



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

Tuesday, January 26, 2021
WELL WORK PERMIT
Horizontal 6A / New Drill

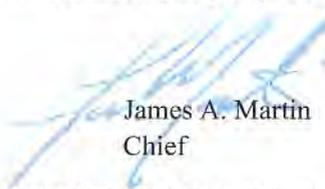
TUG HILL OPERATING, LLC
380 SOUTHPOINTE BOULEVARD, PLAZA II
SUITE 200
CANONSBURG, PA 15317

Re: Permit approval for BRECKENRIDGE S-10HM
47-051-02346-00-00

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: BRECKENRIDGE S-10HM
Farm Name: CNX LAND LLC
U.S. WELL NUMBER: 47-051-02346-00-00
Horizontal 6A New Drill
Date Issued: 1/26/2021

PERMIT CONDITIONS

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

CONDITIONS

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

API Number: _____

PERMIT CONDITIONS

4705102346

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.

WW-6B
(04/15)

API NO. 47-051 -

OPERATOR WELL NO. Breckenridge S-10HM

Well Pad Name: Breckenridge

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

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

2) Operator's Well Number: Breckenridge S-10HM Well Pad Name: Breckenridge

3) Farm Name/Surface Owner: CNX Land, LLC Public Road Access: CR 62

4) Elevation, current ground: 1380' Elevation, proposed post-construction: 1370.10'

5) Well Type (a) Gas X Oil _____ Underground Storage _____

Other _____

(b) If Gas Shallow X Deep _____

Horizontal X _____

6) Existing Pad: Yes or No No

MW
11/19/2020

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus is the target formation at a depth of 6964' - 7015', thickness of 51' and anticipated pressure of approx. 3800 psi.

8) Proposed Total Vertical Depth: 7,115'

9) Formation at Total Vertical Depth: Onondaga

10) Proposed Total Measured Depth: 8,940'

11) Proposed Horizontal Leg Length: 1,546.47'

12) Approximate Fresh Water Strata Depths: 70; 1048'

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

14) Approximate Saltwater Depths: 1,515'

15) Approximate Coal Seam Depths: Sewickley Coal - 952' and Pittsburgh Coal - 1,042'

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

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

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(a) If Yes, provide Mine Info: Name: Marshall County Mine

Depth: Pittsburgh Coal - 1042'; subsea level - 328'

Seam: Pittsburgh

Owner: Murray Energy Corporation

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18) CASING AND TUBING PROGRAM

<u>TYPE</u>	<u>Size (in)</u>	<u>New or Used</u>	<u>Grade</u>	<u>Weight per ft. (lb/ft)</u>	<u>FOOTAGE: For Drilling (ft)</u>	<u>INTERVALS: Left in Well (ft)</u>	<u>CEMENT: Fill-up (Cu. Ft.)/CTS</u>
Conductor	30"	NEW	BW	BW	120'	120'	259ft^3(CTS)
Fresh Water	13 3/8"	NEW	J55	54.5#	1100'	1100'	1114^3(CTS)
Coal	13 3/8"	NEW	J55	54.5#	1100'	1100'	1114^(CTS)
Intermediate	9 5/8"	NEW	J55	36#	2970'	2970'	985^3(CTS)
Production	5 1/2"	NEW	P110	20#	8940'	8940'	2301^3(CTS)
Tubing	2 3/8"	NEW	N80	4.7#	6379'		
Liners							

Handwritten: JW 11/19/2020

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

PACKERS

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

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

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

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

Well to be completed with approximately 3,865,000 lb proppant and 70,000 bbl of water. Max rate = 80 bpm; max psi = 9,000#.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 45.40

22) Area to be disturbed for well pad only, less access road (acres): 8.21

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:

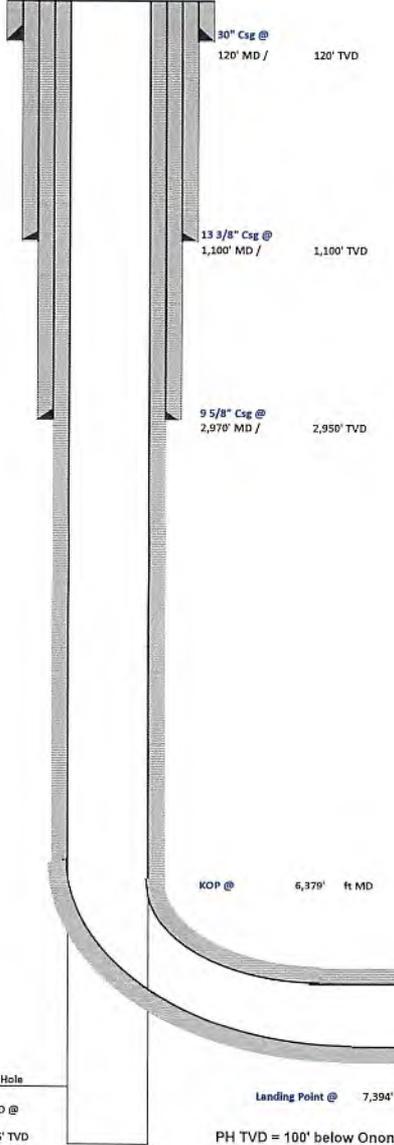
Will circulate a minimum of 3 hours at TD, short trip to curve, circulate bottoms up, check for flow, POOH

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*Note: Attach additional sheets as needed.



WELL NAME: Breckenridge 5-10HM
STATE: WV **COUNTY:** Marshall
DISTRICT: Cameron
DF Elev: 1,370' **GL Elev:** 1,370'
TD: 8,940'
TH Latitude: 39.83028369
TH Longitude: -80.62673459
BH Latitude: 39.82675115
BH Longitude: -80.62333519



FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	1048
Sewickley Coal	952
Pittsburgh Coal	1042
Big Lime	2223
Weir	2644
Berea	2840
Gordon	3093
Rhinestreet	6253
Genesee/Burkett	6808
Tully	6844
Hamilton	6873
Marcellus	6964
Landing Depth	6997
Onondaga	7015
Pilot Hole Depth	7115

CASING SUMMARY							
Type	Hole Size (in)	Csg Size (in)	Depth (MD)	Depth (TVD)	Weight (lb/ft)	Grade	Top of Cement
Conductor	36	30	120'	120'	BW	BW	Surface
Surface	17.5	13 3/8	1,100'	1,100'	54.5	J55	Surface
Intermediate 1	12 1/4	9 5/8	2,970'	2,950'	36	J55	Surface
Production	8 7/8 x 8 3/4	5 1/2	8,940'	7,024'	20	CYHP110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
	Sacks	Class	Density	Fluid Type	Centralizer Notes
Conductor	338	A	15.6	Air	None
Surface	1,128	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	989	A	15	Air	1 Centralizer every other jt
Production	2,093	A	14.5	Air / SOBMs	1 every other joint in lateral; 1 per joint in curve; 1 every other jt to sfc

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Pilot Hole
 PH TD @ 7,115' TVD
 Landing Point @ 7,394' MD / 6,997' TVD
 PH TVD = 100' below Onondaga Top

Lateral TD @ 8,940' ft MD
 7,024' ft TVD

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Tug Hill Operating, LLC Casing and Cement Program

