 29. Coffield Ridge). Follow Co. R 29 for 1.4 mi. Turn Right onto Co. R 76 (Rimes Ridge Rd.). Follow Co. R 76 for 1.1 mi. The site entrance will be on the Left (West) side of the road.

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

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

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

Floodplain Conditions

Do all construction activities take place in a floodplain.	NO
Final posted signs comply floodplain coordinator.	NO
Final posted signs comply floodplain coordinator.	NO
Final posted signs comply floodplain coordinator.	NO
Final posted signs comply floodplain coordinator.	NO
Final posted signs comply floodplain coordinator.	NO
Final posted signs comply floodplain coordinator.	NO
Final posted signs comply floodplain coordinator.	NO
Final posted signs comply floodplain coordinator.	NO
Final posted signs comply floodplain coordinator.	NO



Project Contacts

Tug Hill Operating
380 Sandpoint Blvd
Sandpoint Plaza II Suite 200
Cranberry, PA 15117

Service and Engineer
Kenneth Kuhn
304-638-9682 OFE
304-638-9683 CEM
ICAH P. Sec.
304-442-0220 OFE
Zachary Zimmerman/field
304-334-0887 OFE

Environmental:
Weed/ Disturbance is provided by Allier Ecology dated April 9, 2018

Transportation Information:
The topographic information shown herein is based on recent hydrography by Data Source: Earth Mapping, Crane, WV

MISS UTILITY OF WEST VIRGINIA
1-800-245-4848
West Virginia State Land Office
Division 21V, Gas and 24V, Electric
Natural Gas and Electric Bureau
P.O. Box 60337
Charleston, WV 25360-0337

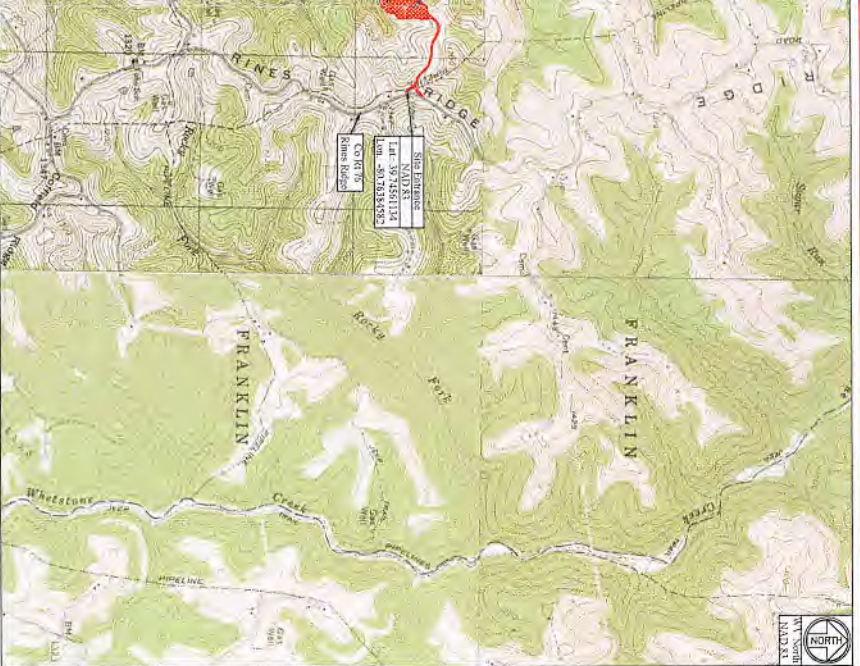
Know What's Below.
Call before you dig.



