



west virginia department of environmental protection

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

Jim Justice , Governor  
Austin Caperton , Cabinet Secretary  
www.dep.wv.gov

Wednesday, September 13, 2017  
WELL WORK PERMIT  
Horizontal 6A / New Drill

TUG HILL OPERATING, LLC  
550 BAILEY AVENUE, SUITE 510

FORT WORTH, TX 76107

Re: Permit approval for HEAVEN HILL 3-5HM  
47-051-01948-00-00

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: HEAVEN HILL 3-5HM  
Farm Name: RICKY L. WHITLATCH  
U.S. WELL NUMBER: 47-051-01948-00-00  
Horizontal 6A / New Drill  
Date Issued: 9/13/2017

Promoting a healthy environment.

09/15/2017

# PERMIT CONDITIONS

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

## CONDITIONS

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

# PERMIT CONDITIONS

11. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to [DEPOOGNotify@wv.gov](mailto:DEPOOGNotify@wv.gov).



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	125'	120'	259FT^3(CTS)
Fresh Water	13 3/8"	NEW	H40	48#	1,130'	1,120'	1128ft^3(CTS)
Coal	13 3/8"	NEW	H40	48#	1,130'	1,120'	1128ft^3(CTS)
Intermediate	9 5/8"	NEW	J55	36#	2,812'	2,802'	918ft^3(CTS)
Production	5 1/2"	NEW	P110	20#	19,512'	19,502'	4968ft^3(CTS)
Tubing	2 3/8"	NEW	N80	4.7#		6,300'	
Liners							

*ju 7/5/17*

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	13 3/8"	17 1/2"	.33	1,730	1,384	SEE #24	1.2
Coal	13 3/8"	17 1/2"	.33	1,730	1,384	SEE#24	1.2
Intermediate	9 5/8"	12 1/4"	.352	3,520	2,816	SEE#24	1.19
Production	5 1/2"	8 7/8_ 8 3/4	.361	12,640	10,112	SEE#24	1.17/1.19
Tubing	2 3/8"		.19	11,200	8,960		
Liners							

PACKERS

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

WW-6B  
(10/14)

047-051-01948  
API NO. 47-051 - \_\_\_\_\_  
OPERATOR WELL NO. Heaven Hill 3-5HM  
Well Pad Name: Heaven Hill 3

*JL*  
*7/15/17*

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

Drill through the Marcellus and TD Pilot Hole 100' into the Onondaga. 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 30,792,500 lb prop and approximately 476,075 bbl of water. Max rate = 80 bpm; max psi = 9,000#.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 18.43

22) Area to be disturbed for well pad only, less access road (acres): 7.15

23) Describe centralizer placement for each casing string:

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

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

\*See Attachment

25) Proposed borehole conditioning procedures:

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

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\*Note: Attach additional sheets as needed.

WW-6B Attachment to #24

**Conductor, Coal and Fresh Water Casing Cement:**

*Premium NE-1 + 2% CaCl*

- Premium NE-1 – Class A Portland API Spec
- CaCl – Calcium Chloride

**Intermediate Casing:**

*Premium NE-1 + 2% bwoc CaCl<sub>2</sub> + 46.5% Fresh Water*

- Premium NE-1 – Class A Portland API spec
- CaCl<sub>2</sub> – Calcium Chloride
- Cello Flake – Fluid Loss Preventer

**Kick Off Plug:**

*Class H Cement + 1% CD-32 + .7% Sodium Metasilicate + .1% R-3 + .75 gal/100sk FP-13L + 38% Fresh Water*

- Class H – Increased Compressive Strength Cement
- Sodium Metasilicate – Free Water Control; Early Strength Additive
- R-3 – Cement Retarder
- FP-13L – Anti-Foaming Agent
- CaCl<sub>2</sub> – Calcium Chloride
- Cello Flake – Fluid Loss Preventer

**Production Casing Cement:**

*Lead: 50:50 (Poz:Premium NE-1) + .2% R-3 + .2% MPA-170 + .75 gal/100sk FP-13L*

*Tail: 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*

- Poz – Fly Ash
- Premium NE-1 – Class A Portland API spec
- R-3 – Cement Retarder
- MPA-170 – Gelling Agent
- FP-13L – Anti-Foaming Agent
- ASA-301 – Free Water Control Agent
- BA-10A – Bonding Agent
- ASCA-1 – Solubility Additive

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

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

## Data Sources Reviewed:

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

Contacted Devin Ducoeur 724-705-0444, [dducoeur@dpslandservices.com](mailto:dducoeur@dpslandservices.com) DPS GIS (12/19/2016) 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

Permit well - Heaven Hill 3-5HM

Wells within 500' Buffer

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

API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705140024	Unknown	Unknown	Unknown	Unknown	Unknown but unlikely, Appears to be a shallow coal test bore well.	Well records are incomplete
4705100833	McElroy Coal Co.	2978	Gordon	Unknown	No. TVD depth of well is too shallow to be within Range of potential Fracture propagation from Marcellus wells	Old well originally drilled in 1939 to Gordon, Plugged and recompleted in unknown horizon in 1998. Plug date 7/22/1998
4705100846	Hope Natural Gas Co.	Unknown	Unknown	Unknown	Unknown but unlikely, Appears to be a coal test bore well	Well records are incomplete, plug date 12/12/1999
4705100843	Hope Natural Gas Co.	Unknown	Unknown	Unknown	Unknown but unlikely, Appears to be a coal test bore well	Well records are incomplete, plug date 9/16/1999
4705100595	Columbia Gas Transmission Corp.	2545	Gordon	Unknown	No. TVD depth of well is too shallow to be within Range of potential Fracture propagation from Marcellus wells	
4705100863	Wheeling Natural Gas Co.	Unknown	Unknown	Unknown	Unknown but unlikely, Appears to be a shallow coal test bore well.	Well records are incomplete, plug date 3/6/2002



[Table Descriptions](#)  
[County Code Translations](#)  
[Permit Number Series](#)  
[Usage Notes](#)  
[Contact Information](#)  
[Disclaimer](#)  
[WVGES Main](#)  
[Pipeline-Plus! New](#)

Select County: (051) Marshall    Select datatypes:  (Check All)

Enter Permit #: 40024

Location     Production     Plugging  
 Owner/Completion     Stratigraphy     Sample  
 Pay/Snow/Water     Logs     Bore Hole Log

Get Data    Reset

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WV Geological & Economic Survey: **Well: County = 51 Permit = 40024** Rep

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705140024	Marshall	40024	Meade	Glen Easton	Cameron	39.810935	-80.950728	628472.1	4406819

There is no Bottom Hole Location data for this well

There is no Owner/Completion data for this well

There is no Owner/Completion data for this well

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

Stratigraphy Information:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4705140024	Original Loc	Pittsburgh coal	CBM Drill Hole	1035	Reasonable	7	Reasonable	1343	unknown

There is no Wireline (E-Log) data for this well

There is no Plugging data for this well

There is no Sample data for this well

5.11. Area of Review-- The permittee shall review the area surrounding the proposed well pad so as to identify and evaluate potential conduits for unintended fracture propagation, a report of which the permittee shall provide to the Office with the application for well work. All existing active, plugged, abandoned, and undocumented wells within a five hundred feet (500') radius of the surface location of the well that is the subject of the new application and within a five hundred feet (500') radius of the lateral section of the wellbore shall be considered for the potential of unintended fracture propagation. The report shall detail those wells that are known or reasonably expected to penetrate a depth that could be within the range of the fracture propagation. The detail shall include at a minimum the API number, operator name, total depth, perforated formation(s) and producing zones not perforated.



**WGES "Pipeline"**

Select County: (051) Marshall | Select datatypes:  (Check All)

Enter Permit #: 00595

Location  Production  Plugging  
 Owner/Completion  Stratigraphy  Sample  
 Pay/ShowWater  Logs  Bm Hole Loc

Get Data | Reset

Table Descriptions: County Code Transactions, Permit-Submittal Series, Lease Notes, Contact Information, Database, WORES Main, PipelinesPlus New

WV Geological & Economic Survey | Well: County = 51 Permit = 00595 | Report Time: Thursday, June 08, 2017 5:15

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4728100595	Marshall	595	Meade	Glen Easton	Cameron	39.752715	-80.575923	527937.9	4404450.1

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TROT_FM
4728100595	8/16/1905	Original Leo	Completed	Riley Miner	1	1222				Manufacturers Light & Heat Co.		
4728100595				unknown						Columbia Gas Transmission Corp.		

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTH
4728100595	8/16/1905	4/29/1905		Cameron-Garner	Gordon	Gordon	unclassified	unclassified	Gas	unknown	fast	2545		2545
4728100595										not available	unknown	unknown		

There is no Pay data for this well

**WGES "Pipeline"**

Select County: (051) Marshall | Select datatypes:  (Check All)

Enter Permit #: 00863

Location  Production  Plugging  
 Owner/Completion  Stratigraphy  Sample  
 Pay/ShowWater  Logs  Bm Hole Loc

Get Data | Reset

Table Descriptions: County Code Transactions, Permit-Submittal Series, Lease Notes, Contact Information, Database, WORES Main, PipelinesPlus New

WV Geological & Economic Survey | Well: County = 51 Permit = 00863 | Report Time: Thursday, June 08,

Well Reassignment Information: Reassigned From

OLD_COUNTY	OLD_PERMIT	NEW_COUNTY	NEW_PERMIT
51	70114	51	863

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705100863	Marshall	863	Meade	Glen Easton	Cameron	39.75297	-80.574932	527932.8	4404452.5

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TROT_FM
4705100863	3/8/2002	Plugging	Completed	Myrtle R Garten		M-52			Consolidation Coal Co	Consolidation Coal Co		
4705100863				Original Leo						Wheeling Natural Gas Co., The		

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTH
4705100863	3/8/2002	2/14/2002	868	Barometer			unclassified	unclassified	not available	unknown	unknown			
4705100863														

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 Stratigraphy data for this well

There is no Wireline (E-Log) data for this well

Plugging Information:

API	PLG_DT	DEPTH_PST
4705100863	3/8/2002	0

There is no Sample data for this well

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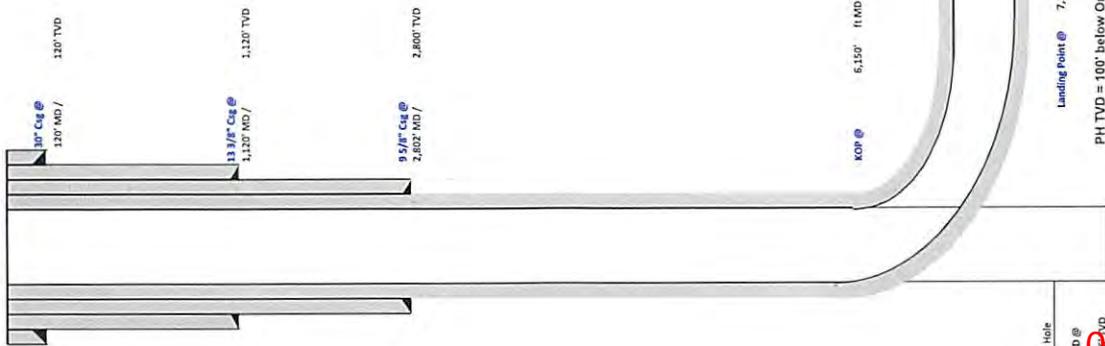
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OFFICE OF OIL AND GAS REGULATION



WELL NAME: Heaven Hill 3-SHM  
 STATE: West Virginia COUNTY: Marshall  
 DISTRICT: Meade  
 DF Elev: 1,326' GL Elev: 1,326'  
 TD: 19,502'  
 TH Latitude: 39.80863272  
 TH Longitude: -80.69117425  
 BH Latitude: 39.77982674  
 BH Longitude: -80.66909367



**CASING SUMMARY**

Type	Hole Size (in)	Csg Size (in)	Depth (MD)	Depth (TVD)	Weight (lb/ft)	Grade	Top of Cement
Conductor	36	30	120'	120'	BW	BW	Surface
Surface	17.5	13 3/8	1,120'	1,120'	48	H40	Surface
Intermediate 1	12 1/4	9 5/8	2,802'	2,800'	36	J55	Surface
Production	8 7/8 x 8 3/4	5 1/2	19,502'	6,980'	20	P110	Surface

**FORMATION TOPS**

Formation	Depth TVD
Deepcut Fresh Water	1038
Sewickley Coal	946
Pittsburgh Coal	1031
Big Lime	2060
Weir	2466
Berea	2684
Gordon	2946
Rhinestreet	6088
Genesee/Burkett	6586
Tully	6617
Hamilton	6650
Marcellus	6724
Landing Depth	6765
Onondaga	6776
Pilot Hole Depth	6876

**CEMENT SUMMARY**

Secks	Class	Density	Fluid Type	Centralizer Notes
338	A	15.6	Air	None
1,142	A	15.6	Air	3 Centralizers at equal distance
856	A	15	Air	1 Centralizer every other ft
4,382	A	14.5	Air / SOBAM	1 every other joint in lateral; 1 per joint in curve; 1 every other ft to s/c

*Handwritten signature*

Pilot Hole PH TD @ 6,980' TVD  
 Landing Point @ 7,185' MD / 6,765' TVD  
 PH TVD = 100' below Onondaga Top  
 Lateral TD @ 19,502' ft MD  
 6,980' ft TVD

**Well: Heaven Hill 3-5 HM**  
**Site: Heaven Hill 3**  
**Project: Marshall County, West Virginia**  
**Design: rev2**

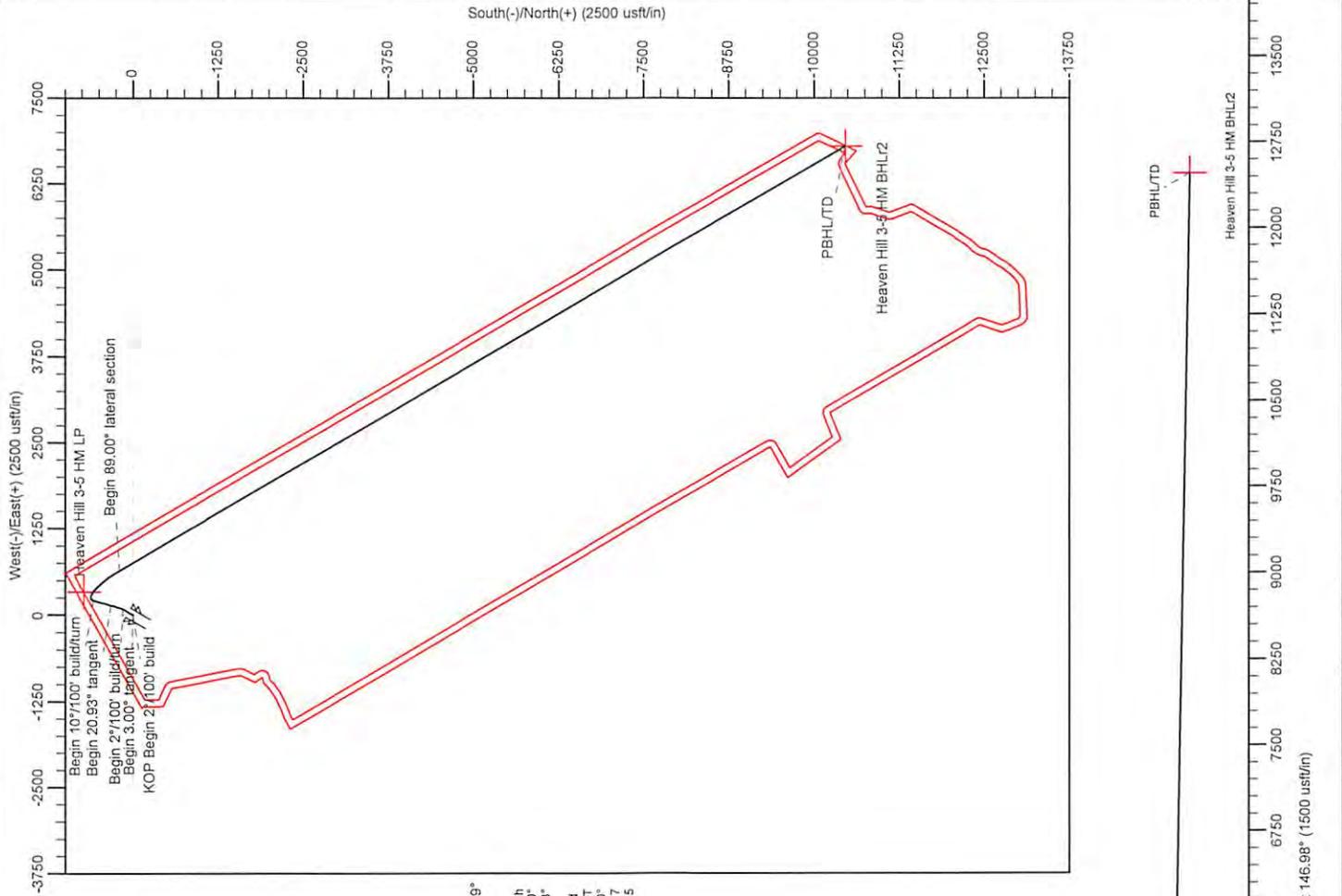
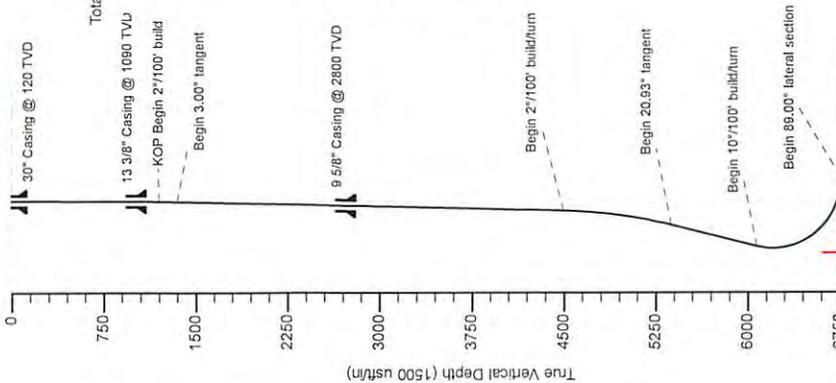
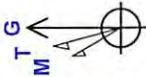
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 2°/100' build
3	1350.00	3.00	30.00	1349.93	3.40	1.96	2.00	30.00	-1.78	Begin 3.00° tangent
4	4504.39	3.00	30.00	4500.00	146.37	84.51	0.00	0.00	-76.68	Begin 2°/100' build
5	5406.60	20.93	15.51	5379.09	323.59	139.87	2.00	0.00	-16.78	Begin 20.93° tangent
6	6149.65	20.93	15.51	6073.10	579.41	210.85	0.00	0.00	-370.92	Begin 10°/100' build
7	7185.00	89.00	150.00	6765.04	200.08	643.90	10.00	132.81	183.14	Begin 89.00° lateral section
8	19501.81	89.00	150.00	6980.00	10464.99	6801.37	0.00	0.00	2480.97	PBHL/TD



Geocentric System: Universal Transverse Mercator (US Survey Feet)  
 Datum: NAD83 West Virginia - HARN  
 Ellipsoid: GRS 1990  
 Zone: Zone 17N (84 W to 78 W)

System Datum: Mean Sea Level  
 Depth Reference: GL=1325 @ 1326.00usft  
 Northing 14457197.78 Easting 39.80863272 Latitude Longitude  
 1726582.97 39.80863272 -80.69317425  
 Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 6.89°  
 Azimuths to Grid North  
 True North: -0.20°  
 Magnetic North: -8.88°  
 Magnetic Field  
 Strength: 52225.15nT  
 Dip Angle: 67.00°  
 Date: 2/3/2017  
 Model: IGRF2015



09/15/2017



Planning Report - Geographic

<b>Database:</b>	DB_Jul2216dt_v14	<b>Local Co-ordinate Reference:</b>	Well Heaven Hill 3-5 HM
<b>Company:</b>	Tug Hill Operating LLC	<b>TVD Reference:</b>	GL=1326 @ 1326.00usft
<b>Project:</b>	Marshall County, West Virginia	<b>MD Reference:</b>	GL=1326 @ 1326.00usft
<b>Site:</b>	Heaven Hill 3	<b>North Reference:</b>	Grid
<b>Well:</b>	Heaven Hill 3-5 HM	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev2		

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

<b>Site</b>	Heaven Hill 3				
<b>Site Position:</b>		<b>Northing:</b>	14,457,178.77 usft	<b>Latitude:</b>	39.80858060
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,726,571.98 usft	<b>Longitude:</b>	-80.69321360
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.20 °

<b>Well</b>	Heaven Hill 3-5 HM					
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	14,457,197.78 usft	<b>Latitude:</b>	39.80863272
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	1,726,582.97 usft	<b>Longitude:</b>	-80.69317425
<b>Position Uncertainty</b>		0.00 usft	<b>Wellhead Elevation:</b>	0.00 usft	<b>Ground Level:</b>	1,326.00 usft

<b>Wellbore</b>	Original Hole				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	2/3/2017	-8.69	67.00	52,225.08590161

<b>Design</b>	rev2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	146.98

<b>Plan Survey Tool Program</b>	<b>Date</b>	5/17/2017		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	19,501.81 rev2 (Original Hole)	MWD	MWD - Standard

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,350.00	3.00	30.00	1,349.93	3.40	1.96	2.00	2.00	0.00	30.00	
4,504.39	3.00	30.00	4,500.00	146.37	84.51	0.00	0.00	0.00	0.00	
5,406.60	20.93	15.51	5,379.09	323.59	139.87	2.00	1.99	-1.61	-16.78	
6,149.65	20.93	15.51	6,073.10	579.41	210.85	0.00	0.00	0.00	0.00	
7,185.00	89.00	150.00	6,765.04	200.06	643.90	10.00	6.57	12.99	132.81	
19,501.81	89.00	150.00	6,980.00	-10,464.99	6,801.37	0.00	0.00	0.00	0.00	Heaven Hill 3-5 HM B



Planning Report - Geographic

<b>Database:</b>	DB_Jul2216dt_v14	<b>Local Co-ordinate Reference:</b>	Well Heaven Hill 3-5 HM
<b>Company:</b>	Tug Hill Operating LLC	<b>TVD Reference:</b>	GL=1326 @ 1326.00usft
<b>Project:</b>	Marshall County, West Virginia	<b>MD Reference:</b>	GL=1326 @ 1326.00usft
<b>Site:</b>	Heaven Hill 3	<b>North Reference:</b>	Grid
<b>Well:</b>	Heaven Hill 3-5 HM	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev2		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.00	0.00	0.00	0.00	0.00	0.00	14,457,197.78	1,726,582.97	39.80863272	-80.69317425	
100.00	0.00	0.00	100.00	0.00	0.00	14,457,197.78	1,726,582.97	39.80863272	-80.69317425	
200.00	0.00	0.00	200.00	0.00	0.00	14,457,197.78	1,726,582.97	39.80863272	-80.69317425	
300.00	0.00	0.00	300.00	0.00	0.00	14,457,197.78	1,726,582.97	39.80863272	-80.69317425	
400.00	0.00	0.00	400.00	0.00	0.00	14,457,197.78	1,726,582.97	39.80863272	-80.69317425	
500.00	0.00	0.00	500.00	0.00	0.00	14,457,197.78	1,726,582.97	39.80863272	-80.69317425	
600.00	0.00	0.00	600.00	0.00	0.00	14,457,197.78	1,726,582.97	39.80863272	-80.69317425	
700.00	0.00	0.00	700.00	0.00	0.00	14,457,197.78	1,726,582.97	39.80863272	-80.69317425	
800.00	0.00	0.00	800.00	0.00	0.00	14,457,197.78	1,726,582.97	39.80863272	-80.69317425	
900.00	0.00	0.00	900.00	0.00	0.00	14,457,197.78	1,726,582.97	39.80863272	-80.69317425	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,457,197.78	1,726,582.97	39.80863272	-80.69317425	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,457,197.78	1,726,582.97	39.80863272	-80.69317425	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,457,197.78	1,726,582.97	39.80863272	-80.69317425	
<b>KOP Begin 2°/100' build</b>										
1,300.00	2.00	30.00	1,299.98	1.51	0.87	14,457,199.29	1,726,583.84	39.80863686	-80.69317112	
1,350.00	3.00	30.00	1,349.93	3.40	1.96	14,457,201.18	1,726,584.93	39.80864204	-80.69316722	
<b>Begin 3.00° tangent</b>										
1,400.00	3.00	30.00	1,399.86	5.67	3.27	14,457,203.45	1,726,586.24	39.80864825	-80.69316253	
1,500.00	3.00	30.00	1,499.73	10.20	5.89	14,457,207.98	1,726,588.86	39.80866067	-80.69315316	
1,600.00	3.00	30.00	1,599.59	14.73	8.51	14,457,212.51	1,726,591.47	39.80867310	-80.69314379	
1,700.00	3.00	30.00	1,699.45	19.26	11.12	14,457,217.05	1,726,594.09	39.80868552	-80.69313441	
1,800.00	3.00	30.00	1,799.31	23.80	13.74	14,457,221.58	1,726,596.71	39.80869794	-80.69312504	
1,900.00	3.00	30.00	1,899.18	28.33	16.36	14,457,226.11	1,726,599.32	39.80871036	-80.69311567	
2,000.00	3.00	30.00	1,999.04	32.86	18.97	14,457,230.64	1,726,601.94	39.80872279	-80.69310629	
2,100.00	3.00	30.00	2,098.90	37.39	21.59	14,457,235.18	1,726,604.56	39.80873521	-80.69309692	
2,200.00	3.00	30.00	2,198.77	41.93	24.21	14,457,239.71	1,726,607.17	39.80874763	-80.69308755	
2,300.00	3.00	30.00	2,298.63	46.46	26.82	14,457,244.24	1,726,609.79	39.80876005	-80.69307817	
2,400.00	3.00	30.00	2,398.49	50.99	29.44	14,457,248.77	1,726,612.41	39.80877248	-80.69306880	
2,500.00	3.00	30.00	2,498.36	55.52	32.06	14,457,253.31	1,726,615.03	39.80878490	-80.69305943	
2,600.00	3.00	30.00	2,598.22	60.06	34.67	14,457,257.84	1,726,617.64	39.80879732	-80.69305005	
2,700.00	3.00	30.00	2,698.08	64.59	37.29	14,457,262.37	1,726,620.26	39.80880974	-80.69304068	
2,800.00	3.00	30.00	2,797.94	69.12	39.91	14,457,266.90	1,726,622.88	39.80882217	-80.69303131	
2,900.00	3.00	30.00	2,897.81	73.65	42.52	14,457,271.44	1,726,625.49	39.80883459	-80.69302193	
3,000.00	3.00	30.00	2,997.67	78.19	45.14	14,457,275.97	1,726,628.11	39.80884701	-80.69301256	
3,100.00	3.00	30.00	3,097.53	82.72	47.76	14,457,280.50	1,726,630.73	39.80885943	-80.69300319	
3,200.00	3.00	30.00	3,197.40	87.25	50.37	14,457,285.03	1,726,633.34	39.80887186	-80.69299381	
3,300.00	3.00	30.00	3,297.26	91.78	52.99	14,457,289.56	1,726,635.96	39.80888428	-80.69298444	
3,400.00	3.00	30.00	3,397.12	96.31	55.61	14,457,294.10	1,726,638.58	39.80889670	-80.69297507	
3,500.00	3.00	30.00	3,496.99	100.85	58.22	14,457,298.63	1,726,641.19	39.80890912	-80.69296569	
3,600.00	3.00	30.00	3,596.85	105.38	60.84	14,457,303.16	1,726,643.81	39.80892155	-80.69295632	
3,700.00	3.00	30.00	3,696.71	109.91	63.46	14,457,307.69	1,726,646.43	39.80893397	-80.69294695	
3,800.00	3.00	30.00	3,796.57	114.44	66.07	14,457,312.23	1,726,649.04	39.80894639	-80.69293757	
3,900.00	3.00	30.00	3,896.44	118.98	68.69	14,457,316.76	1,726,651.66	39.80895881	-80.69292820	
4,000.00	3.00	30.00	3,996.30	123.51	71.31	14,457,321.29	1,726,654.28	39.80897124	-80.69291883	
4,100.00	3.00	30.00	4,096.16	128.04	73.92	14,457,325.82	1,726,656.89	39.80898366	-80.69290945	
4,200.00	3.00	30.00	4,196.03	132.57	76.54	14,457,330.36	1,726,659.51	39.80899608	-80.69290008	
4,300.00	3.00	30.00	4,295.89	137.11	79.16	14,457,334.89	1,726,662.13	39.80900850	-80.69289071	
4,400.00	3.00	30.00	4,395.75	141.64	81.78	14,457,339.42	1,726,664.74	39.80902093	-80.69288133	
4,500.00	3.00	30.00	4,495.61	146.17	84.39	14,457,343.95	1,726,667.36	39.80903335	-80.69287196	
4,504.39	3.00	30.00	4,500.00	146.37	84.51	14,457,344.15	1,726,667.48	39.80903390	-80.69287155	
<b>Begin 2°/100' build/turn</b>										
4,600.00	4.86	23.48	4,595.38	152.25	87.37	14,457,350.04	1,726,670.34	39.80905003	-80.69286127	
4,700.00	6.84	20.48	4,694.85	161.72	91.14	14,457,359.50	1,726,674.11	39.80907599	-80.69284773	
4,800.00	8.83	18.83	4,793.92	174.56	95.70	14,457,372.34	1,726,678.67	39.80911121	-80.69283133	

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Planning Report - Geographic

<b>Database:</b>	DB_Jul2216dt_v14	<b>Local Co-ordinate Reference:</b>	Well Heaven Hill 3-5 HM
<b>Company:</b>	Tug Hill Operating LLC	<b>TVD Reference:</b>	GL=1326 @ 1326.00usft
<b>Project:</b>	Marshall County, West Virginia	<b>MD Reference:</b>	GL=1326 @ 1326.00usft
<b>Site:</b>	Heaven Hill 3	<b>North Reference:</b>	Grid
<b>Well:</b>	Heaven Hill 3-5 HM	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev2		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
4,900.00	10.82	17.78	4,892.45	190.76	101.05	14,457,388.54	1,726,684.02	39.80915565	-80.69281211	
5,000.00	12.81	17.05	4,990.32	210.30	107.17	14,457,408.09	1,726,690.13	39.80920925	-80.69279008	
5,100.00	14.81	16.52	5,087.43	233.16	114.05	14,457,430.94	1,726,697.02	39.80927196	-80.69276528	
5,200.00	16.81	16.11	5,183.64	259.30	121.70	14,457,457.09	1,726,704.67	39.80934369	-80.69273773	
5,300.00	18.80	15.79	5,278.84	288.70	130.10	14,457,486.49	1,726,713.07	39.80942435	-80.69270746	
5,400.00	20.80	15.52	5,372.93	321.32	139.24	14,457,519.11	1,726,722.21	39.80951385	-80.69267452	
5,406.60	20.93	15.51	5,379.09	323.59	139.87	14,457,521.37	1,726,722.84	39.80952006	-80.69267226	
<b>Begin 20.93° tangent</b>										
5,500.00	20.93	15.51	5,466.33	355.75	148.79	14,457,553.53	1,726,731.76	39.80960828	-80.69264009	
5,600.00	20.93	15.51	5,559.73	390.17	158.34	14,457,587.96	1,726,741.31	39.80970274	-80.69260565	
5,700.00	20.93	15.51	5,653.13	424.60	167.90	14,457,622.38	1,726,750.87	39.80979720	-80.69257121	
5,800.00	20.93	15.51	5,746.53	459.03	177.45	14,457,656.81	1,726,760.42	39.80989166	-80.69253677	
5,900.00	20.93	15.51	5,839.93	493.46	187.00	14,457,691.24	1,726,769.97	39.80998611	-80.69250233	
6,000.00	20.93	15.51	5,933.32	527.88	196.56	14,457,725.67	1,726,779.53	39.81008057	-80.69246789	
6,100.00	20.93	15.51	6,026.72	562.31	206.11	14,457,760.10	1,726,789.08	39.81017503	-80.69243345	
6,149.65	20.93	15.51	6,073.10	579.41	210.85	14,457,777.19	1,726,793.82	39.81022192	-80.69241635	
<b>Begin 10°/100' build/turn</b>										
6,200.00	17.88	27.61	6,120.60	594.93	216.85	14,457,792.71	1,726,799.81	39.81026451	-80.69239483	
6,300.00	15.20	62.04	6,216.68	614.73	235.59	14,457,812.52	1,726,818.56	39.81031871	-80.69232784	
6,400.00	18.38	95.44	6,312.62	619.40	262.93	14,457,817.18	1,726,845.90	39.81033126	-80.69223041	
6,500.00	25.29	115.19	6,405.51	608.79	298.05	14,457,806.57	1,726,881.02	39.81030179	-80.69210550	
6,600.00	33.71	126.25	6,492.53	583.22	339.87	14,457,781.00	1,726,922.84	39.81023118	-80.69195690	
6,700.00	42.76	133.19	6,571.03	543.47	387.12	14,457,741.26	1,726,970.09	39.81012158	-80.69178914	
6,800.00	52.10	138.06	6,638.63	490.76	438.36	14,457,688.54	1,727,021.33	39.80997633	-80.69160730	
6,900.00	61.59	141.82	6,693.27	426.67	492.05	14,457,624.46	1,727,075.02	39.80979983	-80.69141692	
7,000.00	71.17	144.96	6,733.30	353.17	546.54	14,457,550.95	1,727,129.51	39.80959745	-80.69122378	
7,100.00	80.80	147.75	6,757.49	272.48	600.19	14,457,470.26	1,727,183.16	39.80937534	-80.69103374	
7,185.00	89.00	150.00	6,765.04	200.06	643.90	14,457,397.84	1,727,226.87	39.80917605	-80.69087898	
<b>Begin 89.00° lateral section</b>										
7,200.00	89.00	150.00	6,765.30	187.07	651.40	14,457,384.86	1,727,234.37	39.80914031	-80.69085243	
7,300.00	89.00	150.00	6,767.05	100.48	701.39	14,457,298.27	1,727,284.36	39.80890204	-80.69067549	
7,400.00	89.00	150.00	6,768.79	13.89	751.39	14,457,211.68	1,727,334.36	39.80866377	-80.69049854	
7,500.00	89.00	150.00	6,770.54	-72.70	801.38	14,457,125.09	1,727,384.35	39.80842550	-80.69032159	
7,600.00	89.00	150.00	6,772.28	-159.28	851.37	14,457,038.50	1,727,434.34	39.80818723	-80.69014465	
7,700.00	89.00	150.00	6,774.03	-245.87	901.36	14,456,951.91	1,727,484.33	39.80794896	-80.68996770	
7,800.00	89.00	150.00	6,775.78	-332.46	951.36	14,456,865.32	1,727,534.32	39.80771069	-80.68979076	
7,900.00	89.00	150.00	6,777.52	-419.05	1,001.35	14,456,778.73	1,727,584.32	39.80747242	-80.68961382	
8,000.00	89.00	150.00	6,779.27	-505.64	1,051.34	14,456,692.14	1,727,634.31	39.80723415	-80.68943688	
8,100.00	89.00	150.00	6,781.01	-592.23	1,101.33	14,456,605.55	1,727,684.30	39.80699587	-80.68925994	
8,200.00	89.00	150.00	6,782.76	-678.82	1,151.33	14,456,518.96	1,727,734.29	39.80675760	-80.68908300	
8,300.00	89.00	150.00	6,784.50	-765.41	1,201.32	14,456,432.37	1,727,784.29	39.80651933	-80.68890606	
8,400.00	89.00	150.00	6,786.25	-852.00	1,251.31	14,456,345.78	1,727,834.28	39.80628106	-80.68872913	
8,500.00	89.00	150.00	6,787.99	-938.59	1,301.30	14,456,259.19	1,727,884.27	39.80604278	-80.68855220	
8,600.00	89.00	150.00	6,789.74	-1,025.18	1,351.29	14,456,172.60	1,727,934.26	39.80580451	-80.68837526	
8,700.00	89.00	150.00	6,791.48	-1,111.77	1,401.29	14,456,086.01	1,727,984.26	39.80556624	-80.68819833	
8,800.00	89.00	150.00	6,793.23	-1,198.36	1,451.28	14,455,999.43	1,728,034.25	39.80532796	-80.68802140	
8,900.00	89.00	150.00	6,794.97	-1,284.95	1,501.27	14,455,912.84	1,728,084.24	39.80508969	-80.68784447	
9,000.00	89.00	150.00	6,796.72	-1,371.54	1,551.26	14,455,826.25	1,728,134.23	39.80485141	-80.68766754	
9,100.00	89.00	150.00	6,798.46	-1,458.12	1,601.26	14,455,739.66	1,728,184.23	39.80461314	-80.68749062	
9,200.00	89.00	150.00	6,800.21	-1,544.71	1,651.25	14,455,653.07	1,728,234.22	39.80437486	-80.68731369	
9,300.00	89.00	150.00	6,801.95	-1,631.30	1,701.24	14,455,566.48	1,728,284.21	39.80413659	-80.68713677	
9,400.00	89.00	150.00	6,803.70	-1,717.89	1,751.23	14,455,479.89	1,728,334.20	39.80389831	-80.68695984	
9,500.00	89.00	150.00	6,805.44	-1,804.48	1,801.23	14,455,393.30	1,728,384.20	39.80366004	-80.68678292	
9,600.00	89.00	150.00	6,807.19	-1,891.07	1,851.22	14,455,306.71	1,728,434.19	39.80342176	-80.68660600	