Breckenridge S-10HM

Casing

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	13 3/8"	J55	17 1/2"	1,100'	CTS
Intermediate	9 5/8"	J55	12 1/4"	2,970'	CTS
Production	5 1/2"	CYHP110	8 7/8 x 8 3/4"	8,940'	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

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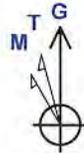
Well: Breckenridge S-10 HM (slot P)
 Site: Breckenridge (1 row)
 Project: Marshall County, West Virginia
 Design: rev3
 Rig:

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Annotation
1	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.000	0.00	
2	1800.00	0.00	0.000	1800.00	0.00	0.00	0.00	0.000	0.00	KOP Begin 2"/100' build
3	2467.92	13.36	348.455	2461.88	75.94	-15.51	2.00	348.455	-70.09	Begin 13.36° tangent
4	4396.33	13.36	348.455	4338.12	512.47	-104.68	0.00	0.000	-473.00	Begin 2"/100' drop
5	5064.24	0.00	150.000	5000.00	588.41	-120.19	2.00	180.000	-543.09	Begin vertical hold
6	6378.64	0.00	150.000	6314.40	588.41	-120.19	0.00	150.000	-543.09	Begin 2"/100' build
7	7003.64	50.00	150.000	6863.04	366.85	7.73	8.00	150.000	-289.06	Begin 10"/100' build
8	7393.64	89.00	150.003	6997.00	56.56	186.86	10.00	0.004	66.69	Bbegin 89.00° lateral
9	8939.83	89.00	150.003	7024.00	-1282.31	959.78	0.00	0.000	1601.72	TD at 8939.83

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Breckenridge S-10HM LP r3	6997.00	56.56	186.8614465209.02	1745395.33	39.83043688	-80.62506816	
Breckenridge S-10HM BHL r3	7024.00	-1282.31	959.7814463870.15	1746168.24	39.82675115	-80.62333519	



Azimuths to Grid North
 True North: -0.24°
 Magnetic North: -8.96°
 Magnetic Field
 Strength: 51823.8nT
 Dip Angle: 85.52°
 Date: 11/4/2020
 Model: IGRF2020

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

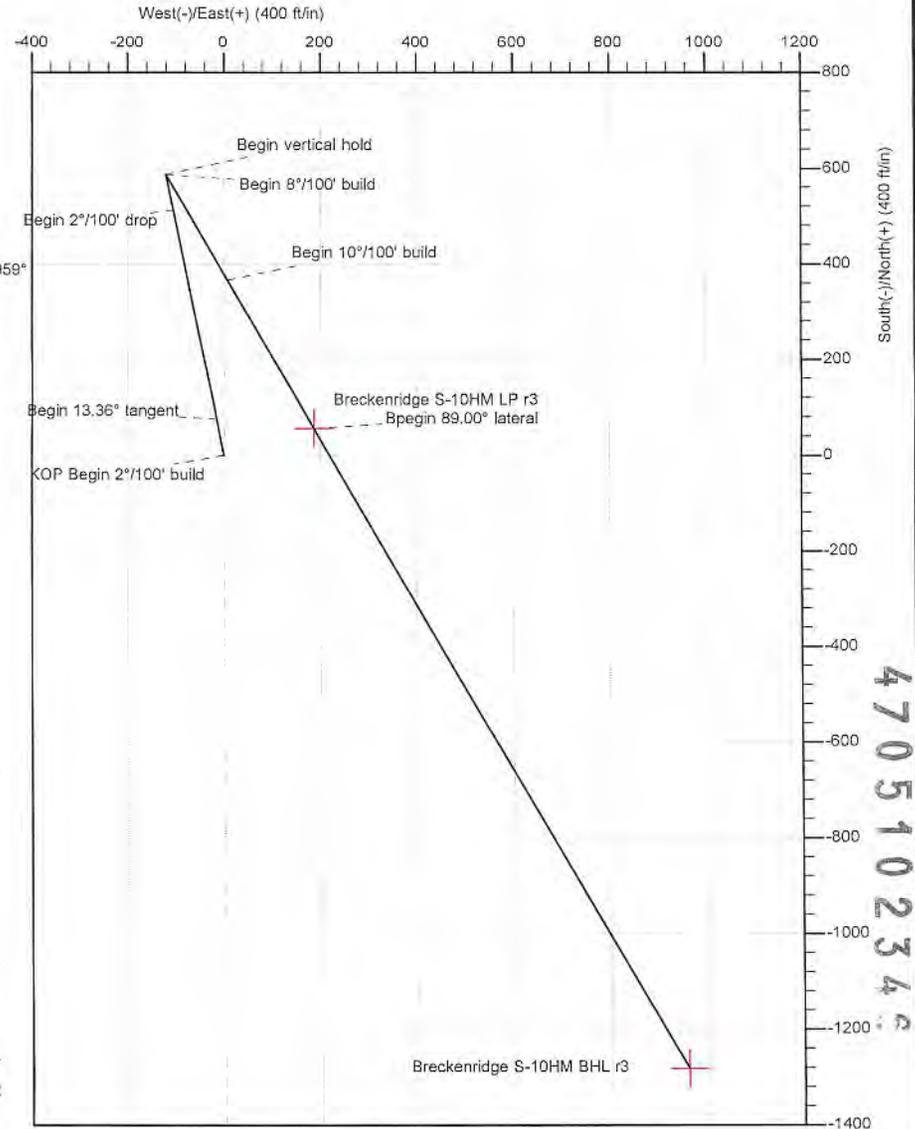
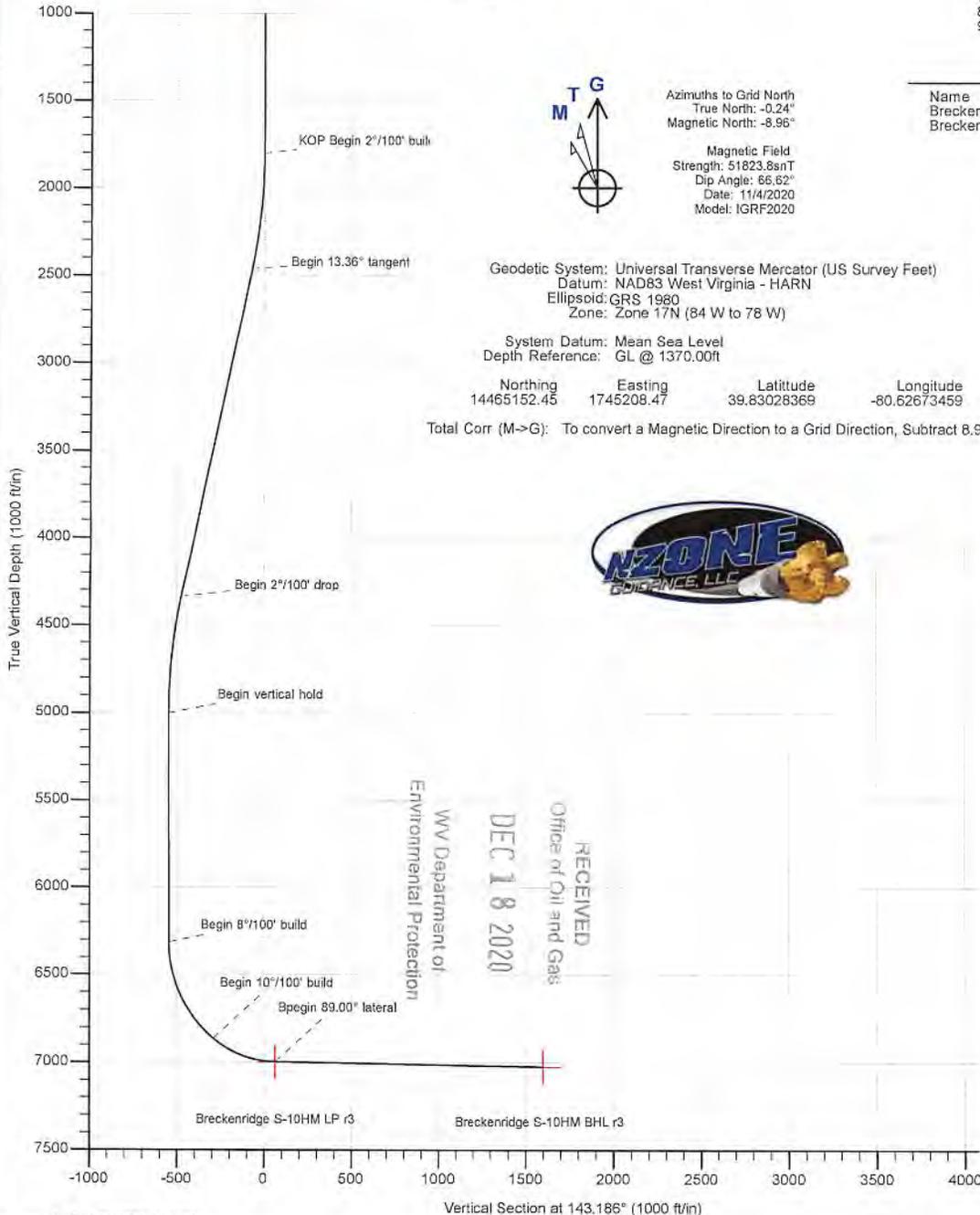
System Datum: Mean Sea Level
 Depth Reference: GL @ 1370.00ft

