

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

Harold D. Ward, Cabinet Secretary www.dep.wv.gov

Friday, June 24, 2022 WELL WORK PERMIT Horizontal 6A / New Drill

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

Re: Permit approval for HEAVEN HILL 3N-12HM 47-051-02449-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0450.

James A. Martin Chief

Operator's Well Number: HEAVEN HILL 3N 12HM Farm Name: ANDREW C WHITLATCH ET U.S. WELL NUMBER: 47-051-02449-00-00 Horizontal 6A New Drill Date Issued: 6/24/2022

Promoting a healthy environment.

$\begin{array}{r} \text{API Number:} \\ 4705102449 \end{array}$

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. <u>Failure to adhere to the specified permit</u> 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.

API Number:

4705102449

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.

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07/01/2022

WW-6B (04/15)

OPERATOR WELL NO. Heaven Hill 3N-12HM Well Pad Name: Heaven Hill 3

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<u>STATE OF WEST VIRGINIA</u>	° F /	V.	3 I	v e	44	: 9
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFIC	E OF	OIL	ANI) GAS		-
WELL WORK PERMIT APPLICATION						

1) Well Operate	or: Tug Hi	ill Operating	j, LLC	494510851	Marshall	Meade	Glen Easton 7.5'
· •				Operator ID	County	District	Quadrangle
2) Operator's W	/ell Numbe	r: <u>Heaven I</u>	Hill 3N-12H	HM Well Pad	Name: Heave	en Hill 3	
3) Farm Name/	Surface Ow	ner: Andrew	C. Whitlatch	, et ux Public Roa	d Access: Yea	ter Lane C	R 21/11
4) Elevation, cu	irrent groun	nd: 1,328'	El	evation, proposed	post-construction	on: 1,328'	
5) Well Type	(a) Gas	<u>X</u>	Oil	Unde	rground Storag	je	
	Other						
	(b)If Gas	Shallow	X	Deep			
		Horizontal	X				
6) Existing Pad	: Yes or No	Yes					
				ipated Thickness a ressure of approx. 3800 psi.	nd Expected Pr	essure(s):	
8) Proposed To	tal Vertical	Depth: 6,9	69'			RE Office o	CEIVED of Oil and Gas
9) Formation at			Onondag	a			1 5 2022
10) Proposed T	otal Measu	red Depth:	14,732'			0011	
11) Proposed H	orizontal L	eg Length:	6,979.09'			Environn	nental Protection
12) Approxima	te Fresh Wa	ater Strata D	epths:	70; 1,038'		-	
13) Method to 1	Determine I	Fresh Water	Depths: E	Based on the depth of	Pittsburgh Coal s	eam, per WV	GES mapping contours
14) Approxima	te Saltwate	r Depths:	,431'				
15) Approxima	te Coal Sea	m Depths:	Sewickley	Coal - 945' and F	Pittsburgh Coa	- 1,032'	
16) Approxima	te Depth to	Possible Vo	id (coal mi	ne, karst, other):	None anticipat	ed	
17) Does Propo directly overlyi				ns Yes X	No		
(a) If Yes, pro	vide Mine	Info: Nam	e: Mars	hall County Coal	Resources / M	larshall Co	unty Mine
· · · •		Dept	h: Pittst	ourgh coal TVD -	1,032' and sub	sea level -	- 295'
		Seam	: Pittst	ourgh #8			
		Own	er: Mars	hall County Coal	Resources, In	c	

4705102449 API NO. 47-051 -___

OPERATOR WELL NO. Heaven Hill 3N-12HM

Well Pad Name: Heaven Hill 3

WW-6B (04/15)

18)

CASING AND TUBING PROGRAM

ТҮРЕ	<u>Size</u> (in)	<u>New</u> or <u>Used</u>	<u>Grade</u>	<u>Weight per ft.</u> (lb/ft)	<u>FOOTAGE: For</u> <u>Drilling (ft)</u>	INTERVALS: Left in Well (ft)	<u>CEMENT:</u> <u>Fill-up</u> (Cu. Ft.)/CTS
Conductor	30"	NEW	BW	BW	100'	100'	259FT^3(CTS)
Fresh Water/Coal	13 3/8"	NEW	J55	54.5#	1,175'	1,175'	1,108FT^3(CTS)
Intermediate	9 5/8"	NEW	J55	36#	2,947'	2,947'	981FT^3(CTS)
Production	5 1/2"	NEW	P110	20#	14,732'	14,732'	3,764FT^3(CTS)
Tubing	2 3/8"	NEW	P110	4.7#		6,682'	
Liners							

MgK 1/19/2022

ТҮРЕ	Size (in)	Wellbore Diameter (in)	<u>Wall</u> <u>Thickness</u> <u>(in)</u>	<u>Burst Pressure</u> (psi)	Anticipated Max. Internal Pressure (psi)	<u>Cement</u> <u>Type</u>	<u>Cement</u> <u>Yield</u> (cu. ft./k)
Conductor	30"	36"	1.0	2,333	1,866	CLASS A	1.2
Fresh Water/ Coal	13 3/8"	17 1/2"	.38	2,740	2,192	SEE #24	1.2
Intermediate	9 5/8"	12 1/4"	.352	3,520	2,816	SEE #24	1.19
Production	5 1/2"	8 7/8"_8 3/4"	.361	12,640	10,112	SEE #24	1.17/1.19
Tubing	2 3/8"		.19	11,200	8,960	6	
Liners							

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PACKERS

		wy Department or
Kind:	N/A	WV Department or Environmental Protection
Sizes:	N/A	
Depths Set:	N/A	

WW-6B (10/14)

47051 API NO. 47-051	02449
OPERATOR WELL NO). Heaven Hill 3N-12HM
Well Pad Name: Here	aven Hill 3

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

Drill through the Marcellus and TD Pilot Hole 100' into the Onondaga. Log vertical section and run a solid cement plug back to proposed KOP (6,362'). Drill curve and lateral per proposed well plan, run and cement production casing. Perform CBL from 60 deg to surface, make cleanout run, and stimulate.

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

Well to be completed with approximately 17,500,000 lb proppant and 320,000 bbl of water. Max rate = 80 bpm; max psi = 9,000#.

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

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

23) Describe centralizer placement for each casing string:

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

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

Sfc - Premium NE-1 + 2% CaCl; Int1 - Premium NE-1 + 1.5% CaCL + Flake; Int2 - Lead: Premium NE-1 + 5% BA-90 + .85% R-3 +
3% KCl + .75 gals/100sk FP-13L + 1% MPA-170 Tail: Premium NE-1 +.1% R-3 + 5% KCl + 1% CD-32 + .4% FL-52 +.2% ASA-301
+ .6% Sodium Metasilicate; Kick Plug - Class H Cement + 1% CD-32 + .7% Sodium Metasilicate + .1% R-3 + .75 gal/100sk FP-13L;
Prod - Lead: 50:50 (Poz:Class H) + .3% R-3 + .3% MPA-250 + .75 gal/100sk FP-13L Tail: 25:75 (Poz:Class H) + .3% R-3 + .3%
MPA-250 + .375 gal/100sk FP-13L

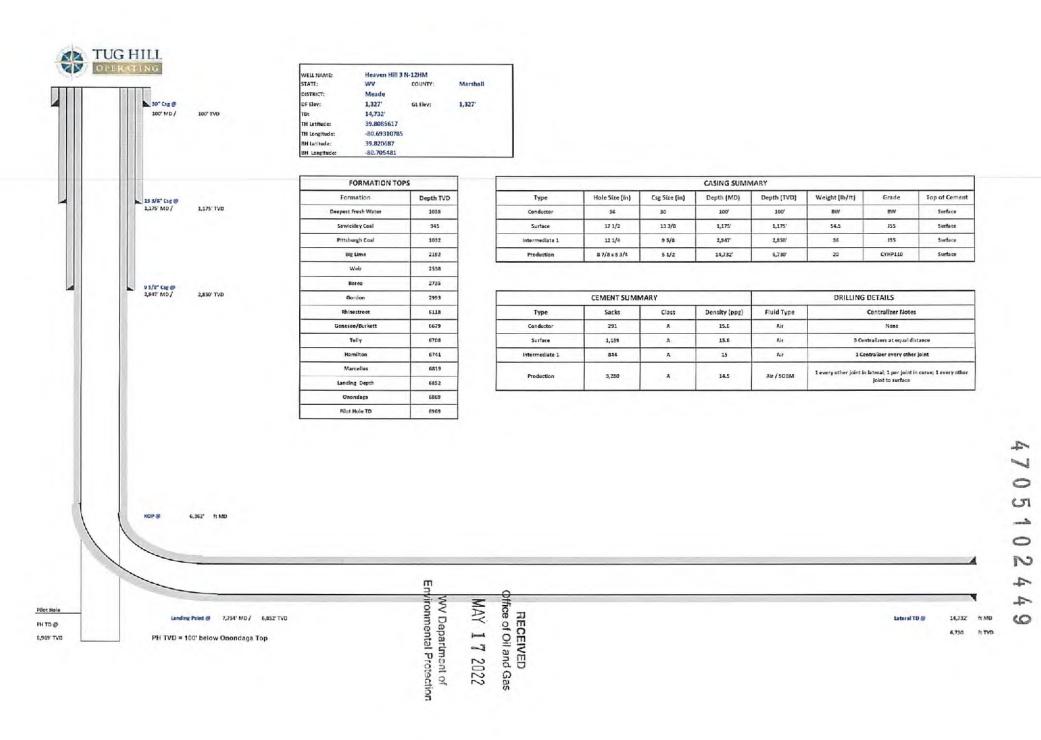
25) Proposed borehole conditioning procedures:

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

MAY 17 2022

WV Department of Environmental Protection

*Note: Attach additional sheets as needed.



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Tug Hill Operating, LLC Casing and Cement Program

Heaven Hill 3 N-12HM

Casing

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	100'	CTS
Surface	13 3/8"	J55	17 1/2"	1,175	CTS
Intermediate	9 5/8"	J55	12 1/4"	2,947'	CTS
Production	5 1/2"	CYHP110	87/8 x 83/4	14,732'	CTS

Cement

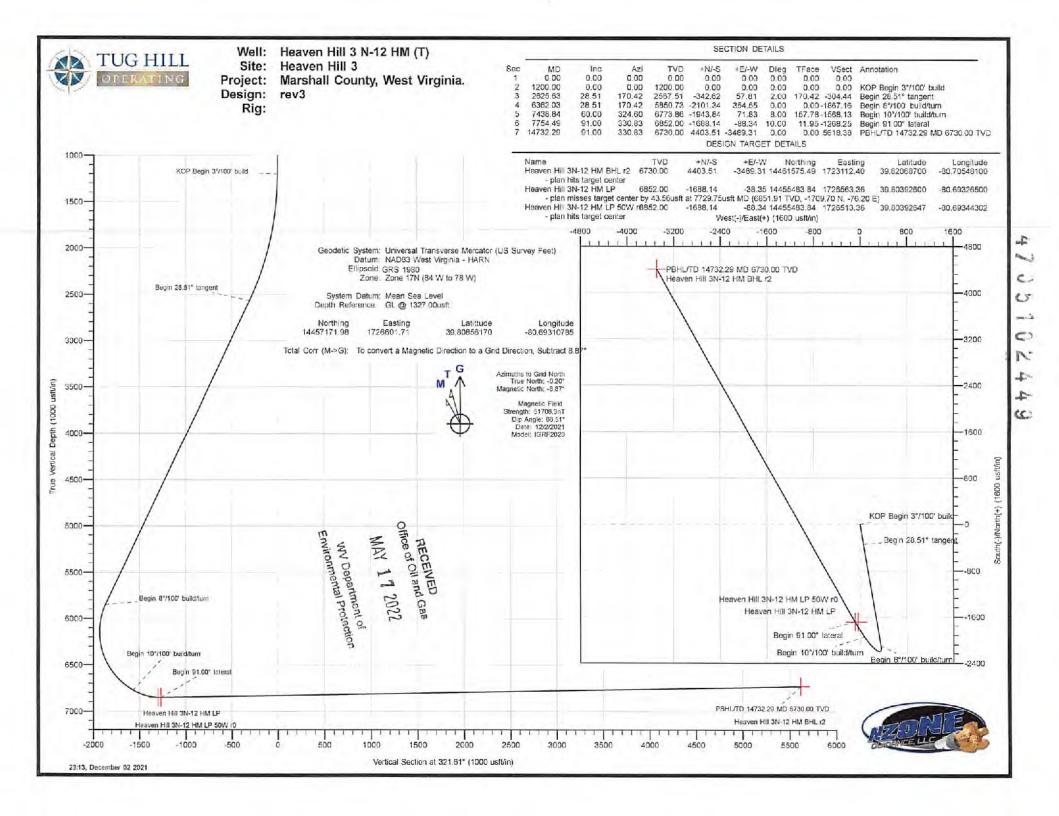
Conductor:	Premium NE-1 + 2% bwoc CaC12 + 46.5% Fresh Water - Conductor Cement mixed at 15.6 ppg, Y=1.2
Surface:	Premium NE-1 + 2% bwoc CaC12 + 46.5% Fresh Water – Surface Cement mixed at 15.6 ppg, Y=1.2
Intermediate:	Premium NE-1 + 1% bwoc CaC12 + 46.5% Fresh Water – Intermediate Cement mixed at 15 ppg, Y=1.38
Kick Off Plug:	Class H Cement + 1% CD-32 + .7% Sodium Metasilicate + .1% R-3 + .75 gal/100sk FP-13L - KOP Plug
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 14.5 ppg, Y = 1.3

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WV Department of Environmental Protection

07/01/2022





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; t Virginia. 1 (T)	Local Co-ordinate Refere TVD Reference: MD Reference: North Reference: Survey Calculation Meth	GL GL Gri	II Heaven Hill 3 @ 1327.00usft @ 1327.00usft d imum Curvature)
Virginia.					
ercator (US Survey Feet) ARN)	System Datum:	Mear	Sea Level		
Northing: Easting: sft Slot Radius:		Latitude: Longitude:			39.80858060 -80.69321360
(T)					
) usft Northing:) usft Easting:) usft Wellhead Elevat	14,457,171.99 1,726,601.70 n:	usft Longit			39.80856170 -80.69310785 1,327.00 usf
Sample Date	Declination (°)	Dip Ang (°)	le		trength T)
12/2/2021	-8.67		66.51	51,7	08.31519079
Phase: P	AN Tie	On Depth:	0.0	00	
pth From (TVD) (usft) 0.00	+N/-S +E/ (usft) (us 0,00 0,0	ft)	Directi (°) 321.6		á.
Wellbore) ginal Hole)	Tool Name	Remarks			
Vertical Depth +N/-S (usft) (usft)	Dogleg +E/-W Rate (usft) (°/100usft)	Build Rate (°/100usft) (°	Turn Rate /100usft)	TFO (°)	Target
0.00 0.00	0.00 0.00	0.00	0.00	0.00	
1,200.00 0.00	0.00 0.00	0.00	0.00	0.00	
2,567.51 -342.62	57.81 2.00	2.00	0.00	170.42	
5,850.73 -2,101.34	354.55 0.00	0.00	0.00	0.00	
					Heaven Hill 3N-12 HM
	6,773.86 -1,943.84 6,852.00 -1,688.14 6,730.00 4,403.51	6,773.86-1,943.8471.838.006,852.00-1,688.14-88.3410.00	6,773.86-1,943.8471.838.002.926,852.00-1,688.14-88.3410.009.82	6,773.86-1,943.8471.838.002.9214.326,852.00-1,688.14-88.3410.009.821.97	6,773.86-1,943.8471.838.002.9214.32157.786,852.00-1,688.14-88.3410.009.821.9711.95





4705102449

Well Heaven Hill 3 N-12 HM (T)

GL @ 1327.00usft

GL @ 1327.00usft

Minimum Curvature

Grid

DB_Dec2220_v16 Local Co-ordinate Reference: Database: Company: Tug Hill Operating LLC TVD Reference: Marshall County, West Virginia. Project: MD Reference: Site: Heaven Hill 3 North Reference: Well: Heaven Hill 3 N-12 HM (T) Survey Calculation Method: Original Hole Wellbore: rev3 Design:

Planned Survey

Vertical Map Map Measured Easting Depth Inclination Azimuth Depth +N/-S +E/-W Northing (usft) (usft) (usft) (usft) (") (usft) (usft) Latitude Longitude (°) -80 69310785 0.00 0.00 0.00 0.00 0.00 0.00 14,457,171.99 1,726,601.70 39.80856170 0.00 0.00 100.00 0.00 0.00 14,457,171,99 1.726.601.70 39.80856170 -80.69310785 100.00 200.00 0.00 0.00 200.00 0.00 0.00 14,457,171.99 1,726,601.70 39,80856170 -80,69310785 300.00 39.80856170 -80.69310785 0.00 0.00 0.00 14 457 171 99 1,726,601,70 300.00 0.00 39.80856170 -80.69310785 400.00 0.00 0.00 400.00 0.00 0.00 14,457,171.99 1,726,601.70 500.00 0.00 0.00 500.00 0.00 0.00 14.457.171.99 1,726,601.70 39 80856170 -80.69310785 600.00 0.00 0.00 600.00 0.00 0.00 14,457,171.99 39.80856170 -80.69310785 1,726,601.70 700.00 0.00 0.00 700.00 0.00 0.00 14,457,171.99 1,726,601.70 39 80856170 -80 69310785 0.00 800.008 0.00 14 457 171 99 39.80856170 -80.69310785 800.00 0.00 0.00 1726 601.70 39.80856170 -80.69310785 900.00 0.00 0.00 900.00 0.00 0.00 14,457,171.99 1,726,601.70 -80.69310785 1,000.00 0.00 0.00 1 000.00 0.00 0 00 14,457,171.99 1,726,601.70 39.80856170 -80.69310785 1,100.00 0.00 0.00 1.100.00 0.00 0.00 14,457,171.99 1,726,601.70 39.80856170 1,200.00 0.00 0.00 1,200.00 0.00 0.00 14,457,171.99 1,726,601.70 39 80856170 -80.69310785KOP Begin 3º/100' build 2.00 170.42 1,299,98 -1.72 0.29 14,457,170.27 1,726,602.00 39.80855697 -80.69310684 1,300.00 1,400.00 4.00 170.42 1.399.84 -6.88 1.16 14,457,165.10 1,726,602.87 39.80854279 -80.69310380 6.00 1,499.45 39.80851918 -80.69309874 1,500.00 170.42 -15.47 2.61 14,457,156,51 1,726,604.32 8.00 1,598.70 -27.49 39.80848616 -80.69309167 1,600.00 170.42 4.64 14,457,144,49 1,726,606.34 -80 69308259 10.00 1 697 47 -42.92 7 24 39 80844378 1,700.00 170.42 14,457,129,07 1,726,608.95 1,800.00 12.00 170.42 1.795.62 -61.73 10.42 14,457,110.25 1,726,612.12 39.80839208 -80.69307152 1,900.00 14.00 170.42 1.893.06 -83.91 14,16 14,457,088.08 1,726,615.86 39.80833113 -80 69305846 2,000,00 16.00 170,42 1,989,64 -109,43 18.46 14,457,062.58 39,80826101 -80 69304344 1,726,620,17 2,100.00 18.00 170.42 2.085.27 -138.26 23.33 14,457,033.73 1.726,625.03 39.80818179 -80.69302647 2 179.82 2,200,00 20.00 170,42 -170.36 28.74 14.457.001.63 1,726,630,45 39,80809358 -80,69300758 22.00 2,273.17 -205.70 39.80799648 -80.69298678 2.300.00 170.42 34.71 14,456,966,29 1,726,636.41 2,400.00 24 00 170 42 2 365 21 -244 22 41 21 14,456,927,76 1,726,642,91 39 80789062 -80 69296410 2,455.84 2.500.00 26.00 170.42 -285.89 48.24 14,456,886.09 1,726,649.94 39.80777612 -80.69293958 2,600.00 28.00 170 42 2 544 94 -330 66 55 79 14,456,841,33 1,726,657,50 39 80765311 -80 69291323 2.625.63 28.51 170.42 2.567.51 -342.62 57.81 14,456,829.37 1,726,659.51 39.80762024 -80,69290619 Begin 28.51° tangent 2,700.00 28.51 170.42 2.632.86 -377.63 63.72 14,456,794.36 1,726,665.42 39.80752405 -80.69288559 28.51 170.42 2,720.73 39.80739471 -80.69285788 2.800.00 -424.70 71.66 14.456.747.29 1.726.673.36 2,900.00 28.51 170.42 2 808 61 -471.77 79.60 39.80726537 -80,69283018 14,456,700,22 1.726.681.30 -80.69280247 3.000.00 28.51 170.42 2.896.48 -518.84 87.54 14,456,653,15 1,726,689.25 39.80713603 3,100.00 28.51 170.42 2,984.35 -565.91 95.48 14,456,606.08 1,726,697.19 39,80700669 -80.69277477 3.200.00 28.51 170.42 3 072 22 -612.98 103.43 14,456,559.01 1,726,705.13 39.80687735 -80.69274707 3,300,00 28.51 170.42 3,160.09 -660.05 111.37 14,456,511,94 1,726,713.07 39,80674801 -80.69271936 3,400.00 28.51 170.42 3.247.96 -707.12 119.31 14,456,464.87 1,726,721.01 39.80661866 -80.69269166 3,500.00 28.51 170.42 3 335 83 -754.19 127.25 14,456,417,80 1.726.728.96 39,80648932 -80,69265395 3,600.00 28.51 170.42 3,423.70 -801.26 135.19 39.80635998 -80.69263625 14,456,370,73 1.726.736.90 3,700.00 28.51 3,511.58 170.42 -848.32 143.14 14,456,323,66 1,726,744,84 39,80623064 -80.69260855 3.800.00 28.51 170.42 3,599.45 -895.39 151.08 -80.69258085 14,456,276,59 1.726.752.78 39,80610130 3,900.00 28.51 170.42 3,687.32 -942.46 159.02 14,456,229,52 1.726.760.72 39,80597196 -80.69255314 4,000.00 28.51 170.42 3,775.19 -989,53 166.96 14,456,182.45 1,726,768.67 39.80584262 -80.69252544 28.51 4.100.00 170.42 3,863.06 -1.035.60 174.90 14,456,135,38 1,726,776.61 39 80571328 -80,69249774 4,200.00 28.51 170.42 3,950.93 -1.083.67 182,85 14,456,088.31 1,726,784.55 39.80558394 -80.69247003 4.300.00 28.51 170.42 4 038 80 -1.130.74190 79 14,456,041,24 1,726,792.49 39 80545460 -80.69244233 4,400.00 28.51 170.42 4,126.67 -1.177.81 198,73 14,455,994.17 1,726,800.43 39.80532526 -80.69241463 4.500.00 28.51 170.42 4.214.55 -1,224.88206.67 14,455,947.10 1,726,808,38 39,80519592 -80.69238693 28.51 4,600.00 170.42 4,302,42 -1.271.95 214.61 39.80506658 -80.69235923 14,455,900,03 1,726,816,32 4 700 00 28.51 170.42 4 390 29 -1.319.02222 55 14,455,852.96 1,726,824.26 39,80493724 -80.69233152 4,800.00 28.51 170.42 4,478,16 -1,366.09 230,50 14,455,805,89 1,726,832,20 39.80480790 -80.69230382 -1,413.16 4,900.00 28.51 170.42 4,566.03 238.44 14,455,758.82 1,726,840.14 39.80467856 -80.69227612

5.000.00

28.51

170.42

4 653 90

-1,460,23

246.38

14,455,711.75

1,726,848.09

COMPASS 5000.16 Build 96 07/01/2022

-80 69224842

39.80454922



4705102449

Well Heaven Hill 3 N-12 HM (T)

GL @ 1327.00usft

GL @ 1327.00usft

Minimum Curvature

Grid

DB_Dec2220_v16 Local Co-ordinate Reference: Database: Tug Hill Operating LLC Company: **TVD Reference:** Marshall County, West Virginia. Project: MD Reference: Heaven Hill 3 Site: North Reference: Well: Heaven Hill 3 N-12 HM (T) Survey Calculation Method: Wellbore: Original Hole Design:

Planned

ign:	rev3	na noie							
nned Survey Measured Depth (usft)	Inclination (°)	Azimuth (")	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,100.00	28,51	170.42	4,741.77	-1,507.30	254.32	14,455.664.68	1,726,856,03	39.80441988	-80,69222072
5,200.00	28,51	170,42	4,829,64	-1.554.37	262.28	14,455.617.61	1,726,863.97	39.80429054	-80.69219301
5,300.00	28.51	170.42	4,917,52	-1,601.44	270.21	14,455,570.54	1,726,871.91	39.80416120	-80,69216531
5,400.00	28.51	170.42	5,005.39	-1.648.51	278,15	14,455,523,47	1,726,879.85	39.80403186	-80.69213761
5,500.00	28.51	170.42	5,093,26	-1,695.58	286.09	14,455,476,41	1,726,887.80	39,80390252	-80.69210991
5,600.00	28.51	170.42	5,181.13	-1,742.65	294.03	14,455,429.34	1,726,895,74	39.80377318	-80.69208221
5,700.00	28.51	170.42	5,269.00	-1,789.72	301.97	14,455,382.27	1,726,903.68	39.80364384	-80.69205451
5,800.00	28.51	170.42	5,356.87	-1,836.79	309.92	14,455,335.20	1,726,911,62	39.80351450	-80,69202681
5,900.00	28.51	170.42	5,444.74	-1,883.86	317.86	14,455,288.13	1,726,919.56	39.80338516	-80.69199911
6,000.00	28.51	170.42	5,532.61	-1,930.93	325.80	14,455,241.06	1,726,927.50	39.80325582	-80.69197140
6,100.00	28.51	170.42	5,620.49	-1.978.00	333.74	14,455,193.99	1,726,935.45	39.80312648	-80.69194370
6,200.00	28.51	170.42	5,708.36	-2,025.07	341.68	14,455,146.92	1,726,943.39	39.80299714	-80.69191600
6,300.00	28.51	170.42	5,796.23	-2,072.14	349.63	14,455,099.85	1,726,951.33	39.80286780	-80.69188830
6,362.03	28.51	170.42	5,850.73	-2,101.34	354.55	14,455,070.65	1,726,955.26	39.80278757	-80.59187112
			5,650.75	-2,101.04	304.00	14,455,070.05	1,720,000.20	00.00210101	-00.00101112
	/100' build/tu		E 004 50	0 110 10	357.08	14,455,053,53	1,726,958.76	39.80274053	-80.69186242
6,400.00	25.72	173.07	5,884.53	-2,118.46		In the second of the	(4) (1) (2) (3) (3) (3) (3)	39.80268506	-80,69185653
6,450.00	22.14	177.48	5,930.23	-2,138.65	358,78	14,455,033.34	1,726,960.48		
6,500.00	18.73	183.45	5,977_08	-2,156.08	358.71	14,455,015.90	1,726,960.41	39.80263718	-80.69185699
6,550.00	15.58	191.85	6,024.86	-2,170.67	356.85	14,455,001.32	1,726,958.55	39.80259714	-80.69186380
6,600.00	12.89	203.99	6,073.33	-2,182.34	353.20	14,454,989.65	1,726,954.90	39.80256513	-80.69187693
6,650.00	11.02	221.16	6,122.26	-2,191.04	347.79	14,454,980.95	1,726,949,49	39,80254130	-80.69189631
6,700.00	10.40	242,56	6,171.40	-2,196.71	340,63	14,454.975.27	1,726,942.34	39.80252577	-80.69192185
6,750.00	11.26	263,48	6,220.53	-2,199.35	331.77	14,454,972.64	1,726,933.48	39.80251862	-80.69195343
6,800.00	13.30	279.76	6,269.40	-2.198.93	321.25	14,454,973.06	1,726,922.96	39.80251987	-80,69199088
6,850.00	16.08	291.16	6,317.77	-2.195.45	309,12	14,454,976.53	1,726,910.82	39.80252954	-80.69203404
6,900.00	19.29	299.06	6,365.41	-2,188.94	295.44	14,454,983.05	1,726,897.14	39.80254756	-80.69208268
6,950.00	22.74	304.72	6,412.08	-2,179.42	280.27	14,454,992.57	1,726,881,97	39.80257385	-80.69213657
7,000.00	26.34	308.93	6,457.56	-2,166.94	263,69	14,455,005.05	1,726,865,39	39.80260828	-80.69219545
7,050.00	30.04	312.18	6,501.62	-2,151.56	245.78	14,455,020.43	1,726,847.48	39.80265068	-80.69225903
7,100.00	33.80	314.77	6,544.06	-2,133,35	226.62	14,455,038.63	1,726,828.33	39.80270085	-80.69232701
7,150.00	37.60	316.90	6,584.66	-2,112.41	206.32	14,455,059.57	1,726,808.02	39,80275855	-80,69239904
7,200.00	41.43	318.68	6,623.22	-2,088.84	184.96	14,455,083.14	1,726,786.67	39.80282349	-80.69247479
7,250.00	45.29	320.22	6.659.57	-2,062.75	162.66	14,455,109.24	1,726,764.37	39.80289535	-80.69255387
7,300.00	49.17	321.56	6,693,51	-2,034.27	139.52	14,455,137.72	1,726,741.23	39.80297379	-80.69263591
7,350.00	53.06	322.75	6,724.90	-2,003.53	115,66	14,455,168.45	1.726,717.36	39.80305842	-80.69272051
7,400.00	56.96	323.83	6,753.58	-1,970.70	91.18	14,455,201.29	1,726,692.89	39.80314883	-80.69280725
7,438.84	60.00	324.60	6,773.86	-1,943.84	71.83	14,455,228.15	1,726,673.53	39.80322276	-80.69287583
Begin 10	°/100' build/tu	urn							
7,450.00	61.09	324.86	6,779.35	-1,935.90	66.22	14,455,236.08	1,726,667.92	39.80324461	-80.69289572
7,500.00	65.99	325.98	5,801.62	-1,899.05	40.83	14,455,272.93	1,726,642.54	39.80334605	-80.69298566
7,550.00	70.90	327.02	6,819.99	-1,860.28	15,18	14,455,311.70	1 726,616.89	39.80345277	-80,69307651
7,600.00	75.81	328.00	6,834.31	-1,819.89	-10.54	14,455,352.10	1,726,591.17	39,80356395	-80.69316759
7,650.00	80.72	328,94	6,844.47	-1,778.17	-36.13	14,455,393.82	1 726,565.58	39,80367875	-80.69325820
7,700.00	85.64	329.85	6,850.40	-1,735.45	-61.40	14,455,436,53	1,726,540,31	39,80379630	-80.69334765
7,754,49	91.00	330.83	6,852.00	-1,688.14	-68.34	14,455,483.84	1,726,513,36	39,80392647	-80.69344301
	.00° lateral					and the second			
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COMPASS 5000.16 Build 96 07/01/2022

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 Database:
 DB_Dec2220_v16
 Loc

 Company:
 Tug Hill Operating LLC
 TVD

 Project:
 Marshall County, West Virginia.
 MD

 Site:
 Heaven Hill 3
 Nort

 Well:
 Heaven Hill 3 N-12 HM (T)
 Sur

 Wellbore:
 Original Hole
 Design:

Planned Survey

Local Co-ordinate Reference: TVD Reference: MD Reference: North Reference: Survey Calculation Method: Well Heaven Hill 3 N-12 HM (T) GL @ 1327.00usft GL @ 1327.00usft Grid Minimum Curvature

Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
8,600.00	91.00	330,83	6,837.22	-950.01	-500.44	14,456,221.98	1,726,101.26	39.80595744	-80.6949013
8,700.00	91,00	330.83	6,835.47	-862.71	-549.18	14,456,309.28	1,726,052.52	39.80619765	-80,6950738
8,800.00	91.00	330.83	6,833,72	-775.41	-597.92	14,456,396.58	1,726,003.78	39.80643785	-80,6952463
8,900.00	91.00	330,83	6,831.97	-688.11	-646.66	14,456,483.88	1,725,955.04	39,80667805	-80,6954188
9,000.00	91.00	330.83	6,830,22	-600.81	-695.40	14,456,571.18	1,725,906.30	39.80691826	-80.6955913
9,100.00	91.00	330.83	6,828,48	-513.51	-744.14	14,456,658,48	1,725,857.56	39.80715847	-80.695763
9,200.00	91.00	330.83	6,826.73	-426.21	-792,88	14,456,745.78	1,725,808.82	39,80739867	-80.695938
9,300.00	91.00	330.83	6,824.98	-338.91	-841.62	14,456.833.08	1,725,760.08	39.80763887	-80.696108
9,400.00	91.00	330.83	6,823.23	-251.60	-890.36	14,456,920.38	1,725,711.34	39.80787908	-80.696281
9,500.00	91.00	330.83	6,821.48	-164.30	-939.10	14,457,007.68	1,725,662.60	39.80811928	-80,696453
9,600.00	91.00	330.83	6,819.73	-77.00	-987.84	14,457,094.98	1,725,613.86	39,80835948	-80,696626
9,700.00	91.00	330.83	6,817.98	10.30	-1,036.58	14,457,182.28	1,725,565.12	39.80859968	-80.696798
9,800.00	91.00	330.83	6,816.24	97.60	-1,085.32	14,457,269.58	1,725,516.38	39.80883988	-80.695971
9,900.00	91.00	330.83	6,814.49	184.90	-1,134.06	14,457,356.88	1,725,467.64	39.80908009	-80,697143
10,000.00	91.00	330,83	6,812,74	272,20	-1,182.80	14,457,444,18	1,725,418.90	39.80932029	-80.697316
10,100.00	91.00	330.83	6,810.99	359,50	-1,231.54	14,457,531.48	1,725,370.16	39.80956049	-80.697488
10,200.00	91.00	330,83	6.809.24	446.80	-1,280.28	14,457,618.78	1,725,321.42	39,80980069	-80.697661
10,300.00	91.00	330.83	6,807,49	534.10	-1,329.02	14,457,706.09	1,725,272.68	39.81004089	-80,697833
10,400.00	91.00	330.83	6,805,75	621.40	-1,377.76	14,457,793.39	1,725,223.94	39.81028109	-80.698006
10,500.00	91.00	330.83	6,804.00	708.70	-1,426.50	14,457,880.69	1,725,175.20	39.81052129	-80.698178
10,600.00	91.00	330.83	6,802.25	796.00	-1,475.24	14,457,967.99	1,725,126.46	39.81076149	-80,698351
10,700.00	91.00	330.83	6,800.50	883.30	-1,523.98	14,458,055.29	1,725,077.72	39.81100169	-80.698523
10,800.00	91.00	330.83	6,798.75	970.60	-1,572.72	14,458,142.59	1,725,028.98	39.81124189	-80.698698
10,900.00	91.00	330.83	6,797.00	1,057.90	-1,621.46	14,458,229,89	1,724,980.24	39.81148209	-80.698866
11.000.00	91.00	330.83	6,795,26	1,145.20	-1,670.20	14,458,317.19	1,724,931.50	39.81172229	-80.699041
11,100.00	91.00	330,83	6,793.51	1,232.50	-1,718.94	14,458,404.49	1,724,882.76	39.81196248	-80.699213
11,200.00	91.00	330.83	6,791.76	1,319.80	-1,767.68	14,458,491.79	1,724,834.02	39.81220268	-80.699386
11,300.00	91.00	330.83	6,790.01	1,407.10	-1,816.42	14,458,579.09	1,724,785.29	39.81244288	-80.699558
11,400.00	91.00	330.83	6,788.26	1,494.40	-1,865.16	14,458,666.39	1,724,736.55	39.81268308	-80.699731
11,500.00	91.00	330.83	6,786.51	1,581.70	-1,913.90	14,458,753.69	1,724,687.81	39.81292328	-80.699903
11,600,00	91 00	330,83	6,784.77	1,669.01	-1,962.64	14,458,840.99	1,724,639,07	39.81316347	-80.700076
11,700.00	91.00	330.83	6,783.02	1,756.31	-2,011.38	14,458,928.29	1,724,590,33	39.81340367	-80.700249
11,800,00	91.00	330.83	6,781.27	1,843.61	-2,060.12	14,459,015.59	1,724,541.59	39.81364387	-80.700421
11,900.00	91.00	330.83	6,779.52	1,930.91	-2,108.86	14,459,102.89	1 724,492.85	39.81388406	-80.700594
12,000.00	91.00	330.83	6,777.77	2,018.21	-2,157.60	14,459,190,19	1,724,444.11	39.81412426	-80,700756
12,100.00	91.00	330.83	6,776.02	2,105.51	-2,206.34	14,459,277.49	1.724,395.37	39.81436446	-80.700939
12,200.00	91.00	330,83	6,774.27	2,192.81	-2,255.08	14,459,364.79	1,724,346.63	39.81460465	-80.701111
12,300.00	91.00	330.83	6,772.53	2,280.11	-2,303.82	14,459,452.09	1,724,297.89	39.81484485	-80.701284
12,400.00	91.00	330.83	6,770.78	2,367.41	-2,352.56	14,459,539.40	1,724,249.15	39.81508504	-80.701456
12,500.00	91.00	330.83	6,769.03	2,454.71	-2,401.30	14,459,628.70	1,724,200.41	39.81532524	-80.701629
12,600.00	91.00	330.83	6,767.28	2,542.01	-2,450.04	14,459,714.00	1,724,151.67	39.81556543	-80.701801
12,700.00	91.00	330.83	6,765.53	2,629.31	-2,498.78	14,459,801.30	1,724,102.93	39.81580563	-80,701974
12,800.00	91.00	330.83	6,763.78	2,716.61	-2,547.52	14,459,888.60	1,724,054.19	39.81604582	-80.702146
12,900.00	91.00	330.83	6,762.04	2,803.91	-2,596.26	14,459,975.90	1,724,005.45	39.81628601	-80.702319
13,000.00	91.00	330.83	6,760.29	2,891.21	-2,645.00	14,460,063.20	1,723,956.71	39.81652621	-80,702491
13,100.00	91.00	330.83	6,758.54	2,978.51	-2,693.74	14,460,150,50	1,723,907.97	39,81676640	-80.702664
13,200.00	91.00	330,83	6,756.79	3,065.81	-2,742,48	14,460,237,80	1,723,859,23	39,81700659	-80.702837
13,300.00	91.00	330.83	6,755.04	3,153.11	-2,791.22	14,460,325.10	1,723,810.49	39.81724679	-80.703009
13,400,00	91.00	330,83	6,753.29	3,240.41	-2.839.96	14,460,412.40	1,723,761.75	39.81748698	-80,703182
13,500.00	91.00	330.83	6,751.55	3,327.71	-2,888.70	14,460,499.70	1,723,713.01	39,81772717	-80,703354
13,600.00	91.00	330,83	6,749.80	3,415.01	-2,937.44	14,460,587.00	1,723,664.27	39.81796736	-80,703527
13,700.00	91.00	330.83	6,748.05	3,502.32	-2,986.18	14,460,674.30	1,723,615.53	39,81820755	-80.703699
13,800.00	91.00	330.83	6,746.30	3,589.62	-3,034.92	14,460,761.60	1,723,566.79	39.81844774	-80,703872
13,900.00	91.00	330.83	6,744.55	3,676.92	-3,083.66	14,460,848.90	1,723,518.05	39.81868794	-80.704044
14,000.00	91.00	330.83	6,742,80	3,764.22	-3.132.40	14,460,936.20	1,723,469.31	39.81892813	-80,704217

COMPASS 5000.16 Build 96 07/01/2022



4705102449

Design:	rev3		
Wellbore:	Original Hole		
Well:	Heaven Hill 3 N-12 HM (T)	Survey Calculation Method:	Minimum Curvature
Site:	Heaven Hill 3	North Reference:	Grid
Project:	Marshall County, West Virginia.	MD Reference:	GL @ 1327.00usft
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1327.00usft
Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Heaven Hill 3 N-12 HM (T)

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
14,100.00	91.00	330.83	6,741.06	3,851.52	-3,181.14	14,461,023,50	1,723,420.57	39.81916832	-80.70438995
14,200,00	91,00	330,83	6,739.31	3,938.82	-3,229.88	14,461,110.80	1,723,371.83	39.81940851	-80.70456250
14,300.00	91.00	330.83	6,737,56	4,026,12	-3,278.62	14,461,198.10	1,723,323.09	39.81964870	-80.70473506
14,400.00	91.00	330,83	6,735.81	4,113.42	-3,327.36	14,461,285.40	1,723,274.35	39.81988889	-80.70490761
14,500.00	91.00	330,83	6,734.06	4,200.72	-3,376.09	14,461,372.70	1,723,225.61	39.82012908	-80.70508017
14.600.00	91.00	330.83	6,732.31	4,288.02	-3,424.83	14,461,460.01	1,723,176,87	39.82036927	-80.70525273
14,700.00	91.00	330.83	6,730.56	4,375.32	-3,473.57	14,461,547.31	1,723,128.13	39.82060946	-80.70542529
14.732.29	91.00	330.83	6,730.00	4,403.51	-3,489.31	14,461,575.49	1,723,112.39	39.82068700	-80.70548100

1201		-	
Des	ian	Targ	ets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Heaven Hill 3N-12 HM B - plan hits target cent - Point	0.00 er	0.00	6,730.00	4,403,51	-3,489.31	14,461,575.49	1,723,112.39	39.82068700	-80.70548100
Heaven Hill 3N-12 HM L - plan hits target cent - Point	0.00 er	0.00	6,852,00	-1,688,14	-88.34	14,455,483.84	1,726,513.36	39.80392647	-80,69344302
Heaven Hill 3N-12 HM L - plan misses target o - Point	0.00 enter by 43.5	0.01 6usft at 772	6,852.00 9.75usft MD	-1,688.14 (6851.91 TVD	-38.35), -1709.70 N,	14,455,483.84 -76.20 E)	1,726,563.36	39.80392600	-80.69326500

Plan Annotatio

Measured	Vertical		Casing Hole	
Depth	Depth		Diameter Diameter	
(usft)	(usft)	Name	(") (")	

Measured	Vertical	Local Coor	dinates		
Depth (usft)	Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment	
1,200.00	1,200.00	0.00	0.00	KOP Begin 3°/100' build	
2,625.63	2,567,51	-342.62	57.81	Begin 28.51° tangent	
6,362.03	5,850.73	-2,101.34	354.55	Begin 8°/100' build/turn	
7,438.84	6,773.86	-1,943.84	71.83	Begin 10°/100' build/turn	
7,754.49	6,852.00	-1,688.14	-88.34	Begin 91.00° lateral	
14,732.29	6,730.00	4,403.51	-3,489.31	PBHL/TD 14732.29 MD 6730.00 TVD	

API Number	4	70	5	1	0	2	4	4	9
API Number	47 -	051	~	_		~		÷.	~

Operator's Well No. Heaven Hill 3N-12HM

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Tug Hill Operating, LLC	OP Code 494510851
Watershed (HUC 10) Fish Creek	Quadrangle Glen Easton 7.5'
Do you anticipate using more than 5,000 bbls of water to c Will a pit be used? Yes <u>No</u> No	complete the proposed well work? Yes No
If so, please describe anticipated pit waste:	Tanks with proper containment will be used for staging fresh and produced water for frac
Will a synthetic liner be used in the pit? Yes	No V If so, what ml.? AST Tacks will be used with proper contained
Proposed Disposal Method For Treated Pit Waste	s:
Land Application Underground Injection (UIC P Reuse (at API Number Off Site Disposal (Supply form Other (Explain	ermit NumberUIC 2459, UIC 965, UIC 359, UIC 2D0732540, UIC 2D0732523)) WW-9 for disposal location)
Will closed loop system be used? If so, describe: Yes - Fo Drilling medium anticipated for this well (vertical and hori -If oil based, what type? Synthetic, petroleum, etc	zontal)? Air, freshwater, oil based, etc. Air for vertical
Additives to be used in drilling medium? Barite for weight	
Drill cuttings disposal method? Leave in pit, landfill, remo	oved offsite, etc. All drill cuttings to be disposed of in a Landfill
-If left in pit and plan to solidify what medium wi	Il be used? (cement, lime, sawdust) N/A
-Landfill or offsite name/permit number?	Santary Lonetil (SWF-1021 / WV0109185) and Westmoristand Santary Lanotit, LLC (SAN1405 / Pa DEP EC#1586426), Chevruit Voley Lawdill (103419)
Permittee shall provide written notice to the Office of Oil a West Virginia solid waste facility. The notice shall be prov where it was properly disposed.	and Gas of any load of drill cuttings or associated waste rejected at any rided within 24 hours of rejection and the permittee shall also disclose
on August 1, 2005, by the Office of Oil and Gas of the We provisions of the permit are enforceable by law. Violatio law or regulation can lead to enforcement action. I certify under penalty of law that I have perso application form and all attachments thereto and that, I obtaining the information, I believe that the information	and conditions of the GENERAL WATER POLLUTION PERMIT issued st Virginia Department of Environmental Protection. I understand that the ns of any term or condition of the general permit and/or other applicable nally examined and am familiar with the information submitted on this based on my inquiry of those individuals immediately responsible for is true, accurate, and complete. I am aware that there are significant weightight of fine or impriconment

Company Official Signature	RECEIVED Office of Oil and Gas
Company Official (Typed Name) Jim Pancake	MAY 1 7 2022
Company Official Title Vice President - Geosciences	WV Department of Environmental Protection
	Public
My commission expires 1/15/2025	Commonwealth of Pennsylvania - Notary Seal Susanne Deliere, Notary Public Washington County 22 My commission express Vanuary 15, 2025 Commission number 1382332

Member, Pennsylvania Association of Notaries

Form WW-9

4705102449 Operator's Well No. Heaven Hill 3N-12HM

Tug Hill Operating, LLC

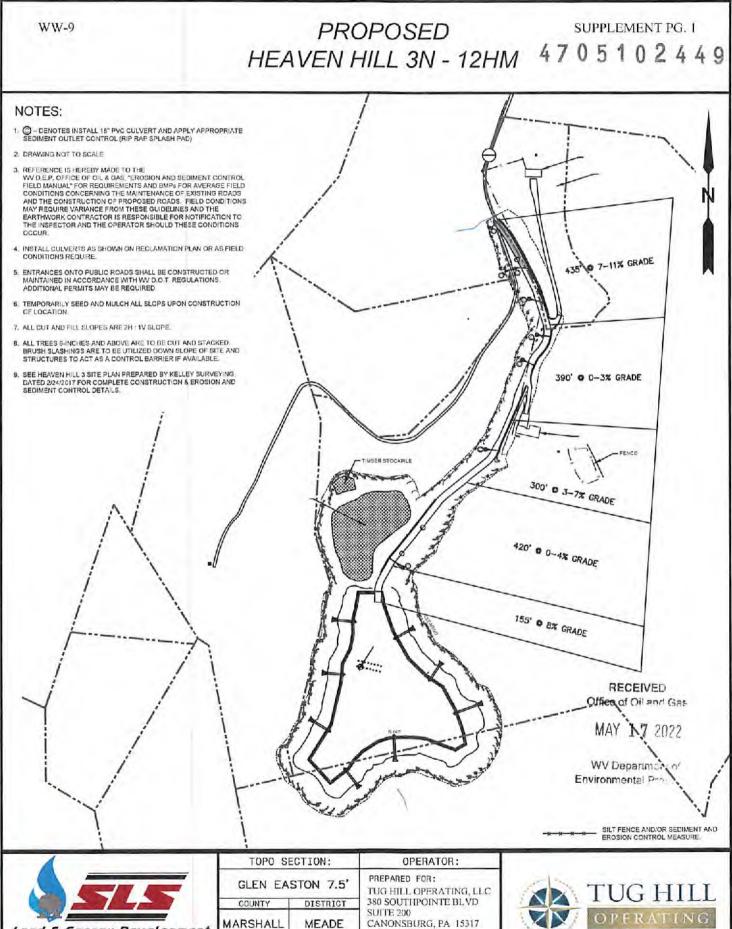
Proposed Revegetation Treatmer	it: Acres Disturbed	3 Prevegetation pH	0.0
Lime 3	_Tons/acre or to correct to	рН 6.5	
Fertilizer type 10-20-2	20		
Fertilizer amount 500		_lbs/acre	
Mulch 2.5	To	ns/acre	
	5	Seed Mixtures	
Temp	orary	Perma	nent
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual Ryegrass	40	Orchard 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.

omments:	RECEIVED
	RECEIVED Office of Oil and Gas
	Office of ON AUL MAY 17 2022
	1
	WV Department of Environmental Protection
	Enalisis
ule Oil and Gas Inspector	Date: 1/19/2022
itle: Oil and Gas Inspector	Date: 1/19/2022



Land & Energy Development Solutions from the ground up. O. Box 150 •12 Vanhom Drive • Otenville, WV 25351 •(304) 462-5634 www.slasurveys.com

DRAWN BY K.G.M.

STON 7.5'	TUG HILL OPER	ATING, LLC	14	TUG HILL
DISTRICT		TEBLVD		TOOTHLL
MEADE		PA 15317		OPERATING
JOB NO.	DATE	SCALE	2.13.1 -2	
8654	06/21/2019	NONE		07/01/2022
	MEADE	DISTRICT DISTRICT MEADE JOB NO. JOB NO. JUG HILL OPER 380 SOUTHPOIN SUITE 200 CANONSBURG, DATE	DISTRICT TUG HILL OPERATING, LLC DISTRICT 380 SOUTHPOINTE BLVD SUITE 200 SUITE 200 MEADE CANONSBURG, PA 15317 JOB NO. DATE	STON 7.5 TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUJTE 200 CANONSBURG, PA 15317 JOB NO. DATE

Operator's Well No. Heaven Hill 3 N-12HM

4705102449

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. Enverus and RS Energy Group 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 Adam Picard 724-485-9331, <u>apicard@dpslandservices.com</u>, DPS GIS (1/11/2022) to have him make maps of the wellbores with his information. DPS utilizes WVGES maps for their mapping seems it is the best publicly available. See attached map he provided.

