

west virginia department of environmental protection

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

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

Monday, March 15, 2021 PERMIT MODIFICATION APPROVAL Horizontal 6A / New Drill

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

Re: Permit Modification Approval for KNOB CREEK N-4HM 47-051-02267-00-00

Casing update

### TUG HILL OPERATING, LLC

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before 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: KNOB CREEK N-4HM Farm Name: DAVID LEE FRANKLIN U.S. WELL NUMBER: 47-051-02267-00-00 Horizontal 6A New Drill Date Modification Issued: 3/15/2021

Promoting a healthy environment.



February 16, 2021

WADE STANSBERRY WV DEP OFFICE OF OIL & GAS 601 57<sup>TH</sup> STREET SE CHARLESTON, WV 25304-2345

### VIA USPS

RE: Knob Creek N-4HM API # 47-051-02267 (H6A Permit Modification) Meade District, Marshall County, WV

Dear Wade:

Tug Hill Operating, LLC is submitting a permit modification for its permitted well, Knob Creek N-4HM to change ground elevation, TVD and freshwater/coal string depths. Therefore, enclosed please find the following:

- Modified WW-6B with changes highlighted in yellow
- WW-6A with certified mail receipts to notice of freshwater and coal string changes
- Updated well plat
- Updated Site Safety Plan (The only information that has changed is the contact information for the Inspector at the contact list at the end of the Plan).

If you have any questions or need any additional information, please do not hesitate to call me on (304) 376-0111. Thank you for attention to this matter, it is greatly appreciated.

Sincerely,

any lours

AMY MORRIS PERMIT SPECIALIST-APPALACHIA REGION TUG HILL OPERATING, LLC RECEIVED Office of Oil and Gas

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Enclosures

WW-6B (04/15)

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

1) Well Operator: Tug	g Hill Operating, LLC	494510851	Marshall	Meade	Glen Easton 7.5'
· · · · · · · · · · · · · · · · · · ·		Operator ID	County	District	Quadrangle
2) Operator's Well Nu	mber: Knob Creek N-4	HM Well	Pad Name: Knc	b Creek	
3) Farm Name/Surface	Owner: David Lee Fra	anklin Public F	Road Access: St	. Joseph Ro	oad - CR 21
4) Elevation, current gi	ound: 737'	Elevation, propos	ed post-construc	tion: 737'	
5) Well Type (a) Gas Other	s <u>x</u> Oil	U	nderground Stor	age	
(b)If G	as Shallow x	Deep			1 1 0
	Horizontal ×			fe	0/10/2020
6) Existing Pad: Yes or	No Yes			0	0/0.1
	mation(s), Depth(s), An				
	- LD - 6 360'				
8) Proposed Total Vert					
9) Formation at Total V	Vertical Depth: Ononda	aga			
10) Proposed Total Me	asured Depth: 19,823				
11) Proposed Horizonta	al Leg Length: 13,029	.47'			
12) Approximate Fresh	Water Strata Depths:	70'; 380'			
13) Method to Determi	ne Fresh Water Depths:	Use shallow offset wells to determine	deepest freshwater, or determine usi	ng pre-drill tests, testing whil	e drilling or petrophysical evaluation of resistivity.
14) Approximate Saltw	ater Depths: 1,740'				
15) Approximate Coal	Seam Depths: Sewickle	ey Coal - 292' an	d Pittsburgh Co	oal - 374'	
16) Approximate Depth	n to Possible Void (coal	mine, karst, other)	: None		
	l location contain coal so ljacent to an active mine		N	o x	RECEIVED Office of Off and Gas
(a) If Yes, provide Mi	ine Info: Name:				FEB 2 5 2021
	Depth:				WV Bepartment of
	Seam:				Environmenter recount
	Owner:				



API NO. 47- 051 - 02267 OPERATOR WELL NO. Knob Creek N-4HM Well Pad Name: Knob Creek

WW-6B (04/15)

# 18)

# CASING AND TUBING PROGRAM

<u>, (11,</u>	$\begin{array}{c c} \underline{\text{Size}} & \underline{\text{New}} \\ \underline{\text{or}} & \underline{\text{or}} \\ \underline{\text{Used}} \end{array} \end{array} \underline{\text{Gr}}$		<u>Weight per ft.</u> <u>(lb/ft)</u>	<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	120'	120'	259ft^3(CTS)	
Fresh Water 13 3/8	" NEW	J55	54.5#	480'	480'	683ft^3(CTS)	
Coal 13 3/8	" NEW	J55	54.5#	480'	480'	683ft^3(CTS)	
Intermediate 9 5/8	" NEW	J55	36#	2,300'	2,300'	744ft^3(CTS)	
Production 5 1/2	" NEW	P110	20#	19,823'	19,823'	5052ft^3(CTS)	
Tubing 2 3/8	" NEW	N80	4.7#	6,425'			
Liners		1					

ТҮРЕ	Size (in)	<u>Wellbore</u> <u>Diameter (in)</u>	<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	13 3/8"	17.5"	.33	2,740	2,192	SEE #24	1.2
Coal	13 3/8"	17.5"	.33	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"	1	.19	11,200	8,960		1.
Liners							

## PACKERS

Kind:	N/A	
Sizes:	N/A	
Depths Set:	N/A	RECEIVED Office of Oil and G

FEB 2 5 2021

WV Department of Environmental Protection



WW-6B (10/14) API NO. 47- 051 - 02267 OPERATOR WELL NO. Knob Creek N-4HM Well Pad Name: Knob Creek

8-10/29/2020

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

Drill through the Marcellus tagging less than 100' from the top of the Onondaga to get depths and log data. Plug back to proposed kick off point. Drill the horizontal section to planned and proposed TD. Run casing and cement to surface. Run Bond Log from app. 60 deg to surface. Make clean out run and stimulate.

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

Well to completed with approximately 32,500,000 lb. proppant and 585,000 barrels of water. Max rate = 80bpm; max psi = 9,000#.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 12.93 acres

22) Area to be disturbed for well pad only, less access road (acres): 5.55 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:

RECEIVED Gas

\*See attachment

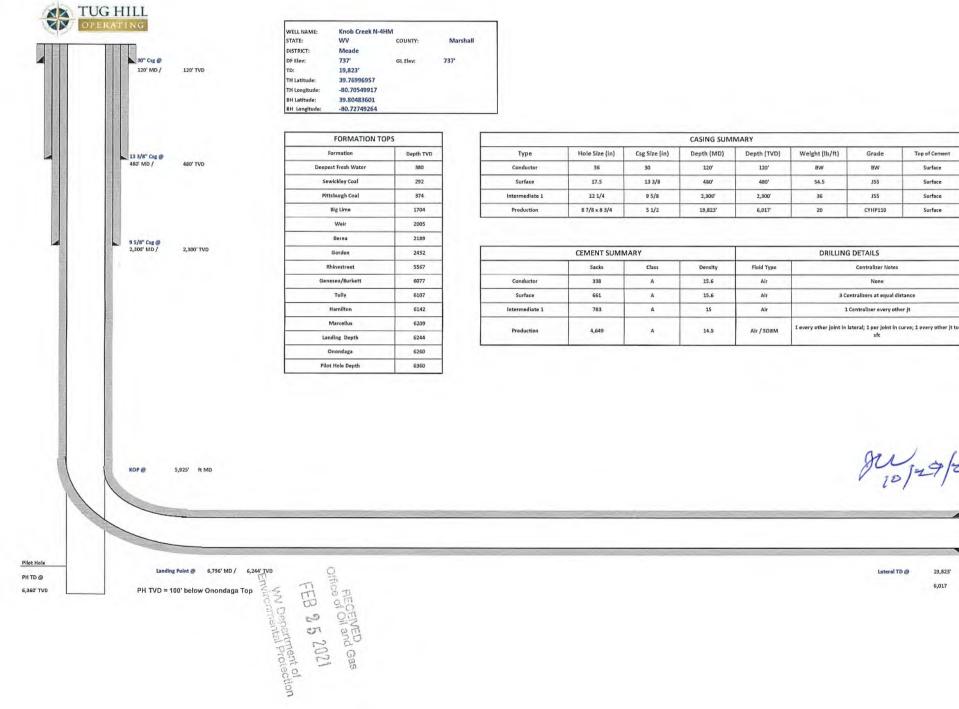
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25) Proposed borehole conditioning procedures:

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





Ju 120/2020

19,823

6,017

ft MD

ft TVD

Lateral TD @

Top of Cement

Centralizer Notes

3 Centralizers at equal distance

1 Centralizer every other jt

sfc

BW BW Surface 54.5 J55 Surface 36 Surface 155 CYHP110 Surface

Weight (lb/ft) Grade

	1704	Production	57/5x83/4	51/2	19,823	6,017	20	CYMPIIO
	2005							
	2189							
	2452		CEMENT SUMM	DRILLING DETA				
1	5567		Sacks	Class	Density	Fluid Type		Centralizer N
1	6077	Conductor	338	А	15.6	Air		None
1	6107	Surface	661	A	15.6	Air	30	entralizers at equ
	6142	Intermediate 1	783	A	15	Air		L Centralizer ever