Planning Report - Geographic

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<b>Project:</b>	Marshall County, West Virginia	<b>MD Reference:</b>	GL=1326 @ 1326.00usft
<b>Site:</b>	Heaven Hill 3	<b>North Reference:</b>	Grid
<b>Well:</b>	Heaven Hill 3-5 HM	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev2		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
9,700.00	89.00	150.00	6,808.93	-1,977.66	1,901.21	14,455,220.12	1,728,484.18	39.80318348	-80.68642908	
9,800.00	89.00	150.00	6,810.68	-2,064.25	1,951.20	14,455,133.53	1,728,534.17	39.80294521	-80.68625216	
9,900.00	89.00	150.00	6,812.43	-2,150.84	2,001.20	14,455,046.94	1,728,584.16	39.80270693	-80.68607524	
10,000.00	89.00	150.00	6,814.17	-2,237.43	2,051.19	14,454,960.35	1,728,634.16	39.80246865	-80.68589833	
10,100.00	89.00	150.00	6,815.92	-2,324.02	2,101.18	14,454,873.76	1,728,684.15	39.80223037	-80.68572141	
10,200.00	89.00	150.00	6,817.66	-2,410.61	2,151.17	14,454,787.17	1,728,734.14	39.80199210	-80.68554450	
10,300.00	89.00	150.00	6,819.41	-2,497.20	2,201.17	14,454,700.59	1,728,784.13	39.80175382	-80.68536759	
10,400.00	89.00	150.00	6,821.15	-2,583.79	2,251.16	14,454,614.00	1,728,834.13	39.80151554	-80.68519068	
10,500.00	89.00	150.00	6,822.90	-2,670.38	2,301.15	14,454,527.41	1,728,884.12	39.80127726	-80.68501377	
10,600.00	89.00	150.00	6,824.64	-2,756.97	2,351.14	14,454,440.82	1,728,934.11	39.80103898	-80.68483686	
10,700.00	89.00	150.00	6,826.39	-2,843.55	2,401.14	14,454,354.23	1,728,984.10	39.80080070	-80.68465995	
10,800.00	89.00	150.00	6,828.13	-2,930.14	2,451.13	14,454,267.64	1,729,034.10	39.80056242	-80.68448305	
10,900.00	89.00	150.00	6,829.88	-3,016.73	2,501.12	14,454,181.05	1,729,084.09	39.80032414	-80.68430614	
11,000.00	89.00	150.00	6,831.62	-3,103.32	2,551.11	14,454,094.46	1,729,134.08	39.80008586	-80.68412924	
11,100.00	89.00	150.00	6,833.37	-3,189.91	2,601.10	14,454,007.87	1,729,184.07	39.79984758	-80.68395233	
11,200.00	89.00	150.00	6,835.11	-3,276.50	2,651.10	14,453,921.28	1,729,234.07	39.79960930	-80.68377543	
11,300.00	89.00	150.00	6,836.86	-3,363.09	2,701.09	14,453,834.69	1,729,284.06	39.79937102	-80.68359853	
11,400.00	89.00	150.00	6,838.60	-3,449.68	2,751.08	14,453,748.10	1,729,334.05	39.79913274	-80.68342163	
11,500.00	89.00	150.00	6,840.35	-3,536.27	2,801.07	14,453,661.51	1,729,384.04	39.79889446	-80.68324474	
11,600.00	89.00	150.00	6,842.09	-3,622.86	2,851.07	14,453,574.92	1,729,434.04	39.79865618	-80.68306784	
11,700.00	89.00	150.00	6,843.84	-3,709.45	2,901.06	14,453,488.33	1,729,484.03	39.79841790	-80.68289094	
11,800.00	89.00	150.00	6,845.58	-3,796.04	2,951.05	14,453,401.74	1,729,534.02	39.79817961	-80.68271405	
11,900.00	89.00	150.00	6,847.33	-3,882.63	3,001.04	14,453,315.16	1,729,584.01	39.79794133	-80.68253716	
12,000.00	89.00	150.00	6,849.08	-3,969.22	3,051.04	14,453,228.57	1,729,634.01	39.79770305	-80.68236027	
12,100.00	89.00	150.00	6,850.82	-4,055.81	3,101.03	14,453,141.98	1,729,684.00	39.79746476	-80.68218338	
12,200.00	89.00	150.00	6,852.57	-4,142.39	3,151.02	14,453,055.39	1,729,733.99	39.79722648	-80.68200649	
12,300.00	89.00	150.00	6,854.31	-4,228.98	3,201.01	14,452,968.80	1,729,783.98	39.79698820	-80.68182960	
12,400.00	89.00	150.00	6,856.06	-4,315.57	3,251.01	14,452,882.21	1,729,833.97	39.79674991	-80.68165271	
12,500.00	89.00	150.00	6,857.80	-4,402.16	3,301.00	14,452,795.62	1,729,883.97	39.79651163	-80.68147583	
12,600.00	89.00	150.00	6,859.55	-4,488.75	3,350.99	14,452,709.03	1,729,933.96	39.79627335	-80.68129894	
12,700.00	89.00	150.00	6,861.29	-4,575.34	3,400.98	14,452,622.44	1,729,983.95	39.79603506	-80.68112206	
12,800.00	89.00	150.00	6,863.04	-4,661.93	3,450.98	14,452,535.85	1,730,033.94	39.79579678	-80.68094518	
12,900.00	89.00	150.00	6,864.78	-4,748.52	3,500.97	14,452,449.26	1,730,083.94	39.79555849	-80.68076830	
13,000.00	89.00	150.00	6,866.53	-4,835.11	3,550.96	14,452,362.67	1,730,133.93	39.79532020	-80.68059142	
13,100.00	89.00	150.00	6,868.27	-4,921.70	3,600.95	14,452,276.08	1,730,183.92	39.79508192	-80.68041454	
13,200.00	89.00	150.00	6,870.02	-5,008.29	3,650.94	14,452,189.49	1,730,233.91	39.79484363	-80.68023766	
13,300.00	89.00	150.00	6,871.76	-5,094.88	3,700.94	14,452,102.90	1,730,283.91	39.79460535	-80.68006079	
13,400.00	89.00	150.00	6,873.51	-5,181.47	3,750.93	14,452,016.32	1,730,333.90	39.79436706	-80.67988391	
13,500.00	89.00	150.00	6,875.25	-5,268.06	3,800.92	14,451,929.73	1,730,383.89	39.79412877	-80.67970704	
13,600.00	89.00	150.00	6,877.00	-5,354.65	3,850.91	14,451,843.14	1,730,433.88	39.79389049	-80.67953017	
13,700.00	89.00	150.00	6,878.74	-5,441.24	3,900.91	14,451,756.55	1,730,483.88	39.79365220	-80.67935330	
13,800.00	89.00	150.00	6,880.49	-5,527.82	3,950.90	14,451,669.96	1,730,533.87	39.79341391	-80.67917643	
13,900.00	89.00	150.00	6,882.24	-5,614.41	4,000.89	14,451,583.37	1,730,583.86	39.79317562	-80.67899956	
14,000.00	89.00	150.00	6,883.98	-5,701.00	4,050.88	14,451,496.78	1,730,633.85	39.79293733	-80.67882269	
14,100.00	89.00	150.00	6,885.73	-5,787.59	4,100.88	14,451,410.19	1,730,683.85	39.79269905	-80.67864582	
14,200.00	89.00	150.00	6,887.47	-5,874.18	4,150.87	14,451,323.60	1,730,733.84	39.79246076	-80.67846896	
14,300.00	89.00	150.00	6,889.22	-5,960.77	4,200.86	14,451,237.01	1,730,783.83	39.79222247	-80.67829210	
14,400.00	89.00	150.00	6,890.96	-6,047.36	4,250.85	14,451,150.42	1,730,833.82	39.79198418	-80.67811523	
14,500.00	89.00	150.00	6,892.71	-6,133.95	4,300.85	14,451,063.83	1,730,883.81	39.79174589	-80.67793837	
14,600.00	89.00	150.00	6,894.45	-6,220.54	4,350.84	14,450,977.24	1,730,933.81	39.79150760	-80.67776151	
14,700.00	89.00	150.00	6,896.20	-6,307.13	4,400.83	14,450,890.65	1,730,983.80	39.79126931	-80.67758465	
14,800.00	89.00	150.00	6,897.94	-6,393.72	4,450.82	14,450,804.06	1,731,033.79	39.79103102	-80.67740780	
14,900.00	89.00	150.00	6,899.69	-6,480.31	4,500.82	14,450,717.46	1,731,083.78	39.79079273	-80.67723094	
15,000.00	89.00	150.00	6,901.43	-6,566.90	4,550.81	14,450,630.89	1,731,133.78	39.79055444	-80.67705409	
15,100.00	89.00	150.00	6,903.18	-6,653.49	4,600.80	14,450,544.30	1,731,183.77	39.79031614	-80.67687723	



Planning Report - Geographic

<b>Database:</b>	DB_Jul2216dt_v14	<b>Local Co-ordinate Reference:</b>	Well Heaven Hill 3-5 HM
<b>Company:</b>	Tug Hill Operating LLC	<b>TVD Reference:</b>	GL=1326 @ 1326.00usft
<b>Project:</b>	Marshall County, West Virginia	<b>MD Reference:</b>	GL=1326 @ 1326.00usft
<b>Site:</b>	Heaven Hill 3	<b>North Reference:</b>	Grid
<b>Well:</b>	Heaven Hill 3-5 HM	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev2		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
15,200.00	89.00	150.00	6,904.92	-6,740.08	4,650.79	14,450,457.71	1,731,233.76	39.79007785	-80.67670038	
15,300.00	89.00	150.00	6,906.67	-6,826.66	4,700.78	14,450,371.12	1,731,283.75	39.78983956	-80.67652353	
15,400.00	89.00	150.00	6,908.41	-6,913.25	4,750.78	14,450,284.53	1,731,333.75	39.78960127	-80.67634668	
15,500.00	89.00	150.00	6,910.16	-6,999.84	4,800.77	14,450,197.94	1,731,383.74	39.78936298	-80.67616983	
15,600.00	89.00	150.00	6,911.90	-7,086.43	4,850.76	14,450,111.35	1,731,433.73	39.78912468	-80.67599298	
15,700.00	89.00	150.00	6,913.65	-7,173.02	4,900.75	14,450,024.76	1,731,483.72	39.78888639	-80.67581613	
15,800.00	89.00	150.00	6,915.39	-7,259.61	4,950.75	14,449,938.17	1,731,533.72	39.78864810	-80.67563929	
15,900.00	89.00	150.00	6,917.14	-7,346.20	5,000.74	14,449,851.58	1,731,583.71	39.78840980	-80.67546245	
16,000.00	89.00	150.00	6,918.89	-7,432.79	5,050.73	14,449,764.99	1,731,633.70	39.78817151	-80.67528560	
16,100.00	89.00	150.00	6,920.63	-7,519.38	5,100.72	14,449,678.40	1,731,683.69	39.78793322	-80.67510876	
16,200.00	89.00	150.00	6,922.38	-7,605.97	5,150.72	14,449,591.81	1,731,733.69	39.78769492	-80.67493192	
16,300.00	89.00	150.00	6,924.12	-7,692.56	5,200.71	14,449,505.22	1,731,783.68	39.78745663	-80.67475508	
16,400.00	89.00	150.00	6,925.87	-7,779.15	5,250.70	14,449,418.63	1,731,833.67	39.78721833	-80.67457824	
16,500.00	89.00	150.00	6,927.61	-7,865.74	5,300.69	14,449,332.05	1,731,883.66	39.78698004	-80.67440141	
16,600.00	89.00	150.00	6,929.36	-7,952.33	5,350.69	14,449,245.46	1,731,933.65	39.78674174	-80.67422457	
16,700.00	89.00	150.00	6,931.10	-8,038.92	5,400.68	14,449,158.87	1,731,983.65	39.78650345	-80.67404774	
16,800.00	89.00	150.00	6,932.85	-8,125.51	5,450.67	14,449,072.28	1,732,033.64	39.78626515	-80.67387090	
16,900.00	89.00	150.00	6,934.59	-8,212.09	5,500.66	14,448,985.69	1,732,083.63	39.78602685	-80.67369407	
17,000.00	89.00	150.00	6,936.34	-8,298.68	5,550.66	14,448,899.10	1,732,133.62	39.78578856	-80.67351724	
17,100.00	89.00	150.00	6,938.08	-8,385.27	5,600.65	14,448,812.51	1,732,183.62	39.78555026	-80.67334041	
17,200.00	89.00	150.00	6,939.83	-8,471.86	5,650.64	14,448,725.92	1,732,233.61	39.78531196	-80.67316358	
17,300.00	89.00	150.00	6,941.57	-8,558.45	5,700.63	14,448,639.33	1,732,283.60	39.78507367	-80.67298676	
17,400.00	89.00	150.00	6,943.32	-8,645.04	5,750.62	14,448,552.74	1,732,333.59	39.78483537	-80.67280993	
17,500.00	89.00	150.00	6,945.06	-8,731.63	5,800.62	14,448,466.15	1,732,383.59	39.78459707	-80.67263310	
17,600.00	89.00	150.00	6,946.81	-8,818.22	5,850.61	14,448,379.56	1,732,433.58	39.78435877	-80.67245628	
17,700.00	89.00	150.00	6,948.55	-8,904.81	5,900.60	14,448,292.97	1,732,483.57	39.78412047	-80.67227946	
17,800.00	89.00	150.00	6,950.30	-8,991.40	5,950.59	14,448,206.38	1,732,533.56	39.78388218	-80.67210264	
17,900.00	89.00	150.00	6,952.04	-9,077.99	6,000.59	14,448,119.79	1,732,583.56	39.78364388	-80.67192582	
18,000.00	89.00	150.00	6,953.79	-9,164.58	6,050.58	14,448,033.21	1,732,633.55	39.78340558	-80.67174900	
18,100.00	89.00	150.00	6,955.54	-9,251.17	6,100.57	14,447,946.62	1,732,683.54	39.78316728	-80.67157218	
18,200.00	89.00	150.00	6,957.28	-9,337.76	6,150.56	14,447,860.03	1,732,733.53	39.78292898	-80.67139537	
18,300.00	89.00	150.00	6,959.03	-9,424.35	6,200.56	14,447,773.44	1,732,783.53	39.78269068	-80.67121855	
18,400.00	89.00	150.00	6,960.77	-9,510.93	6,250.55	14,447,686.85	1,732,833.52	39.78245238	-80.67104174	
18,500.00	89.00	150.00	6,962.52	-9,597.52	6,300.54	14,447,600.26	1,732,883.51	39.78221408	-80.67086493	
18,600.00	89.00	150.00	6,964.26	-9,684.11	6,350.53	14,447,513.67	1,732,933.50	39.78197578	-80.67068811	
18,700.00	89.00	150.00	6,966.01	-9,770.70	6,400.53	14,447,427.08	1,732,983.49	39.78173747	-80.67051130	
18,800.00	89.00	150.00	6,967.75	-9,857.29	6,450.52	14,447,340.49	1,733,033.49	39.78149917	-80.67033450	
18,900.00	89.00	150.00	6,969.50	-9,943.88	6,500.51	14,447,253.90	1,733,083.48	39.78126087	-80.67015769	
19,000.00	89.00	150.00	6,971.24	-10,030.47	6,550.50	14,447,167.31	1,733,133.47	39.78102257	-80.66998088	
19,100.00	89.00	150.00	6,972.99	-10,117.06	6,600.50	14,447,080.72	1,733,183.46	39.78078427	-80.66980408	
19,200.00	89.00	150.00	6,974.73	-10,203.65	6,650.49	14,446,994.13	1,733,233.46	39.78054596	-80.66962727	
19,300.00	89.00	150.00	6,976.48	-10,290.24	6,700.48	14,446,907.54	1,733,283.45	39.78030766	-80.66945047	
19,400.00	89.00	150.00	6,978.22	-10,376.83	6,750.47	14,446,820.95	1,733,333.44	39.78006936	-80.66927367	
19,500.00	89.00	150.00	6,979.97	-10,463.42	6,800.46	14,446,734.36	1,733,383.43	39.77983105	-80.66909687	
19,501.81	89.00	150.00	6,980.00	-10,464.98	6,801.37	14,446,732.80	1,733,384.34	39.77982674	-80.66909367	

PBHL/TD



## Planning Report - Geographic

<b>Database:</b>	DB_Jul2216dt_v14	<b>Local Co-ordinate Reference:</b>	Well Heaven Hill 3-5 HM
<b>Company:</b>	Tug Hill Operating LLC	<b>TVD Reference:</b>	GL=1326 @ 1326.00usft
<b>Project:</b>	Marshall County, West Virginia	<b>MD Reference:</b>	GL=1326 @ 1326.00usft
<b>Site:</b>	Heaven Hill 3	<b>North Reference:</b>	Grid
<b>Well:</b>	Heaven Hill 3-5 HM	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev2		

## Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Heaven Hill 3-5 HM LP - hit/miss target - Shape - plan misses target center by 261.87usft at 6703.00usft MD (6573.23 TVD, 542.07 N, 388.60 E) - Point	0.00	0.00	6,754.00	724.66	337.99	14,457,922.44	1,726,920.96	39.81061963	-80.69196184
Heaven Hill 3-5 HM BHL - plan hits target center - Point	0.00	0.00	6,980.00	-10,464.99	6,801.37	14,446,732.79	1,733,384.34	39.77982673	-80.66909366

## Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
120.00	120.00	30" Casing @ 120 TVD	30	36
1,090.00	1,090.00	13 3/8" Casing @ 1090 TVD	13-3/8	17
2,802.06	2,800.00	9 5/8" Casing @ 2800 TVD	9-5/8	12-1/4

## Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,200.00	1,200.00	0.00	0.00	KOP Begin 2°/100' build
1,350.00	1,349.93	3.40	1.96	Begin 3.00° tangent
4,504.39	4,500.00	146.37	84.51	Begin 2°/100' build/turn
5,406.60	5,379.09	323.59	139.87	Begin 20.93° tangent
6,149.65	6,073.10	579.41	210.85	Begin 10°/100' build/turn
7,185.00	6,765.04	200.06	643.90	Begin 89.00° lateral section
19,501.81	6,980.00	-10,464.98	6,801.37	PBHL/TD

WW-9  
(4/16)

API Number 47 - 051 - \_\_\_\_\_  
Operator's Well No. Heaven Hill 3-5HM

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 Glen Easton 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 / WW0109185) 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.

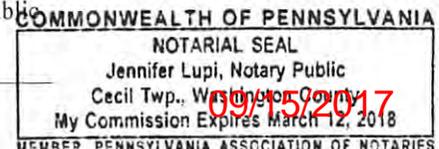
Company Official Signature \_\_\_\_\_  
Company Official (Typed Name) Sean Gasser  
Company Official Title Engineer

Subscribed and sworn before me this 8th day of June, 20 14

Jennifer Lupi Notary Public

My commission expires March 12, 2018

OFFICE OF OIL AND GAS JUL 07 2017



**Tug Hill Operating, LLC**

Proposed Revegetation Treatment: Acres Disturbed 18.43 Prevegetation pH 6.0

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch 2.5 Tons/acre

Seed Mixtures

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

**Attach:**

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: *Jim Nicholas*

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

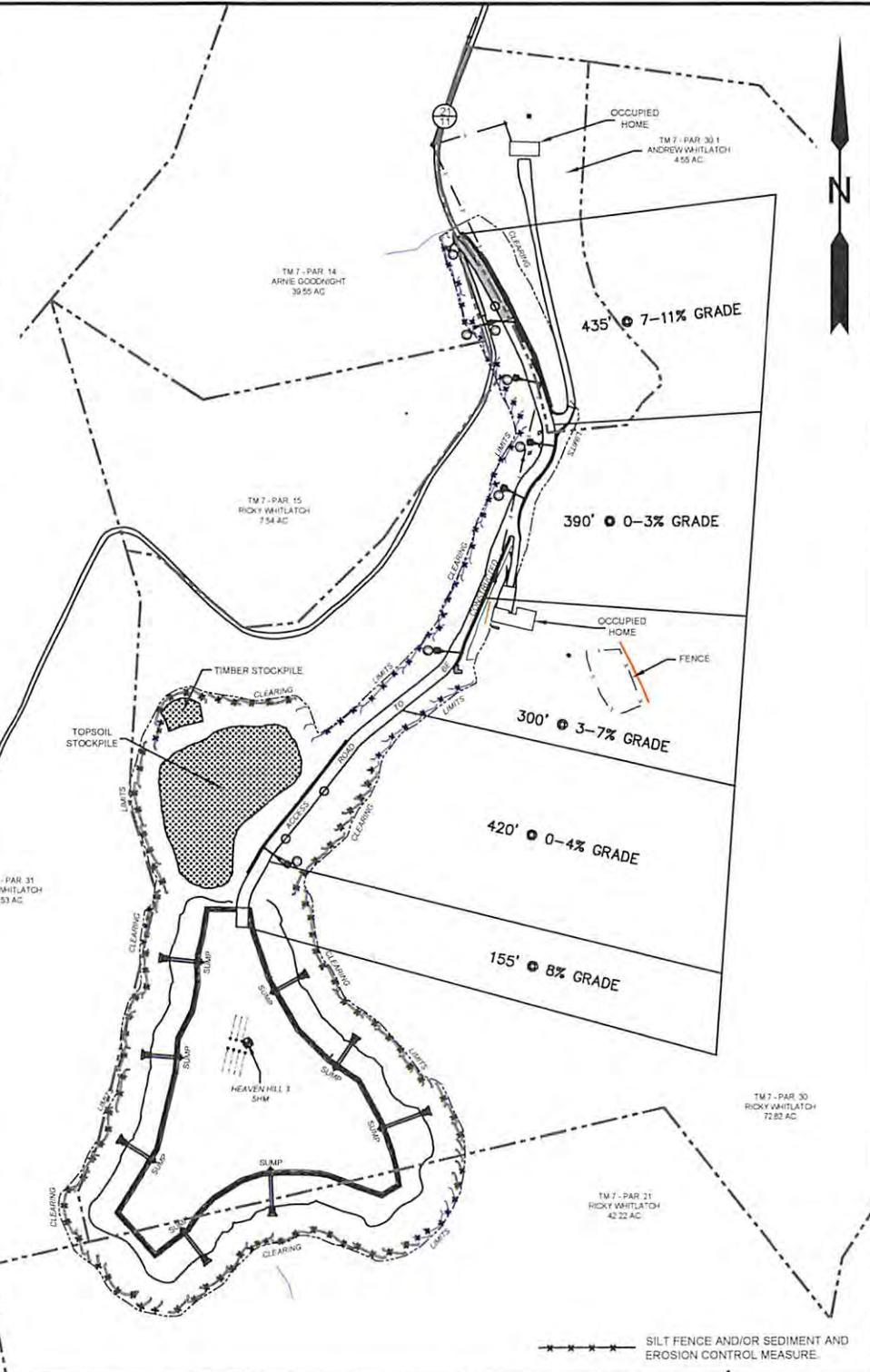
Title: Oil & Gas Inspector Date: 7/5/17

Field Reviewed?  Yes  No

# PROPOSED HEAVEN HILL 3 - 5HM

**NOTES:**

1. DENOTES INSTALL 18" PVC CULVERT AND APPLY APPROPRIATE SEDIMENT OUTLET CONTROL (RIP RAP SPLASH PAD)
2. DRAWING NOT TO SCALE
3. 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.
4. INSTALL CULVERTS AS SHOWN ON RECLAMATION PLAN OR AS FIELD CONDITIONS REQUIRE.
5. ENTRANCES ONTO PUBLIC ROADS SHALL BE CONSTRUCTED OR MAINTAINED IN ACCORDANCE WITH WV D.O.T. REGULATIONS. ADDITIONAL PERMITS MAY BE REQUIRED.
6. TEMPORARILY SEED AND MULCH ALL SLOPS UPON CONSTRUCTION OF LOCATION.
7. ALL CUT AND FILL SLOPES ARE 2H: 1V SLOPE.
8. ALL TREES 6-INCHES AND ABOVE ARE TO BE CUT AND STACKED. BRUSH SLASHINGS ARE TO BE UTILIZED DOWN SLOPE OF SITE AND STRUCTURES TO ACT AS A CONTROL BARRIER IF AVAILABLE.
9. SEE HEAVEN HILL 3 SITE PLAN PREPARED BY KELLEY SURVEYING, DATED 2/24/2017 FOR COMPLETE CONSTRUCTION & EROSION AND SEDIMENT CONTROL DETAILS.



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TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR:	
COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
MARSHALL	MEADE	380 SOUTHPOINTE BLVD	
		SUITE 200	
		CANONSBURG, PA 15317	
DRAWN BY	JOB NO.	DATE	SCALE
K.G.M.	8654	06/29/2017	NONE

2/15/17

**TUG HILL OPERATING**

09/15/2017



# Well Site Safety Plan

## Tug Hill Operating, LLC

*8/15/17*

Well Name: Heaven Hill 3-5HM

Pad Location: Heaven Hill 3

Marshall County, West Virginia

UTM (meters), NAD83, Zone 17:  
Northing-4,406,562.70  
Easting -526,263.54

July 2017

7,447' T.H.

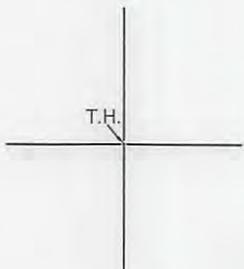
B.H. 682'

**HEAVEN HILL 3 LEASE  
WELL 5HM  
TUG HILL OPERATING**

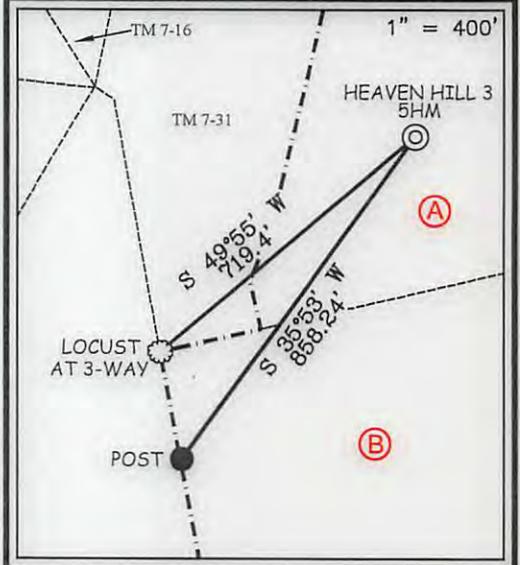
T.H. LATITUDE 39°50'00"  
B.H. LATITUDE 39°47'30"

T.H. LONGITUDE 80°40'00"  
B.H. LONGITUDE 80°40'00"  
4,313' B.H.  
8,998' T.H.