Request maps for:

- 1. Wellbore with Enverus 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)

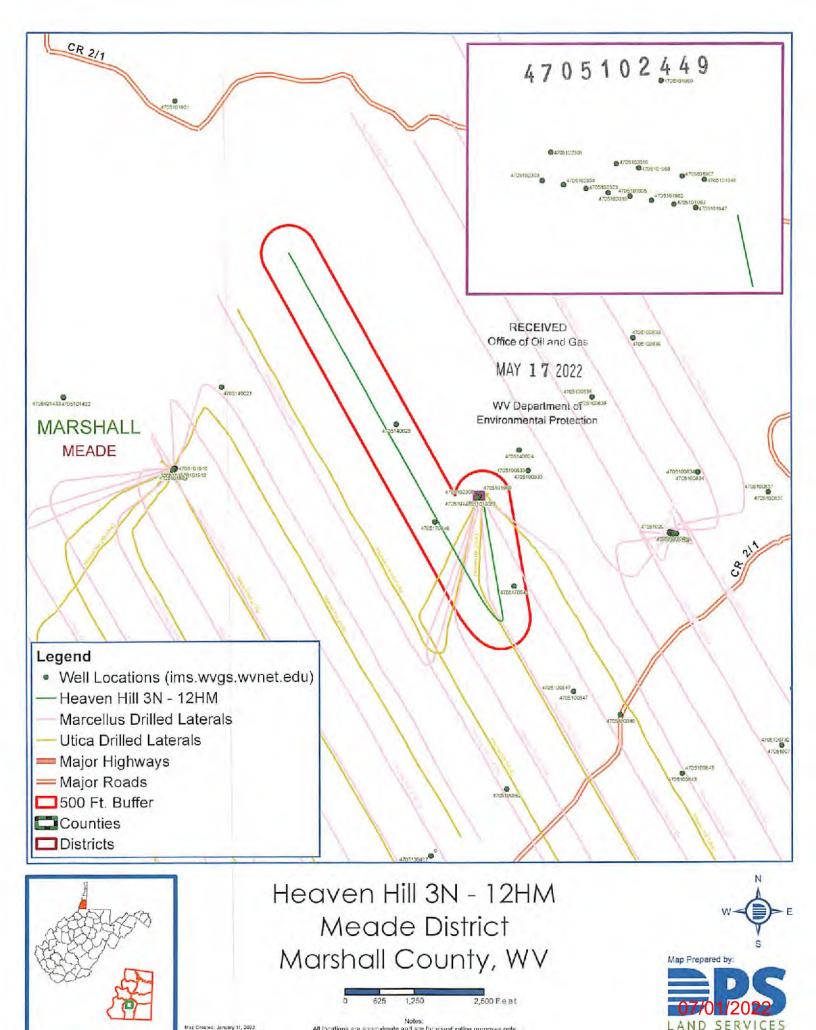
- WVGES has plotted every well spot they have access to and are aware of with that contains a coordinate. 30000, 70000, and 90000 series wells are available via the WVGES online map. Some locations aren't great due to vintage and manipulation of maps through time
- 30000 series any well drilled prior 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

MAY 17

WV Depair Environ

Page 1 of 20

07/01/2022



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

Wells within 500' Buffer

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

API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705 1 01935	Tug Hill Operating, LLC.	19555' MD / 6968' TVD	Marcellus	none	Yes, this is a producing well in the Marcellus. This well is within the expected fracture propagation from the proposed Marcellus stimulation. Proper casing and cement should prevent migration of fluids between wellbores.	Producing Marcellus well, operated by Tug Hill Operating, LLC., located on same well pad as proposed Heaven Hill 3 N-12HM.
4705101947	Tug Hill Operating, LLC.	17877' MD / 6912' TVD	Marcellus	none	Yes, this is a producing well in the Marcellus. This well is within the expected fracture propagation from the proposed Marcellus stimulation. Proper casing and cement should prevent migration of fluids between wellbores.	Producing Marcellus well, operated by Tug Hill Operating, LLC., located on same well pad as proposed Heaven Hill 3 N-12HM.
4705101948	Tug Hill Operating, LLC.	17936' MD / 6928' TVD	Marcellus	none	Yes, this is a producing well in the Marcellus. This well is within the expected fracture propagation from the proposed Marcellus stimulation. Proper casing and cement should prevent migration of fluids between wellbores.	Producing Marcellus well, operated by Tug Hill Operating, LLC., located on same well pad as proposed Heaven Hill 3 N-12HM.
4705101962	Tug Hill Operating, LLC.	19057' MD / 6923' TVD	Marcellus Q	none	Yes, this is a producing well in the Marcellus. This well is within the expected fracture propagation from the proposed Marcellus stimulation. Proper casing and cement should prevent migration of fluids between wellbores.	Producing Marcellus well, operated by Tug Hill Operating, LLC., located on same well pad as proposed Heaven Hill 3 N-12HM.
		WV Depais Environmental Protector	Office of ON and Gas MAY 17 2022			Page 2 of 20

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2 -0 5 -0 N

API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705101963	Tug Hill Operating, LLC.	18243' MD / 6904' TVD	Marcellus	none	Yes, this is a producing well in the Marcellus. This well is within the expected fracture propagation from the proposed Marcellus stimulation. Proper casing and cement should prevent migration of fluids between wellbores.	Producing Marcellus well, operated by Tug Hill Operating, LLC., located on same well pad as proposed Heaven Hill 3 N-12HM.
4705101967	Tug Hill Operating, LLC.	22395' MD / 11920' TVD	Point Pleasant	none	No, this is a producing well in the Point Pleasant. This well is too deep to be within the expected fracture propagation from the proposed Marcellus stimulation.	Producing Point Pleasant well, operated by Tug Hill Operating, LLC., located on same well pad as proposed Heaven Hill 3 N-12HM.
4705101968	Tug Hill Operating, LLC.	23854' MD / 11898' TVD	Point Pleasant	none	No, this is a producing well in the Point Pleasant. This well is too deep to be within the expected fracture propagation from the proposed Marcellus stimulation.	Producing Point Pleasant well, operated by Tug Hill Operating, LLC., located on same well pad as proposed Heaven Hill 3 N-12HM.
4705101969	Tug Hill Operating, LLC.	22722' MD / 11865' TVD	Point Pleasant	none	No, this is a producing well in the Point Pleasant. This well is too deep to be within the expected fracture propagation from the proposed Marcellus stimulation.	Producing Point Pleasant well, operated by Tug Hill Operating, LLC., located on same well pad as proposed Heaven Hill 3 N-12HM.
4705102015	Tug Hill Operating, LLC.	15224' MD / 6762' TVD	Marcellus	none	Yes, this is a producing well in the Marcellus. This well is within the expected fracture propagation from the proposed Marcellus stimulation. Proper casing and cement should prevent migration of fluids between wellbores.	Producing Marcellus well, operated by Tug Hill Operating, LLC., located on same well pad as proposed Heaven Hill 3 N-12HM.

MAY 17 2022 NN Department of NN Departmental Protection Environmental Protection

Page 3 of 20

API Number	nber Operator Total Depth Ems		Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments	
4705102016	Tug Hill Operating, LLC.	19300' MD / 11612' TVD	Point Pleasant	none	No, this is a producing well in the Point Pleasant. This well is too deep to be within the expected fracture propagation from the proposed Marcellus stimulation.	Producing Point Pleasant well, operated by Tug Hill Operating, LLC., located on same well pad as proposed Heaven Hill 3 N-12HM.
4705102303	Tug Hill Operating, LLC.	6966' TVD (proposed)	none	none	No, this well will not be drilled to the proposed depth or perforated. This is a canceled permit.	Permit canceled by Tug Hill Operating, LLC.
4705102304	Tug Hill Operating, LLC.	6969' TVD (proposed)	none	none	No, this well will not be drilled to the proposed depth or perforated. This is a canceled permit.	Permit canceled by Tug Hill Operating, LLC.
4705102305	Tug Hill Operating, LLC.	6969' TVD (proposed)	none	none	No, this well will not be drilled to the proposed depth or perforated. This is a canceled permit.	Permit canceled by Tug Hill Operating, LLC.
4705102323	Tug Hill Operating, LLC.	6969' TVD (proposed)	none	none	No, this well will not be drilled to the proposed depth or perforated. This is a canceled permit.	Permit canceled by Tug Hill Operating, LLC.

MAY 17 2022 I WN Department of Environmental Protection

Page 4 of 20

API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705102306	Tug Hill Operating, LLC.	11684' TVD (proposed)	none	none	No, this well will not be drilled to the proposed depth or perforated. This is a canceled permit.	Permit canceled by Tug Hill Operating, LLC.
4705102307	Tug Hill Operating, LLC.	11701' TVD (proposed)	none	none	No, this is a permitted well in the Point Pleasant. This well is too deep to be within the expected fracture propagation from the proposed Marcellus stimulation.	Permitted Point Pleasant well by Tug Hill Operating, LLC., located on same well pad as proposed Heaven Hill 3 N-12HM.
4705170645	unknown	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing of the proposed Marcellus well. Well is plugged.	State records are incomplete.
4705170646	unknown	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing of the proposed Marcellus well. Well is plugged.	State records are incomplete.
4705140025	unknown	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing of the proposed Marcellus well. Well is plugged.	State records are incomplete.

MAY 17 2022 WV Department of WV Departmental Protection Environmental Protection

Page 5 of 20

WV Geological & Economic Surve	ey.			Well: County = 51 Permit = 01935	Report Time Wednesday, January 12, 2022 9 14:23 AM
cation Information: View		OUMD 75	QUAD_15 LAT_DD LON_	DO UTME UTMN	
05101935 Marshall 1935	Meade	Gien East	n Cameron 39,8586 -80.65	3321 526251 4406559	
ottom Hole Location Inform	nation:	LON D	D LAT DD		
705101935 1 As Drilled 5. 705101935 1 As Proposed 5.	27724.7 440259	5.6 -80.676	272 39,772843		
wner Information:					ATOR_AT_COMPLETION PROP_VD PROP_TRGT_FM TFM_EST_PR
PI CMP_DT SUFFU 705101935 10/28/2019 Dv1d Ce	c STATU	s SURFA	CE_OWNER WELL_NUM CO Whittatch	DINUM LEASE LEASE_NUM MINERAL_OWN OPERA 3-1HM Heaven Hill Ricky L Whitiatch et al. Tug Hill	Operating LLC 6876 Marcellus Fm
ompletion Information:					G CMP_MTHD TVD TMD NEW_FTG KOD G_BEF G_AFT O_B
PI CMP_DT SPUD 705101935 10/28/2019 2/15/20	18 1326 Grou	and Level U	ELD DEEPEST FM DEEP mamed Marcellus Fm Marcel	EST_FMT_INITIAL_CLASS_FINAL_CLASS_TYPERIG Illus FmDevelopment Well_Development Well_Oil and Gas_Ro	tary Acid+Frac 6968 19500 19500 7265 0
ay/Show/Water Information		RECTION	DEPTH_TOP FM_TOP	CEPTH_BOT FN_BOT G_BEF G_AFT O_BEF O	AFT WATED ONTY
4705101935 10/28/2019 Water	Fresh Water	Deviated	DEPIN_IOP PAGIOP	897 Pennsylvanian System	ACT MALES_GATT
4705101935 10/28/2019 Water 4705101935 10/28/2019 Pay	Sall Water Oil & Gas	Deviated Deviated	8487 Marcellus Fm	1595 Salt Sands (undiff) 8640 Marcellus Fm	
4705101935 10/28/2019 Pay	OI & Gas	Deviated	8862 Marcellus Fm	8815 Marcellus Fm	
4705101935 10/28/2019 Pay 4705101935 10/28/2019 Pay	Oil & Gas Oil & Gas	Deviated Deviated	6037 Marcellus Fm 9012 Marcellus Fm	2990 Marcellus Fm 9165 Marcellus Fm	
4705101935 10/28/2019 Pay	OI & Gas	Deviated	9187 Marcellus Fm	9340 Marcellus Fm	
4705101935 10/28/2019 Pay 4705101935 10/28/2019 Pay	OI & Gas OI & Gas	Deviated Deviated	9362 Marcellus Fm 9537 Marcellus Fm	9515 Marcellus Fm 9690 Marcellus Fm	
4705101935 10/28/2019 Pay	OI & Gas	Deviated	9712 Marcelius Fm	9065 Marcellus Fm	
4705101935 10/28/2019 Pay 4705101935 10/28/2019 Pay	OI & Gas OI & Gas	Deviated Deviated	9887 Marcellus Fm 10062 Marcellus Fm	10040 Marcellus Fm 10215 Marcellus Fm	
705101935 10/28/2019 Pay	OI & Gas	Deviated	10237 Marcellus Em	10390 Marcellus Fm	
4705101935 10/28/2019 Pay	01 & Gas 01 & Gas	Deviated Deviated	10412 Marcellus Fm 10587 Marcellus Fm	10565 Marcellus Fm 10740 Marcellus Fm	
4705101935 10/28/2019 Pay 4705101935 10/28/2019 Pay	OI & Gas	Deviated	10762 Marcellus Fm	10915 Marcellus Fm	
705101935 10/28/2019 Pay	OI & G25	Deviated	10937 Marcellus Fm	11090 Marcellus Em	
705101935 10/28/2019 Pay 705101935 10/28/2019 Pay	OI & Gas OI & Gas	Deviated Deviated	11112 Marcellus Em 11287 Marcellus Em	11265 Marcellus Fm 11440 Marcellus Fm	
1705101935 10/28/2019 Pay	OI & Gas	Deviated	11462 Marcellus Fm	11615 Marcellus Fm	
1705101935 10/28/2019 Pay 1705101935 10/28/2019 Pay	OI & Gas OI & Gas	Deviated Deviated	11637 Marcellus Fm 11812 Marcellus Fm	11790 Marcellus Fm 11965 Marcellus Fm	
4705181935 10/28/2019 Pay	Oil & Gas	Deviated	11987 Marcellus Fm	12140 Marcellus Fm	
4705101935 10/28/2019 Pay 4705101935 10/28/2019 Pay	OI & Gas OI & Gas	Deviated Deviated	12162 Marcellus Fm 12337 Marcellus Fm	12315 Marcellus Fm 12490 Marcellus Fm	
4705101935 10/28/2019 Pay	OI & Gas	Deviated	12512 Marcellus Fm	12665 Marcellus Fm	
4705101935 10/28/2019 Pay 4705101935 10/28/2019 Pay	OI & Gas OI & Gas	Deviated Deviated	12687 Marcellus Fm 12862 Marcellus Fm	12840 Marcellus Fm 13015 Marcellus Fm	
4705101935 10/28/2019 Pay	OI & Gas	Deviated	13037 Marcellus Fm	13190 Marcellus Fm	
4705101935 10/28/2019 Pay 4705101935 10/28/2019 Pay	OI & Gas OI & Gas	Deviated Deviated	13212 Marcellus Em 13387 Marcellus Em	13365 Marcellus Fm 13540 Marcellus Fm	
705101935 10/28/2019 Pay	OI & Gas	Deviated	13562 Marcellus Em	13715 Marcellus Fm	
4705101935 10/28/2019 Pay	OILS Gas	Deviated	13737 Marcellus Fm	13890 Marcellus Fm 14065 Marcellus Fm	
4705101935 10/28/2019 Pay 4705101935 10/28/2019 Pay	OI & Gas OI & Gas	Deviated Deviated	13912 Marcellus Fm 14087 Marcellus Fm	14240 Marcellus Fm	
4705101935 10/28/2019 Pay	OI & Gas	Deviated	14262 Marcellus Fm	14415 Marcellus Fm 14550 Marcellus Fm	
4705101935 10/28/2019 Pay 4705101935 10/28/2019 Pay	OI & Gas OI & Gas	Devlated Devlated	14437 Marcellus Fm 14612 Marcellus Fm	14550 Marcelus Fm 14765 Marcelus Fm	
4705101935 10/28/2019 Pay	OI & Gas	Deviated	14787 Marcellus Fm	14940 Marcellus Fm	
705101935 10/28/2019 Pay 705101935 10/28/2019 Pay	OI & Gas OI & Gas	Deviated Deviated	14962 Marcellus Fm 15137 Marcellus Fm	15115 Marcellus Fm 15290 Marcellus Fm	
705101935 10/28/2019 Pay	OILS Gas	Deviated	15312 Marcellus Fm	15465 Marcellus Fm	
705101935 10/28/2019 Pay 1705101935 10/28/2019 Pay	OI & Gas OI & Gas	Deviated Deviated	15487 Marcellus Fm 15662 Marcellus Fm	15840 Marcellus Fm 15815 Marcellus Fm	
705101935 10/28/2019 Pay	OI & Gas	Deviated	15837 Marcellus Fint	15990 Marcellus Fm	
705101935 10/28/2019 Pay 705101935 10/28/2019 Pay	OI & Gas OI & Gas	Deviated Deviated	16012 Marcellus Em 16187 Marcellus Em	16165 Marcellus Fm 16340 Marcellus Fm	
705101935 10/28/2019 Pay	OI & Gas	Deviated	16362 Marcellus Fm	16515 Marcellus Fm	
705101935 10/28/2019 Pay 705101935 10/28/2019 Pay	OI & Gas OI & Gas	Deviated Deviated	16537 Marcellus Fm 16712 Marcellus Fm	16690 Marcellus Fm 16865 Marcellus Fm	
705101935 10/28/2019 Pay	Oil & Gas	Deviated	16887 Marcellus Fm	17040 Marcellus Fm	
705101935 10/28/2019 Pay 705101935 10/28/2019 Pay	OILS Gas OILS Gas	Deviated Deviated	17062 Marcellus Fm 17237 Marcellus Fm	17215 Marcellus Fm 17390 Marcellus Fm	
705101935 10/28/2019 Pay	O1 & Gas	Deviated	17412 Marcellus Fm	17565 Marcellus Fm	
705101935 10/28/2019 Pay 705101935 10/28/2019 Pay	OI & Gas OI & Gas	Deviated	17587 Marcellus Fm 17762 Marcellus Fm	17740 Marcellus Fm	
705101935 10/28/2019 Pay	OI & Gas	Deviated Deviated	17937 Marcellus Fm	17915 Marcellus Fm 18090 Marcellus Fm	
705101935 10/28/2019 Pay	OI 5 Gas	Deviated	10112 Marcellus Fm	18265 Marcellus Em	
705101935 10/28/2019 Pay 705101935 10/28/2019 Pay	OI & Gas OI & Gas	Deviated Deviated	18287 Marcellus Fm 18462 Marcellus Fm	18440 Marcellus Fm 18515 Marcellus Fm	
705101935 10/28/2019 Pay	OI & Gas	Deviated	18637 Marcellus Fm	18790 Marcellus Fm	
705101935 10/28/2019 Pay 705101935 10/28/2019 Pay	OI & Gas	Deviated Deviated	18812 Marcelus Fm 18987 Marcelus Fm	19965 Marcellus Fm 19140 Marcellus Fm	
705101935 10/28/2019 Pay	Oil & Gas	Deviated	19162 Marcellus Fm.	19315 Marcelus Fm	
4705101935 10/28/2019 Pay	OI & Gas	Deviated	19385 Marcellus Fm	19440 Marcellus Fm	

 Production Gas Information: (Volumes in Mcf)
 API
 PRODUCING OPERATOR PRD VEAR ANN GAS JAN
 FEB
 MAR
 APR
 MAY
 JUN
 JUL
 AUG
 SEP
 OCT
 NOV
 DCM

 4705101935
 Tug HI Operating, LLC
 2019
 455,540
 0
 0
 0
 0
 0
 0
 0.041
 133,453
 315,083

 4705101935
 Tug HI Operating, LLC
 2020
 3,604
 659
 326,580
 200,937
 203,933
 303,280
 256,144
 269,736
 212,967
 133,905
 220,987
 206,599
 200,721

Page 6 of 20

WV Geological & Economic Survey

Well: County = 51 Permit = 01947

Report Time Wednesday, January 12, 2022 9 15 35 AM

Location Information: View Map. API COUNTY PERMIT TAX_DISTRICT_QUAD_75_QUAD_16_LAT_DD_LON_DD_UTME_UTMN 4705101947_Marshall_1947_Meade____Glen Easton_Cameron_39.808577_-80.693191_526262.1_4405556.5

 Bottom Hole Location Information:

 API
 EP FLAG
 UTME
 UTMN
 LON_DD
 LAT_DD

 4705101947
 1
 As Drilled
 5281273
 4403215
 24057105
 296 77892

 4705101947
 1
 As Proposed
 528157.7
 44032152
 8-80 671672
 39 778929

 Owner Information:
 API
 CMP_DT
 SUFFIX
 STATUS
 SUFFACE_OWNER
 WELL_NUM
 CD_NUM
 LEASE_NUM
 MINERAL_OWN
 OPERATOR_AT_COMPLETION
 PROP_VD_PROP_TRGT_FM_TFM_EST_PR

 4705101947
 10/20/2019
 DVd Dron Loc
 Completed
 Rcky L Weitlatch et al: Tug Hill Operating LLC
 6076
 Natcellus Fm

D. 101 All

Completion Information: API CMP_DT SPUD_DT ELEV DATUM FIELD DEEPEST_FM DEEPEST_FMT INITIAL_CLASS FINAL_CLASS TYPE RIG CMP_MTHD TVD TMD NEW_FTG KOD G_BEF G_AFT D 4705101947 10/25/2019 3/15/2015 1325 Ground Level Cameron-Gamer Marcellus Fm Development Well Development Well Oil and Gas Rotary Acid2ed 6911 17867 17867 5634 Comment: 10/26/2019 Plat Missing data

					DEPTH_TOP	FM_TOP	DEPTH_BOT		G_AFT	O_BEF	O_AFT WAT	ER_QNT
705101947			Fresh Water				1064	Pennsylvanian System				
785101947			Salt Water			and the second	1595	Salt Sanda (undiff)				
705101947			OII & Gas	Deviated		Marcellus Fm		Marcellus Fm				
705101947		Pay	Oil & Gas	Deviated		Marcellus Fm		Marcellus Fm				
705101947		Pay	OI & Gas	Deviated		Marcel us Fm	7994	Marcelus Fm				
705101947	10/28/3019	Pay	OII & Gas		8023	Marcellus Fm	\$169	Marcellus Fm				
705101947	10/28/2019	Pay	OI & Gas	Deviated.	6198	Marcellus Fm Marcellus Fm	8344	Marcellus Fm				
705101947	10/28/2019	Par	OILS Gas	Deviated	B373	Marcellus Fm	8519	Marcelus Fm Marcelus Fm Marcelus Fm				
705101947		Far	Oil & Gas	Deviated	8549	Marcellus Fm Marcellus Fm	5805	Marcelus Fm				
705101947			OI 5 Gas	Deviated	8774	Marcellus Fm	8870	Marcellus Fm				
705101947			OI & Gas		ppgg	Lineal an Em	00.45	Marcellus Fm				
705101947		East	OI & Gas		9074	Marcellus Fm Marcellus Fm	9226	Marcelus Em				
705101947		Ext	OIL& Gas	Deviated	9749	Marcellus Em	9395	Advance in the Free				
705101947		Par	OI & Gas OI & Gas	Deviated	6425	Marcellus Fm	0471	Marcelus Fm				
1705101947		Fau	OIS Gas	Deviated		Marcellus Fm	97.45	Marcellus Fm				
1705101947			OI & Gas			Marcellus Fm	0031	Marcellus Fm				
1705101947			OI & Gas				10095	Evaluation Free				
705101947		Pay	OIL ON	Deviated	10130	Manualus Fills	10030	Marcellus Prin				
705101947		Pay	OI & Gas OI & Gas	Devialed	10123	Marcellus Fin	102/1	Marcelus Put				
		Pay	OI & Gas	Devialed	10501	Marcellus Fm Marcellus Fm	10447	Marcellus Pril				
705101947			OI & Gas		104/8	Marcellus I-m	10622	Marcelus rm				
705101947		Pay	OI & Gas	Deviated	10651	Marcelles Fm	10/9/	Marcellus Fm Marcellus Fm Marcellus Fm Marcellus Fm Marcellus Fm				
705101947			Oil & Gas		10526	Marcellus Fm	10972	Marcelus Fm				
1705101947			OIL Gas		11001	Marcellus Fm	11147	Marcelus Fm Marcelus Fm Marcelus Fm Marcelus Fm				
1705101947		Par	OI & Gas	Deviated	11177	Marcellus Fm	11323	Marcelus Fm				
705101947		Pay	OI & Gas	Deviated	11352	Marcellus Fm	11498	Marcellus Fm				
705101947		Fay	OI & G25	Deviated	11527	Marcellus Fm	11673	Marcellus Fm				
705101947			OILS Gas		311922	Marcellus Pm	11040	Marcellus Pim				
705101947		Pay	OI & Gas	Deviated	11377	Marcellus Fm	12023	Marcellus Fm				
705101947		Fay	OI & Gas	Deviated	12053	Marcellus Frit	12199	Marcellus Fm				
705101947	10/28/2019	Pay	OILS Gas	Deviated	12228	Marcellus Fm	12374	Marcellus Fm				
1705101947	10/28/2019	Fay	OILS Gas	Deviated	12403	Marcellus Fm	12549	Marcelus Fm Marcelus Fm Marcelus Fm				
705101947	10/28/2019	Pay	OI & Gas	Deviated								
705101947	10/28/2019	Pay	OI & Gas	Deviated	12753	Marcelus Fm	12399	Marcellus Fm				
705101947 1	10/28/2019	Fay	OI & Gas	Deviated	12929	Marcellus Fm	13075	Marcellus Fm				
705101947		Pay	OI & Gas	Densted	13104	Marrellus Fm	13250	Marcellus Fm				
705101947		Pay	OI & Gas	Deciated	13279	Martellus Em	13425	Marcelus Fm Marcelus Fm Marcelus Fm Marcelus Fm Marcelus Fm				
705101947		Far	OI & Gas	Deviated	13454	Marrelius Em	13400	Marcellus Fm				
705101947 1			Ol & Gas		13020	Margalian Fre	15775	Margalue Fre				
705101947	10/28/2010	Dave	OI & Gas	Designed	10000	Manuality Fri	13772	Manual a Em				
705101947		Day	OI & Gas	Deviated	12000	Marcatkie Eat	13031	This ship Con				
705101947		Pay	Oil & Gas	Devialed	11166	Marcellus Fm	19120	Marcelus Fin				
705101947 1	10/20/2019	Pay	OIL Case	Deviated	14122	Marcesus Pm	19,301	Marcelus Fm				
		E MI	OI & Gas OI & Gas	Devided	14330	Marcelus Pm	19478	Marcelus Fm Marcelus Fm Marcelus Fm Marcelus Fm Marcelus Fm				
705101947		Fay	OI & Gas	Devialed								
705101947 1		Pay	OI & Gas OI & Gas	Deviated	14681	Marcellus Fm	14527	Marcelus Fm Marcelus Fm Marcelus Fm Marcelus Fm				
705101947 1		Pay	UI & G25	Deviated	14855	Marcellus Fm	15002	Marcellus Fm				
705101947 1	10/26/2019	Pay	OI & Gas	Deviated	15031	Marcellus Fm	15177	Marcellus Fm				
705101947 1	10/28/2019	Pay	OI & Gas	Devialed	15206	Marcellus Fm	15352	Marcellus Pm				
705101947 1	10/28/2019	Pay	OIS Gas		12301	Marcellus nm	15527	Marcellus Fitti				
705101947 1		Pay	OI S Gas	Deviated		Marcellus Fm	15703	Marcellus Fm				
705181947 1	10/28/2019	Pay	OI & Gas OI & Gas	Deviated		Marcellus Fm	15878	Marcellus Fm Marcellus Fm				
705101947 1						Marcellus Fm	19053	Marcellus Fm				
705101947 1		Pay	OIS Gas	Deviated	16082	Marcellus Fm	16228	Marcellus Fm				
705181947 1	10/28/2019	Pay	OI S Gas	Deviated	16257	Marcellus Fm	16228	Marcellus Fm				
705101947 1			OI 5 Gas	Deviated	16433	Marcellus Fm	16579	Marcellus Fm				
705101947 1			OIS Gas			Marcellus Fm		Marcellus Fm				
705101947		Pay	OI & Gas	Deviated		Marcellus Fm	16000	Marcellus Fm				
705101947		Pau	OIS Gas	Devialed			17104					
705101947 1			OI & GES				17279					
705101947		Paul	OI & Gas	Deviated	17200	Marcellus Fm	17.425	Marcellus Fm				
	10/28/2019		015 Gas	Desistant		Marcellus Fm	1400	Marcellus Fm				