## Tug Hill Operating, LLC Casing and Cement Program

### Knob Creek N-4HM

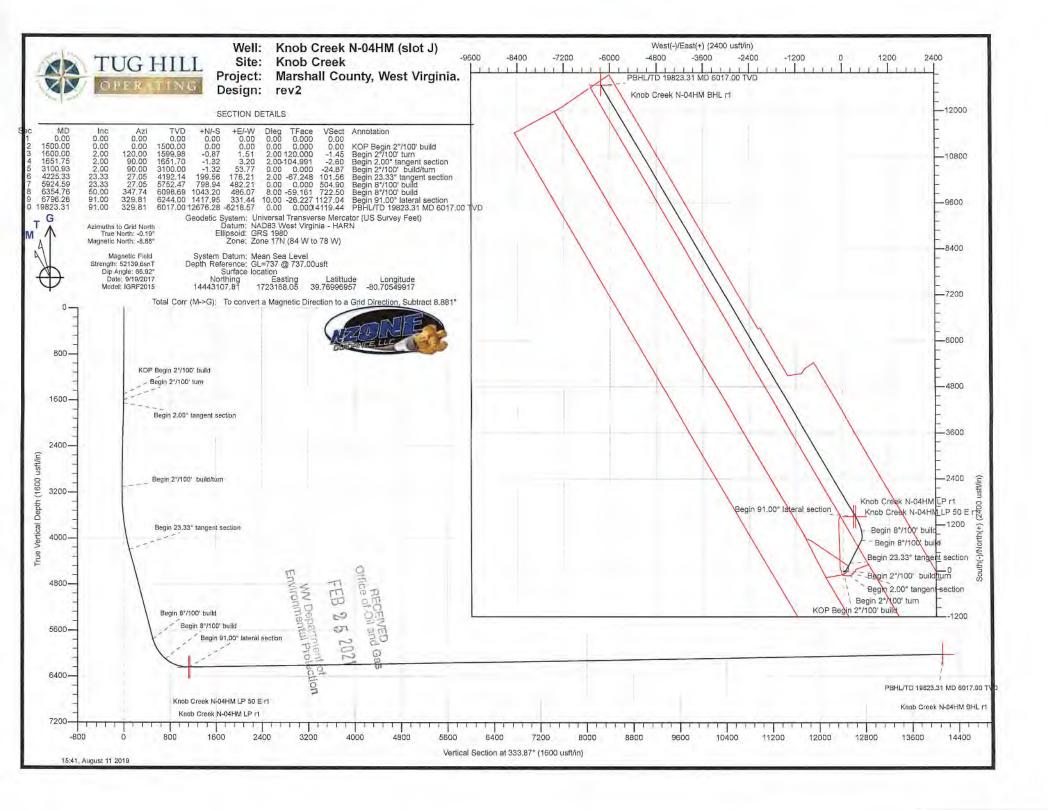
	Casing						
	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up		
Conductor	30"	BW	36"	120'	CTS		
Surface	13 3/8"	J55	17 1/2"	480'	CTS		
Intermediate	9 5/8"	J55	12 1/4"	2,300'	CTS		
Production	5 1/2"	CYHP110	8 7/8 x 8 3/4	19,823'	CTS		

# 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 15.6 ppg, Y=1.19
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 15.2ppg, Y = 1.19

Office of Oil and Gas WV Department of Environmental Protection

03/19/2021





### Planning Report - Geographic

Database: Company:	DB_Jul2216dt_v14 Tug Hill Operating L		Local Co-ordina TVD Reference		Well Knob Creek N-0 GL=737 @ 737.00us			
Project:	Marshall County, W		MD Reference:		GL=737 @ 737.00us	737 @ 737.00usft		
Site:	Knob Creek		North Reference	e:	Grid			
Nell:	Knob Creek N-04HM	M (slot J)	Survey Calculat					
Wellbore:	Original Hole							
Design:	rev2							
Project	Marshall County, We	est Virginia.		anno -				
Geo Datum:	NAD83 West Virginia -		System Datum:		Mean Sea Level			
Map Zone:	Zone 17N (84 W to 78	W)						
Site	Knob Creek	an anna an ann an an an an an an an an a						
Site Position:		Northing:	14,443,053.7	4 usft Latitude:	0	39.76982148		
From:	Lat/Long	Easting:	1,723,120.2	9 usft Longitud	ie:	-80.70566975		
Position Uncertainty:	0.0	00 usft Slot Radius:	13-	3/16 " Grid Cor	ivergence:	0.188 °		
Well	Knob Creek N-04HM	(slot J)		and approximately and				
Well Position	+N/-S 0	0.00 usft Northing:	14,44	3,107.82 usft	Latitude:	39.76996957		
	+E/-W 0	0.00 usft Easting:	1,72	3,168.05 usft	Longitude:	-80.70549917		
Position Uncertainty	C	0.00 usft Wellhead Elev	vation:		Ground Level:	737.00 usft		
Wellbore	Original Hole							
Magnetics	Model Name	Sample Date	Declination (°)		Dip Angle (°)	Field Strength (nT)		
	IGRF2015	5 9/19/2017	-4	3.693	66.922	52,139.56559285		
Design	rev2		11 - 12			and a second		
Audit Notes:								
Version:		Phase:	PLAN	Tie On Dept	h: 0.00	с. 		
Vertical Section:		Depth From (TVD)	+N/-S	+E/-W	Directio	n		
		(usft)	(usft)	(usft)	(°)			
		0.00	0.00	0.00	333.87	7		
Plan Survey Tool Pro	gram Date	8/11/2019	ana					
Depth From	Depth To							
(usft)		(Wellbore)	Tool Name	Remark	ks			
1 0.00	19,823.31 rev2 (C	Driginal Hole)	MWD					
			MWD - Standard					
						RECEIVED Gas		

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### Planning Report - Geographic

Well Knob Creek N-04HM (slot J) Database: DB\_Jul2216dt\_v14 lt Local Co-ordinate Reference: Tug Hill Operating LLC GL=737 @ 737.00usft Company: **TVD Reference:** Marshall County, West Virginia. GL=737 @ 737.00usft Project: **MD Reference:** North Reference: Site: Knob Creek Grid Well: Knob Creek N-04HM (slot J) Survey Calculation Method: Minimum Curvature Wellbore: Original Hole Design: rev2

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0,000	
1,600.00	2.00	120.00	1,599.98	-0.87	1.51	2.00	2.00	0.00	120.000	
1,651.75	2.00	90.00	1,651.70	-1.32	3.20	2.00	0.00	-57.97	-104.991	
3,100.93	2.00	90.00	3,100.00	-1.32	53.77	0.00	0.00	0.00	0.000	
4,225.33	23.33	27.05	4,192.14	199.56	176.21	2.00	1.90	-5.60	-67.248	
5,924.59	23.33	27.05	5,752.47	798.94	482.21	0.00	0.00	0.00	0.000	
6,354.76	50.00	347.74	6,098.69	1,043.20	486.07	8.00	6.20	-9.14	-59.161	
6,796.26	91.00	329.81	6,244.00	1,417.95	331.44	10.00	9.29	-4.06	-26.227	
19.823.31	91.00	329.81	6,017.00	12,676.28	-6,218.57	0.00	0.00	0.00	0.000	Knob Creek N-04HM

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rev2

### Planning Report - Geographic

DB\_Jul2216dt\_v14 lt Loc: Tug Hill Operating LLC TVD Marshall County, West Virginia. MD Knob Creek N-04HM (slot J) Surr Original Hole

Local Co-ordinate Reference: TVD Reference: MD Reference: North Reference: Survey Calculation Method: Well Knob Creek N-04HM (slot J) GL=737 @ 737.00usft GL=737 @ 737.00usft Grid Minimum Curvature

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WV Department of Environmenual Protection

Planned Survey

Database:

Company:

Project:

Wellbore:

Design:

Site:

Well:

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.00	0.00	0.00	14,443,107.82	1,723,168.05	39,76996957	-80.70549917
100.0	0.00	0.00	100.00	0.00	0.00	14,443,107.82	1,723,168.05	39.76996957	-80,70549917
200.0	0.00	0.00	200.00	0.00	0.00	14,443,107.82	1,723,168.05	39.76996957	-80.70549917
300.0	0.00	0.00	300.00	0.00	0.00	14,443,107.82	1,723,168.05	39.76996957	-80.70549917
400.0	0.00	0.00	400.00	0.00	0.00	14,443,107.82	1,723,168.05	39,76996957	-80.70549917
500.0	0.00	0.00	500,00	0.00	0.00	14,443,107.82	1,723,168.05	39,76996957	-80.70549917
600.0	0.00	0.00	600.00	0.00	0.00	14,443,107.82	1,723,168.05	39.76996957	-80.70549917
700.0	0.00	0.00	700.00	0.00	0.00	14,443,107.82	1,723,188.05	39,76996957	-80.70549917
800.0	0.00	0.00	800.00	0.00	0.00	14,443,107.82	1,723,168.05	39,76996957	-80.70549917
900.0	0.00	0.00	900.00	0.00	0.00	14,443,107.82	1,723,168.05	39,76996957	-80.70549917
1,000.0	0.00	0.00	1,000.00	0.00	0.00	14,443,107.82	1,723,168.05	39.76996957	-80.70549917
1,100.0	0.00	0.00	1,100.00	0.00	0.00	14,443,107.82	1,723,168.05	39.76996957	-80.70549917
1,200.0	0.00	0.00	1,200.00	0.00	0.00	14,443,107.82	1,723,168.05	39.76996957	-80.70549917
1,300.0	0.00	0.00	1,300.00	0.00	0.00	14,443,107.82	1,723,168.05	39.76996957	-80.70549917
1,400.0	0 0.00	0.00	1,400.00	0.00	0.00	14,443,107.82	1,723,168.05	39,76996957	-80.70549917
1,500.0	0.00	0.00	1,500.00	0.00	0.00	14,443,107.82	1,723,168.05	39.76996957	-80.70549917
KOP B	egin 2°/100' bui	ld							
1,600.0	0 2.00	120.00	1,599.98	-0.87	1.51	14,443,106.94	1,723,169.56	39.76996716	-80.70549380
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2°/100' turn	00.00	1 854 70	4 99	0.00	01 201 011 11	4 700 474 05	39,76996591	-80.70548781
1,651.7		90.00	1,651.70	-1.32	3,20	14,443,106.49	1,723,171.25	35.76996391	-80,70346761
	2.00° tangent se		1,699,92	-1.32	4 00	14,443,106.49	1,723,172.93	39,76996589	-80.70548182
1,700.0		90.00	100 C C C C C C C C C C C C C C C C C C		4.88	14,443,106.49		39.76996586	-80.70546940
1,800.0		90,00	1,799.86	-1.32	8.37		1,723,176.42	39.76996583	-80.70545698
1,900.0		90.00	1,899.80		11.86 15.35	14,443,106.49	1,723,179.91 1,723,183.40	39.76996580	-80.70544456
2,000.0		90.00	1,999.74	-1.32		14,443,106.49		39.76996577	-80.70543214
2,100.0		90.00	2,099.68	-1.32	18.84	14,443,106.49	1,723,186.89	39.76996573	-80.70541972
2,200.0		90.00	2,199.62	-1.32	22.33	14,443,106.49	1,723,190.38		-80.70540730
2,300.0		90.00	2,299.55	-1.32	25.82	14,443,106.49	1,723,193.87	39.76996570 39.76996567	-80.70539488
2,400.0		90.00	2,399.49 2,499.43	-1.32	29.31	14,443,106.49	1,723,197.36	39.76996564	-80.70538246
2,500.0		90.00		-1.32	32.80	14,443,106.49	1,723,200.85	39.76996561	-80.70537004
2,600.0		90.00	2,599.37 2,699.31	-1.32 -1.32	36.29 39.78	14,443,106.49	1,723,204.34	39.76996558	-80.70535762
2,700.0		90.00 90.00	2,799.25			14,443,106.49	1,723,207.83 1,723,211.32	39.76996554	-80,70534520
2,800.0		90.00	2,899.19	-1.32	43.27 46.76	14,443,106.49 14,443,106.49		39.76996551	-80.70533278
2,900.0		90.00	2,899.19				1,723,214.81	39.76996548	-80.70532036
3,000.0		90.00	3,099.07	-1.32	50.25	14,443,106,49	1,723,218.30	39.76996545	-80.70530794
3,100.0		90.00	3,100.00	-1.32 -1.32	53.74 53.77	14,443,106.49	1,723,221.79	39.76996545	-80.70530782
3,100.9 Begin :	2°/100' build/tu		3,100.00	-1.52	55.77	14,443,106.49	1,723,221.82	38./0880345	-00.70330762
3,200.0	0 3.32	56.54	3,198.96	0.26	57.89	14,443,108.07	1,723,225.94	39.76996975	-80.70529314
3,300.0	0 5.10	43.92	3,298.69	5.05	63.39	14,443,112.87	1,723,231.43	39.76998287	-80.70527353
3,400.0	0 7.00	37,97	3,398.13	13.06	70.22	14,443,120.88	1,723,238.27	39.77000480	-80.70524912
3,500.0	0 8.95	34.57	3,497.16	24.27	78.38	14,443,132.08	1,723,246.43	39.77003551	-80.70521995
3,600.0	0 10.91	32.38	3,595.66	38.66	87.86	14,443,146,48	1,723,255.91	39.77007496	-80.70518604
3,700.0	0 12.89	30.86	3,693.51	56.23	98.65	14,443,164.05	1,723,266.70	39.77012310	-80.70514744
3,800.0	0 14.87	29.73	3,790.58	76.94	110.73	14,443,184.76	1,723,278.78	39,77017988	-80.70510420
3,900.0	0 16.85	28.87	3,886.77	100.78	124.09	14,443,208.60	1,723,292.14	39.77024522	-80.70505637
4,000.0	0 18.84	28.18	3,981.95	127.71	138.72	14,443,235.53	1,723,306.77	39.77031905	-80.70500400
4,100.0	0 20.83	27.62	4,076.01	157.71	154.59	14,443,265.52	1,723,322.64	39.77040128	-80,70494717
4,200.0	0 22.83	27.15	4,168.84	190.73	171.69	14,443,298.54	1,723,339.73	39.77049180	-80.70488594
4,225.3	3 23.33	27.05	4,192.14	199.56	176.21	14,443,307,38	1,723,344.26	39.77051603	-80.70486974
	23.33° tangent s		S anno 10						
4,300.0		27.05	4,260,71	225.90	189.65	14,443,333.72	1,723,357.70	39.77058824	-80,70482157
4,400.0		27.05	4,352.53	261.17	207.66	14,443,368.99	1,723,375.71	39.77068495	-80.70475707
4,500.0	0 23.33	27.05	4,444.35	296.45	225.67	14,443,404.26	1,723,393.72	39.77078165	-80.70469257





Database:

Company:

Project:

Site:

Well: Wellbore:

Design:

Planned Survey

### Planning Report - Geographic

DB\_Jul2216dt\_v14 lt Tug Hill Operating LLC Marshall County, West Virginia, Knob Creek Knob Creek N-04HM (slot J) Original Hole rev2

Local Co-ordinate Reference: TVD Reference: MD Reference: North Reference: Survey Calculation Method: Well Knob Creek N-04HM (slot J) GL=737 @ 737.00usft GL=737 @ 737.00usft Grid Minimum Curvature

RECEIVED Office of Oil and Gas

# FEB 2 5 2021

WN Denarch one of

feasured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Environmentel Longitude
4,600.00	23,33	27.05	4,536.18	331.72	243,68	14,443,439,54	1,723,411.73	39,77087836	-80.7046
4,700.00	23.33	27.05	4,628.00	366.99	261.69	14,443,474,81	1,723,429.73	39.77097506	-80,7045
4,800.00	23.33	27.05	4,719.82	402.27	279.69	14,443,510.08	1,723,447,74	39.77107177	-80.7044
4,900.00	23,33	27.05	4,811.65	437.54	297.70	14,443,545.36	1,723,465,75	39.77116847	-80.7044
5,000.00	23.33	27.05	4,903.47	472.81	315.71	14,443,580.63	1,723,483.76	39.77126518	-80.7043
5,100.00	23.33	27.05	4,995.30	508.08	333.72	14,443,615.90	1,723,501.77	39.77136188	-80,7043
5,200.00	23.33	27.05	5,087.12	543.36	351.73	14,443,651.17	1,723,519.77	39.77145859	-80.7042
5,300.00	23.33	27.05	5,178.94	578.63	369.73	14,443,686.45	1,723,537.78	39.77155529	-80.7041
5,400.00	23.33	27.05	5,270.77	613.90	387.74	14,443,721.72	1,723,555.79	39,77165200	-80.704
5,500.00	23.33	27.05	5,362.59	649.17	405.75	14,443,756.99	1,723,573,80	39.77174870	-80.7040
5,600.00	23.33	27.05	5,454.41	684.45	423.76	14,443,792.26	1,723,591.81	39.77184541	-80.7039
5,700.00	23.33	27.05	5,546.24	719.72	441.76	14,443,827.54	1,723,609.81	39.77194211	-80.7039
	23.33	27.05	5,638.06	754.99	459.77	14,443,862.81	1,723,627.82	39.77203882	-80.7038
5,800.00			1. C. C. C. C. C. S. S.		477.78		1,723,645.83	39.77213552	-80.7037
5,900.00	23.33	27.05	5,729.88	790.26		14,443,898.08		39.77215930	-80,7037
5,924.59	23.33	27.05	5,752.47	798.94	482,21	14,443,906.76	1,723,650,26	39.77215930	-60,7037
	/100' build						. 700 004 00		00 7007
6,000.00	26.90	15.54	5,820.77	828.70	493.58	14,443,936.52	1,723,661.63	39.77224093	-80.7037
6,100.00	32.69	4.37	5,907.59	877.50	501.71	14,443,985.31	1,723,669,76	39.77237487	-80.7037
6,200.00	39.19	356.40	5,988.55	936.05	501.79	14,444,043.87	1.723,669.84	39.77253568	-80.7037
6,300.00	46.10	350.44	6,062.09	1,003.23	493.81	14,444,111.04	1,723,661.85	39,77272022	-80.7037
6,354.76	50.00	347.74	6,098.69	1,043.20	486.07	14,444,151.02	1,723,654,12	39.77283007	-80.7037
Begin 8°	/100' build								
6,400.00	54.08	345.27	6,126.51	1,077.87	477.73	14,444,185.68	1,723,645.78	39.77292535	-80.7037
6,500.00	63.26	340.61	6,178.47	1,159.36	452.55	14,444,267.18	1,723,620.60	39,77314938	-80.7038
6,600.00	72.57	336.66	6,216.04	1,245.50	418.74	14,444,353.31	1,723,586.78	39.77338625	-80.7039
6,700.00	81.94	333.09	6,238.08	1,333.66	377.32	14,444,441.48	1,723,545.37	39.77362875	-80.7041
6,796.26	91.00	329.81	6,244.00	1,417,95	331.44	14,444,525.77	1,723,499.49	39.77386064	-80,7043
Begin 91	.00° lateral se	ction							
6,800.00	91.00	329.81	6,243.93	1,421.18	329.56	14,444,529.00	1,723,497.61	39,77386954	-80.7043
6,900.00	91.00	329.81	6,242.19	1,507.61	279.28	14,444,615.42	1,723,447.33	39,77410733	-80.7044
7.000.00	91.00	329.81	6,240,45	1,594.03	229.00	14,444,701.85	1,723,397.05	39.77434513	-80.7046
7,100.00	91.00	329.81	6,238.71	1,680.45	178.72	14,444,788.27	1,723,346.77	39.77458292	-80.7048
7,200.00	91.00	329.81	6,236.96	1,766.87	128.44	14,444,874.69	1,723,296,49	39.77482072	-80.7050
7,300.00	91.00	329,81	6,235.22	1,853,30	78.16	14,444,961.11	1,723,246.21	39,77505851	-80,7051
7,400.00	91.00	329.81	6,233.48	1,939.72	27.88	14,445,047.54	1,723,195.93	39.77529631	-80.7053
7,500.00	91.00	329,81	6,231.74	2,026.14	-22.40	14,445,133,96	1,723,145.65	39,77553410	-80.7055
7,600,00	91.00	329.81	6,229,99	2,112.57	-72.68	14,445,220.38	1,723,095.37	39,77577189	-80.7057
7,700.00	91.00	329,81	6,228.25	2,198.99	-122,96	14,445,306.81	1,723,045.09	39.77600969	-80.7059
7,800.00	91.00	329,81	6,226.51	2,285.41	-173.24	14,445,393.23	1,722,994.81	39.77624748	-80.7060
7,900.00	91.00	329,81	6,224.77	2,371.83	-223.52	14,445,479.65	1,722,944.53	39.77648527	-80.7062
8,000.00	91.00	329.81	6,223.02	2,458.26	-273.80	14,445,566.07	1,722,894.25	39.77672306	-80.7064
8,100.00	91.00	329.81	6,221.28	2,544.68	-324.08	14,445,652.50	1,722,843.97	39.77696085	-80.7066
	12 starts	and a set of the		a and the		14,445,738.92	C 400 400 000	the second second second	22.2022
8,200.00 8,300.00	91.00 91.00	329.81 329.81	6,219.54 6,217.80	2,631.10 2,717.52	-374.36 -424.64	14,445,825.34	1,722,793.69 1,722,743.41	39.77719865 39.77743644	-80.7068
8,400.00	91.00	329.81	6,216.05	2,803.95	-474.92	14,445,911.76	1,722,693.13	39.77767423	-80.7071
8,500.00	91.00	329.81	6,214.31	2,890.37	-525.20	14,445,998.19	1,722,642.85	39.77791202	-80.7073
8,600.00	91.00	329.81	6,214.57	2,890.37	-575.48		1,722,592.57	39.77814981	-80.7075
8,700.00	91.00	329.81	6,212.37	3,063.21	-575.48	14,446,084.61	and the second second second second		-80.7075
						14,446,171.03	1,722,542.29	39.77838760	
8,800.00	91.00	329.81	6,209.08 6,207.34	3,149.64	-676.04	14,446,257.45	1,722,492.01	39.77862539	-80.7078
8,900.00	91.00	329.81 329.81		3,236.06	-726,32	14,446,343.88	1,722,441.73	39.77886318	-80.7080
9,000.00	91.00		6,205,60	3,322.48	-776.60	14,446,430.30	1,722,391.45	39.77910097	
9,100.00	91.00	329.81	6,203.86	3,408.91	-826,88	14,446,516,72	1,722,341.17	39.77933876	-80.7084
9,200.00	91.00 91.00	329.81 329.81	6,202.11 6,200.37	3,495.33 3,581.75	-877.16 -927.44	14,446,603.15 14,446,689.57	1,722,290.89 1,722,240.61	39.77957655 39.77981434	-80.7085 -80.7087