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)		
NAD'83 S.P.C.(FT)	N. 478,871.18	E. 1,633,313.44
NAD'83 GEO.	LAT-(N) 39.808633	LONG-(W) 80.693174
NAD'83 UTM (M)	N. 4,406,562.70	E. 526,263.54
<u>LANDING POINT</u>		
NAD'83 S.P.C.(FT)	N. 479,060.5	E. 1,633,960.8
NAD'83 GEO.	LAT-(N) 39.809176	LONG-(W) 80.690879
NAD'83 UTM (M)	N. 4,406,623.7	E. 526,459.8
<u>BOTTOM HOLE</u>		
NAD'83 S.P.C.(FT)	N. 468,290.5	E. 1,639,941.2
NAD'83 GEO.	LAT-(N) 39.779827	LONG-(W) 80.669094
NAD'83 UTM (M)	N. 4,403,373.0	E. 528,336.6



**REFERENCES**



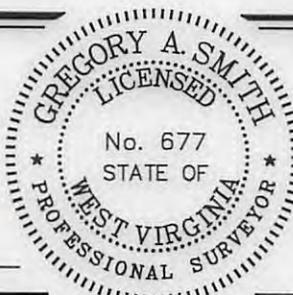
**NOTES ON SURVEY**

1. NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
2. WELL SPOT CIRCLE & TOPO MARK SCALE IS 1"=2000'

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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 REGULATIONS ISSUED AND PRESCRIBED BY THE DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 677 Gregory A. Smith



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.  
DATE JUNE 30, 20 17  
REVISED \_\_\_\_\_, 20 \_\_\_\_  
OPERATORS WELL NO. HEAVEN HILL 3-5HM  
API WELL NO. 47 - 051 - 01948  
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8654P5HM.dwg  
HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 2000'

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

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  IF "GAS" PRODUCTION  STORAGE  DEEP  SHALLOW

LOCATION: GROUND = 1,342.20' PROPOSED = 1,326.35' WATERSHED LOWER BOWMAN RUN OF FISH CREEK (HUC 10)  
DISTRICT MEADE COUNTY MARSHALL QUADRANGLE GLEN EASTON 7.5'

SURFACE OWNER RICKY L. WHITLATCH ACREAGE 72.82±  
ROYALTY OWNER RICKY L. WHITLATCH, ET AL - SEE PGS. 3,4,5,6,7,8 & 9 ACREAGE 72.82±

PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  PLUG AND ABANDON  CLEAN OUT AND REPLUG  OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ TARGET FORMATION MARCELLUS ESTIMATED DEPTH TVD: 6,876' / TMD: 19,512'

WELL OPERATOR TUG HILL OPERATING, LLC ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107  
DESIGNATED AGENT DIANNA STAMPER CT CORPORATION SYSTEM ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

COUNTY NAME MEADE  
PERMIT 09/15/2017



HEAVEN HILL 3 LEASE  
WELL 5HM  
TUG HILL OPERATING



No.	Lease Name or No.	Tag	Parcel	Grantor, Lessor, etc.	Deed Book/Page
1	10*15557	A	9-7-30	RICKY L WHITLATCH ET AL	780 226
2	10*15557	B	9-7-21	RICKY L WHITLATCH ET AL	780 226
3	10*15655	C	9-7-22	ANNA EMERSON A/K/A ANNIE ASTON	864 603
4	10*15666	C	9-7-22	BRENDA J WHETZEL	863 635
5	10*15679	C	9-7-22	CARA BONAR FRIESE AND GEORGE H FRIESE	905 481
6	10*15748	C	9-7-22	CAROLYN LEE FUREY AND MARTIN J FUREY	905 495
7	10*15618	C	9-7-22	CHARLES A RINE	835 22
8	10*16389	C	9-7-22	CHARLES BERRY	905 508
9	10*16287	C	9-7-22	CHARLINE M ENGLE AND KEVIN E ENGLE	905 534
10	10*16585	C	9-7-22	DALE BRIAN GOODMAN	909 506
11	10*47051.295.5	C	9-7-22	DALE R MOORE	904 635
12	10*16179	C	9-7-22	DANA BERRY COPELAND	905 532
13	10*15629	C	9-7-22	DANIEL L RINE	850 86
14	10*17296	C	9-7-22	DANIEL W HEINZEROTH AND KATHLEEN E HEINZEROTH	914 528
15	10*16384	C	9-7-22	DANIELLE BONAR OSTER AND LOUIS MICHAEL OSTER	905 501
16	10*16049	C	9-7-22	DANNY SHAWN KERNS AND AMY LYNN KERNS	905 518
17	10*15614	C	9-7-22	DAVID F RINE	837 130
18	10*15631	C	9-7-22	DAVID HEINZEROTH	836 219
19	10*47051.295.10	C	9-7-22	DEENA J PALOMO	905 470
20	10*15639	C	9-7-22	DELLA M BURKEY A/K/A MAXINE ASTON	848 435
21	10*15749	C	9-7-22	DIANA SMITH KNIGHT	905 497
22	10*15673	C	9-7-22	DIANE B ASTON	864 595
23	10*15637	C	9-7-22	DONALD ASTON	848 274
24	10*16295	C	9-7-22	DONALD H SNYDER JR AND KAREN S SNYDER	903 183
25	10*15489	C	9-7-22	DONALD T SNODGRASS AND LILA F SNODGRASS	915 189
26	10*15729	C	9-7-22	DONNA KAY ALLEN AND ROGER ALLEN	905 493
27	10*16423	C	9-7-22	GAIL L VAUGHN & LARRY L VAUGHN	905 536
28	10*15660	C	9-7-22	DOUGLAS PAUL HENCEROOTH BY HIS AIF	871 193
29	10*47051.295.12	C	9-7-22	EARL D WELLMAN	905 432
30	10*16588	C	9-7-22	EDWIN M KNABENSHUE ADMINISTRATOR OF THE ESTATE OF SARAH J KNABENSHUE, DECEASED	907 408
31	10*15635	C	9-7-22	ELLEN L BETTINAZZI	847 496
32	10*15653	C	9-7-22	EMILY M HENCEROOTH	862 574
33	10*15640	C	9-7-22	EMMA JANE DAVIS A/K/A EMA ASTON	848 271
34	10*15654	C	9-7-22	GEORGE E HENNIGER	863 612
35	10*15617	C	9-7-22	GLADYS M RINE	836 329
36	10*15620	C	9-7-22	GLADYS RUCKMAN	840 319
37	10*15658	C	9-7-22	GLEN MATTHEW LAUGHTON	873 324
38	10*16571	C	9-7-22	GRACE LAURA BONAR	907 411
39	10*47051.295.3	C	9-7-22	HAZEL ARIZONA MOORE REYNOLDS	904 632
40	10*15492	C	9-7-22	HEATHER WHORTON STILLION AND CHRISTOPHER STILLION	905 473
41	10*15641	C	9-7-22	HENRY W ASTON	847 138
42	10*16844	C	9-7-22	HOLLY A LONGFELLOW	927 454
43	10*16719	C	9-7-22	HOWARD T CONNER AND NANETTE CONNER	912 37
44	10*15652	C	9-7-22	ISAAC R ASTON A/K/A IKE ASTON	886 136
45	10*47051.295.9	C	9-7-22	JAMES E HIMELRICK JR AND KAREN HIMELRICK	904 465
46	10*15634	C	9-7-22	JAMES W DAYTON	847 567
47	10*15630	C	9-7-22	JANE L HELFER	836 342
48	10*15622	C	9-7-22	JAY LEROY RINE	840 351
49	10*47051.295.7	C	9-7-22	JEANNE V MELCHIORI	904 462
50	10*15628	C	9-7-22	JENNIFER SEAVER	853 272
51	10*15689	C	9-7-22	JOHN LEROY BAKER AND CYNTHIA A BAKER	905 491
52	10*15636	C	9-7-22	JOSEPH ASTON JR BY HIS ATTORNEY-IN-FACT MELVIN J. ASTON	848 280
53	10*16177	C	9-7-22	JOSEPHINE BROWN	905 530
54	10*15688	C	9-7-22	JOSH GARY AND CHRISTINA M GARY	905 487
55	10*15646	C	9-7-22	JUDITH A CIRONE	848 428
56	10*15645	C	9-7-22	KAREN K OLDFIELD	854 111
57	10*15621	C	9-7-22	KATHERINE A STALMAKER	840 325
58	10*17370	C	9-7-22	KELLY JUNE GOODMAN	927 470
59	10*15642	C	9-7-22	KENNETH L DAYTON	852 366
60	10*15647	C	9-7-22	KENNETH WENDELL OLDFIELD	861 589
61	10*15662	C	9-7-22	LARRY LEE CONKLE	863 354
62	10*15625	C	9-7-22	LAWRENCE W STIRLING	852 384
63	10*47051.295.4	C	9-7-22	LLOYD D MOORE	904 459
64	10*16501	C	9-7-22	LLOYD DOYLE MOORE AND GWENDOLYN K MOORE	907 392
65	10*16513	C	9-7-22	LOWELL D AND JANICE L KNIGHT	927 458
66	10*15632	C	9-7-22	MARIAN D JONES	835 38
67	10*16553	C	9-7-22	MARK EDWARD AND KARRIE A GOODMAN	909 81
68	10*16029	C	9-7-22	MARTHA ASHWORTH KNIGHT	905 505
69	10*15648	C	9-7-22	MARTHA CRAWFORD	863 542
70	10*16896	C	9-7-22	MARTHA J BLACK	927 450
71	10*15650	C	9-7-22	MARY GLADYS KUHN BY ATTORNEY IN FACT CONNIE LYONS	860 89
72	10*47051.295.6	C	9-7-22	MARY I BURKHART	904 638
73	10*15649	C	9-7-22	MARY JANE DANIEL	858 28
74	10*16589	C	9-7-22	MARY L WHITTINGTON	907 400
75	10*15728	C	9-7-22	MARY LOU KITTELBERGER AND FREDERICK W KITTELBERGER	905 483
76	10*15657	C	9-7-22	MARY MARGARET ASTON	868 283
77	10*16440	C	9-7-22	MELANIE C WILKINS AND ROBERT WILKINS	927 462
78	10*15609	C	9-7-22	MICHELLE R WILHELM	834 456
79	10*17365	C	9-7-22	MYSTI JOANNE GOODMAN	927 468
80	10*15643	C	9-7-22	NORMAN G JOHNSON	848 363
81	10*15656	C	9-7-22	PATTY L MYERS	867 100
82	10*16558	C	9-7-22	PAUL BONAR KNIGHT AND SUZANNE L HOPKINS-KNIGHT	927 460
83	10*15638	C	9-7-22	PAUL J ASTON A/K/A JACK ASTON	848 277
84	10*15615	C	9-7-22	PAUL WAYNE RINE	837 133
85	10*15627	C	9-7-22	PAULA R SEAVER	853 483
86	10*15616	C	9-7-22	PHILLIP C RINE	836 332
87	10*16123	C	9-7-22	PHYLLIS R GATTO	905 520
88	10*47051.295.11	C	9-7-22	REGINA D FIGUEROA AND DAVID FIGUEROA	905 435
89	10*16426	C	9-7-22	RENE J RUTAN	905 538
90	10*15486	C	9-7-22	RICHARD NEAL NORRIS AND CAROL NORRIS	905 430
91	10*15626	C	9-7-22	ROBERT J SEAVER	854 77
92	10*15611	C	9-7-22	ROBERT S ZEHNDER	834 437
93	10*16114	C	9-7-22	ROBERT SANDFORD BLACK AND JOAN BLACK	905 510
94	10*15690	C	9-7-22	ROBERT WHORTON AND LINDSAY WHORTON	905 489
95	10*15680	C	9-7-22	ROBERTA JANE CLAYTON	905 485
96	10*16019	C	9-7-22	ROGER E GALLAGHER AND CONIE M GALLAGHER	905 503
97	10*15633	C	9-7-22	ROGER W GATTS	835 35
98	10*15624	C	9-7-22	RONALD A ZEHNDER	847 213
99	10*15644	C	9-7-22	RONALD BEN LAUGHTON	852 360
100	10*15663	C	9-7-22	ROY A CONKLE SR	863 311

FILE NO. 8654P5HM.dwg

DATE JUNE 30, 20 17

REVISED \_\_\_\_\_, 20 \_\_\_\_\_

OPERATORS WELL NO. HEAVEN HILL 3-5HM

API WELL NO. 47 — 051 — 01948  
STATE COUNTY PERMIT



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



COUNTY NAME  
PERMIT

09/16/2017

WELL OPERATOR TUG HILL OPERATING, LLC  
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500  
FORT WORTH, TX 76107

DESIGNATED AGENT DIANNA STAMPER  
ADDRESS CT CORPORATION SYSTEM  
5400 D BIG TYLER ROAD  
CHARLESTON, WV 25313

HEAVEN HILL 3 LEASE  
WELL 5HM  
TUG HILL OPERATING



No.	Lease Name or No.	Tag	Parcel	Oil & Gas Royalty Owner - Continued	Deed Book/Page
101	10*15610	C	9-7-22	SARAH STEVENS	834 432
102	10*15619	C	9-7-22	SHARON M REYNOLDS	840 322
103	10*15623	C	9-7-22	SUSAN JANE WHEELER	847 473
104	10*17497	C	9-7-22	SUZANNA DOOLING AND MICHAEL DOOLING	927 464
105	10*47051.295.13	C	9-7-22	THE DOLLY F WOOD REVOCABLE TRUST BY NICHOLAS CHARLES WOOD AS TRUSTEE	904 641
106	10*15664	C	9-7-22	THERESA ANNE HUGHES	863 343
107	10*15651	C	9-7-22	THOMAS G ASTON	860 83
108	10*15613	C	9-7-22	THOMAS L STEVENS	836 290
109	10*16845	C	9-7-22	TRACY L AND KEITH W BARNBY	927 452
110	10*15612	C	9-7-22	VERA SHIRENE & ARTHUR WORKMAN	837 361
111	10*16546	C	9-7-22	WALTER C AND CHERYL A RINE	927 456
112	10*15487	C	9-7-22	WILLIAM C RUTAN	905 475
113	10*15659	C	9-7-22	WILLIAM E DAYTON BY HIS AIF	871 190
114	10*15747	C	9-7-22	WILLIAM H BAKER	905 459
115	10*16050	C	9-7-22	WILLIAM L GALLAGHER	905 512
116	10*17584	C	9-7-22	WILLIAM THOMAS BONAR AND MONICA BONAR	927 466
117	10*47051.256.22	D	9-7-23	BEVERLY J HOPSON	913 581
118	10*47051.256.1	D	9-7-23	BRENDA J WHETZEL	881 145
119	10*15746	D	9-7-23	BRUCE D SCHURR	921 478
120	10*16247	D	9-7-23	CAROL RIGGLE PARSLEY AND JAMES DENNIS PARSLEY	925 327
121	10*47051.256.24	D	9-7-23	CATHERINE BONAR PETTIT BILLIE	904 628
122	10*47051.256.16	D	9-7-23	CHARLOTTE B HUMMELL	905 45
123	10*47051.256.15	D	9-7-23	CHARLOTTE J BONAR YOHO	904 455
124	10*17506	D	9-7-23	CHASKIA F HARRIS AND JAMES M HARRIS	919 239
125	10*17507	D	9-7-23	DEZRAY METCALF	919 235
126	10*17508	D	9-7-23	DILLON PITSENBARGER	919 241
127	10*17415	D	9-7-23	DILLON PITSENBARGER	919 241
128	10*16115	D	9-7-23	EARL W HARRIS	925 329
129	10*47051.256.10	D	9-7-23	GRACE LAURA BONAR	905 35
130	10*47051.256.14	D	9-7-23	HUGH R BLIZZARD	905 43
131	10*47051.256.21	D	9-7-23	JACK L MASON AND JEAN M MASON	904 626
132	10*47051.256.20	D	9-7-23	JEFFREY THOMAS PYLES AND TERESA A PYLES	907 209
133	10*47051.256.11	D	9-7-23	JOHN L MASON	905 37
134	10*47051.256.18	D	9-7-23	JOHN WILLIAM BONAR AND SHIRLEY BONAR	913 522
135	10*47051.256.7	D	9-7-23	MARILYN SUE BUMER	905 29
136	10*47051.256.17	D	9-7-23	MAXINE G JOHNSON	904 457
137	10*47051.256.19	D	9-7-23	MICHAEL DAVID PYLES AND CYNTHIA A PYLES	907 207
138	10*47051.256.8	D	9-7-23	PAMELA ANN MASON	905 31
139	10*47051.256.23	D	9-7-23	ROBERT L BONAR	913 556
140	10*47051.256.12	D	9-7-23	STEVEN A BOHRER	905 39
141	10*16021	D	9-7-23	TOMMY BONAR AND TANYA S BONAR	925 325
142	10*47051.256.9	D	9-7-23	WANDA MASON SUNSHINE	905 33
143	10*47051.256.13	D	9-7-23	WILLIAM W CRAIG AND GLENDA L CRAIG	905 41
144	10*15662	E	9-7-24	LARRY LEE CONKLE	863 354
145	10*15663	E	9-7-24	ROYA CONKLE SR	863 311
146	10*15664	E	9-7-24	THERESA ANNE HUGHES	863 343
147	10*15666	E	9-7-24	BRENDA J WHETZEL	863 635
148	10*16049	E	9-7-24	DANNY SHAWN KERNS AND AMY LYNN KERNS	905 518
149	10*16501	E	9-7-24	LLOYD DOYLE MOORE AND GWENDOLYN K MOORE	907 392
150	10*16553	E	9-7-24	MARK EDWARD AND KARRIE A GOODMAN	909 81
151	10*16585	E	9-7-24	DALE BRIAN GOODMAN	909 506
152	10*17365	E	9-7-24	MYSTI JOANNE GOODMAN	927 468
153	10*17370	E	9-7-24	KELLY JUNE GOODMAN	927 470
154	10*47051.295.10	E	9-7-24	DEENA J PALOMO	905 470
155	10*47051.295.11	E	9-7-24	REGINA D FIGUEROA AND DAVID FIGUEROA	905 435
156	10*47051.295.12	E	9-7-24	EARL D WELLMAN	905 432
157	10*47051.295.13	E	9-7-24	THE DOLLY F WOOD REVOCABLE TRUST BY NICHOLAS CHARLES WOOD AS TRUSTEE	904 641
158	10*47051.295.3	E	9-7-24	HAZEL ARIZONA MOORE REYNOLDS	904 632
159	10*47051.295.4	E	9-7-24	LLOYD D MOORE	904 459
160	10*47051.295.5	E	9-7-24	DALE R MOORE	904 635
161	10*47051.295.6	E	9-7-24	MARY I BURKHART	904 638
162	10*47051.295.7	E	9-7-24	JEANNE V MELCHIORI	904 462
163	10*47051.295.9	E	9-7-24	JAMES E HIMELRICK JR AND KAREN HIMELRICK	904 465
164	10*47051.256.22	F	9-11-7	BEVERLY J HOPSON	913 581
165	10*47051.256.1	F	9-11-7	BRENDA J WHETZEL	881 145
166	10*15746	F	9-11-7	BRUCE D SCHURR	921 478
167	10*16247	F	9-11-7	CAROL RIGGLE PARSLEY AND JAMES DENNIS PARSLEY	925 327
168	10*47051.256.24	F	9-11-7	CATHERINE BONAR PETTIT BILLIE	904 628
169	10*47051.256.16	F	9-11-7	CHARLOTTE B HUMMELL	905 45
170	10*47051.256.15	F	9-11-7	CHARLOTTE J BONAR YOHO	904 455
171	10*17506	F	9-11-7	CHASKIA F HARRIS AND JAMES M HARRIS	919 239
172	10*17507	F	9-11-7	DEZRAY METCALF	919 235
173	10*17415	F	9-11-7	DILLON PITSENBARGER	919 241
174	10*16115	F	9-11-7	EARL W HARRIS	925 329
175	10*47051.256.10	F	9-11-7	GRACE LAURA BONAR	905 35
176	10*47051.256.14	F	9-11-7	HUGH R BLIZZARD	905 43
177	10*47051.256.21	F	9-11-7	JACK L MASON AND JEAN M MASON	904 626
178	10*47051.256.20	F	9-11-7	JEFFREY THOMAS PYLES AND TERESA A PYLES	907 209
179	10*47051.256.11	F	9-11-7	JOHN L MASON	905 37
180	10*47051.256.18	F	9-11-7	JOHN WILLIAM BONAR AND SHIRLEY BONAR	913 522
181	10*47051.256.7	F	9-11-7	MARILYN SUE BUMER	905 29
182	10*47051.256.17	F	9-11-7	MAXINE G JOHNSON	904 457
183	10*47051.256.19	F	9-11-7	MICHAEL DAVID PYLES AND CYNTHIA A PYLES	907 207
184	10*47051.256.8	F	9-11-7	PAMELA ANN MASON	905 31
185	10*47051.256.23	F	9-11-7	ROBERT L BONAR	913 556
186	10*47051.256.12	F	9-11-7	STEVEN A BOHRER	905 39
187	10*16021	F	9-11-7	TOMMY BONAR AND TANYA S BONAR	925 325
188	10*47051.256.9	F	9-11-7	WANDA MASON SUNSHINE	905 33
189	10*47051.256.13	F	9-11-7	WILLIAM W CRAIG AND GLENDA L CRAIG	905 41
190	10*47051.256.22	G	9-11-7.1	BEVERLY J HOPSON	913 581
191	10*47051.256.1	G	9-11-7.1	BRENDA J WHETZEL	881 145
192	10*15746	G	9-11-7.1	BRUCE D SCHURR	921 478
193	10*16247	G	9-11-7.1	CAROL RIGGLE PARSLEY AND JAMES DENNIS PARSLEY	925 327
194	10*47051.256.24	G	9-11-7.1	CATHERINE BONAR PETTIT BILLIE	904 628
195	10*47051.256.16	G	9-11-7.1	CHARLOTTE B HUMMELL	905 45
196	10*47051.256.15	G	9-11-7.1	CHARLOTTE J BONAR YOHO	904 455
197	10*17506	G	9-11-7.1	CHASKIA F HARRIS AND JAMES M HARRIS	919 239
198	10*17507	G	9-11-7.1	DEZRAY METCALF	919 235
199	10*17415	G	9-11-7.1	DILLON PITSENBARGER	919 241
200	10*16115	G	9-11-7.1	EARL W HARRIS	925 329

FILE NO. 8654P5HM.dwg  
DATE JUNE 30, 20 17  
REVISED \_\_\_\_\_, 20 \_\_\_\_  
OPERATORS WELL NO. HEAVEN HILL 3-5HM  
API WELL NO. 47 — 051 — 01948  
STATE COUNTY PERMIT



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



COUNTY NAME  
PERMIT

WELL OPERATOR TUG HILL OPERATING, LLC  
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500  
FORT WORTH, TX 76107  
DESIGNATED AGENT DIANNA STAMPER  
ADDRESS CT CORPORATION SYSTEM  
5400 D BIG TYLER ROAD  
CHARLESTON, WV 25313

HEAVEN HILL 3 LEASE  
WELL 5HM  
TUG HILL OPERATING



No.	Lessee Name or No.	Tag	Parcel	Oil & Gas Royalty Owner - Continued	Deed Book/Page
201	10*47051.256.10	G	9-11-7.1	GRACE LAURA BONAR	905 35
202	10*47051.256.14	G	9-11-7.1	HUGH R BUZZARD	905 43
203	10*47051.256.21	G	9-11-7.1	JACK L MASON AND JEAN M MASON	904 626
204	10*47051.256.20	G	9-11-7.1	JEFFREY THOMAS PYLES AND TERESA A PYLES	907 209
205	10*47051.256.11	G	9-11-7.1	JOHN L MASON	905 37
206	10*47051.256.18	G	9-11-7.1	JOHN WILLIAM BONAR AND SHIRLEY BONAR	913 522
207	10*47051.256.7	G	9-11-7.1	MARILYN SUE BUMER	905 29
208	10*47051.256.17	G	9-11-7.1	MAXINE G JOHNSON	904 457
209	10*47051.256.19	G	9-11-7.1	MICHAEL DAVID PYLES AND CYNTHIA A PYLES	907 207
210	10*47051.256.8	G	9-11-7.1	PAMELA ANN MASON	905 31
211	10*47051.256.23	G	9-11-7.1	ROBERT L BONAR	913 556
212	10*47051.256.12	G	9-11-7.1	STEVEN A BOHRER	905 39
213	10*16021	G	9-11-7.1	TOMMY BONAR AND TANYA S BONAR	925 325
214	10*47051.256.9	G	9-11-7.1	WANDA MASON SUNSHINE	905 33
215	10*47051.256.13	G	9-11-7.1	WILLIAM W CRAIG AND GLENDA L CRAIG	905 41
216	10*16514	H	9-11-8	ALEX RUSSELL AND JOYCE A CAMPBELL	908 248
217	10*47051.223.12	H	9-11-8	AUCE GORBY MARTIN	908 52
218	10*17416	H	9-11-8	ANDREW M. ORTIZ	921 346
219	10*16515	H	9-11-8	ANNA MARIE JACKSON	908 251
220	10*47051.223.20	H	9-11-8	BARBARA A BUZZARD	908 24
221	10*17276	H	9-11-8	BERTHA EZELL WYATT	921 526
222	10*47051.223.16	H	9-11-8	BETTY LOU STERN AND WILLIAM KEITH STERN	908 64
223	10*16880	H	9-11-8	BEVERLY ANN STORTS	921 498
224	10*16989	H	9-11-8	BRITTANY RICHARDSON	921 376
225	10*47051.223.18	H	9-11-8	BRITTNEY MENEAR	908 57
226	10*15463	H	9-11-8	CHARLES A RINE	908 274
227	10*16667	H	9-11-8	CHARLES F AND GAIL ANN PYLE	908 266
228	10*16686	H	9-11-8	CHERYLE M TRACEY	927 475
229	10*16802	H	9-11-8	CHRISTOPHER AND TAMMY RICHARDSON	921 495
230	10*17130	H	9-11-8	CINDY L BARGER	921 137
231	10*16416	H	9-11-8	CYNTHIA HUDSON	908 219
232	10*17274	H	9-11-8	DAVID H WILSON	921 474
233	10*47051.223.8	H	9-11-8	DAVID M WILSON	907 640
234	10*16807	H	9-11-8	DAVID TULLER AND SUSAN STORTS TULLER	921 513
235	10*15481	H	9-11-8	DEAN P RIGBY AND SUSAN RIGBY	908 197
236	10*47051.223.35	H	9-11-8	DEBRA L CIAFFAGLIONE	908 190
237	10*17438	H	9-11-8	DENNIS M WILSON	921 476
238	10*16962	H	9-11-8	DENNIS P AND BARBARA EZELL FLORY	921 70
239	10*16720	H	9-11-8	DONNA ELAINE BRASKETT	921 152
240	10*47051.223.11	H	9-11-8	ELIZABETH ESTEP	908 37
241	10*47051.223.21	H	9-11-8	GARY T WARD AND SHARON D WARD	908 19
242	10*16298	H	9-11-8	GEOFFREY A SHIEFER AND STEPHANIE L SCHIEFER	908 238
243	10*17677	H	9-11-8	GEORGE M GONTA JR	921 89
244	10*47051.223.5	H	9-11-8	HAROLD S BROWN II AND MARIA A BROWN	907 641
245	10*16815	H	9-11-8	HAROLD W PYLE	921 357
246	10*17156	H	9-11-8	HENRI NELL JACKSON KENT BARNES	921 139
247	10*16668	H	9-11-8	JACK I AND MERRILEE PYLE	908 257
248	10*47051.223.7	H	9-11-8	JACK R WILSON JR AND JANE A WILSON	908 4
249	10*47051.223.13	H	9-11-8	JAMES A GORBY	908 42
250	10*16839	H	9-11-8	JAMES B FOUNDS AND LYNN M MOWERY	921 73
251	10*16800	H	9-11-8	JAMES KENNETH JACKSON AND JULIE JACKSON	921 93
252	10*17588	H	9-11-8	JAMES M JACKSON	921 325
253	10*17527	H	9-11-8	JAMES MICHAEL EZELL AND LUCILLE D EZELL	921 111
254	10*17157	H	9-11-8	JAMES N REEVES JR AND RITA M REEVES	921 367
255	10*17564	H	9-11-8	JAMES R B TRACEY E NICKOLSON	921 340
256	10*47051.223.31	H	9-11-8	JANICE M GONTA GAVALIK	908 180
257	10*47051.223.19	H	9-11-8	JASON RINE AND HEATHER RINE	907 629
258	10*47051.223.1	H	9-11-8	JEAN ANNE GORBY STORCH	877 216
259	10*17526	H	9-11-8	JEFFREY L REEVES AND JODY L REEVES	921 370
260	10*16977	H	9-11-8	JEREMY COCHENOUR	921 102
261	10*17565	H	9-11-8	JESSE ALLEN JACKSON AND ELIZABETH D JACKSON	921 327
262	10*17155	H	9-11-8	JESSE LEON JR AND TERESA GAIL EZELLE	921 118
263	10*47051.223.24	H	9-11-8	JO DEE K DAVIS	908 136
264	10*47051.223.25	H	9-11-8	JOANNE WELCH	908 141
265	10*17552	H	9-11-8	JOHN BEVACQUA AND PATRICIA A BEVACQUA	921 144
266	10*16689	H	9-11-8	JOHN C FOUNDS	927 490
267	10*47051.223.34	H	9-11-8	JOHN CIAFFAGLIONE	908 170
268	10*15686	H	9-11-8	JOHN OMER BOLTZ	908 160
269	10*17275	H	9-11-8	JOHN R REEVES AND MONA G REEVES	921 373
270	10*16669	H	9-11-8	JOHN S AND PATRICIA S DADO	908 269
271	10*47051.223.32	H	9-11-8	JOSEPH GORBY DAKAN	908 175
272	10*17339	H	9-11-8	JOSEPH W FOUNDS	921 76
273	10*47051.223.6	H	9-11-8	JOSHUA RINE AND REBECCA RINE	907 634
274	10*47051.223.14	H	9-11-8	JUSTIN RINE AND BECKY RINE	907 639
275	10*47051.223.28	H	9-11-8	KAREN S GAST	908 150
276	10*17561	H	9-11-8	KATHRYN L & ROGER L TYRELL	921 519
277	10*17444	H	9-11-8	KELLY FOUNDS CAMPBELL	921 99
278	10*17440	H	9-11-8	KENDRA WALISA	927 484
279	10*47051.223.15	H	9-11-8	LARRY D TAUNT AND NANCY L TAUNT	908 14
280	10*47051.223.30	H	9-11-8	LAURIE DRIGGERS MANDERSON	908 165
281	10*16987	H	9-11-8	LAURIE EZELL PERRY	921 355
282	10*16976	H	9-11-8	LESTER G AND CONSTANCE B NICKOLSON	921 343
283	10*47051.223.9	H	9-11-8	LUNDA DELBERT	908 32
284	10*17485	H	9-11-8	MARGIE ANN JACKSON ROBBINS GRAHAM	921 91
285	10*16478	H	9-11-8	MARION LAND EMILY CAMPBELL	908 245
286	10*16879	H	9-11-8	MARK E AND LESLEY A STORTS	921 501
287	10*16902	H	9-11-8	MARY BARCAW DUKE	921 105
288	10*17589	H	9-11-8	MARY CHRISTINE MCKENNA	921 332
289	10*16414	H	9-11-8	MARY ELIZABETH DRIGGERS	908 208
290	10*16991	H	9-11-8	MARVELLEN FOUNDS AND LAUREN FOUNDS	921 79
291	10*16058	H	9-11-8	MATTIE RUTH JACKSON PRESCOTT	908 231
292	10*17278	H	9-11-8	MICHAEL L EZELLE	921 121
293	10*16808	H	9-11-8	MICHAEL L ORTIZ	921 349
294	10*16666	H	9-11-8	MICHAEL P PYLE	908 255
295	10*17554	H	9-11-8	MICHAEL T RANKIN	921 361
296	10*16868	H	9-11-8	MICHAEL W STORTS AND JESSICA M STORTS	921 504
297	10*17443	H	9-11-8	MICHELLE MORROW-BACK	921 337
298	10*17377	H	9-11-8	MILTON HOWARD EZELLE JR AND ELIZABETH A EZELLE	921 123
299	10*47051.223.33	H	9-11-8	NANCY CIAFFAGLIONE HOUSLEY	908 185
300	10*17566	H	9-11-8	NATHAN P & BARBARA T ERDOSSY	921 108

FILE NO. 8654P5HM.dwg  
DATE JUNE 30, 20 17  
REVISED \_\_\_\_\_, 20 \_\_\_\_  
OPERATORS WELL NO. HEAVEN HILL 3-5HM  
API WELL NO. 47 — 051 — 01948  
STATE COUNTY PERMIT



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



COUNTY NAME  
PERMIT

WELL OPERATOR TUG HILL OPERATING, LLC  
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500  
FORT WORTH, TX 76107  
DESIGNATED AGENT DIANNA STAMPER  
ADDRESS 5400 D BIG TYLER ROAD  
CHARLESTON, WV 25313

09/15/2017

HEAVEN HILL 3 LEASE  
WELL 5HM  
TUG HILL OPERATING



No.	Lease Name or No.	Tag	Parcel	Oil & Gas Royalty Owner - Continued	Deed Book/Page
301	10*17484	H	9-11-8	NELDA S JACKSON	921 330
302	10*16798	H	9-11-8	PATRICK A RANKIN AND ROBIN A RANKIN	921 364
303	10*17208	H	9-11-8	PATRICK S GALLAGHER AND JOYCE ANN FOUNDS	921 86
304	10*47051.223.29	H	9-11-8	PATSY JO RAJU	908 155
305	10*16742	H	9-11-8	PAUL C WILSON	927 490
306	10*17449	H	9-11-8	PHYLLIS J BLAKE	921 150
307	10*47051.223.17	H	9-11-8	RALPH E HUNTER JR AND CHARLOTTE HUNTER	908 9
308	10*17441	H	9-11-8	RALPH J WILSON	921 522
309	10*16448	H	9-11-8	RALPH L AND JUANITA L CRIM	906 584
310	10*16690	H	9-11-8	RICARDO ORTIZ	921 352
311	10*17483	H	9-11-8	RICHARD I PYLE	921 359
312	10*16662	H	9-11-8	RICHARD THOMAS AND VICKI J MIMS	908 863
313	10*16836	H	9-11-8	RICK A AND LENORE A STORTS	921 507
314	10*16297	H	9-11-8	ROBERT A LEADBETTER AND M REBECCA LEADBETTER	908 235
315	10*47051.223.10	H	9-11-8	ROBERT E GORBY	908 47
316	10*16545	H	9-11-8	ROBERT G & ELLEN FOUNDS	908 260
317	10*16838	H	9-11-8	ROBERT G FUNARI	921 82
318	10*16424	H	9-11-8	ROBERT J RIGBY	908 241
319	10*16383	H	9-11-8	ROBERT STEPHEN DRIGGERS	908 224
320	10*47051.223.23	H	9-11-8	RONALD S CRIM	908 79
321	10*16118	H	9-11-8	RUBY RIDDLE JACKSON	908 233
322	10*47051.223.22	H	9-11-8	SALLY COLE	908 74
323	10*17744	H	9-11-8	SAM PRESLEY EZELL	921 116
324	10*17205	H	9-11-8	SANDRA JEAN WILSON	921 524
325	10*15750	H	9-11-8	SANDRA K TRULL	908 229
326	10*17442	H	9-11-8	SHANE ALLEN AND MENDY JEAN ALLEN	921 134
327	10*16821	H	9-11-8	SHEILA BRASKETT WEICHEY	921 516
328	10*16688	H	9-11-8	SHERRYL PYLE BAIR	927 481
329	10*15482	H	9-11-8	SUSAN NELSON	908 203
330	10*16415	H	9-11-8	TERENCE J & NANCY J ANDERSON	908 213
331	10*17482	H	9-11-8	TERESA EZELLE RALVA AND DAVID L RALVA	927 487
332	10*16819	H	9-11-8	TERESA ORTIZ BIGGS	921 147
333	10*16837	H	9-11-8	TERRY L AND THELMA A POFF	927 472
334	10*17198	H	9-11-8	THOMAS G AND DIANE W BAYLESS	921 141
335	10*16996	H	9-11-8	THOMAS RANKIN	917 75
336	10*47051.223.27	H	9-11-8	TIM J HOBBS	908 277
337	10*16863	H	9-11-8	TINA MOORE	921 334
338	10*16806	H	9-11-8	VIRGINIA I WHITMAN	921 528
339	10*47051.223.26	H	9-11-8	WENDY L SMARTEL	908 69
340	10*16747	H	9-11-8	WILLIAM DALE BRASKETT	921 96
341	10*16804	H	9-11-8	WILLIAM N AND SHERRY D TAYLOR	921 510
342	10*16516	H	9-11-8	WILSON ANDREW JACKSON	908 253
343	10*15606	I	9-12-2	CHK-MAC LLC	798 150
344	10*47051.309.3	I	9-12-2	GERALD W QUIGLEY AND VICKI L QUIGLEY	905 12
345	10*16932	I	9-12-2	HAYMAKER PROPERTIES LP	902 447
346	10*47051.309.1	I	9-12-2	LESLIE E QUIGLEY	905 8
347	10*47051.309.2	I	9-12-2	LEWIS M QUIGLEY AND MAXINE V QUIGLEY	907 217
348	10*16238	I	9-12-2	SUSAN MARIE JOHNSON AKA SUSAN MARIE HUBER	924 614
349	10*17609	J	9-12-30	ANN M & CURTIS STEVENS	927 215
350	10*47051.318.35	J	9-12-30	ANNA MAE PATTERSON	905 573
351	10*16672	J	9-12-30	ANNE RAND JOSEPH A MURPHY	910 215
352	10*16737	J	9-12-30	ARICA HOLMES AND CARI M HOLMES	913 389
353	10*47051.318.12	J	9-12-30	BARBARA J BEVERIDGE	904 606
354	10*16437	J	9-12-30	BECKY LANDRIS	926 625
355	10*16491	J	9-12-30	BELA N WELLENREITER	921 467
356	10*17619	J	9-12-30	BRENDA GILBERT	927 211
357	10*16818	J	9-12-30	BRENDA REID	927 30
358	10*47051.318.16	J	9-12-30	BULA F YOST	904 614
359	10*17726	J	9-12-30	C FREEMAN MCCALL AND SUSAN M MCCALL	915 480
360	10*47051.318.24	J	9-12-30	CARLA MAE ALLEY	904 516
361	10*47051.318.46	J	9-12-30	CAROL L BOBBY AND DONALD J BOBBY	905 603
362	10*16243	J	9-12-30	CATHERINE I AND ERNEST MSILVERIO	906 47
363	10*47051.318.43	J	9-12-30	CHAD ERIC BENNETT AND MARY A BENNETT	905 588
364	10*16769	J	9-12-30	CHARLES C SEAMON	910 219
365	10*47051.318.20	J	9-12-30	CHARLES R BENNETT JR AND DONNA S BENNETT	904 500
366	10*15684	J	9-12-30	CHARLES R WILLIAMSON JR	906 7
367	10*47051.318.2	J	9-12-30	CHRISTAL L SCHAFFER	904 531
368	10*17476	J	9-12-30	CHRISTINA NESTELL AND CHARLES E NESTELL III	927 207
369	10*16280	J	9-12-30	CHRISTOPHER SAUDERS	905 612
370	10*16035	J	9-12-30	CLARISSA MALONE	906 23
371	10*47051.318.17	J	9-12-30	CORA ALICE DAUBE	904 618
372	10*47051.318.30	J	9-12-30	CYNTHIA TEACHNOR GRAHAM	905 553
373	10*16886	J	9-12-30	DALE R ALLEY	927 19
374	10*17620	J	9-12-30	DANIEL E WILLIAMSON AND HEATHER R WILLIAMSON	927 204
375	10*16232	J	9-12-30	DANIEL L ALLEY AND TERESA ALLEY	906 53
376	10*47051.318.36	J	9-12-30	DANNY CARMICHAEL III	905 576
377	10*16541	J	9-12-30	DEBORAH L TURLEY	926 644
378	10*47051.318.48	J	9-12-30	DEBORAH SUE KYLE 231 EAST 24TH AVENUE	905 600
379	10*15498	J	9-12-30	DELBERT D RUSH AND BETTY RUTH RUSH	905 647
380	10*16435	J	9-12-30	DENISE WILLIAMSON	926 622
381	10*16418	J	9-12-30	DENZIL ALLEY JR	905 641
382	10*16381	J	9-12-30	DONNA BURNS	906 20
383	10*47051.318.15	J	9-12-30	DONNA CHMELYNYSKI	904 610
384	10*47051.318.10	J	9-12-30	DONNA JUNE STRAIT	904 600
385	10*47051.318.39	J	9-12-30	DONNA K DUNN AND JAMES DUNN	905 444
386	10*47051.318.34	J	9-12-30	DONNA SMITH WEEKLEY	905 442
387	10*47051.318.21	J	9-12-30	DORETTA RUSH	904 504
388	10*17705	J	9-12-30	EARL & LYDIA ARMENTA FRAZIER	927 200
389	10*47051.318.22	J	9-12-30	ELIZABETH STARC	904 508
390	10*47051.318.23	J	9-12-30	EMMA CRISWELL	904 512
391	10*17893	J	9-12-30	ERIC D & AMANDA N PETRUCCI	924 545
392	10*15496	J	9-12-30	FRANK A STORCH JR AND SUSAN STORCH	906 1
393	10*47051.318.47	J	9-12-30	FRIEDA A REINBEAU AND RONALD REINBEAU	905 598
394	10*47051.318.37	J	9-12-30	GENELDA MASON	905 580
395	10*16375	J	9-12-30	GEORGE E HOLMES AND SUSAN HOLMES	905 635
396	10*17375	J	9-12-30	GEORGE R CORNELIUS JR AND JANNA JANOUSEK CORNELIUS	927 36
397	10*47051.318.33	J	9-12-30	J RONALD FOX	905 565
398	10*17177	J	9-12-30	JAMES P MILLER	926 608
399	10*47051.318.9	J	9-12-30	JANICE M MEDER	905 545
400	10*16290	J	9-12-30	JENNIFER ALLEY	906 59