	Gas Information: (Volum	mes in Mcf	1.1.1.1.1.1												
	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN .	JUL	AUG	SEP	OCT	NOV	DCM
	Tug Hill Operating, LLC		442.741		0	0	0	0	0	0	Û	0	10,039	136 848	295,854
4705101947	Tug Hill Operating, LLC	2020	2,647,154	275,303	251,477	286,751	230,753	245.080	191,068	120,033	213 753	296,319	157,055	179.040	170,442

Page 7 of 20

WV Geological & Economic Surve	7			Well: County = 51 Permit = 01948	Report Time Wednesday, January 12, 2022 9 20 26 AM
cation Information: View	Map		A destruction of the second		
	TAX_DISTRICT Meade	Glen Easton	QUAD_15 LAT_DD LO Cameron 39.808532 -80	LDD UTME UTMN 692941 526283.5 4406562.7	
ottom Hole Location Inform	ation:				
PI EP FLAG U 705101948 1 As Drilled 52 705101948 1 As Proposed 52	TME UTMN 28334.7 440337 26336.6 440337	6 9 -80 66911			
wner Information:					
PI CMP_DT SUFFIX 705101948 10/28/2019 Dvts On	STATU: ani Loc Comple	5 SURFAC	E_OWNER WELL_NUM C	D_NUM_LEASE LEASE_NUM_MINERAL_OWN OPERA 3-5HM_Heaven Hill Rickly L Whitatch et al Tug Hill	TOR_AT_COMPLETION PROP_VD PROP_TRGT_FM TFM_EST_PR Operating_LLC 8878 Marcellus Fm
mpletion Information:					
PL CMP DT SPUD	DT ELEV DAT	UM FIEL ind Level Can	DEEPEST_Fit neton-Gamer Matcellus Fit	DEEPEST_FMT_INITIAL_CLASS_FINAL_CLASS_TYPE Marcellus Fm Development Well_Development Well_Oil and G	RIG CMP_MTHD TVD TMD NEW_FTG KOD G_BEF G_AI as Rotary Add-Frac 6905 19967 19967 6729
ay/Show/Water Information	4		and the second		
PI CMP_DT ACTIVIT 705101948 10/28/2019 Water	Fresh Water		EPTH_TOP FM_TOP	DEPTH_BOT_FM_BOTG_BEF_G_AFT_O_BEF_O_ 70 Pennsylvanian System	AFT WATER_ONTY
705101948 10/28/2019 Water	Salt Water	Ventical		2167 Salt Sands (undiff)	
705101948 10/28/2019 Pay 705101948 10/28/2019 Pay	OI & Gas OI & Gas	Deviated Deviated	7633 Marcellus Fm 7806 Marcellus Fm	7785 Marcellus Fm 7958 Marcellus Fm	
705101948 10/28/2019 Pay	OI & Gas	Deviated	7980 Marcellus Fm	\$132 Marcellus Fm	
705101948 10/28/2019 Pay	OIS Gas	Deviated Deviated	8154 Marcellus Fm 8328 Marcellus Fm	8306 Marcellus Fm 8480 Marcellus Fm	
705101948 10/28/2019 Pay 705101948 10/28/2019 Pay	Cil & Gas	Deviated	8502 Marcellus Fm	\$654 Marcellus Fm	
05101948 10/28/2019 Pay	OIL& Gas	Deviated	8675 Marcellus Fm	8827 Marcellus Fm	
05101948 10/28/2019 Pay 05101948 10/28/2019 Pay	CI & Gas CI & Gas	Deviated Deviated	8849 Marcellus Fm 9023 Marcellus Fm	9001 Marcellus Fm 9175 Marcellus Fm	
05101948 10/28/2019 Pay	OIL& Gas	Deviated	9197 Marcellus Ent	9349 Marcellus Fm	
05101948 10/28/2019 Pay	OI & Gas	Devlated	9371 Marcellus Fm		
05101948 10/28/2019 Pay 05101948 10/28/2019 Pay	Cil & Gas Cil & Gas	Deviated Deviated	9544 Marcellus Fm 9718 Marcellus Fm	9696 Marcellus Fm 9870 Marcellus Fm	
05101948 10/28/2019 Pay	OI & Gas	Deviated	5892 Marcellus Fm	10044 Marcellus Fm	
05101948 10/20/2019 Pay 05101948 10/28/2019 Pay	OI & Gas OI & Gas	Deviated Deviated	10066 Marcellus Fm 10240 Marcellus Fm	19218 Marcellus Fm 19392 Marcellus Fm	
05101948 10/28/2019 Pay	Oil & Gas	Deviated			
705101948 10/28/2019 Pay	Cil & Gas	Deviated	10587 Marcellus Fm	10739 Marcellus Fm	
705101948 10/28/2019 Pay 705101948 10/28/2019 Pay	Cil & Gas Cil & Gas	Deviated Deviated	10761 Marcellus Fm 10935 Marcellus Fm		
705101948 10/28/2019 Pay	OI & Gas	Devlated	11100 Monality Fat	11061 Managing Free	
705101948 10/28/2019 Pay 705101948 10/28/2019 Pay	Oil & Gas	Deviated Deviated		11434 Marcellus Fm	
705101948 10/28/2019 Pay	Cil & Gas	Deviated	11630 Marcellus Fm	11608 Marcellus Fm 11782 Marcellus Fm	
705101948 10/28/2019 Pay	OI & Gas	Deviated	11604 Marcellus Fm	11606 Marcellus Fm 11782 Marcellus Fm 11956 Marcellus Fm 12130 Marcellus Fm	
705101948 10/28/2019 Pay 705101948 10/28/2019 Pay	OIS Gas	Deviated Deviated	11978 Marcellus Fm 12151 Marcellus Fm	12130 Marcellus Fm 12303 Marcellus Fm	
705101948 10/28/2019 Pay	OI 5 Gas	Deviated	12325 Marcellus Fm	12477 Marcellus Em	
785101948 10/28/2019 Pay	OI & GAS	Deviated	12499 Marcellus Frit	12651 Marcellus Fm	
705101948 10/28/2019 Pay 705101948 10/28/2019 Pay	OI & Gas OI & Gas	Deviated Deviated	12673 Marcellus Fm 12847 Marcellus Fm	12825 Marcellus Fm 12999 Marcellus Fm	
705101948 10/28/2019 Pay	OI & Gas	Deviated	13020 Marcellus Fm	13172 Marcellus Fm	
705101948 10/28/2019 Pay 705101948 10/28/2019 Pay	OI & Gas OI & Gas	Deviated Deviated	13194 Marcellus Fm 13366 Marcellus Fm 13542 Marcellus Fm	13346 Marcellus Fm 13520 Marcellus Fm	
705101948 10/28/2019 Pay	Cil & Gas	Deviated			
05101948 10/28/2019 Pay	Oil & Gas	Deviated	13718 Marcellus Fm	13868 Marcellus Fm	
05101948 10/28/2019 Pay 05101948 10/28/2019 Pay	OI & Gas DI & Gas	Deviated Deviated	13889 Marcellus Fm 13918 Marcellus Fm	14041 Marcellus Fm 14170 Marcellus Fm	
05101948 10/28/2019 Pay	OI & GAS	Deviated	14063 Marcellus Fm	14215 Marcellus Fm	
05101948 10/28/2019 Pay	OI & Gas OI & Gas	Deviated Deviated	14237 Marcellus Fm 14411 Marcellus Fm	14389 Marcellus Fm	
05101948 10/28/2019 Pay 05101948 10/28/2019 Pay	OI & Gas	Deviated	14411 Marcellus Fm 14585 Marcellus Fm	14563 Marcellus Fm 14737 Marcellus Fm	
05101948 10/28/2019 Pay	OII & Gas	Deviated	14758 Marcellus Fm	14910 Marcellus Fm	
05101948 10/28/2019 Pay 05101948 10/28/2019 Pay		Deviated Deviated	14932 Marcellus Fm 15106 Marcellus Fm	15084 Marcellus Fm 15258 Marcellus Fm	
05101945 10/28/2019 Pay	OI 5 Gas	Deviated	15280 Marcellus Fm	15432 Marcellus Fm	
05101948 10/28/2019 Pay 05101948 10/28/2019 Pay	OI & Gas	Deviated Deviated	15454 Marcellus Em	15605 Marcellus Fm	
05101948 10/28/2019 Pay 05101948 10/28/2019 Pay		Deviated Deviated	15627 Marcellus Fm 15801 Marcellus Fm	15779 Marcellus Fm 15953 Marcellus Fm	
05101948 10/28/2019 Pay	OI & Gas	Deviated	15975 Marcellus Fm	16127 Marcellus Fm	
05101948 10/28/2019 Pay 05101948 10/28/2019 Pay	OI & Gas OI & Gas	Deviated Deviated	16149 Marcellus Fm 16323 Marcellus Fm	16301 Marcellus Fm 16475 Marcellus Fm	
10/28/2019 Pay		Deviated	16436 Marcellus Fm	16475 Marcellus Fm 16648 Marcellus Fm	
25101945 10/28/2019 Pav	Oil & Gas	Deviated	16670 Marcellus Fm	16822 Marcellus Fm	
705101948 10/28/2019 Pay 705101948 10/28/2019 Pay	OI & Gas OI & Gas	Deviated Deviated	15944 Marcellus Fm 17192 Marcellus Fm	16996 Marcellus Fm 17344 Marcellus Fm	
05101945 10/28/2019 Pay	OILS Gas	Deviated	17355 Marcellus Fm	17517 Marcellus Em	
05101948 10/28/2019 Pay	OIL& Gas	Deviated	17539 Marcellus Fm	17691 Marcellus Fm	

Production	Gas Information. [Volur	nes in Mcf)													
API	PRODUCING OPERATOR	PRD YEAR	ANN GAS	JAN	FEB .	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101948	Tug Hill Operating, LLC	2019	411,073	0	0	0	0	0	0	0	Ū	0	10.272	104 522	295,979
4705101948	Tug Hill Operating, LLC	2020	2 580 181	269,951	252.973	261,995	223 361	223,387	173 237	117,917	212,852	292,346	168,939	176,850	168,573

Page 8 of 20

ocation Information. View PI COUNTY PERMIT 705101962 Marshall 1962	TAX DISTRICT	QUAD_75	QUAD_15 LAT_DD LOP	N DD UTME UTMN 693275 506547 4408558 2
705101962 Marshall 1962	Meace	Gien Easion	Gameron 39 808592 -80	9932//8 526254./ 4400596.2
ottom Hole Location Inform	ation.	104.00	1.67.00	
PI EP FLAG UT 705101952 1 As Drilled 52 705101952 1 As Proposed 52	7872 2 44028 7874 44028	00 7 -80 674541	1 39 774588 39 77459	
wner Information.				
PI CMP_DT SUFFIX	STATU	SURFACE	OWNER WELL_NUM CO	O_NUM_LEASE_LEASE_NUM_MINERAL_OWN_OPERATOR_AT_COMPLETION_PROP_VD_PROP_TRGT_FM_TFM_EST_ 32HM_Heaven Hill
703101902 10(20)2018 LANG CIN	an Loc Campa	eneo Richty L Via	and ca	Sama reaker nor recay Livingacia et al rugha operang deo oronance dana
ompletion Information:			DEEPEST_FM	M DEEPEST_FMT INITIAL_CLASS FINAL_CLASS TYPE RIG CMP_MTHD TVD TMD NEW_FTG KOD G_BEF G
PI CMP_DT SPUD_0 705101962 10/28/2019 2/25/20	18 1326 Gro	und Level Came	Hon-Garner Marcellus Fm	Marcellus Fm Development Well Development Well OI and Gas Rotary Add+Frac 6923 15053 15053 8989
av/Show/Water Information				
PI CMP_DT ACTIVIT	Y PRODUCT	SECTION DE	PTH_TOP FM_TOP	DEPTH_BOT_FM_BOTG_BEF_G_AFT_O_BEF_O_AFT_WATER_GNTY
705101962 10/28/2019 Water 705101962 10/28/2019 Water	Fresh Water Salt Water			1064 Permsylvanian System 1595 Salt Sands (undiff)
70C404000 #0.00.0040 Dev	OIE CHA	Deviated	7781 Marcellus Fm	7935 Marcellus Fm
705101962 10/28/2019 Pay 705101962 10/28/2019 Pay 705101962 10/28/2019 Pay	OI & Gas OI & Gas		7957 Marcellus Fm 8132 Marcellus Fm	
705101962 10/28/2019 Pav	OI & G25	Deviated	8308 Marcellus Fm	E481 Marcellus Fm
705101962 10/28/2019 Pay 705101962 10/28/2019 Pay	OI & Gas OI & Gas	Deviated Deviated	8483 Marcellus Fm 8658 Marcellus Fm	8537 Marcelus Fm 8537 Marcelus Fm 9163 Marcelus Fm 9353 Marcelus Fm 9514 Marcelus Fm 9655 Marcelus Fm 9665 Marcelus Fm
705101962 10/28/2019 Pay	OI & G25	Deviated	8834 Marcellus Fm	8987 Marcelus Fm
705101962 10/28/2019 Pay 705101962 10/28/2019 Pay	OI & Gas OI & Gas	Deviated Deviated	9185 Marcellus Fm	9163 Marcellus Fm 9338 Marcellus Fm
705101962 10/28/2019 Pay	OI & Gas	Deviated	9360 Marcellus Fm	9514 Marcelus Fm
705101962 10/28/2019 Pay 705101962 10/28/2019 Pay	OIL& Gas OIL& Gas	Deviated	9711 Marcellus Fm	9639 Marcelus Fm 9865 Marcelus Fm 10040 Marcelus Fm 10216 Marcelus Fm 10391 Marcelus Fm
705181962 10/28/2019 Pay	OI & Gas	Devlated	9887 Marcellus Fm	10040 Marcelus Fm
705101962 10/28/2019 Pay 705101962 10/28/2019 Pay	OI & Gas	Deviated Deviated	10062 Marcellus Fm 10237 Marcellus Fm	10216 Marcelus Fm 10391 Marcelus Fm
705101962 10/28/2019 Pay 705101962 10/28/2019 Pay	OI & Gas OI & Gas	Deviated	10413 Marcellus Fm 10588 Marcellus Fm	10566 Marcellus Fm
705101962 10/28/2019 Pay	OI & Gas	Deviated	10764 Marcellus Fm	10917 Marcelus Fm
705101962 10/28/2019 Pay 705101962 10/28/2019 Pay	OI & Gas		10939 Marcellus Fm 11115 Marcellus Fm	11020 Marcalus Exp
705101962 10/28/2019 Pay		Deviated	11290 Marcellus Fm	11444 Marcellus Fm
705101962 10/28/2019 Pay 705101962 10/28/2019 Pay	OILS Gas	Deviated Deviated	11486 Manhollers From	11610 Material Bits Free
705101962 10/28/2019 Pay	OI & Gas	Deviated	11816 Marcellus Fm	
705101962 10/28/2019 Pay 705101962 10/28/2019 Pay	OI & G25 OI & G25	Devialed	11992 Marcellus Fm 12167 Marcellus Fm	12145 Marcelus Fm 12321 Marcelus Fm
705101962 10/28/2019 Pay	OI & Gas	Deviated	12343 Marcellus Fm	12496 Marcellus Fm
705101962 10/26/2019 Pay 705101962 10/26/2019 Pay	OI & Gas OI & Gas		12518 Marcellus Fm 12694 Marcellus Fm	12672 Marcelus Fm 12847 Marcelus Fm
705101962 10/28/2019 Pay	OI & Gas	Deviated	12869 Marcellus Fm	13023 Marcelus Fm
705101952 10/26/2019 Pay 705101952 10/26/2019 Pay		Deviated Deviated	13044 Marcellus Fm 13220 Marcellus Fm	13158 Marcelus Fm 13373 Marcelus Fm
705101962 10/28/2019 Pay	OI & Gas	Deviated	13395 Marcellus Fm	13549 Marcelus Fm
705101962 10/28/2019 Pay 705101962 10/28/2019 Pay	OI & Gas OI & Gas	Deviated	13571 Marcellus Fm 13746 Marcellus Fm	13724 Marcelus Fm 13900 Marcelus Fm
705101952 10/28/2019 Pay 705101952 10/28/2019 Pay	OI & Gas OI & Gas	Deviated	13922 Marcellus Fm 14097 Marcellus Fm	14075 Marcelus Em
705101952 10/28/2019 Pay	OIL& Gas	Deviated	14273 Marcellus Fm	14426 Marcelus Fm
705101962 10/28/2019 Pay 705101962 10/28/2019 Pay	OI & Gas OI & Gas		14448 Marcellus Fm 14623 Marcellus Fm	14602 Marcelus Fm
785181962 10/28/2019 Pay	OI & Gas	Deviated	14799 Marcellus Fm	14952 Marcelus Fm
705101962 10/28/2019 Pay 705101962 10/28/2019 Pay	OILS Gas OILS Gas		14974 Marcellus Fm 15150 Marcellus Fm	15128 Marcelus Fm 15303 Marcelus Fm
705101952 10/28/2019 Pay	OI & Gas	Deviated	15325 Marcellus Fm	15479 Marcelus Pro
785101962 10/28/2019 Pay	OI & Gas OI & Gas	Deviated Deviated	15501 Marcellus Fm 15676 Marcellus Fm	15854 Marcelus Fm 15830 Marcelus Fm
705101962 10/28/2019 Pay 705101962 10/28/2019 Pay 705101962 10/28/2019 Pay 705101962 10/28/2019 Pay	OI & Gas	Deviated	15852 Marcellus Fm	16005 Marcelus Fm
705101962 10/28/2019 Pay 705101962 10/28/2019 Pay	OIL& Gas OIL& Gas	Deviated Deviated	16027 Marcellus Fm 16202 Marcellus Fm	16160 Marcelus Fm 16356 Marcelus Fm
705101982 10/28/2019 Pay	Cil & Gas	Devialed	16378 Marcellus Fm	16531 Marbellus Fm
705101962 10/28/2019 Pay	OI & Gas OI & Gas		16553 Marcellus Fm 16729 Marcellus Fm	16707 Marcelus Fm 16882 Marcelus Fm
705101962 10/28/2019 Pay	OILS Gas	Deviated	16904 Marcellus Fm	17058 Marcellus Fm
705101962 10/28/2019 Pay 705101962 10/28/2019 Pay	OI & Gas OI & Gas	Deviated Deviated	17080 Marcellus Fm 17255 Marcellus Fm	17233 Marcelus Fm 17409 Marcelus Fm
705101962 10/28/2019 Pay 705101962 10/28/2019 Pay	OI & Gas OI & Gas	Deviated	17430 Mamellus Fm	17584 Marcellus Fm
705101962 10/28/2019 Pay	OI & Gas	Deviated	17606 Marcellus Fm 17781 Marcellus Fm	17759 Marcelus Fm 17935 Marcelus Fm
705101962 10/26/2019 Pay 705101962 10/26/2019 Pay	OI 5 Gas OI 5 Gas	Deviated Deviated	17957 Marcellus Fm 18132 Marcellus Fm	18110 Marcellus Fm 18725 Daviellus Fm
705101962 10/28/2019 Pay	OIL& Gas	Deviated	18308 Marcellus Fm	18266 Marcelus Fm 18461 Marcelus Fm
705101962 10/28/2019 Pay 705101962 10/28/2019 Pay	Cil & Gas	Deviated Deviated	18483 Marcellus Fm 18859 Marcellus Fm	18637 Marcelus Fm 18812 Marcelus Fm
the state of the second	Parent in man	STATINGU	TOWAR INCIDENTS LITT	Poor a conservation of the

WV Geological & Economic Survey

Well: County = 51 Permit = 01963

Report Time Wednesday January 12, 2022 9:21:24 AM

Location Information: View Map API COUNTY PERMIT TAX_DISTRICT OUAD_75 QUAD_15 LAT_OD LON_DD UTME UTMN 4705101963 Marshall 1963 Meade Gien Easton Cameron 39.805584 -80.895234 526258.4 4406557.3

 Bottom Hole Location Information:

 IAPI
 EP FLAG
 UTME
 UTMN
 LON_DD
 LAT_DD

 4705101953
 1
 ASDMILE
 527975
 4403078.8
 40.6733
 39.777182

 4705101953
 1
 As Proposed
 527977.5
 4403078.8
 40.6733
 39.777188

Owner Information: API CMP_DT SUFFIX STATUS SURFACE_OWNER WELL_NUM CO_NUM LEASE LEASE_NUM MINERAL_OWN OPERATOR_AT_COMPLETION PROP_VD PROP_TRGT_FM TFM_EST_PR 4705101963 10/20/2019 Dvtd Orgni Loc Completed Ricky L Whilfalch 3-3HM Heaven Hill Ricky L Whilfalch et al. Tug Hill Operating, LLC 6876 Marcelius Fm

Completion Information: API CMP_DT SPUD_DT ELEV DATUM FIELD DEEPEST_FM DEEPEST_FMT INITIAL_CLASS FINAL_CLASS TYPE RIG CMP_MTHD TVD TMD NEW_FTG KOD G_BEF G_AFT C 4705101963 1028/2019 3/7/2018 1326 Ground Level Cameron-Gamer Marcellus Fm Marcellus Fm Development Well Development Well OU and Gas Rotary Adid=Frac 6804 18261 18261 5823 Motor Info maline

API C 4705101963 1			PRODUCT Fresh Water		DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT G_BEF G_AFT O_BEF O_AFT WATER_QNT Pennsylvanian System
705101963 1			Salt Water					Eig Lime
705101963 1		Dav	Cil & Gas	Desistant	7643	Marcellus Fm	7817	Marcellus Fm
705101963 1		Davi	Oil & Gas	Devaled		Marcellus Fm		Marcellus Fm
705101963		Pay	OIS GM	Deviated		Marcellus Fm		Marcellus Fm
705101963 1		ey .	OI & Gas OI & Gas OI & Gas	Devideo		Marcellus Fm	72.13	Stavestics Em
705101963 1		- ay	OIL Gas	Deviated	83.55	I from others Ever	TEAD.	Manager Free
705101963		ay	OIL Cas	Devaled	0203	Marcellus Pin	200	Natorius Fra Marcelus Fra Marcelus Fra Marcelus Fra Marcelus Fra Marcelus Fra
705101963 1		- ay	016 023	Deviated	0740	Mancence Pin	0001	Marcellus Fill
		-ay	OI & Gas OI & Gas OI & Gas	Deviated	0/10	Marcellus Pm	00/0	Marcelus Fin
705101963		e ev	OTAGAS	Deviated	0092	Marcellus rm	9040	Marceaus
705101963 1		-sy	Oil & Gas	Deviated	2087	Marcellus Pm	5221	Marceilus Pm
705101963 1		-27	OIL& Gas OIL& Gas	Deviated	5242	Marcellus Fm Marcellus Fm	9396	Marcellus Fm
705101963 1		Pay	OI & Gas	Deviated	9418	Marcellus Pm	9572	Marcellus Fm
705101963	0/28/2019	291	Oil 5 Gas	Devialed	\$593	Marcellus Fm	9747	Marcellus Fm Marcellus Fm Marcellus Fm
705101963 1		Pay	OI & Gas OI & Gas	Deviated	9769	Marcellus Fm	9923	Marceilus Fm
705101963 1		Pay	OII & Gas	Deviated	9944	Marcellus Fm	10098	Marcellus Fm
705101963	0/28/2019	Pay	OILS Gas	Deviated	10120	Marceitus Fm	10274	Marcellus Fm
705101963 1		Pay	OI & Gas OI & Gas	Deviated	10295	Marcellus Fm	10449	Marcellus Fm
705101963		Pay	OI 5 Gas	Deviated	10471	Marcellus Fm	10624	Marcellus Fm
705101963 1		Pay	OI & Gas	Devated	10545	Marcellus Fm	10800	Marcellus Fm
705101963 1		Pay	Dil & Gas Dil & Gas Dil & Gas	Deviated	10822	Marcellus Fm	10975	Marcelus Prin Marcelus Frin Marcelus Frin Marcelus Prin Marcelus Prin Marcelus Frin Marcelus Frin Marcelus Frin Marcelus Frin
705101963 1	0/28/2019	Pay	Cil & Gas	Devialed	10997	Marcellus Fm	11151	Marcellus Fm
705101963 1	0/28/2019 1	Pay	OIS Gas	Deviated	11173	Marcellus Fm	11326	Marcellus Fm
705101963 1	0/28/2019	Pay	OILS Gas	Deviated	11348	Marcellus Fm	11502	Marcellus Fm
705101963 1	0/28/2019	Pay	OI & Gas	Deviated				
705101963 1	0/28/2019 1	Pav	OI & Gas	Deviated	11699	Marcellus Em	11853	Marcellus Fm Marcellus Fm Marcellus Fm Marcellus Fm
705101963 1		Pay	Cil & Gas	Deviated	11875	Marcellus Fm	12025	Marcellus Fm
705101963 1		Pay	Cil & Gas	Deviated	12050	Marcellus Fm	12204	Marcellus Fin
705101963 1		Pane	OLS Gas	Dellated	12225	Marcellus Em	12379	Marcellus Fm
705101963 1		Pay	OILS Gas	Deviated	12401	Marcellus Em	12555	Marcellus Em
705101963 1		Pay	CILS GAS	Deviated	12577	Marcellus Fm Marcellus Fm	12730	Marcellus Em
705101963 1		Pay	Cil & Gas	Devialed	13753	Strengthin Em	1000.0	Manually of Fem
705101963 1		2314	OIS Gas	Deviated	12928	Machellus Em	13081	Marcellus Frin Marcellus Frin Marcellus Frin
705101963 1		Davi	OI & Gas	Denstad	13103	Alamalit & Fee	13257	Elsenative Film
705101963 1		Day	OILS GES	Deviated	+2270	Manalkin Em	12422	Manada a Ens
705101963 1			OIL & Gas		13454	Marcellus Fm	13405	Munally Em
705101963 1		Dave	OI & Gas	Devaled	13630	Marcellus Fm	13705	Manager Fin
705101963 1		- ay	OI 5 Gas					
705101963 1		ay	OILS Cas	Deviated	13003	Marcellus Fill	13353	Marcelus Fm Marcelus Fm Marcelus Fm Marcelus Fm
705101963 1		ay	OI & Gas OI & Gas	Deviated	13901	Harcenus ran	14134	Marcellus Fm
705101963 1	028/2019	ay	OI & Gas	Devated	14150	Marcellus Pm	14310	Marceilus Fin
				Deviated	14352	Marcellus Pm	14465	Marcesus Fin
705101963 1		-ay	OI & Gas	Deviated		Marcellus Fm		
705101963 1		ay	OI & Gas	Deviated	14683	Marcellus Fm	14836	Marcelus Fm Marcelus Fm Marcelus Fm Marcelus Fm Marcelus Fm Marcelus Fm
705101963 1			OI & Gas		14858	Marcellus Fm	15012	Marcellus Fm
705101953 1			Oil & Gas		15034	Marcellus Fm	15187	Marcelus Pm
705101963 1			Oil & Gas	Devialed	15209	Marcellus Fm	15363	Marcelus Fm
705101963 1			Oil & Gas		15385	Marcellus Fm	15538	Marcellus Fm
705101963 1		Pay	OI & Gas	Deviated	15560	Marcellus Fm	15714	Marcellus Fm
705101963 1		ay	OI & Gas	Devialed	15736	Marcellus Fm	15889	Narcelus Fm Narcelus Fm Narcelus Fm Marcelus Fm Marcelus Fm
705101963 1			OI & Gas	Deviated	15911	Marcellus Fm	16065	Marcellus Fm
705101963 1		Pay	Oil & Gas	Devialed	16087	Marcellus Fm	16240	Marcellus Fm
705101963 1	0/28/2019 1	Pay	Oil & Gas	Deviated.	16262	Marcellus Fm	16416	Marcellus Fm
705101963 1	0/23/2019 #	Pay	OI & Gas	Deviated	16435	Marcellus Fm	16591	Marcelus Fm
785101963 1		Pay	Oil & Gas	Deviated	16613	Marcellus Fm Marcellus Fm	16767	Marcellus Fm
705101963 1		200	OIL Car	Deviated	16789	Marcellus Fm	16942	Marcellus Fm
705101963 1		av	Oil & Gas	Deviated	16954	Marcellus Fm	17115	Marcellus Fm
705101953 1		Pag.	Oil & Gas	Deviated	17140	Marcellus Fm	17293	Marcalus Fm
705101963 1		av	QL5 Gas	Deviated	17315	Marcellus Fra	17469	Marcelus Fm Marcelus Fm Marcelus Fm Marcelus Fm
705101953 1		34	OILS Gas	Deviated	17491	Marcellus Fm	17644	Marcellus Em
705101963 1		av	Oil & Gas	Deviated	17844	Marcellus Fm	17850	Marcelus Fm
and a second of	0/28/2019			Devialed		Marcellus Fm	10000	Marcelus Fm