Northing: 14465152.45 Easting: 1746208.47 Latitude: 39.83028369 Longitude: -80.62673459

Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.959°



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

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

Data Sources Reviewed:

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

Contacted Adam Picard 724-485-9331, apicard@dpslandservices.com, DPS GIS (12/03/2020) to have him make maps of the wellbores with his information. DPS utilizes WVGES maps for their mapping seems it as the best publicly available. See attached map he provided.

Request maps for:

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

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

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

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Permit well - Breckenridge S-10HM
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
4705101082	Consolidation Coal Co.	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Marcellus well. Well is plugged.	Well was plugged 7/3/2008.
4705100753	Leatherwood, Inc.	3045' TVD	Gordon	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Marcellus stimulation.	
4705101076	Consolidation Coal Co.	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Marcellus well. Well is plugged.	Well was plugged 6/17/2008.
4705101173	McElroy Coal Company	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Marcellus well. Well is plugged.	Well was plugged 10/2/2008.
4705130250	Manufacturers Light & Heat Co.	3143' TVD	Fourth Sand	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Marcellus stimulation.	Well was plugged 8/2/1946.
4705170164	Hope Natural Gas Company	2374' TVD	Big Injun	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Marcellus stimulation.	
4705170513	Unknown	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Marcellus well.	
4705170514	Unknown	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Marcellus well.	
4705170515	Unknown	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Marcellus well.	

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Well Reassignment Information Reassigned From

OLD_COUNTY	OLD_PERMIT	NEW_COUNTY	NEW_PERMIT
51	74182	51	751

4705102346

Location Information View Map

AR	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_16	LAT_DO	LOW_DO	UTME	UTWN
4705102346	Marshall	751	County	25	10	3015775	3015775	4490131	4490143

There is no Bottom Hole Location data for this well

Owner Information

AR	CMP_ID	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWNER	OPERATOR_AT_COMPLETION	PROG_VO	PROG_FRGT_FM	FRM_BST_FM
4705102346	12-1926	---	Completed	J D Williams	1		J D Williams		Richard Vicky	Cameron Gas Co.			

Completion Information

AR	CMP_ID	SPUD_DT	ELEV	DATUM	FISLD	DEPSEPT_FWI	DEPSEPT_FWT	INITIAL_CLASS	FINAL_CLASS	TYPR	RST	CMP_MTHD	TVD	TMD	NEW_FTO	KOD	G_BSP	G_AFT	G_BSP	G_AFT	NGA_BSP	NGA_AFT	P_BSP	P_AFT	T_AFT	OH_P_BSP	OH_P_AFT	G_MBRD_BST
4705102346	12-1926	---	1320	Benardete	Cameron-Cantor	Manufacture Corp	Gascon	Development Well	Development Well	224	224	Cable Tool Shot	3645		3645		G	G	G	G								

Pay/Show/Water Information

AR	CMP_ID	ACTIVITY	PRODUCT	SECTION	DEPTH_FOP	FWI_EQU	DEPTH_BST	FRM_BST	G_BSP	G_AFT	G_BSP	G_AFT	WATER_QNTY
4705102346	12-1926	Pay	Gas	Vertical	3327	Big Inlet (Priced)	3327	Big Inlet (Priced)	0	0	0	0	0

Production Gas Information (Volumes in Mcf)

AR	PRODUCTION_OPERATOR	PRO_YEAR	ANA_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705102346	Cameron Oil and Gas Co.	1991	0	0	0	0	0	0	0	0	0	0	0	0	0

Production Oil Information (Volumes in Bbl) ** some operators may have reported NGL under O2

AR	PRODUCTION_OPERATOR	PRO_YEAR	ANA_OIL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705102346	Cameron Oil and Gas Co.	1991	0	0	0	0	0	0	0	0	0	0	0	0	0

There is no Production NGL data for this well ** some operators may have reported NGL under O2

There is no Production Water data for this well

There is no Stratigraphy data for this well

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

There is no Plugging data for this well

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Location Information View Map

AR	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_16	LAT_DO	LOW_DO	UTME	UTWN
4705102346	Marshall	1075	Cameron	25	10	3015775	3015775	4490131	4490143

There is no Bottom Hole Location data for this well

Owner Information

AR	CMP_ID	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWNER	OPERATOR_AT_COMPLETION	PROG_VO	PROG_FRGT_FM	FRM_BST_FM
4705102346	0172095	Plugging	Completed	J Richard Vicky	1		M-109		Cameron Gas Co.				