FILE NO. 8654P5HM.dwg

DATE JUNE 30, 20 17

REVISED \_\_\_\_\_, 20 \_\_\_\_\_

OPERATORS WELL NO. HEAVEN HILL 3-5HM

API WELL NO. 47  
STATE COUNTY PERMIT



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



COUNTY NAME  
PERMIT

WELL OPERATOR TUG HILL OPERATING, LLC  
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500  
FORT WORTH, TX 76107

DESIGNATED AGENT DIANNA STAMPER  
ADDRESS 5400 D BIG TYLER ROAD  
CHARLESTON, WV 25313

HEAVEN HILL 3 LEASE  
WELL 5HM  
TUG HILL OPERATING



No.	Lease Name or No.	Tag	Parcel	Oil & Gas Royalty Owner - Continued	Deed Book/Page
401	10*16578	J	9-12-30	JESSE HOLMES	909 502
402	10*47051.318.8	J	9-12-30	JOHN M SHALLENBERGER AND JOANNE SHALLENBERGER	905 541
403	10*17294	J	9-12-30	JOHN P HOLMES AND DEBRA A HOLMES	927 6
404	10*47051.318.41	J	9-12-30	JOHN T CRISWELL AND CATHERINE A CRISWELL	905 582
405	10*16487	J	9-12-30	JOHN WILLIAMSON JR	927 27
406	10*47051.318.6	J	9-12-30	JOSEPH F STARC JR AND DONNA STARC	904 596
407	10*47051.318.1	J	9-12-30	JOSEPH PAUL FOX AND MARGARET H FOX	905 569
408	10*16785	J	9-12-30	JOSHUA W SEAMON	910 223
409	10*16508	J	9-12-30	JUDITH C LORADITCH	926 631
410	10*15462	J	9-12-30	JUDITH F TEMPLE AND LOUIS I TEMPLE	905 617
411	10*47051.318.19	J	9-12-30	JUDY LYNN CHIPLINSKI	904 496
412	10*47051.318.27	J	9-12-30	KAREN J BRUGGEMAN	904 520
413	10*16374	J	9-12-30	KAREN L ZUCKER AND MICHAEL D ZUCKER	905 632
414	10*17678	J	9-12-30	KATHERINE & DANIEL DEGROOT	927 218
415	10*16110	J	9-12-30	KATHLEEN D AND STEVEN MONIGOLD	906 35
416	10*17818	J	9-12-30	KATHLEEN REILLY MANNIX AND J MICHAEL MANNIX	917 128
417	10*16539	J	9-12-30	KATHRYN BROWN AND BRUCE G BROWN	926 641
418	10*15468	J	9-12-30	KEITH W STORCH AND DEBORAH A STORCH	905 624
419	10*17475	J	9-12-30	LARRY R CRANE	927 13
420	10*15740	J	9-12-30	LARRY W ALLEY	912 49
421	10*17172	J	9-12-30	LINDA K AND MICHAEL HUMES	927 33
422	10*16382	J	9-12-30	LINDA M HONE AND VAUGHN HONE SR	906 17
423	10*16330	J	9-12-30	LISA R IMHOFF AND CHAD IMHOFF	905 626
424	10*16331	J	9-12-30	LOLA F BLEVINS	905 630
425	10*47051.318.28	J	9-12-30	LORAIN GAIL STARC HORNER AND CHARLES HORNER	904 524
426	10*17388	J	9-12-30	LORI A FARMER AND DANIEL K FARMER	927 9
427	10*16607	J	9-12-30	LOUISE M AND WILSON D MCELHINNY	909 72
428	10*17536	J	9-12-30	MABEL MCCARTHY	909 512
429	10*47051.318.25	J	9-12-30	MARIANN T DARGUSCH AND JONATHAN DARGUSCH	905 549
430	10*16189	J	9-12-30	MARLENE BAKER	906 50
431	10*17882	J	9-12-30	MARY E HAMM	924 552
432	10*47051.318.4	J	9-12-30	MARY ELISE CAMP	905 557
433	10*17809	J	9-12-30	MARY M MORRIS	921 66
434	10*16054	J	9-12-30	MEGAN R AUSTIN AND ANTHONY B POWERS	906 29
435	10*16032	J	9-12-30	MELINDA M GREENOUGH AND DOUGLAS CORWIN GREENOUGH	906 26
436	10*17477	J	9-12-30	MICHAEL SAUDERS AND AMI SAUDERS	927 39
437	10*47051.318.18	J	9-12-30	MICHAEL WAYNE ALLEY AND LINDA ALLEY	904 622
438	10*47051.318.40	J	9-12-30	NANCY MARIE DUNN AND GEORGE L DUNN	905 590
439	10*16241	J	9-12-30	NANNETTE BERLETCH AND MATTHEW S BERLETCH JR	906 56
440	10*16671	J	9-12-30	NATHAN AND KARI KOHRMANN	913 40
441	10*47051.318.45	J	9-12-30	PATRICIA KIRCHNER	905 592
442	10*16047	J	9-12-30	PEGGY KOHRMANN AND DAVID KOHRMANN	906 32
443	10*16823	J	9-12-30	PEGGY N AND JAMES E GLASER	913 373
444	10*47051.318.52	J	9-12-30	PETER G STORCH AND LAURIE L STORCH	905 608
445	10*16488	J	9-12-30	RACHEL AND FRED THORNE JR	926 628
446	10*47051.318.3	J	9-12-30	RANDY W MORRIS AND CHERYL MORRIS	904 535
447	10*16184	J	9-12-30	RAYMOND P RIEK AND GARDALEE RIECK	906 44
448	10*47051.318.7	J	9-12-30	REED O MILLER AND EFFIE M MILLER	904 598
449	10*47051.318.57	J	9-12-30	RHONDA L PALASOTA AND SAM A PALASOTA	905 620
450	10*47051.318.11	J	9-12-30	RICHARD TAYLOR	904 604
451	10*16137	J	9-12-30	RODNEY K, BANE & CATHIE J. BANE	906 41
452	10*16526	J	9-12-30	ROSELLA M HERR AND WILLARD L HERR	927 1
453	10*47051.318.53	J	9-12-30	ROSEMARIE BERISFORD	905 610
454	10*47051.318.56	J	9-12-30	SALLY MERRICK	905 614
455	10*15461	J	9-12-30	SANDRA SUE HALL AND DAVID HALL	905 622
456	10*47051.318.49	J	9-12-30	SHARLA ROLLINS AND GARY ROLLINS	905 594
457	10*47051.318.32	J	9-12-30	SHARON KELLER JOEY KELLER JR	904 539
458	10*47051.318.50	J	9-12-30	SHEILA SIMMONS	905 606
459	10*47051.318.38	J	9-12-30	SHERWOOD MASON NILA JUNE MASON	905 448
460	10*17496	J	9-12-30	STACY L BARNHART	927 16
461	10*47051.318.44	J	9-12-30	STACY R BENNETT	905 596
462	10*16366	J	9-12-30	STEVEN P ROBERTS	905 628
463	10*16410	J	9-12-30	SUSAN I BAKER	905 638
464	10*47051.318.42	J	9-12-30	TARA E CAUSEY	905 586
465	10*16744	J	9-12-30	THE JENNIFER TEACHNOR GAFFEY LIVING TRUST DATED OCTOBER 30TH 2013	926 634
466	10*17815	J	9-12-30	THE TESTAMENTARY TRUST OF CAREY B PAUL III	919 252
467	10*15682	J	9-12-30	THELMA W BIRDWELL	906 9
468	10*15727	J	9-12-30	TIMOTHY LEE COLLEY	906 12
469	10*15497	J	9-12-30	TOM ALLEY	905 644
470	10*15685	J	9-12-30	TRACY RAND	906 4
471	10*16898	J	9-12-30	VICTOR E ALLEY JR AND DEBRA A ALLEY	926 647
472	10*16071	J	9-12-30	VIRGINIA LESLIE BERTRAM	901 370
473	10*16616	J	9-12-30	WILLIAM BRYAN COLLEY	913 628
474	10*47051.318.5	J	9-12-30	WILLIAM F EWART JR AND JOAN REED EWART	905 438
475	10*47051.318.31	J	9-12-30	WILLIAM RICHARD FOX	905 561
476	10*16606	J	9-12-30	WILLIAM T AND BARBARA W PAUL	919 252
477	10*47051.312.0	K	9-12-37	JAN GRIMES SIMNACHER LEONARD A SIMNACHER	904 472
478	10*47051.140.1	L	9-12-32	DAVID P CHAPMAN & DEBORAH BORCK-CHAPMAN	866 318
479	10*47051.140.2	L	9-12-32	DOROTHY SULLIVAN POA JAMES REID SULLIVAN	873 501
480	10*17555	M	9-14-18	AARON AND JANA K PARRY	924 113
481	10*17452	M	9-14-18	ALAN H & MARY K DEGARMO	924 164
482	10*17139	M	9-14-18	ALICE G WEINER AND GERALD S WEINER	915 131
483	10*16183	M	9-14-18	ALLEN R L DAVIS AND DIANA LEE PATTERSON	906 285
484	10*17436	M	9-14-18	ANDREW M HOOVER AND DINAH R HOOVER	924 156
485	10*16239	M	9-14-18	ANGELA L OLDFIELD AND KENNETH W OLDFIELD	906 287
486	10*17880	M	9-14-18	ANNA M WRIGHT	924 586
487	10*16443	M	9-14-18	BARBARA BROWN CHAMBERS	924 621
488	10*16018	M	9-14-18	BARBARA MCFADDEN ALBRIGHT	906 262
489	10*17708	M	9-14-18	BETTY LOU NOBLE	923 127
490	10*17612	M	9-14-18	BEVERLY A LEDBETTER	923 480
491	10*16240	M	9-14-18	BONNIE SUE PATTERSON SWISHER	906 289
492	10*17830	M	9-14-18	BRIAN AND MELINDA MASTERS	925 319
493	10*16031	M	9-14-18	CARL J CHMIELEWSKI AND KATHLEEN A CHMIELEWSKI	906 266
494	10*17613	M	9-14-18	CARLTON DOBBS JR AND MIKHAIL PROKOPENKO	924 120
495	10*16444	M	9-14-18	CATHERINE ELLEN CHAMBERS	924 623
496	10*16083	M	9-14-18	CECIL HARRY LILLY, III AND PAMELA KAY KNIGHT LILLY	912 47
497	10*17771	M	9-14-18	CHARLES AND LISA WARRICK	923 477
498	10*16535	M	9-14-18	CHARLES E CARSON AND MARY KAY CARSON	906 420
499	10*17396	M	9-14-18	CHRISTINE L KIDD	924 158
500	10*16486	M	9-14-18	DAVID ALAN WILKINSON AND PATRICIA LYNN WILKINSON	924 180

FILE NO. 8654P5HM.dwg  
 DATE JUNE 30, 20 17  
 REVISED \_\_\_\_\_, 20 \_\_\_\_\_  
 OPERATORS WELL NO. HEAVEN HILL 3-5HM  
 API WELL NO. 47 — OSI — 01948  
 STATE COUNTY PERMIT



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



COUNTY NAME \_\_\_\_\_  
 PERMIT \_\_\_\_\_

WELL OPERATOR TUG HILL OPERATING, LLC ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107  
 DESIGNATED AGENT DIANNA STAMPER CT CORPORATION SYSTEM ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

HEAVEN HILL 3 LEASE  
WELL 5HM  
TUG HILL OPERATING



No.	Lease Name or No.	Tag	Parcel	Oil & Gas Royalty Owner - Continued	Deed Book/Page
501	10*17614	M	9-14-18	DAVID DOBBS	923 489
502	10*17528	M	9-14-18	DEAN E GARRISON	923 535
503	10*17487	M	9-14-18	DEBORAH R MOKOSH	924 166
504	10*17711	M	9-14-18	DEBRA A WENNEMAN AND KURT J WENNEMAN	923 520
505	10*16995	M	9-14-18	DIANE ELSIE RAMSEY	924 146
506	10*17579	M	9-14-18	DON COFFIELD & GLENDA DOBBS	923 525
507	10*17563	M	9-14-18	DONALD L WOOD	923 523
508	10*16953	M	9-14-18	DONALD T AND JEAN K HOGAN	924 140
509	10*16582	M	9-14-18	DORA BROCK BRAMMER	907 429
510	10*16445	M	9-14-18	DOUGLAS C AND GWENDLYN D LEWTON	925 123
511	10*16511	M	9-14-18	DOUGLAS R BOWEN	906 475
512	10*17766	M	9-14-18	EDWARD S & NANCY A ROSENTHAL	923 495
513	10*16131	M	9-14-18	ERIC S DOBBS	902 68
514	10*16835	M	9-14-18	ERNEST CARL AUGUSTINE JR	924 188
515	10*16182	M	9-14-18	FIRST CHRISTIAN CHURCH OF MOUNDSVILLE BY ROGER FRANCIS AND ROBERT ALBERT TRUSTEES	906 283
516	10*16017	M	9-14-18	FLOYD A MCFADDEN	906 260
517	10*15730	M	9-14-18	FRANCES V CARPENTER	906 256
518	10*16442	M	9-14-18	FRED T AND JERRY L CHAMBERS	924 174
519	10*17448	M	9-14-18	FREDERICK L HERVEY AND CATHY J HERVEY	924 162
520	10*16948	M	9-14-18	FREDERICK M LEWTON	924 136
521	10*17209	M	9-14-18	GAYLE S SHANNON	924 168
522	10*16441	M	9-14-18	GEORGE FRANKLIN AND NANCY ANN REED	924 619
523	10*17515	M	9-14-18	GLADYS E DOBBS	923 541
524	10*17769	M	9-14-18	GLADYS FRAZIER KING	923 492
525	10*17504	M	9-14-18	GREGG ALAN MILLER AND BETH ANN MILLER	924 118
526	10*17675	M	9-14-18	GREGORY D & CAROLYN J WIBLE	923 507
527	10*16580	M	9-14-18	HAROLD C MCFADDEN	907 480
528	10*17289	M	9-14-18	HAROLD R HUNT JR AND ELIZABETH A HUNT	924 170
529	10*17879	M	9-14-18	HARRY R WRIGHT JR	924 588
530	10*16581	M	9-14-18	HELEN L SCHILLING	907 489
531	10*17674	M	9-14-18	HOWARD L & BETH E WOOD	923 505
532	10*16540	M	9-14-18	JAMES A WINTER AND CONNIE G WINTER	924 184
533	10*17676	M	9-14-18	JAMES C & DEIDRE G DORIA	923 513
534	10*47051.325.4	M	9-14-18	JAMES H WHITE AND RITA FRANKS WHITE	906 230
535	10*17731	M	9-14-18	JAMES J MCGHEE AND JEANNINE CHAMBERS MCGHEE	914 519
536	10*17671	M	9-14-18	JAMES L STOLTJ	923 484
537	10*16882	M	9-14-18	JAMES LEROY AND DARLENE DOBBS OWENS	924 190
538	10*16569	M	9-14-18	JANICE C BAILE	907 425
539	10*17503	M	9-14-18	JANICE L KUHN	924 122
540	10*16950	M	9-14-18	JAY E AND CECILIA E LEWTON	924 134
541	10*16532	M	9-14-18	JEAN ANN MCFADDEN	906 450
542	10*16285	M	9-14-18	JOHN A SHUTZ AND CYNTHIA J SHUTZ	906 291
543	10*16483	M	9-14-18	JOHN C AND BARBARA H WINTER	924 178
544	10*16966	M	9-14-18	JOHN GILLETTE AND BARBARA GILLETTE	913 377
545	10*17885	M	9-14-18	JOHN RUSSELL BECKER	924 540
546	10*17582	M	9-14-18	JOHN THOMAS ERAZMUS AND JEAN R ERAZMUS	924 124
547	10*16030	M	9-14-18	JOSEPH F CHMIELEWSKI AND SANDRA CHMIELEWSKI	906 264
548	10*47051.325.1	M	9-14-18	JUDITH A LEWANDOSKY AND ALAN E LEWANDOSKY	906 225
549	10*16993	M	9-14-18	JULIA HOOVER	924 150
550	10*17517	M	9-14-18	JULIO ENRIQUE & DEBRA K TORRES	923 537
551	10*16085	M	9-14-18	KATHARYN ANNETTE LILLY LAING AND FREDDIE JOE LAING	912 43
552	10*16086	M	9-14-18	KATHARYN DAY LILLY	906 272
553	10*16531	M	9-14-18	KATHY DOBBS WELLS	906 472
554	10*17668	M	9-14-18	KENNETH R DOBBS	923 503
555	10*16537	M	9-14-18	KIM D BOWEN AND MADONNA M BOWEN	907 415
556	10*17572	M	9-14-18	KIM O CHAMBERS AND DEBRA CHAMBERS	906 258
557	10*16180	M	9-14-18	LARRY L CHAMBERS	906 280
558	10*17131	M	9-14-18	LAURA E TOTTEN AND LONNIE R TOTTEN	924 154
559	10*16726	M	9-14-18	LESLY K WHITE	924 182
560	10*16576	M	9-14-18	LINDA A MINER AND MICHAEL W MINER	907 484
561	10*16992	M	9-14-18	LINDA C ABRAHAM	924 148
562	10*17520	M	9-14-18	LUCY P SULLIVAN	923 533
563	10*17559	M	9-14-18	MARVIN JERRY BLAKE AND LINDA D BLAKE	923 528
564	10*16087	M	9-14-18	MARY PENELOPE LILLY MURPHY	912 41
565	10*17516	M	9-14-18	MARY V DOBBS	923 539
566	10*17505	M	9-14-18	MICHAEL R & LEANNE DOBBS	924 116
567	10*47051.325.3	M	9-14-18	NICHOLAS D PAVLIK AND GLORIA K PAVLIK	906 278
568	10*16181	M	9-14-18	NORMA CHRISTINE WHIPP AND GERALD WAYNE BLACK	906 281
569	10*16144	M	9-14-18	PATTIE S MADRID	906 278
570	10*17580	M	9-14-18	PAUL CRAIG CUNNINGHAM	923 530
571	10*17615	M	9-14-18	PAULA JO WRIGHT	923 482
572	10*17581	M	9-14-18	PAULA WEIRES	923 486
573	10*47051.325.8	M	9-14-18	RICK PAVLIK	906 239
574	10*16570	M	9-14-18	ROBERT D BOWEN AND MARCIA M R BOWEN	907 420
575	10*17878	M	9-14-18	ROBERT E & SARAH M ROUSH	924 590
576	10*17413	M	9-14-18	ROBERT M CHAMBERS AND CHARLOTTE A CHAMBERS	924 160
577	10*17129	M	9-14-18	ROBERTA JANE PARKINSON	924 142
578	10*17700	M	9-14-18	ROGER L & MARILYN L GARRISON	923 472
579	10*17616	M	9-14-18	RONALD & ELIZABETH DOBBS	924 107
580	10*15477	M	9-14-18	RONALD A WYCINSKI	906 241
581	10*16680	M	9-14-18	RONALD J AND JENNIFER CHAMBERS FICCA	924 186
582	10*16990	M	9-14-18	ROSEMARY H BEAVERS	924 152
583	10*17664	M	9-14-18	RUDOLPH H PARSONS	923 511
584	10*16952	M	9-14-18	RUSSELL D HERVEY	924 132
585	10*47051.325.5	M	9-14-18	SAMUEL ALAN MCCORD AND WINIFRED A MCKEE	906 232
586	10*16733	M	9-14-18	SARAH L BISHOP	924 172
587	10*47051.325.7	M	9-14-18	SHERON JONES	906 237
588	10*16533	M	9-14-18	SHIRLEY ANN DOBBS	906 469
589	10*17703	M	9-14-18	SHIRLEY N COX	923 498
590	10*16949	M	9-14-18	STEVEN R AND BRIANNE LUTT	924 138
591	10*17701	M	9-14-18	SUE ANN WORD	923 470
592	10*17702	M	9-14-18	TAMMY BETH RAMSEY	925 500
593	10*16967	M	9-14-18	TARA JEANNE MINOR AND JENNIFER A KNAPP	914 612
594	10*16534	M	9-14-18	TERRY LEE LASAVAGE	906 443
595	10*17667	M	9-14-18	THOMAS BRIAN WARRICK	923 509
596	10*47051.325.6	M	9-14-18	THOMAS O MCCORD	906 235
597	10*47051.325.2	M	9-14-18	TIMMY LEE STOUT AND DOROTHY MARIE STOUT	906 222
598	10*17560	M	9-14-18	TREVOR HOOKS	924 110
599	10*17134	M	9-14-18	UNITED CHRISTIAN MISSIONARY SOCIETY	924 144
600	10*17617	M	9-14-18	UNITED DISCIPLES OF CHRIST CHURCH	924 129

FILE NO. 8654P5HM.dwg

DATE JUNE 30, 20 17

REVISED \_\_\_\_\_, 20 \_\_\_\_\_

OPERATORS WELL NO. HEAVEN HILL 3-5HM

API WELL NO. 47 — 051 — 01948  
STATE COUNTY PERMIT



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



COUNTY NAME PERMIT

WELL OPERATOR TUG HILL OPERATING, LLC  
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500  
FORT WORTH, TX 76107

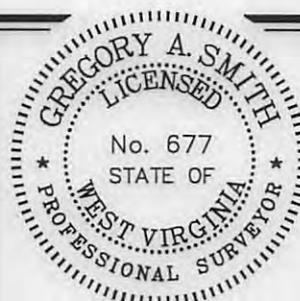
DESIGNATED AGENT DIANNA STAMPER  
ADDRESS CT CORPORATION SYSTEM  
5400 D BIG TYLER ROAD  
CHARLESTON, WV 25313

HEAVEN HILL 3 LEASE  
WELL 5HM  
TUG HILL OPERATING



No.	Lease Name or No.	Tag	Parcel	Oil & Gas Royalty Owner - Continued	Deed Book/Page
601	10*17881	M	9-14-18	WAYLON L & ANGELA J MURPHEE	924 555
602	10*16490	M	9-14-18	WILLIAM H AND MERRY C COTTON	924 176
603	10*17767	M	9-14-18	WILLIAM K & LINDA J MERRITT	923 474
604	10*16965	M	9-14-18	WILLIAM L WRIGHT AND CAROLINA WRIGHT	914 524
605	10*17452	N	9-15-3	ALAN H & MARY K DEGARMO	924 164
606	10*17436	N	9-15-3	ANDREW M HOOVER AND DINAH R HOOVER	924 156
607	10*16239	N	9-15-3	ANGELA L OLDFIELD AND KENNETH W OLDFIELD	906 287
608	10*16443	N	9-15-3	BARBARA BROWN CHAMBERS	924 621
609	10*16018	N	9-15-3	BARBARA MCFADDEN ALBRIGHT	906 262
610	10*16444	N	9-15-3	CATHERINE ELLEN CHAMBERS	924 623
611	10*16535	N	9-15-3	CHARLES E CARSON AND MARY KAY CARSON	906 420
612	10*17396	N	9-15-3	CHRISTINE L KIDD	924 158
613	10*16486	N	9-15-3	DAVID ALAN WILKINSON AND PATRICIA LYNN WILKINSON	924 180
614	10*17487	N	9-15-3	DEBORAH R MCKOSH	924 166
615	10*16995	N	9-15-3	DIANE ELSIE RAMSEY	924 146
616	10*17563	N	9-15-3	DONALD L WOOD	923 523
617	10*16953	N	9-15-3	DONALD T AND JEAN K HOGAN	924 140
618	10*16582	N	9-15-3	DORA BROCK BRAMMER	907 429
619	10*16445	N	9-15-3	DOUGLAS C AND GWENDLYN D LEWTON	925 123
620	10*16511	N	9-15-3	DOUGLAS R BOWEN	906 475
621	10*16835	N	9-15-3	ERNEST CARL AUGUSTINE JR	924 188
622	10*16182	N	9-15-3	FIRST CHRISTIAN CHURCH OF MOUNDSVILLE BY ROGER FRANCIS AND ROBERT ALBERT TRUSTEES	906 283
623	10*16017	N	9-15-3	FLOYD A MCFADDEN	906 260
624	10*16442	N	9-15-3	FRED T AND JERRY L CHAMBERS	924 174
625	10*17448	N	9-15-3	FREDERICK L HERVEY AND CATHY J HERVEY	924 162
626	10*16948	N	9-15-3	FREDERICK M LEWTON	924 136
627	10*17209	N	9-15-3	GAYLE S SHANNON	924 168
628	10*16441	N	9-15-3	GEORGE FRANKLIN AND NANCY ANN REED	924 619
629	10*17675	N	9-15-3	GREGORY D & CAROLYN J WIBLE	923 507
630	10*16580	N	9-15-3	HAROLD C MCFADDEN	907 480
631	10*17289	N	9-15-3	HAROLD R HUNT JR AND ELIZABETH A HUNT	924 170
632	10*16581	N	9-15-3	HELEN L SCHILLING	907 489
633	10*17674	N	9-15-3	HOWARD L & BETH E WOOD	923 505
634	10*16540	N	9-15-3	JAMES A WINTER AND CONNIE G WINTER	924 184
635	10*47051.325.4	N	9-15-3	JAMES H WHITE AND RITA FRANKS WHITE	906 230
636	10*17731	N	9-15-3	JAMES J MCGHEE AND JEANNINE CHAMBERS MCGHEE	914 519
637	10*16569	N	9-15-3	JANICE C BALE	907 425
638	10*16950	N	9-15-3	JAY E AND CECILIA E LEWTON	924 134
639	10*16532	N	9-15-3	JEAN ANN MCFADDEN	906 459
640	10*16285	N	9-15-3	JOHN A SHUTZ AND CYNTHIA J SHUTZ	906 291
641	10*16483	N	9-15-3	JOHN C AND BARBARA H WINTER	924 178
642	10*47051.325.1	N	9-15-3	JUDITH A LEWANDOSKY AND ALAN E LEWANDOSKY	906 225
643	10*16993	N	9-15-3	JULIA HOOVER	924 150
644	10*16537	N	9-15-3	KIM D BOWEN AND MADONNA M BOWEN	907 415
645	10*15752	N	9-15-3	KIM O CHAMBERS AND DEBRA CHAMBERS	906 258
646	10*16180	N	9-15-3	LARRY L CHAMBERS	906 280
647	10*17131	N	9-15-3	LAURA E TOTTEN AND LONNIE R TOTTEN	924 154
648	10*16726	N	9-15-3	LESLY K WHITE	924 182
649	10*16576	N	9-15-3	LUNDA A MINER AND MICHAEL W MINER	907 484
650	10*16992	N	9-15-3	LUNDA C ABRAHAM	924 148
651	10*47051.325.3	N	9-15-3	NICHOLAS D PAVLIK AND GLORIA K PAVLIK	906 228
652	10*16181	N	9-15-3	NORMA CHRISTINE WHIPP AND GERALD WAYNE BLACK	906 281
653	10*16144	N	9-15-3	PATTIE S MADRID	906 278
654	10*47051.325.8	N	9-15-3	RICK PAVLIK	906 239
655	10*16570	N	9-15-3	ROBERT D BOWEN AND MARCIA M R BOWEN	907 420
656	10*17413	N	9-15-3	ROBERT M CHAMBERS AND CHARLOTTE A CHAMBERS	924 160
657	10*17129	N	9-15-3	ROBERTA JANE PARKINSON	924 142
658	10*16680	N	9-15-3	RONALD J AND JENNIFER CHAMBERS FICCA	924 186
659	10*16990	N	9-15-3	ROSEMARY H BEAVERS	924 152
660	10*16952	N	9-15-3	RUSSELL D HERVEY	924 132
661	10*47051.325.5	N	9-15-3	SAMUEL ALAN MCCORD AND WINIFRED A MCKEE	906 232
662	10*16733	N	9-15-3	SARAH L BISHOP	924 172
663	10*47051.325.7	N	9-15-3	SHERON JONES	906 237
664	10*16949	N	9-15-3	STEVEN R AND BRIANNE L UTT	924 138
665	10*17701	N	9-15-3	SUE ANN WORD	923 470
666	10*17702	N	9-15-3	TAMMY BETH RAMSEY	925 500
667	10*16534	N	9-15-3	TERRY LEE LASAVAGE	906 443
668	10*47051.325.6	N	9-15-3	THOMAS O MCCORD	906 235
669	10*17134	N	9-15-3	UNITED CHRISTIAN MISSIONARY SOCIETY	924 144
670	10*17617	N	9-15-3	UNITED DISCIPLES OF CHRIST CHURCH	924 129
671	10*16490	N	9-15-3	WILLIAM H AND MERRY C COTTON	924 176

FILE NO. 8654P5HM.dwg  
DATE JUNE 30, 20 17  
REVISED \_\_\_\_\_, 20 \_\_\_\_\_  
OPERATORS WELL NO. HEAVEN HILL 3-5HM  
API NO. 47 — 051 — 01948  
WELL NO. STATE COUNTY PERMIT



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



COUNTY NAME  
PERMIT

WELL OPERATOR TUG HILL OPERATING, LLC  
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500  
FORT WORTH, TX 76107

DESIGNATED AGENT DIANNA STAMPER  
ADDRESS 5400 D BIG TYLER ROAD  
CHARLESTON, WV 25313

09/16/2017

WW-6A1  
(5/13)