Database:

Company:

Project:

Wellbore:

Design:

Site:

Well:

### Planning Report - Geographic

DB\_Jul2216dt\_v14 lt Tug Hill Operating LLC Marshall County, West Virginia. Knob Creek Knob Greek N-04HM (slot J) Original Hole rev2

Local Co-ordinate Reference: TVD Reference: MD Reference: North Reference: Survey Calculation Method:

Well Knob Creek N-04HM (slot J) GL=737 @ 737,00usft GL=737 @ 737.00usft Grid Minimum Curvature

RECEIVED Office of Oil and Gas

# FEB 2 5 2021

WV Department of Winnmanual Protection

ned Survey									Environment
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,400.00	91.00	329.81	6,198.63	3,668.17	-977.72	14,446,775.99	1,722,190.33	39,78005212	-80.70893
9,500.00	91.00	329.81	6,196.89	3,754.60	-1,028.00	14,446,862.41	1,722,140.05	39.78028991	-80.70911
9,600.00	91.00	329.81	6,195.14	3,841.02	-1,078.28	14,446,948.84	1,722,089.77	39.78052770	-80.70929
9,700.00	91.00	329.81	6,193.40	3,927.44	-1,128.56	14,447,035.26	1,722,039.49	39,78076549	-80.70947
9,800.00	91.00	329.81	6,191.66	4,013.86	-1,178.84	14,447,121.68	1,721,989.21	39.78100328	-80.70964
9,900.00	91.00	329.81	6,189.92	4,100.29	-1,229.12	14,447,208.10	1,721,938.93	39,78124106	-80,70982
10,000.00	91.00	329.81	6,188.17	4,186.71	-1,279.40	14,447,294.53	1,721,888.65	39.78147885	-80.71000
10,100.00	91.00	329,81	6,186.43	4,273.13	-1,329.68	14,447,380.95	1,721,838.37	39.78171664	-80.71018
10,200.00	91.00	329.81	6,184.69	4,359.56	-1,379.96	14,447,467.37	1,721,788.09	39.78195442	-80.71036
10,300.00	91.00	329,81	6,182.95	4,445,98	-1,430.24	14,447,553.80	1,721,737.81	39.78219221	-80.71053
10,400.00	91.00	329.81	6,181.20	4,532.40	-1,480.52	14,447,640.22	1,721,687.53	39.78242999	-80.71071
10,500.00	91.00	329.81	6,179.46	4,618.82	-1,530.80	14,447,726.64	1,721,637.25	39.78266778	-80.71089
10,600.00	91.00	329.81	6,177.72	4,705.25	-1,581.08	14,447,813.06	1,721,586.97	39.78290556	-80.71107
10,700.00	91.00	329.81	6,175.98	4,791.67	-1,631.36	14,447,899.49	1,721,536.69	39.78314335	-80.71124
10,800.00	91.00	329.81	6,174.23	4,878.09	-1,681.64	14,447,985.91	1,721,486.41	39.78338113	-80.71142
10,900.00	91.00	329.81	6,172.49	4,964.51	-1,731.92	14,448,072.33	1,721,436.13	39.78361892	-80.71160
11,000.00	91.00	329.81	6,170.75	5,050.94	-1,782.20	14,448,158,75	1,721,385.85	39.78385670	-80.71178
11,100.00	91.00	329.81	6,169.01	5,137.36	-1,832.48	14,448,245.18	1,721,335.57	39.78409448	-80.71196
11,200.00	91.00	329,81	6,167.26	5,223.78	-1,882.76	14,448,331.60	1,721,285,29	39.78433227	-80.71213
11,300.00	91.00	329,81	6,165.52	5,310.20	-1,933.04	14,448,418.02	1,721,235.01	39.78457005	-80.71231
11,400.00	91.00	329.81	6,163.78	5,396.63	-1,983.32	14,448,504.44	1,721,184.73	39.78480783	-80.71249
11,500.00	91.00	329.81	6,162.04	5,483.05	-2,033.60	14,448,590.87	1,721,134.45	39.78504562	-80.71285
11,600.00	91.00	329.81	6,160.29	5,569.47	-2,083.88	14,448,677.29	1,721,084.17	39.78528340 39.78552118	-80.71283
11,700.00	91.00 91.00	329.81 329.81	6,158.55 6,156.81	5,655.90 5,742.32	-2,134.16 -2,184.44	14,448,763.71 14,448,850.14	1,721,033.89 1,720,983.61	39.78575896	-80.71320
11,800.00	91.00	329.81	6,155.07	5,828.74	-2,184.44	14,448,936.56	1,720,933.33	39.78599674	-80.71338
12,000.00	91.00	329.81	6,153.32	5,915.16	-2,285.00	14,449,022.98	1,720,883.05	39.78623452	-80.71356
12,100.00	91.00	329.81	6,151.58	6,001.59	-2,335.28	14,449,109.40	1,720,832.77	39.78647230	-80.71374
12,200.00	91.00	329.81	6,149,84	6,088.01	-2,385,56	14,449,195,83	1,720,782.49	39.78671009	-80.71391
12,300.00	91.00	329.81	6,148.10	6,174.43	-2,435.84	14,449,282.25	1,720,732.21	39.78694787	-80.71409
12,400.00	91.00	329.81	6,146.35	6,260.85	-2,486,12	14,449,368,67	1,720,681.93	39,78718565	-80.71427
12,500.00	91.00	329.81	6,144.61	6,347.28	-2,536.40	14,449,455.09	1,720,631.65	39.78742343	-80,71445
12,600.00	91.00	329.81	6,142.87	6,433.70	-2,586.68	14,449,541.52	1,720,581.37	39.78766120	-80.71463
12,700.00	91.00	329.81	6,141.13	6,520.12	-2,636.96	14,449,627.94	1,720,531.09	39,78789898	-80,71480
12,800.00	91.00	329.81	6,139.38	6,606.55	-2,687.24	14,449,714.36	1,720,480.81	39,78813676	-80.71498
12,900.00	91.00	329.81	6,137,64	6,692.97	-2,737.52	14,449,800,79	1,720,430.53	39,78837454	-80,71516
13,000.00	91.00	329.81	6,135.90	6,779.39	-2,787.80	14,449,887.21	1,720,380.25	39.78861232	-80,71534
13,100.00	91.00	329.81	6,134.15	6,865.81	-2,838.08	14,449,973.63	1,720,329.97	39.78885010	-80.71552
13,200.00	91.00	329.81	6,132,41	6,952.24	-2,888.36	14,450,060.05	1,720,279.69	39,78908788	-80.71569
13,300,00	91.00	329.81	6,130.67	7,038.66	-2,938.64	14,450,146.48	1,720,229.41	39.78932565	-80.71587
13,400.00	91.00	329.81	6,128.93	7,125.08	-2,988.92	14,450,232.90	1,720,179.13	39.78956343	-80,71605
13,500.00	91.00	329.81	6,127.18	7,211.50	-3,039.20	14,450,319.32	1,720,128.85	39.78980121	-80.71623
13,600.00	91.00	329.81	6,125.44	7,297.93	-3,089.48	14,450,405.74	1,720,078.57	39.79003898	-80.71641
13,700.00	91.00	329.81	6,123.70	7,384.35	-3,139.76	14,450,492.17	1,720,028.29	39.79027676	-80.71658
13,800.00	91.00	329.81	6,121.96	7,470.77	-3,190.04	14,450,578.59	1,719,978.01	39.79051454	-80.71676
13,900.00	91.00	329.81	6,120.21	7,557.19	-3,240.32	14,450,665.01	1,719,927.73	39.79075231	-80.71694
14,000.00	91.00	329.81	6,118.47	7,643,62	-3,290.60	14,450,751.43	1,719,877.45	39,79099009	-80.71712
14,100.00	91.00	329.81	6,116.73	7,730.04	-3,340.88	14,450,837.86	1,719,827.17	39.79122786	-80.71730
14,200.00	91.00	329.81	6,114.99	7,816.46	-3,391.16	14,450,924.28	1,719,776.89	39.79146564	-80.71747
14,300.00	91.00	329.81	6,113.24	7,902.89	-3,441.44	14,451,010.70	1,719,726.61	39,79170341	-80.71765
14,400.00	91.00	329,81	6,111.50	7,989.31	-3,491.72	14,451,097.13	1,719,676.33	39.79194119	-80.71783
14,500.00	91.00	329.81	6,109.76	8,075.73	-3,542.00	14,451,183.55	1,719,626.05	39.79217896	-80.71801
14,600,00	91.00	329.81	6,108.02	8,162.15	-3,592.28	14,451,269.97	1,719,575.77	39.79241673	-80.71819
14,700.00	91.00	329.81	6,106.27	8,248.58	-3,642.56	14,451,356.39	1,719,525.49	39.79265451	-80.71837
14,800.00	91.00	329.81	6,104.53	8,335.00	-3,692.84	14,451,442.82	1,719,475.21	39.79289228	-80,71854





