



west virginia department of environmental protection

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

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

Thursday, June 14, 2018
WELL WORK PERMIT
Horizontal 6A / New Drill

TUG HILL OPERATING, LLC
380 SOUTHPOINTE BOULEVARD, PLAZA II
SUITE 200
CANNONSBURG, PA 15317

Re: Permit approval for TEN HIGH 1N-12HU
47-051-01961-00-00

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: TEN HIGH 1N-12HU
Farm Name: LAWRENCE & SHIRLEY CON.
U.S. WELL NUMBER: 47-051-01961-00-00
Horizontal 6A New Drill
Date Issued: 6/14/2018

PERMIT CONDITIONS

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

CONDITIONS

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

PERMIT CONDITIONS

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



west virginia department of environmental protection

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

Barry K. Lay, Chairman
dep.wv.gov

March 16, 2018

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

RE: Application for Deep Well Permit – API #47-051-01961

COMPANY: Tug Hill Operating, LLC

FARM: Tug Hill Operating, LLC Ten High 1N-12HU

COUNTY: Marshall DISTRICT: Meade QUAD: Glen Easton 7.5'

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

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

1. Comments to Notice of Deviation filed? No.
2. Provided a certified copy of duly acknowledged and recorded consent and easement form from all surface owners? Yes
3. Provided a tabulation of all deep wells within one mile of the proposed location, including the API number of all deep wells: 47-051-01967, 47-051-01969, 47-051-01960, and 47-051-01965
4. Provided a plat showing that the proposed location is a distance of 400+ feet from the nearest lease line or unit boundary and showing the following wells drilled to or capable of producing from the objective formation within 3,000 feet of the proposed location.

Sincerely,

A handwritten signature in blue ink that reads 'Susan Rose'.

Susan Rose
Administrator

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

1) Well Operator: Tug Hill Operating, LLC 494510851 Marshall Meade Glen Easton 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Ten High 1N-12HU Well Pad Name: Ten High

3) Farm Name/Surface Owner: Lawrence & Shirley Conkle, ests Public Road Access: Shepherd Ridge Lane CR 21/9

4) Elevation, current ground: 1319' Elevation, proposed post-construction: 1310'

5) Well Type (a) Gas Oil Underground Storage

Other _____

(b) If Gas Shallow _____ Deep

Horizontal

6) Existing Pad: Yes or No No

JN 5/1/18

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Point Pleasant is the target formation at a depth of 11,589' - 11,728' thickness of 139' and anticipated pressure of approx. 9500 psi

8) Proposed Total Vertical Depth: 11,878'

9) Formation at Total Vertical Depth: Trenton

10) Proposed Total Measured Depth: 18,362'

11) Proposed Horizontal Leg Length: 6,384'

12) Approximate Fresh Water Strata Depths: 70', 1026'

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

14) Approximate Saltwater Depths: 2,167'

15) Approximate Coal Seam Depths: Sewickly Coal - 935' and Pittsburgh Coal - 1020'

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

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

(a) If Yes, provide Mine Info: Name: Marshall County Coal Co. / Marshall County Mine
Depth: 1020' TVD and 290' subsea level
Seam: Pittsburgh #8
Owner: Murray Energy / Consolidated Coal Co.

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	105'	100'	216FT^3(CTS)
Fresh Water	20"	NEW	J55	106.5#	1,096'	1,086'	1,725ft^3(CTS)
Coal	13 3/8"	NEW	J55	54.5#	2,810'	2,800'	1,969ft^3(CTS)
Intermediate	9 5/8"	NEW	HPP110	47#	10,467'	10,457'	3,414ft^3(CTS)
Production	5 1/2"	NEW	HCP110	23#	18,372'	18,362'	4,384ft^3(CTS)
Tubing	2 7/8"	NEW	P110	6.5#		11,422'	
Liners							

JN 5/1/18

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	30"	36"	1.0	2,333	1,866	CLASS A	1.2
Fresh Water	20"	26"	.5	2,410	1,928	SEE #24	1.2
Coal	13 3/8"	17 1/2"	.38	2,740	2,192	SEE#24	1.2
Intermediate	9 5/8"	12 1/4"	.472	10,730	6,968	SEE#24	1.99
Production	5 1/2"	8 1/2"	.415	13,580	10,864	SEE#24	1.18
Tubing	2 7/8"			14,530	11,624		
Liners							

PACKERS

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

JW 5/1/18

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

Drill through the Point Pleasant and TD Pilot Hole 150' into the Trenton. Log vertical section and run a solid cement plug back to proposed KOP. Drill curve and lateral per proposed well plan, run and cement production casing. Perform CBL from 60 deg to surface, make cleanout run, and stimulate.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

Well to be completed with approximately 15,970,000 lb proppant and 246,908 bbl of water. Max rate = 100 bpm; max psi = 12,500#.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 16.2

22) Area to be disturbed for well pad only, less access road (acres): 5.92

23) Describe centralizer placement for each casing string:

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

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

*See Attachment

25) Proposed borehole conditioning procedures:

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

*Note: Attach additional sheets as needed.



Tug Hill Operating, LLC Casing and Cement Program

Ten High 1N-12HU

Casing

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	100'	CTS
Surface	20"	J55	26"	1,086'	CTS
Intermediate 1	13 3/8"	J55	17 1/2"	2,800'	CTS
Intermediate 2	9 5/8"	HPP110	12 1/4"	10,457'	CTS
Production	5 1/2"	HCP110	8 1/2"	18,362'	CTS

Cement

Surface: Premium NE-1 + 2% bwoc CaC12 + 46.5% Fresh Water – Surface Cement mixed at 15.6 ppg, Y=1.2

Intermediate 1: Premium NE-1 + 1% bwoc CaC12 + 46.5% Fresh Water – Intermediate Cement mixed at 15.6 ppg, Y=1.2

Intermediate 2: Premium NE-1 + 1% bwoc CaC12 + 46.5% Fresh Water – Intermediate Cement mixed at 15.6 ppg, Y=1.99

Production: 50:50 Poz: Premium NE-1 + .1% bwoc ASA-301 + 60lb/sk ASCA-1 + .35% bwoc BA-10A + .25% bwoc MPA-170, 44 lb sack + .5% bwoc R-3 + .75 gals/100sk FP-13L – Production Cement mixed at 15.2ppg, Y = 1.18

RECEIVED
Office of Oil and Gas

JAN 23 2018

WV Department of
Environmental Protection

06/15/2018

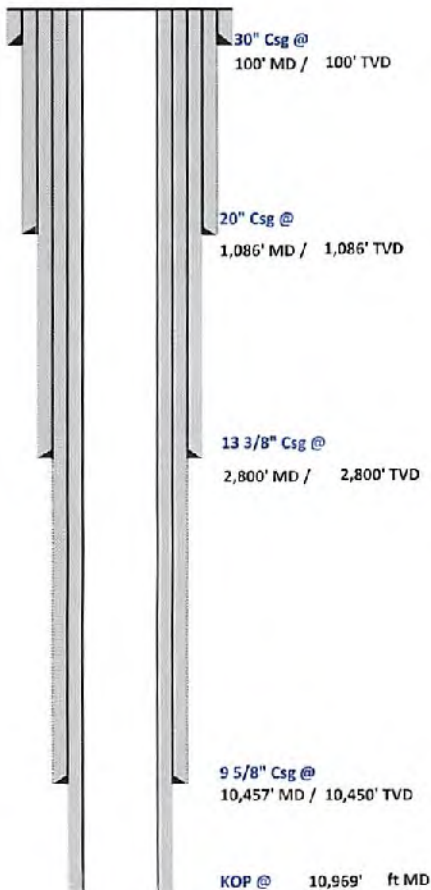


WELL NAME: Ten High 1N-12HU
STATE: West Virginia **COUNTY:** Marshall
DISTRICT: Meade
DF Elev: 1,310' **GL Elev:** 1,310'
TD: 18,362'
IH Latitude: 39.80672948
IH Longitude: -80.68089691
BH Latitude: 39.82285348
BH Longitude: -80.69227575

FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	1,026'
Sewickley Coal	935'
Pittsburgh Coal	1,020'
Big Lime	2,049'
Berea	2,673'
Tully	6,606'
Marcellus	6,713'
Onondaga	6,765'
Salina	7,497'
Lockport	8,562'
Utica	11,413'
Point Pleasant	11,589'
Landing Depth	11,615'
Trenton	11,728'
Pilot Hole TD	11,878'

CASING SUMMARY							
Type	Hole Size (in)	Csg Size (in)	Depth (MD)	Depth (TVD)	Weight (lb/ft)	Grade	Top of Cement
Conductor	36	30	100'	100'	BW	BW	Surface
Surface	26	20	1,086'	1,086'	106.5	J55	Surface
Intermediate 1	17 1/2	13 3/8	2,800'	2,800'	54.5	J55	Surface
Intermediate 2	12 1/4	9 5/8	10,457'	10,450'	47	HPP110	Surface
Production	8 1/2	5 1/2	18,362'	11,504'	23	HCP110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
	Sacks	Class	Density	Fluid Type	Centralizer Notes
Conductor	291	A	15.6	Air	None
Surface	1,872	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	2,139	A	15	Air	1 Centralizer every other jt
Intermediate 2	2,786	A	14.5	Air	1 Centralizer every other jt
Production	3,764	A	15	Air / SOB	1 every other joint in lateral; 1 per joint in curve; 1 every other jt to sfc



Pilot Hole
 PH TD @
 11,878'

WV Department of
 Environmental Protection

JAN 23 2018

RECEIVED
 Office of Oil and Gas

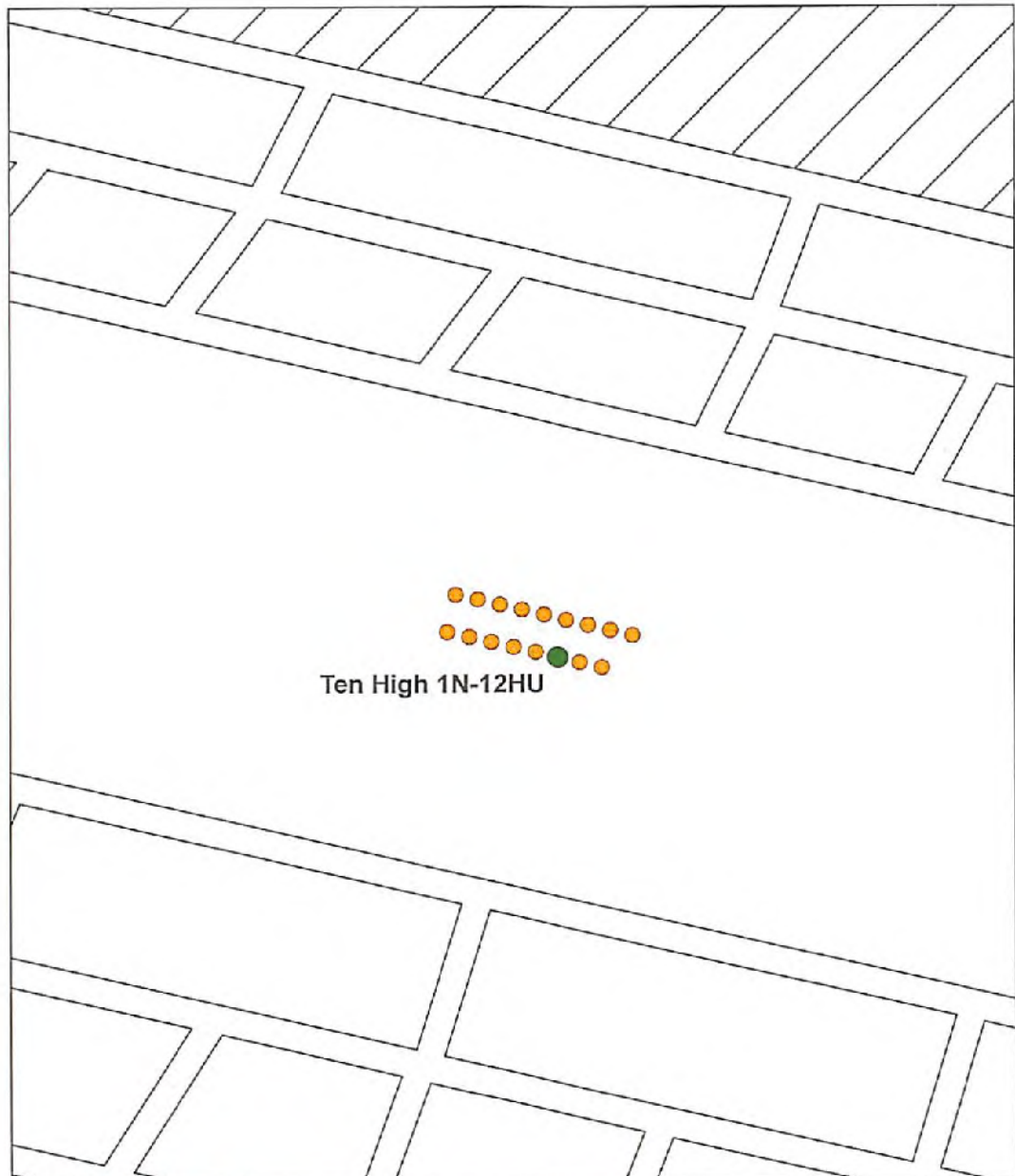
Landing Point @ 11,978' MD / 11,615' TVD

PH TD = 150' below Trenton Top

Handwritten signature and date: 1/17/18

Lateral TD @ 18,362' ft MD
 11,504' ft TVD

51-01961



Ten High 1N-12HU

<p>CONFIDENTIAL</p>	<p>Ten High Pad Ten High 1N-12HU Well Location</p>	
<p>0 5 10 20 30 40 Feet</p>		
	<p>● Surface Location — Coal Mined Area</p>	

Document Path: L:\GIS\GISDATA\WPA\TUG_HILL\10818_01.mxd
Map Created By: jgarcia on: 6/22/17

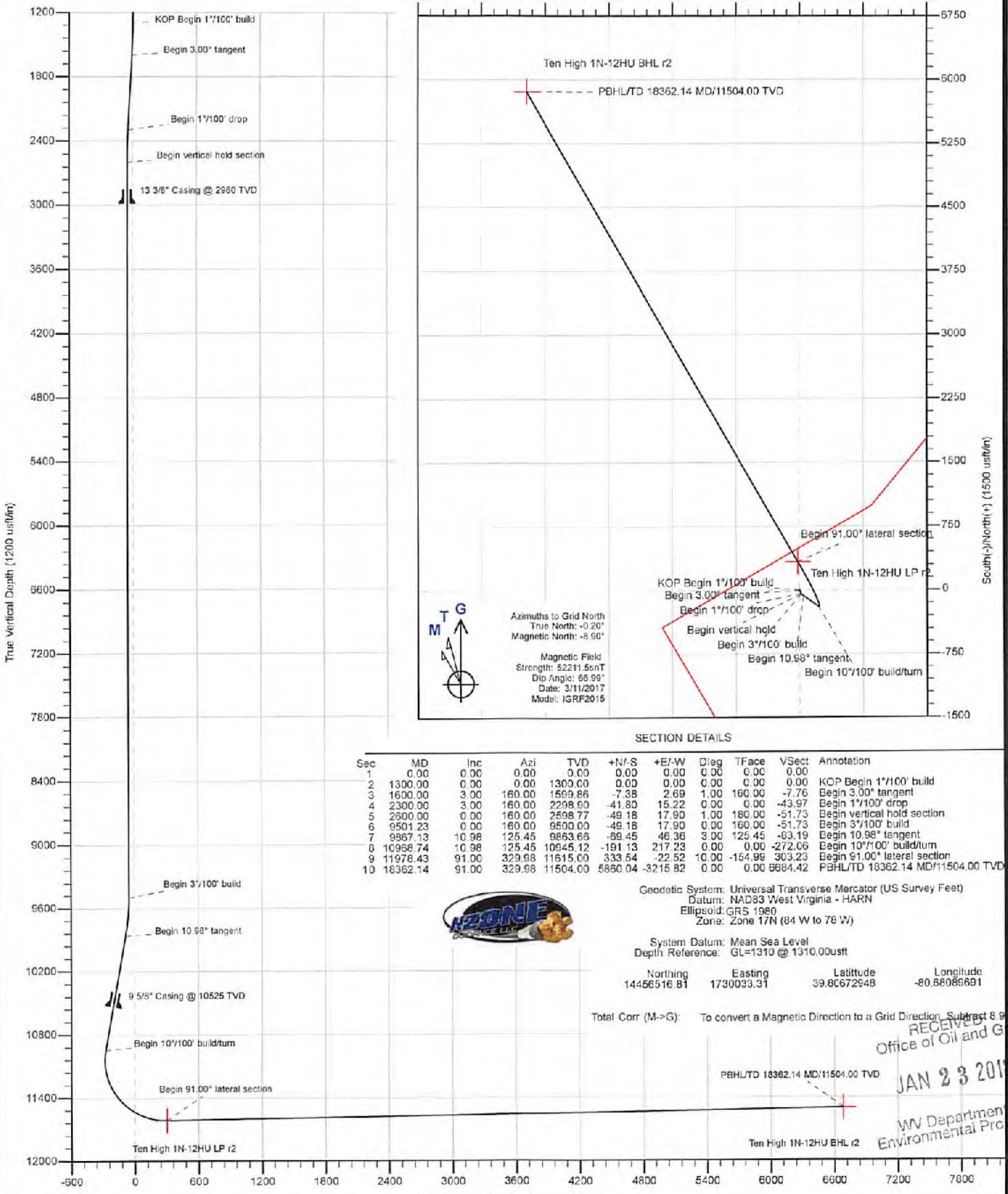
RECEIVED
Office of Oil and Gas
JAN 23 2018
WV Department of
Environmental Protection

51-01961



Well: Ten High 1N-12HU (M)
 Site: Ten High
 Project: Marshall County, West Virginia
 Design: rev3

West(-)/East(+) (1500 usft/in)



Azimuths to Grid North
 True North: -0.20°
 Magnetic North: -8.90°
 Magnetic Field
 Strength: 52211.5nT
 Dip Angle: 66.99°
 Date: 3/11/2017
 Model: IGRF2015

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	1300.00	0.00	0.00	1300.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 1"/100' build
3	1600.00	3.00	160.00	1599.86	-7.38	2.69	1.00	160.00	-7.76	Begin 3.00' tangent
4	2300.00	3.00	160.00	2298.90	-41.80	15.22	0.00	0.00	-43.97	Begin 1"/100' drop
5	2600.00	0.00	160.00	2598.77	-49.18	17.90	1.00	180.00	-51.73	Begin vertical hold section
6	9501.23	0.00	160.00	9500.00	-49.18	17.90	0.00	160.00	-51.73	Begin 3"/100' build
7	9957.13	10.98	125.45	9863.66	-89.45	46.36	3.00	125.45	-83.19	Begin 10.98° tangent
8	10958.74	10.98	125.45	10945.12	-191.13	217.23	0.00	0.00	-272.06	Begin 10"/100' build/turn
9	11978.43	91.00	329.98	11615.00	333.54	-22.52	10.00	-154.99	303.23	Begin 91.00° lateral section
10	18362.14	91.00	329.98	11504.00	5880.04	-3216.82	0.00	0.00	5684.42	PBHLTD 18362.14 MD/11504.00 TVD



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

System Datum: Mean Sea Level
 Depth Reference: GL=1310 @ 1310.00usft

Northing	Easting	Latitude	Longitude
14456516.81	1730033.31	39.8672548	-80.68085691

Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.9°

RECEIVED
 Office of Oil and Gas

JAN 23 2018

WV Department of Environmental Protection

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

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

Data Sources Reviewed:

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

Contacted Devin Ducoeur 724-705-0444, dducoeur@dpslandservices.com DPS GIS (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

RECEIVED
Office of Oil and Gas

JAN 23 2018

WV Department of
Environmental Protection

Permit well - Ten High 1N-12HU

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

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

API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Comments
4705101934	Tug Hill	6737' TVD planned	None	None	Permitted Marcellus well. Not yet drilled
4705170078	Wheeling Natural Gas Co	Unknown	Unknown	Unknown	Unknown but unlikely, Appears to be an old shallow well Well records are incomplete
4705100838	Hope Natural Gas Company	Unknown	Unknown	Unknown	Unknown but unlikely, probably an old shallow well or coal test bore, now plugged Well records incomplete. Well plugged 12/4/1998

WV Geological & Economic Survey | Well: County = 51 Permit = 70078

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX DISTRICT	SUBD_ID	OSDAS_ID	LAY_ID	LOG_ID	UTM	UTM
4705101934	Marshall	70078	Marshall	0000	0000	0000	0000	0000	0000

There is no Bottom Hole Location data for this well

Owner Information:

API	COMP_ID	SUFFID	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VG
4705101934										

Completion Information:

API	COMP_ID	SUFFID	ELEV DATUM	FIELD	DEEPTST_FW	DEEPTST_NPT	INITIAL_CLASS	FINAL_CLASS	TYPE	ISB	ISD	ISG	ISV	ISW	ISX	ISY	ISZ	ISAA	ISAB	ISAC	ISAD	ISAE	ISAF	ISAG	ISAH	ISAI	ISAJ	ISAK	ISAL	ISAM	ISAN	ISAO	ISAP	ISAQ	ISAR	ISAS	ISAT	ISAU	ISAV	ISAW	ISAX	ISAY	ISAZ	ISBA	ISBB	ISBC	ISBD	ISBE	ISBF	ISBG	ISBH	ISBI	ISBJ	ISBK	ISBL	ISBM	ISBN	ISBO	ISBP	ISBQ	ISBR	ISBS	ISBT	ISBU	ISBV	ISBW	ISBX	ISBY	ISBZ	ISCA	ISCB	ISCC	ISCD	ISCE	ISCF	ISCG	ISCH	ISCI	ISCJ	ISCK	ISCL	ISCM	ISCN	ISCO	ISCP	ISCQ	ISCR	ISCS	ISCT	ISCU	ISCV	ISCW	ISCX	ISCY	IS CZ	ISDA	ISDB	ISDC	ISDD	ISDE	ISDF	ISDG	ISDH	ISDI	ISDJ	ISDK	ISDL	ISDM	ISDN	ISDO	ISDP	ISDQ	ISDR	ISDS	ISDT	ISDU	ISDV	ISDW	ISDX	ISDY	ISDZ	ISEA	ISEB	ISEC	ISED	ISEE	IS EF	IS EG	ISEH	ISEI	ISEJ	ISEK	ISEL	ISEM	ISEN	ISEO	ISEP	ISEQ	ISER	ISES	IS ET	ISEU	ISEV	ISEW	ISEX	ISEY	ISEZ	ISFA	ISFB	ISFC	ISFD	ISFE	ISFF	ISFG	ISFH	ISFI	ISFJ	ISFK	ISFL	ISFM	ISFN	ISFO	ISFP	ISFQ	ISFR	ISFS	ISFT	ISFU	ISFV	ISFW	ISFX	ISFY	ISFZ	ISGA	ISGB	ISGC	ISGD	ISGE	ISGF	ISGG	ISGH	ISGI	ISGJ	ISGK	ISGL	ISGM	ISGN	ISGO	ISGP	ISGQ	ISGR	ISGS	ISGT	ISGU	ISGV	ISGW	ISGX	ISGY	ISGZ	ISHA	ISHB	ISHC	ISHD	ISHE	ISHF	ISHG	ISHH	ISHI	ISHJ	ISHK	ISHL	ISHM	ISHN	ISHO	ISHP	ISHQ	ISHR	ISHS	ISHT	ISHU	ISHV	ISHW	ISHX	ISHY	ISHZ	ISIA	ISIB	ISIC	ISID	ISIE	ISIF	ISIG	ISIH	ISII	ISIJ	ISIK	ISIL	ISIM	ISIN	ISIO	ISIP	ISIQ	ISIR	ISIS	ISIT	ISIU	ISIV	ISIW	ISIX	IS IY	ISIZ	ISJA	ISJB	ISJC	ISJD	ISJE	ISJF	ISJG	ISJH	ISJI	ISJJ	ISJK	ISJL	ISJM	ISJN	ISJO	ISJP	ISJQ	ISJR	ISJS	ISJT	ISJU	ISJV	ISJW	ISJX	ISJY	ISJZ	ISK	ISKA	ISKB	ISKC	ISKD	ISKE	ISKF	ISKG	ISKH	ISKI	ISKJ	ISKK	ISKL	ISKM	ISKN	ISKO	ISKP	ISKQ	ISKR	ISKS	ISKT	ISKU	ISKV	ISKW	ISKX	ISKY	ISKZ	ISLA	ISLB	ISLC	ISLD	ISLE	ISLF	ISLG	ISLH	ISLI	ISLJ	ISLK	ISLL	ISLM	ISLN	ISLO	ISLP	ISLQ	ISLR	ISLS	ISLT	ISLU	ISLV	ISLW	ISLX	ISLY	ISLZ	ISMA	ISMB	ISMC	ISMD	ISME	ISMF	ISMG	ISMH	ISMI	ISMJ	ISMK	ISML	ISMN	ISMO	ISMP	ISMQ	ISM R	ISMS	ISMT	ISMU	ISMV	ISMW	ISMX	ISMY	ISMZ	ISNA	ISNB	ISNC	ISND	ISNE	ISNF	ISNG	ISNH	ISNI	ISNJ	ISNK	ISNL	ISNM	ISNO	ISNP	ISNQ	ISNR	ISNS	ISNT	ISNU	ISNV	ISNW	ISNX	ISNY	ISNZ	ISOB	ISOA	ISOB	ISOC	ISOD	ISOE	ISOF	ISOG	ISOH	ISOI	ISOJ	ISOK	ISOL	ISOM	ISON	ISOO	ISOP	ISOQ	ISOR	ISOS	ISOT	ISOU	ISOV	ISOW	ISOX	ISOY	IS OZ	ISPA	ISPB	ISPC	ISPD	ISPE	ISPF	ISPG	ISPH	ISPI	ISPJ	ISPK	ISPL	ISPM	ISPN	ISPO	ISPP	IS PQ	ISPR	ISPS	ISPT	ISPU	ISPV	ISPW	ISPX	ISPY	IS PZ	ISRA	ISRB	ISRC	ISRD	ISRE	ISRF	ISRG	ISRH	ISRI	ISRJ	ISRK	ISRL	ISRM	ISRN	ISRO	ISRP	ISRQ	ISRR	ISRS	ISRT	ISRU	ISRV	ISRW	ISRX	ISRY	ISRZ	ISSA	ISSB	ISSC	ISSD	ISSE	IS SF	IS SG	ISSH	ISSI	ISSJ	ISSK	ISSL	ISSM	ISSN	ISSO	IS SP	ISSQ	ISSR	ISSS	ISST	IS SU	ISSV	ISSW	ISSX	ISSY	ISSZ	IS TA	IS TB	IS TC	IS TD	IS TE	IS TF	IS TG	IS TH	IS TI	IS TJ	IS TK	IS TL	IS TM	IS TN	IS TO	IS TP	IS TQ	IS TR	IS TS	IS TU	IS TV	IS TW	IS TX	IS TY	IS TZ	IS UA	IS UB	IS UC	IS UD	IS UE	IS UF	IS UG	IS UH	IS UI	IS UJ	IS UK	IS UL	IS UM	IS UN	IS UO	IS UP	IS UQ	IS UR	IS US	IS UT	IS U U	IS UV	IS UW	IS UX	IS UY	IS UZ	IS VA	IS VB	IS VC	IS VD	IS VE	IS VF	IS VG	IS VH	IS VI	IS VJ	IS VK	IS VL	IS VM	IS VN	IS VO	IS VP	IS VQ	IS VR	IS VS	IS VT	IS VU	IS VV	IS VW	IS VX	IS VY	IS VZ	IS WA	IS WB	IS WC	IS WD	IS WE	IS WF	IS WG	IS WH	IS WI	IS WJ	IS WK	IS WL	IS WM	IS WN	IS WO	IS WP	IS WQ	IS WR	IS WS	IS WT	IS WU	IS WV	IS WW	IS WX	IS WY	IS WZ	IS XA	IS XB	IS XC	IS XD	IS XE	IS XF	IS XG	IS XH	IS XI	IS XJ	IS XK	IS XL	IS XM	IS XN	IS XO	IS XP	IS XQ	IS XR	IS XS	IS XT	IS XU	IS XV	IS XW	IS XX	IS XY	IS XZ	IS YA	IS YB	IS YC	IS YD	IS YE	IS YF	IS YG	IS YH	IS YI	IS YJ	IS YK	IS YL	IS YM	IS YN	IS YO	IS YP	IS YQ	IS YR	IS YS	IS YT	IS YU	IS YV	IS YW	IS YX	IS Y Y	IS YZ	IS ZA	IS ZB	IS ZC	IS ZD	IS ZE	IS ZF	IS ZG	IS ZH	IS ZI	IS ZJ	IS ZK	IS ZL	IS ZM	IS ZN	IS ZO	IS ZP	IS ZQ	IS ZR	IS ZS	IS ZT	IS ZU	IS ZV	IS ZW	IS ZX	IS ZY	IS Z Z
-----	---------	--------	------------	-------	------------	-------------	---------------	-------------	------	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-------	-------	------	------	------	------	------	------	------	------	------	------	------	------	-------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-------	------	------	------	------	------	------	------	------	-------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-------	-------	------	------	------	------	------	------	------	------	-------	------	------	------	------	-------	------	------	------	------	------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	--------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	--------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	--------

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

There is no Plugging data for this well

There is no Sample data for this well

WV Geological & Economic Survey | Well: County = 51 Permit = 00838

Well Reassignment Information: Reassigned From

OLD COUNTY	OLD PERMIT	NEW COUNTY	NEW PERMIT
51	00838	51	00838

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX DISTRICT	SUBD_ID	OSDAS_ID	LAY_ID	LOG_ID	UTM	UTM
4705100838	Marshall	00838	Marshall	0000	0000	0000	0000	0000	0000

There is no Bottom Hole Location data for this well

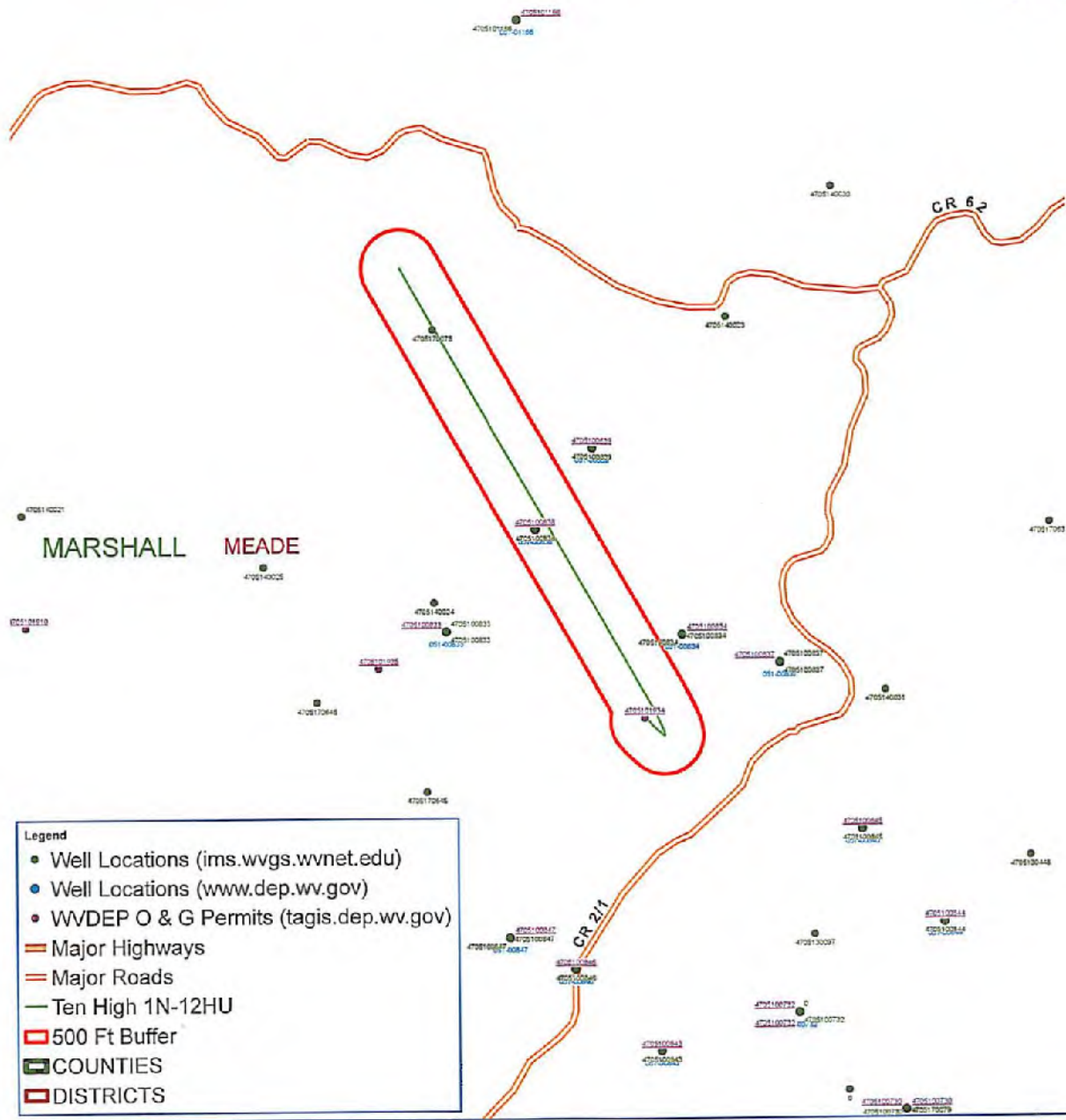
Owner Information:

API	COMP_ID	SUFFID	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VG
4705100838										

Completion Information:

API	COMP_ID	SUFFID	ELEV DATUM	FIELD	DEEPTST_FW	DEEPTST_NPT	INITIAL_CLASS	FINAL_CLASS	TYPE	ISB	ISD	ISG	ISV	ISW	ISX	ISY	ISZ	ISAA	ISAB	ISAC	ISAD	ISAE	ISAF	ISAG	ISAH	ISAI	ISAJ	ISAK	ISAL	ISAM	ISAN	ISAO	ISAP	ISAQ	ISAR	ISAS	ISAT	ISAU	ISAV	ISAW	ISAX	ISAY	ISAZ	ISBA	ISBB	ISBC	ISBD	ISBE	ISBF	ISBG	ISBH	ISBI	ISBJ	ISBK	ISBL	ISBM	ISBN	ISBO	ISBP	ISBQ	ISBR	ISBS	ISBT	ISBU	ISBV	ISBW	ISBX	ISBY	ISBZ	ISCA	ISCB	ISCC	ISCD	ISCE	IS CF	IS CG	IS CH	IS CI	IS CJ	IS CK	IS CL	IS CM	IS CN	IS CO	IS CP	IS CQ	IS CR	IS CS	IS CT	IS CU	IS CV	IS CW	IS CX	IS CY	IS CZ	ISDA	ISDB	ISDC	ISDD	ISDE	ISDF	IS DG	IS DH	IS DI	IS DJ	IS DK	IS DL	IS DM	IS DN	IS DO	IS DP	IS DQ	IS DR	IS DS	IS DT	IS DU	IS DV	IS DW	IS DX	IS DY	IS DZ	IS EA	IS EB	IS EC	IS ED	IS EE	IS EF	IS EG	IS EH	IS EI	IS EJ	IS EK	IS EL	IS EM	IS EN	IS EO	IS EP	IS EQ	IS ER	IS ES	IS ET	IS EU	IS EV	IS EW	IS EX	IS EY	IS EZ	IS FA	IS FB	IS FC	IS FD	IS FE	IS FF	IS FG	IS FH	IS FI	IS FJ	IS FK	IS FL	IS FM	IS FN	IS FO	IS FP	IS FQ	IS FR	IS FS	IS FT	IS FU	IS FV	IS FW	IS FX	IS FY	IS FZ	IS GA	IS GB	IS GC	IS GD	IS GE	IS GF	IS GG	IS GH	IS GI	IS GJ	IS GK	IS GL	IS GM	IS GN	IS GO	IS GP	IS GQ	IS GR	IS GS	IS GT	IS GU	IS GV	IS GW	IS GX	IS GY	IS GZ	IS HA	IS HB	IS HC	IS HD	IS HE	IS HF	IS HG	IS HH	IS HI	IS HJ	IS HK	IS HL	IS HM	IS HN	IS HO	IS HP	IS HQ	IS HR	IS HS	IS HT	IS HU	IS HV	IS HW	IS HX	IS HY	IS HZ	IS IA	IS IB	IS IC	IS ID	IS IE	IS IF	IS IG	IS IH	IS II	IS IJ	IS IK	IS IL	IS IM	IS IN	IS IO	IS IP	IS IQ	IS IR	IS IS	IS IT	IS IU	IS IV	IS IW	IS IX	IS IY	IS IZ	IS JA	IS JB	IS JC	IS JD	IS JE	IS JF	IS JG	IS JH	IS JI	IS JJ	IS JK	IS JL	IS JM	IS JN	IS JO	IS JP	IS JQ	IS JR	IS JS	IS JT	IS JU	IS JV	IS JW	IS JX	IS JY	IS JZ	IS KA	IS KB	IS KC	IS KD	IS KE	IS KF	IS KG	IS KH	IS KI	IS KJ	IS KL	IS KM	IS KN	IS KO	IS KP	IS KQ	IS KR	IS KS	IS KT	IS KU	IS KV	IS KW	IS KX	IS KY	IS KZ	IS LA	IS LB	IS LC	IS LD	IS LE	IS LF	IS LG	IS LH	IS LI	IS LJ	IS LK	IS LM	IS LN	IS LO	IS LP	IS LQ	IS LR	IS LS	IS LT	IS LU	IS LV	IS LW	IS LX	IS LY	IS LZ	IS MA	IS MB	IS MC	IS MD	IS ME	IS MF	IS MG	IS MH	IS MI	IS MJ	IS MK	IS ML	IS MN	IS MO	IS MP	IS MQ	IS MR	IS MS	IS MT	IS MU	IS MV	IS MW	IS MX	IS MY	IS MZ	IS NA	IS NB	IS NC	IS ND	IS NE	IS NF	IS NG	IS NH	IS NI	IS NJ	IS NK	IS NL	IS NM	IS NO	IS NP	IS NQ	IS NR	IS NS	IS NT	IS NU	IS NV	IS NW	IS NX	IS NY	IS NZ	IS OA	IS OB	IS OC	IS OD	IS OE	IS OF	IS OG	IS OH	IS OI	IS OJ	IS OK	IS OL	IS OM	IS ON	IS OO	IS OP	IS OQ	IS OR	IS OS	IS OT	IS OU	IS OV	IS OW	IS OX	IS OY	IS OZ	IS PA	IS PB	IS PC	IS PD	IS PE	IS PF	IS PG	IS PH	IS PI	IS PJ	IS PK	IS PL	IS PM	IS PN	IS PO	IS PP	IS PQ	IS PR	IS PS	IS PT	IS PU	IS PV	IS PW	IS PX	IS PY	IS PZ	IS QA	IS QB	IS QC	IS QD	IS QE	IS QF	IS QG	IS QH	IS QI	IS QJ	IS QK	IS QL	IS QM	IS QN	IS QO	IS QP	IS QQ	IS QR	IS QS	IS QT	IS QU	IS QV	IS QW	IS QX	IS QY	IS QZ	IS RA	IS RB	IS RC	IS RD	IS RE	IS RF	IS RG	IS RH	IS RI	IS RJ	IS RK	IS RL	IS RM	IS RN	IS RO	IS RP	IS RQ	IS RR	IS RS	IS RT	IS RU	IS RV	IS RW	IS RX	IS RY	IS RZ	IS SA	IS SB	IS SC	IS SD	IS SE	IS SF	IS SG	IS SH	IS SI	IS SJ	IS SK	IS SL	IS SM	IS SN	IS SO	IS SP	IS SQ	IS SR	IS SS	IS ST	IS SU	IS SV	IS SW	IS SX	IS SY	IS SZ	IS TA	IS TB	IS TC	IS TD	IS TE	IS TF	IS TG	IS TH	IS TI	IS TJ	IS TK	IS TL	IS TM	IS TN	IS TO	IS TP	IS TQ	IS TR	IS TS	IS TU	IS TV	IS TW	IS TX	IS TY	IS TZ	IS UA	IS UB	IS UC	IS UD	IS UE	IS UF	IS UG	IS UH	IS UI	IS UJ	IS UK	IS UL	IS UM	IS UN	IS UO	IS UP	IS UQ	IS UR	IS US	IS UT	IS U U	IS UV	IS UW	IS UX	IS UY	IS UZ	IS VA	IS VB	IS VC	IS VD	IS VE	IS VF	IS VG	IS VH	IS VI	IS VJ	IS VK	IS VL	IS VM	IS VN	IS VO	IS VP	IS VQ	IS VR	IS VS	IS VT	IS VU	IS VV	IS VW	IS VX	IS VY	IS VZ	IS WA	IS WB	IS WC	IS WD	IS WE	IS WF	IS WG	IS WH	IS WI	IS WJ	IS WK	IS WL	IS WM	IS WN	IS WO	IS WP	IS WQ	IS WR	IS WS	IS WT	IS WU	IS WV	IS WW	IS WX	IS WY	IS W
-----	---------	--------	------------	-------	------------	-------------	---------------	-------------	------	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	------	------	------	------	------	------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	--------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	------

51-01961



- Legend**
- Well Locations (ims.wvgs.wvnet.edu)
 - Well Locations (www.dep.wv.gov)
 - WVDEP O & G Permits (tagis.dep.wv.gov)
 - Major Highways
 - Major Roads
 - Ten High 1N-12HU
 - ▭ 500 Ft Buffer
 - ▭ COUNTIES
 - ▭ DISTRICTS



Ten High 1N-12HU
Meade District
Marshall County, WV



Map Created: July 7, 2017
Map Current As Of: July 7, 2017

Notes:
All boundaries are approximate and are for illustrative purposes only.

RECEIVED
Office of Oil and Gas
JAN 23 2018
WV Department of
Environmental Protection

06/15/2018



Planning Report - Geographic



Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Ten High 1N-12HU (M)
Company:	Tug Hill Operating LLC	TVD Reference:	GL=1310 @ 1310.00usft
Project:	Marshall County, West Virginia	MD Reference:	GL=1310 @ 1310.00usft
Site:	Ten High	North Reference:	Grid
Well:	Ten High 1N-12HU (M)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev3		

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

Site	Ten High				
Site Position:		Northing:	14,456,545.60 usft	Latitude:	39.80680885
From:	Lat/Long	Easting:	1,730,001.41 usft	Longitude:	-80.68101011
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.20 °

Well	Ten High 1N-12HU (M)					
Well Position	+N-S	0.00 usft	Northing:	14,456,516.81 usft	Latitude:	39.80672948
	+E-W	0.00 usft	Easting:	1,730,033.31 usft	Longitude:	-80.68089691
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	1,310.00 usft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	3/11/2017	-8.70	66.99	52,211.48197218

Design	rev3			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)
	0.00	0.00	0.00	331.24

Plan Survey Tool Program	Date 11/26/2017			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,362.14 rev3 (Original Hole)	MWD	
			MWD - Standard	

RECEIVED
Office of Oil and Gas
JAN 23 2018
WV Department of
Environmental Protection

51-01961



Planning Report - Geographic



Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Ten High 1N-12HU (M)
Company:	Tug Hill Operating LLC	TVD Reference:	GL=1310 @ 1310.00usft
Project:	Marshall County, West Virginia	MD Reference:	GL=1310 @ 1310.00usft
Site:	Ten High	North Reference:	Grid
Well:	Ten High 1N-12HU (M)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev3		

Plan Sections											
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00		
1,600.00	3.00	160.00	1,599.86	-7.38	2.69	1.00	1.00	0.00	160.00		
2,300.00	3.00	160.00	2,298.80	-41.80	15.22	0.00	0.00	0.00	0.00		
2,600.00	0.00	160.00	2,598.77	-49.18	17.90	1.00	-1.00	0.00	180.00		
9,501.23	0.00	160.00	9,500.00	-49.18	17.90	0.00	0.00	0.00	160.00		
9,867.13	10.98	125.45	9,863.66	-69.45	46.36	3.00	3.00	0.00	125.45		
10,968.74	10.98	125.45	10,945.12	-191.13	217.23	0.00	0.00	0.00	0.00		
11,978.43	91.00	329.98	11,615.00	333.54	-22.52	10.00	7.93	-15.40	-154.99	Ten High 1N-12HU LF	
18,382.14	91.00	329.98	11,504.00	5,860.04	-3,215.82	0.00	0.00	0.00	0.00	Ten High 1N-12HU BI	

RECEIVED
Office of Oil and Gas
JAN 23 2018
WV Department of
Environmental Protection

51-01961



Planning Report - Geographic



Database: DB_Jul2216dt_v14
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: Ten High
 Well: Ten High 1N-12HU (M)
 Wellbore: Original Hole
 Design: rev3

Local Co-ordinate Reference: Well Ten High 1N-12HU (M)
 TVD Reference: GL=1310 @ 1310.00usft
 MD Reference: GL=1310 @ 1310.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

RECEIVED
 Office of Oil and Gas
 JAN 23 2018
 WV Department of
 Environmental Protection