Operator's Well No. Heaven Hill 3-5HM

**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 sheets

**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 *Amy Miller*  
 Its: Permit Specialist - Appalachia Region

Lease Name or No	Tag	Parcel	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment
10*15557	A	9-7-30	RICKY L WHITLATCH ET AL	CHEVRON USA INC	1/8+	780 226	N/A	N/A	Chevron to Tug Hill: 36/148
10*15557	B	9-7-21	RICKY L WHITLATCH ET AL	CHEVRON USA INC	1/8+	780 226	N/A	N/A	Chevron to Tug Hill: 36/148
10*15655	C	9-7-22	ANNA EMERSON A/K/A ANNIE ASTON	CHEVRON U.S.A. INC.	1/8+	864 603	N/A	N/A	Chevron to Tug Hill: 36/148
10*15666	C	9-7-22	BRENDA J WHETZEL	CHEVRON USA INC	1/8+	863 635	N/A	N/A	Chevron to Tug Hill: 36/148
10*15679	C	9-7-22	CARA BONAR FREESE AND GEORGE H FREESE	TH EXPLORATION LLC	1/8+	905 481	N/A	N/A	N/A
10*15748	C	9-7-22	CAROLYN LEE FUREY AND MARTIN J FUREY	TH EXPLORATION LLC	1/8+	905 495	N/A	N/A	N/A
10*15618	C	9-7-22	CHARLES A RINE	CHEVRON U.S.A. INC.	1/8+	835 22	N/A	N/A	Chevron to Tug Hill: 36/148
10*16389	C	9-7-22	CHARLES BERRY	TH EXPLORATION LLC	1/8+	905 508	N/A	N/A	N/A
10*16287	C	9-7-22	CHARLINE M ENGLE AND KEVIN E ENGLE	TH EXPLORATION LLC	1/8+	905 534	N/A	N/A	N/A
10*16585	C	9-7-22	DALE BRIAN GOODMAN	TH EXPLORATION LLC	1/8+	909 506	N/A	N/A	N/A
10*47051.295.5	C	9-7-22	DALE R MOORE	TH EXPLORATION LLC	1/8+	904 635	N/A	N/A	N/A
10*16179	C	9-7-22	DANA BERRY COPELAND	TH EXPLORATION LLC	1/8+	905 532	N/A	N/A	N/A
10*15629	C	9-7-22	DANIEL L RINE	CHEVRON U.S.A. INC.	1/8+	860 86	N/A	N/A	Chevron to Tug Hill: 36/148
10*17296	C	9-7-22	DANIEL W HEINZEROTH AND KATHLEEN E HEINZEROTH	TH EXPLORATION LLC	1/8+	914 528	N/A	N/A	N/A
10*16384	C	9-7-22	DANIELLE BONAR OSTER AND LOUIS MICHAEL OSTER	TH EXPLORATION LLC	1/8+	905 501	N/A	N/A	N/A
10*16049	C	9-7-22	DANNY SHAWN KERNS AND AMY LYNN KERNS	TH EXPLORATION LLC	1/8+	905 518	N/A	N/A	N/A
10*15614	C	9-7-22	DAVID F RINE	CHEVRON U.S.A. INC.	1/8+	837 130	N/A	N/A	Chevron to Tug Hill: 36/148
10*15631	C	9-7-22	DAVID HEINZEROTH	CHEVRON U.S.A. INC.	1/8+	836 219	N/A	N/A	Chevron to Tug Hill: 36/148
10*47051.295.10	C	9-7-22	DEENA J PALOMO	TH EXPLORATION LLC	1/8+	905 470	N/A	N/A	N/A
10*15639	C	9-7-22	DELLA M BURKEY A/K/A MAXINE ASTON	CHEVRON U.S.A. INC.	1/8+	848 435	N/A	N/A	Chevron to Tug Hill: 36/148
10*15749	C	9-7-22	DIANA SMITH KNIGHT	TH EXPLORATION LLC	1/8+	905 497	N/A	N/A	N/A
10*15673	C	9-7-22	DIANE B ASTON	CHEVRON U.S.A. INC.	1/8+	864 595	N/A	N/A	Chevron to Tug Hill: 36/148
10*15637	C	9-7-22	DONALD ASTON	CHEVRON U.S.A. INC.	1/8+	848 274	N/A	N/A	Chevron to Tug Hill: 36/148
10*16295	C	9-7-22	DONALD H SNYDER JR AND KAREN S SNYDER	TH EXPLORATION LLC	1/8+	903 183	N/A	N/A	N/A
10*15489	C	9-7-22	DONALD T SNODGRASS AND LILA F SNODGRASS	TH EXPLORATION LLC	1/8+	915 189	N/A	N/A	N/A
10*15729	C	9-7-22	DONNA KAY ALLEN AND ROGER ALLEN	TH EXPLORATION LLC	1/8+	905 493	N/A	N/A	N/A
10*16423	C	9-7-22	GAIL L. VAUGHN & LARRY L. VAUGHN	TH EXPLORATION LLC	1/8+	905 536	N/A	N/A	N/A
10*15660	C	9-7-22	DOUGLAS PAUL HENCEROOTH BY HIS AIF	CHEVRON U.S.A. INC.	1/8+	871 193	N/A	N/A	Chevron to Tug Hill: 36/148
10*47051.295.12	C	9-7-22	EARL D WELLMAN	TH EXPLORATION LLC	1/8+	905 432	N/A	N/A	N/A
10*16588	C	9-7-22	EDWIN M KNABENSHUE ADMINISTRATOR OF THE ESTATE OF SARAH J KNABENSHUE, DECEASED	TH EXPLORATION LLC	1/8+	907 408	N/A	N/A	N/A
10*15635	C	9-7-22	ELLEN L BETTINAZZI	CHEVRON U.S.A. INC.	1/8+	847 496	N/A	N/A	Chevron to Tug Hill: 36/148
10*15653	C	9-7-22	EMILY M HENCEROOTH	CHEVRON U.S.A. INC.	1/8+	862 574	N/A	N/A	Chevron to Tug Hill: 36/148
10*15640	C	9-7-22	EMMA JANE DAVIS A/K/A EMA ASTON	CHEVRON U.S.A. INC.	1/8+	848 271	N/A	N/A	Chevron to Tug Hill: 36/148
10*15654	C	9-7-22	GEORGE E HENNIGER	CHEVRON U.S.A. INC.	1/8+	863 612	N/A	N/A	Chevron to Tug Hill: 36/148
10*15617	C	9-7-22	GLADYS M RINE	CHEVRON U.S.A. INC.	1/8+	836 329	N/A	N/A	Chevron to Tug Hill: 36/148
10*15620	C	9-7-22	GLADYS RUCKMAN	CHEVRON U.S.A. INC.	1/8+	840 319	N/A	N/A	Chevron to Tug Hill: 36/148
10*15658	C	9-7-22	GLEN MATTHEW LAUGHTON	CHEVRON USA INC	1/8+	873 324	N/A	N/A	Chevron to Tug Hill: 36/148
10*16571	C	9-7-22	GRACE LAURA BONAR	TH EXPLORATION LLC	1/8+	907 411	N/A	N/A	N/A
10*47051.295.3	C	9-7-22	HAZEL ARIZONA MOORE REYNOLDS	TH EXPLORATION LLC	1/8+	904 632	N/A	N/A	N/A
10*15492	C	9-7-22	HEATHER WHORTON STILLION AND CHRISTOPHER STILLION	TH EXPLORATION LLC	1/8+	905 473	N/A	N/A	N/A
10*15641	C	9-7-22	HENRY W ASTON	CHEVRON U.S.A. INC.	1/8+	847 138	N/A	N/A	Chevron to Tug Hill: 36/148
10*16844	C	9-7-22	HOLLY A LONGFELLOW	TH EXPLORATION LLC	1/8+	927 454	N/A	N/A	N/A
10*16719	C	9-7-22	HOWARD T CONNER AND NANETTE CONNER	TH EXPLORATION LLC	1/8+	912 37	N/A	N/A	N/A
10*15652	C	9-7-22	ISAAC R ASTON A/K/A IKE ASTON	CHEVRON U.S.A. INC.	1/8+	886 136	N/A	N/A	Chevron to Tug Hill: 36/148
10*47051.295.9	C	9-7-22	JAMES E HIMELRICK JR AND KAREN HIMELRICK	TH EXPLORATION LLC	1/8+	904 465	N/A	N/A	N/A
10*15634	C	9-7-22	JAMES W DAYTON	CHEVRON U.S.A. INC.	1/8+	847 567	N/A	N/A	Chevron to Tug Hill: 36/148
10*15630	C	9-7-22	JANE L HELFER	CHEVRON U.S.A. INC.	1/8+	836 342	N/A	N/A	Chevron to Tug Hill: 36/148
10*15622	C	9-7-22	JAY LEROY RINE	CHEVRON U.S.A. INC.	1/8+	840 351	N/A	N/A	Chevron to Tug Hill: 36/148
10*47051.295.7	C	9-7-22	JEANNE V MELCHIORI	TH EXPLORATION LLC	1/8+	904 462	N/A	N/A	N/A
10*15628	C	9-7-22	JENNIFER SEAVER	CHEVRON U.S.A. INC.	1/8+	853 272	N/A	N/A	Chevron to Tug Hill: 36/148
10*15689	C	9-7-22	JOHN LEROY BAKER AND CYNTHIA A BAKER	TH EXPLORATION LLC	1/8+	905 491	N/A	N/A	N/A
10*15636	C	9-7-22	JOSEPH ASTON JR BY HIS ATTORNEY-IN-FACT MELVIN J. ASTON	CHEVRON U.S.A. INC.	1/8+	848 280	N/A	N/A	Chevron to Tug Hill: 36/148
10*16177	C	9-7-22	JOSEPHINE BROWN	TH EXPLORATION LLC	1/8+	905 530	N/A	N/A	N/A
10*15688	C	9-7-22	JOSH GARY AND CHRISTINA M GARY	TH EXPLORATION LLC	1/8+	905 487	N/A	N/A	N/A
10*15646	C	9-7-22	JUDITH A CIRONE	CHEVRON USA INC	1/8+	848 428	N/A	N/A	Chevron to Tug Hill: 36/148
10*15645	C	9-7-22	KAREN K OLDFIELD	CHEVRON U.S.A. INC.	1/8+	854 111	N/A	N/A	Chevron to Tug Hill: 36/148
10*15621	C	9-7-22	KATHERINE A STALNAKER	CHEVRON U.S.A. INC.	1/8+	840 325	N/A	N/A	Chevron to Tug Hill: 36/148
10*17370	C	9-7-22	KELLY JUNE GOODMAN	TH EXPLORATION LLC	1/8+	927 470	N/A	N/A	N/A
10*15642	C	9-7-22	KENNETH L DAYTON	CHEVRON U.S.A. INC.	1/8+	852 366	N/A	N/A	Chevron to Tug Hill: 36/148
10*15647	C	9-7-22	KENNETH WENDELL OLDFIELD	CHEVRON U.S.A. INC.	1/8+	861 589	N/A	N/A	Chevron to Tug Hill: 36/148
10*15662	C	9-7-22	LARRY LEE CONKLE	CHEVRON U.S.A. INC.	1/8+	863 354	N/A	N/A	Chevron to Tug Hill: 36/148

OFFICE OF OIL AND GAS JUL 07 2017

Lease Name or No	Tag	Parcel	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment
10*15625	C	9-7-22	LAWRENCE W STIRLING	CHEVRON U.S.A. INC.	1/8+	852 384	N/A	N/A	Chevron to Tug Hill: 36/148
10*47051.295.4	C	9-7-22	LLOYD D MOORE	TH EXPLORATION LLC	1/8+	904 459	N/A	N/A	N/A
10*16501	C	9-7-22	LLOYD DOYLE MOORE AND GWENDOLYN K MOORE	TH EXPLORATION LLC	1/8+	907 392	N/A	N/A	N/A
10*16513	C	9-7-22	LOWELL D AND JANICE L KNIGHT	TH EXPLORATION LLC	1/8+	927 458	N/A	N/A	N/A
10*15632	C	9-7-22	MARIAN D JONES	CHEVRON U.S.A. INC.	1/8+	835 38	N/A	N/A	Chevron to Tug Hill: 36/148
10*16553	C	9-7-22	MARK EDWARD AND KARRIE A GOODMAN	TH EXPLORATION LLC	1/8+	909 81	N/A	N/A	N/A
10*16029	C	9-7-22	MARTHA ASHWORTH KNIGHT	TH EXPLORATION LLC	1/8+	905 505	N/A	N/A	N/A
10*15648	C	9-7-22	MARTHA CRAWFORD	CHEVRON U.S.A. INC.	1/8+	863 542	N/A	N/A	Chevron to Tug Hill: 36/148
10*16896	C	9-7-22	MARTHA J BLACK	TH EXPLORATION LLC	1/8+	927 450	N/A	N/A	N/A
10*15650	C	9-7-22	MARY GLADYS KUHN BY ATTORNEY IN FACT CONNIE LYONS	CHEVRON USA INC	1/8+	860 89	N/A	N/A	Chevron to Tug Hill: 36/148
10*47051.295.6	C	9-7-22	MARY I BURKHART	TH EXPLORATION LLC	1/8+	904 638	N/A	N/A	N/A
10*15649	C	9-7-22	MARY JANE DANIEL	CHEVRON U.S.A. INC.	1/8+	858 28	N/A	N/A	Chevron to Tug Hill: 36/148
10*16589	C	9-7-22	MARY L WHITTINGTON	TH EXPLORATION LLC	1/8+	907 400	N/A	N/A	N/A
10*15728	C	9-7-22	MARY LOU KITTELBERGER AND FREDERICK W KITTELBERGER	TH EXPLORATION LLC	1/8+	905 483	N/A	N/A	N/A
10*15657	C	9-7-22	MARY MARGARET ASTON	CHEVRON U.S.A. INC.	1/8+	868 283	N/A	N/A	Chevron to Tug Hill: 36/148
10*16440	C	9-7-22	MELANIE C WILKINS AND ROBERT WILKINS	TH EXPLORATION LLC	1/8+	927 462	N/A	N/A	N/A
10*15609	C	9-7-22	MICHELLE R WILHELM	CHEVRON USA INC	1/8+	834 456	N/A	N/A	Chevron to Tug Hill: 36/148
10*17365	C	9-7-22	MYSTI JOANNE GOODMAN	TH EXPLORATION LLC	1/8+	927 468	N/A	N/A	N/A
10*15643	C	9-7-22	NORMAN G JOHNSON	CHEVRON U.S.A. INC.	1/8+	848 363	N/A	N/A	Chevron to Tug Hill: 36/148
10*15656	C	9-7-22	PATTY L MYERS	CHEVRON U.S.A. INC.	1/8+	867 100	N/A	N/A	Chevron to Tug Hill: 36/148
10*16558	C	9-7-22	PAUL BONAR KNIGHT AND SUZANNE L HOPKINS-KNIGHT	TH EXPLORATION LLC	1/8+	927 460	N/A	N/A	N/A
10*15638	C	9-7-22	PAUL J ASTON A/K/A JACK ASTON	CHEVRON U.S.A. INC.	1/8+	848 277	N/A	N/A	Chevron to Tug Hill: 36/148
10*15615	C	9-7-22	PAUL WAYNE RINE	CHEVRON USA INC	1/8+	837 133	N/A	N/A	Chevron to Tug Hill: 36/148
10*15627	C	9-7-22	PAULA R SEAVER	CHEVRON U.S.A. INC.	1/8+	853 483	N/A	N/A	Chevron to Tug Hill: 36/148
10*15616	C	9-7-22	PHILLIP C RINE	CHEVRON U.S.A. INC.	1/8+	836 332	N/A	N/A	Chevron to Tug Hill: 36/148
10*16123	C	9-7-22	PHYLLIS R GATTO	TH EXPLORATION LLC	1/8+	905 520	N/A	N/A	N/A
10*47051.295.11	C	9-7-22	REGINA D FIGUEROA AND DAVID FIGUEROA	TH EXPLORATION LLC	1/8+	905 435	N/A	N/A	N/A
10*16426	C	9-7-22	RENE J RUTAN	TH EXPLORATION, LLC	1/8+	905 538	N/A	N/A	N/A
10*15486	C	9-7-22	RICHARD NEAL NORRIS AND CAROL NORRIS	TH EXPLORATION LLC	1/8+	905 430	N/A	N/A	N/A
10*15626	C	9-7-22	ROBERT J SEAVER	CHEVRON U.S.A. INC.	1/8+	854 77	N/A	N/A	Chevron to Tug Hill: 36/148
10*15611	C	9-7-22	ROBERT S ZEHNDER	CHEVRON U.S.A. INC.	1/8+	834 437	N/A	N/A	Chevron to Tug Hill: 36/148
10*16114	C	9-7-22	ROBERT SANDFORD BLACK AND JOAN BLACK	TH EXPLORATION LLC	1/8+	905 510	N/A	N/A	N/A
10*15690	C	9-7-22	ROBERT WHORTON AND LINDSAY WHORTON	TH EXPLORATION LLC	1/8+	905 489	N/A	N/A	N/A
10*15680	C	9-7-22	ROBERTA JANE CLAYTON	TH EXPLORATION LLC	1/8+	905 485	N/A	N/A	N/A
10*16019	C	9-7-22	ROGER E GALLAGHER AND CONIE M GALLAGHER	TH EXPLORATION LLC	1/8+	905 503	N/A	N/A	N/A
10*15633	C	9-7-22	ROGER W GATTS	CHEVRON U.S.A. INC.	1/8+	835 35	N/A	N/A	Chevron to Tug Hill: 36/148
10*15624	C	9-7-22	RONALD A ZEHNDER	CHEVRON U.S.A. INC.	1/8+	847 213	N/A	N/A	Chevron to Tug Hill: 36/148
10*15644	C	9-7-22	RONALD BEN LAUGHTON	CHEVRON U.S.A. INC.	1/8+	852 360	N/A	N/A	Chevron to Tug Hill: 36/148
10*15663	C	9-7-22	ROY A CONKLE SR	CHEVRON USA INC	1/8+	863 311	N/A	N/A	Chevron to Tug Hill: 36/148
10*15610	C	9-7-22	SARAH STEVENS	CHEVRON U.S.A. INC.	1/8+	834 432	N/A	N/A	Chevron to Tug Hill: 36/148
10*15619	C	9-7-22	SHARON M REYNOLDS	CHEVRON U.S.A. INC.	1/8+	840 322	N/A	N/A	Chevron to Tug Hill: 36/148
10*15623	C	9-7-22	SUSAN JANE WHEELER	CHEVRON U.S.A. INC.	1/8+	847 473	N/A	N/A	Chevron to Tug Hill: 36/148
10*17497	C	9-7-22	SUZANNA DOOLING AND MICHAEL DOOLING	TH EXPLORATION LLC	1/8+	927 464	N/A	N/A	N/A
10*47051.295.13	C	9-7-22	THE DOLLYE F WOOD REVOCABLE TRUST BY NICHOLAS CHARLES WOOD AS TRUSTEE	TH EXPLORATION LLC	1/8+	904 641	N/A	N/A	N/A
10*15664	C	9-7-22	THERESA ANNE HUGHES	CHEVRON USA INC	1/8+	863 343	N/A	N/A	Chevron to Tug Hill: 36/148
10*15651	C	9-7-22	THOMAS G ASTON	CHEVRON U.S.A. INC.	1/8+	860 83	N/A	N/A	Chevron to Tug Hill: 36/148
10*15613	C	9-7-22	THOMAS L STEVENS	CHEVRON U.S.A. INC.	1/8+	836 290	N/A	N/A	Chevron to Tug Hill: 36/148
10*16845	C	9-7-22	TRACY L AND KEITH W BARNBY	TH EXPLORATION LLC	1/8+	927 452	N/A	N/A	N/A
10*15612	C	9-7-22	VERA SHIRLENE & ARTHUR WORKMAN	CHEVRON U.S.A. INC.	1/8+	837 361	N/A	N/A	Chevron to Tug Hill: 36/148
10*16546	C	9-7-22	WALTER C AND CHERYL A RINE	TH EXPLORATION LLC	1/8+	927 456	N/A	N/A	N/A
10*15487	C	9-7-22	WILLIAM C RUTAN	TH EXPLORATION LLC	1/8+	905 475	N/A	N/A	N/A
10*15659	C	9-7-22	WILLIAM E DAYTON BY HIS AIF	CHEVRON U.S.A. INC.	1/8+	871 190	N/A	N/A	Chevron to Tug Hill: 36/148
10*15747	C	9-7-22	WILLIAM H BAKER	TH EXPLORATION LLC	1/8+	905 499	N/A	N/A	N/A
10*16050	C	9-7-22	WILLIAM L GALLAGHER	TH EXPLORATION LLC	1/8+	905 512	N/A	N/A	N/A
10*17584	C	9-7-22	WILLIAM THOMAS BONAR AND MONICA BONAR	TH EXPLORATION LLC	1/8+	927 466	N/A	N/A	N/A
10*47051.256.22	D	9-7-23	BEVERLY J HOPSON	TH EXPLORATION LLC	1/8+	913 581	N/A	N/A	N/A
10*47051.256.1	D	9-7-23	BRENDA J WHETZEL	TH EXPLORATION LLC	1/8+	881 145	N/A	N/A	N/A
10*15746	D	9-7-23	BRUCE D SCHURR	TH EXPLORATION LLC	1/8+	921 478	N/A	N/A	N/A
10*16247	D	9-7-23	CAROL RIGGLE PARSLEY AND JAMES DENNIS PARSLEY	TH EXPLORATION LLC	1/8+	925 327	N/A	N/A	N/A
10*47051.256.24	D	9-7-23	CATHERINE BONAR PETTIT BILLIE	TH EXPLORATION LLC	1/8+	904 628	N/A	N/A	N/A
10*47051.256.16	D	9-7-23	CHARLOTTE B HUMMELL	TH EXPLORATION LLC	1/8+	905 45	N/A	N/A	N/A

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Lease Name or No	Tag	Parcel	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment
10*47051.256.15	D	9-7-23	CHARLOTTE J BONAR YOHO	TH EXPLORATION LLC	1/8+	904 455	N/A	N/A	N/A
10*17506	D	9-7-23	CHASKIA F HARRIS AND JAMES M HARRIS	TH EXPLORATION LLC	1/8+	919 239	N/A	N/A	N/A
10*17507	D	9-7-23	DEZRAY METCALF	TH EXPLORATION LLC	1/8+	919 235	N/A	N/A	N/A
10*17508	D	9-7-23	DILLION PITSENBARGER	TH EXPLORATION, LLC	1/8+	919 241	N/A	N/A	N/A
10*17415	D	9-7-23	DILLON PITSENBARGER	TH EXPLORATION LLC	1/8+	919 241	N/A	N/A	N/A
10*16115	D	9-7-23	EARL W HARRIS	TH EXPLORATION LLC	1/8+	925 329	N/A	N/A	N/A
10*47051.256.10	D	9-7-23	GRACE LAURA BONAR	TH EXPLORATION LLC	1/8+	905 35	N/A	N/A	N/A
10*47051.256.14	D	9-7-23	HUGH R BUZZARD	TH EXPLORATION LLC	1/8+	905 43	N/A	N/A	N/A
10*47051.256.21	D	9-7-23	JACK L MASON AND JEAN M MASON	TH EXPLORATION LLC	1/8+	904 626	N/A	N/A	N/A
10*47051.256.20	D	9-7-23	JEFFREY THOMAS PYLES AND TERESA A PYLES	TH EXPLORATION LLC	1/8+	907 209	N/A	N/A	N/A
10*47051.256.11	D	9-7-23	JOHN L MASON	TH EXPLORATION LLC	1/8+	905 37	N/A	N/A	N/A
10*47051.256.18	D	9-7-23	JOHN WILLIAM BONAR AND SHIRLEY BONAR	TH EXPLORATION LLC	1/8+	913 522	N/A	N/A	N/A
10*47051.256.7	D	9-7-23	MARILYN SUE BUMER	TH EXPLORATION LLC	1/8+	905 29	N/A	N/A	N/A
10*47051.256.17	D	9-7-23	MAXINE G JOHNSON	TH EXPLORATION LLC	1/8+	904 457	N/A	N/A	N/A
10*47051.256.19	D	9-7-23	MICHAEL DAVID PYLES AND CYNTHIA A PYLES	TH EXPLORATION LLC	1/8+	907 207	N/A	N/A	N/A
10*47051.256.8	D	9-7-23	PAMELA ANN MASON	TH EXPLORATION LLC	1/8+	905 31	N/A	N/A	N/A
10*47051.256.23	D	9-7-23	ROBERT L BONAR	TH EXPLORATION LLC	1/8+	913 556	N/A	N/A	N/A
10*47051.256.12	D	9-7-23	STEVEN A BOHRER	TH EXPLORATION LLC	1/8+	905 39	N/A	N/A	N/A
10*16021	D	9-7-23	TOMMY BONAR AND TANYA S BONAR	TH EXPLORATION LLC	1/8+	925 325	N/A	N/A	N/A
10*47051.256.9	D	9-7-23	WANDA MASON SUNSHINE	TH EXPLORATION LLC	1/8+	905 33	N/A	N/A	N/A
10*47051.256.13	D	9-7-23	WILLIAM W CRAIG AND GLENDA L CRAIG	TH EXPLORATION LLC	1/8+	905 41	N/A	N/A	N/A
10*15662	E	9-7-24	LARRY LEE CONKLE	CHEVRON U.S.A. INC.	1/8+	863 354	N/A	N/A	Chevron to Tug Hill: 36/148
10*15663	E	9-7-24	ROY A CONKLE SR	CHEVRON USA INC	1/8+	863 311	N/A	N/A	Chevron to Tug Hill: 36/148
10*15664	E	9-7-24	THERESA ANNE HUGHES	CHEVRON USA INC	1/8+	863 343	N/A	N/A	Chevron to Tug Hill: 36/148
10*15666	E	9-7-24	BRENDA J WHETZEL	CHEVRON USA INC	1/8+	863 635	N/A	N/A	Chevron to Tug Hill: 36/148
10*16049	E	9-7-24	DANNY SHAWN KERNS AND AMY LYNN KERNS	TH EXPLORATION LLC	1/8+	905 518	N/A	N/A	N/A
10*16501	E	9-7-24	LLOYD DOYLE MOORE AND GWENDOLYN K MOORE	TH EXPLORATION LLC	1/8+	907 392	N/A	N/A	N/A
10*16553	E	9-7-24	MARK EDWARD AND KARRIE A GOODMAN	TH EXPLORATION LLC	1/8+	909 81	N/A	N/A	N/A
10*16585	E	9-7-24	DALE BRIAN GOODMAN	TH EXPLORATION LLC	1/8+	909 506	N/A	N/A	N/A
10*17365	E	9-7-24	MYSTI JOANNE GOODMAN	TH EXPLORATION LLC	1/8+	927 468	N/A	N/A	N/A
10*17370	E	9-7-24	KELLY JUNE GOODMAN	TH EXPLORATION LLC	1/8+	927 470	N/A	N/A	N/A
10*47051.295.10	E	9-7-24	DEENA J PALOMO	TH EXPLORATION LLC	1/8+	905 470	N/A	N/A	N/A
10*47051.295.11	E	9-7-24	REGINA D FIGUEROA AND DAVID FIGUEROA	TH EXPLORATION LLC	1/8+	905 435	N/A	N/A	N/A
10*47051.295.12	E	9-7-24	EARL D WELLMAN	TH EXPLORATION LLC	1/8+	905 432	N/A	N/A	N/A
10*47051.295.13	E	9-7-24	THE DOLLYE F WOOD REVOCABLE TRUST BY NICHOLAS CHARLES WOOD AS TRUSTEE	TH EXPLORATION LLC	1/8+	904 641	N/A	N/A	N/A
10*47051.295.3	E	9-7-24	HAZEL ARIZONA MOORE REYNOLDS	TH EXPLORATION LLC	1/8+	904 632	N/A	N/A	N/A
10*47051.295.4	E	9-7-24	LLOYD D MOORE	TH EXPLORATION LLC	1/8+	904 459	N/A	N/A	N/A
10*47051.295.5	E	9-7-24	DALE R MOORE	TH EXPLORATION LLC	1/8+	904 635	N/A	N/A	N/A
10*47051.295.6	E	9-7-24	MARY I BURKHART	TH EXPLORATION LLC	1/8+	904 638	N/A	N/A	N/A
10*47051.295.7	E	9-7-24	JEANNE V MELCHIORI	TH EXPLORATION LLC	1/8+	904 462	N/A	N/A	N/A
10*47051.295.9	E	9-7-24	JAMES E HIMELRICK JR AND KAREN HIMELRICK	TH EXPLORATION LLC	1/8+	904 465	N/A	N/A	N/A
10*47051.256.22	F	9-11-7	BEVERLY J HOPSON	TH EXPLORATION LLC	1/8+	913 581	N/A	N/A	N/A
10*47051.256.1	F	9-11-7	BRENDA J WHETZEL	TH EXPLORATION LLC	1/8+	881 145	N/A	N/A	N/A
10*15746	F	9-11-7	BRUCE D SCHURR	TH EXPLORATION LLC	1/8+	921 478	N/A	N/A	N/A
10*16247	F	9-11-7	CAROL RIGGLE PARSLEY AND JAMES DENNIS PARSLEY	TH EXPLORATION LLC	1/8+	925 327	N/A	N/A	N/A
10*47051.256.24	F	9-11-7	CATHERINE BONAR PETTIT BILLIE	TH EXPLORATION LLC	1/8+	904 628	N/A	N/A	N/A
10*47051.256.16	F	9-11-7	CHARLOTTE B HUMMELL	TH EXPLORATION LLC	1/8+	905 45	N/A	N/A	N/A
10*47051.256.15	F	9-11-7	CHARLOTTE J BONAR YOHO	TH EXPLORATION LLC	1/8+	904 455	N/A	N/A	N/A
10*17506	F	9-11-7	CHASKIA F HARRIS AND JAMES M HARRIS	TH EXPLORATION LLC	1/8+	919 239	N/A	N/A	N/A
10*17507	F	9-11-7	DEZRAY METCALF	TH EXPLORATION LLC	1/8+	919 235	N/A	N/A	N/A
10*17415	F	9-11-7	DILLON PITSENBARGER	TH EXPLORATION LLC	1/8+	919 241	N/A	N/A	N/A
10*16115	F	9-11-7	EARL W HARRIS	TH EXPLORATION LLC	1/8+	925 329	N/A	N/A	N/A
10*47051.256.10	F	9-11-7	GRACE LAURA BONAR	TH EXPLORATION LLC	1/8+	905 35	N/A	N/A	N/A
10*47051.256.14	F	9-11-7	HUGH R BUZZARD	TH EXPLORATION LLC	1/8+	905 43	N/A	N/A	N/A
10*47051.256.21	F	9-11-7	JACK L MASON AND JEAN M MASON	TH EXPLORATION LLC	1/8+	904 626	N/A	N/A	N/A
10*47051.256.20	F	9-11-7	JEFFREY THOMAS PYLES AND TERESA A PYLES	TH EXPLORATION LLC	1/8+	907 209	N/A	N/A	N/A
10*47051.256.11	F	9-11-7	JOHN L MASON	TH EXPLORATION LLC	1/8+	905 37	N/A	N/A	N/A
10*47051.256.18	F	9-11-7	JOHN WILLIAM BONAR AND SHIRLEY BONAR	TH EXPLORATION LLC	1/8+	913 522	N/A	N/A	N/A
10*47051.256.7	F	9-11-7	MARILYN SUE BUMER	TH EXPLORATION LLC	1/8+	905 29	N/A	N/A	N/A
10*47051.256.17	F	9-11-7	MAXINE G JOHNSON	TH EXPLORATION LLC	1/8+	904 457	N/A	N/A	N/A
10*47051.256.19	F	9-11-7	MICHAEL DAVID PYLES AND CYNTHIA A PYLES	TH EXPLORATION LLC	1/8+	907 207	N/A	N/A	N/A