Database:

Company:

Project:

Design:

Planned Survey

Site:

Well: Wellbore: DB\_Jul2216dt\_v14 lt

Knob Creek

Original Hole rev2

Tug Hill Operating LLC

### Planning Report - Geographic

Local Co-ordinate Reference: TVD Reference: Marshall County, West Virginia. MD Reference: North Reference: Knob Creek N-04HM (slot J) Survey Calculation Method:

Well Knob Creek N-04HM (slot J) GL=737 @ 737.00usft GL=737 @ 737.00usft Grid Minimum Curvature

14,900.00 15,000.00 15,100.00	91,00		(usft)	(usft)	(usft)	Northing (usft)	(usft)	Latitude	Longitude
15,100.00		329.81	6,102.79	8,421.42	-3,743.12	14,451,529.24	1,719,424.93	39.79313005	-80,7187
	91.00	329.81	6,101.05	8,507.84	-3,793.40	14,451,615.66	1,719,374.65	39.79336783	-80,71890
	91,00	329.81	6,099.30	8,594.27	-3,843.68	14,451,702.08	1,719,324.37	39.79360560	-80.7190
15,200.00	91.00	329.81	6,097.56	8,680.69	-3,893,96	14,451,788.51	1,719,274.09	39.79384337	-80,7192
15,300.00	91.00	329.81	6,095.82	8,767.11	-3,944.24	14,451,874.93	1,719,223.81	39,79408114	-80.7194
15,400.00	91.00	329.81	6,094,08	8,853.54	-3,994.52	14,451,961.35	1,719,173.52	39,79431892	-80.7196
15,500.00	91.00	329.81	6,092.33	8,939.96	-4,044.80	14,452,047.78	1,719,123.24	39.79455669	-80.7197
15,600.00	91.00	329.81	6,090.59	9,026.38	-4,095.08	14,452,134.20	1,719,072.96	39.79479446	-80.7199
15,700.00	91.00	329.81	6,088.85	9,112.80	-4,145.36	14,452,220.62	1,719,022.68	39.79503223	-80.7201
15,800.00	91.00	329.81	6,087.11	9,199.23	-4,195.64	14,452,307.04	1,718,972.40	39.79527000	-80,7203
15,900.00	91.00	329.81	6,085.36	9,285.65	-4,245.92	14,452,393.47	1,718,922.12	39.79550777	-80.7205
16,000.00	91,00	329.81	6,083.62	9,372.07	-4,296.20	14,452,479.89	1,718,871.84	39.79574554	-80,7206
16,100.00	91.00	329.81	6,081.88	9,458.49	-4,346.48	14,452,566.31	1,718,821.56	39.79598331	-80.7208
16,200,00	91.00	329.81	6,080.14	9,544.92	-4,396.76	14,452,652.73	1,718,771.28	39.79622108	-80.7210
16,300.00	91.00	329.81	6,078.39	9,631.34	-4,447.04	14,452,739,16	1,718,721.00	39,79645885	-80,7212
16,400.00	91.00	329.81	6,076.65	9,717.76	-4,497.32	14,452,825.58	1,718,670.72	39.79669662	-80,7213
16,500.00	91.00	329.81	6,074.91	9,804.18	-4,547.60	14,452,912.00	1,718,620.44	39,79693439	-80.7215
16,600.00	91.00	329.81	6,073.17	9,890.61	-4,597.88	14,452,998.42	1,718,570,16	39,79717215	-80.7217
16,700.00	91.00	329.81	6,071,42	9,977.03	-4,648.16	14,453,084,85	1,718,519.88	39,79740992	-80.7219
16,800,00	91.00	329.81	6,069.68	10,063.45	-4,698,44	14,453,171.27	1,718,469.60	39,79764769	-80.7221
16,900.00	91.00	329.81	6,067.94	10,149.88	-4,748,72	14,453,257.69	1,718,419.32	39.79788546	-80.7222
17,000.00	91.00	329.81	6,066.20	10,236.30	-4,799.00	14,453,344.12	1,718,369.04	39,79812322	-80.7224
17,100.00	91,00	329.81	6,064.45	10,322.72	-4,849.28	14,453,430.54	1,718,318.76	39.79836099	-80.7226
17,200.00	91.00	329.81	6,062.71	10,409.14	-4,899.56	14,453,516.96	1,718,268.48	39.79859876	-80.7228
17,300.00	91.00	329.81	6,060.97	10,495.57	-4,949,84	14,453,603.38	1,718,218.20	39.79883652	-80.7229
17,400.00	91.00	329.81	6,059.23	10,581.99	-5,000.12	14,453,689.81	1,718,167.92	39.79907429	-80.7231
17,500.00	91.00	329.81	6,057.48	10,668.41	-5,050.40	14,453,776.23	1,718,117.64	39,79931206	-80.7233
17,600.00	91.00	329.81	6,055.74	10,754.83	-5,100.68	14,453,862.65	1,718,067.36	39,79954982	-80.7235
17,700.00	91.00	329.81	6,054.00	10,841.26	-5,150.97	14,453,949.07	1,718,017.08	39.79978759	-80.7237
17,800.00	91.00	329.81	6,052.26	10,927.68	-5,201.25	14,454,035.50	1,717,966.80	39.80002535	-80.7238
17,900.00	91.00	329.81	6,050.51	11,014.10	-5,251,53	14,454,121,92	1,717,916.52	39.80026312	-80.7240
18,000.00	91,00	329.81	6,048.77	11,100.52	-5,301.81	14,454,208,34	1,717,866.24	39,80050088	-80,7242
18,100.00	91.00	329.81	6,047.03	11,186.95	-5,352.09	14,454,294.76	1,717,815.96	39.80073864	-80,7244
18,200,00	91.00	329.81	6,045.29	11,273.37	-5,402.37	14,454,381.19	1,717,765.68	39.80097641	-80.7246
18,300.00	91.00	329.81	6,043.54	11,359.79	-5,452.65	14,454,467.61	1,717,715.40	39,80121417	-80,7247
18,400.00	91.00	329,81	6,041.80	11,446.22	-5,502.93	14,454,554.03	1,717,665.12	39.80145194	-80,7249
18,500.00	91.00	329.81	6,040,06	11,532.64	-5,553.21	14,454,640.46	1,717,614.84	39.80168970	-80.7251
18,600.00	91.00	329.81	6,038.32	11,619.06	-5,603.49	14,454,726.88	1,717,564.56	39.80192746	-80,7253
18,700.00	91.00	329.81	6,036.57	11,705.48	-5,653.77	14,454,813.30	1,717,514.28	39.80216522	-80.7254
18,800.00	91.00	329.81	6,034.83	11,791.91	-5,704.05	14,454,899.72	1,717,464.00	39.80240299	-80.7256
18,900.00	91.00	329.81	6,033.09	11,878.33	-5,754.33	14,454,986.15	1,717,413.72	39.80264075	-80.7258
19,000.00	91.00	329.81	6,031.35	11,964.75	-5,804.61	14,455,072.57	1,717,363.44	39.80287851	-80.7260
19,100.00	91.00	329.81	6,031.33	12,051.17	-5,854.89	14,455,158.99	1,717,313.16	39.80311627	-80,7262
19,200.00	91.00	329.81	6,027.86	12,137.60	-5,905.17	14,455,245.41	1,717,262.88	39,80335403	-80.7263
19,300.00	91.00	329.81	6,026.12	12,224.02	-5,955.45	14,455,331.84	1,717,212.60	39.80359179	-80.7265
19,400.00	91.00	329.81	6,024.38	12,310.44	-6,005.73	14,455,418.26	1,717,162.32	39,80382955	-80.7267
19,500.00	91.00	329.81	6,022,63	12,396.87	-6,056.01	14,455,504.68	1,717,112.04	39,80406731	-80.7269
19,600.00	91.00	329.81	6,020.89	12,483.29	-6,106.29	14,455,591.11	1,717,061.76	39,80430507	-80.7270
19,700.00	91.00	329.81	6,019.15	12,465.29	-6,156.57	14,455,677.53	1,717,011.48	39.80454283	-80.7272
19,800.00	91.00	329.81	6,017.41	12,656.13	-6,206.85	14,455,763.95	1,716,961.20	39.80478059	-80.7274
19,800.00	91.00	329.81	6,017.00	12,676.28	-6,218.57	14,455,784.10	1,716,949.48	39.80483601	-80.7274





### Planning Report - Geographic

Database: DB\_Jul2216dt\_v14 lt Local Co-ordinate Reference: Well Knob Creek N-04HM (slot J) Tug Hill Operating LLC Company: GL=737 @ 737.00usft TVD Reference: Project: Marshall County, West Virginia. **MD Reference:** GL=737 @ 737.00usft Site: Knob Creek North Reference: Grid Well: Knob Creek N-04HM (slot J) Survey Calculation Method: Minimum Curvature Original Hole Wellbore: Design: rev2

### Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Knob Creek N-04HM BH - plan hits target cent - Point	0.00 er	0.00	6,017.00	12,676.28	-6,218.57	14,455,784.10	1,716,949.48	39.80483601	-80.72749264
Knob Creek N-04HM LP	0.00	0.00	6,244.00	1,417.95	331.43	14,444,525.76	1,723,499.48	39,77386063	-80.70430299
<ul> <li>plan misses target o</li> <li>Point</li> </ul>	center by 0.01	usft at 6796	.26usft MD (	6244.00 TVD,	1417.95 N, 3	31.44 E)			
Knob Creek N-04HM LP	0.00	0.00	6,244.00	1,417.95	281.43	14,444,525.76	1,723,449.48	39.77386108	-80.70448095