Completion Information

AR	CMP_ID	SPUD_DT	ELEV	DATUM	FISLD	DEPSEPT_FWI	DEPSEPT_FWT	INITIAL_CLASS	FINAL_CLASS	TYPR	RST	CMP_MTHD	TVD	TMD	NEW_FTO	KOD	G_BSP	G_AFT	G_BSP	G_AFT	NGA_BSP	NGA_AFT	P_BSP	P_AFT	T_AFT	OH_P_BSP	OH_P_AFT	G_MBRD_BST
4705102346	0172095	03/23/09	1336	Benardete	Cantor	Manufacture Corp	Gascon	Development Well	Development Well	224	224	Cable Tool Shot	3645		3645		G	G	G	G								

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 O2

There is no Production NGL data for this well ** some operators may have reported NGL under O2

There is no Production Water data for this well

Stratigraphy Information

AR	SUFFIX	FWI	FWI_QUALITY	DEPTH_FOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4705102346	Plugging	0172095	03/23/09	1336	Benardete	0	Benardete	1336	Benardete

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

Plugging Information

AR	PLUG_DT	DEPTH_BST
4705102346	0172095	0

There is no Sample data for this well

4705102340

WV Geological & Economic Survey

Well: County = 51 Permit = 01082

Report Time: Thursday, December 03, 2020 2:45:01 PM

Location Information: [View Map](#)

APR	COUNTY	PERMIT	TAX_DISTRICT	QUAD_76	QUAD_16	LAF_00	LOW_00	UTMR	UTMR
4795101082	Marshall	01082	Carroll	East Eden	Carroll	39 E2000	02 07 438	5105019	4420007

There is no Bottom Hole Location data for this well

APR	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VO	PROP_TNGT_FM	TRM_EST_PR
4795101082	7/2/2004		Plugging	Completed	J. Richard Wirt		47-134		Completed Coal Co.			

APR	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FWT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TWO	TWO	NEAR_FTG	KGD	G_BSP	O_APT	O_BSP	O_APT	NGL_BSP	NGL_APT	P_BSP	T_BSP	P_APT	T_APT	SH_P_BSP	SH_P_APT	O_BSRD_BY
4795101082	7/2/2004	8/10/2004	1282	Ground Level				undecided	undecided		not available	unknown																	

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:

APR	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_BOTTOM	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4795101082	Plugging	Plugging coal	Visual Record	348	Reasonable	1	Reasonable	1282	Ground Level

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

Plugging Information:

APR	PLG_DT	DEPTH_PRT
4795101082	7/2/2004	0

There is no Sample data for this well

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WV Geological & Economic Survey

Well: County = 51 Permit = 01173

Report Time: Thursday, December 03, 2020 2:42:41 PM

Location Information: [View Map](#)

APR	COUNTY	PERMIT	TAX_DISTRICT	QUAD_76	QUAD_16	LAF_00	LOW_00	UTMR	UTMR
4795101173	Marshall	01173	Carroll	Carroll	Carroll	39 E2000	01 02 628	5121214	4490011

There is no Bottom Hole Location data for this well

APR	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VO	PROP_TNGT_FM	TRM_EST_PR
4795101173	10/2/2008		Plugging	Completed	Charles & Sonja Steen		1333		McShay Coal Company			

APR	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FWT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TWO	TWO	NEAR_FTG	KGD	G_BSP	O_APT	O_BSP	O_APT	NGL_BSP	NGL_APT	P_BSP	T_BSP	P_APT	T_APT	SH_P_BSP	SH_P_APT	O_BSRD_BY
4795101173	10/2/2008	9/2/2008	1171	Ground Level																									

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:

APR	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_BOTTOM	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4795101173	Plugging	Plugging coal	Visual Record	671	Reasonable	7	Reasonable	1171	Ground Level

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

Plugging Information:

APR	PLG_DT	DEPTH_PRT
4795101173	10/2/2008	0

There is no Sample data for this well

4705102340

WV Geological & Economic Survey

Well: County = 51 Permit = 70513

Report Time Thursday, December 01, 2021 2:50:00 PM

Location Information [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_76	LAT_DD	LONG_DD	UTM_E	UTM_N
4705170513	Marshall	70513	Campton	Campton	Campton	40.452997	-80.453172	1122213	4489721.8

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_ID	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VO	PROP_TRGT_FM	TFM_EST_P
4705170513	William P. Williams	...	...	...	...	...	...	...	...	...

API	CMP_ID	SPUD_DT	ELV DATUM	FIELD	DEEPEST_FW	DEEPEST_FWT	INITIAL_CLASS	FINAL_CLASS	TYPE	REG	CMP_MTHO	TVD	TMD	NSW_FTG	KSD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	P_AFT	SH_P_BEF	SH_P_AFT	O_MERO_BY
4705170513

There is no Pay data for this well

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

There is no Stratigraphy data for this well

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

There is no Plugging data for this well

There is no Sample data for this well

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WV Geological & Economic Survey

Well: County = 51 Permit = 70514

Report Time Thursday, December 01, 2021 2:51:21 PM

Location Information [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_76	LAT_DD	LONG_DD	UTM_E	UTM_N
4705170514	Marshall	70514	Campton	Campton	Campton	40.420107	-80.424214	1121461	4492785.7

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_ID	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VO	PROP_TRGT_FM	TFM_EST_P
4705170514	William P. Williams	...	...	...	...	...	...	...	...	...

API	CMP_ID	SPUD_DT	ELV DATUM	FIELD	DEEPEST_FW	DEEPEST_FWT	INITIAL_CLASS	FINAL_CLASS	TYPE	REG	CMP_MTHO	TVD	TMD	NSW_FTG	KSD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	P_AFT	SH_P_BEF	SH_P_AFT	O_MERO_BY
4705170514

There is no Pay data for this well

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

There is no Stratigraphy data for this well

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

There is no Plugging data for this well

There is no Sample data for this well

4705102346

Location Information [View Map](#)

AR	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_76	LAT_DD	LONG_DD	UTM_E	UTM_N
4705102346	Garret	70515	Cameron	6	6	35.62347	-80.9248	3741723	4499842

There is no Bottom Hole Location data for this well

Owner Information

AR	COMP_ID	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_NO	PROP_TRGT_YM	TFM_EXT_PR
4705102346				unknown	70515								

Completion Information

AR	COMP_ID	SPUD_DT	ELEV_DATUM	THLD	DEEPRELT_YM	DEEPRELT_FTH	INITIAL_CLASS	FINAL_CLASS	TYPE	REG	COMP_MTHD	TNS	TMD	NEGR_PTS	WDD	G_BSF	G_AFT	O_BSF	O_AFT	NGL_BSF	NGL_AFT	P_BSF	P_AFT	H_AFT	BH_P_BSF	BH_P_AFT	G_MERD_BY
4705102346							unclassified	unclassified	oil	oil	unclassified	unclassified															

There is no Pay data for this well

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

There is no Stratigraphy data for this well

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

There is no Plugging data for this well

There is no Sample data for this well

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WW-9
(4/16)

4705102346

API Number 47 - 051 -

Operator's Well No. Breckenridge S-10HM

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) Grave Creek & Laurel Run Quadrangle Glen Easton 7.5'

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes No

Will a pit be used? Yes No

If so, please describe anticipated pit waste: AST Tanks with proper containment will be used for staging fresh water for frac and flow back water

Will a synthetic liner be used in the pit? Yes No If so, what ml.? AST Tanks will be used with proper contain

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection (UIC Permit Number UIC 2459, UIC 965, UIC 359, UIC 2D0732540, UIC 2D0732523)
- Reuse (at API Number _____)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain _____)

Will closed loop system be used? If so, describe: Yes - For Vertical and Horizontal Drilling

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Air for vertical / Oil for Horizontal