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Lease Name or No	Tag	Parcel	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment
10*47051.256.8	F	9-11-7	PAMELA ANN MASON	TH EXPLORATION LLC	1/8+	905 31	N/A	N/A	N/A
10*47051.256.23	F	9-11-7	ROBERT L BONAR	TH EXPLORATION LLC	1/8+	913 556	N/A	N/A	N/A
10*47051.256.12	F	9-11-7	STEVEN A BOHRER	TH EXPLORATION LLC	1/8+	905 39	N/A	N/A	N/A
10*16021	F	9-11-7	TOMMY BONAR AND TANYA S BONAR	TH EXPLORATION LLC	1/8+	925 325	N/A	N/A	N/A
10*47051.256.9	F	9-11-7	WANDA MASON SUNSHINE	TH EXPLORATION LLC	1/8+	905 33	N/A	N/A	N/A
10*47051.256.13	F	9-11-7	WILLIAM W CRAIG AND GLENDA L CRAIG	TH EXPLORATION LLC	1/8+	905 41	N/A	N/A	N/A
10*47051.256.22	G	9-11-7.1	BEVERLY J HOPSON	TH EXPLORATION LLC	1/8+	913 581	N/A	N/A	N/A
10*47051.256.1	G	9-11-7.1	BRENDA J WHETZEL	TH EXPLORATION LLC	1/8+	881 145	N/A	N/A	N/A
10*15746	G	9-11-7.1	BRUCE D SCHURR	TH EXPLORATION LLC	1/8+	921 478	N/A	N/A	N/A
10*16247	G	9-11-7.1	CAROL RIGGLE PARSLEY AND JAMES DENNIS PARSLEY	TH EXPLORATION LLC	1/8+	925 327	N/A	N/A	N/A
10*47051.256.24	G	9-11-7.1	CATHERINE BONAR PETTIT BILLIE	TH EXPLORATION LLC	1/8+	904 628	N/A	N/A	N/A
10*47051.256.16	G	9-11-7.1	CHARLOTTE B HUMMELL	TH EXPLORATION LLC	1/8+	905 45	N/A	N/A	N/A
10*47051.256.15	G	9-11-7.1	CHARLOTTE J BONAR YOHO	TH EXPLORATION LLC	1/8+	904 455	N/A	N/A	N/A
10*17506	G	9-11-7.1	CHASKIA F HARRIS AND JAMES M HARRIS	TH EXPLORATION LLC	1/8+	919 239	N/A	N/A	N/A
10*17507	G	9-11-7.1	DEZRAY METCALF	TH EXPLORATION LLC	1/8+	919 235	N/A	N/A	N/A
10*17415	G	9-11-7.1	DILLON PITSENBARGER	TH EXPLORATION LLC	1/8+	919 241	N/A	N/A	N/A
10*16115	G	9-11-7.1	EARL W HARRIS	TH EXPLORATION LLC	1/8+	925 329	N/A	N/A	N/A
10*47051.256.10	G	9-11-7.1	GRACE LAURA BONAR	TH EXPLORATION LLC	1/8+	905 35	N/A	N/A	N/A
10*47051.256.14	G	9-11-7.1	HUGH R BUZZARD	TH EXPLORATION LLC	1/8+	905 43	N/A	N/A	N/A
10*47051.256.21	G	9-11-7.1	JACK L MASON AND JEAN M MASON	TH EXPLORATION LLC	1/8+	904 626	N/A	N/A	N/A
10*47051.256.20	G	9-11-7.1	JEFFREY THOMAS PYLES AND TERESA A PYLES	TH EXPLORATION LLC	1/8+	907 209	N/A	N/A	N/A
10*47051.256.11	G	9-11-7.1	JOHN L MASON	TH EXPLORATION LLC	1/8+	905 37	N/A	N/A	N/A
10*47051.256.18	G	9-11-7.1	JOHN WILLIAM BONAR AND SHIRLEY BONAR	TH EXPLORATION LLC	1/8+	913 522	N/A	N/A	N/A
10*47051.256.7	G	9-11-7.1	MARILYN SUE BUMER	TH EXPLORATION LLC	1/8+	905 29	N/A	N/A	N/A
10*47051.256.17	G	9-11-7.1	MAXINE G JOHNSON	TH EXPLORATION LLC	1/8+	904 457	N/A	N/A	N/A
10*47051.256.19	G	9-11-7.1	MICHAEL DAVID PYLES AND CYNTHIA A PYLES	TH EXPLORATION LLC	1/8+	907 207	N/A	N/A	N/A
10*47051.256.8	G	9-11-7.1	PAMELA ANN MASON	TH EXPLORATION LLC	1/8+	905 31	N/A	N/A	N/A
10*47051.256.23	G	9-11-7.1	ROBERT L BONAR	TH EXPLORATION LLC	1/8+	913 556	N/A	N/A	N/A
10*47051.256.12	G	9-11-7.1	STEVEN A BOHRER	TH EXPLORATION LLC	1/8+	905 39	N/A	N/A	N/A
10*16021	G	9-11-7.1	TOMMY BONAR AND TANYA S BONAR	TH EXPLORATION LLC	1/8+	925 325	N/A	N/A	N/A
10*47051.256.9	G	9-11-7.1	WANDA MASON SUNSHINE	TH EXPLORATION LLC	1/8+	905 33	N/A	N/A	N/A
10*47051.256.13	G	9-11-7.1	WILLIAM W CRAIG AND GLENDA L CRAIG	TH EXPLORATION LLC	1/8+	905 41	N/A	N/A	N/A
10*16514	H	9-11-8	ALEX RUSSELL AND JOYCE A CAMPBELL	TH EXPLORATION LLC	1/8+	908 248	N/A	N/A	N/A
10*47051.223.12	H	9-11-8	ALICE GORBY MARTIN	TH EXPLORATION LLC	1/8+	908 52	N/A	N/A	N/A
10*17416	H	9-11-8	ANDREW M. ORTIZ	TH EXPLORATION, LLC	1/8+	921 346	N/A	N/A	N/A
10*16515	H	9-11-8	ANNA MARIE JACKSON	TH EXPLORATION LLC	1/8+	908 251	N/A	N/A	N/A
10*47051.223.20	H	9-11-8	BARBARA A BUZZARD	TH EXPLORATION LLC	1/8+	908 24	N/A	N/A	N/A
10*17276	H	9-11-8	BERTHA EZELL WYATT	TH EXPLORATION LLC	1/8+	921 526	N/A	N/A	N/A
10*47051.223.16	H	9-11-8	BETTY LOU STERN AND WILLIAM KEITH STERN	TH EXPLORATION LLC	1/8+	908 64	N/A	N/A	N/A
10*16880	H	9-11-8	BEVERLY ANN STORTS	TH EXPLORATION LLC	1/8+	921 498	N/A	N/A	N/A
10*16989	H	9-11-8	BRITTANY RICHARDSON	TH EXPLORATION LLC	1/8+	921 376	N/A	N/A	N/A
10*47051.223.18	H	9-11-8	BRITTNEY MENEAR	TH EXPLORATION LLC	1/8+	908 57	N/A	N/A	N/A
10*15463	H	9-11-8	CHARLES A RINE	TH EXPLORATION LLC	1/8+	908 274	N/A	N/A	N/A
10*16667	H	9-11-8	CHARLES F AND GAIL ANN PYLE	TH EXPLORATION LLC	1/8+	908 266	N/A	N/A	N/A
10*16686	H	9-11-8	CHERYLE M TRACEY	TH EXPLORATION LLC	1/8+	927 475	N/A	N/A	N/A
10*16802	H	9-11-8	CHRISTOPHER AND TAMMY RICHARDSON	TH EXPLORATION LLC	1/8+	921 495	N/A	N/A	N/A
10*17130	H	9-11-8	CINDY L BARGER	TH EXPLORATION LLC	1/8+	921 137	N/A	N/A	N/A
10*16416	H	9-11-8	CYNTHIA HUDSON	TH EXPLORATION, LLC	1/8+	908 219	N/A	N/A	N/A
10*17274	H	9-11-8	DAVID H WILSON	TH EXPLORATION LLC	1/8+	921 474	N/A	N/A	N/A
10*47051.223.8	H	9-11-8	DAVID M WILSON	TH EXPLORATION LLC	1/8+	907 649	N/A	N/A	N/A
10*16807	H	9-11-8	DAVID TULLER AND SUSAN STORTS TULLER	TH EXPLORATION LLC	1/8+	921 513	N/A	N/A	N/A
10*15481	H	9-11-8	DEAN P RIGBY AND SUSAN RIGBY	TH EXPLORATION LLC	1/8+	908 197	N/A	N/A	N/A
10*47051.223.35	H	9-11-8	DEBRA L CIAFFAGLIONE	TH EXPLORATION LLC	1/8+	908 190	N/A	N/A	N/A
10*17438	H	9-11-8	DENNIS M WILSON	TH EXPLORATION LLC	1/8+	921 476	N/A	N/A	N/A
10*16962	H	9-11-8	DENNIS P AND BARBARA EZELL FLORY	TH EXPLORATION LLC	1/8+	921 70	N/A	N/A	N/A
10*16720	H	9-11-8	DONNA ELAINE BRASKETT	TH EXPLORATION LLC	1/8+	921 152	N/A	N/A	N/A
10*47051.223.11	H	9-11-8	ELIZABETH ESTEP	TH EXPLORATION LLC	1/8+	908 37	N/A	N/A	N/A
10*47051.223.21	H	9-11-8	GARY T WARD AND SHARON D WARD	TH EXPLORATION LLC	1/8+	908 19	N/A	N/A	N/A
10*16298	H	9-11-8	GEOFFREY A SHIEFER AND STEPHANIE L SCHIEFER	TH EXPLORATION LLC	1/8+	908 238	N/A	N/A	N/A
10*17677	H	9-11-8	GEORGE M GONTA JR	TH EXPLORATION, LLC	1/8+	921 89	N/A	N/A	N/A
10*47051.223.5	H	9-11-8	HAROLD S BROWN II AND MARIA A BROWN	TH EXPLORATION LLC	1/8+	907 641	N/A	N/A	N/A

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Lease Name or No	Tag	Parcel	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment
10*16815	H	9-11-8	HAROLD W PYLE	TH EXPLORATION LLC	1/8+	921 357	N/A	N/A	N/A
10*17156	H	9-11-8	HENRI NELL JACKSON KENT BARNES	TH EXPLORATION LLC	1/8+	921 139	N/A	N/A	N/A
10*16668	H	9-11-8	JACK I AND MERRILEE PYLE	TH EXPLORATION LLC	1/8+	908 257	N/A	N/A	N/A
10*47051.223.7	H	9-11-8	JACK R WILSON JR AND JANE A WILSON	TH EXPLORATION LLC	1/8+	908 4	N/A	N/A	N/A
10*47051.223.13	H	9-11-8	JAMES A GORBY	TH EXPLORATION LLC	1/8+	908 42	N/A	N/A	N/A
10*16839	H	9-11-8	JAMES B FOUNDS AND LYNN M MOWERY	TH EXPLORATION LLC	1/8+	921 73	N/A	N/A	N/A
10*16800	H	9-11-8	JAMES KENNETH JACKSON AND JULIE JACKSON	TH EXPLORATION LLC	1/8+	921 93	N/A	N/A	N/A
10*17588	H	9-11-8	JAMES M JACKSON	TH EXPLORATION LLC	1/8+	921 325	N/A	N/A	N/A
10*17527	H	9-11-8	JAMES MICHAEL EZELL AND LUCILLE D EZELL	TH EXPLORATION LLC	1/8+	921 111	N/A	N/A	N/A
10*17157	H	9-11-8	JAMES N REEVES JR AND RITA M REEVES	TH EXPLORATION LLC	1/8+	921 367	N/A	N/A	N/A
10*17564	H	9-11-8	JAMES R & TRACEY E NICKOLSON	TH EXPLORATION, LLC	1/8+	921 340	N/A	N/A	N/A
10*47051.223.31	H	9-11-8	JANICE M GONTA GAVALIK	TH EXPLORATION LLC	1/8+	908 180	N/A	N/A	N/A
10*47051.223.19	H	9-11-8	JASON RINE AND HEATHER RINE	TH EXPLORATION LLC	1/8+	907 629	N/A	N/A	N/A
10*47051.223.1	H	9-11-8	JEAN ANNE GORBY STORCH	TH EXPLORATION LLC	1/8+	877 216	N/A	N/A	N/A
10*17526	H	9-11-8	JEFFREY L REEVES AND JODY L REEVES	TH EXPLORATION LLC	1/8+	921 370	N/A	N/A	N/A
10*16977	H	9-11-8	JEREMY COCHENOUR	TH EXPLORATION LLC	1/8+	921 102	N/A	N/A	N/A
10*17565	H	9-11-8	JESSE ALLEN JACKSON AND ELIZABETH D JACKSON	TH EXPLORATION LLC	1/8+	921 327	N/A	N/A	N/A
10*17155	H	9-11-8	JESSE LEON JR AND TERESA GAIL EZELLE	TH EXPLORATION LLC	1/8+	921 118	N/A	N/A	N/A
10*47051.223.24	H	9-11-8	JO DEE K DAVIS	TH EXPLORATION LLC	1/8+	908 136	N/A	N/A	N/A
10*47051.223.25	H	9-11-8	JOANNE WELCH	TH EXPLORATION LLC	1/8+	908 141	N/A	N/A	N/A
10*17552	H	9-11-8	JOHN BEVACQUA AND PATRICIA A BEVACQUA	TH EXPLORATION LLC	1/8+	921 144	N/A	N/A	N/A
10*16689	H	9-11-8	JOHN C FOUNDS	TH EXPLORATION LLC	1/8+	927 490	N/A	N/A	N/A
10*47051.223.34	H	9-11-8	JOHN CIAFFAGLIONE	TH EXPLORATION LLC	1/8+	908 170	N/A	N/A	N/A
10*15686	H	9-11-8	JOHN OMER BOLTZ	TH EXPLORATION LLC	1/8+	908 160	N/A	N/A	N/A
10*17275	H	9-11-8	JOHN R REEVES AND MONA G REEVES	TH EXPLORATION LLC	1/8+	921 373	N/A	N/A	N/A
10*16669	H	9-11-8	JOHN S AND PATRICIA S DADO	TH EXPLORATION LLC	1/8+	908 269	N/A	N/A	N/A
10*47051.223.32	H	9-11-8	JOSEPH GORBY DAKAN	TH EXPLORATION LLC	1/8+	908 175	N/A	N/A	N/A
10*17339	H	9-11-8	JOSEPH W FOUNDS	TH EXPLORATION LLC	1/8+	921 76	N/A	N/A	N/A
10*47051.223.6	H	9-11-8	JOSHUA RINE AND REBECCA RINE	TH EXPLORATION LLC	1/8+	907 634	N/A	N/A	N/A
10*47051.223.14	H	9-11-8	JUSTIN RINE AND BECKY RINE	TH EXPLORATION LLC	1/8+	907 639	N/A	N/A	N/A
10*47051.223.28	H	9-11-8	KAREN S GAST	TH EXPLORATION LLC	1/8+	908 150	N/A	N/A	N/A
10*17561	H	9-11-8	KATHRYN L & ROGER L TYRELL	TH EXPLORATION, LLC	1/8+	921 519	N/A	N/A	N/A
10*17444	H	9-11-8	KELLY FOUNDS CAMPBELL	TH EXPLORATION LLC	1/8+	921 99	N/A	N/A	N/A
10*17440	H	9-11-8	KENDRA WALISA	TH EXPLORATION LLC	1/8+	927 484	N/A	N/A	N/A
10*47051.223.15	H	9-11-8	LARRY D TAUNT AND NANCY L TAUNT	TH EXPLORATION LLC	1/8+	908 14	N/A	N/A	N/A
10*47051.223.30	H	9-11-8	LAURIE DRIGGERS MANDERSON	TH EXPLORATION LLC	1/8+	908 165	N/A	N/A	N/A
10*16987	H	9-11-8	LAURIE EZELL PERRY	TH EXPLORATION LLC	1/8+	921 355	N/A	N/A	N/A
10*16976	H	9-11-8	LESTER G AND CONSTANCE B NICKOLSON	TH EXPLORATION LLC	1/8+	921 343	N/A	N/A	N/A
10*47051.223.9	H	9-11-8	LINDA DELBERT	TH EXPLORATION LLC	1/8+	908 32	N/A	N/A	N/A
10*17485	H	9-11-8	MARGIE ANN JACKSON ROBBINS GRAHAM	TH EXPLORATION LLC	1/8+	921 91	N/A	N/A	N/A
10*16478	H	9-11-8	MARION L AND EMILY CAMPBELL	TH EXPLORATION LLC	1/8+	908 245	N/A	N/A	N/A
10*16879	H	9-11-8	MARK E AND LESLEY A STORTS	TH EXPLORATION LLC	1/8+	921 501	N/A	N/A	N/A
10*16902	H	9-11-8	MARY BARCAW DUKE	TH EXPLORATION LLC	1/8+	921 105	N/A	N/A	N/A
10*17589	H	9-11-8	MARY CHRISTINE MCKENNA	TH EXPLORATION, LLC	1/8+	921 332	N/A	N/A	N/A
10*16414	H	9-11-8	MARY ELIZABETH DRIGGERS	TH EXPLORATION, LCC	1/8+	908 208	N/A	N/A	N/A
10*16991	H	9-11-8	MARYELLEN FOUNDS AND LAUREN FOUNDS	TH EXPLORATION LLC	1/8+	921 79	N/A	N/A	N/A
10*16058	H	9-11-8	MATTIE RUTH JACKSON PRESCOTT	TH EXPLORATION LLC	1/8+	908 231	N/A	N/A	N/A
10*17278	H	9-11-8	MICHAEL L EZELLE	TH EXPLORATION LLC	1/8+	921 121	N/A	N/A	N/A
10*16808	H	9-11-8	MICHAEL L ORTIZ	TH EXPLORATION LLC	1/8+	921 349	N/A	N/A	N/A
10*16666	H	9-11-8	MICHAEL P PYLE	TH EXPLORATION LLC	1/8+	908 255	N/A	N/A	N/A
10*17554	H	9-11-8	MICHAEL T RANKIN	TH EXPLORATION LLC	1/8+	921 361	N/A	N/A	N/A
10*16868	H	9-11-8	MICHAEL W STORTS AND JESSICA M STORTS	TH EXPLORATION LLC	1/8+	921 504	N/A	N/A	N/A
10*17443	H	9-11-8	MICHELLE MORROW-BACK	TH EXPLORATION LLC	1/8+	921 337	N/A	N/A	N/A
10*17377	H	9-11-8	MILTON HOWARD EZELLE JR AND ELIZABETH A EZELLE	TH EXPLORATION LLC	1/8+	921 123	N/A	N/A	N/A
10*47051.223.33	H	9-11-8	NANCY CIAFFAGLIONE HOUSLEY	TH EXPLORATION LLC	1/8+	908 185	N/A	N/A	N/A
10*17566	H	9-11-8	NATHAN P & BARBARA T ERDOSSY	TH EXPLORATION, LLC	1/8+	921 108	N/A	N/A	N/A
10*17484	H	9-11-8	NELDA S JACKSON	TH EXPLORATION LLC	1/8+	921 330	N/A	N/A	N/A
10*16798	H	9-11-8	PATRICK A RANKIN AND ROBIN A RANKIN	TH EXPLORATION LLC	1/8+	921 364	N/A	N/A	N/A
10*17208	H	9-11-8	PATRICK S GALLAGHER AND JOYCE ANN FOUNDS	TH EXPLORATION LLC	1/8+	921 86	N/A	N/A	N/A
10*47051.223.29	H	9-11-8	PATSY JO RAJU	TH EXPLORATION LLC	1/8+	908 155	N/A	N/A	N/A
10*16742	H	9-11-8	PAUL C WILSON	TH EXPLORATION LLC	1/8+	927 490	N/A	N/A	N/A

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Lease Name or No	Tag	Parcel	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment
10*17449	H	9-11-8	PHYLLIS J BLAKE	TH EXPLORATION LLC	1/8+	921 150	N/A	N/A	N/A
10*47051.223.17	H	9-11-8	RALPH E HUNTER JR AND CHARLOTTE HUNTER	TH EXPLORATION LLC	1/8+	908 9	N/A	N/A	N/A
10*17441	H	9-11-8	RALPH J WILSON	TH EXPLORATION LLC	1/8+	921 522	N/A	N/A	N/A
10*16448	H	9-11-8	RALPH L AND JUANITA L CRIM	TH EXPLORATION LLC	1/8+	908 584	N/A	N/A	N/A
10*16690	H	9-11-8	RICARDO ORTIZ	TH EXPLORATION LLC	1/8+	921 352	N/A	N/A	N/A
10*17483	H	9-11-8	RICHARD I PYLE	TH EXPLORATION LLC	1/8+	921 359	N/A	N/A	N/A
10*16662	H	9-11-8	RICHARD THOMAS AND VICKI J MIMS	TH EXPLORATION LLC	1/8+	908 863	N/A	N/A	N/A
10*16836	H	9-11-8	RICK A AND LENORE A STORTS	TH EXPLORATION LLC	1/8+	921 507	N/A	N/A	N/A
10*16297	H	9-11-8	ROBERT A LEADBETTER AND M REBECCA LEADBETTER	TH EXPLORATION LLC	1/8+	908 235	N/A	N/A	N/A
10*47051.223.10	H	9-11-8	ROBERT E GORBY	TH EXPLORATION LLC	1/8+	908 47	N/A	N/A	N/A
10*16545	H	9-11-8	ROBERT G & ELLEN FOUNDS	TH EXPLORATION LLC	1/8+	908 260	N/A	N/A	N/A
10*16838	H	9-11-8	ROBERT G FUNARI	TH EXPLORATION LLC	1/8+	921 82	N/A	N/A	N/A
10*16424	H	9-11-8	ROBERT J RIGBY	TH EXPLORATION, LLC	1/8+	908 241	N/A	N/A	N/A
10*16383	H	9-11-8	ROBERT STEPHEN DRIGGERS	TH EXPLORATION LLC	1/8+	908 224	N/A	N/A	N/A
10*47051.223.23	H	9-11-8	RONALD S CRIM	TH EXPLORATION LLC	1/8+	908 79	N/A	N/A	N/A
10*16118	H	9-11-8	RUBY RIDDLE JACKSON	TH EXPLORATION LLC	1/8+	908 233	N/A	N/A	N/A
10*47051.223.22	H	9-11-8	SALLY COLE	TH EXPLORATION LLC	1/8+	908 74	N/A	N/A	N/A
10*17744	H	9-11-8	SAM PRESLEY EZELL	TH EXPLORATION LLC	1/8+	921 116	N/A	N/A	N/A
10*17205	H	9-11-8	SANDRA JEAN WILSON	TH EXPLORATION LLC	1/8+	921 524	N/A	N/A	N/A
10*15750	H	9-11-8	SANDRA K TRULL	TH EXPLORATION LLC	1/8+	908 229	N/A	N/A	N/A
10*17442	H	9-11-8	SHANE ALLEN AND MENDY JEAN ALLEN	TH EXPLORATION LLC	1/8+	921 134	N/A	N/A	N/A
10*16821	H	9-11-8	SHEILA BRASKETT WEICHEY	TH EXPLORATION LLC	1/8+	921 516	N/A	N/A	N/A
10*16688	H	9-11-8	SHERRYL PYLE BAIR	TH EXPLORATION LLC	1/8+	927 481	N/A	N/A	N/A
10*15482	H	9-11-8	SUSAN NELSON	TH EXPLORATION LLC	1/8+	908 203	N/A	N/A	N/A
10*16415	H	9-11-8	TERENCE J & NANCY J ANDERSON	TH EXPLORATION, LLC	1/8+	908 213	N/A	N/A	N/A
10*17482	H	9-11-8	TERESA EZELLE RALYA AND DAVID L RALYA	TH EXPLORATION LLC	1/8+	927 487	N/A	N/A	N/A
10*16819	H	9-11-8	TERESA ORTIZ BIGGS	TH EXPLORATION LLC	1/8+	921 147	N/A	N/A	N/A
10*16837	H	9-11-8	TERRY L AND THELMA A POFF	TH EXPLORATION LLC	1/8+	927 472	N/A	N/A	N/A
10*17198	H	9-11-8	THOMAS G AND DIANE W BAYLESS	TH EXPLORATION LLC	1/8+	921 141	N/A	N/A	N/A
10*16996	H	9-11-8	THOMAS RANKIN	TH EXPLORATION LLC	1/8+	917 75	N/A	N/A	N/A
10*47051.223.27	H	9-11-8	TIMI J HOBBS	TH EXPLORATION LLC	1/8+	908 277	N/A	N/A	N/A
10*16863	H	9-11-8	TINA MOORE	TH EXPLORATION LLC	1/8+	921 334	N/A	N/A	N/A
10*16806	H	9-11-8	VIRGINIA I WHITMAN	TH EXPLORATION LLC	1/8+	921 528	N/A	N/A	N/A
10*47051.223.26	H	9-11-8	WENDY L SMARKEL	TH EXPLORATION LLC	1/8+	908 69	N/A	N/A	N/A
10*16747	H	9-11-8	WILLIAM DALE BRASKETT	TH EXPLORATION LLC	1/8+	921 96	N/A	N/A	N/A
10*16804	H	9-11-8	WILLIAM N AND SHERRY D TAYLOR	TH EXPLORATION LLC	1/8+	921 510	N/A	N/A	N/A
10*16516	H	9-11-8	WILSON ANDREW JACKSON	TH EXPLORATION LLC	1/8+	908 253	N/A	N/A	N/A
10*15606	I	9-12-2	CHK-MAC LLC	CHESAPEAKE APPALACHIA LLC	1/8+	798 150	N/A	Chesapeake to Chevron: 30/461	Chevron to Tug Hill: 36/148
10*47051.309.3	I	9-12-2	GERALD W QUIGLEY AND VICKI L QUIGLEY	TH EXPLORATION LLC	1/8+	905 12	N/A	N/A	N/A
10*16932	I	9-12-2	HAYMAKER PROPERTIES LP	CHEVRON U.S.A. INC.	1/8+	902 447	N/A	N/A	Chevron to Tug Hill: 37/437
10*47051.309.1	I	9-12-2	LESLIE E QUIGLEY	TH EXPLORATION LLC	1/8+	905 8	N/A	N/A	N/A
10*47051.309.2	I	9-12-2	LEWIS M QUIGLEY AND MAXINE V QUIGLEY	TH EXPLORATION LLC	1/8+	907 217	N/A	N/A	N/A
10*16238	I	9-12-2	SUSAN MARIE JOHNSON AKA SUSAN MARIE HUBER	TH EXPLORATION LLC	1/8+	924 614	N/A	N/A	N/A
10*17665	J	9-12-30	ANN M & CURTIS STEVENS	TH EXPLORATION, LLC	1/8+	927 215	N/A	N/A	N/A
10*47051.318.35	J	9-12-30	ANNA MAE PATTERSON	TH EXPLORATION LLC	1/8+	905 573	N/A	N/A	N/A
10*16672	J	9-12-30	ANNE R AND JOSEPH A MURPHY	TH EXPLORATION LLC	1/8+	910 215	N/A	N/A	N/A
10*16737	J	9-12-30	ARIC A HOLMES AND CARI M HOLMES	TH EXPLORATION LLC	1/8+	913 389	N/A	N/A	N/A
10*47051.318.12	J	9-12-30	BARBARA J BEVERIDGE	TH EXPLORATION LLC	1/8+	904 606	N/A	N/A	N/A
10*16437	J	9-12-30	BECKY LANDRIS	TH EXPLORATION LLC	1/8+	926 625	N/A	N/A	N/A
10*16491	J	9-12-30	BELA N WELLENREITER	TH EXPLORATION LLC	1/8+	921 467	N/A	N/A	N/A
10*17619	J	9-12-30	BRENDA GILBERT	TH EXPLORATION LLC	1/8+	927 211	N/A	N/A	N/A
10*16818	J	9-12-30	BRENDA REED	TH EXPLORATION LLC	1/8+	927 30	N/A	N/A	N/A
10*47051.318.16	J	9-12-30	BULA F YOST	TH EXPLORATION LLC	1/8+	904 614	N/A	N/A	N/A
10*17726	J	9-12-30	C FREEMAN MCCALL AND SUSAN M MCCALL	TH EXPLORATION LLC	1/8+	915 480	N/A	N/A	N/A
10*47051.318.24	J	9-12-30	CARLA MAE ALLEY	TH EXPLORATION LLC	1/8+	904 516	N/A	N/A	N/A
10*47051.318.46	J	9-12-30	CAROL L BOBBY AND DONALD J BOBBY	TH EXPLORATION LLC	1/8+	905 603	N/A	N/A	N/A
10*16243	J	9-12-30	CATHERINE I AND ERNEST M SILVERIO	TH EXPLORATION LLC	1/8+	906 47	N/A	N/A	N/A
10*47051.318.43	J	9-12-30	CHAD ERIC BENNETT AND MARY A BENNETT	TH EXPLORATION LLC	1/8+	905 588	N/A	N/A	N/A
10*16769	J	9-12-30	CHARLES C SEAMON	TH EXPLORATION LLC	1/8+	910 219	N/A	N/A	N/A
10*47051.318.20	J	9-12-30	CHARLES R BENNETT JR AND DONNA S BENNETT	TH EXPLORATION LLC	1/8+	904 500	N/A	N/A	N/A
10*15684	J	9-12-30	CHARLES R WILLIAMSON JR	TH EXPLORATION LLC	1/8+	906 7	N/A	N/A	N/A

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Lease Name or No	Tag	Parcel	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment
10*47051.318.2	J	9-12-30	CHRISTAL L SCHAFER	TH EXPLORATION LLC	1/8+	904 531	N/A	N/A	N/A
10*17476	J	9-12-30	CHRISTINA NESTELL AND CHARLES E NESTELL III	TH EXPLORATION LLC	1/8+	927 207	N/A	N/A	N/A
10*16280	J	9-12-30	CHRISTOPHER SAUDERS	TH EXPLORATION LLC	1/8+	905 612	N/A	N/A	N/A
10*16035	J	9-12-30	CLARISSA MALONE	TH EXPLORATION LLC	1/8+	906 23	N/A	N/A	N/A
10*47051.318.17	J	9-12-30	CORA ALICE DAUBE	TH EXPLORATION LLC	1/8+	904 618	N/A	N/A	N/A
10*47051.318.30	J	9-12-30	CYNTHIA TEACHNOR GRAHAM	TH EXPLORATION LLC	1/8+	905 553	N/A	N/A	N/A
10*16886	J	9-12-30	DALE R ALLEY	TH EXPLORATION LLC	1/8+	927 19	N/A	N/A	N/A
10*17620	J	9-12-30	DANIEL E WILLIAMSON AND HEATHER R WILLIAMSON	TH EXPLORATION LLC	1/8+	927 204	N/A	N/A	N/A
10*16232	J	9-12-30	DANIEL L ALLEY AND TERESA ALLEY	TH EXPLORATION LLC	1/8+	906 53	N/A	N/A	N/A
10*47051.318.36	J	9-12-30	DANNY CARMICHAEL III	TH EXPLORATION LLC	1/8+	905 576	N/A	N/A	N/A
10*16541	J	9-12-30	DEBORAH L TURLEY	TH EXPLORATION LLC	1/8+	926 644	N/A	N/A	N/A
10*47051.318.48	J	9-12-30	DEBORAH SUE KYLE 231 EAST 24TH AVENUE	TH EXPLORATION LLC	1/8+	905 600	N/A	N/A	N/A
10*15498	J	9-12-30	DELBERT D RUSH AND BETTY RUTH RUSH	TH EXPLORATION LLC	1/8+	905 647	N/A	N/A	N/A
10*16435	J	9-12-30	DENISE WILLIAMSON	TH EXPLORATION LLC	1/8+	926 622	N/A	N/A	N/A
10*16418	J	9-12-30	DENZIL ALLEY JR	TH EXPLORATION, LLC	1/8+	905 641	N/A	N/A	N/A
10*16381	J	9-12-30	DONNA BURNS	TH EXPLORATION LLC	1/8+	906 20	N/A	N/A	N/A
10*47051.318.15	J	9-12-30	DONNA CHMELYNski	TH EXPLORATION LLC	1/8+	904 610	N/A	N/A	N/A
10*47051.318.10	J	9-12-30	DONNA JUNE STRAIT	TH EXPLORATION LLC	1/8+	904 600	N/A	N/A	N/A
10*47051.318.39	J	9-12-30	DONNA K DUNN AND JAMES DUNN	TH EXPLORATION LLC	1/8+	905 444	N/A	N/A	N/A
10*47051.318.34	J	9-12-30	DONNA SMITH WEEKLEY	TH EXPLORATION LLC	1/8+	905 442	N/A	N/A	N/A
10*47051.318.21	J	9-12-30	DORETTA RUSH	TH EXPLORATION LLC	1/8+	904 504	N/A	N/A	N/A
10*17705	J	9-12-30	EARL & LYDIA ARMENTA FRAZIER	TH EXPLORATION, LLC	1/8+	927 200	N/A	N/A	N/A
10*47051.318.22	J	9-12-30	ELIZABETH STARC	TH EXPLORATION LLC	1/8+	904 508	N/A	N/A	N/A
10*47051.318.23	J	9-12-30	EMMA CRISWELL	TH EXPLORATION LLC	1/8+	904 512	N/A	N/A	N/A
10*17893	J	9-12-30	ERIC D & AMANDA N PETRUCCI	TH EXPLORATION, LLC	1/8+	924 545	N/A	N/A	N/A
10*15496	J	9-12-30	FRANK A STORCH JR AND SUSAN STORCH	TH EXPLORATION LLC	1/8+	906 1	N/A	N/A	N/A
10*47051.318.47	J	9-12-30	FRIEDA A REINBEAU AND RONALD REINBEAU	TH EXPLORATION LLC	1/8+	905 598	N/A	N/A	N/A
10*47051.318.37	J	9-12-30	GENELDA MASON	TH EXPLORATION LLC	1/8+	905 580	N/A	N/A	N/A
10*16375	J	9-12-30	GEORGE E HOLMES AND SUSAN HOLMES	TH EXPLORATION LLC	1/8+	905 635	N/A	N/A	N/A
10*17375	J	9-12-30	GEORGE R CORNELIUS JR AND JANNA JANOUSEK CORNELIUS	TH EXPLORATION LLC	1/8+	927 36	N/A	N/A	N/A
10*47051.318.33	J	9-12-30	J RONALD FOX	TH EXPLORATION LLC	1/8+	905 565	N/A	N/A	N/A
10*17177	J	9-12-30	JAMES P MILLER	TH EXPLORATION LLC	1/8+	926 608	N/A	N/A	N/A
10*47051.318.9	J	9-12-30	JANICE M MEDER	TH EXPLORATION LLC	1/8+	905 545	N/A	N/A	N/A
10*16290	J	9-12-30	JENNIFER ALLEY	TH EXPLORATION LLC	1/8+	906 59	N/A	N/A	N/A
10*16578	J	9-12-30	JESSE HOLMES	TH EXPLORATION LLC	1/8+	909 502	N/A	N/A	N/A
10*47051.318.8	J	9-12-30	JOHN M SHALLENBERGER AND JOANNE SHALLENBERGER	TH EXPLORATION LLC	1/8+	905 541	N/A	N/A	N/A
10*17294	J	9-12-30	JOHN P HOLMES AND DEBRA A HOLMES	TH EXPLORATION LLC	1/8+	927 6	N/A	N/A	N/A
10*47051.318.41	J	9-12-30	JOHN T CRISWELL AND CATHERINE A CRISWELL	TH EXPLORATION LLC	1/8+	905 582	N/A	N/A	N/A
10*16487	J	9-12-30	JOHN WILLIAMSON JR	TH EXPLORATION LLC	1/8+	927 27	N/A	N/A	N/A
10*47051.318.6	J	9-12-30	JOSEPH F STARC JR AND DONNA STARC	TH EXPLORATION LLC	1/8+	904 596	N/A	N/A	N/A
10*47051.318.1	J	9-12-30	JOSEPH PAUL FOX AND MARGARET H FOX	TH EXPLORATION LLC	1/8+	905 569	N/A	N/A	N/A
10*16785	J	9-12-30	JOSHUA W SEAMON	TH EXPLORATION LLC	1/8+	910 223	N/A	N/A	N/A
10*16508	J	9-12-30	JUDITH C LORADITCH	TH EXPLORATION LLC	1/8+	926 631	N/A	N/A	N/A
10*15462	J	9-12-30	JUDITH F TEMPLE AND LOUIS I TEMPLE	TH EXPLORATION LLC	1/8+	905 617	N/A	N/A	N/A
10*47051.318.19	J	9-12-30	JUDY LYNN CHIPLINSKI	TH EXPLORATION LLC	1/8+	904 496	N/A	N/A	N/A
10*47051.318.27	J	9-12-30	KAREN J BRUGGEMAN	TH EXPLORATION LLC	1/8+	904 520	N/A	N/A	N/A
10*16374	J	9-12-30	KAREN L ZUCKER AND MICHAEL D ZUCKER	TH EXPLORATION LLC	1/8+	905 632	N/A	N/A	N/A
10*17678	J	9-12-30	KATHERINE & DANIEL DEGROOT	TH EXPLORATION, LLC	1/8+	927 218	N/A	N/A	N/A
10*16110	J	9-12-30	KATHLEEN D AND STEVEN MONIGOLD	TH EXPLORATION LLC	1/8+	906 35	N/A	N/A	N/A
10*17818	J	9-12-30	KATHLEEN REILLY MANNIX AND J MICHAEL MANNIX	TH EXPLORATION LLC	1/8+	917 128	N/A	N/A	N/A
10*16539	J	9-12-30	KATHRYN BROWN AND BRUCE G BROWN	TH EXPLORATION LLC	1/8+	926 641	N/A	N/A	N/A
10*15468	J	9-12-30	KEITH W STORCH AND DEBORAH A STORCH	TH EXPLORATION LLC	1/8+	905 624	N/A	N/A	N/A
10*17475	J	9-12-30	LARRY R CRANE	TH EXPLORATION LLC	1/8+	927 13	N/A	N/A	N/A
10*15740	J	9-12-30	LARRY W ALLEY	TH EXPLORATION LLC	1/8+	912 49	N/A	N/A	N/A
10*17172	J	9-12-30	LINDA K AND MICHAEL HUMES	TH EXPLORATION LLC	1/8+	927 33	N/A	N/A	N/A
10*16382	J	9-12-30	LINDA M HONE AND VAUGHN HONE SR	TH EXPLORATION LLC	1/8+	906 17	N/A	N/A	N/A
10*16330	J	9-12-30	LISA R IMHOFF AND CHAD IMHOFF	TH EXPLORATION LLC	1/8+	905 626	N/A	N/A	N/A
10*16331	J	9-12-30	LOLA F BLEVINS	TH EXPLORATION LLC	1/8+	905 630	N/A	N/A	N/A
10*47051.318.28	J	9-12-30	LORAIN GAIL STARC HORNER AND CHARLES HORNER	TH EXPLORATION LLC	1/8+	904 524	N/A	N/A	N/A
10*17388	J	9-12-30	LORI A FARMER AND DANIEL K FARMER	TH EXPLORATION LLC	1/8+	927 9	N/A	N/A	N/A
10*16607	J	9-12-30	LOUISE M AND WILSON D MCELHINNY	TH EXPLORATION LLC	1/8+	909 72	N/A	N/A	N/A