- plan miss

### Plan Annotations

Measured	Vertical	Local Coor	dinates	
Depth (usft)	Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
1,500.00	1,500.00	0.00	0.00	KOP Begin 2°/100' build
1,600.00	1,599.98	-0.87	1.51	Begin 2°/100' turn
1,651.75	1,651.70	-1.32	3.20	Begin 2.00° tangent section
3,100.93	3,100.00	-1.32	53.77	Begin 2°/100' build/turn
4,225.33	4,192.14	199.56	176.21	Begin 23.33° tangent section
5,924.59	5,752.47	798.94	482.21	Begin 8°/100' build
6,354.76	6,098.69	1,043.20	486.07	Begin 8°/100' build
6,796.26	6,244.00	1,417.95	331.44	Begin 91.00° lateral section
19,823.31	6.017.00	12,676,28	-6.218.57	PBHL/TD 19823.31 MD 6017.00 TVD

RECEIVED Office of Oil and Gas

# FEB 2 5 2021

WV Department of Environmental Protection



# Well Site Safety Plan

Tug Hill Operating, LLC

Au/19/2028

Well Name: Knob Creek N-4HM

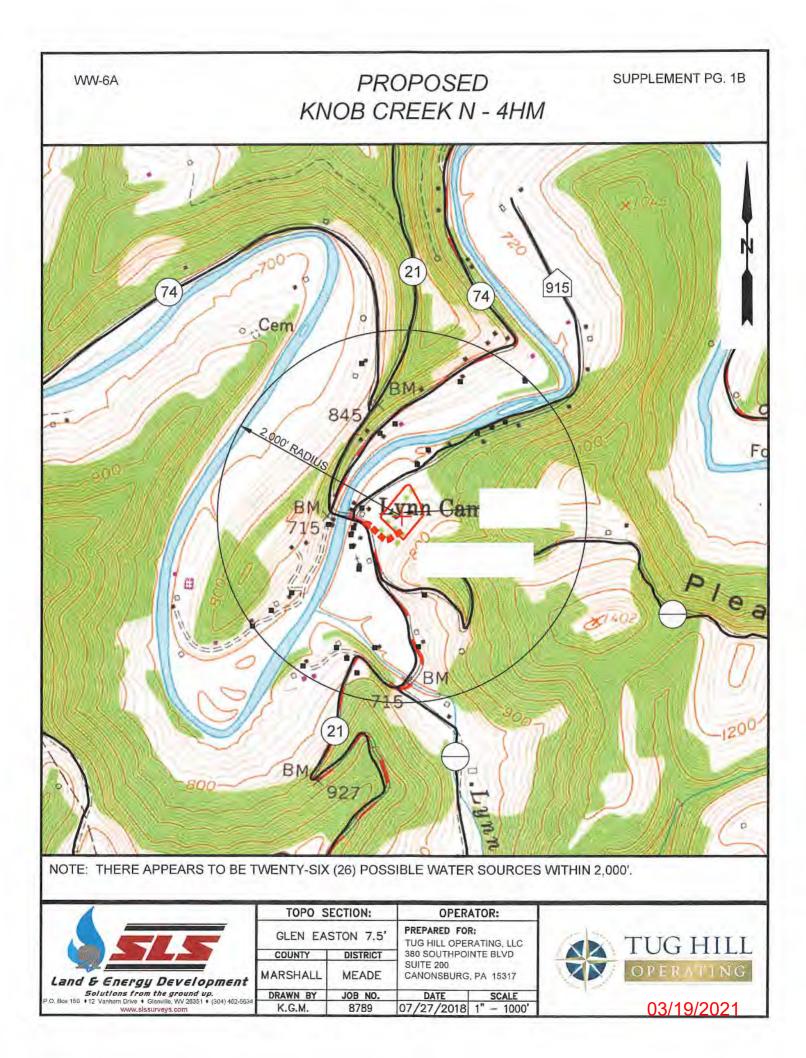
Pad Location: Knob Creek Pad

Marshall County, West Virginia

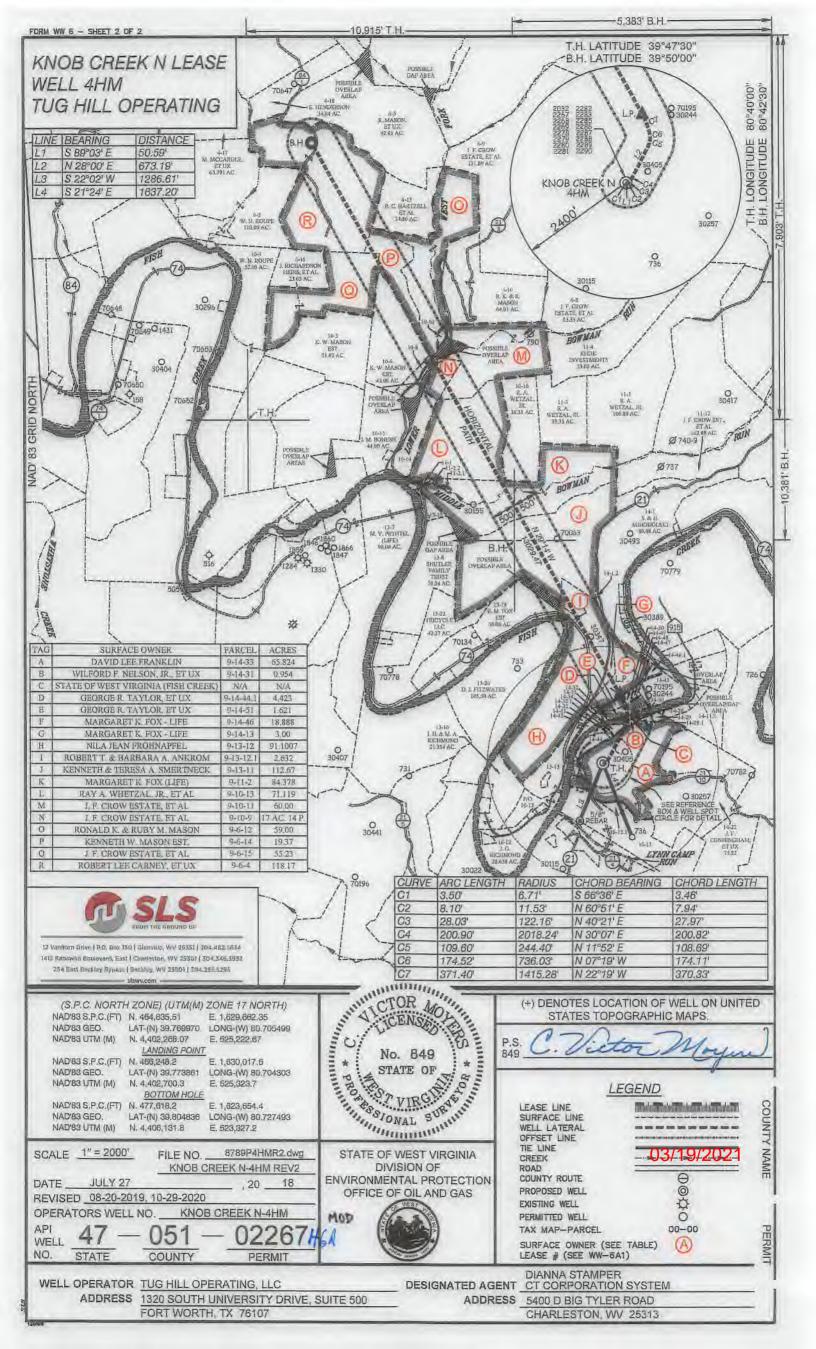
UTM (meters), NAD83, Zone 17: Northing: 4,402,268.07 Easting: 525,222.67