-If oil based, what type? Synthetic, petroleum, etc. Synthetic Oil Base

Additives to be used in drilling medium? Barite for weight

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. All drill cuttings to be disposed of in a Landfill

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) N/A

-Landfill or offsite name/permit number? Wetzel County Sanitary Landfill (SWF-1021 / WV0109185) and Westmoreland Sanitary Landfill, LLC (SAN1405 / PA DEP ECH138642B)

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature [Signature]

Company Official (Typed Name) Jim Pancake

Company Official Title Vice President - Geosciences

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Subscribed and sworn before me this _____ day of NOVEMBER

[Signature]

Notary Public

Commonwealth of Pennsylvania - Notary Seal
David Gabriel Delalio, Notary Public
Washington County
My commission expires February 16, 2024
Commission number 1267492
Member, Pennsylvania Association of Notaries

My commission expires 2/16/2024

Tug Hill Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 45.40 Prevegetation pH 6.0

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch 2.5 Tons/acre

Seed Mixtures

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

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: *John Wisbaker*
Comments: _____

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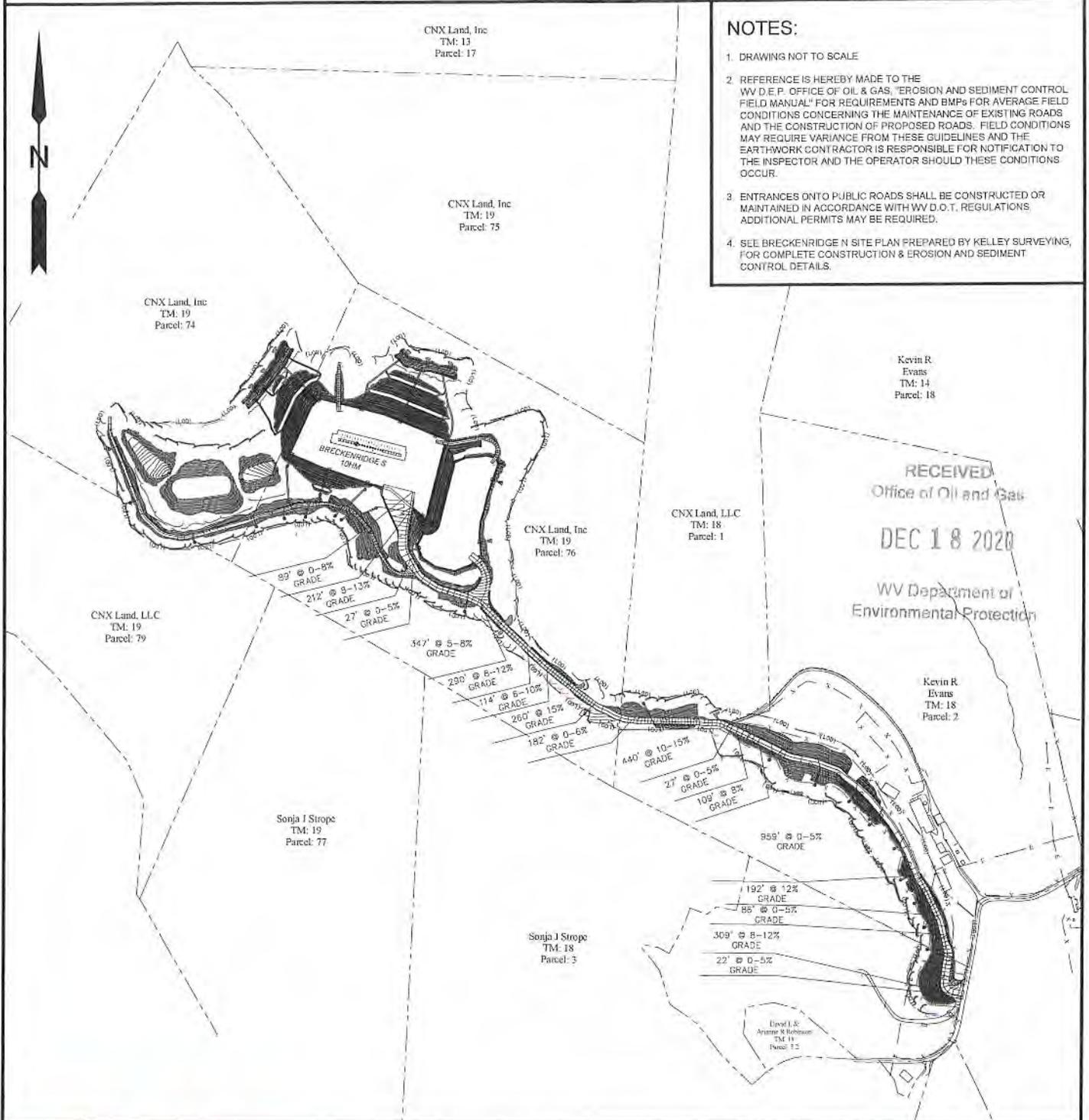
Title: Oil and Gas Inspector Date: 11/19/2020

Field Reviewed? Yes No

PROPOSED BRECKENRIDGE S - 10HM

NOTES:

1. DRAWING NOT TO SCALE
2. REFERENCE IS HEREBY MADE TO THE WV D.E.P. OFFICE OF OIL & GAS "EROSION AND SEDIMENT CONTROL FIELD MANUAL" FOR REQUIREMENTS AND BMPs FOR AVERAGE FIELD CONDITIONS CONCERNING THE MAINTENANCE OF EXISTING ROADS AND THE CONSTRUCTION OF PROPOSED ROADS. FIELD CONDITIONS MAY REQUIRE VARIANCE FROM THESE GUIDELINES AND THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION TO THE INSPECTOR AND THE OPERATOR SHOULD THESE CONDITIONS OCCUR.
3. ENTRANCES ONTO PUBLIC ROADS SHALL BE CONSTRUCTED OR MAINTAINED IN ACCORDANCE WITH WV D.O.T. REGULATIONS. ADDITIONAL PERMITS MAY BE REQUIRED.
4. SEE BRECKENRIDGE N SITE PLAN PREPARED BY KELLEY SURVEYING, FOR COMPLETE CONSTRUCTION & EROSION AND SEDIMENT CONTROL DETAILS.