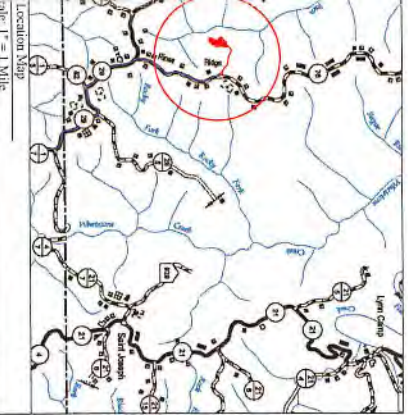
Well Site

Construction Plan, &
 Admittment Control Plans
 Tug Hill Operating
 Marshall County
 Franklin District
 39.74597093°
 -80.77030987°
 Creek Watershed

Sign: Issue for Permitting



Site Locations (NAD 83)			
Structure	Latitude (DD)	Longitude (DD)	
Center of Well Pad	39.74597093	-80.77030987	
Center of Shaping Area	39.7458817	-80.77026799	



Pertinent Site Information
 Simms Well Site
 Emergency Number: 304-845-1920
 Franklin District, Marshall County, WV
 Watershed: Lower Fish Creek Watershed
 Tug Hill Contact Number: 1-817-652-3400

Property Owner Information - Simms Well Site					
Franklin District - Marshall County					
Owner	331 - Parcel	Well Pad	Shaping	Access Road	Topsoil Paved
Kenneth Coker et ux	17411	1000	0.67	0.00	0.64
Larry Simms et ux	257	3.10	1.84	0.66	0.28
Sub Totals (Ac)	3.10	1.84	1.53	0.24	5.31
					11.61

WV State Plane Coordinate System
 North Zone, NAD 83
 Elevation Based on NAVD83
 Established by Survey Grade OPS
 and OFS 1970/1975/2000

Access Road		
Surface Owner	TM - Parcel	Road Length
Kenneth Coker et ux	17411	1,248.30'
Larry Simms et ux	257	1,267.30'
		New Access Road Construction

Disturbed Area	
Well Pad Construction	3.19 Ac
Shaping Area Construction	1.14 Ac
Access Road Construction	1.14 Ac
Topsoil Paved	0.64 Ac
Ignored - Forest Material	0.24 Ac
Additional Clearing	3.51 Ac
Total Disturbed Area	11.61 Ac

Simms Well Site Quantities					
Description	Cent (C07)	Point (C01)	Spread (C07)	Max Slope	Length of Stone
Well Pad Grade	0.89	5,996.15'	N/A	N/A	N/A
Access Road (Kilometer) Stone	0.89	5,996.15'	584.11'	17.2%	58.42'
Shaping Area	7,237.97'	2,259.23'	4,998.24'	N/A	N/A
Shaping Area (Access Road)	7,237.97'	2,259.23'	3,585.92'	N/A	3,511.01'
Topsoil Paved	1,712.50'	4,097.46'	2,007.46'	N/A	N/A
Ignored - Forest Material	7,097.71'	11,269.16'	4,198.84'	9.23%/9.9'	N/A
Sub Total			4,331.25'		(Access Spread (Quantity))

Well Location Restrictions
 All Pad construction complies with the following restrictions:
 *250' from an existing well or developed spring used for human or domestic animals;
 *425' from an occupied dwelling or barn greater than 2,500 SF used for poultry or dairy measured from the center of the pad;
 *100' from the edge of distance to synthetic, permanent streams, natural or artificial lake, pond or reservoir;
 *50' from the edge of distance to a landmark (excluding broad stream)
 *1,000' of a surface or ground water table to a public water supply.
 (Well Location Restrictions of WV Code 24-6A.12)



The drawings, construction notes and/or other documents attached hereto have been prepared in accordance with the West Virginia Code of State Rules, Division of Environmental Protection, (Office of Professional Engineering) and the Professional Engineering Act of 1982, Chapter 24-6A, Article 12, Section 2. I, the undersigned, am a duly Licensed Professional Engineer in the State of West Virginia, License No. 22214.
 Date: 05-24-2018

Sheet	Description
1	Cover Sheet
V1	Schedule of Quantities
N1-N4	Site Notes
2	Pre-Construction Site Conditions
3	Site Soil Map
4	Shaping Area Exhibit
5	Overall Plan View
6-7	E&S Plan View
8	Tree Key Exhibit
9-10	Plan View
11	Cross Sections - Well Pad
12	Cross Sections - Well Pad Access Road
13	Cross Sections - Shaping Area
G1-G2	Geotechnical Exhibit
L1	Landowner Disturbed Area Exhibit
S1	Site Remediation
M1-M3	Proposed Well Pad
D1-D2	Proposed Well Pad
R1	Access Road Details
P1	Pad Details