October 2020

03/19/2021



orm ww 6 - sheet 1 of 2	10,915' T.H	5,383' B.H.
		T.H. LATITUDE 39°47'30" B.H. LATITUDE 39°50'00"
KNOB CREEK N LEASE		(S. P.C. NORTH ZONE) (UTMIN) ZONE 17 NORTH)
NELL 4HM		(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH) NAD'83 S.P.C.(FT) N. 464,835.51 E. 1,629,662.35
UG HILL OPERATING		NAD'83 S.P.C. (FT)         N. 464,835.51         E. 1,629,662.35         D         O         Q
MAF/PARCEL ADJOINING SURFACE OWNER LIST 9-10-8 BRENT ALLEN CONNER	ACRES	NAD'83 GEO. LAT-(N) 39.773861 LONG-(W) 80.704303
9-10-10 RALPH MARTIN TAYLOR 9-10-14 WILLIAM MCCONNELL	2.23 15.00	NAD'83 UTM (M) N. 4,402,700.3 E. 525,323.7
9-11-1         GERALD F. PADLOW           9-11-2.1         KENNETH P. GATEWOOD, ET UX           9-11-2.2         GERALD F. PADLOW, ET UX	1.033 0.308 0.291	NAD'83 S.P.C.(FT) N. 477,618.2 E. 1,623,654.4 O O NAD'83 GEO. LAT-(N) 39.804836 LONG-(W) 80.727493
9-13-10 ARTHUR L MOORE 9-13-13 MARGARET K, FOX - LIFE	3.96 15.513	NAD'83 UTM (M) N. 4,406,131.8 E. 523,327.2
9-14-1.2 KENNETH N. & TERESA A. SMERTNE 9-14-11.3 PATRICK J. SCHELLHASE - TRUST	23.424	
9-14-28 CHARLES & SCHELLHASE, ET UX 9-14-29 ANDREW FASOULETOS, ET UX 9-14-29.1 ANDREW FASOULETOS, ET UX	3,029 0,209 1,171	MAP/PARCEL ADJOINING SURFACE OWNER LIST - CONTINUED ACRES 9-14-38 MARGARET FOX - LIFE 0.631
9-14-30 WILLIAM C. GROFT, ET UX 9-14-32 TWILA C. COFFIELD	0,35 0,583	9-14-39 MARGARET FOX - LIFE 8675 SQ. FT. 9-14-40 MARGARET FOX - LIFE 19,560 SQ. FT.
9-14-32.1         TWILA C. COFFIELD           9-14-35         PAUL G. FON           9-14-36         MARGARET FOX - LIFE	0.184 0.338 1600 SQ. FT.	9-14-41 MARGARET FOX + LIFE 9165 S0, FT. 9-14-42 JOHN C: LAGOS, ET UX 1.87 9-14-43 JAMES G, FOX 0.66
9-14-37 MARGARET FOX - LIFE	LOT	9-14-43 DAVID LEE FRANKLIN 2.913 9-14-45 GEORGE R. TAYLOR, ET UX 10.98
	1	9-14-46,1 MARTHA JANE FAZZARO L.512 9-14-47 MICHAEL L& CHERYL J. ACREE 0.355 9-14-48 MICHAEL L& CHERYL J. ACREE 0.473
		9-14-48 MICHAEL L. & CHERYL J. ACREE 0.473 9-14-49 MICHAEL L. & CHERYL J. ACREE 0.118 9-14-50 RONALD MARSH 0.707
		9-14-52 JAMES E PEELMAN 0.439 9-14-53 JAMES E PEELMAN 0.555
REFERENCES	<u>_Т.Н.</u>	9-14-54 RICHARD L. HARVETH, ET UX 1.649 9-16-14 LYNN CAMP METHODIST CHURCH 0.762 9-16-15 RONALD R. YOUNG, ET UX - UFE 32.02
		9-16-15         RONALD R. YOUNG, ET UX - LIFE         32.02           9-16-15.1         ERIC J. YOUNG         1.98
13-13		
6- 14-44 1915		
B.	*	
E ADIL DETE AD		
5/8" REBAR	TER OF	B.H. <sup>2</sup>
PRO -PRO	POSED LL PAD	
144 14-39 14-36 14-36		
14-370 14-40 KNOB CRE		
47-051-0		
1435 A A		
5/B" REBAR		
P/O 14-33	and a second sec	NOTES ON SURVEY
16-15 16-14 1" =	= 400'	<ol> <li>NO WATER WELLS WERE FOUND WITHIN 250° OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ. FT. WERE FOUND WITHIN</li> </ol>
Reic		625' OF THE CENTER OF PROPOSED WELL PAD. 2. SEE REFERENCES FOR DWELLINGS LOCATED
FROM THE ORDUNG UP		WITHIN 825' OF THE CENTER OF PROPOSED WELL PAD. 3. WELL SPOT CIRCLE & TOPO MARK SCALE IS
12 Vanisom Drive   P.O. Box 150   Glenville, WV 28351   504.462.5634		1"=2000'. 4. BASED ON WV DOT COUNTY ROUTE 74 IS A 40'
[7]2 Kanawina Boulevard, East   Charleston, WV 25301   304.346.3952 254 Basil Beckley Bypass   Beckley, WV 25801   304.255,5295		STRIP OF LAND ACQUIRED IN NUMEROUS DEEDS.
siswe.com	unumun,	
THE UNDERSIGNED, HEREBY CERTIFY		(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
HIS PLAT IS CORRECT TO THE BEST OF NOWLEDGE AND BELIEF AND SHOWS A	LL Erit V	DATE_JULY 27, 2018
HE INFORMATION REQUIRED BY LAW A HE REGULATIONS ISSUED AND PRESCR	RIBED No. 849	REVISED_08-20-2019, 10-29-2020
BY THE DIVISION OF ENVIRONMENTAL PI	ROTECTION. STATE OF	OPERATORS WELL NO. KNOB CREEK N-4HM
s. Anna	Corport	WELL 17 - 051 - 02267
49 <u>C. Octor //</u>	Locial "In SIONAL SU	NO. 47 USI DERMIT
INIMUM DEGREE	FILE NO. 8789P4HMR2.dwg	
FACCURACY 1/2500	KNOB CREEK N-4HM REV2	STATE OF WEST VIRGINIA     DIVISION OF ENVIRONMENTAL PROTECTION
ORIZONTAL & VERTICAL ONTROL DETERMINED BY DGPS (SU	SCÁLE 1" = 2000' IRVEY GRADE TIE TO CORS NETWOR	
VELL LIQUID	WASTE IF	
YPE: OIL GAS X INJECTION		DUCTION X STORAGE DEEP SHALLOW X
OCATION : ELEVATION737.50'	WATERSHED FISH CRE	EK (HUC 10)
DISTRICT MEADE	WATERSHEDISITCKE	
SURFACE OWNER DAVID LEE FRANK		L QUADRANGLE GLEN EASTON 7.5' QUADRANGLE 65.824±
	LIN, ET AL - SEE WW-6A1	
ROPOSED WORK :		ACREAGE LEASE NOSEE WW-6A1 ⋒
DRILL X CONVERT DI	RILL DEEPER REDRILL	
ORMATION PERFORATE NEW F		
PHYSICAL CHANGE IN WELL (SPECIFY)		TARGET FORMATION MARCELLUS
	P_1	TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,360' / TMD: 19,823'
WELL OPERATOR TUG HILL OPERATIN		DIANNA STAMPER
NELL OPERATOR TUG HILL OPERATIN ADDRESS 1320 SOUTH UNIVER	IG, LLC DESIGN	DIANNA STANDED



WW-6A (9-13)

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

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

Date of Notice: 2/12/2021 Date Permit Application Filed: 2/12/2021

$\checkmark$	PERMIT FOR ANY	CERTIFICATE OF APPROVAL FOR THE
	WELL WORK	CONSTRUCTION OF AN IMPOUNDMENT OR PIT

#### Delivery method pursuant to West Virginia Code § 22-6A-10(b)

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

Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

☑ Application Notice ☑ WSSP Notice ☑ E&S Plan Notice ☑ Well Plat Notice is hereby provided to:

☑ SURFACE OWNER(s)	COAL OWNER OR LESSEE
Name: David Lee Franklin	Name: CNX Land Resources, Inc.
Address: 131 Saint Joseph Road	Address: 1000 Consol Energy Drive
Glen Easton, WV 26039	Canonsburg, PA 15318
Name:	COAL OPERATOR
Address:	Name:
	Address:
SURFACE OWNER(s) (Road and/or Other Disturbance)	
Name: David Lee Franklin	SURFACE OWNER OF WATER WELL
Address: 131 Saint Joseph Road	AND/OR WATER PURVEYOR(s)
Glen Easton, WV 26039	Name: *See attached list
Name:	Address:
Address:	
	OPERATOR OF ANY NATURAL GAS STORAGE FIELD
□ SURFACE OWNER(s) (Impoundments or Pits)	Name:
Name:	Address:
Address:	
	*Please attach additional forms if necessary

API NO, 47-\_\_\_\_ OPERATOR WELL NO. Knob Creek N-4HM Well Pad Name: Knob Creek

### Notice is hereby given:

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

### This Notice Shall Include:

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

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

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

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

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting <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



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

### Water Well Testing:

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

### Water Testing Laboratories:

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

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

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

### Written Comment:

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

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

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



WW-6A (8-13) API NO. 47- -OPERATOR WELL NO. Knob Creek N-4HM Well Pad Name: Knob Creek

### Time Limits and Methods for Filing Comments.

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

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

### **Comment Requirements**

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

Disclaimer: All comments received will be placed on our web site http://www.dep.wv.gov/oil-and-gas/Horizontal-

<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.

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### Notice is hereby given by:

Well Operator:	Tug Hill Operating, LLC	
Telephone: 724	-749-8388	Ī
Email: amorris@t	ug-hillop.com any Sudaris	

Address: 380 Southpointe Boulevard, Plaza II, Suite 200 Canonsburg, PA 15317

Facsimile: 724-338-2030

### **Oil and Gas Privacy Notice:**

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

Commonwealth of Pennsylvania - Notary Seal Susanne Deliere, Notary Public Washington County My commission expires January 15, 2025 Commission number 1382332 Member, Pennsylvania Association of Notaries

Subscribed and sworn before me this <u>12<sup>th</sup></u> day of <u>helizerary 20</u>21. <u>Susance Deliere</u> Notary Public

My Commission Expires 1/15/200

# Supplement Pg. 1A

## **Exhibit WW-6A**

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

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

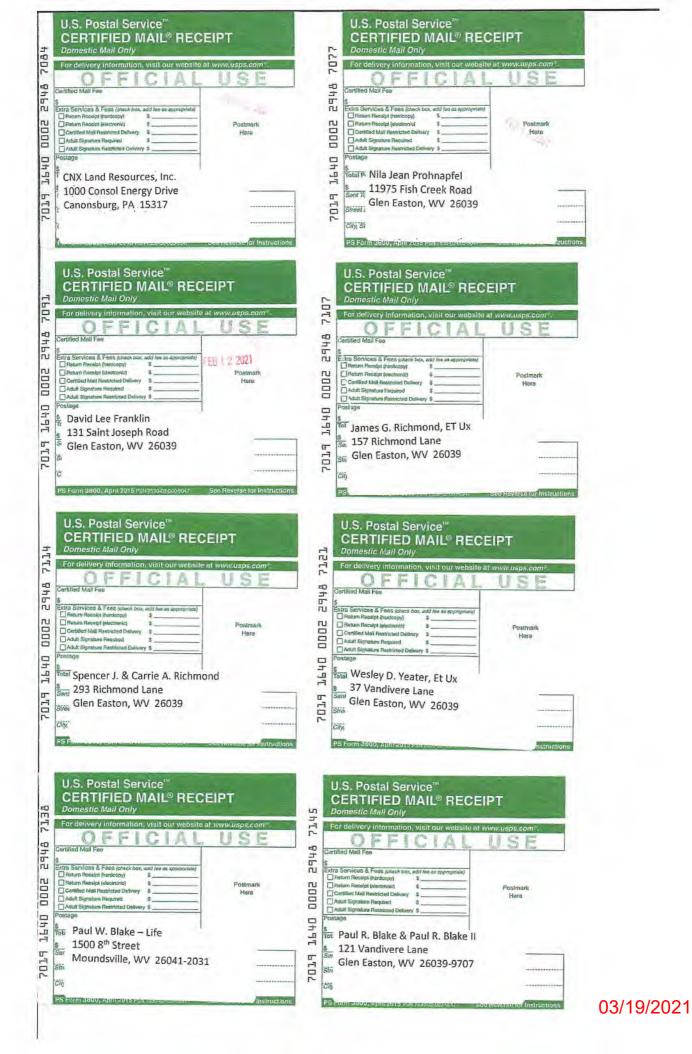
Well:KNOB CREEK N – 4HMDistrict:Meade (House #'s 1-12, 14-26) (Church #13)State:WV