12 Vanford Drive | P.O. Box 150 | Salemville, WV 26381 | 804.462.5334
 1512 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
 254 East Beckley Byway | Beckley, WV 26011 | 804.255.9286
 slsw.com

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR:	
COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
MARSHALL	CAMERON	380 SOUTHPOINTE BLVD	
		SUITE 200	
		CANONSBURG, PA 15317	
DRAWN BY	JOB NO.	DATE	SCALE
K.G.M.	9026	11-19-20	NONE



**TUG HILL
OPERATING**

105102346



Well Site Safety Plan

Tug Hill Operating, LLC

JW
11/19/2020

Well Name: Breckenridge S-10HM

Pad Location: Breckenridge

Marshall County, West Virginia

UTM (meters), NAD83, Zone 17:

Northing: 4,408,987.29

Easting: 531,940.60

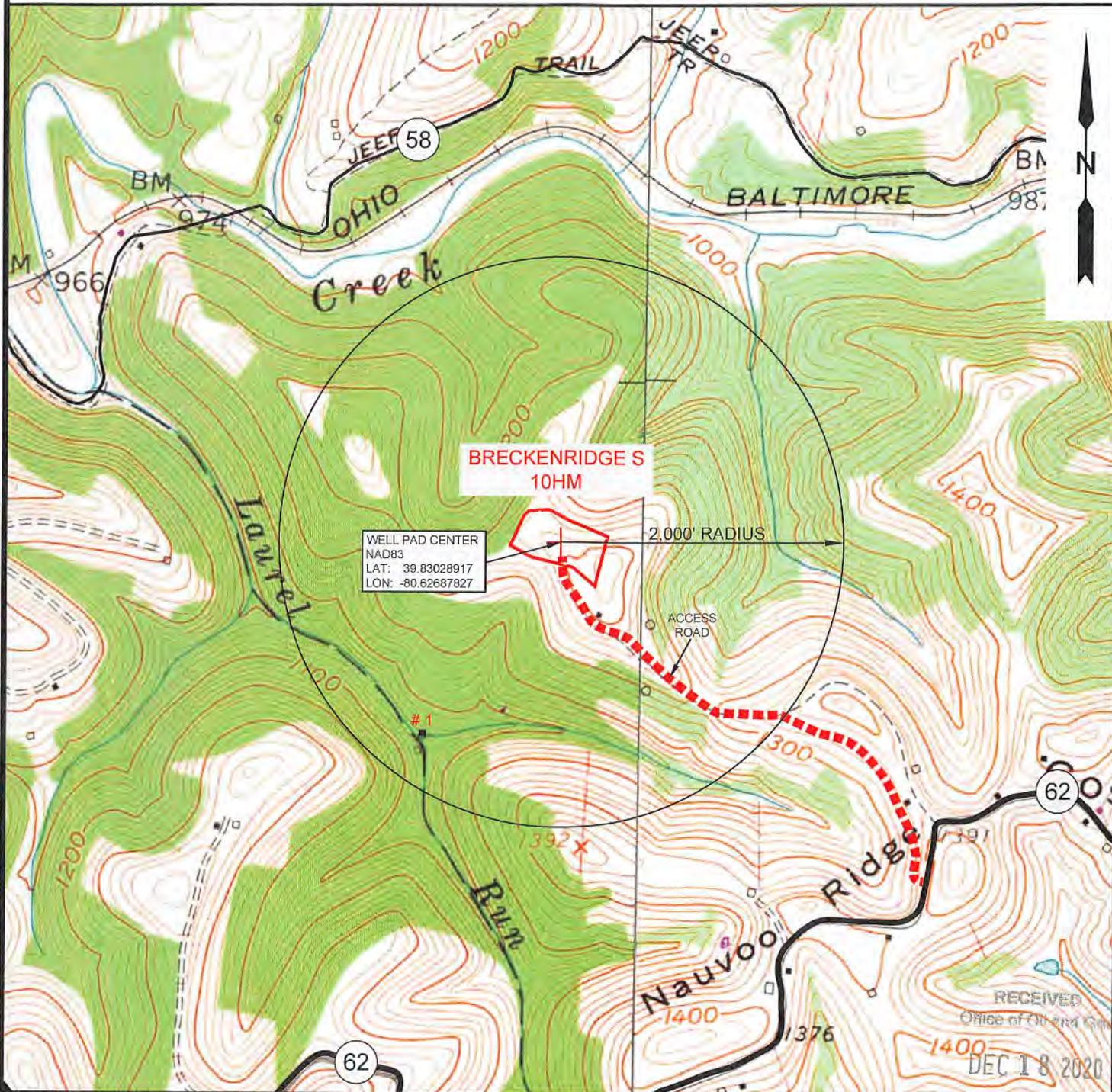
November 2020

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PROPOSED BRECKENRIDGE S - 10HM



NOTE: THERE APPEARS TO BE ONE (1) POSSIBLE WATER SOURCE WITHIN 2,000'.

WV Department of Environmental Protection



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 1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
 254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296
 slswv.com

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR: TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317	
COUNTY	DISTRICT		
MARSHALL	CAMERON		
DRAWN BY	JOB NO.	DATE	SCALE
K.G.M.	9026	11/10/2020	1" = 1000'



TUG HILL
OPERATING

11,235' B.H.

487' T.H.

**BRECKENRIDGE S
WELL 10HM
TUG HILL OPERATING**

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

T.H.

B.H.

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)		
NAD'83 S.P.C. (FT)	N. 486,516.05	E. 1,652,075.57
NAD'83 GEO.	LAT-(N) 39.830284	LONG-(W) 80.626735
NAD'83 UTM (M)	N. 4,408,987.29	E. 531,940.61
LANDING POINT		
NAD'83 S.P.C. (FT)	N. 486,569.5	E. 1,652,263.4
NAD'83 GEO.	LAT-(N) 39.830437	LONG-(W) 80.626068
NAD'83 UTM (M)	N. 4,409,004.5	E. 531,997.6
BOTTOM HOLE		
NAD'83 S.P.C. (FT)	N. 485,217.5	E. 1,653,014.1
NAD'83 GEO.	LAT-(N) 39.826751	LONG-(W) 80.623335
NAD'83 UTM (M)	N. 4,408,596.4	E. 532,233.1

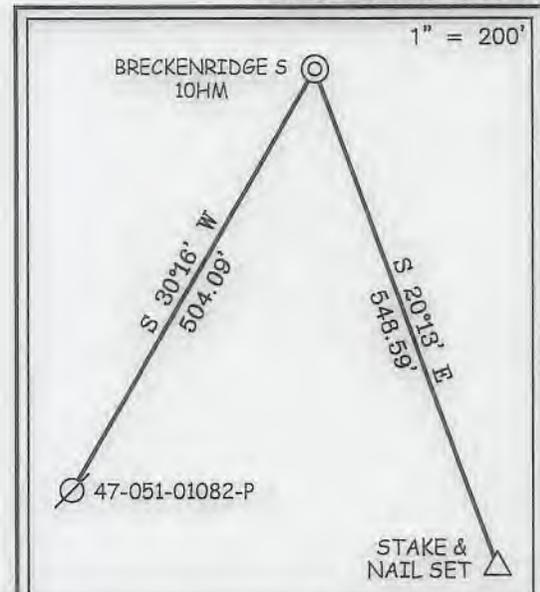
T.H. LONGITUDE 80°37'30"
B.H. LONGITUDE 80°35'00"

1,111' T.H.
2,388' B.H.