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	14,456,516.81	1,730,033.31	39.80672948	-80.68089691	
100.00	0.00	0.00	100.00	0.00	0.00	14,456,516.81	1,730,033.31	39.80672948	-80.68089691	
200.00	0.00	0.00	200.00	0.00	0.00	14,456,516.81	1,730,033.31	39.80672948	-80.68089691	
300.00	0.00	0.00	300.00	0.00	0.00	14,456,516.81	1,730,033.31	39.80672948	-80.68089691	
400.00	0.00	0.00	400.00	0.00	0.00	14,456,516.81	1,730,033.31	39.80672948	-80.68089691	
500.00	0.00	0.00	500.00	0.00	0.00	14,456,516.81	1,730,033.31	39.80672948	-80.68089691	
600.00	0.00	0.00	600.00	0.00	0.00	14,456,516.81	1,730,033.31	39.80672948	-80.68089691	
700.00	0.00	0.00	700.00	0.00	0.00	14,456,516.81	1,730,033.31	39.80672948	-80.68089691	
800.00	0.00	0.00	800.00	0.00	0.00	14,456,516.81	1,730,033.31	39.80672948	-80.68089691	
900.00	0.00	0.00	900.00	0.00	0.00	14,456,516.81	1,730,033.31	39.80672948	-80.68089691	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,456,516.81	1,730,033.31	39.80672948	-80.68089691	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,456,516.81	1,730,033.31	39.80672948	-80.68089691	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,456,516.81	1,730,033.31	39.80672948	-80.68089691	
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,456,516.81	1,730,033.31	39.80672948	-80.68089691	
KOP Begin 1°/100' build										
1,400.00	1.00	160.00	1,399.99	-0.82	0.30	14,456,515.99	1,730,033.61	39.80672723	-80.68089586	
1,500.00	2.00	160.00	1,499.96	-3.28	1.19	14,456,513.53	1,730,034.50	39.80672046	-80.68089270	
1,600.00	3.00	160.00	1,599.85	-7.38	2.89	14,456,509.44	1,730,035.99	39.80570919	-80.68088744	
Begin 3.00° tangent										
1,700.00	3.00	160.00	1,699.73	-12.30	4.48	14,456,504.52	1,730,037.78	39.80669567	-80.68088113	
1,800.00	3.00	160.00	1,799.59	-17.21	6.27	14,456,499.60	1,730,039.57	39.80666215	-80.68087482	
1,900.00	3.00	160.00	1,899.45	-22.13	8.06	14,456,494.68	1,730,041.36	39.80662862	-80.68086851	
2,000.00	3.00	160.00	1,999.31	-27.05	9.85	14,456,489.76	1,730,043.15	39.80659510	-80.68086220	
2,100.00	3.00	160.00	2,099.18	-31.97	11.64	14,456,484.85	1,730,044.94	39.80656157	-80.68085589	
2,200.00	3.00	160.00	2,199.04	-36.88	13.43	14,456,479.93	1,730,046.73	39.80652805	-80.68084957	
2,300.00	3.00	160.00	2,298.90	-41.80	15.22	14,456,475.01	1,730,048.52	39.80649453	-80.68084326	
Begin 1°/100' drop										
2,400.00	2.00	160.00	2,398.81	-45.90	16.71	14,456,470.91	1,730,050.02	39.80646101	-80.68083726	
2,500.00	1.00	160.00	2,498.77	-48.36	17.60	14,456,468.45	1,730,050.91	39.80642749	-80.68083095	
2,600.00	0.00	160.00	2,598.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80639397	-80.68082464	
Begin vertical hold section										
2,700.00	0.00	0.00	2,698.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80636040	-80.68081833	
2,800.00	0.00	0.00	2,798.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80632682	-80.68081202	
2,900.00	0.00	0.00	2,898.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80629324	-80.68080571	
3,000.00	0.00	0.00	2,998.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80625966	-80.68079940	
3,100.00	0.00	0.00	3,098.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80622608	-80.68079309	
3,200.00	0.00	0.00	3,198.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80619250	-80.68078678	
3,300.00	0.00	0.00	3,298.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80615892	-80.68078047	
3,400.00	0.00	0.00	3,398.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80612534	-80.68077416	
3,500.00	0.00	0.00	3,498.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80609176	-80.68076785	
3,600.00	0.00	0.00	3,598.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80605818	-80.68076154	
3,700.00	0.00	0.00	3,698.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80602460	-80.68075523	
3,800.00	0.00	0.00	3,798.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80599102	-80.68074892	
3,900.00	0.00	0.00	3,898.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80595744	-80.68074261	
4,000.00	0.00	0.00	3,998.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80592386	-80.68073630	
4,100.00	0.00	0.00	4,098.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80589028	-80.68073000	
4,200.00	0.00	0.00	4,198.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80585670	-80.68072369	
4,300.00	0.00	0.00	4,298.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80582312	-80.68071738	
4,400.00	0.00	0.00	4,398.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80578954	-80.68071107	
4,500.00	0.00	0.00	4,498.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80575596	-80.68070476	
4,600.00	0.00	0.00	4,598.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80572238	-80.68069845	
4,700.00	0.00	0.00	4,698.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80568880	-80.68069214	
4,800.00	0.00	0.00	4,798.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80565522	-80.68068583	
4,900.00	0.00	0.00	4,898.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80562164	-80.68067952	

51-01961



Planning Report - Geographic



Database: DB_Jul2216dt_v14
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: Ten High
 Well: Ten High 1N-12HU (M)
 Wellbore: Original Hole
 Design: rev3

Local Co-ordinate Reference: Well Ten High 1N-12HU (M)
 TVD Reference: GL=1310 @ 1310.00usft
 MD Reference: GL=1310 @ 1310.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

RECEIVED
 Office of Oil and Gas

JAN 23 2018

WV Department of
 Environmental Protection

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,000.00	0.00	0.00	4,998.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
5,100.00	0.00	0.00	5,098.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
5,200.00	0.00	0.00	5,198.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
5,300.00	0.00	0.00	5,298.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
5,400.00	0.00	0.00	5,398.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
5,500.00	0.00	0.00	5,498.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
5,600.00	0.00	0.00	5,598.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
5,700.00	0.00	0.00	5,698.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
5,800.00	0.00	0.00	5,798.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
5,900.00	0.00	0.00	5,898.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
6,000.00	0.00	0.00	5,998.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
6,100.00	0.00	0.00	6,098.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
6,200.00	0.00	0.00	6,198.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
6,300.00	0.00	0.00	6,298.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
6,400.00	0.00	0.00	6,398.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
6,500.00	0.00	0.00	6,498.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
6,600.00	0.00	0.00	6,598.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
6,700.00	0.00	0.00	6,698.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
6,800.00	0.00	0.00	6,798.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
6,900.00	0.00	0.00	6,898.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
7,000.00	0.00	0.00	6,998.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
7,100.00	0.00	0.00	7,098.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
7,200.00	0.00	0.00	7,198.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
7,300.00	0.00	0.00	7,298.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
7,400.00	0.00	0.00	7,398.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
7,500.00	0.00	0.00	7,498.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
7,600.00	0.00	0.00	7,598.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
7,700.00	0.00	0.00	7,698.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
7,800.00	0.00	0.00	7,798.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
7,900.00	0.00	0.00	7,898.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
8,000.00	0.00	0.00	7,998.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
8,100.00	0.00	0.00	8,098.77	-49.18	17.80	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
8,200.00	0.00	0.00	8,198.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
8,300.00	0.00	0.00	8,298.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
8,400.00	0.00	0.00	8,398.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
8,500.00	0.00	0.00	8,498.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
8,600.00	0.00	0.00	8,598.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
8,700.00	0.00	0.00	8,698.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
8,800.00	0.00	0.00	8,798.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
8,900.00	0.00	0.00	8,898.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
9,000.00	0.00	0.00	8,998.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
9,100.00	0.00	0.00	9,098.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
9,200.00	0.00	0.00	9,198.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
9,300.00	0.00	0.00	9,298.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
9,400.00	0.00	0.00	9,398.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
9,500.00	0.00	0.00	9,498.77	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
9,501.23	0.00	0.00	9,500.00	-49.18	17.90	14,456,467.63	1,730,051.21	39.80659424	-80.68083379
Begin 3°/100' build									
9,600.00	2.98	125.45	9,598.72	-50.66	19.98	14,456,466.15	1,730,053.29	39.80659015	-80.68082641
9,700.00	5.96	125.45	9,698.41	-55.18	26.32	14,456,461.64	1,730,059.63	39.80657769	-80.68080390
9,800.00	8.96	125.45	9,797.55	-62.71	36.90	14,456,454.10	1,730,070.21	39.80655690	-80.68076632
9,867.13	10.98	125.45	9,863.66	-69.45	46.36	14,456,447.36	1,730,079.67	39.80653830	-80.68073270
Begin 10.98° tangent									
9,900.00	10.98	125.45	9,895.93	-73.08	51.46	14,456,443.73	1,730,084.77	39.80652828	-80.68071459



Planning Report - Geographic



Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Ten High 1N-12HU (M)
Company:	Tug Hill Operating LLC	TVD Reference:	GL=1310 @ 1310.00usft
Project:	Marshall County, West Virginia	MD Reference:	GL=1310 @ 1310.00usft
Site:	Ten High	North Reference:	Grid
Well:	Ten High 1N-12HU (M)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev3		

RECEIVED
Office of Oil and Gas

JAN 23 2018

WV Department of
Environmental Protection

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,000.00	10.98	125.45	9,994.10	-84.13	66.87	14,456,432.69	1,730,100.28	39.80649779	-80.68065951
10,100.00	10.96	125.45	10,092.27	-95.17	82.48	14,456,421.64	1,730,115.79	39.80646731	-80.68060442
10,200.00	10.98	125.45	10,190.44	-106.22	97.99	14,456,410.60	1,730,131.30	39.80643682	-80.68054933
10,300.00	10.96	125.45	10,288.61	-117.26	113.50	14,456,399.55	1,730,146.81	39.80640634	-80.68049424
10,400.00	10.96	125.45	10,386.78	-128.31	129.02	14,456,388.51	1,730,162.32	39.80637585	-80.68043916
10,500.00	10.98	125.45	10,484.95	-139.35	144.53	14,456,377.46	1,730,177.83	39.80634537	-80.68038407
10,600.00	10.96	125.45	10,583.12	-150.40	160.04	14,456,366.42	1,730,193.35	39.80631488	-80.68032898
10,700.00	10.98	125.45	10,681.29	-161.44	175.55	14,456,355.37	1,730,208.86	39.80628440	-80.68027389
10,800.00	10.96	125.45	10,779.46	-172.49	191.06	14,456,344.33	1,730,224.37	39.80625391	-80.68021881
10,900.00	10.98	125.45	10,877.64	-183.53	206.57	14,456,333.28	1,730,239.88	39.80622343	-80.68016372
10,968.74	10.98	125.45	10,945.12	-191.13	217.23	14,456,325.69	1,730,250.54	39.80620247	-80.68012585
Begin 10°/100' build/turn									
11,000.00	8.25	116.21	10,975.94	-193.84	221.67	14,456,322.97	1,730,254.98	39.80619497	-80.68011009
11,100.00	5.59	25.65	11,075.44	-192.62	230.23	14,456,324.20	1,730,263.54	39.80619825	-80.68007957
11,200.00	13.93	349.06	11,173.96	-176.37	230.06	14,456,340.45	1,730,283.37	39.80624288	-80.68007999
11,300.00	23.59	340.72	11,268.57	-145.59	221.15	14,456,371.23	1,730,254.45	39.80632750	-80.68011133
11,400.00	33.44	337.08	11,356.34	-101.21	203.77	14,456,415.61	1,730,237.08	39.80644954	-80.68017265
11,500.00	43.35	334.97	11,434.62	-44.59	178.45	14,456,472.23	1,730,211.76	39.80660529	-80.68026207
11,600.00	53.30	333.51	11,501.03	22.56	145.96	14,456,539.38	1,730,179.27	39.80679002	-80.68037689
11,700.00	63.25	332.39	11,553.55	98.20	107.30	14,456,615.02	1,730,140.61	39.80699811	-80.68051381
11,800.00	73.21	331.46	11,590.59	180.03	63.62	14,456,696.84	1,730,096.93	39.80722325	-80.68066608
11,900.00	83.18	330.61	11,611.02	265.55	16.27	14,456,782.37	1,730,049.58	39.80745859	-80.68083561
11,978.43	91.00	329.98	11,615.00	333.54	-22.52	14,456,850.35	1,730,010.79	39.80764567	-80.68097285
Begin 91.00° lateral section									
12,000.00	91.00	329.98	11,614.83	352.21	-33.31	14,456,869.02	1,730,000.00	39.80789706	-80.68101103
12,100.00	91.00	329.98	11,612.89	438.78	-83.33	14,456,955.59	1,729,949.98	39.80793529	-80.68118805
12,200.00	91.00	329.98	11,611.15	525.35	-133.35	14,457,042.17	1,729,899.96	39.80817353	-80.68136507
12,300.00	91.00	329.98	11,609.41	611.92	-183.37	14,457,128.74	1,729,849.94	39.80841177	-80.68154210
12,400.00	91.00	329.98	11,607.67	698.50	-233.40	14,457,215.31	1,729,799.91	39.80865000	-80.68171912
12,500.00	91.00	329.98	11,605.93	785.07	-283.42	14,457,301.88	1,729,749.89	39.80888824	-80.68189615
12,600.00	91.00	329.98	11,604.19	871.64	-333.44	14,457,388.45	1,729,699.87	39.80912648	-80.68207317
12,700.00	91.00	329.98	11,602.45	958.21	-383.46	14,457,475.03	1,729,649.84	39.80936471	-80.68225020
12,800.00	91.00	329.98	11,600.71	1,044.78	-433.49	14,457,561.60	1,729,599.82	39.80960295	-80.68242723
12,900.00	91.00	329.98	11,598.88	1,131.36	-483.51	14,457,648.17	1,729,549.80	39.80984118	-80.68260426
13,000.00	91.00	329.98	11,597.24	1,217.93	-533.53	14,457,734.74	1,729,499.78	39.81007942	-80.68278129
13,100.00	91.00	329.98	11,595.50	1,304.50	-583.56	14,457,821.31	1,729,449.75	39.81031765	-80.68295832
13,200.00	91.00	329.98	11,593.76	1,391.07	-633.58	14,457,907.89	1,729,399.73	39.81055588	-80.68313536
13,300.00	91.00	329.98	11,592.02	1,477.64	-683.60	14,457,994.46	1,729,349.71	39.81079412	-80.68331239
13,400.00	91.00	329.98	11,590.28	1,564.22	-733.62	14,458,081.03	1,729,299.69	39.81103235	-80.68348943
13,500.00	91.00	329.98	11,588.54	1,650.79	-783.65	14,458,167.60	1,729,249.66	39.81127058	-80.68366647
13,600.00	91.00	329.98	11,586.80	1,737.36	-833.67	14,458,254.17	1,729,199.64	39.81150882	-80.68384351
13,700.00	91.00	329.98	11,585.07	1,823.93	-883.69	14,458,340.75	1,729,149.62	39.81174705	-80.68402055
13,800.00	91.00	329.98	11,583.33	1,910.50	-933.71	14,458,427.32	1,729,099.59	39.81198528	-80.68419759
13,900.00	91.00	329.98	11,581.59	1,997.08	-983.74	14,458,513.89	1,729,049.57	39.81222351	-80.68437463
14,000.00	91.00	329.98	11,579.85	2,083.65	-1,033.76	14,458,600.46	1,728,999.55	39.81246175	-80.68455167
14,100.00	91.00	329.98	11,578.11	2,170.22	-1,083.78	14,458,687.03	1,728,949.53	39.81269998	-80.68472872
14,200.00	91.00	329.98	11,576.37	2,256.79	-1,133.81	14,458,773.61	1,728,899.50	39.81293821	-80.68490576
14,300.00	91.00	329.98	11,574.63	2,343.36	-1,183.83	14,458,860.18	1,728,849.48	39.81317644	-80.68508281
14,400.00	91.00	329.98	11,572.89	2,429.94	-1,233.85	14,458,946.75	1,728,799.46	39.81341467	-80.68525986
14,500.00	91.00	329.98	11,571.16	2,516.51	-1,283.87	14,459,033.32	1,728,749.44	39.81365290	-80.68543691
14,600.00	91.00	329.98	11,569.42	2,603.08	-1,333.90	14,459,119.89	1,728,699.41	39.81389113	-80.68561396
14,700.00	91.00	329.98	11,567.68	2,689.65	-1,383.92	14,459,206.47	1,728,649.39	39.81412936	-80.68579101
14,800.00	91.00	329.98	11,565.94	2,776.22	-1,433.94	14,459,293.04	1,728,599.37	39.81436759	-80.68596807
14,900.00	91.00	329.98	11,564.20	2,862.80	-1,483.96	14,459,379.61	1,728,549.34	39.81460582	-80.68614512



Planning Report - Geographic



Database:	DB_Jul2218dt_v14	Local Co-ordinate Reference:	Well Ten High 1N-12HU (M)
Company:	Tug Hill Operating LLC	TVD Reference:	GL=1310 @ 1310.00usft
Project:	Marshall County, West Virginia	MD Reference:	GL=1310 @ 1310.00usft
Site:	Ten High	North Reference:	Grid
Well:	Ten High 1N-12HU (M)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev3		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
15,000.00	91.00	329.98	11,562.46	2,949.37	-1,533.99	14,459,466.18	1,728,499.32	39.81484405	-80.66632218	
15,100.00	91.00	329.98	11,560.72	3,035.94	-1,584.01	14,459,552.75	1,728,449.30	39.81508228	-80.66649923	
15,200.00	91.00	329.98	11,558.98	3,122.51	-1,634.03	14,459,639.33	1,728,399.28	39.81532051	-80.66667629	
15,300.00	91.00	329.98	11,557.24	3,209.08	-1,684.06	14,459,725.90	1,728,349.25	39.81555974	-80.66685335	
15,400.00	91.00	329.98	11,555.51	3,295.65	-1,734.08	14,459,812.47	1,728,299.23	39.81579696	-80.66703041	
15,500.00	91.00	329.98	11,553.77	3,382.23	-1,784.10	14,459,899.04	1,728,249.21	39.81603519	-80.66720748	
15,600.00	91.00	329.98	11,552.03	3,468.80	-1,834.12	14,459,985.61	1,728,199.19	39.81627342	-80.66738454	
15,700.00	91.00	329.98	11,550.29	3,555.37	-1,884.15	14,460,072.19	1,728,149.16	39.81651165	-80.66756160	
15,800.00	91.00	329.98	11,548.55	3,641.94	-1,934.17	14,460,158.76	1,728,099.14	39.81674967	-80.66773867	
15,900.00	91.00	329.98	11,546.81	3,728.51	-1,984.19	14,460,245.33	1,728,049.12	39.81698810	-80.66791574	
16,000.00	91.00	329.98	11,545.07	3,815.09	-2,034.21	14,460,331.90	1,727,999.09	39.81722633	-80.66809280	
16,100.00	91.00	329.98	11,543.33	3,901.66	-2,084.24	14,460,418.47	1,727,949.07	39.81746455	-80.66826997	
16,200.00	91.00	329.98	11,541.60	3,988.23	-2,134.26	14,460,505.05	1,727,899.05	39.81770278	-80.66844694	
16,300.00	91.00	329.98	11,539.86	4,074.80	-2,184.28	14,460,591.62	1,727,849.03	39.81794100	-80.66862401	
16,400.00	91.00	329.98	11,538.12	4,161.37	-2,234.31	14,460,678.19	1,727,799.00	39.81817923	-80.66880109	
16,500.00	91.00	329.98	11,536.38	4,247.95	-2,284.33	14,460,764.76	1,727,748.98	39.81841745	-80.66897816	
16,600.00	91.00	329.98	11,534.64	4,334.52	-2,334.35	14,460,851.33	1,727,698.96	39.81865568	-80.66915524	
16,700.00	91.00	329.98	11,532.90	4,421.09	-2,384.37	14,460,937.90	1,727,648.94	39.81889390	-80.66933231	
16,800.00	91.00	329.98	11,531.16	4,507.66	-2,434.40	14,461,024.48	1,727,598.91	39.81913213	-80.66950939	
16,900.00	91.00	329.98	11,529.42	4,594.23	-2,484.42	14,461,111.05	1,727,548.89	39.81937035	-80.66968647	
17,000.00	91.00	329.98	11,527.68	4,680.81	-2,534.44	14,461,197.62	1,727,498.87	39.81960857	-80.66986355	
17,100.00	91.00	329.98	11,525.95	4,767.38	-2,584.46	14,461,284.19	1,727,448.84	39.81984680	-80.69004063	
17,200.00	91.00	329.98	11,524.21	4,853.95	-2,634.49	14,461,370.76	1,727,398.82	39.82008502	-80.69021771	
17,300.00	91.00	329.98	11,522.47	4,940.52	-2,684.51	14,461,457.34	1,727,348.80	39.82032324	-80.69039480	
17,400.00	91.00	329.98	11,520.73	5,027.09	-2,734.53	14,461,543.91	1,727,298.78	39.82056147	-80.69057188	
17,500.00	91.00	329.98	11,518.99	5,113.67	-2,784.55	14,461,630.48	1,727,248.75	39.82079969	-80.69074897	
17,600.00	91.00	329.98	11,517.25	5,200.24	-2,834.58	14,461,717.05	1,727,198.73	39.82103791	-80.69092606	
17,700.00	91.00	329.98	11,515.51	5,286.81	-2,884.60	14,461,803.62	1,727,148.71	39.82127613	-80.69110315	
17,800.00	91.00	329.98	11,513.77	5,373.38	-2,934.62	14,461,890.20	1,727,098.69	39.82151435	-80.69128024	
17,900.00	91.00	329.98	11,512.04	5,459.95	-2,984.65	14,461,976.77	1,727,048.66	39.82175257	-80.69145733	
18,000.00	91.00	329.98	11,510.30	5,546.53	-3,034.67	14,462,063.34	1,726,998.64	39.82199079	-80.69163442	
18,100.00	91.00	329.98	11,508.56	5,633.10	-3,084.69	14,462,149.91	1,726,948.62	39.82222902	-80.69181151	
18,200.00	91.00	329.98	11,506.82	5,719.67	-3,134.71	14,462,236.48	1,726,898.59	39.82246724	-80.69198861	
18,300.00	91.00	329.98	11,505.08	5,806.24	-3,184.74	14,462,323.06	1,726,848.57	39.82270546	-80.69216570	
18,362.14	91.00	329.98	11,504.00	5,860.04	-3,215.82	14,462,376.85	1,726,817.49	39.82285348	-80.69227575	

PBHL/TD 18362.14 MD/11504.00 TVD

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Ten High 1N-12HU BHL - hit/miss target - Shape - Point	0.00	0.00	11,504.00	5,860.04	-3,215.82	14,462,376.85	1,726,817.49	39.82285348	-80.69227575	
Ten High 1N-12HU LP r - plan hits target center - Point	0.00	0.00	11,615.00	333.54	-22.52	14,456,850.35	1,730,010.79	39.80764567	-80.68997265	

Office of Oil and Gas

JAN 23 2018

WV Department of Environmental Protection



Planning Report - Geographic



Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Ten High 1N-12HU (M)
Company:	Tug Hill Operating LLC	TVD Reference:	GL=1310 @ 1310.00usft
Project:	Marshall County, West Virginia	MD Reference:	GL=1310 @ 1310.00usft
Site:	Ten High	North Reference:	Grid
Well:	Ten High 1N-12HU (M)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev3		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
2,981.23	2,980.00	13 3/8" Casing @ 2980 TVD	13-3/8	17-1/2	
10,540.79	10,525.00	9 5/8" Casing @ 10525 TVD	9-5/8	12-1/4	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
1,300.00	1,300.00	0.00	0.00	KOP Begin 1°/100' build	
1,600.00	1,599.88	-7.38	2.69	Begin 3.00° tangent	
2,300.00	2,298.90	-41.80	15.22	Begin 1°/100' drop	
2,600.00	2,598.77	-49.18	17.90	Begin vertical hold section	
9,501.23	9,500.00	-49.18	17.90	Begin 3°/100' build	
9,867.13	9,863.66	-69.45	46.38	Begin 10.98° tangent	
10,968.74	10,945.12	-191.13	217.23	Begin 10°/100' build/turn	
11,978.43	11,615.00	333.54	-22.52	Begin 91.00° lateral section	
18,362.14	11,504.00	5,860.04	-3,215.82	PBHL/TD 18362.14 MD/11504.00 TVD	

RECEIVED
Office of Oil and Gas

JAN 23 2018

WV Department of
Environmental Protection

WW-9
(4/16)

API Number 47 - 051 - 01961
Operator's Well No. Ten High 1N-12HJ

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 484510851

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 methods

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 (DWV-1021 / WVC120185) and Westmoreland Sanitary Landfill, LLC (SAN1405 / PA DEP ECR1386426)

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.