Office of Oil and Gas
 RECEIVED
 SEP 16 2019
 WV Department of
 Environmental Protection

Kelly Surveys
 2000 State St
 Charleston, WV 25301
 (304) 762-1111

TUG HILL OPERATING

THIS DOCUMENT
 PREPARED FOR
 TUG HILL
 OPERATING

Date
 05-24-2018
 07-02-2018

Revision
 Design
 Design: WVDEP Corrections

Cover Sheet

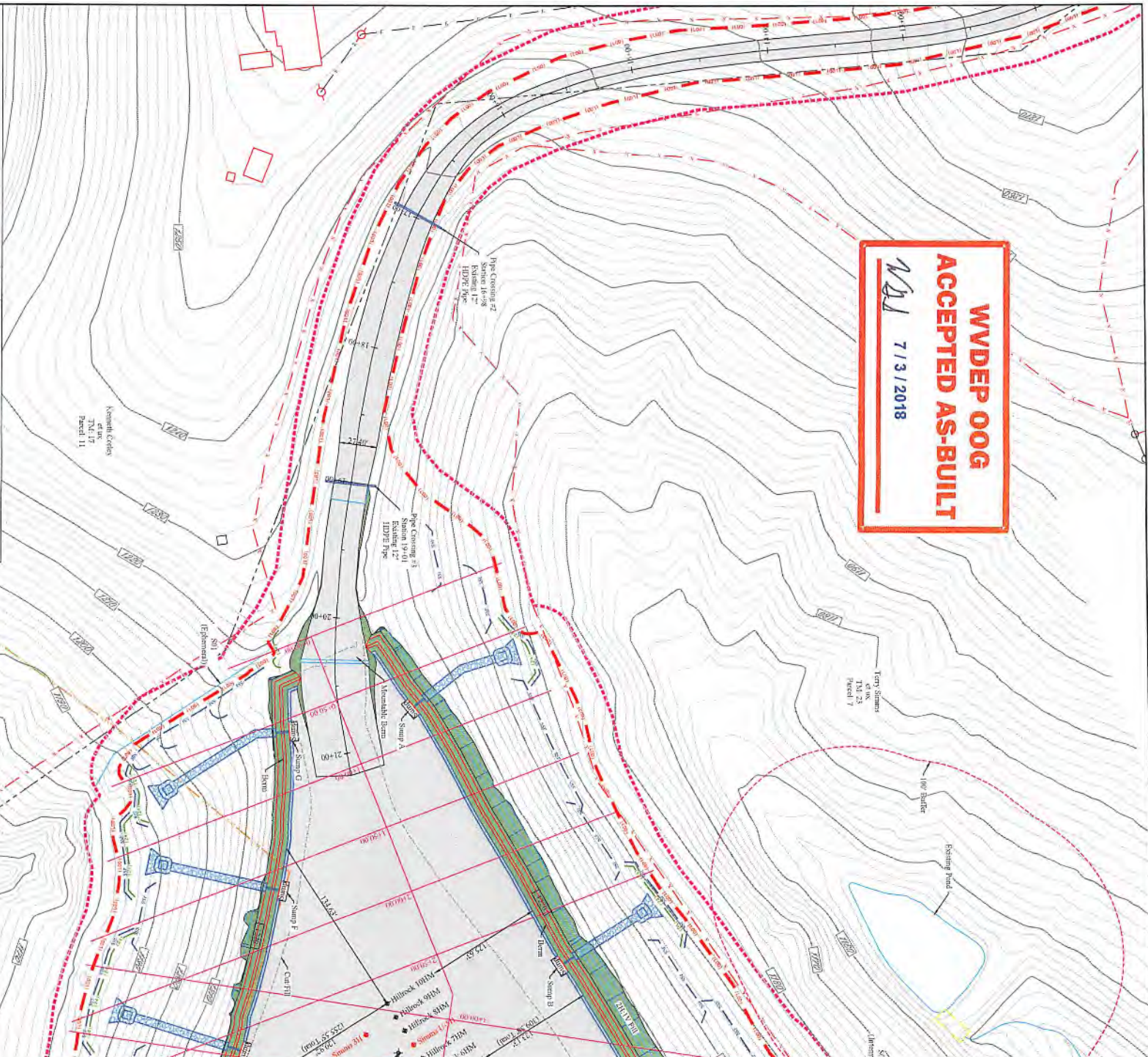
Simms Well Site

Franklin District
 Marshall County, WV

Date: 05/24/2018
 Scale: As Shown
 Designed By: ZS
 File No:
 Sheet 1 of 13

4705
 02273

WDEP 00G
ACCEPTED AS-BUILT