NOTES ON SURVEY

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

REFERENCES

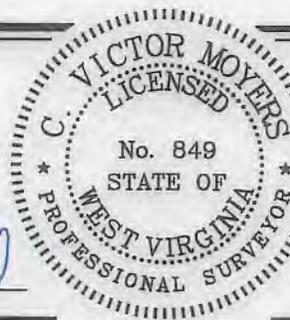


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1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296
slswv.com

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 849

C. Victor Moyers



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

DATE NOVEMBER 10, 2020

REVISED _____, 20____

OPERATORS WELL NO. BRECKENRIDGE S-10HM

API H6A

WELL NO. 47-051-02346

STATE 47 COUNTY 051 PERMIT 02346

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 9026P10HM.dwg
BRECKENRIDGE S-10HM-REV3

HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 2000'

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



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

LOCATION: ELEVATION GROUND = 1,380.00' PROPOSED = 1,370.10' WATERSHED GRAVE CREEK (HUC 10) & LAUREL RUN

DISTRICT CAMERON COUNTY MARSHALL QUADRANGLE GLEN EASTON 7.5'

SURFACE OWNER CNX LAND LLC ACREAGE 53.25±

ROYALTY OWNER HASAN'S VENTURES, ET AL ACREAGE 53.25±

PROPOSED WORK: LEASE NO. SEE WW-6A1

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD

FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION MARCELLUS

ESTIMATED DEPTH TVD: 7,115' / TMD: 8,940'

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

COUNTY NAME

PERMIT

WW-6A1
(5/13)

Operator's Well No. Breckenridge S-10HM

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

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

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

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

*See attached pages

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**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 *Amy L. Morris*
 Its: Permitting Specialist - Appalachia Region

4705102346

WW - 6A1 Supplement

Operator's Well No. Breckenridge S - 10HM

Lease ID	Parcel	Tags	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page		Assignment	Assignment	Assignment
10*31241	3-19-76	A	JAMES R. WAYT **	TRANS ENERGY, INC. AND REPUBLIC ENERGY VENTURES, LI	1/8+	729	40	Trans Energy Inc to Republic Energy Ventures LLC: 24/260	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII, LLC, Republic Partners VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to TH Exploration LLC: 48/21
10*31242	3-19-76	A	EVELYN L. BUTLER **	TRANS ENERGY, INC. AND REPUBLIC ENERGY VENTURES, LI	1/8+	729	49	Trans Energy Inc to Republic Energy Ventures LLC: 24/260	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII, LLC, Republic Partners VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to TH Exploration LLC: 48/21

** LESSOR CONVEYED TO MERIDIUS VENTURES, LLC AND HASAN'S VENTURES, LLC ON 12/3/2013, IN DB 811/494

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Environmental Protection

ASSIGNMENT AND BILL OF SALE

This ASSIGNMENT AND BILL OF SALE (this "*Assignment*") dated as of December 1, 2020 (the "*Execution Date*"), is made by and between EQT PRODUCTION COMPANY, a Pennsylvania corporation, with an address at 625 Liberty Avenue, Suite 1700, Pittsburgh, Pennsylvania 15222 ("*EQT*"), and TH EXPLORATION, LLC, a Texas limited liability company, with an address at 1320 S. University Drive, Suite 500, Fort Worth, Texas 76107 ("*TH*") pursuant to the terms of that certain Acreage Trade Agreement by and among EQT, TH and TH Exploration II, LLC ("*TH II*"), dated July 8, 2020 (the "*Agreement*"). EQT and TH may be referred to herein together as the "*Parties*", and each individually as a "*Party*".

RECITALS

WHEREAS, EQT desires to transfer, convey and assign to TH certain of EQT's oil and gas leasehold interests located in Marshall County, West Virginia set forth on Exhibit A attached hereto and incorporated herein ("*EQT Leases*") in accordance with this Assignment and the Agreement; and

WHEREAS, TH desires to receive from EQT, all of EQT's right, title and interest in and to the EQT Leases in accordance with this Assignment and the Agreement.

NOW, THEREFORE, for and in consideration of the mutual promises contained herein and in the Agreement, the benefits to be derived by each Party hereunder and under the Agreement, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby agree as follows:

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ARTICLE I DEFINED TERMS

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Environmental Protection

1.1 Definitions. Capitalized terms used herein and not otherwise defined throughout this Assignment shall have the meanings given such terms in the Agreement.

ARTICLE II ASSIGNMENT OF ASSETS

2.1 Assignment. Subject to the terms and conditions of this Assignment and the Agreement, EQT does hereby assign, convey and transfer to TH all of the right, title and interest of EQT in and to the following (collectively for purposes of this Assignment, the "*EQT Assets*"):

(a) Subject to the conveyance of the Wells Assets from EQT to TH II as described in the Agreement, the EQT Leases and appurtenances thereto (including rights of access and to install facilities), all Hydrocarbons within, produced from, derived from, or sold from the EQT Leases (and all proceeds related thereto), on and after the Valuation Date, and all Surface Contracts including but not limited to those set forth on Exhibit B attached hereto and incorporated herein (the "*EQT Surface Contracts*") related to the EQT Leases and such Hydrocarbons; and

(b) Copies of deeds, files and all other ownership information directly related to the acquisition, operations and maintenance of the EQT Leases, lease files for the EQT Leases



TUG HILL

4705102346

December 15, 2020

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

RE: Breckenridge S-10HM

Subject: Road Crossing Letter

Dear Laura:

Tug Hill Operating, LLC will not be drilling, extracting or producing any minerals under any WV County or State Routes in the area reflected on the Breckenridge S-10HM well plat.

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-hill.com.

Sincerely,

Amy L. Morris
Permitting Specialist – Appalachia Region

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

Date of Notice Certification: 12/15/2020

API No. 47- 051 -

Operator's Well No. Breckenridge S-10NM

Well Pad Name: Breckenridge

Notice has been given:

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

State:	<u>West Virginia</u>	UTM NAD 83 Easting:	<u>531,940.61</u>
County:	<u>Marshall</u>	UTM NAD 83 Northing:	<u>4,108,987.29</u>
District:	<u>Cameron</u>	Public Road Access:	<u>CR 82</u>
Quadrangle:	<u>Glen Easton 7.5'</u>	Generally used farm name:	<u>CNX Land, LLC</u>
Watershed:	<u>Grave Creek (HUC 10) & Laurel Run</u>		

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

<p>Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p style="padding-left: 100px;"><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p align="center">OOG OFFICE USE ONLY</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p>
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Required Attachments:

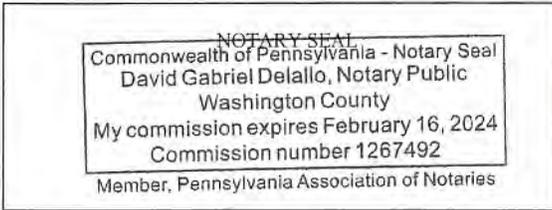
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication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

4705102346

Certification of Notice is hereby given:

THEREFORE, I Amy L. Morris, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator:	<u>Tug Hill Operating, LLC</u>	Address:	<u>380 Southpointe Boulevard, Plaza II, Suite 200</u>
By:	<u>Amy L. Morris <i>Amy L. Morris</i></u>		<u>Canonsburg, PA 15317</u>
Its:	<u>Permitting Specialist - Appalachia Region</u>	Facsimile:	<u>724-338-2030</u>
Telephone:	<u>724-749-8388</u>	Email:	<u>amorris@tug-hillop.com</u>



Subscribed and sworn before me this 15 day of DECEMBER, 2020

David Gabriel Delallo Notary Public

My Commission Expires 2/16/2024

Oil and Gas Privacy Notice:

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

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

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

Date of Notice: 12/15/2020 Date Permit Application Filed: 12/17/2020

Notice of:

- PERMIT FOR ANY WELL WORK
- CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

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

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

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

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

SURFACE OWNER(s)
Name: CNX Land, LLC (Well Pad and Access Road)
Address: 1000 Consol Energy Drive
Canonsburg, PA 15317
Name: _____
Address: _____