 Production Gas Information: (Volumes in Mcf)
 API
 PRODUCING OPERATOR PRD, YEAR ANN GAS JAN
 FEB
 MAR
 APR
 May
 JUN
 JUL
 AUG
 SEP
 OCT
 NOV
 DCM

 4705101963
 Tup HII Operating, LLG
 2019
 437,799
 0
 0
 0
 0
 0
 0,854
 131,175
 257,670

 4705101963
 Tup HII Operating, LLG
 2020
 2,761,968
 296,575
 292,016
 251,555
 196,881
 125,743
 221,437
 306,995
 199,457
 185,040
 175,688

Page 10 of 20

WV Geological & Economic Survey:

Well: County = 51 Permit = 01967

Report Time: Wednesday, January 12, 2022 9 21:52 AM

Location Information: View Map API COUNTY PERMIT TAX_DISTRICT_OUAD_75_QUAD_15_LAT_DD_LON_DD_UTME_UTMN 4705101967_Marshall_1967_Meade _____Gien Easton_Cameron_39.80884_-80.693218_526259.8_4406563.5

Bottom Hole Location Information:

 API
 EP FLAG
 UTME
 UTMN
 LON_DD
 LAT_DD

 4705101967
 1
 As Droposed
 527728.2
 4404242.7
 40676162
 39,787683

 4705101967
 1
 As Drole
 528190.9
 4403437.5
 +80.670792
 39.780413

Owner Information:

API CMP_DT SUFFIX STATUS SURFACE_OWNER WELL_NUM CO_NUM LEASE 4705101967 10/28/2019 Dvtd Orgni Loc Completed Ricky L Whitlatch 3-8HU Heaven Hill OPERATOR_AT_COMPLETION_PROP_VD_PROP_TRGT_FM_TFM_EST_PR Tug Hill Operating, LLC 11829_Pt Pleasant Fm LEASE_NUM MINERAL_OWN Ricky L Whitlatch et al Tug Hill Operating, LLC

Completion Information: API CMP_DT SPUD_DT_ELEV_DATUM FIELD DEEPEST_FM_DEEPEST_FMT_INITIAL_CLASS_FINAL_CLASS_TYPE_RIG_CMP_MTHD_TVD_TMD_NEW_FTG_KOD_G_BEF_G_AFT_0_BEF 4705101967_10/28/2019_4/4/2018_1326_Ground Level Cameron-Gamer_Trenton Group_PI Pleasant Fm_Development Well_Development Well_Gas_Rotary_Acid+Frac____22395_22395_10708 Comment: 10/28/2019_Completion Information straight from operator

Pay/Show/Water Information

API	CMP_DT	ACTIVITY			DEPTH_TOP	FM_TOP	DEPTH_BOT		G_AFT	O_BEF	O_AFT	WATER_ONTY
	10/28/2019		Fresh Water	Vertical			1064	Pennsylvanian System	 	-		
4705101967			Salt Water	Vertical			1595	Salt Sands (undiff)				
4705101967			Gas	Deviated	12390	Pt Pleasant Fm	12535	Pt Pleasant Fm				
4705101967			Gas	Deviated	12564	Pt Pleasant Fm	12709	Pt Pleasant Fm				
4705101967			Gas	Devlated	12739	Pt Pleasant Fm	12884	Pt Pleasant Fm				
4705101967			Gas	Deviated	12913	Pt Pleasant Fm	13058	Pt Pleasant Fm				
4705101967			Gas	Deviated	13088	Pt Pleasant Fm	13233	Pt Pleasant Fm				
4705101967	10/28/2019	Pay	Gas	Deviated	13262	Pt Pleasant Fm	13407	Pt Pleasant Fm				
4705101967			Gas	Deviated	13437	Pt Pleasant Fm	13582	Pt Pleasant Fm				
4705101967			Gas	Deviated	13611	Pt Pleasant Fm	13756	Pt Pleasant Fm				
4705101967			Gas	Deviated	13785	Pt Pleasant Fm	13931	Pt Pleasant Fm				
4705101967			Gas	Deviated	13960	Pt Pleasant Fm	14105	Pt Pleasant Fm				
1705101967			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
705101967			Gas	Deviated	14309	Pt Pleasant Fm	14454	Pt Pleasant Fm				
4705101967			Gas	Deviated	14484	P1 Pleasant Fm	14629	Pt Pleasant Fm				
4705101967			Gas	Deviated	14658	Pt Pleasant Fm	14803	Pt Pleasant Fm				
1705101967			Gas	Deviated	14833	PI Pleasant Fm	14978	Pt Pleasant Fm				
4705101967			Gas	Deviated	15007	Pt Pleasant Fm	15152	Pt Pleasant Fm				
1705101967			Gas	Deviated	15182	Pt Pleasant Fm	15327	Pt Pleasant Fm				
1705101957			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
1705101967			Gas	Deviated	15531	Pt Pleasant Fm	15676	Pt Pleasant Fm				
1705101967			Gas	Deviated	20766	Pt Pleasant Fm	20911	Pt Pleasant Fm				
1705101967			Gas	Deviated	20940	Pt Pleasant Fm	21085	Pt Pleasant Fm				
1705101967			Gas	Deviated	21115	Pt Pleasant Fm	21260	Pt Pleasant Fm				
1705101967			Gas	Deviated	21289	Pt Pleasant Fm	21434	Pt Pleasant Fm				
1705101967	10/28/2019	Pay	Gas	Deviated	21464	Pt Pleasant Fm	21609	Pt Pleasant Fm				
1705101967			Gas	Deviated	21639	Pt Pleasant Fm	21784	Pt Pleasant Fm				
1705101967			Gas	Deviated	21813	Pt Pleasant Fm	21958	Pt Pleasant Fm				
1705101967	10/28/2019	Pay	Gas	Deviated	21988	Pt Pleasant Fm	22133	Pt Pleasant Fm				

Production Gas Information: (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
470510196	7 Tug Hill Operating, LLC	2019	1.043.859	0	0	0	0	0	0	Ō	0	0	69 535	439,145	535,178
470510196	7 Tug Hill Operating, LLC	2020	4,740,538	485,522	447.408	492.592	450,763	472.547	452 617	393,736	373.315	344,073	336.032	220,857	271.076

WV Geological & Economic Survey.

Well: County = 51 Permit = 01968

Report Time: Wadnesday, January 12, 2022 9 22 17 AM

Location Information: View Map API COUNTY PERMIT TAX_DISTRICT_QUAD_75_QUAD_15_LAT_DD_LON_DD_UTME_UTMN 4705101965_Marshall_1958_Meade_____Glan_Easton_Cameron_39.808556_-80.693304_526252.4_4406565.2

 Bottom Hole Location Information:

 API
 EP FLAG
 UTME
 UTMN
 LON DO
 LAT DD

 4705101968
 1
 Ast Drilled
 527715.5
 4402751.7
 -80.676373
 39.77425

 4705101968
 1
 Ast Drilled
 527075.6
 4403863
 -80.653799
 39.77425

 Owner Information;
 API
 CMP_DT
 SUFFIX
 STATUS
 SURFACE_OWNER
 WELL_NUM
 CO_NUM
 LEASE

 4705101966
 10/25/2019
 Dvid Orgni Loc
 Completed
 Ricky L Whittatch
 3-GHU
 Heaven Hill
 LEASE_NUM_MINERAL_OWN OPERATOR_AT_COMPLETION_PROP_VD_PROP_TRGT_FM_TFM_EST_PR Ricky L Whitlatch et al. Tug Hill Operating, LLC 11629_PI Fleasant Fm

Pay/Show/Water Information:

4705101968	10/28/2019	Water	Fresh Water		DEPTH_TOP		1064	FM_BOT Pennsylvanian System Salt Sands (undiff)	 	and the set of	T WATER_ONTY
					10000		1252	Salt Sanos (Unditt)			
4705101968			Gas	Deviated	12563	Pt Pleasant Fm Pt Pleasant Fm	12758	Pt Pleasant Fm			
			Gas	Deviated	2/64	PI Pleasant Pm	12959	Pt Pleasant Fm			
1705101968			Gas	Deviated	12984	PI Pleasant Fm	13160	Pt Pleasant Fm			
4705101968			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm			
4705101968			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm			
4705101968			Gas	Devlated		Pt Pleasant Fm	13761	Pt Pleasant Em			
4705101968	10/28/2019	Pay	Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm			
4705101968	10/28/2019	Pay	Gas	Deviated		PI Pleasant Fm		Pt Pleasant Fm			
1705101968			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm			
4705101968	10/28/2019	Pay	Gas	Deviated		Pt Pleasant Fm	14563	Pt Pleasant Fm			
4705101968	10/28/2019	Pay	Gas	Deviated	14588	Pt Pleasant Fm	14764	Pt Pleasant Fm			
705101968			Gas	Deviated	14789	Pt Pleasant Fm	14964	Pt Pleasant Fm			
4705101968			Gas	Deviated	14989	PL Pleasant Fm	15165	Pt Pleasant Fm			
4705101968			Gas	Deviated	15190	Pt Pleasant Fm		Pt Pleasant Fm			
4705101960			Gas	Deviated	15390	Pt Pleasant Fm	15566	Pt Pleasant Fm			
4705101968	10/28/2019	Pay	Gas	Deviated	15591	Pt Pleasant Fm		Pt Pleasant Fm			
705101958			Gas	Deviated		PI Fleasant Fm		Pt Pleasant Fm			
1705101968	10/28/2019	Pay	Gas	Deviated	15992	PI Floasant Fm		Pt Pleasant Fm			
4705101968			Gas	Devialed		PI Pleasant Fm		Pt Pleasant Fm			
1705101966			Gas	Deviated	16393	PI Fleasant Fm	16568	Pt Pleasant Fm			
1705101968			Gas	Deviated	16593	PI Pleasant Fm	16769	Pt Pleasant Fm			
705101968			Gas	Deviated	16794	PI Pleasant Fm	16969	Pt Pleasant Fm			
705101968	10/28/2019	Pay	Gas	Deviated		PI Fleasant Fm	17170	Pt Pleasant Fm			
705101968	10/28/2019	Pay	Gas	Deviated	17195	PI Pleasant Fm	17370	Pt Pleasant Fm			
705101968	10/28/2019	Pay	Gas	Deviated		PI Pleasant Fm	17571	Pt Pleasant Fm			
705101968			Gas	Deviated	17596	PI Pleasant Fm		Pt Pleasant Fm			
4705101968			Gas	Devialed	17796	Pt Pleasant Fm		Pt Pleasant Fm			
1705101968			Gas	Deviated	17997	PI Pleasant Fm		Pt Pleasant Fm			
705101958			Gas	Deviated		PI Pleasant Fm		Pt Pleasant Fm			
705101968	10/28/2019	Pay	Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm			
705101968			Gas	Deviated	18598	Pt Pleasant Fm	18774	Pt Pleasant Fm			
1705101968	10/28/2019	Pay	Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm			
705101968			Gas	Deviated		Pt Pleasant Fm	19175	Pt Pleasant Fm			
1705101968			Gas	Deviated	19205	Pt Pleasant Fm	10375	Pt Pleasant Fm			
705101968			Gas	Deviated	10,000	Pt Pleasant Fm	10570	Pt Pleasant Fm			
705101968			Gas	Deviated	10604	Pt Pleasant Fm	10776	Pt Pleasant Fm			
705101968	10/28/2019	Par	Gas	Deviated	10001	Pt Pleasant Fm		Pt Pleasant Fm			
705101968	10/28/2019	Daw	Gas	Deviated	20002	PI Pleasant Fm		Pt Pleasant Fm			
4705101966			Gas	Deviated		PI Pleasant Fm		Pt Pleasant Fm			
705101968				Deviated		Pt Pleasant Fm		Pt Pleasant Fm			
705101968			Gas								
			Gas	Deviated		PI Pleasant Fm	20//9	Pt Pleasant Fm			
705101968	10/20/2019	E dy	Gas	Deviated	20804	Pt Pleasant Fm Pt Pleasant Fm	20979	Pt Pleasant Fm Pt Pleasant Fm			
			Gas	Deviated							
705101968			Gas	Deviated	21205	Pt Pieasant Fm	21380	Pt Pleasant Fm			
705101968			Gas	Devialed	21405	Pt Pleasant Fm		Pt Pleasant Fm			
705101968			Gas	Deviated	21606	Pt Pleasant Fm		Pt Pleasant Fm			
705101968			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm			
705101968			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm			
705101968	10/28/2019	Pay	Gas	Deviated		PI Pleasant Fm		Pt Pleasant Fm			
705101968			Gas	Deviated		PI Pleasant Fm		Pt Pleasant Fm			
705101968	10/28/2019	Pay	Gas	Deviated		Pt Pleasant Fm	22784	Pt Pleasant Fm			
4705101968			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm			
705101968			Gas	Deviated		Pt Pleasant Fm	23185	Pt Pleasant Fm			
705101968			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm			
705101968	10/28/2019	Pay	Gas	Deviated		Pt Pleasant Fm	23586	Pt Pleasant Fm			

Froouction	Gas mormation (Volu	nes in McI	100 W 10 1 1												
API	PRODUCING_OPERATOR	PRD YEAR	ANN GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101968	Tug Hill Operating, LLC	2019	1.028.627	0	0	0	0	0	0	0	0	0	73,846	424,843	529,935
4705101968	Tug Hill Operating, LLC	2020	5 293 404	540.001	461,650	497.232	482,774	516,773	473,860	455.502	444,396	402,717	412,199	286, 197	320,103

Page 12 of 20

WV Geological & Economic Survey.

Well: County = 51 Permit = 01969

Report Time Wednesday, January 12, 2022 9 22 41 AM

Location Information: View Map

API COU	NTY PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN 4408564.4
4705101969 Mars	hall 1969	Meade	Gien Easton	Cameron	39.808548	-80 693261	526255.1	
								11003041

Bottom Hole Location Information:

API		FLAG	UTME	UTMN	LON DD	LAT DD
4705101969	1	As Drilled	527904.9	4403167.7	-80.674144	39 777992
4705101969		As Proposed	527400 G	4404047 6	-80 679996	39.765936

Owner Information: API CMP_DT SUFFIX STATUS SURFACE_OWNER WELL_NUM CO_NUM LEASE LEASE_NUM MINERAL_OWN OPERATOR_AT_COMPLETION PROP_VD_PROP_TRGT_FM_TFM_EST_PR 4705101969_1028/2019_Dvtd Orgini Loc_Completed Ricky L Whitlaten 3-7HU Heaven Hill Ricky L Whitlaten et al. Tug Hill Operating, LLC 11829_PF Pleasant Fm

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE I	RIG	CMP_MTHD	TVD	TMD	NEW_FTG_KOD	G_BEF C	S_AFT (D_BE
4705101969	10/28/2019	4/27/2018	1326	Ground Level	Cameron-Gamer	Pt Fleasant Fm	Pt Fleasant Fm	Development Well	Development Well	Gas I	Rotary	Acid+Frac	11865	22736	22736 11677		500	-
-		1.11																

API	CMP_DT	ACTIVITY			DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEF	G_AFT O_E	EF O_AFT	WATER_ONTY
705101969			Fresh Water					Pennsylvanian System				
705101969	10/28/2019	water	Salt Water		Sarvill.	100 C C C C C C C C C C C C C C C C C C	1595	Sall Sands (undiff)				
1705101969	10/28/2019	Pay	Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
705101969			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
1705101969			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
1705101969			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
4705101969	10/28/2019	Pay	Gas	Deviated	13260	Pt Pleasant Fm.	13435	Pt Pleasant Fm				
4705101969	10/28/2019	Pay	Gas	Deviated	13460	Pt Pleasant Fm	13636	Pt Pleasant Fm				
4705101969			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
4705101969			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
1705101969			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
4705101969			Gas	Devialed		Pt Pleasant Fm		Pt Pleasant Fm				
4705101969			Gas	Deviated	14463	Pt Pleasant Fm	14638	Pt Pleasant Fm				
4705101969			Gas	Deviated	14663	P1 Pleasant Fm	14839	Ft Pleasant Fm				
4705101969			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
4705101969			Gas	Deviated		PI Pleasant Fm		Pt Pleasant Fm				
4705101969			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
4705101969			Gas	Deviated	15205	Pt Pleasant Fm		Pt Pleasant Fm				
4705101969			Gas	Deviated	13403	Pt Pleasant Fm	15041	Pt Pleasant Fm				
							10041	PI Pleasant Fm				
4705101969			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
4705101969			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
4705101969			Gas	Deviated	16267	Pt Pleasant Fm	16443	Pt Pleasant Fm				
4705101969			Gas	Deviated	16468	Pt Pleasant Fm	16643	Pt Pleasant Fm				
4705101969			Gas	Devialed	16663	Pt Pleasanl Fm	16844	Pt Pleasant Fm				
4705101969			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
4705101969			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
4705101969	10/28/2019	Pay	Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
4705101969	10/28/2019	Pay	Gas	Deviated	17470	Pt Pleasant Fm	17646	Pt Pleasant Fm				
4705101969	10/28/2019	Pay	Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
4705101969	10/28/2019	Pay	Gas	Devialed	17871	Pt Pleasant Fm	18047	Pt Pleasant Fm				
4705101969	10/28/2019	Pay	Gas	Deviated	18072	Pt Pleasant Fm	18247	Pt Pleasant Fm				
4705101969			Gas	Deviated		Pt Pleasant Fm	16448	Pt Pleasant Fm				
4705101969	10/28/2019	Pay	Gas	Deviated	18473	Pt Pleasant Fm	18648	Pt Pleasant Em				
4705101969	10/28/2019	Pay	Gas	Deviated	18573	Pt Pleasant Fm	18849	Pt Pleasant Fm				
4705101969	10/28/2019	Pau	Gas	Deviated	18874	Pt Pleasant Fm	19049	Pt Pleasant Fm				
4705101969	10/28/2019	Pay	Gas	Deviated	19074	PI Pleasant Fm	19250	Pt Pleasant Fm				
4705101969	10/28/2019	Pay	Gas	Deviated	19275	PI Pleasant Fm	19450	Pt Pleasant Fm				
4705101969			Gas	Deviated	10475	Pt Pleasant Fm	10051	Pt Pleasant Fm				
705101969	10/20/2019	Day	Gas	Deviated		PI Pleasant Fm		Pt Pleasant Fm				
4705101969			Gas	Deviated	10070	Pt Pleasant Fm	20062	Pt Pleasant Fm				
4705101969	10/28/2019	Day				Pt Pleasant Fm		Pt Pleasant Fm				
4705101969	10/20/2019	Day	Gas	Deviated	20077	PI Pleasant Fm		Pt Pleasant Fm				
4705101969	10/20/2019	Pay	Gas	Deviated	20211	PI Pleasant Pit	20453					
4705101969			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
4705101969			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
4705101969	10/28/2019	Pay	Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
4705101969	10/28/2019	Pay	Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
4705101969			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
4705101969			Gas	Deviated		Pt Pleasant Fm		PI Pleasant Fm				
4705101969			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
1705101969	10/28/2019	Pay	Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
1705101969			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
4705101969	10/28/2019	Pay	Gas	Deviated	22283	Pt Pleasant Fm	22458	Pt Pleasant Fm				

	PRODUCING_OPERATOR I	PRD_YEAR	ANN GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	100	NOV	DCM
4705101969	Tug Hill Operating LLC	2019	1,028,727	0	0	0	0	0	0	0	0	0	72,074	427,502	529,151
4705101969	Tug Hill Operating, LLC	2020	4 599 352	502,639	439 245	483.118	459.546	480.964	435.261	400.538	362.681	296 675	297.984	213,120	227,581

WV Geological & Economic Survey

Well: County = 51 Permit = 02015

Report Time. Wednesday, January 12, 2022 9:23:04 AM

Location Information: View Map

			TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102015	Marshall	2015	Meade	Glen Easton	Cameron	39.808607	-80.693364	526247.3	4406559.8

Bottom Hole Location Information:

 API
 EP
 FLAG
 UTME
 UTMN
 LON_DD
 LAT_DD

 4705102015
 1
 As Drilled
 524814.4
 4407664.3
 -80.710062
 39.818602

 4705102015
 1
 As Proposed
 524811.1
 4407566
 -80.710104
 39.817716

 Owner Information:
 API
 CMP_DT
 SUFFIX
 STATUS
 SURFACE_OWNER
 WELL_NUM
 CO_NUM
 LEASE_NUM
 MINERAL_OWN
 OPERATOR_AT_COMPLETION
 PROP_VD
 PROP_TRGT_FM
 TFM_EST_PR

 4705102015
 10/28/2019
 Dvld Orgni Loc
 Completed
 Ricky L Whitlatch
 3N-9HM
 Heaven Hill
 Ricky L Whitlatch et al
 Tug Hill Operating, LLC
 6876
 Marcellus Fm

Completion Information:

API	CMP DT	SPUD DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST FMT	INITIAL CLASS	FINAL CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG KOD G_BEF G_AFT O
4705102	15 10/28/2019	-/26/2018	1326	Ground Level	Cameron-Gamer	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rolary	Acid+Frac	6886	15275	15275 8739

Pay/Show/Water Information.