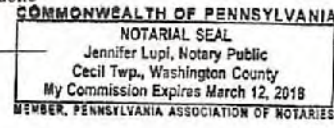
I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations 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, 2017

Jennifer Lupi Notary Public
My commission expires March 12, 2018



RECEIVED
Office of Oil and Gas

JAN 23 2018

WV Department of
Environmental Protection

06/15/2018

Tug Hill Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 16.20 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 Uehohsen*

Comments: _____

Title: Oil & Gas Inspection Date: 7/27/17

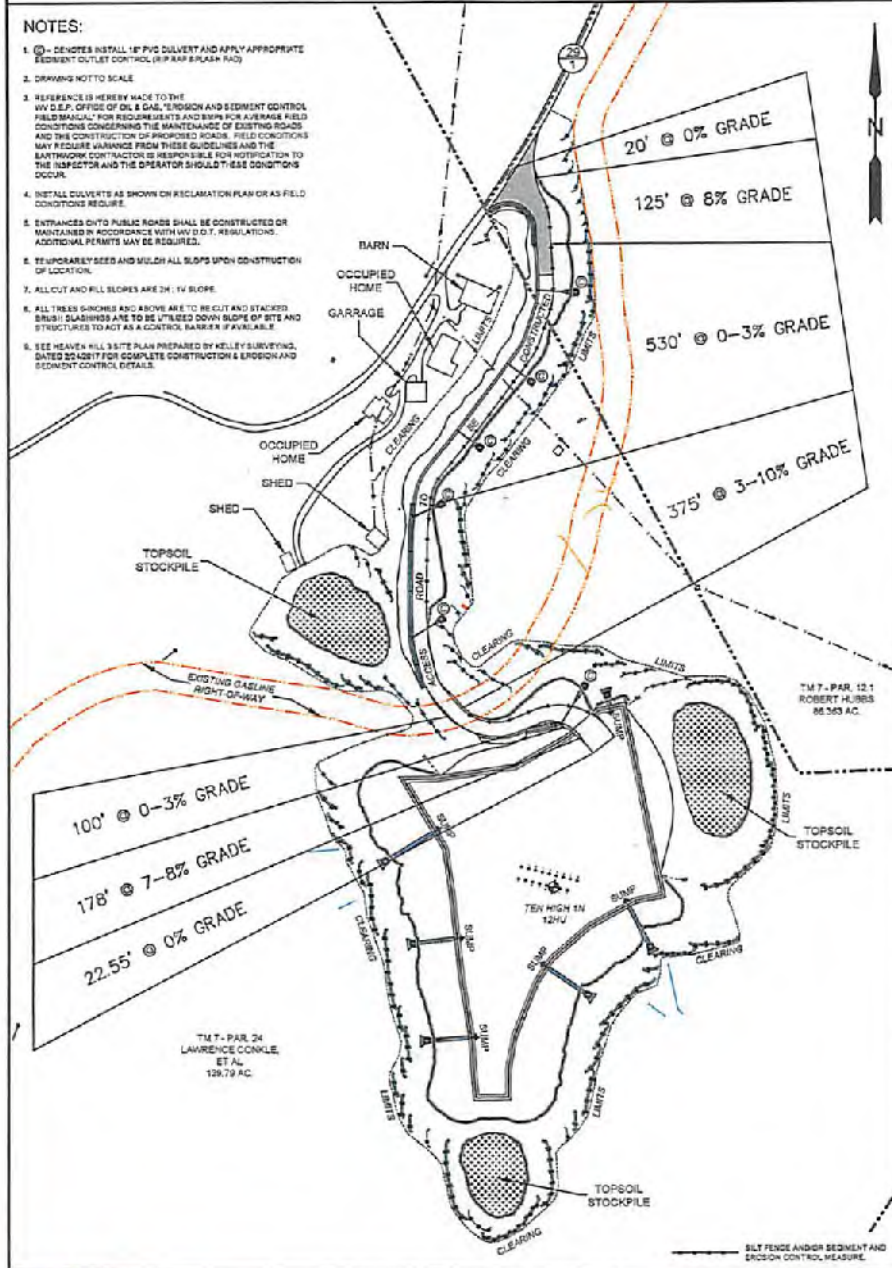
Field Reviewed? Yes No

RECEIVED
Office of Oil and Gas
JAN 23 2018
WV Department of
Environmental Protection

PROPOSED
TEN HIGH 1N - 12HU

NOTES:

1. (S) DENOTES INSTALL 18" PVC DULVERT AND APPLY APPROPRIATE SEDIMENT OUTLET CONTROL (R/R RAP OR ALAKA 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 BEST PRACTICES FIELD CONDITIONS CONCERNING THE MAINTENANCE OF EXISTING ROADS AND THE CONSTRUCTION OF PROPOSED ROADS. FIELD CONDITIONS MAY REQUIRE VARIANCE FROM THESE GUIDELINES AND THE BATHROOM CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION TO THE INSPECTOR AND THE OPERATOR SHOULD THESE CONDITIONS OCCUR.
4. INSTALL DULVERTS AS SHOWN ON RECLAMATION PLAN OR AS FIELD CONDITIONS REQUIRE.
5. ENTRANCES INTO 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 COMPLETION 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 W/LEED DOWN SLOPE OF SITE AND STRUCTURES TO ACT AS A CONTROL BARRIER IF AVAILABLE.
9. SEE HAVEN HILL SITE PLAN PREPARED BY KELLEY SURVEYING, DATED 06/20/17 FOR COMPLETE CONSTRUCTION & EROSION AND SEDIMENT CONTROL DETAILS.



SLS
Land & Energy Development
Solutions from the ground up.
P.O. Box 134, 853 Walker Drive, Glen Dale, WV 26031, 803.642.6634
www.slsenv.com

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR:	
COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
MARSHALL	MEADE	383 SOUTHFORTE BLVD	
		SUITE 200	
		CANONSBURG, PA 15317	
DRAWN BY	JOB NO.	DATE	SCALE
K.G.M.	8555	07-21-17	NONE

TUG HILL
OPERATING

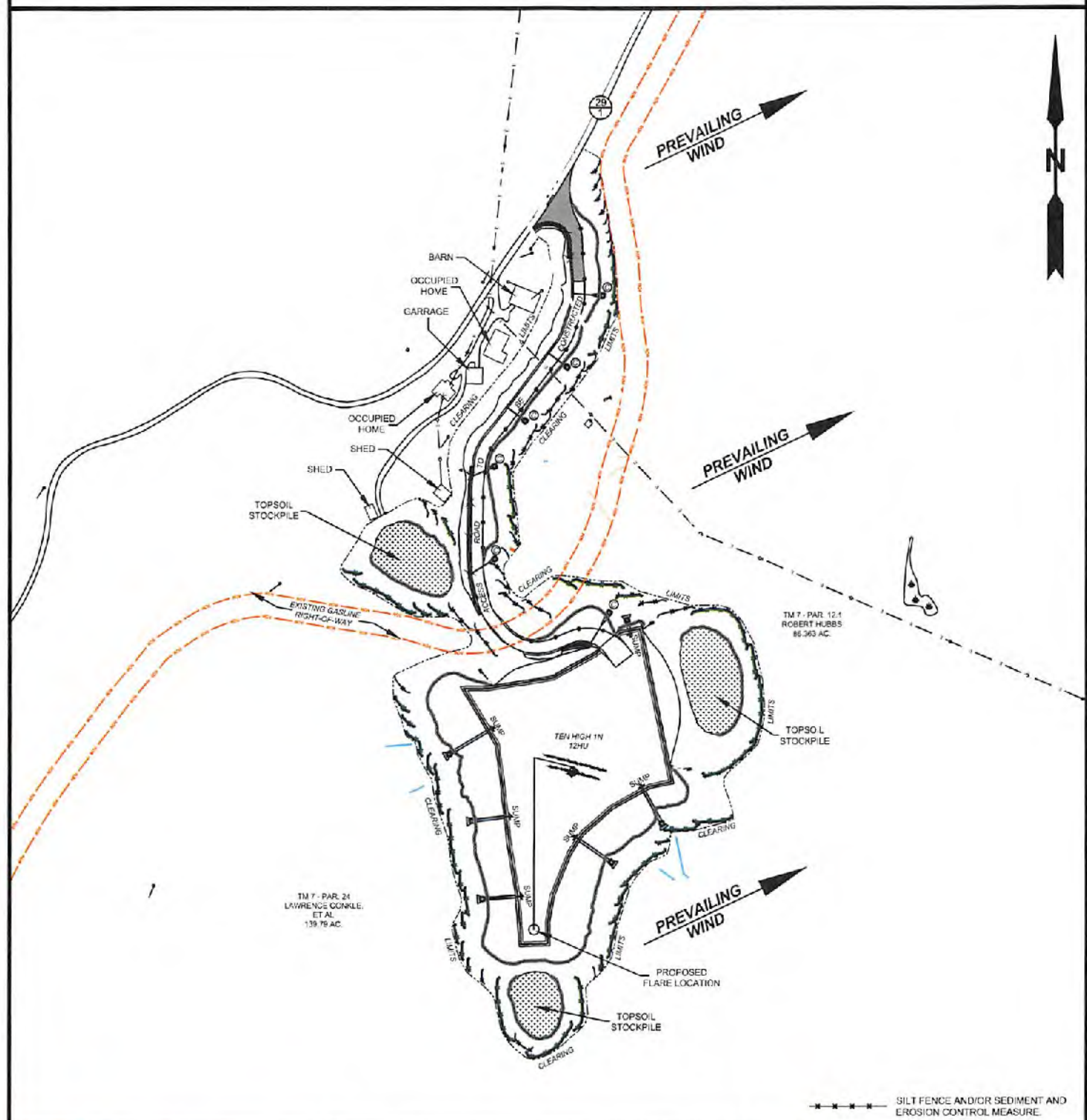
RECEIVED
Office of Oil and Gas
JAN 23 2018
WV Department of
Environmental Protection

06/15/2018

51-01961

PROPOSED TEN HIGH 1N - 12HU

EXHIBIT 1



SLS
Land & Energy Development
Solutions from the ground up.
P.O. Box 150 #12 Vanhook Drive | Glenville, WV 26351 | (304) 462-5634
www.slsurveys.com

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR: TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317	
COUNTY	DISTRICT		
MARSHALL	MEADE		
DRAWN BY	JOB NO.	DATE	SCALE
K.G.M.	8655	01-08-18	NONE

TUG HILL
OPERATING

06/15/2018



Well Site Safety Plan

Tug Hill Operating, LLC

J. 1/12/18

Well Name: Ten High 1N-12HU

Pad Location: Ten High

Marshall County, West Virginia

UTM (meters), NAD83, Zone 17:

NORTHING -4,406,355.14

EASTING -527,315.21

January 2018

7,193' B.H.

3,998" T.H.

LATITUDE 39°50'00"

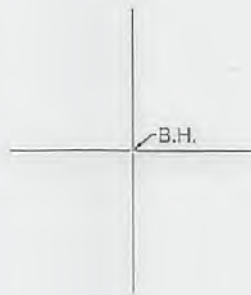
LONGITUDE 80°40'00"

3,818' B.H.

**TEN HIGH 1N LEASE
WELL 12HU
TUG HILL OPERATING**

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

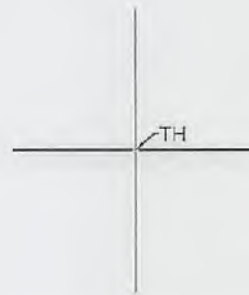
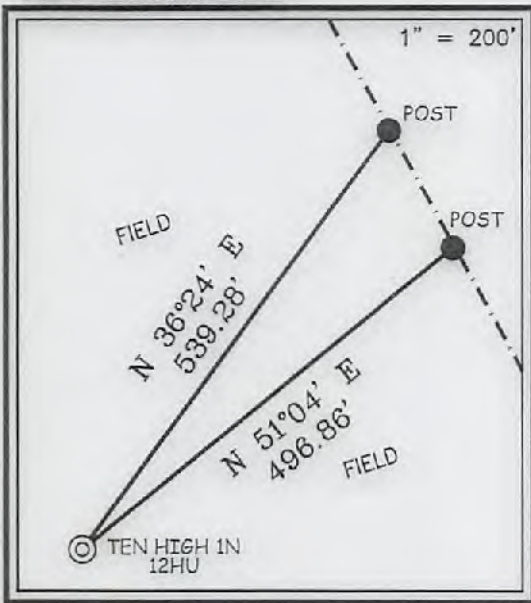
NAD'83 S.P.C.(FT)	N. 478,132.41	E. 1,636,753.07
NAD'83 GEO.	LAT-(N) 39.806729	LONG-(W) 80.690897
NAD'83 UTM (M)	N. 4,406,355.14	E. 527,315.21
LANDING POINT		
NAD'83 S.P.C.(FT)	N. 478,466.4	E. 1,636,736.1
NAD'83 GEO.	LAT-(N) 39.807646	LONG-(W) 80.690973
NAD'83 UTM (M)	N. 4,406,456.8	E. 527,308.3
BOTTOM HOLE		
NAD'83 S.P.C.(FT)	N. 484,047.4	E. 1,633,934.6
NAD'83 GEO.	LAT-(N) 39.822853	LONG-(W) 80.692276
NAD'83 UTM (M)	N. 4,408,141.3	E. 526,335.0



NOTES ON SURVEY

- 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.
- WELL SPOT CIRCLE & TOPO MARK SCALE IS 1"=200'

REFERENCES



TAG	SURFACE OWNER	PARCEL	ACRES
A	LAWRENCE & SHIRLEY CONKLE ESTS	9-7-24	139.79
B	ROBERT G. HUBES & SCARLETTE E. OTTE	9-7-12.1	86.363
C	RONALD MOORE, ET UX	9-7-12	16.587
D	LAWRENCE & SHIRLEY CONKLE ESTS	9-7-22	12.00
E	RICKY L. WHITLATCH	9-7-30	72.82
F	ANDREW COREY WHITLATCH	9-7-30.1	4.55
G	RONALD MOORE, ET UX	9-7-13	51.49
H	RICKY L. WHITLATCH	9-7-15	7.54
I	ARNIE GOODNIGHT, ET UX	9-7-14	39.55
J	TERESA L. HORNER, ET AL	9-7-6	103.30
K	ARNIE GOODNIGHT, ET UX	9-7-5	62.18
L	ELMER ASTON	9-5-4	108.225
M	MICHAEL JOSEPH SNYDER	9-5-4	64.00
N	KELLY WILSON, ET AL	9-5-18	5.807
O	CARLA SUE CROW	9-5-17	6.341
P	MICHAEL JOSEPH SNYDER	9-5-5	35.02



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 JULY 21, 20 17
 REVISED JANUARY 10 & FEBRUARY 8, 20 18
 OPERATORS WELL NO. TEN HIGH 1N-12HU
 API WELL NO. 47-051-01961 **H6A**
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8655P12HUR2.dwg
 HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 1000'

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 = 1,320.70' ELEVATION PROPOSED = 1,310.06' WATERSHED MIDDLE BOWMAN RUN OF FISH CREEK (HUC-10)
 DISTRICT MEADE COUNTY MARSHALL QUADRANGLE GLEN EASTON 7.5'

SURFACE OWNER LAWRENCE & SHIRLEY CONKLE ESTS ACREAGE 139.79±
 ROYALTY OWNER LARRY LEE CONKLE, ET AL - SEE PGS. 3, 4, 5, 6 & 7 ACREAGE 139.79±

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

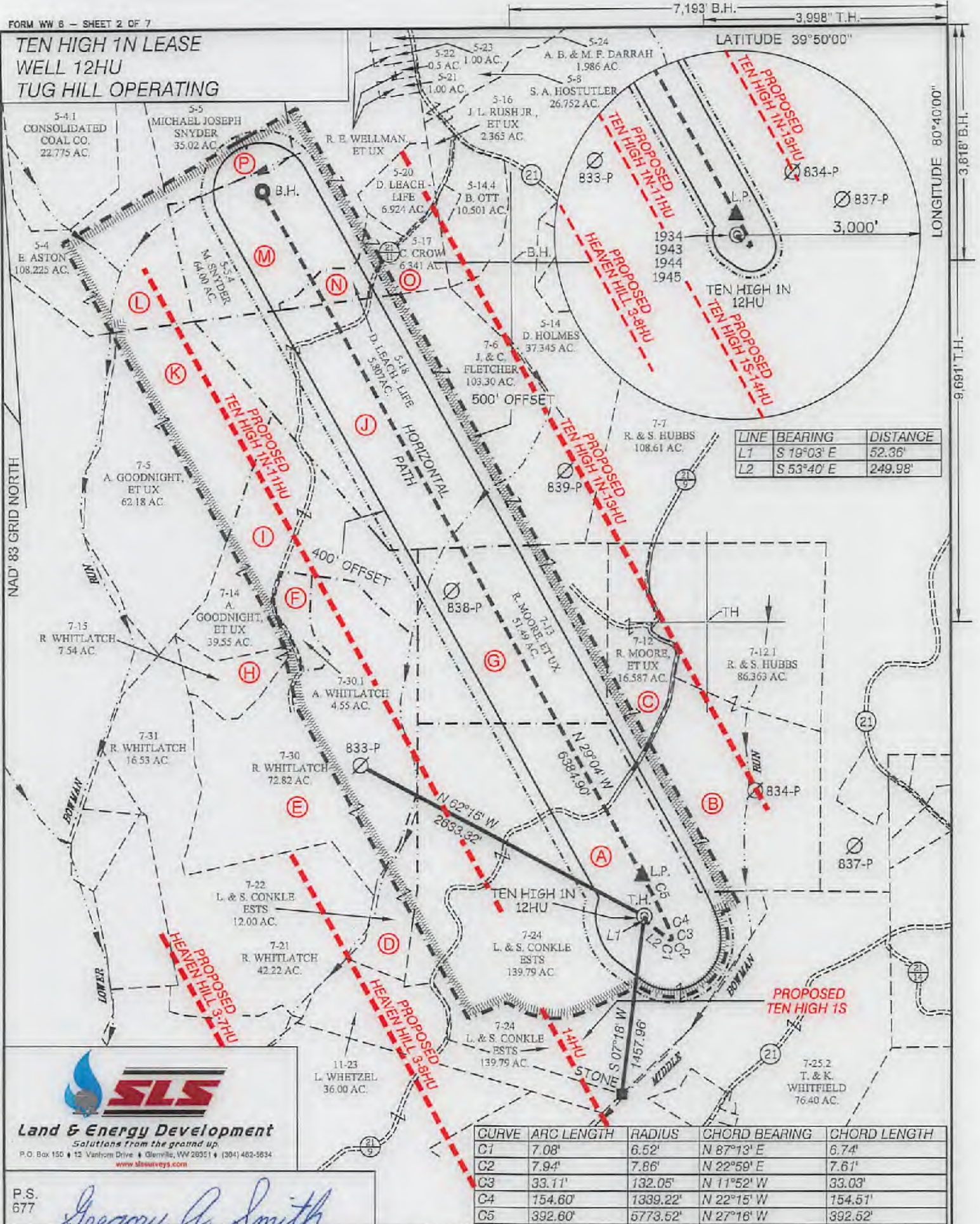
PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION POINT PLEASANT ESTIMATED DEPTH TVD: 11,878' / TMD: 18,372'

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 PERMIT

06/15/2018

**TEN HIGH 1N LEASE
WELL 12HU
TUG HILL OPERATING**



P.S. 677
Gregory A. Smith



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.