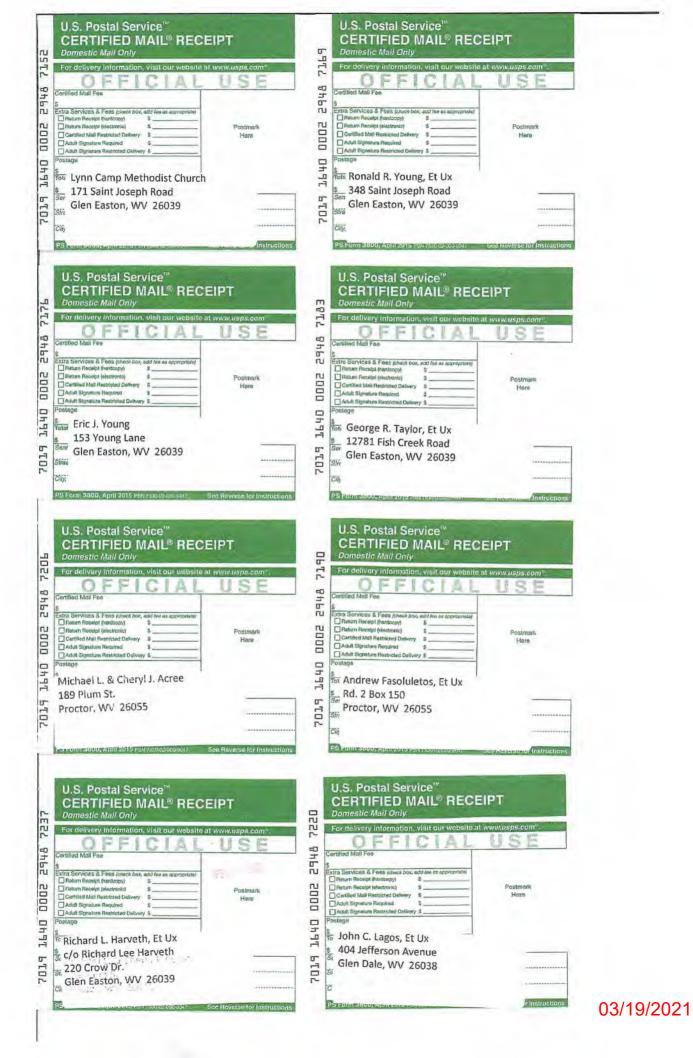
There are twenty-six (25) residences, no businesses, one (1) church, no schools or no emergency facilities within two-thousand feet (2,000') of the above referenced well location.

House 1	House 2	House 3
TM 14 Pcl. 39	TM 14 Pcl. 32	TM 14 Pcl. 54
Margaret Fox – Life	Twila C. Coffield	Richard L. Harveth, Et Ux
c/o Paul Fox	Phone: 304-845-5941	c/o Richard Lee Harveth
Phone: 304-455-3817 (Per Tax Address	Physical Address:	Phone: 304-845-7397; 304-845-5128
– Paul G. Fox)	184 Crow Dr.	Physical Address:
Physical Address:	Glen Easton, WV 26039	220 Crow Dr.
31 Crow Dr.	Tax Address:	Glen Easton, WV 26039
Glen Easton, WV 26039	16 Sandy Ave.	Tax Address:
Tax Address:	Moundsville, WV 26041-1020	Same
5761 Saint Joseph Rd.		
Proctor, WV 26055		
House 4	House 5	House 6
TM 14 Pcl. 42	TM 14 Pcl. 53	TM 14 Pcl. 29.1
John C. Lagos, Et Ux	James E. Peelman	Andrew Fasouletos, Et Ux
Phone: 304-845-2793	Phone: None Found	Phone: 304-845-9009
Physical Address:	Physical Address:	Physical Address:
12529 Fish Creek Rd.	12551 Fish Creek Rd.	329 Crow Dr.
Glen Easton, WV 26039	Glen Easton, WV 26039	Glen Easton, WV 26039
Tax Address:	Tax Address:	Tax Address:
404 Jefferson Ave.	12551 Fish Creek Rd.	1. Rd. 2 Box 150
Glen Dale, WV 26038	Glen Easton, WV 26039	Proctor, WV 26055
		2. 3391 Taylors Ridge Rd.
		Proctor, WV 26055-9723
House 7	House 8	House 9
TM 14 Pcl. 29.1	TM 14 Pcl. 29	TM 14 Pcl. 48
Andrew Fasouletos, Et Ux	Andrew Fasouletos, Et Ux	Michael L. & Cheryl J. Acree
Phone: 304-845-9009	c/o Tena Marie Stricklin	Phone: 304-455-2148; 304-455-5859
Physical Address:	Phone: 304-845-9009	Physical Address:
361 Crow Dr.	Physical Address:	12725 Fish Creek Rd.
Glen Easton, WV 26039	389 Crow Dr.	Glen Easton, WV 26039
Tax Address:	Glen Easton, WV 26039	Tax Address:
1. Rd. 2 Box 150	Tax Address:	189 Plum St.
Proctor, WV 26055	1. 3391 Taylors Ridge Rd.	Proctor, WV 26055
2. 3391 Taylors Ridge Rd.	Proctor, WV 26055-9723	
Proctor, WV 26055-9723	2. Rd. 2 Box 150	
	Proctor, WV 26055	

House 10	House 11	House 12
TM 14 Pcl. 45	TM 16 Pcl. 15.1	TM 16 Pcl. 15
George R. Taylor, Et Ux	Eric J. Young	Ronald R. Young, Et Ux - Life
Phone: 304-845-2987	Phone: 304-686-3398; 304-905-1986	Phone: 304-845-6044 (Per Tax Address –
Physical Address:	(Per Address – Chelsey Long); 304-845-	Geraldine M. Young)
12781 Fish Creek Rd.	0154 (Per Address – Bill J. Blatt)	Physical Address:
Glen Easton, WV 26039	Physical Address:	348 Saint Joseph Rd.
Tax Address:	153 Young Ln.	Glen Easton, WV 26039
Same	Glen Easton, WV 26039	Tax Address:
Same	Tax Address:	Same
	Same	June
House 13	House 14	House 15
TM 16 Pcl. 14	TM 16 Pcl. 15	TM 16 Pcl. 13.5
Lynn Camp Methodist Church	Ronald R. Young, Et Ux - Life	Paul R. Blake & Paul R. Blake II
Phone:	Phone: 304-845-6044 (Per Tax Address	Phone: 304-845-9369
Physical Address:	– Geraldine M. Young)	Physical Address:
171 Saint Joseph Rd.	Physical Address:	616 Saint Joseph Rd.
Glen Easton, WV 26039	323 Saint Joseph Rd.	Glen Easton, WV 26039
Tax Address:	Glen Easton, WV 26039	Tax Address:
Unknown Address	Tax Address:	121 Vandivere Ln.
Moundsville, WV 26041	348 Saint Joseph Rd.	Glen Easton, WV 26039-9707
	Glen Easton, WV 26039	
House 16	House 17	House 18
TM 16 Pcl. 13.1	TM 16 Pcl. 13.6	TM 16 Pcl. 13.3
Paul W. Blake - Life	Wesley D. Yeater, Et Ux	Paul R. Blake
Phone: 304-845-2999	Phone: 304-843-5212	Phone: 304-845-9369
Physical Address:	Physical Address:	Physical Address:
581 Saint Joseph Rd.	37 Vandivere Ln.	121 Vandivere Ln.
Glen Easton, WV 26039	Glen Easton, WV 26039	Glen Easton, WV 26039
Tax Address:	Tax Address:	Tax Address:
1500 8 <sup>th</sup> St.	Same	Same
Moundsville, WV 26041-2031	Same	Jame
,		
House 19	House 20	House 21
TM 16 Pcl. 12.2	TM 16 Pcl. 12.7	TM 16 Pcl. 12.1
Spencer J. & Carrie A. Richmond	Spencer J. & Carrie A. Richmond	James G. Richmond, Et Ux
Phone: 304-845-2274; 304-845-8186	Phone: 304-845-2274; 304-845-8186	Phone: 304-845-8186
Physical Address:	Physical Address:	Physical Address:
293 Richmond Ln.	243 Richmond Ln.	157 Richmond Ln.
Glen Easton, WV 26039	Glen Easton, WV 26039	Glen Easton, WV 26039
Tax Address:	Tax Address:	Tax Address:
243 Richmond Ln.	Same	Same
Glen Easton, WV 26039		
House 22	House 23	House 24
TM 14 Pcl. 33	TM 14 Pcl. 37	TM 14 Pcl. 37
David Lee Franklin	Margaret Fox – Life	Margaret Fox – Life
Phone: 304-845-6025; 304-845-3203	c/o Paul Fox	c/o Paul Fox
Physical Address:	Phone: 304-455-3817 (Per Tax Address	Phone: 304-455-3817 (Per Tax Address –
131 Saint Joseph Rd.	– Paul G. Fox)	Paul G. Fox)
Glen Easton, WV 26039	Physical Address:	Physical Address:
Tax Address:	107 Saint Joseph Rd.	51 Saint Joseph Rd.
131 Saint Joseph Rd.	Glen Easton, WV 26039	Glen Easton, WV 26039
Glen Easton, WV 26039	Tax Address:	Tax Address:
	5761 Saint Joseph Rd.	5761 Saint Joseph Rd.
	Proctor, WV 26055	Proctor, WV 26055

House 25	House 26	
TM 13 Pcl. 13	TM 13 Pcl. 12	
Margaret K. Fox – Life	Nila Jean Prohnapfel	
c/o Paul Fox	Phone: None Found	
Phone: 304-455-3817 (Per Tax Address	Physical Address:	
– Paul G. Fox)	11975 Fish Creek Rd.	
Physical Address:	Glen Easton, WV 26039	
28 Richmond Ln.	Tax Address:	
Glen Easton, WV 26039	Rd. 1 Box 190	
Tax Address:	Proctor, WV 26055-9703	
5761 Saint Joseph Rd.		
Proctor, WV 26055		





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