WJL 7/3/2018



Legend

- Original Ground 2' Contour
- Original Ground 10' Contour
- Pad Design 2' Contour
- Pad Design 10' Contour
- Center of Structure
- Proposed Wall

24" Composite Pipe Sock

- Original Ground
- Proposed
- Limit of Disturbance
- Area of Interest
- Existing Utility Profile
- Rock-lined Ditch
- Existing Concrete-lined Ditch

Disturbed Area

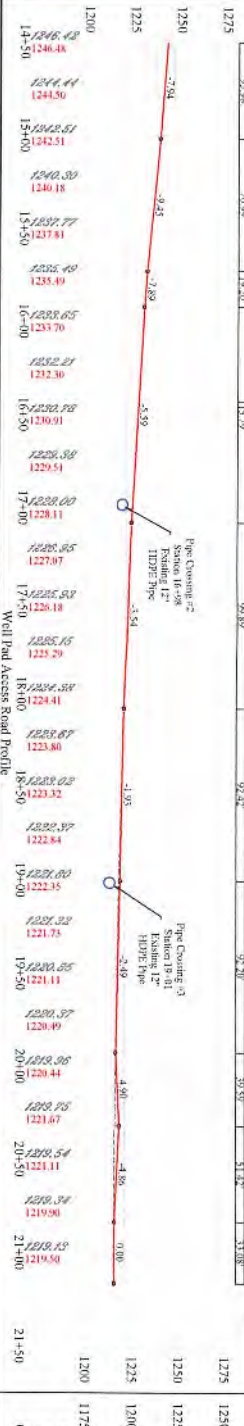
- W&E Disturbance
- Signage Area Construction
- Access Road Construction
- Temporary Access Structure
- Final Disturbed Area
- Surface Change