LEGEND

UNIT BOUNDARY	
LEASED TRACTS INSIDE UNIT BOUNDARY	
SURFACE LINE	
DEED WELL LATERAL WITHIN 300'	
WELL LATERAL	
400' OFFSET LINE	
500' OFFSET LINE	
TIE LINE	
CREEK	
ROAD	
COUNTY ROUTE	
PROPOSED WELL	
EXISTING WELL	
PERMITTED WELL	
SURFACE OWNER (SEE TABLE-SHEET 1)	
LEASE # (SEE PGS. 3,4,5,6&7)	

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)
 NAD'83 S.P.C.(FT) N. 478,132.41 E. 1,836,753.07
 NAD'83 GEO. LAT-(N) 39.906729 LONG-(W) 80.680897
 NAD'83 UTM (M) N. 4,406,355.14 E. 527,315.21
LANDING POINT
 NAD'83 S.P.C.(FT) N. 478,486.4 E. 1,836,736.1
 NAD'83 GEO. LAT-(N) 39.907646 LONG-(W) 80.680973
 NAD'83 UTM (M) N. 4,405,456.8 E. 527,309.3
BOTTOM HOLE
 NAD'83 S.P.C.(FT) N. 484,047.4 E. 1,833,634.6
 NAD'83 GEO. LAT-(N) 39.822853 LONG-(W) 80.692278
 NAD'83 UTM (M) N. 4,408,141.3 E. 526,395.0

SCALE 1" = 1000' FILE NO. 8655P12HUR2.dwg
 DATE JULY 21, 20 17
 REVISED JANUARY 10 & FEBRUARY 8, 20 18
 OPERATORS WELL NO. TEN HIGH 1N-12HU
 API WELL NO. 47-051-1961 H6A
 NO. STATE COUNTY PERMIT

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

06/15/2018

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

TEN HIGH 1N LEASE
WELL 12HU
TUG HILL OPERATING



No.	Lease Name or No.	Tag	Parcel	Oil & Gas Royalty Owners	Deed Book/Page
1	10*15652	A	9-7-24	LARRY LEE CONKLE	853 354
2	10*15663	A	9-7-24	ROY A CONKLE SR	853 311
3	10*15664	A	9-7-24	THERESA ANNE HUGHES	853 343
4	10*15666	A	9-7-24	BRENDA J WHITZEL	853 635
5	10*16049	A	9-7-24	DANNY SHAWN KERNS AND AMY LYNN KERNS	905 518
6	10*16820	A	9-7-24	ROBERTA ANN AND DAVID S GIBB	919 237
7	10*17365	A	9-7-24	MYSTI JOANNE GOODMAN	927 268
8	10*17370	A	9-7-24	KELLY JUNE GOODMAN	927 470
9	10*47051.295.10	A	9-7-24	DEENA J PALOMO	905 470
10	10*47051.295.11	A	9-7-24	REGINA D FIGUEROA AND DAVID FIGUEROA	905 436
11	10*47051.295.12	A	9-7-24	EARLD WELLMAN	905 432
12	10*47051.295.13	A	9-7-24	THE DOLLY F WOOD REVOCABLE TRUST BY NICHOLAS CHARLES WOOD AS TRUSTEE	904 641
13	10*47051.295.3	A	9-7-24	HAZEL ARIZONA MOORE REYNOLDS	904 632
14	10*47051.295.4	A	9-7-24	LOYD D MOORE	904 459
15	10*47051.295.5	A	9-7-24	DALE R MOORE	904 635
16	10*47051.295.6	A	9-7-24	MARY F BURKHART	904 638
17	10*47051.295.7	A	9-7-24	JEANNE V MELCHIORI	904 482
18	10*47051.295.9	A	9-7-24	JAMES E HIMELBUCK JR AND KAREN HIMELBUCK	904 465
19	10*15501	B	9-7-12-1	RONALD AND EDNA MOORE	561 449
20	10*15501	C	9-7-12	RONALD AND EDNA MOORE	561 449
21	10*15486	D	9-7-22	RICHARD NEAL NORRIS AND CAROL NORRIS	890 403
22	10*15487	D	9-7-22	WILLIAM C RUTAN	905 430
23	10*15489	D	9-7-22	DONALD T SNODGRASS AND LILA F SNODGRASS	925 189
24	10*15492	D	9-7-22	HEATHER WHORTON STILLION AND CHRISTOPHER STILLION	905 473
25	10*15609	D	9-7-22	MICHELLE R WILHELM	834 456
26	10*15610	D	9-7-22	SARAH STEVENS	834 432
27	10*15611	D	9-7-22	ROBERT S ZEHNDER	834 457
28	10*15612	D	9-7-22	VERA SHIRLENE & ARTHUR WORKMAN	837 351
29	10*15613	D	9-7-22	THOMAS L STEVENS	836 290
30	10*15614	D	9-7-22	DAVID F RINE	837 130
31	10*15615	D	9-7-22	PAUL WAYNE RINE	837 133
32	10*15615	D	9-7-22	PHILLIP C RINE	836 352
33	10*15617	D	9-7-22	GLADYS M RINE	836 329
34	10*15618	D	9-7-22	CHARLES A RINE	835 22
35	10*15619	D	9-7-22	SHARON M REYNOLDS	840 322
36	10*15620	D	9-7-22	GLADYS RUCKMAN	840 319
37	10*15621	D	9-7-22	KATHERINE A STALNAKER	840 325
38	10*15622	D	9-7-22	JAY LEROY RINE	840 351
39	10*15623	D	9-7-22	SUSAN JANE WHEELER	847 473
40	10*15624	D	9-7-22	RONALD A ZEHNDER	847 213
41	10*15625	D	9-7-22	LAWRENCE W STIRLING	852 384
42	10*15626	D	9-7-22	ROBERT J SEAVER	854 77
43	10*15627	D	9-7-22	PAULA R SEAVER	853 483
44	10*15628	D	9-7-22	JENNIFER SEAVER	853 272
45	10*15629	D	9-7-22	DANIEL L RINE	850 86
46	10*15630	D	9-7-22	JANE L HELFER	836 342
47	10*15631	D	9-7-22	DAVID HEINZEROTH	836 219
48	10*15632	D	9-7-22	MARIAN D JONES	835 38
49	10*15633	D	9-7-22	ROGER W GATTS	835 35
50	10*15634	D	9-7-22	JAMES W DAYTON	847 567
51	10*15635	D	9-7-22	ELLEN L BETTINAZZI	847 496
52	10*15636	D	9-7-22	JOSEPH ASTON JR BY HIS ATTORNEY-IN-FACT MELVIN J. ASTON	848 280
53	10*15637	D	9-7-22	DONALD ASTON	848 274
54	10*15638	D	9-7-22	PAUL J ASTON A/K/A JACK ASTON	848 277
55	10*15639	D	9-7-22	DELLA M BURKEY A/K/A MAXINE ASTON	848 435
56	10*15640	D	9-7-22	EMMA JANE DAVIS A/K/A EMA ASTON	848 271
57	10*15641	D	9-7-22	HENRY W ASTON	847 138
58	10*15642	D	9-7-22	KENNETH L DAYTON	852 366
59	10*15643	D	9-7-22	NORMAN G JOHNSON	848 363
60	10*15644	D	9-7-22	RONALD BEN LAUGHTON	832 360
61	10*15645	D	9-7-22	KAREN K OLDFIELD	834 111
62	10*15646	D	9-7-22	JUDITH A CIRONE	848 428
63	10*15647	D	9-7-22	KENNETH WENDELL OLDFIELD	851 589
64	10*15648	D	9-7-22	MARTHA CRAWFORD	853 542
65	10*15649	D	9-7-22	MARY JANE DANIEL	858 78
66	10*15650	D	9-7-22	MARY GLADYS KUHN BY ATTORNEY IN FACT CONNIE LYONS	850 89
67	10*15651	D	9-7-22	THOMAS G ASTON	860 83
68	10*15652	D	9-7-22	ISAAC R ASTON A/K/A IKE ASTON	868 136
69	10*15653	D	9-7-22	EMILY M HENCEROTH	852 574
70	10*15654	D	9-7-22	GEORGE E HENNINGER	853 612
71	10*15655	D	9-7-22	ANNA EMERSON A/K/A ANNIE ASTON	854 603
72	10*15656	D	9-7-22	PATTY L MYERS	857 100
73	10*15657	D	9-7-22	MARY MARGARET ASTON	868 283
74	10*15658	D	9-7-22	GLEN MATTHEW LAUGHTON	873 324
75	10*15659	D	9-7-22	WILLIAM E DAYTON BY HIS AIF	871 190
76	10*15660	D	9-7-22	DOUGLAS PAUL HENCEROTH BY HIS AIF	871 193
77	10*15662	D	9-7-22	LARRY LEE CONKLE	853 354
78	10*15663	D	9-7-22	ROY A CONKLE SR	853 311
79	10*15664	D	9-7-22	THERESA ANNE HUGHES	853 343
80	10*15666	D	9-7-22	BRENDA J WHITZEL	853 635
81	10*15675	D	9-7-22	DIANE B ASTON	854 595
82	10*15679	D	9-7-22	CARA BONAR FREESE AND GEORGE H FREESE	905 481
83	10*15680	D	9-7-22	ROBERTA JANE CLAYTON	905 485
84	10*15686	D	9-7-22	JOSH GARY AND CHRISTINA M GARY	905 487
85	10*15689	D	9-7-22	JOHN LEROY BAKER AND CYNTHIA A BAKER	905 491
86	10*15690	D	9-7-22	ROBERT WHORTON AND LINDSAY WHORTON	905 489
87	10*15728	D	9-7-22	MARY LOU KITTELBERGER AND FREDERICK W KITTELBERGER	905 483
88	10*15729	D	9-7-22	DONNA KAY ALLEN AND ROGER ALLEN	905 493
89	10*15747	D	9-7-22	WILLIAM H BAKER	905 499
90	10*15748	D	9-7-22	CAROLYN LEE FUREY AND MARTIN J FUREY	905 495
91	10*15749	D	9-7-22	DIANA SMITH KNIGHT	905 497
92	10*16019	D	9-7-22	ROGER E GALLAGHER AND CONIE M GALLAGHER	905 503
93	10*16020	D	9-7-22	MARTHA ASHWORTH KNIGHT	905 506
94	10*16049	D	9-7-22	DANNY SHAWN KERNS AND AMY LYNN KERNS	905 518
95	10*16050	D	9-7-22	WILLIAM L GALLAGHER	905 512
96	10*16114	D	9-7-22	ROBERT SANDFORD BLACK AND JOAN BLACK	905 510
97	10*16123	D	9-7-22	PHYLIS R GATTO	905 520
98	10*16177	D	9-7-22	JOSEPHINE BROWN	905 530
99	10*16179	D	9-7-22	DAN A BERRY COPELAND	905 532
100	10*16287	D	9-7-22	CHARLINE M ENGLE AND KEVIN E ENGLE	905 554

51-01961 H&A

FILE NO. 8855P12HUR2.dwg

DATE JULY 21, 20 17

REVISED JANUARY 10 & FEBRUARY 8, 20 18

OPERATORS WELL NO. TEN HIGH 1N-12HU

API WELL NO. 47 STATE COUNTY PERMIT



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



06/15/2018

P.S. 677 Gregory A. Smith

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

COUNTY NAME PERMIT

TEN HIGH 1N LEASE
WELL 12HU
TUG HILL OPERATING



No.	Lease Name or No.	Tag	Parcel	Oil & Gas Royalty Owner - Continued	Deed Book/Page
101	10*16384	D	9-7-22	DANIELLE BONAR OSTER AND LOUIS MICHAEL OSTER	905 501
102	10*16389	D	9-7-22	CHARLES BERRY	905 508
103	10*16423	D	9-7-22	GAIL L VAUGHN AND LARRY VAUGHN	905 536
104	10*16426	D	9-7-22	RENE J RUTAN	905 538
105	10*16440	D	9-7-22	MELANIE C WILKINS AND ROBERT WILKINS	927 462
106	10*16613	D	9-7-22	LOWELL D AND JANICE L KNIGHT	927 458
107	10*16646	D	9-7-22	WALTER C AND CHERYL A RINE	927 456
108	10*16658	D	9-7-22	PAUL BONAR KNIGHT AND SUZANNE L HOPKINS-KNIGHT	927 460
109	10*16830	D	9-7-22	ROBERTA ANN AND DAVID S GIBB	919 237
110	10*16844	D	9-7-22	HOLLY A LONGFELLOW	927 454
111	10*16845	D	9-7-22	TRACY L AND KEITH W BARNBY	927 452
112	10*16896	D	9-7-22	MARTHA J BLACK	927 450
113	10*17365	D	9-7-22	MYSTI JOANNE GOODMAN	927 468
114	10*17370	D	9-7-22	KELLY JUNE GOODMAN	927 470
115	10*17497	D	9-7-22	SUZANNA DOOLING AND MICHAEL DOOLING	927 464
116	10*17584	D	9-7-22	WILLIAM T & MONICA BONAR	927 466
117	10*17625	D	9-7-22	CHARLES E BROWN	929 624
118	10*47051.295.10	D	9-7-22	DEENA J PALOMO	905 470
119	10*47051.295.11	D	9-7-22	REGINA D FIGUEROA AND DAVID FIGUEROA	905 435
120	10*47051.295.12	D	9-7-22	EARLD WELLMAN	905 432
121	10*47051.295.13	D	9-7-22	THE DOLLY F WOOD REVOCABLE TRUST BY NICHOLAS CHARLES WOOD AS TRUSTEE	904 641
122	10*47051.295.3	D	9-7-22	HAZEL ARIZONA MOORE REYNOLDS	904 632
123	10*47051.295.4	D	9-7-22	LLOYD D MOORE	904 459
124	10*47051.295.5	D	9-7-22	DALE R MOORE	904 665
125	10*47051.295.6	D	9-7-22	MARY I BURKHART	904 628
126	10*47051.295.7	D	9-7-22	JEANNE V MELCHIORI	904 452
127	10*47051.295.9	D	9-7-22	JAMES E HEMELRICK JR AND KAREN HEMELRICK	661 449
128	10*15557	E	9-7-30	RICKY L WHITLATCH ET AL	780 225
129	10*15557	F	9-7-30.1	RICKY L WHITLATCH ET AL	780 226
130	10*15501	G	9-7-13	RONALD AND EDNA MOORE	661 449
131	10*15557	H	9-7-15	RICKY L WHITLATCH ET AL	780 226
132	10*15558	I	9-7-14	ARNIE GOODNIGHT	777 59
133	10*15500	J	9-7-6	JERRY FLETCHER AND CAROLYN FLETCHER, HUSBAND AND WIFE	661 154
134	10*15502	J	9-7-6	SHERWOOD YEATER	661 454
135	10*15558	K	9-7-5	ARNIE GOODNIGHT	777 59
136	10*15481	L	9-5-4	DEAN P RIGBY AND SUSAN RIGBY	908 197
137	10*15482	L	9-5-4	SUSAN NELSON	908 208
138	10*15594	L	9-5-4	IVAN F GORBY	695 527
139	10*15595	L	9-5-4	JOSEPH D DAKAN	695 519
140	10*15596	L	9-5-4	JOHN E GORBY	695 523
141	10*15597	L	9-5-4	KAREN S GAST	694 534
142	10*15598	L	9-5-4	ADA HAZEL GONTA	695 183
143	10*15596	L	9-5-4	PATSY JO RAJU	694 561
144	10*15686	L	9-5-4	JOHN OMER BOLTZ	908 160
145	10*15750	L	9-5-4	SANDRA K TRULL	908 229
146	10*16058	L	9-5-4	MATTIE RUTH JACKSON PRESCOTT	908 231
147	10*16118	L	9-5-4	RUBY RIDDLE JACKSON	908 233
148	10*16363	L	9-5-4	ROBERT STEPHEN DRIGGERS	908 224
149	10*16414	L	9-5-4	MARY ELIZABETH DRIGGERS	908 208
150	10*16416	L	9-5-4	CYNTHIA HUDSON	908 219
151	10*16424	L	9-5-4	ROBERT J RIGBY	908 241
152	10*16448	L	9-5-4	RALPH L AND JUANITA L CRIM	908 154
153	10*16473	L	9-5-4	MARION L AND EMILY CAMPBELL	908 245
154	10*16514	L	9-5-4	ALEX RUSSELL AND JOYCE A CAMPBELL	908 248
155	10*16515	L	9-5-4	ANNA MARIE JACKSON	908 251
156	10*16516	L	9-5-4	WILSON ANDREW JACKSON	908 233
157	10*16543	L	9-5-4	ROBERT G & ELLEN FOUNDS	908 250
158	10*16662	L	9-5-4	RICHARD THOMAS AND VICKI J MIMS	908 893
159	10*16666	L	9-5-4	MICHAEL P PYLE	908 255
160	10*16667	L	9-5-4	CHARLES F AND GAIL ANN PYLE	908 266
161	10*16668	L	9-5-4	JACK I AND MERRILEE PYLE	908 257
162	10*16669	L	9-5-4	JOHN S AND PATRICIA S DADO	908 269
163	10*16686	L	9-5-4	CHERYLE M TRACEY	927 475
164	10*16688	L	9-5-4	SHERYL PYLE BAIR	927 481
165	10*16689	L	9-5-4	JOHN C FOUNDS	927 478
166	10*16690	L	9-5-4	RICARDO ORTIZ	921 352
167	10*16720	L	9-5-4	DONNA ELAINE BRASKETT	921 152
168	10*16747	L	9-5-4	WILLIAM DALE BRASKETT	921 96
169	10*16798	L	9-5-4	PATRICK A RANKIN AND ROBIN A RANKIN	921 354
170	10*16800	L	9-5-4	JAMES KENNETH JACKSON AND JULIE JACKSON	921 93
171	10*16802	L	9-5-4	CHRISTOPHER AND TAMMY RICHARDSON	921 495
172	10*16804	L	9-5-4	WILLIAM N AND SHERRY D TAYLOR	921 510
173	10*16805	L	9-5-4	VIRGINIA J WHITMAN	921 528
174	10*16807	L	9-5-4	DAVID TULLER AND SUSAN STORTS TULLER	921 513
175	10*16808	L	9-5-4	MICHAEL L ORTIZ	921 349
176	10*16815	L	9-5-4	HAROLD W PYLE	921 357
177	10*16819	L	9-5-4	TERESA ORTIZ BIGGS	921 147
178	10*16821	L	9-5-4	SHELA BRASKETT WEICHEY	921 516
179	10*16836	L	9-5-4	RICK A AND LENORE A STORTS	921 507
180	10*16837	L	9-5-4	TERRY L AND THELMA A POFF	927 472
181	10*16838	L	9-5-4	ROBERT G FUNARI	921 82
182	10*16839	L	9-5-4	JAMES B FOUNDS AND LYNN M MOWERY	921 73
183	10*16848	L	9-5-4	TINA MOORE	921 334
184	10*16868	L	9-5-4	MICHAEL W STORTS AND JESSICA M STORTS	921 504
185	10*16879	L	9-5-4	MARK E AND LESLEY A STORTS	921 501
186	10*16880	L	9-5-4	BEVERLY ANN STORTS	921 498
187	10*16902	L	9-5-4	MARY BARCAW DUKE	921 106
188	10*16962	L	9-5-4	DENNIS P AND BARBARA EBELL FLORY	921 70
189	10*16976	L	9-5-4	LESTER G AND CONSTANCE B NICKOLSON	921 348
190	10*16977	L	9-5-4	JEREMY COCHENOUR	921 102
191	10*16987	L	9-5-4	LAURIE EZELL PERRY	921 355
192	10*16989	L	9-5-4	BRITTANY RICHARDSON	921 376
193	10*16991	L	9-5-4	MARYELLEN FOUNDS AND LAUREN FOUNDS	921 79
194	10*16996	L	9-5-4	THOMAS RANKIN	917 75
195	10*17130	L	9-5-4	CINDY L BARBER	921 137
196	10*17155	L	9-5-4	JESSE LEON JR AND TERESA GAIL EZZELLE	921 118
197	10*17156	L	9-5-4	HENRI NELL JACKSON KENT BARNES	921 139
198	10*17157	L	9-5-4	JAMES N REEVES JR AND RITA M REEVES	921 367
199	10*17158	L	9-5-4	THOMAS G AND DIANE W BAYLESS	921 141
200	10*17205	L	9-5-4	SANDRA JEAN WILSON	921 534