	CMP DT		PRODUCT	SECTION	DEPTH_TOP	FM TOP	DEPTH BOT	FM BOT	G BEF	G AFT	O BEF	O AFT	WATER ONTY
4705102015			Fresh Water		Cherry C- Aut			Pennsylvanian System					there are a set of
705102015	10/28/2019	Water	Salt Water	Vertical			1505	Salt Sands (undiff)					
705102015	10/28/2019	Pay	Oll & Gas	Deviated	8344	Marcellus Fm	8497	Marcellus Fm					
705102015	10/28/2019	Pay	Oil & Gas	Deviated	8519	Marcellus Fm	8672	Marcellus Fm					
705102015	10/28/2019			Deviated		Marcellus Fm	8847	Marcellus Fm					
1705102015	10/28/2019	Pay	Oil & Gas	Deviated	8869	Marcellus Fm	9022	Marcellus Fm					
1705102015	10/28/2019	Pay	Oil & Gas Oil & Gas	Deviated	9044	Marcellus Fm Marcellus Fm	9197	Marcellus Fm Marcellus Fm					
1705102015	10/28/2019	Pay	Cil & Gas	Deviated	9219	Marcellus Fm	9372	Marcellus Fm					
4705102015	10/28/2019	Pay	OII & Gas	Deviated	9394	Marcellus Fm	9547	Marcellus Fm					
705102015	10/28/2019	Pay	OI & Gas	Deviated		Marcellus Fm	9722	Marcellus Fm Marcellus Fm					
705102015		Pay		Deviated	9744	Marcellus Fm	9897	Marcellus Fm					
705102015	10/28/2019	Pay	Oil & Gas	Deviated	9919	Marcellus Fm	10072	Marcellus Fm					
1705102015	10/28/2019	Pay	Oil & Gas	Deviated	10094	Marcellus Fm	10247	Marcellus Fm					
705102015				Deviated	10269	Marcellus Fm	10422	Marcellus Fm Marcellus Fm					
4705102015				Deviated		Marcellus Fm	10597	Marcellus Fm					
705102015	10/28/2019	Pay	Oil & Gas	Deviated	10619	Marcellus Fm	10772	Marcellus Fm					
705102015			Oil & Gas	Deviated	10794	Marcellus Fm	10947	Marcellus Fm					
	10/28/2019			Deviated		Marcellus Fm		Marcellus Fm					
	10/28/2019			Deviated	11144	Marcellus Fm	11297	Marcellus Fm					
705102015	10/28/2019	Pay	Oil & Gas	Deviated	11319	Marcellus Fm	11472	Marcellus Fm					
	10/28/2019			Deviated	11494	Marcellus Fm		Marcellus Fm					
705102015		Pay	Oil & Gas	Deviated	11669	Marcellus Fm	11822	Marcellus Fm					
705102015	10/28/2019	Pay	Oil & Gas	Deviated	11844	Marcellus Fm	11997	Marcellus Fm					
1705102015	10/28/2019	Pay	Oil & Gas	Deviated	12019	Marcellus Fm	12172	Marcellus Fm					
705102015				Deviated	12194	Marcellus Fm	12347	Marcellus Fm					
1705102015	10/28/2019	Pay	Oil & Gas	Deviated	12359	Marcellus Fm	12522	Marcellus Fm					
705102015				Deviated		Marcellus Fm	12697	Marcellus Fm Marcellus Fm					
705102015	10/28/2019		Oil & Gas	Deviated	12719	Marcellus Fm	12872	Marcellus Fm					
705102015				Deviated	12894	Marcellus Fm	13047	Marcellus Fm					
705102015	10/28/2019	Pay	Oil & Gas	Deviated		Marcellus Fm	13222	Marcellus Fm Marcellus Fm					
705102015	10/28/2019	Pay	Oil & Gas	Deviated	13244	Marcellus Fm	13397	Marcellus Fm					
705102015	10/28/2019	Pay	Oil & Gas	Deviated	13419	Marcellus Fm	13572	Marcellus Fm					
705102015	10/28/2019	Pay	Oil & Gas	Deviated		Marcellus Fm	13747	Marcellus Fm					
705102015	10/28/2019	Pay	Oil & Gas	Deviated	13769	Marcellus Fm	13922	Marcellus Fm					
705102015	10/28/2019			Deviated	13944	Marcellus Fm	14097	Marcellus Fm					
705102015				Deviated	14119	Marcellus Fm	14272	Marcellus Fm					
705102015	10/28/2019	Pay	Oil & Gas	Deviated		Marcellus Fm	14447	Marcellus Fm					
705102015				Deviated	14469	Marcellus Fm		Marcellus Fm					
705102015	10/28/2019	Pay	OI & Gas	Deviated		Marcellus Fm		Marcellus Fm					
705102015	10/28/2019	Pay	Oil & Gas	Deviated	14819	Marcellus Fm		Marcellus Fm					
705102015	10/28/2019	Pay	Oil & Gas	Deviated		Marcellus Fm		Marcellus Fm					

Production Gas Information: (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705102015	Tug Hill Operating, LLC	2019	275,885	0	0	0	0	0	0	0	0	0	8,568	86,145	181.172
4705102015	Tug Hill Operating, LLC	2020	1 591 527	177,387	165,398	167,981	141.491	143.341	111.951	74,195	113,364	173 970	113 265	106 576	102,608

Page 14 of 20

WV Geological & Economic Survey.

Well: County = 51 Permit = 02016

Report Time: Wednesday, January 12, 2022 9:23:27 AM

Location Information: View Map

			TAX_DISTRICT						
4705102016	Marshall	2015	Meade	Glen Easton	Cameron	39.808664	-80 693348	526248.7	4406566 1

Bottom Hole Location Information:

 API
 EP
 FLAG
 UTME
 UTMN
 LON_DD
 LAT_DD

 4705102016
 1
 As Proposed
 524924
 4407583.6
 -80.708785
 39.817871

 4705102016
 1
 As Drilled
 524925.3
 4407592
 -80.708769
 39.817947

Owner Information:

 API
 CMP_DT
 SUFFIX
 STATUS
 SURFACE_OWNER
 WELL_NUM
 CO_NUM
 LEASE
 LEASE_NUM
 MINERAL_OWN
 OPERATOR_AT_COMPLETION
 PROP_VD
 PROP_TRGT_FM
 TFM_EST_PR

 4705102016
 10/28/2019
 Dvtd Orgn1 Loc
 Completed
 Ricky L
 Whittlatch
 3N-10HU
 Heaven Hill
 Ricky L
 Whittlatch et al
 Tug Hill Operating, LLC
 11898
 Pt Pleasant Fm

Completion Information:

API CMP_DT SPUD_DT ELEV DATUM FIELD DEEPEST_FM DEEPEST_FM INITIAL_CLASS FINAL_CLASS TYPE RIG CMP_MTHD TVD TMD NEW_FTG KOD G_BEF G_AFT O_BE 4705102016 10/28/2019 7/4/2018 1326 Ground Level Cameron-Gamer Trenton Group PI Pleasant Fm Development Well Development Well Gas Rotary Acid+Frac 11701 19300 19300 11200 500

Pay/Show/Water Information:

API					DEPTH_TOP	FM_TOP	DEPTH_BOT		G_AFT	O_BEF	O_AFT	WATER_QNTY
4705102016			Fresh Water					Pennsylvanian System				
	10/28/2019		Salt Water	Vertical				Sall Sands (undiff)				
	10/28/2019		Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fnt				
	10/28/2019		Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
1705102016			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
4705102016			Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
	10/28/2019		Gas	Deviated	13516	Pt Pleasant Fm	13665	Pt Pleasant Fm				
4705102016			Gas	Deviated		PI Pleasant Fm		Pt Pleasant Fm				
705102016	10/28/2019	Pay	Gas	Deviated	13912	Pt Pleasant Fm	14061	Pt Pleasant Fm				
705102016	10/28/2019	Pay	Gas	Deviated	14110	Pt Pleasant Fm	14259	Pt Pleasant Fm				
	10/28/2019		Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
705102016	10/28/2019	Pay	Gas	Deviated	14506	Pt Pleasant Fm	14655	Pt Pleasant Fm				
	10/28/2019		Gas	Deviated	14704	Pt Pleasant Fm	14853	Pt Pleasant Fm				
	10/28/2019		Gas	Deviated	14902	Pt Pleasant Fm	15051	Pt Pleasant Fm				
	10/28/2019		Gas	Deviated	15100	Pt Pleasant Fm	15249	Pt Pleasant Fm				
	10/28/2019		Gas	Deviated	15298	Pt Pleasant Fm	15447	Pt Pleasant Fm				
	10/28/2019		Gas	Deviated	15496	Pt Pleasant Fm	15645	Pt Pleasant Fm				
	10/28/2019		Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				
	10/28/2019		Gas	Deviated	15892	Pt Pleasant Fm	16041	Pt Pleasant Fm				
	10/28/2019		Gas	Deviated	16090	Pt Pleasant Fm	16239	Pt Pleasant Fm				
705102016	10/28/2019	Pay	Gas	Deviated	16288	Pt Pleasant Fm	16437	Pt Pleasant Fm				
705102016	10/28/2019	Pay	Gas	Deviated	16486	Pt Pleasant Fm	16635	Pt Pleasant Fm				
705102016	10/28/2019	Pay	Gas	Deviated	16684	Pt Pleasant Fm	16833	Pt Pleasant Fm				
705102016	10/28/2019	Pay	Gas	Deviated	16882	Pt Pleasant Fm	17031	Pt Pleasant Fm				
705102016	10/28/2019	Pay	Gas	Deviated	17080	Pt Pleasant Fm	17229	Pt Pleasant Fm				
705102016	10/28/2019	Pay	Gas	Deviated	17278	PI Pleasant Fm	17427	Pt Pleasant Fm				
705102016	10/28/2019	Pay	Gas	Deviated	17476	Pt Pleasant Fm	17625	Pt Pleasant Fm				
705102016	10/28/2019	Pay	Gas	Deviated	17674	Pt Pleasant Fm	17823	Pt Pleasant Fm				
705102016	10/28/2019	Pay	Gas	Deviated	17872	PI Pleasant Fm	18021	Pt Pleasant Fm				
705102016	10/28/2019	Pay	Gas	Deviated	18070	PI Pleasant Fm	18219	Pt Pleasant Fm				
705102016	10/28/2019	Pay	Gas	Deviated	18268	PI Pleasant Fm	18417	Pt Pleasant Fm				
1705102016	10/28/2019	Pay	Gas	Deviated	18466	Pt Pleasant Fm	18615	Pt Pleasant Fm				
4705102016	10/28/2019	Pay	Gas	Deviated	18664	Pt Pleasant Fm	18813	Pt Pleasant Fm				
4705102016	10/28/2019	Pay	Gas	Deviated		Pt Pleasant Fm		Pt Pleasant Fm				

Production Gas Information: (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705102016	Tug Hill Operating, LLC	2019	913,548	0	0	0	0	0	0	0	0	0	65 949	368,699	478,900
4705102016	Tug Hill Operating, LLC	2020	3,760,795	471,086	424 437	476.515	442,726	435.171	329,071	266,387	243,834	194,240	184,792	142,449	150.087

WV Geological & Economic Survey:	Well: County = 51 Permit = 02303	Report Time: Wednesday, January 12, 2022 9:23:55 AM
Location Information: <u>View Map</u> API COUNTY PERMIT TAX_DISTRICT QUAD_75 QUAD_ 4705102303 Mershall 2303 Meade Glen Easton Camero	15 LAT_DD LON_DD UTME UTMN n 39.808631 -80.693495 526236.1 4406562.4	
Bottom Hole Location Information:	<u>1 39.000031 -80.093495 326236.1 4406562.4</u>	
API EP FLAG UTME UTMN LON_DD LAT_ 4705102303 1 As Proposed 525041.3 4407722.8 -80.707409 39.81		
Owner Information: API CMP DT SUFFIX STATUS SURFACE OWNER	WELL NUM CO NUM LEASE LEASE NUM MINERAL OWN OPERATOR AT CO	MPLETION PROP_VD PROP_TRGT_FM TFM_EST_PR
4705102303 -/-/- Dvtd Orgni Loc Permitted Ricky L Whittatch	3N-11HM Heaven Hill R L Whitlatch et al Tug Hill Operating. L	
Completion Information: API CMP_DT SPUD_DT ELEV DATUM FIELD DEEPE 4705102303 -/-/	ST_FM DEEPEST_FMT INITIAL_CLASS FINAL_CLASS TYPE RIG CMP_MTHD TVD	TMD NEW_FTG KOD G_BEF G_AFT O_BEF O_AFT NGL_BEF N
WV Geological & Economic Survey.	Well: County = 51 Permit = 02304	Report Time: Wednesday, January 12, 2022 9:24:25 AM
Location Information: View Map		
	15 LAT_DD LON_DD UTME UTMN m 39.808623 -80.693453 526239.7 4406561.5	
Bottom Hole Location Information:		
API EP FLAG UTME UTMN LON_DD LAT_D 4705102304 1 As Proposed 525205.7 4407897 -80.705481 39.820		
Owner Information:		
API CMP_DT SUFFIX STATUS SURFACE_OWNER 4705102304 -/ Dvtd Orgni Loc Permitted Ricky L Whitlatch	WELL_NUM CO_NUM LEASE LEASE_NUM MINERAL_OWN OPERATOR_AT_C 3N-12HM Heaven Hill R L Whitlatch et al Tug Hill Operating.	COMPLETION PROP_VD PROP_TRGT_FM TFM_EST_PR LLC 6969 Marcellus Fm
Completion Information:		

API CMP_DT_SPUD_DT_ELEV_DATUM FIELD_DEEPEST_FM_DEEPEST_FMT_INITIAL_CLASS_FINAL_CLASS_TYPE_RIG_CMP_MTHD_TVD_TMD_NEW_FTG_KOD_G_BEF_G_AFT_O_BEF_O_AFT_NGL_BEF 4705102304 -/-/- 1333_Ground_Level

WV Geological & Economic Survey.	Well: County = 51 Permit = 02305	Report Time: Wednesday, January 12, 2022 9-24:59 AM
Location Information: <u>View Map</u> API COUNTY PERMIT TAX_DISTRICT QUAD_75 (4705102305 Marshall 2305 Meade Glen Easton (QUAD_15 LAT_DD LON_DD UTME UTMN Cameron 39.808687 -80.693478 526237.5 4406568.6	
Bottom Hole Location Information: API EP FLAG UTME UTMN LON_DD 4705102305 1 As Proposed 525377.5 4408521.3 -80.70345		
Owner Information: API CMP DT SUFFIX STATUS SURFACE OV		THE AT COMPLETION DOOD UP DOOD THAT EN TEN EPT DO
API CMP_DT SUFFIX STATUS SURFACE_OV 4705102305 -/ Dvtd OrgnI Loc Permitted Ricky L Whitlat	WNER WELL_NUM CO_NUM LEASE LEASE_NUM MINERAL_OWN OPERATO tch 3N-14HM Heaven Hill R L Whitlatch et al Tug Hill Op	DR_AT_COMPLETION PROP_VD PROP_TRGT_FM TFM_EST_PR perating, LLC 6969 Marcellus Fm
completion Information:		
	DEEPEST_FM DEEPEST_FMT INITIAL_CLASS FINAL_CLASS TYPE RIG CMP_MT	THD TVD TMD NEW_FTG KOD G_BEF G_AFT O_BEF O_AFT NGL_BEF
WV Geological & Economic Survey:	Well: County = 51 Permit = 02323	Report Time: Wednesday, January 12, 2022 9:25:10 AM
ocation Information: View Map		
API COUNTY PERMIT TAX_DISTRICT QUAD_75	QUAD_15 LAT_DD LON_DD UTME UTMN Cameron 39.808615 -80.693408 526243.5 4406560.7	
ottom Hole Location Information:		
API EP FLAG UTME UTMN LON_DD 1705102323 1 As Proposed 525337.6 4408127.8 -80.703931	LAT_DD 1 39.822762	
wner Information:		
	WNER WELL NUM CO NUM LEASE LEASE NUM MINERAL OWN OPERATO	DR_AT_COMPLETION PROP_VD PROP_TRGT_FM TFM_EST_PR

Completion Information: API CMP_DT_SPUD_DT_ELEV_DATUM 4705102323 -I-4- -I-4- 1336 Ground Level FIELD DEEPEST_FM DEEPEST_FMT INITIAL_CLASS FINAL_CLASS TYPE RIG CMP_MTHD TVD TMD NEW_FTG KOD G_BEF G_AFT O_BEF O_AFT NGL_BEF

WV Geological & Economic Survey.	Well: County = 51 Permit = 02306	Report Time: Wednesday, January 12, 2022 10:56:39 AM
ocation Information: View Map		
API COUNTY PERMIT TAX_DISTRICT QUAD_75 4705102306 Marshall 2306 Meade Glen Easton	QUAD_15_LAT_DD_LON_DD_UTME_UTMN Cameron_39.80867980.693434_526241.3_4406567.8	
here is no Bottom Hole Location data for this well		
wner Information:		
PI CMP_DT SUFFIX STATUS SURFACE_OV 705102306 -/-/- Dvtd OrgnI Loc Permitted Ricky L Whitla	WNER WELL_NUM CO_NUM LEASE LEASE_NUM MINERAL_OWN OPERATOR tch 3 3N-15HU Tug Hill Ope	
ompletion Information:		
PI CMP_DT SPUD_DT ELEV DATUM FIELD 705102306 -//-/- 1326 Ground Level	DEEPEST_FM DEEPEST_FMT INITIAL_CLASS FINAL_CLASS TYPE RIG not available unka	
W Geological & Economic Survey:	Well: County = 51 Permit = 02307	Report Time: Wednesday, January 12, 2022 10:59:00 AM
ocation Information: View Map		
	QUAD_15 LAT_DD LON_DD UTME UTMN Cameron 39.808671 -80.693391 526245 4406566.9	
here is no Bottom Hole Location data for this well		
wner Information:	and the second states of the second states of the	
PI CMP_DT SUFFIX STATUS SURFACE_OV 705102307 -/ Dvtd Orgn1 Loc Permitted Ricky L Whitla	WNER WELL_NUM CO_NUM LEASE LEASE_NUM MINERAL_OWN OPERATOR Ich 3 3N-16HU Tug Hill Ope	R_AT_COMPLETION PROP_VD PROP_TRGT_FM TFM_EST_PR erating, LLC 11701 Pt Pleasant Fm
ampletion Information:		

Completion Information: API CMP_DT SPUD_DT ELEV DATUM FIELD DEEPEST_FM DEEPEST_FMT INITIAL_CLASS FINAL_CLASS TYPE RIG CMP_MTHD TVD TMD NEW_FTG KOD G_BEF G_AFT O_BEF O_AFT 4705102307 -/-- 1326 Ground Level not available unknown

WV Geological & Economic Survey.	Well: County = 51 Permit = 70645	Report Time: Wednesday, January 12, 2022 11:07:04 AM
Location Information: View Map		
	15 LAT_DD LON_DD UTME UTMN on 39.804238 -80.691104 526442.5 4406075.5	
There is no Bottom Hole Location data for this well		
Owner Information:		
API CMP_DT SUFFIX STATUS SURFACE_OWNER WE 4705170645 -/-/- unknown Prpty Map E J Jones	LL_NUM CO_NUM LEASE LEASE_NUM MINERAL_OWN OPERATOR_AT_COMPLETIO 1279 unknown	N PROP_VD PROP_TRGT_FM TFM_EST_PR
Completion Information:		
API CMP_DT SPUD_DT ELEV DATUM FIELD DEEPEST_ 4705170645 -//	FM DEEPEST_FMT INITIAL_CLASS FINAL_CLASS TYPE RIG CMP_MTHD unclassified unclassified not available unknown unknown	TVD TMD NEW_FTG KOD G_BEF G_AFT O_BEF O_AFT NGL
WV Geological & Economic Survey:	Well: County = 51 Permit = 70646	Report Time: Wednesday, January 12, 2022 9:26:16 AM
ocation Information: View Map		
API COUNTY PERMIT TAX_DISTRICT QUAD_75 QUAD	15 LAT_DD LON_DD UTME UTMN on 39.807431 -80.696181 526006.7 4406428.4	
here is no Bottom Hole Location data for this well		
Owner Information:		
API CMP_DT_SUFFIX_STATUS_SURFACE_OWNER_WE 1705170646 -1-4- unknown Prpty Map_W J Wetzel	L_NUM CO_NUM LEASE LEASE_NUM MINERAL_OWN OPERATOR_AT_COMPLETIO 1 OP=Blackshere Oper in Min.owner fid.no code a	
ompletion Information:		

API CMP_DT SPUD_DT ELEV DATUM FIELD DEEPEST_FM DEEPEST_FM INITIAL_CLASS FINAL_CLASS TYPE RIG CMP_MTHD TVD TMD NEW_FTG KOD G_BEF G_AFT O_BEF O_AFT NGL 4705170646 -!-- -!-- unclassified unc WV Geological & Economic Survey:

Well: County = 51 Permit = 40025

Report Time: Wednesday, January 12, 2022 9:28:15 AM

 Location
 Information:
 View
 Map

 API
 COUNTY
 PERMIT
 TAX, DISTRICT
 QUAD_75
 QUAD_16
 LAT_DD
 LON_DD
 UTME
 UTMN

 4705140025
 Marshall
 40025
 Meade
 Glen
 Easton
 Cameron
 39.81224
 -80.698625
 525795.6
 4406961.5

There is no Bottom Hole Location data for this well

There is no Owner/Completion data for this well

There is no Owner/Completion data for this well

There is no Pay data for this well

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

Stratigraphy Information:

API	SUFFIX	FM	FM QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS	QUALITY	ELEV	DATUM
4705140025	Original Loc	Pittsburgh coal	CBM: Drill Hole	971	Reasonable	9	Reasonable		1269	unknown



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

Well Name: Heaven Hill 3N-12HM Pad Name: Heaven Hill 3 County: Marshall

UTM (meters), NAD83, Zone 17 Northing: 4,406,554.83 Easting: 526,269.25

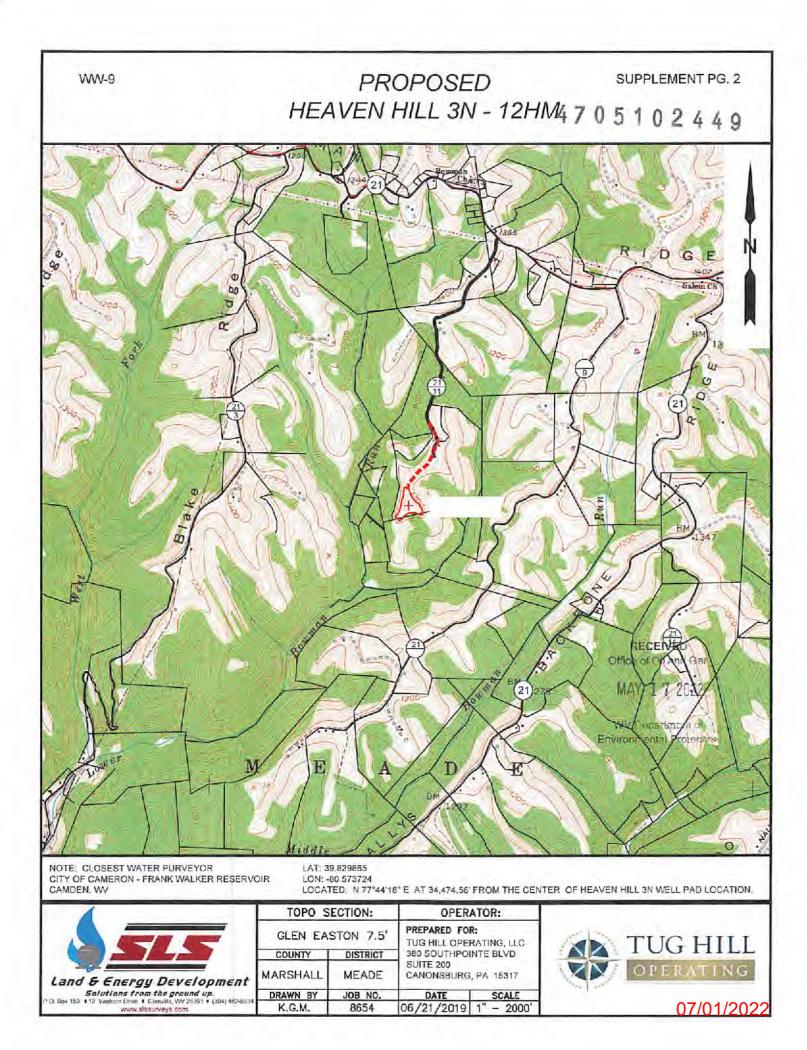
KEY CONTACT FOR WELL SITE SAFETY PLAN DEVELOPMENT AND MAINTENANCE

MAY 17 2022

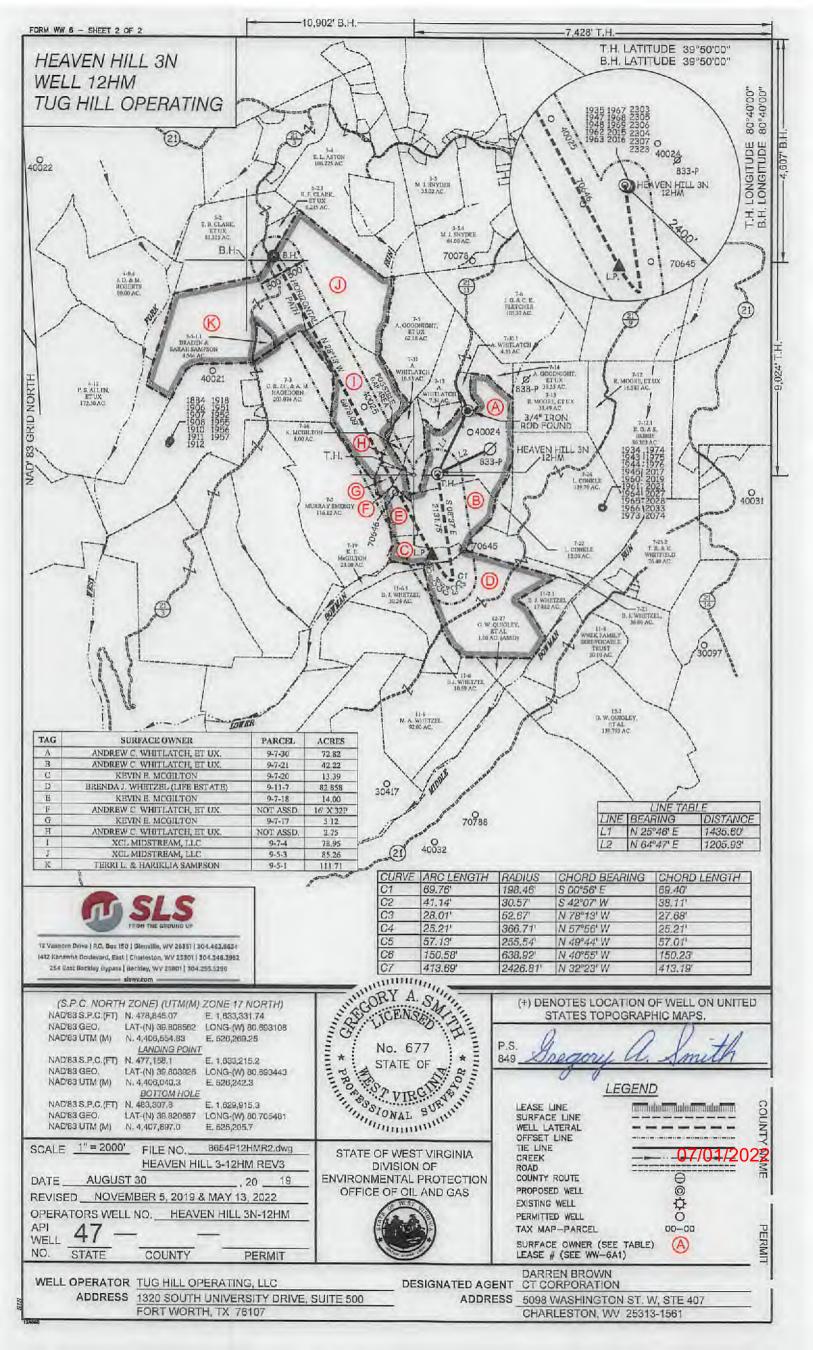
Jerry V. DeRosa, Director EH&S Affairs (724) 338-2029 (office) (412) 736-5767 (cellular)