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10*17536	J	9-12-30	MABEL MCCARTHY	TH EXPLORATION LLC	1/8+	909 512	N/A	N/A	N/A
10*47051.318.25	J	9-12-30	MARIANN T DARGUSCH AND JONATHON DARGUSCH	TH EXPLORATION LLC	1/8+	905 549	N/A	N/A	N/A
10*16189	J	9-12-30	MARLENE BAKER	TH EXPLORATION LLC	1/8+	906 50	N/A	N/A	N/A
10*17882	J	9-12-30	MARY E HAMM	TH EXPLORATION, LLC	1/8+	924 552	N/A	N/A	N/A
10*47051.318.4	J	9-12-30	MARY ELISE CAMP	TH EXPLORATION LLC	1/8+	905 557	N/A	N/A	N/A
10*17809	J	9-12-30	MARY M MORRIS	TH EXPLORATION LLC	1/8+	921 66	N/A	N/A	N/A
10*16054	J	9-12-30	MEGAN R AUSTIN AND ANTHONY B POWERS	TH EXPLORATION LLC	1/8+	906 29	N/A	N/A	N/A
10*16032	J	9-12-30	MELINDA M GREENOUGH AND DOUGLAS CORWIN GREENOUGH	TH EXPLORATION LLC	1/8+	906 26	N/A	N/A	N/A
10*17477	J	9-12-30	MICHAEL SAUDERS AND AMI SAUDERS	TH EXPLORATION LLC	1/8+	927 39	N/A	N/A	N/A
10*47051.318.18	J	9-12-30	MICHAEL WAYNE ALLEY AND LINDA ALLEY	TH EXPLORATION LLC	1/8+	904 622	N/A	N/A	N/A
10*47051.318.40	J	9-12-30	NANCY MARIE DUNN AND GEORGE L DUNN	TH EXPLORATION LLC	1/8+	905 590	N/A	N/A	N/A
10*16241	J	9-12-30	NANNETTE BERLETCH AND MATTHEW S BERLETCH JR	TH EXPLORATION LLC	1/8+	906 56	N/A	N/A	N/A
10*16671	J	9-12-30	NATHAN AND KARI KOHRMANN	TH EXPLORATION LLC	1/8+	913 40	N/A	N/A	N/A
10*47051.318.45	J	9-12-30	PATRICIA KIRCHNER	TH EXPLORATION LLC	1/8+	905 592	N/A	N/A	N/A
10*16047	J	9-12-30	PEGGY KOHRMANN AND DAVID KOHRMANN	TH EXPLORATION LLC	1/8+	906 32	N/A	N/A	N/A
10*16823	J	9-12-30	PEGGY N AND JAMES E GLASER	TH EXPLORATION LLC	1/8+	913 373	N/A	N/A	N/A
10*47051.318.52	J	9-12-30	PETER G STORCH AND LAURIE L STORCH	TH EXPLORATION LLC	1/8+	905 608	N/A	N/A	N/A
10*16488	J	9-12-30	RACHEL AND FRED THORNE JR	TH EXPLORATION LLC	1/8+	926 628	N/A	N/A	N/A
10*47051.318.3	J	9-12-30	RANDY W MORRIS AND CHERYL MORRIS	TH EXPLORATION LLC	1/8+	904 535	N/A	N/A	N/A
10*16184	J	9-12-30	RAYMOND P RIEK AND GARDALEE RIECK	TH EXPLORATION LLC	1/8+	906 44	N/A	N/A	N/A
10*47051.318.7	J	9-12-30	REED O MILLER AND EFFIE M MILLER	TH EXPLORATION LLC	1/8+	904 598	N/A	N/A	N/A
10*47051.318.57	J	9-12-30	RHONDA L PALASOTA AND SAM A PALASOTA	TH EXPLORATION LLC	1/8+	905 620	N/A	N/A	N/A
10*47051.318.11	J	9-12-30	RICHARD TAYLOR	TH EXPLORATION LLC	1/8+	904 604	N/A	N/A	N/A
10*16137	J	9-12-30	RODNEY K. BANE & CATHIE J. BANE	TH EXPLORATION LLC	1/8+	906 41	N/A	N/A	N/A
10*16528	J	9-12-30	ROSELLA M HERR AND WILLARD L HERR	TH EXPLORATION LLC	1/8+	927 1	N/A	N/A	N/A
10*47051.318.53	J	9-12-30	ROSEMARIE BERISFORD	TH EXPLORATION LLC	1/8+	905 610	N/A	N/A	N/A
10*47051.318.56	J	9-12-30	SALLY MERRICK	TH EXPLORATION LLC	1/8+	905 614	N/A	N/A	N/A
10*15461	J	9-12-30	SANDRA SUE HALL AND DAVID HALL	TH EXPLORATION LLC	1/8+	905 622	N/A	N/A	N/A
10*47051.318.49	J	9-12-30	SHARLA ROLLINS AND GARY ROLLINS	TH EXPLORATION LLC	1/8+	905 594	N/A	N/A	N/A
10*47051.318.32	J	9-12-30	SHARON KELLER JOEY KELLER JR	TH EXPLORATION LLC	1/8+	904 539	N/A	N/A	N/A
10*47051.318.50	J	9-12-30	SHEILA SIMMONS	TH EXPLORATION LLC	1/8+	905 606	N/A	N/A	N/A
10*47051.318.38	J	9-12-30	SHERWOOD MASON NILA JUNE MASON	TH EXPLORATION LLC	1/8+	905 448	N/A	N/A	N/A
10*17496	J	9-12-30	STACY L BARNHART	TH EXPLORATION LLC	1/8+	927 16	N/A	N/A	N/A
10*47051.318.44	J	9-12-30	STACY R BENNETT	TH EXPLORATION LLC	1/8+	905 596	N/A	N/A	N/A
10*16366	J	9-12-30	STEVEN P ROBERTS	TH EXPLORATION LLC	1/8+	905 628	N/A	N/A	N/A
10*16410	J	9-12-30	SUSAN I BAKER	TH EXPLORATION LLC	1/8+	905 638	N/A	N/A	N/A
10*47051.318.42	J	9-12-30	TARA E CAUSEY	TH EXPLORATION LLC	1/8+	905 586	N/A	N/A	N/A
10*16744	J	9-12-30	THE JENNIFER TEACHNOR GAFFEY LIVING TRUST DATED OCTOBER 30TH 2013	TH EXPLORATION LLC	1/8+	926 634	N/A	N/A	N/A
10*17815	J	9-12-30	THE TESTAMENTARY TRUST OF CAREY B PAUL III	TH EXPLORATION LLC	1/8+	919 252	N/A	N/A	N/A
10*15682	J	9-12-30	THELMA W BIRDWELL	TH EXPLORATION LLC	1/8+	906 9	N/A	N/A	N/A
10*15727	J	9-12-30	TIMOTHY LEE COLLEY	TH EXPLORATION LLC	1/8+	906 12	N/A	N/A	N/A
10*15497	J	9-12-30	TOM ALLEY	TH EXPLORATION LLC	1/8+	905 644	N/A	N/A	N/A
10*15685	J	9-12-30	TRACY RAND	TH EXPLORATION LLC	1/8+	906 4	N/A	N/A	N/A
10*16898	J	9-12-30	VICTOR E ALLEY JR AND DEBRA A ALLEY	TH EXPLORATION LLC	1/8+	926 647	N/A	N/A	N/A
10*16071	J	9-12-30	VIRGINIA LESLIE BERTRAM	TH EXPLORATION LLC	1/8+	901 370	N/A	N/A	N/A
10*16616	J	9-12-30	WILLIAM BRYAN COLLEY	TH EXPLORATION LLC	1/8+	913 628	N/A	N/A	N/A
10*47051.318.5	J	9-12-30	WILLIAM F EWART JR AND JOAN REED EWART	TH EXPLORATION LLC	1/8+	905 438	N/A	N/A	N/A
10*47051.318.31	J	9-12-30	WILLIAM RICHARD FOX	TH EXPLORATION LLC	1/8+	905 561	N/A	N/A	N/A
10*16606	J	9-12-30	WILLIAM T AND BARBARA W PAUL	TH EXPLORATION LLC	1/8+	919 252	N/A	N/A	N/A
10*47051.312.0	K	9-12-37	JAN GRIMES SIMNACHER LEONARD A SIMNACHER	TH EXPLORATION LLC	1/8+	904 472	N/A	N/A	N/A
10*47051.140.1	L	9-12-32	DAVID P CHAPMAN & DEBORAH BORCK-CHAPMAN	TH EXPLORATION LLC	1/8+	866 318	N/A	N/A	N/A
10*47051.140.2	L	9-12-32	DOROTHY SULLIVAN POA JAMES REID SULLIVAN	TH EXPLORATION LLC	1/8+	873 501	N/A	N/A	N/A
10*17555	M	9-14-18	AARON AND JANA K PARRY	TH EXPLORATION LLC	1/8+	924 113	N/A	N/A	N/A
10*17452	M	9-14-18	ALAN H & MARY K DEGARMO	TH EXPLORATION, LLC	1/8+	924 164	N/A	N/A	N/A
10*17139	M	9-14-18	ALICE G WEINER AND GERALD S WEINER	TH EXPLORATION LLC	1/8+	915 131	N/A	N/A	N/A
10*16183	M	9-14-18	ALLEN R L DAVIS AND DIANA LEE PATTERSON	TH EXPLORATION LLC	1/8+	906 285	N/A	N/A	N/A
10*17436	M	9-14-18	ANDREW M HOOVER AND DINAH R HOOVER	TH EXPLORATION LLC	1/8+	924 156	N/A	N/A	N/A
10*16239	M	9-14-18	ANGELA L OLDFIELD AND KENNETH W OLDFIELD	TH EXPLORATION LLC	1/8+	906 287	N/A	N/A	N/A
10*17880	M	9-14-18	ANNA M WRIGHT	TH EXPLORATION, LLC	1/8+	924 586	N/A	N/A	N/A
10*16443	M	9-14-18	BARBARA BROWN CHAMBERS	TH EXPLORATION LLC	1/8+	924 621	N/A	N/A	N/A
10*16018	M	9-14-18	BARBARA MCFADDEN ALBRIGHT	TH EXPLORATION LLC	1/8+	906 262	N/A	N/A	N/A

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10*17708	M	9-14-18	BETTY LOU NOBLE	TH EXPLORATION LLC	1/8+	923 127	N/A	N/A	N/A
10*17612	M	9-14-18	BEVERLY A LEDBETTER	TH EXPLORATION, LLC	1/8+	923 480	N/A	N/A	N/A
10*16240	M	9-14-18	BONNIE SUE PATTERSON SWISHER	TH EXPLORATION LLC	1/8+	906 289	N/A	N/A	N/A
10*17830	M	9-14-18	BRIAN AND MELINDA MASTERS	TH EXPLORATION LLC	1/8+	925 319	N/A	N/A	N/A
10*16031	M	9-14-18	CARL J CHMIELEWSKI AND KATHLEEN A CHMIELEWSKI	TH EXPLORATION LLC	1/8+	906 266	N/A	N/A	N/A
10*17613	M	9-14-18	CARLTON DOBBS JR AND MIKHAIL PROKOPENKO	TH EXPLORATION LLC	1/8+	924 120	N/A	N/A	N/A
10*16444	M	9-14-18	CATHERINE ELLEN CHAMBERS	TH EXPLORATION LLC	1/8+	924 623	N/A	N/A	N/A
10*16083	M	9-14-18	CECIL HARRY LILLY, III AND PAMELA KAY KNIGHT LILLY	TH EXPLORATION LLC	1/8+	912 47	N/A	N/A	N/A
10*17771	M	9-14-18	CHARLES AND LISA WARRICK	TH EXPLORATION, LLC	1/8+	923 477	N/A	N/A	N/A
10*16535	M	9-14-18	CHARLES E CARSON AND MARY KAY CARSON	TH EXPLORATION LLC	1/8+	906 420	N/A	N/A	N/A
10*17396	M	9-14-18	CHRISTINE L KIDD	TH EXPLORATION LLC	1/8+	924 158	N/A	N/A	N/A
10*16486	M	9-14-18	DAVID ALAN WILKINSON AND PATRICIA LYNN WILKINSON	TH EXPLORATION LLC	1/8+	924 180	N/A	N/A	N/A
10*17614	M	9-14-18	DAVID DOBBS	TH EXPLORATION, LLC	1/8+	923 489	N/A	N/A	N/A
10*17528	M	9-14-18	DEAN E GARRISON	TH EXPLORATION LLC	1/8+	923 535	N/A	N/A	N/A
10*17487	M	9-14-18	DEBORAH R MOKOSH	TH EXPLORATION LLC	1/8+	924 166	N/A	N/A	N/A
10*17711	M	9-14-18	DEBRA A WENNEMAN AND KURT J WENNEMAN	TH EXPLORATION LLC	1/8+	923 520	N/A	N/A	N/A
10*16995	M	9-14-18	DIANE ELSIE RAMSEY	TH EXPLORATION LLC	1/8+	924 146	N/A	N/A	N/A
10*17579	M	9-14-18	DON COFFIELD & GLENDA DOBBS	TH EXPLORATION, LLC	1/8+	923 525	N/A	N/A	N/A
10*17563	M	9-14-18	DONALD L WOOD	TH EXPLORATION LLC	1/8+	923 523	N/A	N/A	N/A
10*16953	M	9-14-18	DONALD T AND JEAN K HOGAN	TH EXPLORATION LLC	1/8+	924 140	N/A	N/A	N/A
10*16582	M	9-14-18	DORA BROCK BRAMMER	TH EXPLORATION LLC	1/8+	907 429	N/A	N/A	N/A
10*16445	M	9-14-18	DOUGLAS C AND GWENDLYN D LEWTON	TH EXPLORATION LLC	1/8+	925 123	N/A	N/A	N/A
10*16511	M	9-14-18	DOUGLAS R BOWEN	TH EXPLORATION LLC	1/8+	906 475	N/A	N/A	N/A
10*17766	M	9-14-18	EDWARD S & NANCY A ROSENTHAL	TH EXPLORATION, LLC	1/8+	923 495	N/A	N/A	N/A
10*16131	M	9-14-18	ERIC S DOBBS	TH EXPLORATION LLC	1/8+	902 68	N/A	N/A	N/A
10*16835	M	9-14-18	ERNEST CARL AUGUSTINE JR	TH EXPLORATION LLC	1/8+	924 188	N/A	N/A	N/A
10*16182	M	9-14-18	FIRST CHRISTIAN CHURCH OF MOUNDSVILLE BY ROGER FRANCIS AND ROBERT ALBERT TRUSTEES	TH EXPLORATION LLC	1/8+	906 283	N/A	N/A	N/A
10*16017	M	9-14-18	FLOYD A MCFADDEN	TH EXPLORATION LLC	1/8+	906 260	N/A	N/A	N/A
10*15730	M	9-14-18	FRANCES V CARPENTER	TH EXPLORATION LLC	1/8+	906 256	N/A	N/A	N/A
10*16442	M	9-14-18	FRED T AND JERRY L CHAMBERS	TH EXPLORATION LLC	1/8+	924 174	N/A	N/A	N/A
10*17448	M	9-14-18	FREDERICK L HERVEY AND CATHY J HERVEY	TH EXPLORATION LLC	1/8+	924 162	N/A	N/A	N/A
10*16948	M	9-14-18	FREDERICK M LEWTON	TH EXPLORATION LLC	1/8+	924 136	N/A	N/A	N/A
10*17209	M	9-14-18	GAYLE S SHANNON	TH EXPLORATION LLC	1/8+	924 168	N/A	N/A	N/A
10*16441	M	9-14-18	GEORGE FRANKLIN AND NANCY ANN REED	TH EXPLORATION LLC	1/8+	924 619	N/A	N/A	N/A
10*17515	M	9-14-18	GLADYS E DOBBS	TH EXPLORATION LLC	1/8+	923 541	N/A	N/A	N/A
10*17769	M	9-14-18	GLADYS FRAZIER KING	TH EXPLORATION, LLC	1/8+	923 492	N/A	N/A	N/A
10*17504	M	9-14-18	GREGG ALAN MILLER AND BETH ANN MILLER	TH EXPLORATION LLC	1/8+	924 118	N/A	N/A	N/A
10*17675	M	9-14-18	GREGORY D & CAROLYN J WIBLE	TH EXPLORATION, LLC	1/8+	923 507	N/A	N/A	N/A
10*16580	M	9-14-18	HAROLD C MCFADDEN	TH EXPLORATION LLC	1/8+	907 480	N/A	N/A	N/A
10*17289	M	9-14-18	HAROLD R HUNT JR AND ELIZABETH A HUNT	TH EXPLORATION LLC	1/8+	924 170	N/A	N/A	N/A
10*17879	M	9-14-18	HARRY R WRIGHT JR	TH EXPLORATION, LLC	1/8+	924 588	N/A	N/A	N/A
10*16581	M	9-14-18	HELEN L SCHILLING	TH EXPLORATION LLC	1/8+	907 489	N/A	N/A	N/A
10*17674	M	9-14-18	HOWARD L & BETH E WOOD	TH EXPLORATION, LLC	1/8+	923 505	N/A	N/A	N/A
10*16540	M	9-14-18	JAMES A WINTER AND CONNIE G WINTER	TH EXPLORATION LLC	1/8+	924 184	N/A	N/A	N/A
10*17676	M	9-14-18	JAMES C & DEIDRE G DORIA	TH EXPLORATION, LLC	1/8+	923 513	N/A	N/A	N/A
10*47051.325.4	M	9-14-18	JAMES H WHITE AND RITA FRANKS WHITE	TH EXPLORATION LLC	1/8+	906 230	N/A	N/A	N/A
10*17731	M	9-14-18	JAMES J MCGHEE AND JEANNINE CHAMBERS MCGHEE	TH EXPLORATION LLC	1/8+	914 519	N/A	N/A	N/A
10*17671	M	9-14-18	JAMES L STOUT	TH EXPLORATION LLC	1/8+	923 484	N/A	N/A	N/A
10*16882	M	9-14-18	JAMES LEROY AND DARLENE DOBBS OWENS	TH EXPLORATION LLC	1/8+	924 190	N/A	N/A	N/A
10*16569	M	9-14-18	JANICE C BALE	TH EXPLORATION LLC	1/8+	907 425	N/A	N/A	N/A
10*17503	M	9-14-18	JANICE L KUHN	TH EXPLORATION LLC	1/8+	924 122	N/A	N/A	N/A
10*16950	M	9-14-18	JAY E AND CECILIA E LEWTON	TH EXPLORATION LLC	1/8+	924 134	N/A	N/A	N/A
10*16532	M	9-14-18	JEAN ANN MCFADDEN	TH EXPLORATION LLC	1/8+	906 459	N/A	N/A	N/A
10*16285	M	9-14-18	JOHN A SHUTZ AND CYNTHIA J SHUTZ	TH EXPLORATION LLC	1/8+	906 291	N/A	N/A	N/A
10*16483	M	9-14-18	JOHN C AND BARBARA H WINTER	TH EXPLORATION LLC	1/8+	924 178	N/A	N/A	N/A
10*16966	M	9-14-18	JOHN GILLETTE AND BARBARA GILLETTE	TH EXPLORATION LLC	1/8+	913 377	N/A	N/A	N/A
10*17885	M	9-14-18	JOHN RUSSELL BECKER	TH EXPLORATION, LLC	1/8+	924 540	N/A	N/A	N/A
10*17582	M	9-14-18	JOHN THOMAS ERAZMUS AND JEAN R ERAZMUS	TH EXPLORATION LLC	1/8+	924 124	N/A	N/A	N/A
10*16030	M	9-14-18	JOSEPH F CHMIELEWSKI AND SANDRA CHMIELEWSKI	TH EXPLORATION LLC	1/8+	906 264	N/A	N/A	N/A
10*47051.325.1	M	9-14-18	JUDITH A LEWANDOSKY AND ALAN E LEWANDOSKY	TH EXPLORATION LLC	1/8+	906 225	N/A	N/A	N/A
10*16993	M	9-14-18	JULIA HOOVER	TH EXPLORATION LLC	1/8+	924 150	N/A	N/A	N/A

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Lease Name or No	Tag	Parcel	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment
10*17517	M	9-14-18	JULIO ENRIQUE & DEBRA K TORRES	TH EXPLORATION, LLC	1/8+	923 537	N/A	N/A	N/A
10*16085	M	9-14-18	KATHARYN ANNETTE LILLY LAING AND FREDDIE JOE LAING	TH EXPLORATION LLC	1/8+	912 43	N/A	N/A	N/A
10*16086	M	9-14-18	KATHARYN DAY LILLY	TH EXPLORATION LLC	1/8+	906 272	N/A	N/A	N/A
10*16531	M	9-14-18	KATHY DOBBS WELLS	TH EXPLORATION LLC	1/8+	906 472	N/A	N/A	N/A
10*17668	M	9-14-18	KENNETH R DOBBS	TH EXPLORATION, LLC	1/8+	923 503	N/A	N/A	N/A
10*16537	M	9-14-18	KIM D BOWEN AND MADONNA M BOWEN	TH EXPLORATION LLC	1/8+	907 415	N/A	N/A	N/A
10*15752	M	9-14-18	KIM O CHAMBERS AND DEBRA CHAMBERS	TH EXPLORATION LLC	1/8+	906 258	N/A	N/A	N/A
10*16180	M	9-14-18	LARRY L CHAMBERS	TH EXPLORATION LLC	1/8+	906 280	N/A	N/A	N/A
10*17131	M	9-14-18	LAURA E TOTTEN AND LONNIE R TOTTEN	TH EXPLORATION LLC	1/8+	924 154	N/A	N/A	N/A
10*16726	M	9-14-18	LESLEY K WHITE	TH EXPLORATION LLC	1/8+	924 182	N/A	N/A	N/A
10*16576	M	9-14-18	LINDA A MINER AND MICHAEL W MINER	TH EXPLORATION LLC	1/8+	907 484	N/A	N/A	N/A
10*16992	M	9-14-18	LINDA C ABRAHAM	TH EXPLORATION LLC	1/8+	924 148	N/A	N/A	N/A
10*17520	M	9-14-18	LUCY P SULLIVAN	TH EXPLORATION LLC	1/8+	923 533	N/A	N/A	N/A
10*17559	M	9-14-18	MARVIN JERRY BLAKE AND LINDA D BLAKE	TH EXPLORATION LLC	1/8+	923 528	N/A	N/A	N/A
10*16087	M	9-14-18	MARY PENELOPE LILLY MURPHY	TH EXPLORATION LLC	1/8+	912 41	N/A	N/A	N/A
10*17516	M	9-14-18	MARY V DOBBS	TH EXPLORATION LLC	1/8+	923 539	N/A	N/A	N/A
10*17505	M	9-14-18	MICHAEL R & LEANNE DOBBS	TH EXPLORATION, LLC	1/8+	924 116	N/A	N/A	N/A
10*47051.325.3	M	9-14-18	NICHOLAS D PAVLIK AND GLORIA K PAVLIK	TH EXPLORATION LLC	1/8+	906 228	N/A	N/A	N/A
10*16181	M	9-14-18	NORMA CHRISTINE WHIPP AND GERALD WAYNE BLACK	TH EXPLORATION LLC	1/8+	906 281	N/A	N/A	N/A
10*16144	M	9-14-18	PATTIE S MADRID	TH EXPLORATION LLC	1/8+	906 278	N/A	N/A	N/A
10*17580	M	9-14-18	PAUL CRAIG CUNNINGHAM	TH EXPLORATION LLC	1/8+	923 530	N/A	N/A	N/A
10*17615	M	9-14-18	PAULA JO WRIGHT	TH EXPLORATION, LLC	1/8+	923 482	N/A	N/A	N/A
10*17581	M	9-14-18	PAULA WEIRES	TH EXPLORATION LLC	1/8+	923 486	N/A	N/A	N/A
10*47051.325.8	M	9-14-18	RICK PAVLIK	TH EXPLORATION LLC	1/8+	906 239	N/A	N/A	N/A
10*16570	M	9-14-18	ROBERT D BOWEN AND MARCIA M R BOWEN	TH EXPLORATION LLC	1/8+	907 420	N/A	N/A	N/A
10*17878	M	9-14-18	ROBERT E & SARAH M ROUSH	TH EXPLORATION, LLC	1/8+	924 590	N/A	N/A	N/A
10*17413	M	9-14-18	ROBERT M CHAMBERS AND CHARLOTTE A CHAMBERS	TH EXPLORATION LLC	1/8+	924 160	N/A	N/A	N/A
10*17129	M	9-14-18	ROBERTA JANE PARKINSON	TH EXPLORATION LLC	1/8+	924 142	N/A	N/A	N/A
10*17700	M	9-14-18	ROGER L & MARILYN L GARRISON	TH EXPLORATION, LLC	1/8+	923 472	N/A	N/A	N/A
10*17616	M	9-14-18	RONALD & ELIZABETH DOBBS	TH EXPLORATION, LLC	1/8+	924 107	N/A	N/A	N/A
10*15477	M	9-14-18	RONALD A WYCINSKI	TH EXPLORATION LLC	1/8+	906 241	N/A	N/A	N/A
10*16680	M	9-14-18	RONALD J AND JENNIFER CHAMBERS FICCA	TH EXPLORATION LLC	1/8+	924 186	N/A	N/A	N/A
10*16990	M	9-14-18	ROSEMARY H BEAVERS	TH EXPLORATION LLC	1/8+	924 152	N/A	N/A	N/A
10*17664	M	9-14-18	RUDOLPH H PARSONS	TH EXPLORATION, LLC	1/8+	923 511	N/A	N/A	N/A
10*16952	M	9-14-18	RUSSELL D HERVEY	TH EXPLORATION LLC	1/8+	924 132	N/A	N/A	N/A
10*47051.325.5	M	9-14-18	SAMUEL ALAN MCCORD AND WINIFRED A MCKEE	TH EXPLORATION LLC	1/8+	906 232	N/A	N/A	N/A
10*16733	M	9-14-18	SARAH L BISHOP	TH EXPLORATION LLC	1/8+	924 172	N/A	N/A	N/A
10*47051.325.7	M	9-14-18	SHERON JONES	TH EXPLORATION LLC	1/8+	906 237	N/A	N/A	N/A
10*16533	M	9-14-18	SHIRLEY ANN DOBBS	TH EXPLORATION LLC	1/8+	906 469	N/A	N/A	N/A
10*17703	M	9-14-18	SHIRLEY N COX	TH EXPLORATION, LLC	1/8+	923 498	N/A	N/A	N/A
10*16949	M	9-14-18	STEVEN R AND BRIANNE L UTT	TH EXPLORATION LLC	1/8+	924 138	N/A	N/A	N/A
10*17701	M	9-14-18	SUE ANN WORD	TH EXPLORATION, LLC	1/8+	923 470	N/A	N/A	N/A
10*17702	M	9-14-18	TAMMY BETH RAMSEY	TH EXPLORATION, LLC	1/8+	925 500	N/A	N/A	N/A
10*16967	M	9-14-18	TARA JEANNE MINOR AND JENNIFER A KNAPP	TH EXPLORATION LLC	1/8+	914 612	N/A	N/A	N/A
10*16534	M	9-14-18	TERRY LEE LASAVAGE	TH EXPLORATION LLC	1/8+	906 443	N/A	N/A	N/A
10*17667	M	9-14-18	THOMAS BRIAN WARRICK	TH EXPLORATION, LLC	1/8+	923 509	N/A	N/A	N/A
10*47051.325.6	M	9-14-18	THOMAS O MCCORD	TH EXPLORATION LLC	1/8+	906 235	N/A	N/A	N/A
10*47051.325.2	M	9-14-18	TIMMY LEE STOUT AND DOROTHY MARIE STOUT	TH EXPLORATION LLC	1/8+	906 222	N/A	N/A	N/A
10*17560	M	9-14-18	TREVOR HOOKS	TH EXPLORATION LLC	1/8+	924 110	N/A	N/A	N/A
10*17134	M	9-14-18	UNITED CHRISTIAN MISSIONARY SOCIETY	TH EXPLORATION LLC	1/8+	924 144	N/A	N/A	N/A
10*17617	M	9-14-18	UNITED DISCIPLES OF CHRIST CHURCH	TH EXPLORATION LLC	1/8+	924 129	N/A	N/A	N/A
10*17881	M	9-14-18	WAYLON L & ANGELA J MURPHEE	TH EXPLORATION, LLC	1/8+	924 555	N/A	N/A	N/A
10*16490	M	9-14-18	WILLIAM H AND MERRY C COTTON	TH EXPLORATION LLC	1/8+	924 176	N/A	N/A	N/A
10*17767	M	9-14-18	WILLIAM K & LINDA J MERRITT	TH EXPLORATION, LLC	1/8+	923 474	N/A	N/A	N/A
10*16965	M	9-14-18	WILLIAM L WRIGHT AND CAROLINA WRIGHT	TH EXPLORATION LLC	1/8+	914 524	N/A	N/A	N/A
10*17452	N	9-15-3	ALAN H & MARY K DEGARMO	TH EXPLORATION, LLC	1/8+	924 164	N/A	N/A	N/A
10*17436	N	9-15-3	ANDREW M HOOVER AND DINAH R HOOVER	TH EXPLORATION LLC	1/8+	924 156	N/A	N/A	N/A
10*16239	N	9-15-3	ANGELA L OLDFIELD AND KENNETH W OLDFIELD	TH EXPLORATION LLC	1/8+	906 287	N/A	N/A	N/A
10*16443	N	9-15-3	BARBARA BROWN CHAMBERS	TH EXPLORATION LLC	1/8+	924 621	N/A	N/A	N/A
10*16018	N	9-15-3	BARBARA MCFADDEN ALBRIGHT	TH EXPLORATION LLC	1/8+	906 262	N/A	N/A	N/A
10*16444	N	9-15-3	CATHERINE ELLEN CHAMBERS	TH EXPLORATION LLC	1/8+	924 623	N/A	N/A	N/A