51-01961 A6A

FILE NO. 8656P12HUR2.dwg

DATE JULY 21, 20 17

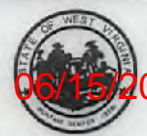
REVISED JANUARY 10 & FEBRUARY 8, 20 18

OPERATORS WELL NO. TEN HIGH 1N-12HU

API WELL NO. 47 STATE COUNTY PERMIT



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



P.S. 677

Gregory A. Smith

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

COUNTY NAME PERMIT

TEN HIGH 1N LEASE
WELL 12HU
TUG HILL OPERATING



No.	Lease Name or No.	Tag	Parcel	Oil & Gas Royalty Owner - Continued	Deed Book/Page
201	10*17208	L	9-5-4	PATRICK S GALLAGHER AND JOYCE ANN FOUNDS	921 86
202	10*17274	L	9-5-4	DAVID H WILSON	921 474
203	10*17275	L	9-5-4	JOHN R REEVES AND MONA G REEVES	921 373
204	10*17276	L	9-5-4	BERTHA EZELL WYATT	921 526
205	10*17278	L	9-5-4	MICHAEL L EZELLE	921 121
206	10*17339	L	9-5-4	JOSEPH W FOUNDS	921 76
207	10*17377	L	9-5-4	MILTON HOWARD EZELLE JR AND ELIZABETH A EZELLE	921 123
208	10*17416	L	9-5-4	ANDREW M. ORTIZ	921 346
209	10*17438	L	9-5-4	DENNIS M WILSON	921 476
210	10*17440	L	9-5-4	KENDRA WALISA	927 484
211	10*17441	L	9-5-4	RALPH J WILSON	921 522
212	10*17442	L	9-5-4	SHANE ALLEN AND MENDY JEAN ALLEN	921 134
213	10*17443	L	9-5-4	NICHOLLE MORROW-BACK	921 337
214	10*17444	L	9-5-4	KELLY FOUNDS CAMP BELL	921 99
215	10*17449	L	9-5-4	PHYLUS J BLAKE	921 150
216	10*17482	L	9-5-4	TERESA EZELLE RALYA AND DAVID L RALYA	927 487
217	10*17483	L	9-5-4	RICHARD I PYLE	921 339
218	10*17484	L	9-5-4	NELDA S JACKSON	921 330
219	10*17485	L	9-5-4	MARGIE ANN JACKSON ROBBINS GRAHAM	921 91
220	10*17526	L	9-5-4	JEFFREY L REEVES AND JODY L REEVES	921 370
221	10*17527	L	9-5-4	JAMES MICHAEL EZELL AND LUCILLE D EZELL	921 111
222	10*17557	L	9-5-4	JOHN BEVACQUA AND PATRICIA A BEVACQUA	921 144
223	10*17554	L	9-5-4	MICHAEL T RANKIN	921 361
224	10*17561	L	9-5-4	KATHRYN L & ROGER L TYRELL	921 519
225	10*17564	L	9-5-4	JAMES R & TRACEY E NICKOLSON	921 340
226	10*17565	L	9-5-4	JESSE ALLEN JACKSON AND ELIZABETH D JACKSON	921 327
227	10*17565	L	9-5-4	NATHAN P & BARBARA T ERDOSSY	921 108
228	10*17588	L	9-5-4	JAMES M JACKSON	921 325
229	10*17589	L	9-5-4	MARY CHRISTINE MCKENNA	921 332
230	10*17744	L	9-5-4	SAM PRESLEY EZELL	921 116
231	10*47051.223.15	L	9-5-4	LARRY D TAUNT AND NANCY L TAUNT	908 14
232	10*47051.223.20	L	9-5-4	BARBARA A BUZZARD	908 24
233	10*47051.223.21	L	9-5-4	GARY T WARD AND SHARON D WARD	908 19
234	10*47051.223.30	L	9-5-4	LAURIE DRIGGERS MANDERSON	908 165
235	10*47051.223.6	L	9-5-4	JOSHUA RINE AND REBECCA RINE	907 634
236	10*15481	M	9-5-5.4	DEAN P RIGBY AND SUSAN RIGBY	908 197
237	10*15482	M	9-5-5.4	SUSAN NELSON	908 203
238	10*15666	M	9-5-5.4	MICHAEL J SNYDER	885 186
239	10*15686	M	9-5-5.4	JOHN OMER BOLTZ	908 160
240	10*15750	M	9-5-5.4	SANDRA K TRULL	908 229
241	10*16058	M	9-5-5.4	MATTIE RUTH JACKSON PRESCOTT	908 231
242	10*16118	M	9-5-5.4	RUBY RIDDLE JACKSON	908 233
243	10*16383	M	9-5-5.4	ROBERT STEPHEN DRIGGERS	908 224
244	10*16414	M	9-5-5.4	MARY ELIZABETH DRIGGERS	908 208
245	10*16416	M	9-5-5.4	CYNTHIA HUDSON	908 219
246	10*16424	M	9-5-5.4	ROBERT J RIGBY	908 241
247	10*16448	M	9-5-5.4	RALPH L AND JUANITA L CRIM	908 584
248	10*16478	M	9-5-5.4	MARION L AND EMILY CAMPBELL	908 245
249	10*16514	M	9-5-5.4	ALEX RUSSELL AND JOYCE A CAMPBELL	908 248
250	10*16515	M	9-5-5.4	ANNA MARIE JACKSON	908 251
251	10*16516	M	9-5-5.4	WILSON ANDREW JACKSON	908 253
252	10*16662	M	9-5-5.4	RICHARD THOMAS AND VICKI J MIMS	908 863
253	10*16800	M	9-5-5.4	JAMES KENNETH JACKSON AND JULIE JACKSON	921 93
254	10*16806	M	9-5-5.4	VIRGINIA I WHITMAN	921 528
255	10*16962	M	9-5-5.4	DENNIS P AND BARBARA EZELL FLORY	921 70
256	10*16976	M	9-5-5.4	LESTER G AND CONSTANCE B NICKOLSON	921 343
257	10*16987	M	9-5-5.4	LAURIE EZELL PERRY	921 355
258	10*17130	M	9-5-5.4	CINDY L BARGER	921 137
259	10*17155	M	9-5-5.4	JESSE LEON JR AND TERESA GAIL EZELLE	921 118
260	10*17156	M	9-5-5.4	HENRI NELL JACKSON KENT BARNES	921 139
261	10*17157	M	9-5-5.4	JAMES N REEVES JR AND RITA M REEVES	921 367
262	10*17198	M	9-5-5.4	THOMAS G AND DIANE W BAYLESS	921 141
263	10*17205	M	9-5-5.4	SANDRA JEAN WILSON	921 524
264	10*17274	M	9-5-5.4	DAVID H WILSON	921 474
265	10*17275	M	9-5-5.4	JOHN R REEVES AND MONA G REEVES	921 373
266	10*17276	M	9-5-5.4	BERTHA EZELL WYATT	921 526
267	10*17278	M	9-5-5.4	MICHAEL L EZELLE	921 121
268	10*17377	M	9-5-5.4	MILTON HOWARD EZELLE JR AND ELIZABETH A EZELLE	921 123
269	10*17438	M	9-5-5.4	DENNIS M WILSON	921 476
270	10*17441	M	9-5-5.4	RALPH J WILSON	921 522
271	10*17449	M	9-5-5.4	PHYLUS J BLAKE	921 150
272	10*17482	M	9-5-5.4	TERESA EZELLE RALYA AND DAVID L RALYA	927 487
273	10*17484	M	9-5-5.4	NELDA S JACKSON	921 330
274	10*17485	M	9-5-5.4	MARGIE ANN JACKSON ROBBINS GRAHAM	921 91
275	10*17526	M	9-5-5.4	JEFFREY L REEVES AND JODY L REEVES	921 370
276	10*17527	M	9-5-5.4	JAMES MICHAEL EZELL AND LUCILLE D EZELL	921 111
277	10*17561	M	9-5-5.4	KATHRYN L & ROGER L TYRELL	921 519
278	10*17564	M	9-5-5.4	JAMES R & TRACEY E NICKOLSON	921 340
279	10*17565	M	9-5-5.4	JESSE ALLEN JACKSON AND ELIZABETH D JACKSON	921 327
280	10*17565	M	9-5-5.4	NATHAN P & BARBARA T ERDOSSY	921 108
281	10*17588	M	9-5-5.4	JAMES M JACKSON	921 325
282	10*17589	M	9-5-5.4	MARY CHRISTINE MCKENNA	921 332
283	10*17744	M	9-5-5.4	SAM PRESLEY EZELL	921 116
284	10*47051.223.1	M	9-5-5.4	JEAN ANNE GORBY STORCH	877 216
285	10*47051.223.15	M	9-5-5.4	LARRY D TAUNT AND NANCY L TAUNT	908 14
286	10*47051.223.2	M	9-5-5.4	STEPHANIE SCHIEFER AND GEOFFREY SCHIEFER	885 321
287	10*47051.223.20	M	9-5-5.4	BARBARA A BUZZARD	908 24
288	10*47051.223.21	M	9-5-5.4	GARY T WARD AND SHARON D WARD	908 19
289	10*47051.223.3	M	9-5-5.4	ROBERT A LEADBETTER AND M REBECCA LEADREITER	885 324
290	10*47051.223.30	M	9-5-5.4	LAURIE DRIGGERS MANDERSON	908 165
291	10*47051.223.6	M	9-5-5.4	JOSHUA RINE AND REBECCA RINE	907 634
292	10*15481	N	9-5-18	DEAN P RIGBY AND SUSAN RIGBY	908 197
293	10*15482	N	9-5-18	SUSAN NELSON	908 203
294	10*15674	N	9-5-18	DONALD E LEACH ET AL	882 209
295	10*15686	N	9-5-18	JOHN OMER BOLTZ	908 160
296	10*15750	N	9-5-18	SANDRA K TRULL	908 229
297	10*16058	N	9-5-18	MATTIE RUTH JACKSON PRESCOTT	908 231
298	10*16118	N	9-5-18	RUBY RIDDLE JACKSON	908 233
299	10*16383	N	9-5-18	ROBERT STEPHEN DRIGGERS	908 224
300	10*16414	N	9-5-18	MARY ELIZABETH DRIGGERS	908 208

51-0196146A

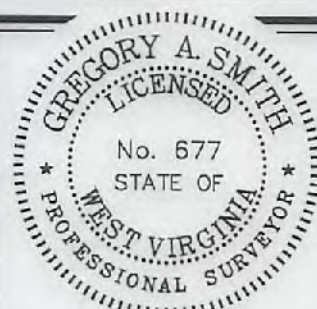
FILE NO. 8655P12HUR2.dwg

DATE JULY 21, 20 17

REVISED JANUARY 10 & FEBRUARY 8, 20 18

OPERATORS WELL NO. TEN HIGH 1N-12HU

API WELL NO. 47 STATE COUNTY PERMIT



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



P.S. 677

Gregory A. Smith

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

COUNTY NAME PERMIT

TEN HIGH 1N LEASE
WELL 12HU
TUG HILL OPERATING



No.	Lease Name or No.	Tag	Parcel	Oil & Gas Royalty Owner - Continued	Deed Book/Page
301	10*16416	N	9-5-18	CYNTHIA HUDSON	908 219
302	10*16424	N	9-5-18	ROBERT J RIGBY	908 241
303	10*16448	N	9-5-18	RALPH LAND JUANITA L CRIM	908 584
304	10*16478	N	9-5-18	MARION L AND EMILY CAMPBELL	908 245
305	10*16514	N	9-5-18	ALEX RUSSELL AND JOYCE A CAMPBELL	908 248
306	10*16515	N	9-5-18	ANNA MARIE JACKSON	908 251
307	10*16516	N	9-5-18	WILSON ANDREW JACKSON	908 253
308	10*16662	N	9-5-18	RICHARD THOMAS AND VICKI J MIMS	908 868
309	10*16800	N	9-5-18	JAMES KENNETH JACKSON AND JULIE JACKSON	921 93
310	10*16806	N	9-5-18	VIRGINIA I WHITMAN	921 528
311	10*16962	N	9-5-18	DENNIS P AND BARBARA EZELL FLORY	921 70
312	10*16976	N	9-5-18	LESTER G AND CONSTANCE B NICKOLSON	921 343
313	10*16987	N	9-5-18	LAURIE EZELL PERRY	921 355
314	10*17130	N	9-5-18	CINDY L BARGER	921 137
315	10*17155	N	9-5-18	JESSE LEON JR AND TERESA GAIL EZELLE	921 118
316	10*17156	N	9-5-18	HENRI NELL JACKSON KENT BARNES	921 139
317	10*17157	N	9-5-18	JAMES N REEVES JR AND RITA M REEVES	921 367
318	10*17198	N	9-5-18	THOMAS G AND DIANE W BAYLESS	921 141
319	10*17205	N	9-5-18	SANDRA JEAN WILSON	921 524
320	10*17274	N	9-5-18	DAVID H WILSON	921 474
321	10*17275	N	9-5-18	JOHN R REEVES AND MONA G REEVES	921 373
322	10*17276	N	9-5-18	BERTHA EZELL WYATT	921 526
323	10*17278	N	9-5-18	MICHAEL L EZELLE	921 121
324	10*17377	N	9-5-18	MILTON HOWARD EZELLE JR AND ELIZABETH A EZELLE	921 123
325	10*17438	N	9-5-18	DENNIS M WILSON	921 476
326	10*17441	N	9-5-18	RALPH J WILSON	921 522
327	10*17449	N	9-5-18	PHYLLIS J BLAKE	921 150
328	10*17482	N	9-5-18	TERESA EZELLE RALYA AND DAVID L RALYA	927 487
329	10*17484	N	9-5-18	NELDA S JACKSON	921 330
330	10*17485	N	9-5-18	MARGIE ANN JACKSON ROBBINS GRAHAM	921 91
331	10*17526	N	9-5-18	JEFFREY L REEVES AND JODY L REEVES	921 370
332	10*17527	N	9-5-18	JAMES MICHAEL EZELL AND LUCILLE D EZELL	921 111
333	10*17561	N	9-5-18	KATHRYN L & ROGER L TYRELL	921 519
334	10*17564	N	9-5-18	JAMES R & TRACEY E NICKOLSON	921 340
335	10*17565	N	9-5-18	JESSE ALLEN JACKSON AND ELIZABETH D JACKSON	921 327
336	10*17566	N	9-5-18	NATHAN P & BARBARA T ERDOSSY	921 108
337	10*17588	N	9-5-18	JAMES M JACKSON	921 325
338	10*17589	N	9-5-18	MARY CHRISTINE MCKENNA	921 332
339	10*17744	N	9-5-18	SAM PRESLEY EZELL	921 116
340	10*47051.223.1	N	9-5-18	JEAN ANNE GORBY STORCH	877 216
341	10*47051.223.15	N	9-5-18	LARRY D TALNT AND NANCY L TALNT	908 14
342	10*47051.223.2	N	9-5-18	STEPHANIE SCHIEFER AND GEOFFREY SCHIEFER	885 321
343	10*47051.223.20	N	9-5-18	BARBARA A BUZZARD	908 24
344	10*47051.223.21	N	9-5-18	GARY T WARD AND SHARON D WARD	908 19
345	10*47051.223.3	N	9-5-18	ROBERT A LEADBETTER AND M REBECCA LEADBETTER	885 324
346	10*47051.223.30	N	9-5-18	LAURIE DRIGGERS MANDERSON	908 155
347	10*47051.223.6	N	9-5-18	JOSHUA RINE AND REBECCA RINE	907 034
348	10*15481	O	9-5-17	DEAN P RIGBY AND SUSAN RIGBY	908 197
349	10*15482	O	9-5-17	SUSAN NELSON	908 203
350	10*15522	O	9-5-17	CARLA S CROW	728 412
351	10*15686	O	9-5-17	JOHN OMER BOLTZ	908 160
352	10*15750	O	9-5-17	SANDRA K TRULL	908 229
353	10*16058	O	9-5-17	MATTIE RUTH JACKSON PRESCOTT	908 231
354	10*16118	O	9-5-17	RUBY RIDDLE JACKSON	908 233
355	10*16383	O	9-5-17	ROBERT STEPHEN DRIGGERS	908 224
356	10*16414	O	9-5-17	MARY ELIZABETH DRIGGERS	908 208
357	10*16416	O	9-5-17	CYNTHIA HUDSON	908 219
358	10*16424	O	9-5-17	ROBERT J RIGBY	908 241
359	10*16448	O	9-5-17	RALPH LAND JUANITA L CRIM	908 584
360	10*16478	O	9-5-17	MARION L AND EMILY CAMPBELL	908 245
361	10*16514	O	9-5-17	ALEX RUSSELL AND JOYCE A CAMPBELL	908 248
362	10*16515	O	9-5-17	ANNA MARIE JACKSON	908 251
363	10*16516	O	9-5-17	WILSON ANDREW JACKSON	908 253
364	10*16662	O	9-5-17	RICHARD THOMAS AND VICKI J MIMS	908 868
365	10*16800	O	9-5-17	JAMES KENNETH JACKSON AND JULIE JACKSON	921 93
366	10*16806	O	9-5-17	VIRGINIA I WHITMAN	921 528
367	10*16962	O	9-5-17	DENNIS P AND BARBARA EZELL FLORY	921 70
368	10*16976	O	9-5-17	LESTER G AND CONSTANCE B NICKOLSON	921 343
369	10*16987	O	9-5-17	LAURIE EZELL PERRY	921 355
370	10*17130	O	9-5-17	CINDY L BARGER	921 137
371	10*17155	O	9-5-17	JESSE LEON JR AND TERESA GAIL EZELLE	921 118
372	10*17156	O	9-5-17	HENRI NELL JACKSON KENT BARNES	921 139
373	10*17157	O	9-5-17	JAMES N REEVES JR AND RITA M REEVES	921 367
374	10*17198	O	9-5-17	THOMAS G AND DIANE W BAYLESS	921 141
375	10*17205	O	9-5-17	SANDRA JEAN WILSON	921 524
376	10*17274	O	9-5-17	DAVID H WILSON	921 474
377	10*17275	O	9-5-17	JOHN R REEVES AND MONA G REEVES	921 373
378	10*17276	O	9-5-17	BERTHA EZELL WYATT	921 526
379	10*17278	O	9-5-17	MICHAEL L EZELLE	921 121
380	10*17377	O	9-5-17	MILTON HOWARD EZELLE JR AND ELIZABETH A EZELLE	921 123
381	10*17438	O	9-5-17	DENNIS M WILSON	921 476
382	10*17441	O	9-5-17	RALPH J WILSON	921 522
383	10*17449	O	9-5-17	PHYLLIS J BLAKE	921 150
384	10*17482	O	9-5-17	TERESA EZELLE RALYA AND DAVID L RALYA	927 487
385	10*17484	O	9-5-17	NELDA S JACKSON	921 330
386	10*17485	O	9-5-17	MARGIE ANN JACKSON ROBBINS GRAHAM	921 91
387	10*17526	O	9-5-17	JEFFREY L REEVES AND JODY L REEVES	921 370
388	10*17527	O	9-5-17	JAMES MICHAEL EZELL AND LUCILLE D EZELL	921 111
389	10*17561	O	9-5-17	KATHRYN L & ROGER L TYRELL	921 519
390	10*17564	O	9-5-17	JAMES R & TRACEY E NICKOLSON	921 340
391	10*17565	O	9-5-17	JESSE ALLEN JACKSON AND ELIZABETH D JACKSON	921 327
392	10*17566	O	9-5-17	NATHAN P & BARBARA T ERDOSSY	921 108
393	10*17588	O	9-5-17	JAMES M JACKSON	921 325
394	10*17589	O	9-5-17	MARY CHRISTINE MCKENNA	921 332
395	10*17744	O	9-5-17	SAM PRESLEY EZELL	921 116
396	10*47051.223.1	O	9-5-17	JEAN ANNE GORBY STORCH	877 216
397	10*47051.223.15	O	9-5-17	LARRY D TALNT AND NANCY L TALNT	908 14
398	10*47051.223.2	O	9-5-17	STEPHANIE SCHIEFER AND GEOFFREY SCHIEFER	885 321
399	10*47051.223.20	O	9-5-17	BARBARA A BUZZARD	908 24
400	10*47051.223.21	O	9-5-17	GARY T WARD AND SHARON D WARD	908 19

SI-01961
H6A

FILE NO. 8655P12HUR2.dwg

DATE JULY 21, 20 17

REVISED JANUARY 10 & FEBRUARY 8, 20 18

OPERATORS WELL NO. TEN HIGH 1N-12HU

API WELL NO. 47 STATE COUNTY PERMIT



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



P.S. 677

Gregory A. Smith

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

COUNTY ME PERMIT

06/15/2018

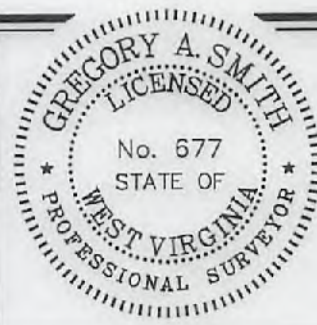
TEN HIGH 1N LEASE
WELL 12HU
TUG HILL OPERATING



No.	Lease Name or No.	Tag	Parcel	Oil & Gas Royalty Owner - Continued	Deed Book/Page
401	10*47051.223.3	O	9-5-17	ROBERT A LEADBETTER AND M REBECCA LEADBETTER	885 374
402	10*47051.223.30	O	9-5-17	LAURIE DRIGGERS MANDERSON	908 165
403	10*47051.223.6	O	9-5-17	JOSHUA RINE AND REBECCA RINE	907 634
404	10*15481	P	9-5-5	DEAN P RIGBY AND SUSAN RIGBY	908 197
405	10*15482	P	9-5-5	SUSAN NELSON	908 208
406	10*15668	P	9-5-5	MICHAEL J SNYDER	895 186
407	10*15886	P	9-5-5	JOHN OMER BOLTZ	908 160
408	10*16750	P	9-5-5	SANDRA K TRULL	908 229
409	10*16058	P	9-5-5	MATTIE RUTH JACKSON PRESCOTT	908 231
410	10*16118	P	9-5-5	RUBY RIDDLE JACKSON	908 253
411	10*16383	P	9-5-5	ROBERT STEPHEN DRIGGERS	908 224
412	10*16414	P	9-5-5	MARY ELIZABETH DRIGGERS	908 208
413	10*16416	P	9-5-5	CYNTHIA HUDSON	908 219
414	10*16424	P	9-5-5	ROBERT J RIGBY	908 241
415	10*16448	P	9-5-5	RALPH L AND JUANITA L CRIM	908 584
416	10*16478	P	9-5-5	MARION L AND EMILY CAMPBELL	908 245
417	10*16514	P	9-5-5	ALEX RUSSELL AND JOYCE A CAMPBELL	908 248
418	10*16515	P	9-5-5	ANNA MARIE JACKSON	908 251
419	10*16516	P	9-5-5	WILSON ANDREW JACKSON	908 253
420	10*16662	P	9-5-5	RICHARD THOMAS AND VICKI J MIMS	908 263
421	10*16800	P	9-5-5	JAMES KENNETH JACKSON AND JULIE JACKSON	921 93
422	10*16806	P	9-5-5	WIRENIA J WHITMAN	921 528
423	10*16962	P	9-5-5	DENNIS P AND BARBARA EZELL FLORY	921 70
424	10*16976	P	9-5-5	LESTER G AND CONSTANCE B NICKOLSON	921 343
425	10*16987	P	9-5-5	LAURIE EZELL PERRY	921 355
426	10*17130	P	9-5-5	CINDY L BARGER	921 137
427	10*17155	P	9-5-5	JESSE LEON JR AND TERESA GAIL EZELLE	921 118
428	10*17156	P	9-5-5	HENRI NELL JACKSON KENT BARNES	921 139
429	10*17157	P	9-5-5	JAMES N REEVES JR AND RITA M REEVES	921 367
430	10*17198	P	9-5-5	THOMAS G AND DIANE W BAYLESS	921 141
431	10*17205	P	9-5-5	SANDRA JEAN WILSON	921 524
432	10*17274	P	9-5-5	DAVID H WILSON	921 474
433	10*17275	P	9-5-5	JOHN R REEVES AND MONA G REEVES	921 373
434	10*17276	P	9-5-5	BERTHA EZELL WYATT	921 526
435	10*17278	P	9-5-5	MICHAEL L EZELLE	921 121
436	10*17377	P	9-5-5	MILTON HOWARD EZELLE JR AND ELIZABETH A EZELLE	921 123
437	10*17438	P	9-5-5	CENNIS M WILSON	921 476
438	10*17441	P	9-5-5	RALPH J WILSON	921 522
439	10*17449	P	9-5-5	PHYLLIS J BLAKE	921 150
440	10*17482	P	9-5-5	TERESA EZELLE RALYA AND DAVID L RALYA	927 487
441	10*17484	P	9-5-5	NELDA S JACKSON	921 330
442	10*17485	P	9-5-5	MARGIE ANN JACKSON ROBBINS GRAHAM	921 91
443	10*17526	P	9-5-5	JEFFREY L REEVES AND JODY L REEVES	921 370
444	10*17527	P	9-5-5	JAMES MICHAEL EZELL AND LUCILLE D EZELL	921 111
445	10*17561	P	9-5-5	KATHRYN L & ROGER L TYBELL	921 519
446	10*17584	P	9-5-5	JAMES R & TRACY E NICKOLSON	921 340
447	10*17585	P	9-5-5	JESSE ALLEN JACKSON AND ELIZABETH D JACKSON	921 327
448	10*17586	P	9-5-5	NATHAN P & BARBARA T ERDOSSY	921 108
449	10*17588	P	9-5-5	JAMES M JACKSON	921 325
450	10*17599	P	9-5-5	MARY CHRISTINE MCKENNA	921 332
451	10*17744	P	9-5-5	SAM PRESLEY EZELL	921 116
452	10*47051.223.1	P	9-5-5	JEAN ANNE GORBY STORCH	877 216
453	10*47051.223.15	P	9-5-5	LARRY D TALNT AND NANCY L TALNT	908 14
454	10*47051.223.2	P	9-5-5	STEPHANIE SCHIEFER AND GEOFFREY SCHIEFER	885 321
455	10*47051.223.20	P	9-5-5	BARBARA A BUZZARD	908 24
456	10*47051.223.21	P	9-5-5	GARY T WARD AND SHARON O WARD	908 19
457	10*47051.223.3	P	9-5-5	ROBERT A LEADBETTER AND M REBECCA LEADBETTER	885 324
458	10*47051.223.30	P	9-5-5	LAURIE DRIGGERS MANDERSON	908 165
459	10*47051.223.6	P	9-5-5	JOSHUA RINE AND REBECCA RINE	907 634

51-0196146A

FILE NO. 8856P12HUR2.dwg
 DATE JULY 21, 20 17
 REVISED JANUARY 10 & FEBRUARY 8, 20 18
 OPERATORS WELL NO. TEN HIGH 1N-12HU
 API WELL NO. 47
 STATE _____ COUNTY _____ PERMIT _____



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

P.S. 677 *Gregory A. Smith*

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

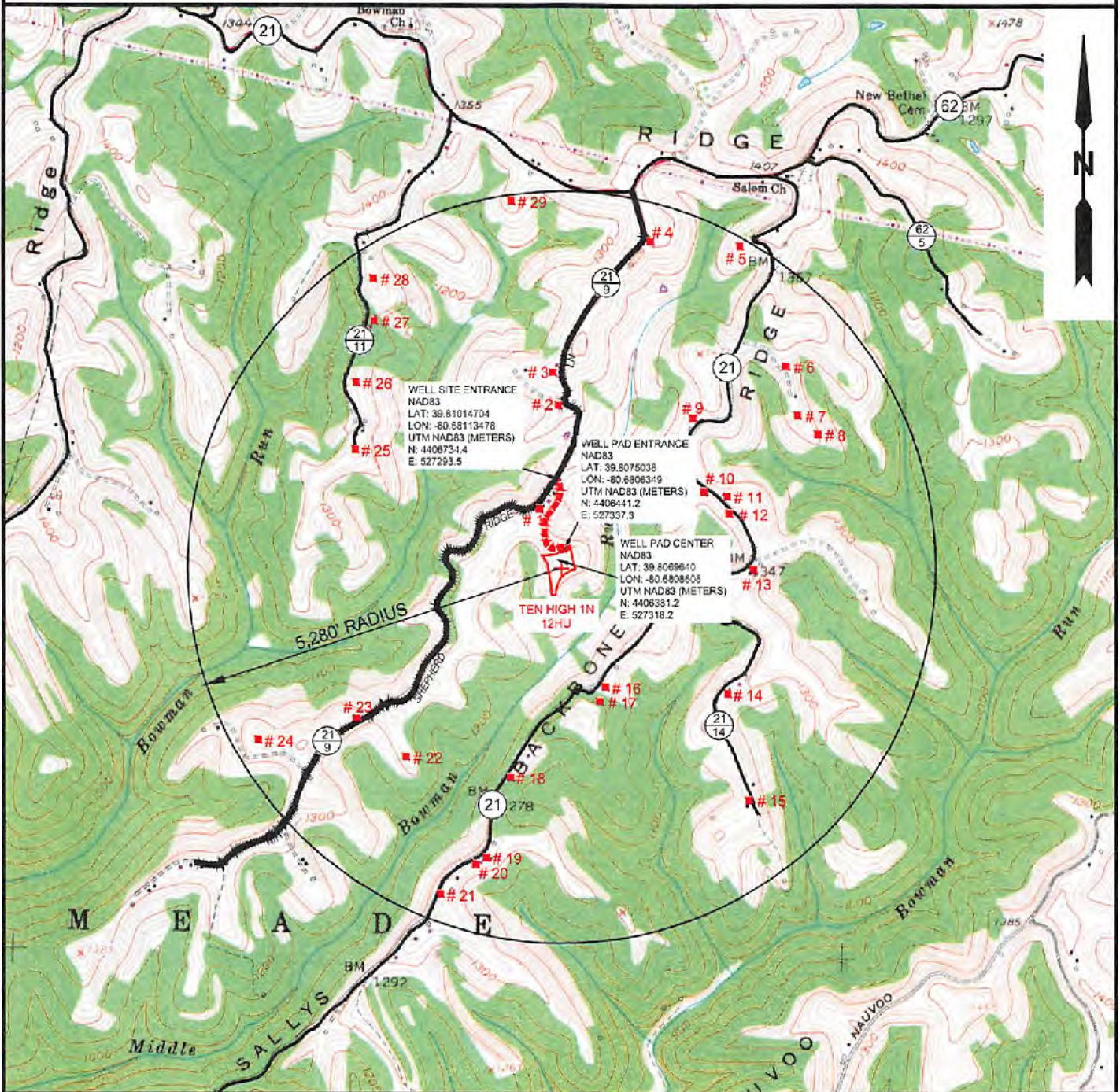
DESIGNATED AGENT DIANNA STAMPER
 ADDRESS CT CORPORATION SYSTEM
5400 D BIG TYLER ROAD
CHARLESTON, WV 25313

COUNTY NAME PERMIT

06/15/2018

PROPOSED TEN HIGH 1N - 12HU

EXHIBIT 2



NOTE: THERE APPEARS TO BE (29) TWENTY-NINE RESIDENCES WITHIN 5,280'.