Access Road

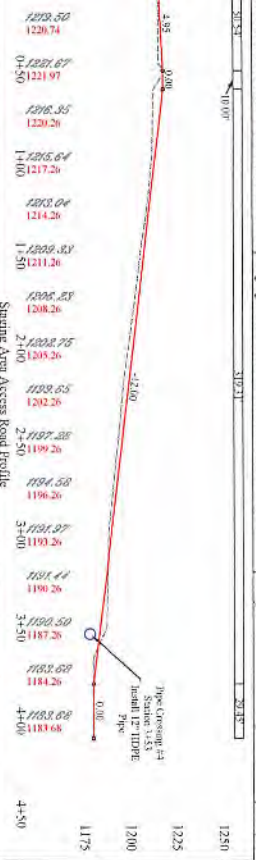
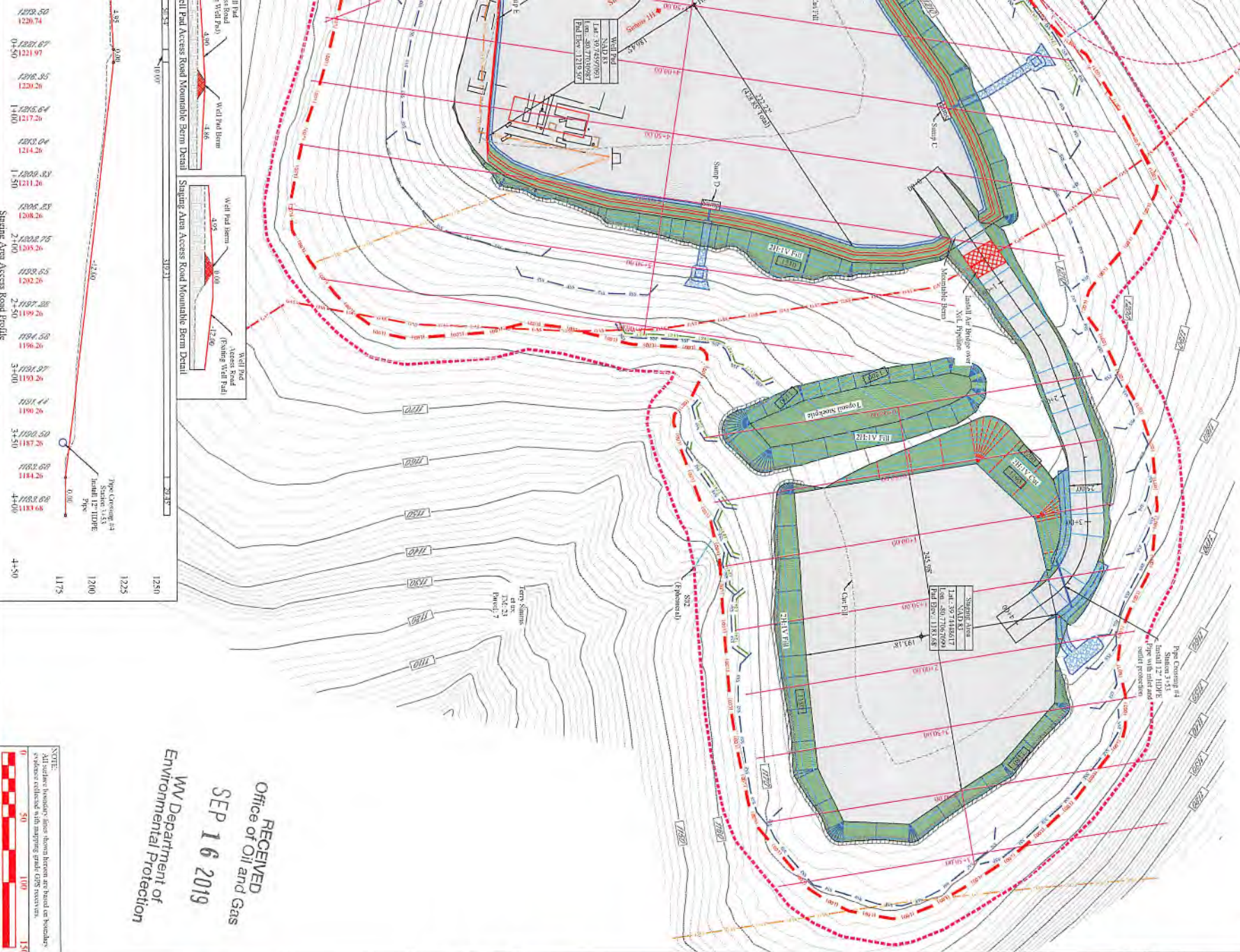
- Top - Final
- Top - Proposed
- Bottom - Final
- Bottom - Proposed

Additional Information

Total Wooded Area Disturbed	1,007 AC	Surface Change	101 - Final	Final Length	1,258' 00"	New Access Road Construction
Total Linear Feet of Access Road	2,252' 00"	Final Area	14,417	Final Width	1,307' 00"	New Access Road Construction
		Final Area	2,373	Final Width	1,307' 00"	Final Area



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



RECEIVED
 Office of Oil and Gas
SEP 16 2019
 WV Department of
 Environmental Protection

NOTE:
 All numbers of location (lines shown herein) are based on boundaries
 of features reflected with mapping graphic GIS sources.
 0 50 100 150
 Feet

Date	Revision
05-24-2018	Design
07-02-2018	Design: WVDEP Corrections



Kelly Sweeney
 2020-2024
 2020-2024
 2020-2024

Site Plan
Simms Well Site
 Franklin District
 Marshall County, WV

Date: 05/24/2018
 Scale: As Shown
 Designed By: ZS
 File No:
 Sheet 10 of 13