24-HOUR EMERGENCY PHONE NUMBER (800) 921-9745 WV Department of Environmental Protection

07/01/2022



NOTES ON SURVEY NOTES ON SURVEY A backet bridge by Less 10 Gardia and	
	0.00
	443 443 81
	81 H
Image: Second State Sta	
Image: Second State Sta	
Image: Second State Sta	
Image: Second State Sta	
Image: Second State Sta	
Image: Second State Control (Second State Contre))))))))))))))))))))))))))))))))))))	
Image: Second State Sta	NCES
Image: Stress of the industry o	= 400'
Image: Second State Sta	зN
NOTES ON SURVEY Image: Selection of the top of the contrast of the cont	S
Image: Second State Sta	0-36 F
Image: Second State Sta	POST
Image: Contraction of the intervention of the interventin of the interventi	
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ITHE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THIS INFORMATION REQUIRED BY LAW AND THE INFORMATION REQUIRED BY LAW AND BY THE DIVISION OF ENVIRONMENTAL PROTECTION. (+) DENOTES LOCATION OF WELL ON UNIT STATES TOPOGRAPHIC MAPS. DATE	
THIS PLAT IS CORRECT TO THE BEST OF MY STATES TOPOGRAPPIC MAPS. KNOWLEDGE AND BELIEF AND SHOWS ALL DATE THE INFORMATION REQUIRED BY LAW AND No. 677 BY THE DIVISION OF ENVIRONMENTAL PROTECTION. No. 677 B49 STATE OF B49 Jonggony MINIMUM DEGREE 1/2500 DFILE NO. 3654P12HMR2.dwg MINIMUM DEGREE 1/2500 DFILE NO. 3654P12HMR2.dwg MON ALL SUM STATE OF WEST VIRGINIA DOPERATORS WELL NO. HEAVEN HILL 3-12HM REV3 OFFICE OF OIL AND GAS SCALE MURL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) Well TYPE: OIL GAS.X INJUSTION 1.328.00' Well LOCATION : 1.328.00' ELEVATION : 1.328.00' WATERSHED LOWER BOWMAN RUN OF FISH CREEK (HUC 10) DISTRICT MEADE COUNTY SURFACE OWNER ANDREW C. WHITLATCH ET UX ACREAGE ROYALTY OWNER RICKY L. WHITLATCH, ET AL ACREAGE ROYALTY OWNER RICKY L. WHITLATCH ET UX ACREAGE ROYALTY OWNE	ED
THE REGULATIONS ISSUED AND PRESCRIBED INO. 677 REVISED NOVEMBER 5, 2019 & MAT 15, 500 PERATORS WELL NO. HEAVEN HILL 31 PROTECTION. P.S. State OF WIRONMENTAL PROTECTION. STATE OF WELL NO. HEAVEN HILL 31 PROTECTION. MINIMUM DEGREE OF ACCURACY 1/2500 FILE NO. 8654P12HMR2.dwg STATE OF WEST VIRGINIA DIVISION OF ENVIRONMENTAL PROTECTION. MORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) STATE OF WEST VIRGINIA DIVISION OF ENVIRONMENTAL PROTECTION OFFICE OF OIL AND GAS WELL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) OFFICE OF OIL AND GAS WELL LIQUID WASTE IF USCALE	
With Mind block Le 1/2500 FILE NO. 8654P12HMR2.dwg STATE OF WEST VIRGINIA HORIZONTAL & VERTICAL SCALE 1" = 2000' Division of Environmental Protection HORIZONTAL & VERTICAL SCALE 1" = 2000' OF FICE OF OIL AND GAS MUSION DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) OFFICE OF OIL AND GAS WELL LIQUID WASTE IF TYPE: OIL GAS INJECTION DISPOSAL "GAS" PRODUCTION X STORAGE DEEP	and the same
With Mind block Le 1/2500 FILE NO. 8654P12HMR2.dwg STATE OF WEST VIRGINIA HORIZONTAL & VERTICAL SCALE 1" = 2000' Division of Environmental Protection HORIZONTAL & VERTICAL SCALE 1" = 2000' OF FICE OF OIL AND GAS MUSION DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) OFFICE OF OIL AND GAS WELL LIQUID WASTE IF TYPE: OIL GAS INJECTION DISPOSAL "GAS" PRODUCTION X STORAGE DEEP	449
MINIMUM DEGREE 1/2500 FILE NO. 36544P12HMR2.dwg STATE OF WEST VIRGINIA DF ACCURACY 1/2500 FILE NO. 36544P12HMR2.dwg Division of Environmental Protection HORIZONTAL & VERTICAL SCALE 1" = 2000' Division of Environmental Protection CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) OFFICE OF OIL AND GAS WELL LIQUID WASTE IF TYPE: OIL GAS_X INJECTION DISPOSAL "GAS" PRODUCTION X STORAGE DEEP	PERMIT
HORIZONTAL & VERTICAL DGALL OFFICE OF OIL AND GAS CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) OFFICE OF OIL AND GAS WELL LIQUID WASTE IF TYPE: OIL GAS_X INJECTION DISPOSAL "GAS" PRODUCTION X STORAGE DEEP	
TYPE: OILGAS_XINJECTIONDISPOSAL "GAS" PRODUCTION _XSTORAGEDEEPSHALL LOCATION :	
ELEVATION 1.328.00' WATERSHED LOWER BOWMAN RUN OF FISH CREEK (HUC 10) DISTRICT MEADE COUNTY MARSHALL QUADRANGLE GLEN EASTON SURFACE OWNER ANDREW C. WHITLATCH ET UX ACREAGE 72.82± ROYALTY OWNER RICKY L. WHITLATCH, ET AL ACREAGE 72.8207/(Council and the council and	LOW <u>X</u>
SURFACE OWNER ANDREW C. WHITLATCH ET UX ACREAGE 72.82± ROYALTY OWNER RICKY L. WHITLATCH, ET AL ACREAGE 72.8207/(PROPOSED WORK : LEASE NO. SEE WW-6A1	7.5'
PROPOSED WORK : LEASE NOSEE WW-6A1	17.5'
)1/20 2
	OFF OLD
FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTH	HER
PHYSICAL CHANGE IN WELL (SPECIFY) TARGET FORMATIONMARCELLUS ESTIMATED DEPTH_TVD: 6,969' / TMD: 14,73	32'
WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DARREN BROWN	
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107 ADDRESS 5098 WASHINGTON ST. W, STE 407 CHARLESTON, WV 25313-1561	



WW-6A1 (5/13) Operator's Well No. ____ Heaven Hill 3N-12HM

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
	3	ee attached pages		

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WV Depart

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

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

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

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

Well Operator:	Tug Hill Operating, LLC
By:	Amy L. Morris
Its:	Permitting Specialist - Appalachia Region

Page 1 of _____

07/01/2022

WW-6A1 Supplement

4705102449

Operator's Well No. <u>Heaven Hill 3N - 12HM</u>

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WW-6A1 S	upple	men	t)22 nt of		47	051	024	449	Operator's	Well No. <u>Heav</u>	<u>en Hill 3N - 12HM</u>
LEASE ID	TMP	TAG	GRANTOR, LESSOR, ETC	GRANTEE, LESSEE, ETC	ROYALTY	DEED BC	OK/PAGE	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT
				<u> </u>							Chevron USA Inc. to TH
10*15557	9 -7-30	A	RICKY L WHITLATCH ET AL	CHEVRON USA INC	1/8+	780	226	N/A	N/A	N/A	Exploration LLC: 36/148
											Chevron USA Inc to TH
10*15557	9-7-21	в		SCHEVRON USA INC	1/8+	780	226	N/A	N/A	N/A	Exploration LLC: 36/148
				<u>ц</u>							Chevron USA Inc. to TH
10*15667	9-7-20	l c	KEVIN E MCGILTON AND TERESA E MCGILTON	CHEVRON USA INC	1/8+	850	351	N/A	N/A	N/A	Exploration LLC: 36/148
10*15720	9-7-20	С	KAREN L GREATHOUSE AND FLOYD GREATHOUSE	TH EXPLORATION LLC	1/8+	905	458	N/A	N/A	N/A	N/A
10*15721	9-7-20	С	TINA LEDGE MONTI AND THOMAS MONTI	TH EXPLORATION LLC	1/8+	905	456	N/A	N/A	N/A	N/A
10*16020	9-7-20	С	SHARON HINERMAN MAY & DANIEL G MAY	TH EXPLORATION LLC	1/8+	905	464	N/A	N/A	N/A	N/A
10*16028	9-7-20	С	ROSEMARY PARKINS AND STEPHEN PARKINS	TH EXPLORATION LLC	1/8+	905	460	N/A	N/A	N/A	N/A
10*16051	9-7-20	С	DONNA JEAN SNIDER	TH EXPLORATION LLC	1/8+	905	462	N/A	N/A	N/A	N/A
10*16053	9-7-20	С	GARY D HINERMAN AND JUDY ANN HINERMAN	TH EXPLORATION LLC	1/8+	905	466	N/A	N/A	N/A	N/A
10*16289	9-7-20	С	BRENDA HINERMAN AND BRIAN K WILLIAMSON	TH EXPLORATION LLC	1/8+	905	468	N/A	N/A	N/A	N/A
10*16412	9-7-20	С	ELIZABETH ANN BLAZER AND PAUL R BLAZER	TH EXPLORATION LLC	1/8+	905	452	N/A	N/A	N/A	N/A
10*16413	9-7-20	С	RONALD H EDGE JR	TH EXPLORATION LLC	1/8+	905	454	N/A	N/A	N/A	N/A
10*16852	9-7-20	с	KEVIN R DURBIN AND KRISTA A DURBIN	TH EXPLORATION LLC	1/8+	929	312	N/A	N/A	N/A	N/A
10*17622	9-7-20	С	DAVID E HINERMAN JR AN INCARCERATED	TH EXPLORATION LLC	1/8+	929	314	N/A	N/A	N/A	N/A
10*27947	9-7-20	С	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1063	568	N/A	N/A	N/A	N/A
10*15746	9-11-7	D	BRUCE D SCHURR	TH EXPLORATION LLC	1/8+	921	478	N/A	N/A	N/A	N/A
10*16021	9-11-7	D	TOMMY BONAR AND TANYA S BONAR	TH EXPLORATION LLC	1/8+	925	325	N/A	N/A	N/A	N/A
10*16115	9-11-7	D	EARL W HARRIS	TH EXPLORATION LLC	1/8+	925	329	N/A	N/A	N/A	N/A
10*16121	9-11-7	D	ISAIAH BENNETT	TH EXPLORATION LLC	1/8+	933	105	N/A	N/A	N/A	N/A
10*16247	9-11-7	D	CAROL RIGGLE PARSLEY AND JAMES DENNIS PARSLEY	TH EXPLORATION LLC	1/8+	925	327	N/A	N/A	N/A	N/A
10*17415	9-11-7	D	DILLON PITSENBARGER	TH EXPLORATION LLC	1/8+	919	241	N/A	N/A	N/A	N/A
10*17506	9 -11-7	D	CHASKIA F HARRIS AND JAMES M HARRIS	TH EXPLORATION LLC	1/8+	919	239	N/A	N/A	N/A	N/A
10*17507	9-11-7	D	DEZRAY METCALF	TH EXPLORATION LLC	1/8+	919	235	N/A	N/A	N/A	N/A
10*47051.256.1	9-11 - 7	D	BRENDA J WHETZEL	TH EXPLORATION LLC	1/8+	881	145	N/A	N/A	N/A	N/A
10*47051.256.10	9-11-7	D	GRACE LAURA BONAR	TH EXPLORATION LLC	1/8+	905	35	N/A	N/A	N/A	N/A
10*47051.256.11	9-11-7	D	JOHN L MASON	TH EXPLORATION LLC	1/8+	905	37	N/A	N/A	N/A	N/A
10*47051.256.12	9-11-7	D	STEVEN A BOHRER	TH EXPLORATION LLC	1/8+	905	39	N/A	N/A	N/A	N/A
10*47051.256.13	9-11-7	D	WILLIAM W CRAIG	TH EXPLORATION LLC	1/8+	905	41	N/A	N/A	N/A	N/A
10*47051.256.14	9 -11-7	D	HUGH R BUZZARD	TH EXPLORATION LLC	1/8+	905	43	N/A	N/A	N/A	N/A
10*47051.256.15	9-11-7	D	ROY E AND CHARLOTTE J BONAR YOHO	TH EXPLORATION LLC	1/8+	904	455	N/A	N/A	N/A	N/A
10*47051.256.16	9-11-7	D	CHARLOTTE B HUMMELL	TH EXPLORATION LLC	1/8+	905	45	N/A	N/A	N/A	N/A
10*47051.256.17	9-11-7	D	MAXINE G JOHNSON	TH EXPLORATION LLC	1/8+	904	457	N/A	N/A	N/A	N/A
10*47051.256.18	9-11-7	D	JOHN WILLIAM BONAR AND SHIRLEY BONAR	TH EXPLORATION LLC	1/8+	913	522	N/A	N/A	N/A	N/A
10*47051.256.19	9-11-7	D	MICHAEL DAVID PYLES AND CYNTHIA A PYLES	TH EXPLORATION LLC	1/8+	907	207	N/A	N/A	N/A	N/A
10*47051.256.20	9-11-7	D	JEFFREY THOMAS PYLES AND TERESA A PYLES	TH EXPLORATION LLC	1/8+	907	209	N/A	N/A	N/A	N/A
10*47051.256.21	9-11-7	D	JACK L MASON AND JEAN M MASON	TH EXPLORATION LLC	1/8+	904	626	N/A	N/A	N/A	N/A
10*47051.256.22	9-11-7	D	BEVERLY J HOPSON	TH EXPLORATION LLC	1/8+	913	581	N/A	N/A	N/A	N/A
10*47051.256.23	9-11-7	D	ROBERT L BONAR	TH EXPLORATION LLC	1/8+	913	556	N/A	N/A	N/A	N/A

Operator's Well No. <u>Heaven Hill 3N - 12HM</u>

WW-6A1 Supplement 4705102449 Operator's Well No. Heaven Hill 3N - 12											ven Hill 3N - 12HM
LEASE ID	TMP			GRANTEE, LESSEE, ETC	ROYALTY	DEED BC		ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT
10*47051.256.24	9-11-7	D	CATHERINE BONAR PETTIT BILLI 📅 🖉 🚽 🖉 🚆	TH EXPLORATION LLC	1/8+	904	628	N/A	<u>N/A</u>	N/A	N/A
10*47051.256.7	9-11-7	D	MARILYN SUE BUMER	TH EXPLORATION LLC	1/8+	905	29	N/A	N/A	N/A	N/A
10*47051.256.8	9-11-7	D	PAMELA ANN MASON	TH EXPLORATION LLC	1/8+	905	31	N/A	N/A	N/A	N/A
10*47051.256.9	9-11-7	D	WANDA MASON SUNSHINE 5 2	TH EXPLORATION LLC	1/8+	905	33	N/A	N/A	N/A	N/A
			<u> </u>								Chevron USA Inc to TH
10*15667	9-7-18	Е	KEVIN E MCGILTON AND TERESA E MCGILTON	CHEVRON USA INC	1/8+	850	351	N/A	N/A	N/A	Exploration LLC: 36/148
10*15720	9-7-18	E	KAREN L GREATHOUSE AND FLOYD GREATHOUSE	TH EXPLORATION LLC	1/8+	905	458	N/A	N/A	N/A	N/A
10*15721	9-7-18	E	TINA LEDGE MONTI AND THOMAS MONTI	TH EXPLORATION LLC	1/8+	905	456	N/A	N/A	N/A	N/A
10*16020	9-7-18	E	SHARON HINERMAN MAY & DANIEL G MAY	TH EXPLORATION LLC	1/8+	905	464	N/A	N/A	N/A	N/A
10*16028	9-7-18	E	ROSEMARY PARKINS AND STEPHEN PARKINS	TH EXPLORATION LLC	1/8+	905	460	N/A	N/A	N/A	N/A
10*16051	9-7-18	E	DONNA JEAN SNIDER	TH EXPLORATION LLC	1/8+	905	462	N/A	N/A	N/A	N/A
10*16053	9-7-18	Ε	GARY D HINERMAN AND JUDY ANN HINERMAN	TH EXPLORATION LLC	1/8+	905	466	N/A	N/A	N/A	N/A
10*16289	9-7-18	E	BRENDA HINERMAN AND BRIAN K WILLIAMSON	TH EXPLORATION LLC	1/8+	905	468	N/A	N/A	N/A	N/A
10*16412	9-7-18	E	ELIZABETH ANN BLAZER AND PAUL R BLAZER	TH EXPLORATION LLC	1/8+	905	452	N/A	N/A	N/A	N/A
10*16413	9-7-18	E	RONALD H EDGE JR	TH EXPLORATION LLC	1/8+	905	454	N/A	N/A	N/A	N/A
10*16852	9-7-18	Ε	KEVIN R DURBIN AND KRISTA A DURBIN	TH EXPLORATION LLC	1/8+	929	312	N/A	N/A	N/A	N/A
10*17622	9-7-18	Ε	DAVID E HINERMAN JR AN INCARCERATED	TH EXPLORATION LLC	1/8+	929	314	N/A	N/A	N/A	N/A
10*27947	9-7-18	E	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1063	568	N/A	N/A	N/A	N/A
10*15557	NOT ASSD.	F	RICKY L WHITLATCH ET AL	CHEVRON USA INC	1/8+	780	226	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15667	9-7-17	G	KEVIN E MCGILTON AND TERESA E MCGILTON	CHEVRON USA INC	1/8+	850	351	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15720	9-7-17	G	KAREN L GREATHOUSE AND FLOYD GREATHOUSE	TH EXPLORATION LLC	1/8+	905	458	N/A	N/A	N/A	N/A
10*15721	9-7-17	G	TINA L EDGE MONTI AND THOMAS MONTI	TH EXPLORATION LLC	1/8+	905	456	N/A	N/A	N/A	N/A
10*16020	9-7-17	G	SHARON HINERMAN MAY & DANIEL G MAY	TH EXPLORATION LLC	1/8+	905	464	N/A	N/A	N/A	N/A
10*16028	9-7-17	G	ROSEMARY PARKINS AND STEPHEN PARKINS	TH EXPLORATION LLC	1/8+	905	460	N/A	N/A	N/A	N/A
10*16051	9-7-17	G	DONNA JEAN SNIDER	TH EXPLORATION LLC	1/8+	905	462	N/A	N/A	N/A	N/A
10*16053	9-7-17	G	GARY D HINERMAN AND JUDY ANN HINERMAN	TH EXPLORATION LLC	1/8+	905	466	N/A	N/A	N/A	N/A
10*16289	9-7-17	G	BRENDA HINERMAN AND BRIAN K WILLIAMSON	TH EXPLORATION LLC	1/8+	905	468	N/A	N/A	N/A	N/A
10*16412	9-7-17	G	ELIZABETH ANN BLAZER AND PAUL R BLAZER	TH EXPLORATION LLC	1/8+	905	452	N/A	N/A	N/A	N/A
10*16413	9-7-17	G	RONALD H EDGE JR	TH EXPLORATION LLC	1/8+	905	454	N/A	N/A	N/A	N/A
10*16852	9-7-17	G	KEVIN R DURBIN AND KRISTA A DURBIN	TH EXPLORATION LLC	1/8+	929	312	N/A	N/A	N/A	N/A
10*17622	9-7-17	G	DAVID E HINERMAN JR AN INCARCERATED	TH EXPLORATION LLC	1/8+	929	314	N/A	N/A	N/A	N/A
10*27947	9-7-17	G	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1063	568	N/A	N/A	N/A	N/A
10*15557	NOT ASSD	н	RICKY L WHITLATCH ET AL	CHEVRON USA INC	1/8+	780	226	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*21593	9-7-4	1	HELEN R. PAYNE	CHEVRON USA INC	1/8+	791	38	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 42/435

3 of 3

WV Department of WV Department Protection

RECEIVED Office of Oil and Gas MAY 1 7 2022

WW-6A1 Supplement

LEASE ID	TMP	TAG	GRANTOR, LESSOR, ETC	GRANTEE, LESSEE, ETC	ROYALTY	DEED BO	OK/PAGE	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT
10*21588	9-5-3	J	LAWRENCE ALLEN WAYT	CHESAPEAKE APPALACHIA LLC	1/8+	687	233	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 22/646	Statoil USA Onshore Properties Inc to Chevron USA Inc: 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chevron USA Inc to TH Exploration LLC: 42/435
10*21591	9-5-3	J	BEATRICE ANN KIDD	CHESAPEAKE APPALACHIA LLC	1/8+	687	230	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 22/646		Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chevron USA Inc to TH Exploration LLC: 42/435
10*21585	9-5-1	к	TERRY L AND HARIKLIA HEIDI SAMPSON	CHEVRON USA INC	1/8+	852	351	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 42/435
10*21585	-9-5-1.1	+	TERRY LAND HARIKLIA HEIDI SAMPSON	CHEVRON USA INC	-1/8+	.852	-351-	-N/A	N/A	N/A_	Chevron USA Inc to TH Exploration LLC: 42/435

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Operator's Well No. <u>Heaven Hill 3N - 12HM</u>

STATE OF WEST VIRGINIA S

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COUNTY OF MARSHALL

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ASSIGNMENT AND CONVEYANCE

DPS LAND SERVICE

6000 TOUR CENTER BLUD STE 145

CANONSBURG, FA 15312-5841

THIS ASSIGNMENT AND CONVEYANCE (the "Assignment") is made and entered into this 17th day of May, 2016 (the "Effective Date"), by and between CHEVRON U.S.A. INC. (hereinafter "Assignor") and TH EXPLORATION, LLC (hereinafter "Assignee") pursuant to the terms of that certain Acreage Trade Agreement between the Assignor and the Assignee dated May 2, 2016 (the "Acreage Trade Agreement"). Capitalized terms used but not defined herein and defined in the Acreage Trade Agreement shall have the meanings given to such terms in the Acreage Trade Agreement.

WITNESSETH:

WHEREAS, Assignor desires to assign, set over, and transfer to Assignee all of Assignor's right, title, and interest in and to those certain Oil and Gas Leases situated in Marshall County, West Virginia, as described in Exhibit "A", and as depicted in Exhibits "A-1" and "A-2", attached hereto and made a part hereof (hereinafter the "Leases"); and

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

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

Assignment. Assignor does hereby grant, bargain, sell, convey, deliver, assign, set over RECEIVED Assignor's right, title and interest in and to the Leases, and the lands covered thereby, together with apprice of Oil and Gas and transfer, as of the Effective Date, to Assignee, its respective successors and assigns, forever, all of rights incident thereto and appurtenances thereon, except that Assignor accepts and reserves from this Assignment the Chevron ORRI previously conveyed to Assignor and as described in that certain MAY 17 2022. Memorandum of Assignment of Oil and Gas Lease Interaction days May 2022. Memorandum of Assignment of Oil and Gas Lease Interests dated November 6, 2012 by and between Cornell Holdings Incorporated and Chevron U.S.A. Inc., which is recorded at Book 0028, Page 0239 in Environmenta, Pro Minr the Office of the County Clerk of Marshall County, West Virginia.

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

2 Special Warranty. Assignor represents and warrants that Assignor has not conveyed or otherwise encumbered (other than Permitted Encumbrances) its interest in the Conveyed Interests since the time that Assignor obtained its interests in the Leases. Assignor does covenant, promise and agree, to and with the Assignee, its respective successors and assigns, to forever specially warrant and defend the title to the Leases or portions thereof included under this Assignment, unto the Assignee and its respective successors and assigns, against the lawful claims of Assignor, and all persons claiming, or to claim, the same or any part thereof, by, through or under Assignor.

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STATE OF WEST VIRGINIA

COUNTY OF MARSHALL

MEMORANDUM OF ASSIGNMENT OF OIL AND GAS LEASES

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This MEMORANDUM OF ASSIGNMENT OF OIL AND GAS LEASES ("Memorandum") dated as of <u>Speleceter 764, 7018</u> (the "Effective Date"), is made by and between Chevron U.S.A. Inc., a Pennsylvania corporation, with an address at 700 Cherrington Parkway, Coraopolis, PA 15108 ("Chevron" or "Assignor") and TH Exploration, LLC, Texas limited liability company, with an address at 1320 S. University Drive, Suite 500, Fort Worth, TX 76107 ("Assignee"). Chevron and Assignee are each referred to herein as a "Party" and collectively as the "Parties." Capitalized terms used but not defined herein shall have the meaning ascribed to those terms in that certain Assignment of Oil and Gas Leases between the Parties dated <u>Sordenber 7th, Soly</u> ("Assignment").

- A. Notice is hereby given that the Parties have entered into the Assignment, pursuant to which Chevron assigned to Assignee all of Assignor's right, title, and interest in and to those certain Leases situated in Marshall County, West Virginia, less and except certain identified portions, as described in Exhibit "A", attached hereto and made a part hereof.
- B. Chevron does covenant, promise and agree, to and with the Assignee, its respective successors and assigns, to forever specially warrant and defend the title to the Leases or portions thereof included under the Assignment and this Memorandum, unto the Assignee and its respective successors and assigns, against the lawful claims of Chevron, and all persons claiming, or to claim, the same or any part thereof, by, through or under Chevron.
- C. Preparation of this Memorandum has been a joint effort of the Parties and it must not be construed more severely against any of the Parties than against any other.
- D. This Memorandum is subject to and expressly incorporates the terms of the Assignment. The Assignment will govern to the extent of any conflict between the terms of this Memorandum and the Assignment.
- E. In consideration of the mutual promises set out in this Assignment, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties agree to be bound by the terms of this Assignment.