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Lease Name or No	Tag	Parcel	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment
10*16535	N	9-15-3	CHARLES E CARSON AND MARY KAY CARSON	TH EXPLORATION LLC	1/8+	906 420	N/A	N/A	N/A
10*17396	N	9-15-3	CHRISTINE L KIDD	TH EXPLORATION LLC	1/8+	924 158	N/A	N/A	N/A
10*16486	N	9-15-3	DAVID ALAN WILKINSON AND PATRICIA LYNN WILKINSON	TH EXPLORATION LLC	1/8+	924 180	N/A	N/A	N/A
10*17487	N	9-15-3	DEBORAH R MOKOSH	TH EXPLORATION LLC	1/8+	924 166	N/A	N/A	N/A
10*16995	N	9-15-3	DIANE ELSIE RAMSEY	TH EXPLORATION LLC	1/8+	924 146	N/A	N/A	N/A
10*17563	N	9-15-3	DONALD L WOOD	TH EXPLORATION LLC	1/8+	923 523	N/A	N/A	N/A
10*16953	N	9-15-3	DONALD T AND JEAN K HOGAN	TH EXPLORATION LLC	1/8+	924 140	N/A	N/A	N/A
10*16582	N	9-15-3	DORA BROCK BRAMMER	TH EXPLORATION LLC	1/8+	907 429	N/A	N/A	N/A
10*16445	N	9-15-3	DOUGLAS C AND GWENDLYN D LEWTON	TH EXPLORATION LLC	1/8+	925 123	N/A	N/A	N/A
10*16511	N	9-15-3	DOUGLAS R BOWEN	TH EXPLORATION LLC	1/8+	906 475	N/A	N/A	N/A
10*16835	N	9-15-3	ERNEST CARL AUGUSTINE JR	TH EXPLORATION LLC	1/8+	924 188	N/A	N/A	N/A
10*16182	N	9-15-3	FIRST CHRISTIAN CHURCH OF MOUNDSVILLE BY ROGER FRANCIS AND ROBERT ALBERT TRUSTEES	TH EXPLORATION LLC	1/8+	906 283	N/A	N/A	N/A
10*16017	N	9-15-3	FLOYD A MCFADDEN	TH EXPLORATION LLC	1/8+	906 260	N/A	N/A	N/A
10*16442	N	9-15-3	FRED T AND JERRY L CHAMBERS	TH EXPLORATION LLC	1/8+	924 174	N/A	N/A	N/A
10*17448	N	9-15-3	FREDERICK L HERVEY AND CATHY J HERVEY	TH EXPLORATION LLC	1/8+	924 162	N/A	N/A	N/A
10*16948	N	9-15-3	FREDERICK M LEWTON	TH EXPLORATION LLC	1/8+	924 136	N/A	N/A	N/A
10*17209	N	9-15-3	GAYLE S SHANNON	TH EXPLORATION LLC	1/8+	924 168	N/A	N/A	N/A
10*16441	N	9-15-3	GEORGE FRANKLIN AND NANCY ANN REED	TH EXPLORATION LLC	1/8+	924 619	N/A	N/A	N/A
10*17675	N	9-15-3	GREGORY D & CAROLYN J WIBLE	TH EXPLORATION, LLC	1/8+	923 507	N/A	N/A	N/A
10*16580	N	9-15-3	HAROLD C MCFADDEN	TH EXPLORATION LLC	1/8+	907 480	N/A	N/A	N/A
10*17289	N	9-15-3	HAROLD R HUNT JR AND ELIZABETH A HUNT	TH EXPLORATION LLC	1/8+	924 170	N/A	N/A	N/A
10*16581	N	9-15-3	HELEN L SCHILLING	TH EXPLORATION LLC	1/8+	907 489	N/A	N/A	N/A
10*17674	N	9-15-3	HOWARD L & BETH E WOOD	TH EXPLORATION, LLC	1/8+	923 505	N/A	N/A	N/A
10*16540	N	9-15-3	JAMES A WINTER AND CONNIE G WINTER	TH EXPLORATION LLC	1/8+	924 184	N/A	N/A	N/A
10*47051.325.4	N	9-15-3	JAMES H WHITE AND RITA FRANKS WHITE	TH EXPLORATION LLC	1/8+	906 230	N/A	N/A	N/A
10*17731	N	9-15-3	JAMES J MCGHEE AND JEANNINE CHAMBERS MCGHEE	TH EXPLORATION LLC	1/8+	914 519	N/A	N/A	N/A
10*16569	N	9-15-3	JANICE C BAILE	TH EXPLORATION LLC	1/8+	907 425	N/A	N/A	N/A
10*16950	N	9-15-3	JAY E AND CECILIA E LEWTON	TH EXPLORATION LLC	1/8+	924 134	N/A	N/A	N/A
10*16532	N	9-15-3	JEAN ANN MCFADDEN	TH EXPLORATION LLC	1/8+	906 459	N/A	N/A	N/A
10*16285	N	9-15-3	JOHN A SHUTZ AND CYNTHIA J SHUTZ	TH EXPLORATION LLC	1/8+	906 291	N/A	N/A	N/A
10*16483	N	9-15-3	JOHN C AND BARBARA H WINTER	TH EXPLORATION LLC	1/8+	924 178	N/A	N/A	N/A
10*47051.325.1	N	9-15-3	JUDITH A LEWANDOSKY AND ALAN E LEWANDOSKY	TH EXPLORATION LLC	1/8+	906 225	N/A	N/A	N/A
10*16993	N	9-15-3	JULIA HOOVER	TH EXPLORATION LLC	1/8+	924 150	N/A	N/A	N/A
10*16537	N	9-15-3	KIM D BOWEN AND MADONNA M BOWEN	TH EXPLORATION LLC	1/8+	907 415	N/A	N/A	N/A
10*15752	N	9-15-3	KIM O CHAMBERS AND DEBRA CHAMBERS	TH EXPLORATION LLC	1/8+	906 258	N/A	N/A	N/A
10*16180	N	9-15-3	LARRY L CHAMBERS	TH EXPLORATION LLC	1/8+	906 280	N/A	N/A	N/A
10*17131	N	9-15-3	LAURA E TOTTEN AND LONNIE R TOTTEN	TH EXPLORATION LLC	1/8+	924 154	N/A	N/A	N/A
10*16726	N	9-15-3	LESLY K WHITE	TH EXPLORATION LLC	1/8+	924 182	N/A	N/A	N/A
10*16576	N	9-15-3	LINDA A MINER AND MICHAEL W MINER	TH EXPLORATION LLC	1/8+	907 484	N/A	N/A	N/A
10*16992	N	9-15-3	LINDA C ABRAHAM	TH EXPLORATION LLC	1/8+	924 148	N/A	N/A	N/A
10*47051.325.3	N	9-15-3	NICHOLAS D PAVLIK AND GLORIA K PAVLIK	TH EXPLORATION LLC	1/8+	906 228	N/A	N/A	N/A
10*16181	N	9-15-3	NORMA CHRISTINE WHIPP AND GERALD WAYNE BLACK	TH EXPLORATION LLC	1/8+	906 281	N/A	N/A	N/A
10*16144	N	9-15-3	PATTIE S MADRID	TH EXPLORATION LLC	1/8+	906 278	N/A	N/A	N/A
10*47051.325.8	N	9-15-3	RICK PAVLIK	TH EXPLORATION LLC	1/8+	906 239	N/A	N/A	N/A
10*16570	N	9-15-3	ROBERT D BOWEN AND MARCIA M R BOWEN	TH EXPLORATION LLC	1/8+	907 420	N/A	N/A	N/A
10*17413	N	9-15-3	ROBERT M CHAMBERS AND CHARLOTTE A CHAMBERS	TH EXPLORATION LLC	1/8+	924 160	N/A	N/A	N/A
10*17129	N	9-15-3	ROBERTA JANE PARKINSON	TH EXPLORATION LLC	1/8+	924 142	N/A	N/A	N/A
10*16680	N	9-15-3	RONALD J AND JENNIFER CHAMBERS FICCA	TH EXPLORATION LLC	1/8+	924 186	N/A	N/A	N/A
10*16990	N	9-15-3	ROSEMARY H BEAVERS	TH EXPLORATION LLC	1/8+	924 152	N/A	N/A	N/A
10*16952	N	9-15-3	RUSSELL D HERVEY	TH EXPLORATION LLC	1/8+	924 132	N/A	N/A	N/A
10*47051.325.5	N	9-15-3	SAMUEL ALAN MCCORD AND WINIFRED A MCKEE	TH EXPLORATION LLC	1/8+	906 232	N/A	N/A	N/A
10*16733	N	9-15-3	SARAH L BISHOP	TH EXPLORATION LLC	1/8+	924 172	N/A	N/A	N/A
10*47051.325.7	N	9-15-3	SHERON JONES	TH EXPLORATION LLC	1/8+	906 237	N/A	N/A	N/A
10*16949	N	9-15-3	STEVEN R AND BRIANNE L UTT	TH EXPLORATION LLC	1/8+	924 138	N/A	N/A	N/A
10*17701	N	9-15-3	SUE ANN WORD	TH EXPLORATION, LLC	1/8+	923 470	N/A	N/A	N/A
10*17702	N	9-15-3	TAMMY BETH RAMSEY	TH EXPLORATION, LLC	1/8+	925 500	N/A	N/A	N/A
10*16534	N	9-15-3	TERRY LEE LASAVAGE	TH EXPLORATION LLC	1/8+	906 443	N/A	N/A	N/A
10*47051.325.6	N	9-15-3	THOMAS O MCCORD	TH EXPLORATION LLC	1/8+	906 235	N/A	N/A	N/A
10*17134	N	9-15-3	UNITED CHRISTIAN MISSIONARY SOCIETY	TH EXPLORATION LLC	1/8+	924 144	N/A	N/A	N/A
10*17617	N	9-15-3	UNITED DISCIPLES OF CHRIST CHURCH	TH EXPLORATION LLC	1/8+	924 129	N/A	N/A	N/A
10*16490	N	9-15-3	WILLIAM H AND MERRY C COTTON	TH EXPLORATION LLC	1/8+	924 176	N/A	N/A	N/A

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**COPY**

AFFIDAVIT

STATE OF TEXAS §  
§ SS  
COUNTY OF TARRANT §

On this 18<sup>th</sup> day of October, 2016, before me, the undersigned authority, personally appeared David D. Kalish ("Affiant") who being first duly sworn under oath, deposes and saith:

1. TH Exploration, LLC, TH Exploration II, LLC and TH Exploration III, LLC are wholly owned subsidiaries of THQ Appalachia I, LLC.
2. Tug Hill Operating, LLC provides oil and gas operations services to THQ Appalachia I, LLC under an Operating Services Agreement dated July 23, 2014.
3. David D. Kalish, the Affiant, is the Vice President of Tug Hill Operating, LLC, THQ Appalachia I, LLC, TH Exploration, LLC, TH Exploration II, LLC and TH Exploration III, LLC, and;
3. Tug Hill Operating, LLC is authorized to operate and maintain the assets owned by THQ Appalachia I, LLC, including, as referenced above, TH Exploration, LLC, TH Exploration II, LLC, and TH Exploration III, LLC, including oil and gas leases, wells, pipelines, surface facilities, and other all other assets that support the business of THQ Appalachia I, LLC, and;
4. Specifically, Tug Hill Operating, LLC is authorized to submit and obtain well work permits and carry out all activities pursuant to such work permits for assets owned by TH Exploration, LLC, TH Exploration II, LLC, TH Exploration III, LLC.

FURTHER, AFFIANT SAITH NOT.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this 18<sup>th</sup> day of October, 2016.

David D. Kalish  
Affiant: David D. Kalish

JURAT

Jan Pest  
MARSHALL County 03:44:28 PM  
Instrument No 1416299  
Date Recorded 10/19/2016  
Document Type HIS  
Pages Recorded 1  
Book-Page 28-62  
Recording Fee \$5.00  
Additional \$6.00

STATE OF TEXAS §  
§ SS  
COUNTY OF TARRANT §

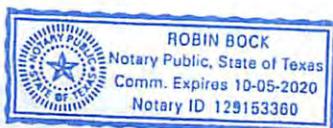
Sworn and subscribed to (or affirmed) before me on this, the 18<sup>th</sup> day of October, 2016, by David D. Kalish

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

My Commission Expires: 10-05-2020

Signature/Notary Public: Robin Bock

Name/Notary Public (Print): Robin Bock





June 28, 2017

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

RE: Heaven Hill 3-5HM

Subject: Marshall County Route 21/9 and 21 Road Crossing Letter

Dear Laura:

Tug Hill Operating, LLC (THO) hereby submits this letter as confirmation that THO has obtained the right to drill, extract and produce the minerals under Marshall County Route 21/9 and 21 in the area reflected on the Heaven Hill 3-5HM 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-hillop.com](mailto:amiller@tug-hillop.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-hillop.com](mailto:amiller@tug-hillop.com)

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A faint, illegible stamp or mark, possibly a date or reference number, located at the bottom center of the page.

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

Date of Notice Certification: 07/06/2017

API No. 47- 051 -  
Operator's Well No. Heaven Hill 3-5HM  
Well Pad Name: Heaven Hill 3

**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>526,250.98</u>
County:	<u>Marshall</u>		Northing:	<u>4,406,558.99</u>
District:	<u>Meade</u>	Public Road Access:	<u>Yeater Lane (Co. Rt. 21/11)</u>	
Quadrangle:	<u>Glen Easton 7.5'</u>	Generally used farm name:	<u>Ricky L. Whittlatch</u>	
Watershed:	<u>(HUC 10) Fish Creek</u>			

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

<p>Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p style="padding-left: 40px;"><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p><b>OOG OFFICE USE ONLY</b></p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p>
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

**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.

OFFICE OF OIL AND GAS JUL 07 2017

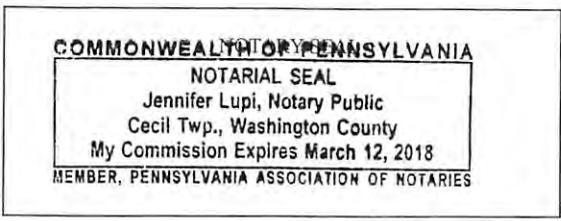
09/15/2017

WW-6AC  
(1/12)

**Certification of Notice is hereby given:**

THEREFORE, I Amy L. Miller *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 Blvd, Southpointe Plaza II, Suite 200</u>
By:	<u>Amy L. Miller</u>		<u>Canonsburg, PA 15317</u>
Its:	<u>Permit Specialist - Appalachia</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 6th day of July, 2017

Jennifer Lupi Notary Public

My Commission Expires March 12, 2018

**Oil and Gas Privacy Notice:**

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

OFFICE OF OIL AND GAS JUL 07 2017

WW-6A  
(9-13)

API NO. 47- 051 -  
OPERATOR WELL NO. Heaven Hill 3-5HM  
Well Pad Name: Heaven Hill 3

**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:** 6/6/2017 **Date Permit Application Filed:** 6/7/2017

**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: Ricky L. Whitlatch

Address: 1044 Yeater Lane  
Glen Easton, WV 26039

Name: None

Address: \_\_\_\_\_

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

Name: Andrew Whitlatch

Address: 942 Yeater Lane  
Glen Easton, WV 26039

Name: Arnie Goodnight, et ux

Address: 102 Goodnight Lane  
Moundsville, WV 26041

SURFACE OWNER(s) (Impoundments or Pits)

Name: None

Address: \_\_\_\_\_

COAL OWNER OR LESSEE

Name: Murray Energy Corporation

Address: 46226 National Road  
St. Clairsville, OH 43950

COAL OPERATOR

Name: Same as above coal owner

Address: \_\_\_\_\_

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

Name: \*See supplement page 1A attached

Address: \_\_\_\_\_

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: None

Address: \_\_\_\_\_

\*Please attach additional forms if necessary

OFFICE OF OIL AND GAS JUL 07 2017

09/15/2017

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(8-13)

API NO. 47- 051 -  
OPERATOR WELL NO. Heaven Hill 3-5HM  
Well Pad Name: Heaven Hill 3

**Notice is hereby given:**

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

**This Notice Shall Include:**

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

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

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

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

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

**Well Location Restrictions**

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

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(8-13)

API NO. 47-051 -  
OPERATOR WELL NO. Heaven Hill 3-5HM  
Well Pad Name: Heaven Hill 3

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

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

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

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

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

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

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

#### **Written Comment:**

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

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

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

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(8-13)

API NO. 47-051 -  
OPERATOR WELL NO. Heaven Hill 3-5HM  
Well Pad Name: Heaven Hill 3

### **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.

OFFICE OF OIL AND GAS JUL 07 2017

09/15/2017

WW-6A  
(8-13)

API NO. 47- 051 -  
OPERATOR WELL NO. Heaven Hill 3-5HM  
Well Pad Name: Heaven Hill 3

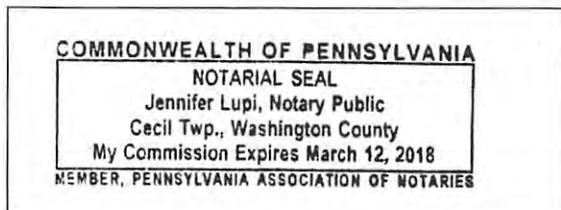
**Notice is hereby given by:**

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

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

**Oil and Gas Privacy Notice:**

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



Subscribed and sworn before me this 6th day of July, 2017.

*Jennifer Lupi* Notary Public  
My Commission Expires March 12, 2018

OFFICE OF OIL AND GAS JUL 07 2017

**Exhibit WW-6A****Supplement Pg. 1A**

Tug Hill Operating, LLC  
 380 Southpointe Blvd, Suite 200  
 Cannonsburg, PA 15137

**Residences within Two-Thousand Feet (2,000')**

Well: Heaven Hill 3 - 5HM  
 District: Meade (House #'s 1 & 2)  
 State: WV

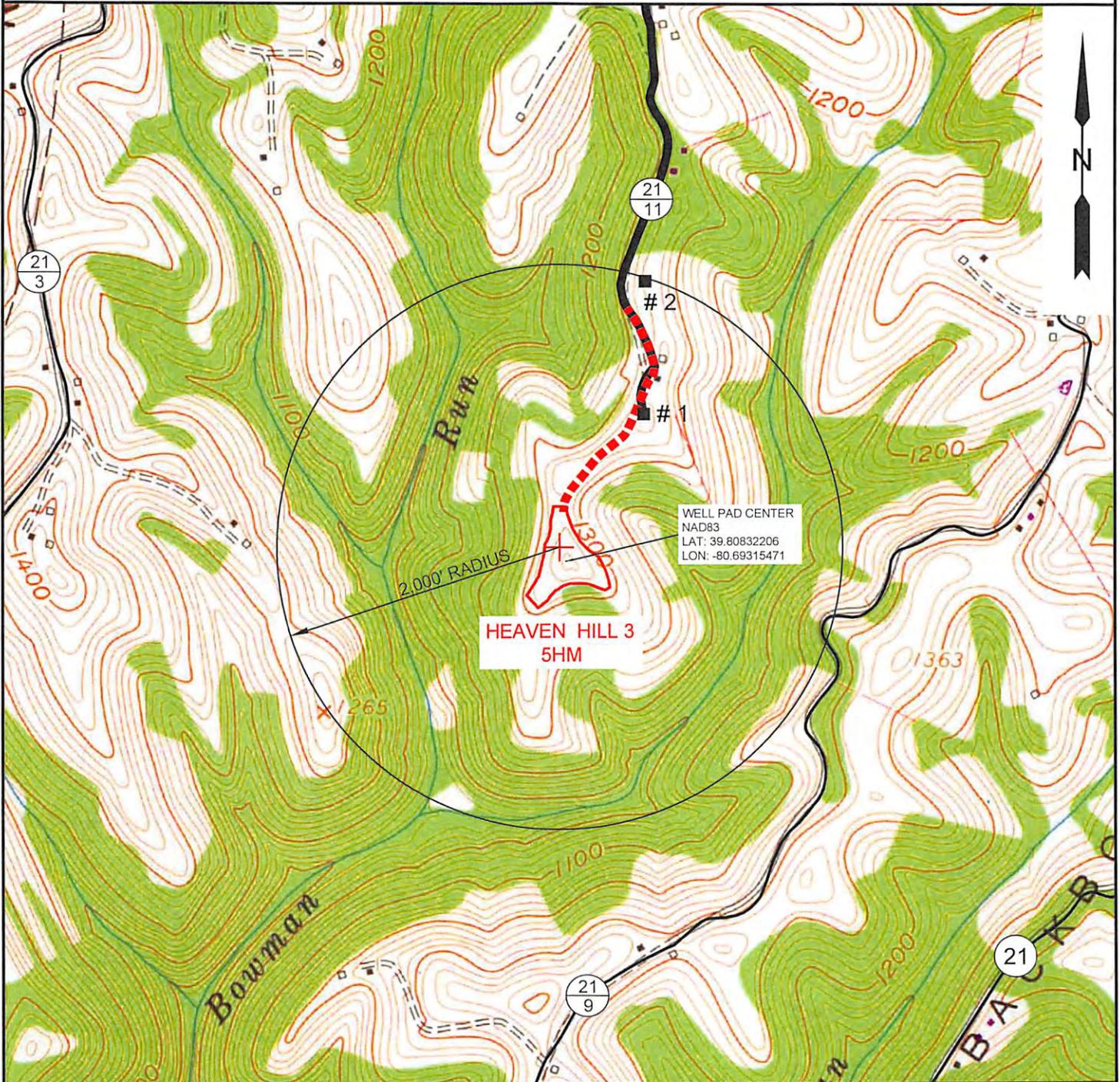
There are two (2) residences, no businesses, no churches, no schools or no emergency facilities within two-thousand feet (2,000') of the above referenced well location.

<b>House 1</b> TM 7 Pcl. 30 Ricky L. Whitlatch Phone: 304-843-1168 <b>Physical Address:</b> 1044 Yeater Ln. Glen Easton, WV 26039 <b>Tax Address:</b> Same	<b>House 2</b> TM 7 Pcl. 30.1 Andrew Corey Whitlatch Phone: 304-845-9605 <b>Physical Address:</b> 942 Yeater Ln. Glen Easton, WV 26039 <b>Tax Address:</b> Same
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OFFICE OF OIL AND GAS JUL 07 2017

09/15/2017

# PROPOSED HEAVEN HILL 3 - 5HM



NOTE: THERE APPEARS TO BE TWO (2) POSSIBLE WATER SOURCES WITHIN 2,000'.

 <p><b>SLS</b> Land &amp; Energy Development <i>Solutions from the ground up.</i> P.O. Box 150 • 12 Vanhorn Drive • Glenville, WV 26351 • (304) 462-5634 www.slsurveys.com</p>	<b>TOPO SECTION:</b> GLEN EASTON 7.5'		<b>OPERATOR:</b> PREPARED FOR: TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317		 <p><b>TUG HILL OPERATING</b></p>		
	<b>COUNTY</b> MARSHALL	<b>DISTRICT</b> MEADE	<b>DRAWN BY</b> K.G.M.	<b>JOB NO.</b> 8654		<b>DATE</b> 06/29/2017	<b>SCALE</b> 1" = 1000'

09/15/2017

**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:** December 5, 2016      **Date of Planned Entry:** December 16, 2016

**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: Ricky L. Whittlatch  
Address: 1044 Yeater Lane  
Glen Easton, WV 26039

Name: Andrew Whittlatch  
Address: 942 Yeater Lane  
Glen Easton, WV 26039

Name: Arnie Goodnight ET UX  
Address: 102 Goodnight Lane  
Moundsville, WV 26041

COAL OWNER OR LESSEE

Name: Murray Energy Corp.  
Address: 46226 National Road  
St. Clairsville, OH 43950

MINERAL OWNER(s)

Name: Ricky L. Whittlatch  
Address: 1044 Yeater Lane  
Glen Easton, WV 26039      **\*\*SEE SUPPLEMENT PAGE\*\***  
\*please attach additional forms if necessary

**Notice is hereby given:**

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

State: <u>West Virginia</u>	Approx. Latitude & Longitude: <u>Lat: 39.8083194, Long: -80.6931660</u>
County: <u>Marshall</u>	Public Road Access: <u>Yeater Lane (CO. Rt. 21/11)</u>
District: <u>Meade</u>	Watershed: <u>HUC-10 Fish Creek</u>
Quadrangle: <u>Glen Easton 7.5'</u>	Generally used farm name: <u>Ricky L. Whittlatch</u>

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Notice is hereby given by:**

Well Operator: <u>Tug Hill Operating, LLC</u>	Address: <u>380 Southpointe Blvd., Soutpointe Plaza II, Suite 200</u>
Telephone: <u>724-0749-8388</u>	<u>Canonsburg, PA 15317</u>
Email: <u>jwhite@tug-hillop.com</u>	Facsimile: <u>724-338-2030</u>

**Oil and Gas Privacy Notice:**

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

Operator Well No. Heaven Hill Unit 3-5HM

**WW-6A3 Notice of Entry for Plat Survey ..... Attachment 1 of 1**

**Mineral Owner(s):**

**Name:** Arnie Goodnight ET UX  
**Address:** 102 Goodnight Lane  
Moundsville, WV 26041

Bounty Minerals III Acquisitions, LLC  
777 Main Street – Suite 850  
Ft. Worth, TX 76102

Andrew Whitlatch  
942 Yeater Lane  
Glen Easton, WV 26039

**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:** 06/29/2017      **Date Permit Application Filed:** 07/07/2017

**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: Ricky L. Whittlatch  
Address: 1044 Yeater Lane  
Glen Easton, WV 26039

Name: Andrew Whittlatch  
Address: 942 Yeater Lane  
Glen Easton, WV 26039 \*\*See Attached\*\*

**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>526,263.54</u>
County:	<u>Marshall</u>		Northing:	<u>4,406,562.70</u>
District:	<u>Meade</u>	Public Road Access:	<u>Yeater Lane (Co. Rt. 21/11)</u>	
Quadrangle:	<u>Glen Easton 7.5'</u>	Generally used farm name:	<u>Ricky L. Whittlatch</u>	
Watershed:	<u>(HUC 10) Fish Creek</u>			

**This Notice Shall Include:**

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

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

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

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OFFICE OF OIL AND GAS JUL 07 2017

**09/15/2017**

047-051-01948

Operator Well No. Heaven Hill Unit 3-5HM

**WW-6A5 Notice of Entry for Plat Survey ..... Attachment 1 of 1**

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

**Name:** Arnie Goodnight, et ux  
**Address:** 102 Goodnight Lane  
Moundsville, WV 26041

/

OFFICE OF OIL AND GAS JUL 07 2017

09/15/2017



047-051-01948

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

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

Jim Justice  
Governor

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

May 16, 2017

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

Subject: DOH Permit for the Heaven Hills Unit 3 Pad, Marshall County  
Heaven Hills Unit 3-5HM Well site

47-051-01948

Dear Mr. Martin,

This well site will be accessed from a DOH permits #06-2016-0284 & 0287 which have been issued to Tug Hill Operating, LLC for access to the State Road for a well site located off of Marshall County Route 21/3 SLS.

The operator has signed a STATEWIDE 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,

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

Cc: Jonathan White  
Tug Hill Operating, LLC  
CH, OM, D-6  
File

OFFICE OF OIL AND GAS JUL 07 2017



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

Well No. Heaven Hill 3-5HM

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

047-051-01948



Heaven Hill 3 Site
Site Design, Construction Plan, &
Erosion and Sediment Control Plans
Tug Hill Operating
Marshall County
Meade District
Latitude 39.80832206°
Longitude -80.69315471°
Middle Fish Creek Watershed

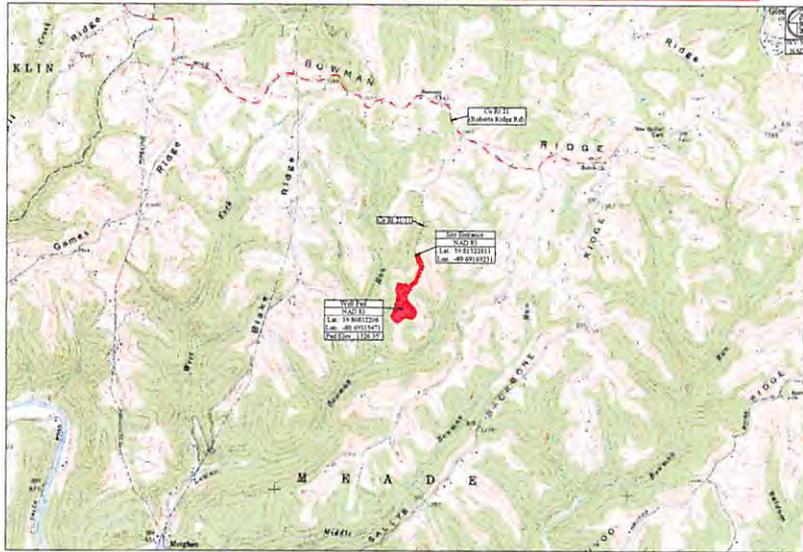
APPROVED
WVDEP OOG
7/10/2017

Pertinent Site Information
Heaven Hill 3 Site
Emergency Number: 304-845-1920
Meade District, Marshall County, WV
Watershed: Middle Fish Creek Watershed
Tug Hill Contact Number: 1-817-632-3400

Exhibit A: Final Design: Issue for Permitting

Table with 2 columns: Site Location and Corner of Well Pad. Lists coordinates for various sites and well pads.

Table with 4 columns: Well Jobs. Lists details for various well jobs including site location and coordinates.



WV State Plane Coordinate System
North Zone, NAD 83
Elevation Based on NAVD 88
Established by Survey 3386-035
and 0713 Post-Processing

Property Owner Information - Heaven Hill 3 Site
Table with columns: Owner, Address, and other details.

Access Road
Table with columns: Section Owner, Address, and other details.

Disturbed Area
Table with columns: Area Type, Area, and other details.

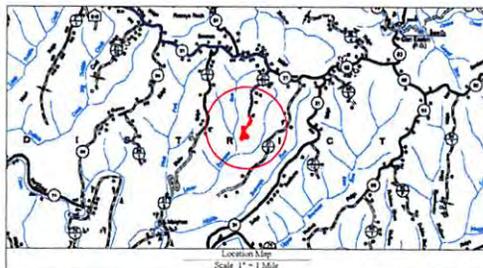
Heaven Hill 3 Site Quantities
Table with columns: Description, Quantity, and other details.

Project Contacts
The Hill Operating
Lead: Adam White, Regulatory Analyst
734-481-2099 CE 334-626-741 CEI
Jeff Radner - V.P. Production
417-423-2098 CEI

Service and Engineer
Kiewit Earth
104-336-8891 CEI
John P. Cox
954-443-2238 CEI
Zachary Landwehr
364-336-8891 CEI
Ammann & Whitney, Inc.
Civil Field
364-336-8891 CEI

Approach Routes
From the intersection of 12th Street and WV Rt 2 in
Meadeville, WV. Follow WV Rt 2 South for 0.9 mi. Turn
Left onto State Rr 2 Ab. Follow State Rr 2 Ab for 256 ft. Turn
Left onto Co Rr 21 (Roberts Ridge Rd). Follow Co Rr 21 for
2.8 mi. Continue straight onto Co Rr 21 (Roberts Ridge St.
Joseph Rd). Follow Co Rr 21 for 4.4 mi. Turn Left to continue
on Co Rr 21 (Roberts Ridge Rd). Follow Co Rr 21 for 2.3 mi.
Turn Right onto Co Rr 21 (1). Follow Co Rr 21 (1) for 0.9 mi.
The site entrance will be at the end of the county road.

Site Locations (NAD 27) and Site Locations (NAD 83)
Tables with columns: Province, Latitude (DMS), Longitude (DMS), and Center of Well Pad.



Well Location Restrictions
All Pad construction compliant with the following restrictions:
\*10' from an existing well or developed spring used for human or domestic animals
\*25' from an existing dwelling or barn greater than 1,500 SF used for poultry or dairy
measured from the center of the pad
\*10' from the edge of disturbance to wetlands, perennial streams, natural or artificial lake,
pond or reservoir
\*10' from the edge of disturbance to a naturally existing trout stream
\*100' of a surface or ground water intake to a public water supply



Sheet Description
Table with columns: Sheet Number and Description. Lists sheets 1 through 21.

MISS UTILITY OF WEST VIRGINIA
800-245-4848
www.missutility.com
IT'S THE LAW
Know what's below. Call before you dig.

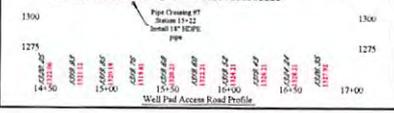
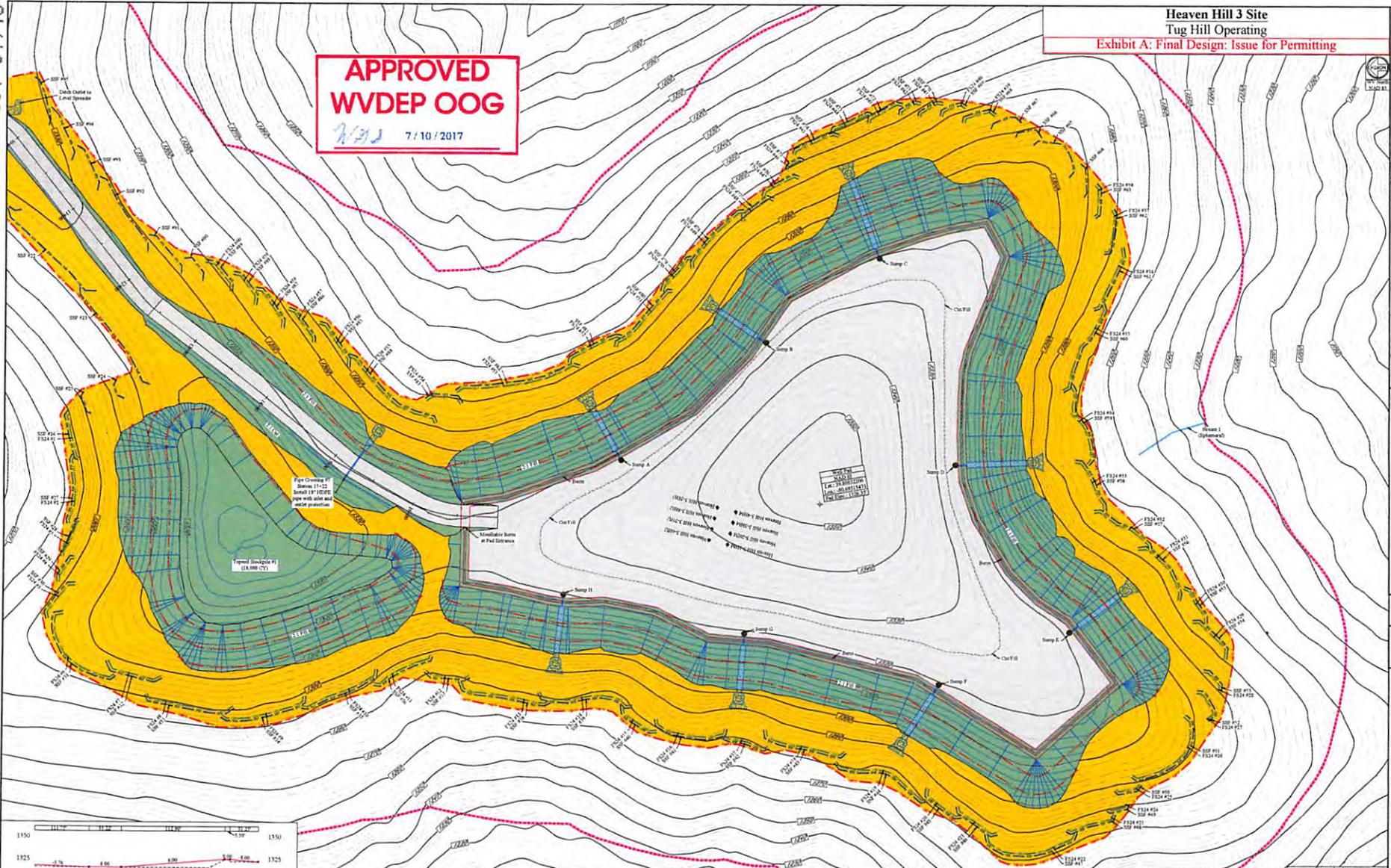
Tug Hill Operating will obtain an Encroachment Permit (Form 306-109)
from the WV Department of Transportation, Division of Highways
prior to the commencement of any construction activities
The WV Mine Website was consulted. Current mining
activities are within the ACE (underground mining)
WVDEP Website files show that there are no
active and/or abandoned gas wells within the ACE

Vertical Scale: 1" = 20'
Horizontal Scale: 1" = 400'
Date: 02-28-2017
Drawing: Access Road Construction
Revision: 03-18-2017
THIS DOCUMENT PREPARED FOR TUG HILL OPERATING
K&S SURVEYING
Cover Sheet
Heaven Hill 3 Site
Meade District
Marshall County, WV
Date: 02-24-2017
Scale: As Shown
Designed by: ZS
Sheet 1 of 14

047-051-01948

Heaven Hill 3 Site  
Tug Hill Operating  
Exhibit A: Final Design: Issue for Permitting

**APPROVED**  
**WVDEP OOG**  
7/10/2017



**Legend**

Original Ground 2' Contour	12" Wall	P200 Wetland
Original Ground 10' Contour	24" Concrete Edge Bank	P300 Wetland
Center of Structure	Super 200 Fabric	P35 Wetland
	Leads of Check Dam	Perennial Stream
	Area of Impact	Intermittent Stream
	Existing Chk Dam	Epithermal Stream
	Existing Utility Pole Line	Dead and Mucky Area
	Rock Lined Ditch	Erosion Control Blanket Slope Area
	Erosion Control Blanket Land Ditch	Stone Check Dam
		Sump

NOTE:  
All as-built boundary lines shown herein are based on boundary evidence collected with mapping grade 0.5m accuracy.



**Disturbed Area**

Well Pad Construction	11.00 AC
Access Road Construction	1.00 AC
Perennial Stream Mitigation	1.00 AC
Additional Planting	1.00 AC
Total Disturbed Area	14.00 AC
1 Year Wetland Area Mitigation	11.00 AC
1 Year Non-Wetland Area Mitigation	1.00 AC
Total Wetland Area Mitigation	12.00 AC

**Additional Information**

Project Name	HEAVEN HILL 3
Project Location	Marshall County, WV
Project No.	047-051-01948
Project Date	07/10/2017
Project Status	Final Design: Issue for Permitting

THIS DOCUMENT PREPARED FOR TUG HILL OPERATING

**TUG HILL OPERATING**

**K+S**

**Erosion and Sediment Control Plan**  
**Heaven Hill 3 Site**  
Meade District  
Marshall County, WV

Date: 07/10/2017  
Scale: As Shown  
Designed by: JES  
File No:  
Sheet 7 of 14