SLS
Land & Energy Development
Solutions from the ground up.
P.O. Box 150 † 12 Vanhorn Drive † Glenville, WV 26351 † (304) 462-5634
www.slsurveys.com

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.	8655	07-21-17	1" = 2000'

TUG HILL
OPERATING

WW-6A1
(5/13)

Operator's Well No. Ten High 1N-12HU

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

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

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

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
----------------------	-----------------------	-----------------------	---------	-----------

*See attached pages

**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

RECEIVED
Office of Oil and Gas

JAN 23 2018

WV Department of
Environmental Protection

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: Tug Hill Operating, LLC

By: Amy L. Miller *Amy Miller*

Its: Permitting Specialist - Appalachia Region

Lease ID	Tag	Tras-40	Lessor	Lessee	Revolvy	Dead Book/Type	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment
10*15462	A	8-7-24	LARRY LEE COMBLE	CHEVRON U.S.A. INC.	1/8*	853 354	N/A	N/A	N/A	N/A	N/A	Chevron to Tag H#R: 36/148
10*15463	A	8-7-24	ROY A COMBLE SR AND LORE A COMBLE	CHEVRON USA INC	1/8*	853 311	N/A	N/A	N/A	N/A	N/A	Chevron to Tag H#R: 36/148
10*15464	A	8-7-24	TRIBESA ANNE HUGHES	CHEVRON USA INC	1/8*	853 343	N/A	N/A	N/A	N/A	N/A	Chevron to Tag H#R: 36/148
10*15466	A	8-7-24	BRENDA I WRETZEL	CHEVRON USA INC	1/8*	863 633	N/A	N/A	N/A	N/A	N/A	Chevron to Tag H#R: 36/148
10*152049	A	8-7-24	DANNY SHAWN KERMS AND AMY LYNN KERMS	TH EXPLORATION LLC	1/8*	905 518	N/A	N/A	N/A	N/A	N/A	N/A
10*156138	A	8-7-24	LARRY W KURN AND VIGOR B KURN, HUSBAND AND WIFE	TH EXPLORATION LLC	1/8*	905 522	N/A	N/A	N/A	N/A	N/A	N/A
10*151339	A	8-7-24	HUBERT DEAN KURN AND ANDREA KURN	TH EXPLORATION LLC	1/8*	905 524	N/A	N/A	N/A	N/A	N/A	N/A
10*15140	A	8-7-24	ANDY PAUL KURN & JACKIE KURN	TH EXPLORATION LLC	1/8*	905 528	N/A	N/A	N/A	N/A	N/A	N/A
10*15141	A	8-7-24	HOWARD L KURN AND MARY L KURN	TH EXPLORATION LLC	1/8*	905 528	N/A	N/A	N/A	N/A	N/A	N/A
10*181920	A	8-7-24	ROBERTA ANN GIBB AND DAVID S GIBB	TH EXPLORATION LLC	1/8*	919 227	N/A	N/A	N/A	N/A	N/A	N/A
10*17385	A	8-7-24	MYSTI JOHANN GOODMAN	TH EXPLORATION LLC	1/8*	927 468	N/A	N/A	N/A	N/A	N/A	N/A
10*17390	A	8-7-24	KELLY ANN GOODMAN	TH EXPLORATION LLC	1/8*	927 470	N/A	N/A	N/A	N/A	N/A	N/A
10*181956	A	8-7-24	JEFFREY STEPHEN GOODMAN	TH EXPLORATION LLC	1/8*	929 1	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.295.1	A	8-7-24	DEENA I PALMON	TH EXPLORATION LLC	1/8*	905 470	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.295.1	A	8-7-24	REGINA D FIGUEROA AND DAVID FIGUEROA	TH EXPLORATION LLC	1/8*	905 433	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.295.1	A	8-7-24	EARL D WELLMAN	TH EXPLORATION LLC	1/8*	905 432	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.295.1	A	8-7-24	THE DOLLY F WOOD REVOCABLE TRUST BY NICHOLAS CHARLES WOOD AS TRUSTEE	TH EXPLORATION LLC	1/8*	904 641	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.295.3	A	8-7-24	HAZEL ARDRA MOORE REYNOLDS	TH EXPLORATION LLC	1/8*	904 632	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.295.4	A	8-7-24	LLOYD D MOORE	TH EXPLORATION LLC	1/8*	904 459	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.295.5	A	8-7-24	DALE R MOORE	TH EXPLORATION LLC	1/8*	904 633	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.295.6	A	8-7-24	MARY I BUSHNART	TH EXPLORATION LLC	1/8*	904 633	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.295.7	A	8-7-24	JAMME V WELLSHORN	TH EXPLORATION LLC	1/8*	904 633	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.295.9	A	8-7-24	JAMES E HEMLOCK JR AND KAREN HEMLOCK	TH EXPLORATION LLC	1/8*	904 665	N/A	N/A	N/A	N/A	N/A	N/A
10*15501	C	8-7-13	RONALD AND EDNA MOORE	TREENERGY INC	1/8*	661 449	N/A	N/A	N/A	N/A	N/A	TreEnergy to AB Resources: 20/252 AB Resources to Chevron: 756/397 Chevron to Tag H#R: 36/148
10*15502	J	8-7-6	JERRY FLETCHER AND CAROLYN FLETCHER, HUSBAND AND WIFE	TREENERGY INC	1/8*	661 154	TreEnergy to AB Resources: 20/252	TreEnergy to TreEnergy Hold: 21/148	AB Resources to Chief, et al: 24/319	Chief, et al to Chevron: 25/1	AB Resources to Chevron: 756/397	Chevron to Tag H#R: 36/148
10*15502	J	8-7-6	SHERWOOD YEATER	TREENERGY INC	1/8*	748 268	TreEnergy to AB Resources: 20/252	TreEnergy to TreEnergy Hold: 21/148	AB Resources to Chief, et al: 24/319	Chief, et al to Chevron: 25/1	AB Resources to Chevron: 756/397	Chevron to Tag H#R: 36/148
10*19001	J	8-7-6	JERRY FLETCHER AND CAROLYN FLETCHER, HUSBAND AND WIFE	TREENERGY, INC	1/8*	661 154	TreEnergy to AB Resources: 20/252	TreEnergy to TreEnergy Hold: 21/148	AB Resources to Chief, et al: 24/319	Chief, et al to Chevron: 25/1	AB Resources to Chevron: 756/397	Chevron to Tag H#R: 36/148
10*19001	J	8-7-6	SHERWOOD YEATER	TREENERGY, INC	1/8*	748 268	TreEnergy to AB Resources: 20/252	TreEnergy to TreEnergy Hold: 21/148	AB Resources to Chief, et al: 24/319	Chief, et al to Chevron: 25/1	AB Resources to Chevron: 756/397	Chevron to Tag H#R: 36/148
10*15481	M	8-5-4	DEAN F ROBY AND SUSAN ROBY	TH EXPLORATION LLC	1/8*	908 197	N/A	N/A	N/A	N/A	N/A	N/A
10*15482	M	8-5-4	SUSAN NELSON	TH EXPLORATION LLC	1/8*	908 203	N/A	N/A	N/A	N/A	N/A	N/A
10*15394	M	8-5-4	IVAN F GOBST	TH EXPLORATION LLC	1/8*	908 203	N/A	N/A	N/A	N/A	N/A	N/A
10*15395	M	8-5-4	JOSEPH D DARRAN	TH EXPLORATION LLC	1/8*	908 203	N/A	N/A	N/A	N/A	N/A	N/A
10*15396	M	8-5-4	JOHN E GOBST	CHESAPEAKE APPALACHIA LLC	1/8*	695 528	N/A	N/A	N/A	N/A	N/A	Chesapeake to Chevron: 30/461 Chevron to Tag H#R: 36/148
10*15397	M	8-5-4	KAREN S GAST	CHESAPEAKE APPALACHIA LLC	1/8*	695 528	N/A	N/A	N/A	N/A	N/A	Chesapeake to Chevron: 30/461 Chevron to Tag H#R: 36/148
10*15398	M	8-5-4	ADA HAZEL GORTTA	CHESAPEAKE APPALACHIA LLC	1/8*	694 534	N/A	N/A	N/A	N/A	N/A	Chesapeake to Chevron: 30/461 Chevron to Tag H#R: 36/148
10*15399	M	8-5-4	PATSY JO RABU	CHESAPEAKE APPALACHIA LLC	1/8*	694 561	N/A	N/A	N/A	N/A	N/A	Chesapeake to Chevron: 30/461 Chevron to Tag H#R: 36/148
10*15486	M	8-5-4	JOHN OMSER BOLTZ	TH EXPLORATION LLC	1/8*	908 160	N/A	N/A	N/A	N/A	N/A	N/A
10*15390	M	8-5-4	SANDRA K TRULL	TH EXPLORATION LLC	1/8*	908 229	N/A	N/A	N/A	N/A	N/A	N/A
10*16056	M	8-5-4	MATTHE RUTH JACKSON PRUSSCOTT	TH EXPLORATION LLC	1/8*	908 231	N/A	N/A	N/A	N/A	N/A	N/A
10*16118	M	8-5-4	RUBY RIDDLE JACKSON	TH EXPLORATION LLC	1/8*	908 233	N/A	N/A	N/A	N/A	N/A	N/A
10*16183	M	8-5-4	ROBERT STEPHEN DRUGGERS	TH EXPLORATION LLC	1/8*	908 224	N/A	N/A	N/A	N/A	N/A	N/A
10*16414	M	8-5-4	MARY ELIZABETH DRUGGERS	TH EXPLORATION LLC	1/8*	908 208	N/A	N/A	N/A	N/A	N/A	N/A
10*16415	M	8-5-4	CYNTHIA HUDSON	TH EXPLORATION LLC	1/8*	908 219	N/A	N/A	N/A	N/A	N/A	N/A
10*16424	M	8-5-4	ROBERT J ROBY	TH EXPLORATION LLC	1/8*	908 241	N/A	N/A	N/A	N/A	N/A	N/A
10*16428	M	8-5-4	RAEUN L AND RIANITA L CROM	TH EXPLORATION LLC	1/8*	908 584	N/A	N/A	N/A	N/A	N/A	N/A
10*16478	M	8-5-4	MARION L AND EMERY CAMPBELL	TH EXPLORATION LLC	1/8*	908 245	N/A	N/A	N/A	N/A	N/A	N/A
10*16514	M	8-5-4	ALEX B CAMPBELL & JOYCE A CAMPBELL	TH EXPLORATION LLC	1/8*	908 248	N/A	N/A	N/A	N/A	N/A	N/A
10*16515	M	8-5-4	ANNA MARIE JACKSON	TH EXPLORATION LLC	1/8*	908 251	N/A	N/A	N/A	N/A	N/A	N/A
10*16516	M	8-5-4	WILSON ANDREW JACKSON	TH EXPLORATION LLC	1/8*	908 253	N/A	N/A	N/A	N/A	N/A	N/A
10*16545	M	8-5-4	ROBERT G FOUNDS AND ELLEN FOUNDS	TH EXPLORATION LLC	1/8*	908 260	N/A	N/A	N/A	N/A	N/A	N/A
10*16682	M	8-5-4	RICHARD THOMAS MIMS & VICKIE J MIMS	TH EXPLORATION LLC	1/8*	908 263	N/A	N/A	N/A	N/A	N/A	N/A
10*16686	M	8-5-4	MICHAEL F PYLE	TH EXPLORATION LLC	1/8*	908 255	N/A	N/A	N/A	N/A	N/A	N/A
10*16687	M	8-5-4	CHARLES F PYLE AND GAIL ANN PYLE	TH EXPLORATION LLC	1/8*	908 266	N/A	N/A	N/A	N/A	N/A	N/A
10*16689	M	8-5-4	JACK I PYLE AND MERZELLE ANN PYLE	TH EXPLORATION LLC	1/8*	908 257	N/A	N/A	N/A	N/A	N/A	N/A
10*16690	M	8-5-4	JOHN S OASO AND PATRICIA S OASO	TH EXPLORATION LLC	1/8*	908 269	N/A	N/A	N/A	N/A	N/A	N/A
10*16695	M	8-5-4	CHESTER M TRACY	TH EXPLORATION LLC	1/8*	927 475	N/A	N/A	N/A	N/A	N/A	N/A
10*16698	M	8-5-4	SHERYL PYLE BARR	TH EXPLORATION LLC	1/8*	927 483	N/A	N/A	N/A	N/A	N/A	N/A
10*16699	M	8-5-4	JOHN C FOUNDS	TH EXPLORATION LLC	1/8*	927 478	N/A	N/A	N/A	N/A	N/A	N/A
10*16690	M	8-5-4	RICARDO ORTIZ	TH EXPLORATION LLC	1/8*	921 353	N/A	N/A	N/A	N/A	N/A	N/A
10*16720	M	8-5-4	DORNA ELAINE BRASKETT	TH EXPLORATION LLC	1/8*	921 152	N/A	N/A	N/A	N/A	N/A	N/A
10*16728	M	8-5-4	CHARLES A BARE AND RUTH K RIVE	TH EXPLORATION LLC	1/8*	908 274	N/A	N/A	N/A	N/A	N/A	N/A
10*16747	M	8-5-4	WILLIAM DALE BRASKETT	TH EXPLORATION LLC	1/8*	921 96	N/A	N/A	N/A	N/A	N/A	N/A
10*16787	M	8-5-4	HERBERT B CAMPBELL & DONNA D CAMPBELL	TH EXPLORATION LLC	1/8*	942 451	N/A	N/A	N/A	N/A	N/A	N/A
10*16798	M	8-5-4	PATRICK A BARNER AND ROBIN A BARNER	TH EXPLORATION LLC	1/8*	921 95	N/A	N/A	N/A	N/A	N/A	N/A
10*16800	M	8-5-4	JAMES BERNITH JACKSON AND JULIE JACKSON	TH EXPLORATION LLC	1/8*	921 495	N/A	N/A	N/A	N/A	N/A	N/A
10*16803	M	8-5-4	CHRISTOPHER RICHARDSON AND TALLEY RICHARDSON	TH EXPLORATION LLC	1/8*	921 510	N/A	N/A	N/A	N/A	N/A	N/A
10*16804	M	8-5-4	WILLIAM N TAYLOR AND SIBERY D TAYLOR	TH EXPLORATION LLC	1/8*	921 510	N/A	N/A	N/A	N/A	N/A	N/A
10*16805	M	8-5-4	VIRGINIA WHITMAN TRUST DTD 7-25-1994 JON WHITMAN TRUSTEE	TH EXPLORATION LLC	1/8*	921 528	N/A	N/A	N/A	N/A	N/A	N/A
10*16807	M	8-5-4	DAVID TULLER AND SUSAN STORTS TULLER	TH EXPLORATION LLC	1/8*	921 513	N/A	N/A	N/A	N/A	N/A	N/A
10*16808	M	8-5-4	MICHAEL ORTIZ	TH EXPLORATION LLC	1/8*	921 549	N/A	N/A	N/A	N/A	N/A	N/A

10*47051.223.2	N	9-5-5.4	STEPHANIE SCHIEFER AND GLOIFREY SCHIEFER	TH EXPLORATION LLC	1/8+	885	321	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.223.2	N	9-5-5.4	BARBARA A BUZZARD	TH EXPLORATION LLC	1/8+	908	24	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.223.2	N	9-5-5.4	GARY T WARD AND SHARON D WARD	TH EXPLORATION LLC	1/8+	908	19	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.223.2	N	9-5-5.4	JO DEEK GAVIS	TH EXPLORATION LLC	1/8+	908	136	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.223.2	N	9-5-5.4	JOANNE WILCH	TH EXPLORATION LLC	1/8+	908	141	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.223.2	N	9-5-5.4	WENDY L SMARTEL	TH EXPLORATION LLC	1/8+	908	69	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.223.2	N	9-5-5.4	TIM J HOBBS	TH EXPLORATION LLC	1/8+	908	277	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.223.2	N	9-5-5.4	PATSY JO BARI	TH EXPLORATION LLC	1/8+	908	155	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.223.3	N	9-5-5.4	ROBERT A LEADBETTER AND M REBECCA LEADBETTER	TH EXPLORATION LLC	1/8+	885	324	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.223.3	N	9-5-5.4	LAURIE DRUGGERS MANDERSON	TH EXPLORATION LLC	1/8+	908	165	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.223.3	N	9-5-5.4	NANCY C HOUSLEY	TH EXPLORATION LLC	1/8+	908	187	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.223.3	N	9-5-5.4	DEBRA L CIAFFAGNONE	TH EXPLORATION LLC	1/8+	908	192	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.223.6	N	9-5-5.4	JOSHUA RINE AND REBECCA RINE	TH EXPLORATION LLC	1/8+	907	634	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.223.6	N	9-5-5.4	MICHAEL J SHYDER	CHEVRON U.S.A. INC.	1/8+	885	185	N/A	N/A	N/A	N/A	N/A	Chevron to Tug HET: 960/409

51-01961



July 18, 2017

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

RE: Ten High 1N-12HU

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 21/11 in the area reflected on the Ten High 1N-12HU 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 at 304-376-0111 or by email at amiller@tug-hilop.com.

Sincerely,

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

Amy L. Miller
Permit Specialist – Appalachia

382 SOUTHPOINTE BLVD-SUITE 200, CANONSBURG, PA 15317 T 724.485.2000 F 724.338.2030

RECEIVED
Office of Oil and Gas
JAN 23 2018
WV Department of
Environmental Protection

06/15/2018

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

Date of Notice Certification: 08/21/2017

API No. 47- 051 - 01961
Operator's Well No. Ten High 1N-12HJ
Well Pad Name: Ten High

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>527,322.64</u>
County: <u>Marshall</u>		Northing: <u>4,408,353.45</u>
District: <u>Meade</u>	Public Road Access: <u>Shepherd Ridge Lane (Co. Rt. 21/S)</u>	
Quadrangle: <u>Glen Easton 7.5'</u>	Generally used farm name: <u>LAWRENCE & SHIRLEY CONKLE, ESTS</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 style="text-align: center;">OOG OFFICE USE ONLY</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p>
--	--

Required Attachments:

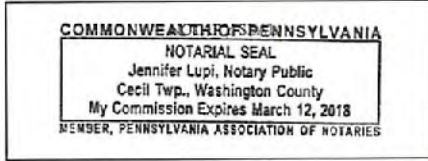
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication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

RECEIVED
Office of Oil and Gas
JAN 23 2018
WV Department of
Environmental Protection

Certification of Notice is hereby given:

THEREFORE, I ~~Jennifer Lupi~~ Amy 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 Miller <i>Amy Miller</i></u>		<u>Canonsburg, PA 15317</u>
Its:	<u>Permit Specialist - Appalachia</u>	Facsimile:	<u>724-336-2030</u>
Telephone:	<u>724-749-8388</u>	Email:	<u>amiller@tug-hill-op.com</u>



Subscribed and sworn before me this 31st 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.

RECEIVED
 Office of Oil and Gas
 JAN 23 2018
 WV Department of
 Environmental Protection

WW-6A
(9-13)

API NO. 47- 051 - 01901
OPERATOR WELL NO. Ten High 1N-12HU
Well Pad Name: Ten High

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: 1/19/2018 **Date Permit Application Filed:** 1/19/2018

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: Estate of Lawrence & Shirley Mae Conkle c/o Roy Conkle

Address: 75 Arlington Avenue
Moundsville, WV 26041

Name: Roy A. Conkle, Sr., and Lorie A.