IN WITNESS WHEREOF, this Memorandum is executed this 14 day of Sectember, 2018.

Narshall County Jan Pest, Clerk Instrument 1445509 09/11/2018 @ 02:17:18 PM ASSIGNMENTS Book 42 @ Page 435 Pages Recorded 7 Recording Cost \$ 13.01



May 16, 2022

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

RECEIVED Office of Oil and Gas MAY + 7 mas

RE: Heaven Hill 3N-12HM

Subject: Road Crossing Letter

Dear Taylor:

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 21/3 in the area reflected on the Heaven Hill 3N-12HM well plat. THO has conducted a full title search in the relevant Court House to confirm its ownership under said County Routes and is not currently aware of any recorded document that would suggest an ownership other than THO.

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

Sincerely,

Amy Ľ. Morris Permitting Specialist Appalachia Region

STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS <u>NOTICE CERTIFICATION</u>

Date of Notice Certification: 05/16/2022

API No. 47- 051 -Operator's Well No. Heaven Hill 3N-12HM Well Pad Name: Heaven Hill 3

Notice has been given:

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

State:	West Virginia	UTM NAD 83	Easting:	526,269.25
County:	Marshall	UTM NAD 83	Northing:	4,406,554.83
District:	Meade	Public Road Ac	cess:	Yeater Lane (Co. Rt. 21/11)
Quadrangle:	Glen Easton 7.5'	Generally used t	farm name:	Ricky L. Whitlatch
Watershed:	(HUC 10) Fish Creek			

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 by the applicant.

Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:	
*PLEASE CHECK ALL THAT APPLY	OOG OFFICE USE ONLY
□ 1. NOTICE OF SEISMIC ACTIVITY or ■ NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED	RECEIVED/ NOT REQUIRED
□ 2. NOTICE OF ENTRY FOR PLAT SURVEY or ■ NO PLAT SURVEY WAS CONDUCTED	
■ 3. NOTICE OF INTENT TO DRILL or DINOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or	RECEIVED/ NOT REQUIRED
WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)ENED	
I 4. NOTICE OF PLANNED OPERATION Office of Oil and Gas MAY 17 2022	E RECEIVED
	RECEIVED
6. NOTICE OF APPLICATION WV Departmental Protraction Environmental Protraction	E RECEIVED

Required Attachments:

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

Certification of Notice is hereby given:

THEREFORE, I <u>Amy L. Morris</u>, 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 penaltics for submitting false information, including the possibility of fine and imprisonment.

Well Operator:	Tug Hill Operating, LLC	Address:	380 Southpointe Blvd, Southepointe Plaza II, Suite 200
By:	Amy L. Morris any Subort	2	Canonsburg, PA 15317
Its:	Regulatory Analyst - Appalachia	Facsimile:	724-338-2030
Telephone:	724-749-8388	Email:	amorris@tug-hillop.com
My co	NOTARY SEAL onwealth of Pennsylvania - Notary Seal Susanne Deliere, Notary Public Washington County mmission expires January 15, 2025 Commission number 1382332 er. Pennsylvania Association of Notaries	Subscribed and swo Sussay My Commission Ex	orn before me this 16th day of May, 1022 we delieve Notary Public spires 1/15/2025

Oil and Gas Privacy Notice:

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

RECEIVED Office of Oil and Gas

MAY 17 2022

WV Department of Environmental Protection WW-6A (9-13)

API NO. 47- 051 0 5 1 0 2 4 4 9

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OPERATOR WELL NO. Heaven Hill 3N-12HM Well Pad Name: Heaven Hill 3

STATE OF WEST VIRGINIA

DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS NOTICE OF APPLICATION

Notice Time Requirement: notice shall be provided no later than the filing date of permit application.

	e of Notice: <u>5/13/202</u> ice of:	22 D	ate Permit Applica	atio	1 Filed: <u>5/15/2022</u>	RECEIVED Office of Oil and Gas
	PERMIT FOR AI WELL WORK		CONST	(RUG	TE OF APPROVAL FOR THE CTION OF AN IMPOUNDMENT OR PIT	MAY 17 2022 WV Department of Environmental Protection
Dell	very method purs	suant t	to West Virginia C	.oae	§ 22-0A-10(D)	
	PERSONAL SERVICE	V	REGISTERED MAIL		METHOD OF DELIVERY THAT REQUIR RECEIPT OR SIGNATURE CONFIRMAT	
certi regis	ficate of approval for stered mail or by any	or the c y metho	construction of an im od of delivery that re	npou equir	the filing date of the application, the applicant for a p ndment or pit as required by this article shall deliver es a receipt or signature confirmation, copies of the	r, by personal service or by 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:

SURF A	ACE OWNER(s)	🛛 COAL	OWNER OR LESSEE
Name:	Ricky L. Whitlatch	Name:	Marshail County Coal Resources, Inc.
Address:	1044 Yeater Lane	Address	46226 National Road
	Glen Easton, WV 26039		St. Clairsville, OH 43950
Name:	None	COAL	OPERATOR
Address:		Name:	Same as above coal owner
		Address	· · · · · · · · · · · · · · · · · · ·
SURF A	ACE OWNER(s) (Road and/or Other Disturbance)		
Name:	Andrew Whitlatch	SURF	ACE OWNER OF WATER WELL
Address:	942 Yeater Lane	AND/OI	R WATER PURVEYOR(s)
	Glen Easton, WV 26039	Name:	See supplement page 1A attached
Name:	Arnie Goodnight, et ux	Address	
Address:	102 Goodnight Lane		
	Moundsville, WV 26041	OPER	ATOR OF ANY NATURAL GAS STORAGE FIELD
USURFA	CE OWNER(s) (Impoundments or Pits)	Name:	None
Name: N	one	Address	
Address:			
		*Please	attach additional forms if necessary

OPERATOR WELL NO, Heaven Hill 3N-12HM Well Pad Name: Heaven Hills

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 <u>www.dep.wv.gov/oil-and-gas/pages/default.aspx</u>.

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

WW-6A (8-13)

OPERATOR WELL NO. Heaven Hill 3N-12HM Well Pad Name: Heaven Hill 3

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

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

WW-6A (8-13)

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OPERATOR WELL NO. Heaven Hill 3N-12HM Well Pad Name: Heaven Hill 3

Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

Disclaimer: All comments received will be placed on our web site <u>http://www.dep.wv.gov/oil-and-gas/Horizontal-</u> <u>Permits/Pages/default.aspx</u> 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.

API NO. 47-051		
OPERATOR WE	ELL NO.	Heaven Hill 3N-12HM
Well Pad Name:	Heaven Hill	3

Notice is hereby given by:

WW-6A (8-13)

Well Opera	tor: Tug Hill Operat	ing, LLC	
Telephone:	724-749-8388	And the state of the state of the	
	ris@tug-hillop.com	any Slours	

Address: 389 Southepointe Blvd, Southpointe Plaza II, Suite 200

		Canonsburg, PA 15317
-		1 704 000 0000

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.

Commonwealth of Pennsylvania - Notary Seal SEAN COTTER - Notary Public Washington County My Commission Expires Jan 2, 2024 Commission Number 1264582

Subscribed and sworn before me this 13 day of	May 2012.
	Notary Public
My Commission Expires 1/2) 2024	

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MAY 17 2022

WV Department of Environmental Protocol

Exhibit WW-6A

Supplement Pg. 1A

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

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

Well:Heaven Hill 3N – 12HMDistrict:Meade (Residence #1)State:WV

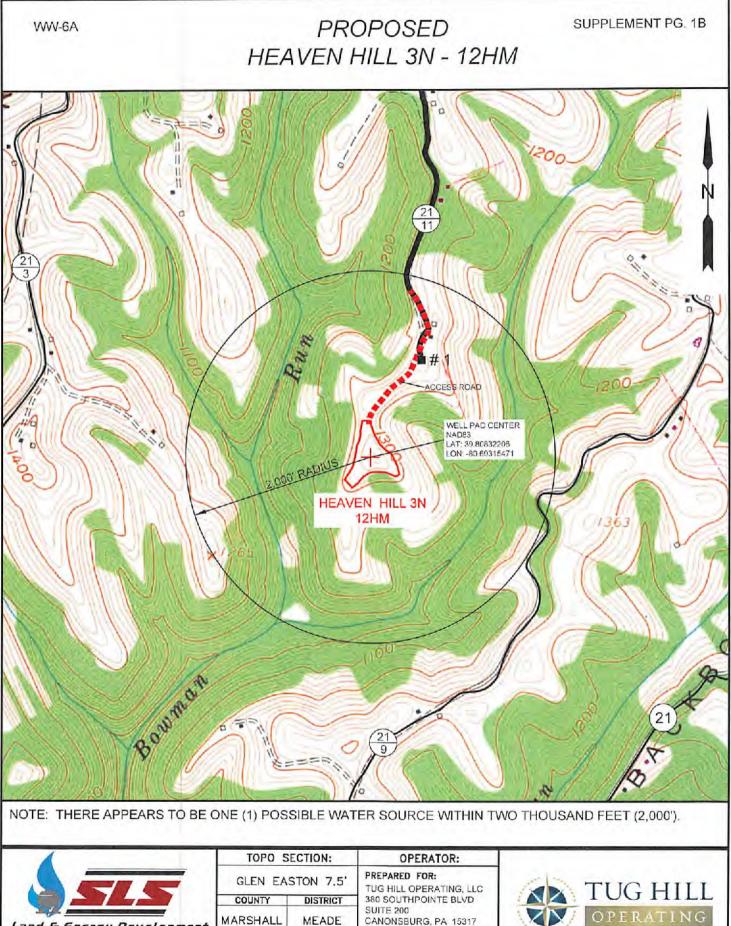
There is one (1) residence, no business or commercial sites, no churches, no schools or emergency facilities within two-thousand feet (2,000') of the above referenced well location.

Residence (#1) TM 7 Pcl. 30 Ricky L. Whitlatch Phone: 304-843-1168 Physical Address: 1044 Yeater Ln. Glen Easton, WV 26039 Tax Address: Same

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MAY 17 2022

WV Department of Environmental Protection



Land & Energy Development Solutions from the ground up, O Box 150 +12 Varhom Drive + Glenville WV 26951 • (304) 452-5634 www.sissurveys.com

DRAW

OPERATOR:			
PREPARED FOI TUG HILL OPER			
380 SOUTHPOI	NTE BLVD		
	SUITE 200 CANONSBURG, PA 15317		
DATE	SCALE		
06/21/2019	1" - 1000'		
	PREPARED FOI TUG HILL OPEI 380 SOUTHPOI SUITE 200 CANONSBURG DATE		



STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS <u>NOTICE OF INTENT TO DRILL</u>

Pursuant to W. Va. Code § 22-6A-16(b), the Notice of Intent to Drill is only required if the notice requirements of W. Va. Code § 22-6A-10(a) have NOT been met or if the Notice of Intent to Drill requirement has NOT been waived in writing by the surface owner.

Notice Time Requirement: Notice shall be provided at least TEN (10) days prior to filing a permit application. Date of Notice: ^{03/18/2022} Date Permit Application Filed: ^{03/28/2022}

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

HAND	CERTIFIED MAIL
DELIVERY	RETURN RECEIPT REQUESTED

Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: *Provided*, That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: *Provided*, *however*, That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

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

Name: Ricky L. Whitlatch		Name: Andrew Whitlatch	1 1 2022
Address: 1044 Yeater Lane		Address: 942 Yeater Lane	MAY 17 2022
Glen Easton, WV 260	39	Glen Easton, WV 26039 *See attached sheet	
			in in constrained of

Environmental Protection

Office of Oil and Gas

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(b), notice is hereby given that the undersigned well operator has an intent to enter upon 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 East
County:	Marshall	UTM NAD 83 Nort
District:	Meade	Public Road Access:
Quadrangle:	Glen Easton 7.5'	Generally used farm n
Watershed:	Fish Creek	

Easting:	526,269,25	_
Northing:	4,406,554,83	
ess:	Yeater Lane CR 21/11	
rm name:	Ricky L. Whitlatch	

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. 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.

Notice is hereby given by:

Tug Hill Operating, LLC	Authorized Representative:	Darren Brown
380 Southpointe Boulevard, Plaza II, Suite 200	Address:	5098 Washington Street W, Suite 407
Canonsburg, PA 15317	a substantia and a substantia a s	Charleston, WV 25313-1561
724-749-8388	Telephone:	877-467-3525
amorris@tug-hillop.com	Email:	ct-statecommunications@wolterskluwer.com
	Facsimile:	
	380 Southpointe Boulevard, Plaza II, Suite 200 Canonsburg, PA 15317 724-749-8388	380 Southpointe Boulevard, Plaza II, Suite 200 Address: Canonsburg, PA 15317 Telephone: 724-749-8388 Telephone: amorris@tug-hillop.com Email:

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 <u>depprivacyofficer@wv.gov</u>.

07/01/2022

Additional WW-6A4 Notice Heaven Hill 3

Arnie Goodnight, et ux 102 Goodnight Lane Moundsville, WV 26041

> RECEIVED Office of Oil and Gas

> > MAY 17 2022

WV Department of Environmental Protection WW-6A5 (1/12)

4705102449

STATE OF WEST VIRGINIA

DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS NOTICE OF PLANNED OPERATION RECEIVED

Office of Oil and Gas

MAY 17 2022

Notice Time Requirement: notice shall be provided no later than the filing date of permit application. Date of Notice: 05/13/2022 Date Permit Application Filed: 05/15/2022

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

П	CERTIFIED MAIL		
	RETURN RECEIPT REQUESTED		

HAND DELIVERY WV Department of Environmental Protection

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

Notice is hereby provided to the SURFACE OWNER(s)

(at the address listed in the records of the sheriff at the time of notice):

Name: Ricky L. Whitlatch	Name: Andrew Whitlatch
Address: 1044 Yeater Lane	Address: 942 Yeater Lane
Glen Easton, WV 26039	Glen Easton, WV 26039 **See Attached**

Notice is hereby given:

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

State:	West Virginia	Easting	526,269.25
County:	Marshall	UTM NAD 83 Northin	g: 4,405,554.83
District:	Meade	Public Road Access:	Yeater Lane (Co. Rt. 21/11)
Quadrangle:	Glen Easton 7.5'	Generally used farm name	Ricky L. Whitlatch
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 <u>www.dep.wv.gov/oil-and-gas/pages/default.aspx</u>.

Well Operator:	Tug Hill Operating, LLC	Address:	380 Southpointe Blvd, Southepointe Plaza II, Suite 200	
Telephone:	724-749-8388		Canonsburg, PA 15317	
Email:	amiller@tug-hillop.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 <u>depprivacyofficer@wv.gov</u>.

07/01/2022

Operator Well No. Heaven Hill Unit 3N-12HM

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

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

Name:Arnie Goodnight, et uxAddress:102 Goodnight LaneMoundsville, WV 26041

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MAY 17 2022

WV Department of Environmental Protection

4705102449



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

D. Alan Reed, P.E. State Highway Engineer

Commissioner of Highways

January 24, 2022

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

Jimmy Wriston, P. E.

Secretary of Transportation

MAY 17 2022

WV Department of Environmental Protection

Subject: DOH Permit for the Heaven Hill 3 Pad, Marshall County Heaven Hill 3N-12HM Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2017-0126 which has been issued to Tug Hill Operating LLC for access to the State Road for a well site located off Marshall County Route 21/11 SLS MP 0.89.

This operator is in compliance with §22-6A-20 of the WV Code. Operator has signed a DISTRICT WIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated October 1, 2018. This letter is valid for permitting purposes for one year from the date of this letter.

Very Truly Yours,

ary K. Clayton

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

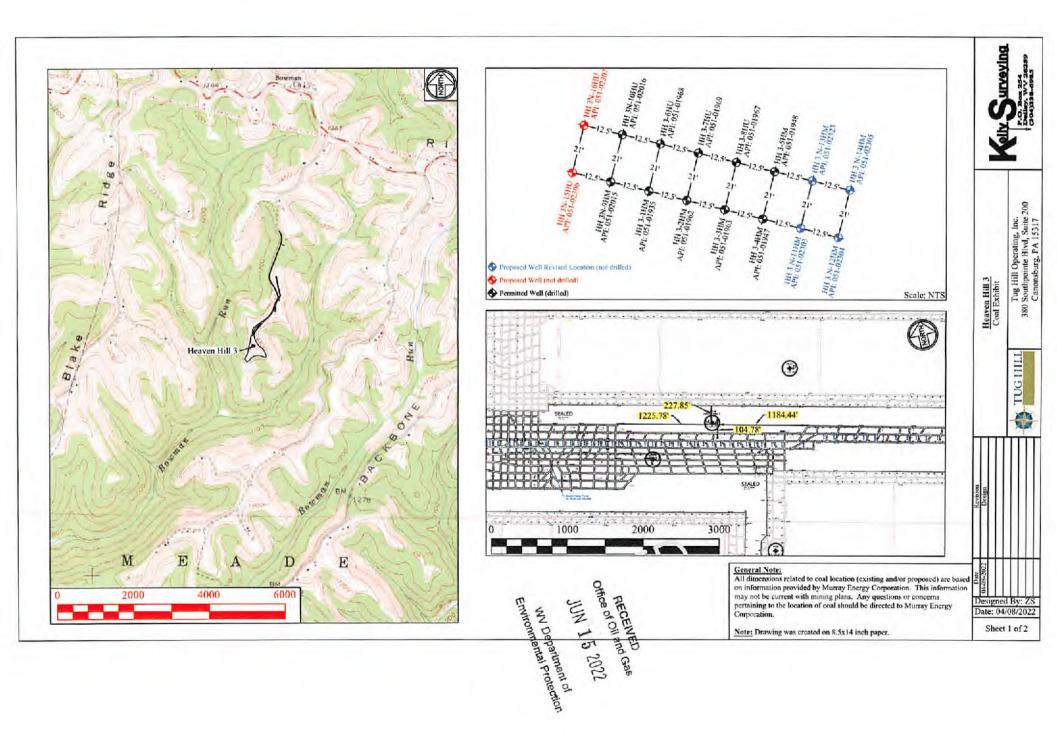
Cc: Amy Morris Tug Hill Operating LLC CH, OM, D-6 File



PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION

Heaven Hill 3 Wells			
PRODUCT NAME:	CHEMICAL DESCRIPTION:	PRODUCT USE:	HAZARDOUS COMPONENT:
GBW-20C	Hemicellulase Breaker	Breaker - Water	None
ALPHA 1427		Biocide	Glutaraldehyde – CAS#000111-30-8 Quatemary 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
			RECEIVED Office of Oil and Gas
			MAY 1 7 2022
			WV Departmont of Environmental Protection

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



HII 3-1HM	HH 3-2HM	HH 3-3HM	HH 5-4HM	HH 3-5HM	HH 3-6HL	HH 3-7HU	HH 3-8HU	urveying
County, Marshall	County: Marshall	County: Marshall	County: Marshall	County: Marshall	County: Marshall	County: Matshall	County: Marshall	
District: Meade	District: Meade	District: Meade	District: Meade	District: Meade	District: Meade	District: Meade	District: Meade	
NAD 83 - WV Nonth Ft N: 478859,938 E: 1633271.434 Lat.: 39°48'30.961" Lon.: -80°41'35.964"	NAD 83 - WV Nonh Ft N; 478857,076 E; 163283,75 Lat; 30°48'30,935' Lon; -80°41'35,805"	NAD 83 - WV North Fr N: 478852.945 E: 163296.462 Lat.: 39'48'30.895'' Lon,- 80''41'35.642''	NAD 83 - WV Nonh Fi N: 478850.935 E: 163308.285 E: 163308.285 Lat.: 39°48'30.877° Lon.: -80°41'35.490°	NAD 83- WV Nonh Ft N: 478870.951 E: 163313.92 Lat.: 39*48'31.070" Lon:: -80*41'35.421"	NAD 83 - WV North Ft N: 478880.340 E: 1633277.216 Lat: 39"48'31.164" Lon: -80"41'35.893"	NAD 83 - WV North FL N: 478877.332 E: 1633289.641 Lat: 39°48'31,135° Lon: -80°41'35.733°	NAD 83 - WV North Ft N: 478874,117 E: 1633301,527 Lat: 39°48'31,105" Lon.: -80°41'35,580"	Sale Sur
4A15 27 - WV North Fr	NAD 27 - WV North Fr	NAD 27 - WV North Ft	NAD 27 • WV North 74	NAD 27 - WV North Ft	NAD 27 - WV North Ft	NAD 27 - WV North Ft	NAD 27 - WV Nonh F:	h
F 478823,196	N: 478820.334	N: 478816.202	N: 478814.191	N: 478834.208	N: 478843.598	N: 478840,589	N: 478837.375	
2 1664708,184	E: 1664720.499	E: 1664733.211	E 1664745.034	E: 1664750.679	E: 1664713.966	E: 1664726,390	E: 1664738.276	
at.: 397-48'30,082"	Lat., 30°48'30 655"	Lat : 39°48'30 616"	Lnt: 39°48'30.597"	Lat. 39"48'30.796"	Lat.: 39"48'30.884"	Lat.: 39"48"30,856"	Lat: 39°48'30.826''	
nn.: -80°41'36 657"	Lon: -80°41'36.499"	Lon.: -80°41'36.335"	Lon:: •80°41'36.183"	Lor.: -80"41'36.114"	Lon.: -80°44'36.586"	Lon.: -80°41"36,427"	Lon: -80°41'36.274''	
Marshall County Mine	Marshall County Mine	Marstall County Mine	Marshall County Mine	Marshall County Mine	Marshall County Mine	Marshal) County Mine.	Marshall County Mine	
9:-79116.876	N: -79119.571	N: -79123.530	N: -79125 380	N: -79105.289	N: -79096.704	N: -79099.238	N: -79102.292	
2:59279.811	E: 59292.165	E: 59304.931	E: 59316.780	E: 59322.153	E: 59285.320	E: 59297.780	E: 59309.708	
UTM Zone 17 NAD 83 Meters N: 4406559.056 2: 526250.803	UTM Zone 17 NAD 83 Meters N: 4406558.247 E: 526254.570	LTM Zone 17 NAD 83 Merers N: 4406557.053 B: 526258,463	LITM Zune 17 NAD 83 Merers N: 4406556,501 E: 520262.076	UTM Zone 17 NAD 83 Meters N: 4406562.628 E: 526263.693	LITM Zone 17 NAD 83 Meters N; 4406565,30) E; 526252,461	UTM Zone 17 NAD 83 Meters N: 4406564,448 E: 526256,261	UTM Zone 17 NAD 83 Meters N: 4406563.529 E: 526259.899	lleaven Hill <u>3</u> Coal Exhibit
HI 3 N-9HM	HH 3 N-10HU	HH 3 N-11HM	1111 3 N-12HM	1111 3 N+1311M	HII 3 N+J4HM	HH 3 N-15HU	HH 3 N-16HU	
ounty: Marshall	County: Marshall	County: Marshall	County: Marshall	County: Marshall	County: Marshall	County: Marshall	County: Marshall	
Istrict: Meade	District: Meade	District: Meade	District: Meade	District: Meade	District: Meade	District: Meade	District: Meade	
AD 83 - WV North Fi	NAD 83 - WV North Ft	NAD 83 - WV North Et	NAD 83 - WV North Ft	NAD 83 - WV North Ft	NAD 83 - WV North Fi	NAD 83 - WV North Ft	NAD 83 - WV North Ft	
: 478863 305	N: 478883.587	N: 478847.927	N: 478845.070	N: 478868.323	N: 478865.466	N: 478865.668	N: 478886.064	
: 1633259.846	E: 1633264.951	E: 1633320.09	E: 1633331.745	F: 1633325.091	E: 1633336.746	E: 1633247.733	E: 1633252.734	
at. 39°48'30.993"	LaL: 39°48'31.192"	Lat.: 39°48'30.849"	Lat:: 39°48'30.822"	Lnt.: 39"48"31.051"	Lat.: 39°48'31.024"	Lat.: 39°48'31.015"	Lat.: 39°48'31.217"	
on.: -80°41'36.113"	Lon.: -80°41'36.051"	Lon.: -80°41'35.338"	Lon.: -80°41'35.188"	Lon.: -80"41"35.278"	Lon.: -80°41'35.128"	Lon.: -80°41'36.268"	Lon.: -80°41'36.208"	
	NAD 27 WV North FI N: 478846.645	NAD 27 - WV North Ft N: 478811 184	NAD 27 - WV North Ft N: 478808.326 E: 1664768.493	NAD 27 - WV North F N: 478831.580 E: 1664761.839	NAD 27 - WV North Ft N: 478828-722 E: 1664773.494	NAD 27 - WV North FI N: 478828 926 E: 1664684.484	NAD 27 - WV North Ft N: 478849,322 E: 1664689,484	THE
AD 27 - WV North Ft 4: 478826.563 5: 1664696.596 .nt; 399-48'30.713" .on; -80941'36.806"	E: 1664701.680 Lat.: 39"48'30.912" Lon.: -80"41'36,744"	E: 1664756.839 Lat.: 39°48'30.569″ Lon.: -80°41'36.032″	Lat.: 39"48'30.543" Lon.: -80"4 ["35.882"	Lat.: 39°48'30,772" Lon.: -80"41'35.971"	Lat.: 39°48'30,745" Lon.: -80°41'35.821"	Lat.: 39"48'30.735" Lon.: -80"41'36.962"	Lat.: 39°48'30.937" Lon.: -80°41'36.901"	
: 478826,563 : 1664696,596 at.: 39°48'30,713"	E: 1664701.680 Lat.: 39"48'30.912"	Lat.: 39º48'30.569"	Lat.: 39"48'30.543"	Lat.: 39°48'30.772"	Lat.: 39°48'30,745"	Lat.: 39*48'30.735*	Lat.: 39°48'30.937"	Kerstann Denign

Sheet 2 of 2

WV department of Environmental Protection JUN

1 5 2022

Office of Oil and Gas