Address: 75 Arlington Avenue
Moundsville, WV 26041 *See Attached*

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

Name: Robert G. Hubbs and Scarlett E. Otte

Address: 132 Shepherds Ridge Lane
Glen Easton, WV 26039

Name: None

Address: _____

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: _____

Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: None

Address: _____

*Please attach additional forms if necessary

RECEIVED
Office of Oil and Gas

JAN 23 2018

WV Department of
Environmental Protection

06/15/2018

Notice is hereby given:

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

This Notice Shall Include:

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

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

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

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

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

RECEIVED
Office of Oil and Gas
JAN 23 2018

WV Department of
Environmental Protection

Well Location Restrictions

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

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

RECEIVED
Office of Oil and Gas
JAN 23 2018
WV Department of
Environmental Protection

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

Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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

RECEIVED
Office of Oil and Gas
JAN 23 2018
WV Department of
Environmental Protection

WW-6A
(8-13)

API NO. 47-051 - 01961
OPERATOR WELL NO. Ten High 1N-12HU
Well Pad Name: Ten High

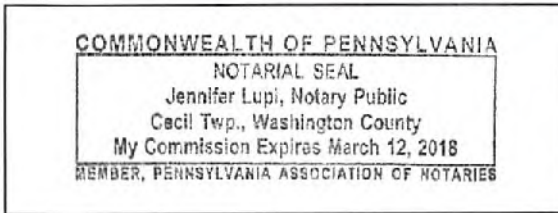
Notice is hereby given by:

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

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.



Subscribed and sworn before me this 19th day of Jan, 2018.
Jennifer Lupi Notary Public
My Commission Expires March 12, 2018

RECEIVED
Office of Oil and Gas

JAN 23 2018

WV Department of
Environmental Protection

06/15/2018

WW-6A Notice of Application Attachment 1 of 1

Surface Owner(s):

Name: Teresa Anne Hughes and Michael J.
Address: 252 Conkle Drive
Glen Easton, WV 26039

Brenda Joyce Whetzel
1863 Shepherds Ridge Lane
Glen Easton, WV 26039

Larry Lee Conkle and Donna D.
154 Conkle Drive
Glen Easton, WV 26039

RECEIVED
Office of Oil and Gas
JAN 23 2018
WV Department of
Environmental Protection

Exhibit WW-6A

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

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

Well: Ten High 1N – 12HU
District: Meade (House #'s 1-3)
State: WV

There are three (3) residences, no businesses, no churches, no schools or no emergency facilities within two-thousand feet (2,000') of the above referenced well location.

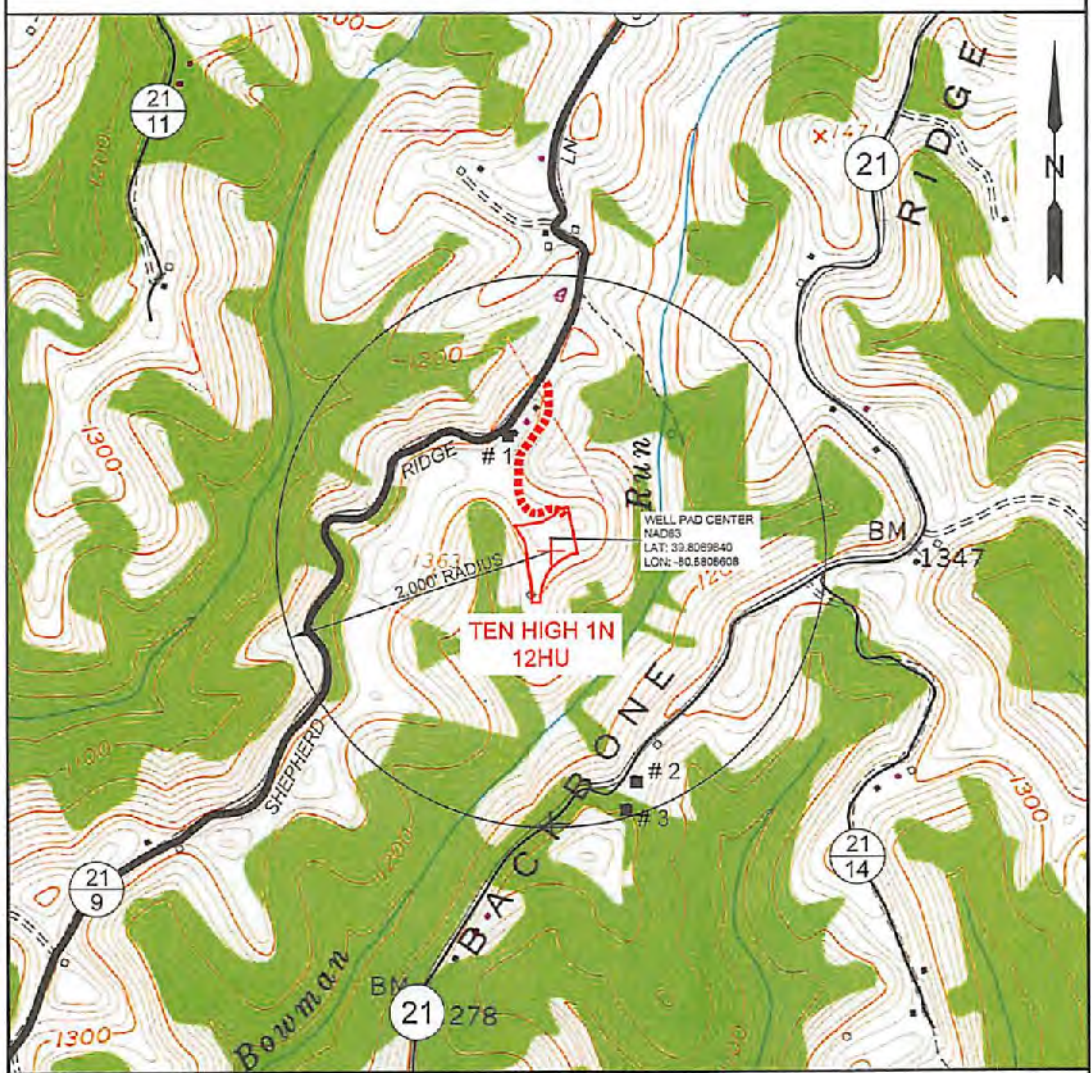
<p>House 1 TM 7 Pcl. 24 Lawrence & Shirley Conkle Ests Phone: 304-845-1808; 304-848-1808 Physical Address: 77B Shepards Lane 932 Shepherd Ridge Ln. Glen Easton, WV 26039 Tax Address: 75 Arlington Ave. Moundsville, WV 26041</p>	<p>House 2 TM 7 Pcl. 25 Thomas R. & Kimberly Whitfield Phone: 304-843-1753 Physical Address: 53 Sallys Backbone Rd. 1834 Sally's Backbone Rd. Glen Easton, WV 26039 Tax Address: 1838 Sallys Backbone Rd. Glen Easton, WV 26039</p>	<p>House 3 TM 7 Pcl. 25 Thomas R. & Kimberly Whitfield Phone: 304-843-1753 Physical Address: 53 Sallys Backbone Rd. 1838 Sally's Backbone Rd. Glen Easton, WV 26039 Tax Address: Same</p>
---	--	--

RECEIVED
Office of Oil and Gas



JAN 23 2018

WV Department of
Environmental Protection

PROPOSED TEN HIGH 1N - 12HU



NOTE: THERE APPEARS TO BE THREE (3) POSSIBLE WATER SOURCES WITHIN 2,000'.

 <p>SLS Land & Energy Development Solutions from the ground up. P.O. Box 150 #12 Vinton Drive # Glenville, WV 26031 # (304) 482-8834 www.slsurveys.com</p>	TOPO SECTION: GLEN EASTON 7.5' COUNTY: MARSHALL DISTRICT: MEADE		OPERATOR: PREPARED FOR: TUG HILL OPERATING, LLC 350 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317		
	DRAWN BY: K.G.M.	JOB NO.: 8555	DATE: 07-21-17	SCALE: 1" = 1000'	

RECEIVED
Office of Oil and Gas
JAN 23 2018
WV Department of
Environmental Protection

51-01961

WW-6A3
(1/12)

Operator Well No. Ten High 1N-124U

**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: February 8, 2017 Date of Planned Entry: February 17, 2017

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: Estate of Lawrence & Shirley Mae Conkle c/o Roy Conkle
Address: 75 Arlington Avenue
Moundsville, WV 26041
Name: Roy A. Conkle, Sr. and Lorie A.
Address: 75 Arlington Avenue
Moundsville, WV 26041
Name: Larry Lee Conkle and Donna D.
Address: 154 Conkle Drive
Glen Eason, WV 26039 *See Attached

COAL OWNER OR LESSEE
Name: Murray Energy Corporation
Address: 46228 National Road
St. Clairsville, OH 43950 *See Attached

MINERAL OWNER(s)
Name: Estate of Lawrence & Shirley Mae Conkle c/o Roy Conkle
Address: 75 Arlington Avenue
Glen Eason, WV 26039 *See Attached
*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 39.8087775 LONG -80.6809192</u>
County:	<u>MARSHALL</u>	Public Road Access:	<u>SHEPHERD RIDGE LANE (Co. RT. 21/B)</u>
District:	<u>MEADE</u>	Watershed:	<u>HUC-10 FISH CREEK</u>
Quadrangle:	<u>GLEN EASTON 7.5'</u>	Generally used farm name:	<u>LAWRENCE CONKLE, SR.</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 57th Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator:	<u>TUG HILL OPERATING, LLC</u>	Address:	<u>380 SOUTHPOINTE BLVD, SOUTHPOINTE PLAZA II, SUITE 200</u>
Telephone:	<u>724-748-8388</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 of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

RECEIVED
Office of Oil and Gas

JAN 23 2018

WV Department of
Environmental Protection

06/15/2018

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

Surface Owner(s):

Name: Teresa Anne Hughes and Michael J.
Address: 252 Conkle Drive
Glen Easton, WV 26039

Brenda Joyce Whetzel
1863 Shepherds Ridge Lane
Glen Easton, WV 26039

Robert G. Hubbs and Scarlett E. Otte
132 Shepherds Ridge Lane
Glen Easton, WV 26039

Mineral Owner(s):

Name: Roy A. Conkle, Sr. and Lorie A.
75 Arlington Avenue
Moundsville, WV 26041

Larry Lee Conkle and Donna D.
154 Conkle Drive
Glen Easton, WV 26039

Teresa Anne Hughes and Michael J.
252 Conkle Drive
Glen Easton, WV 26039

Brenda Joyce Whetzel
1863 Shepherds Ridge Lane
Glen Easton, WV 26039

RECEIVED
Office of Oil and Gas
JAN 23 2018
WV Department of
Environmental Protection

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

Notice Time Requirement: notice shall be provided no later than the filing date of permit application.
Date of Notice: 07/31/2017 Date Permit Application Filed: 08/01/2017

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

- CERTIFIED MAIL RETURN RECEIPT REQUESTED
- HAND 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: Estate of Lawrence & Shirley Mae Conkle c/o Roy Conkle	Name: Roy A. Conkle, Sr., and Lorie A.
Address: 75 Arlington Avenue	Address: 75 Arlington Avenue
Moundsville, WV 26041	Moundsville, WV 26041 **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: West Virginia	UTM NAD 83 Easting: 527,322.64
County: Marshall	Northing: 4,406,353.45
District: Meade	Public Road Access: Shepherd Ridge Lane (Co. Rt. 21/8)
Quadrangle: Glen Easton 7.5'	Generally used farm name: LAWRENCE & SHIRLEY CONKLE, ESTS
Watershed: (HUC 10) Fish Creek	

This Notice Shall Include:

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

Well Operator: Tug Hill Operating, LLC	Address: 380 Southpointe Blvd, Southpointe Plaza II, Suite 200
Telephone: 724-749-8388	Canonsburg, PA 15317
Email: amiller@tug-hill-op.com	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.

RECEIVED
Office of Oil and Gas
JAN 23 2018
WV Department of
Environmental Protection

Operator Well Nos. TEN HIGH 1N-12HU

WW-6A5 Notice of Planned Operation..... Attachment 1 of 1

Surface Owner(s):

Name: Teresa Anne Hughes and Michael J.
Address: 252 Conkle Drive
Glen Easton, WV 26039

Brenda Joyce Whetzel
1863 Shepherds Ridge Lane
Glen Easton, WV 26039

Larry Lee Conkle and Donna D.
154 Conkle Drive
Glen Easton, WV 26039

Robert G. Hubbs and Scarlett E. Otte
132 Shepherds Ridge Lane
Glen Easton, WV 26039

RECEIVED
Office of Oil and Gas
JAN 23 2018
WV Department of
Environmental Protection

51-01961



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 57th Street, SE
Charleston, WV 25304

Subject: DOH Permit for the Ten High 1N Pad, Marshall County
Ten High 1N Unit-12HU Well site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2017-0127 which has been issued to Tug Hill Operating, LLC for access to the State Road for a well site located off of Marshall County Route 21/9 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

E.E.O./AFFIRMATIVE ACTION EMPLOYER

RECEIVED
Office of Oil and Gas
JAN 23 2018
WV Department of
Environmental Protection

06/15/2018

51-01961



PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION

Well No. Ten High 1N-12HU

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

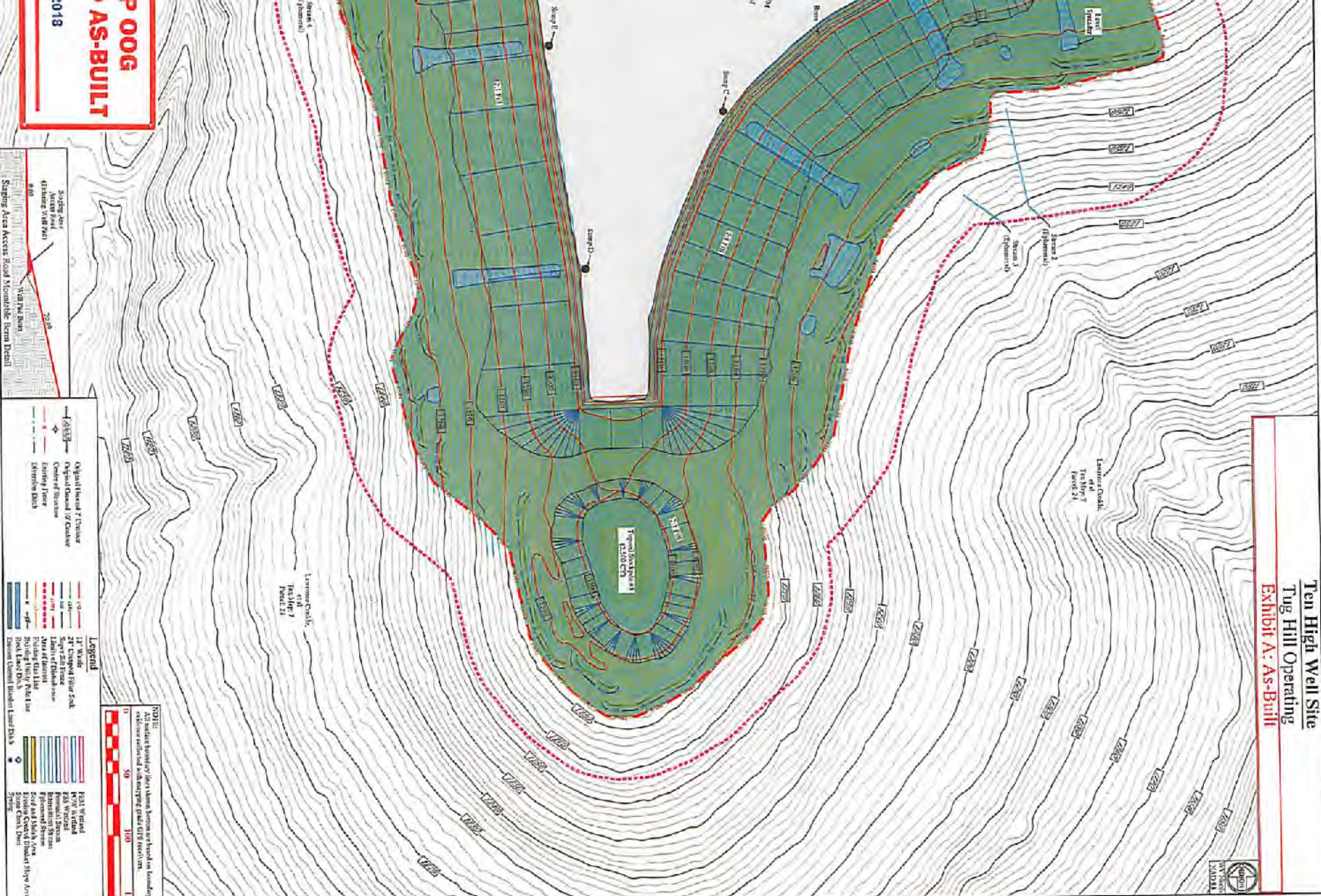
380 SOUTHPOINTE BLVD • SUITE 200 • CANONSBURG, PA 15317 • T 724.485-2000 • F 724.338.2030

RECEIVED
Office of Oil and Gas
JAN 23 2018
WV Department of
Environmental Protection

06/15/2018

51-01961

Ten High Well Site
Tug Hill Operating
Exhibit A: As-Built



Date	02-17-2017	Revision	As-Built
	12-06-2017	Drawn	

TUG HILL
OPERATING



THIS DOCUMENT
PREPARED FOR
TUG HILL
OPERATING

Keller **Stonewall**
Engineering & Construction

Erosion and Sediment Control Plan
Ten High Well Site
Mingo District
Marshall County, WV

WV Department of
Environmental Protection

Date: 02/17/2017
Scale: As Shown
Drawn By: JES
File No:
Sheet 7 of 13



- Legend**
- 12" Wide
 - 24" Wide
 - 36" Wide
 - 48" Wide
 - 60" Wide
 - 72" Wide
 - 84" Wide
 - 96" Wide
 - 108" Wide
 - 120" Wide
 - 132" Wide
 - 144" Wide
 - 156" Wide
 - 168" Wide
 - 180" Wide
 - 192" Wide
 - 204" Wide
 - 216" Wide
 - 228" Wide
 - 240" Wide
 - 252" Wide
 - 264" Wide
 - 276" Wide
 - 288" Wide
 - 300" Wide
 - 312" Wide
 - 324" Wide
 - 336" Wide
 - 348" Wide
 - 360" Wide
 - 372" Wide
 - 384" Wide
 - 396" Wide
 - 408" Wide
 - 420" Wide
 - 432" Wide
 - 444" Wide
 - 456" Wide
 - 468" Wide
 - 480" Wide
 - 492" Wide
 - 504" Wide
 - 516" Wide
 - 528" Wide
 - 540" Wide
 - 552" Wide
 - 564" Wide
 - 576" Wide
 - 588" Wide
 - 600" Wide
 - 612" Wide
 - 624" Wide
 - 636" Wide
 - 648" Wide
 - 660" Wide
 - 672" Wide
 - 684" Wide
 - 696" Wide
 - 708" Wide
 - 720" Wide
 - 732" Wide
 - 744" Wide
 - 756" Wide
 - 768" Wide
 - 780" Wide
 - 792" Wide
 - 804" Wide
 - 816" Wide
 - 828" Wide
 - 840" Wide
 - 852" Wide
 - 864" Wide
 - 876" Wide
 - 888" Wide
 - 900" Wide
 - 912" Wide
 - 924" Wide
 - 936" Wide
 - 948" Wide
 - 960" Wide
 - 972" Wide
 - 984" Wide
 - 996" Wide
 - 1008" Wide
 - 1020" Wide
 - 1032" Wide
 - 1044" Wide
 - 1056" Wide
 - 1068" Wide
 - 1080" Wide
 - 1092" Wide
 - 1104" Wide
 - 1116" Wide
 - 1128" Wide
 - 1140" Wide
 - 1152" Wide
 - 1164" Wide
 - 1176" Wide
 - 1188" Wide
 - 1200" Wide
 - 1212" Wide
 - 1224" Wide
 - 1236" Wide
 - 1248" Wide
 - 1260" Wide
 - 1272" Wide
 - 1284" Wide
 - 1296" Wide
 - 1308" Wide
 - 1320" Wide
 - 1332" Wide
 - 1344" Wide
 - 1356" Wide
 - 1368" Wide
 - 1380" Wide
 - 1392" Wide
 - 1404" Wide
 - 1416" Wide
 - 1428" Wide
 - 1440" Wide
 - 1452" Wide
 - 1464" Wide
 - 1476" Wide
 - 1488" Wide
 - 1500" Wide
 - 1512" Wide
 - 1524" Wide
 - 1536" Wide
 - 1548" Wide
 - 1560" Wide
 - 1572" Wide
 - 1584" Wide
 - 1596" Wide
 - 1608" Wide
 - 1620" Wide
 - 1632" Wide
 - 1644" Wide
 - 1656" Wide
 - 1668" Wide
 - 1680" Wide
 - 1692" Wide
 - 1704" Wide
 - 1716" Wide
 - 1728" Wide
 - 1740" Wide
 - 1752" Wide
 - 1764" Wide
 - 1776" Wide
 - 1788" Wide
 - 1800" Wide
 - 1812" Wide
 - 1824" Wide
 - 1836" Wide
 - 1848" Wide
 - 1860" Wide
 - 1872" Wide
 - 1884" Wide
 - 1896" Wide
 - 1908" Wide
 - 1920" Wide
 - 1932" Wide
 - 1944" Wide
 - 1956" Wide
 - 1968" Wide
 - 1980" Wide
 - 1992" Wide
 - 2004" Wide
 - 2016" Wide
 - 2028" Wide
 - 2040" Wide
 - 2052" Wide
 - 2064" Wide
 - 2076" Wide
 - 2088" Wide
 - 2100" Wide
 - 2112" Wide
 - 2124" Wide
 - 2136" Wide
 - 2148" Wide
 - 2160" Wide
 - 2172" Wide
 - 2184" Wide
 - 2196" Wide
 - 2208" Wide
 - 2220" Wide
 - 2232" Wide
 - 2244" Wide
 - 2256" Wide
 - 2268" Wide
 - 2280" Wide
 - 2292" Wide
 - 2304" Wide
 - 2316" Wide
 - 2328" Wide
 - 2340" Wide
 - 2352" Wide
 - 2364" Wide
 - 2376" Wide
 - 2388" Wide
 - 2400" Wide
 - 2412" Wide
 - 2424" Wide
 - 2436" Wide
 - 2448" Wide
 - 2460" Wide
 - 2472" Wide
 - 2484" Wide
 - 2496" Wide
 - 2508" Wide
 - 2520" Wide
 - 2532" Wide
 - 2544" Wide
 - 2556" Wide
 - 2568" Wide
 - 2580" Wide
 - 2592" Wide
 - 2604" Wide
 - 2616" Wide
 - 2628" Wide
 - 2640" Wide
 - 2652" Wide
 - 2664" Wide
 - 2676" Wide
 - 2688" Wide
 - 2700" Wide
 - 2712" Wide
 - 2724" Wide
 - 2736" Wide
 - 2748" Wide
 - 2760" Wide
 - 2772" Wide
 - 2784" Wide
 - 2796" Wide
 - 2808" Wide
 - 2820" Wide
 - 2832" Wide
 - 2844" Wide
 - 2856" Wide
 - 2868" Wide
 - 2880" Wide
 - 2892" Wide
 - 2904" Wide
 - 2916" Wide
 - 2928" Wide
 - 2940" Wide
 - 2952" Wide
 - 2964" Wide
 - 2976" Wide
 - 2988" Wide
 - 3000" Wide

Scale: 1" = 100'
As-Built

018