COAL OWNER OR LESSEE
Name: CNX Land, LLC
Address: 1000 Consol Energy Drive
Canonsburg, PA 15317

COAL OPERATOR
Name: Murray American Energy, Inc. attn: Mason Smith
Address: 45226 National Road
St. Clairsville, OH 43905

SURFACE OWNER(s) (Road and/or Other Disturbance)
Name: Kevin R. & Shelly Jo Evans
Address: 3820 New Bethel Road
Cameron, WV 26033
Name: David L. & Arianne R. Robinson
Address: 3518 New Bethel Road
Cameron, WV 26033

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)
Name: *see attached
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)
Name: _____
Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD
Name: _____
Address: _____

*Please attach additional forms if necessary

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Notice is hereby given:

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

This Notice Shall Include:

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

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

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

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

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

Well Location Restrictions

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

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API NO. 47-051 -
OPERATOR WELL NO. Breckenridge S-10HM
Well Pad Name: Breckenridge

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 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

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Environmental Protection

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

Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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

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API NO. 47-051
OPERATOR WELL NO. Breckenridge S-10HM
Well Pad Name: Breckenridge

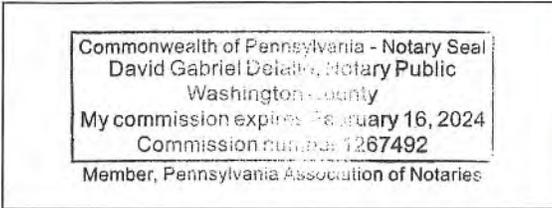
Notice is hereby given by:

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

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

Oil and Gas Privacy Notice:

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



Subscribed and sworn before me this 15 day of December 2020
[Signature] Notary Public
My Commission Expires 2/16/2024

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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: Breckenridge S – 10HM
District: Cameron
State: WV

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

Residence (#1)

TM 3-19-78

CNX Land, LLC

Phone: 724-485-4000

Physical Address:

Unknown – Possible Unoccupied Home
or Hunting Cabin

Tax Address:

1000 Consol Energy DR
Canonsburg, PA 15317-6506

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STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF ENTRY FOR PLAT SURVEY

Notice Time Requirement: Notice shall be provided at least **SEVEN (7)** days but no more than **FORTY-FIVE (45)** days prior to entry

Date of Notice: 12/1/2020 **Date of Planned Entry:** 12/7/2020

Delivery method pursuant to West Virginia Code § 22-6A-10a

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

Pursuant to West Virginia Code § 22-6A-10(a), Prior to filing a permit application, the operator shall provide notice of planned entry on to the surface tract to conduct any plat surveys required pursuant to this article. Such notice shall be provided at least seven days but no more than forty-five days prior to such entry to: (1) The surface owner of such tract; (2) to any owner or lessee of coal seams beneath such tract that has filed a declaration pursuant to section thirty-six, article six, chapter twenty-two of this code; and (3) any owner of minerals underlying such tract in the county tax records. The notice shall include a statement that copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, which statement shall include contact information, including the address for a web page on the Secretary's web site, to enable the surface owner to obtain copies from the secretary.

Notice is hereby provided to:

SURFACE OWNER(s)

Name: CNX Land, LLC (Well Pad and Access Road)

Address: 1000 Consol Energy Drive
Canonsburg, PA 15317

Name: Kevin R & Shelly Jo Evans (Access Road)

Address: 3820 New Bethel Road
Cameron, WV 26033

Name: David L. & Arianne R. Robinson

Address: 3518 New Bethel Road
Cameron, WV 26033

COAL OWNER OR LESSEE

Name: CNX Land, LLC

Address: 1000 Consol Energy Drive
Canonsburg, PA 15317

MINERAL OWNER(s)

Name: Onward E. Burge

Address: RD 3 Box 33
Cameron, WV 26033 ****See attached list**

**please attach additional forms if necessary*

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Notice is hereby given:

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

State: <u>West Virginia</u>	Approx. Latitude & Longitude: <u>39.83027651; -80.62685846</u>
County: <u>Marshall</u>	Public Road Access: <u>County Route 62</u>
District: <u>Cameron</u>	Watershed: <u>Grave Creek (HUC 10) and Laurel Run</u>
Quadrangle: <u>Glen Easton 7.5'</u>	Generally used farm name: <u>CNX Land, LLC</u>

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

Notice is hereby given by:

Well Operator: <u>Tug Hill Operating, LLC</u>	Address: <u>380 Southpointe Boulevard, Plaza II, Suite 200</u>
Telephone: <u>724-749-8388</u>	<u>Canonsburg, PA 15317</u>
Email: <u>amorris@tug-hilltop.com</u>	Facsimile: <u>724-338-2020</u>

Oil and Gas Privacy Notice:

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

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WW-6A3 Attachment
Breckenridge Well Pad

Jan Marie Crego 2110 Plum Street Parkersburg, WV 26101	Nina K. Fletcher 45 Briarwood Drive Wheeling, WV 26003
Leon McCard 25 Honour Cir NW Atlanta, GA 30305	Gary Briggs 1508 26th Street Cody, WY 82414
Jeff and Connie Briggs 803 Meadow Lane Ave Apt 5 Cody, WY 42414	Roger L. Briggs 908 Amble Court Harrington, DE 19952
Thomas A. Briggs 996 Tunnel Hill Road Cameron, WV 26033	Julia A. Briggs 8154 W. Ohio State Lane NW Lancaster, OH 43130
Deena J. Palomo 20 Maxwell Street, Apartment 4 Hebron, IN 46341	Jerrilyn Litts 5582 Fairview Street Stevensville, MI 49127
Douglas Briggs PO Box 1416 Gillette, WY 82717	Gerri A Bannister 508 Richards Ave Gillette, WY 82717
John Briggs PO Box 2008 Richland, WA 99352	Noble Marcellus LP 15601 North Dallas Parkway, Suite 900 Addison, TX 75001
Meridius Ventures LLC PO Box 1099 Ripley, WV 25271	Hasan's Ventures LLC PO Box 1099 Ripley, WV 25271
Bounty Minerals LLC 777 Main Street, Suite 3400 Fort Worth, TX 76102	Goshorn Ridge, LLC 112 Algonquin Trace Wheeling, WV 26003

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

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

Date of Notice: 12/15/2020 **Date Permit Application Filed:** 12/17/2020

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

- CERTIFIED MAIL HAND
RETURN RECEIPT REQUESTED DELIVERY

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

Notice is hereby provided to the SURFACE OWNER(s)

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

Name: CNX Land, LLC
Address: 1000 Consol Energy Drive
Canonsburg, PA 15317

Name: Kevin R. and Shelly J. Evans *See Attached
Address: 3820 New Bethel Road
Cameron, WV 26033

Notice is hereby given:

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

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>531,940.61</u>
County:	<u>Marshall</u>		Northing:	<u>4,408,967.29</u>
District:	<u>Cameron</u>	Public Road Access:		<u>CR 62</u>
Quadrangle:	<u>Glen Easton 7.5'</u>	Generally used farm name:		<u>CNX Land, LLC</u>
Watershed:	<u>Grace Creek (Huc 10) & Laurel Run</u>			

This Notice Shall Include:

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

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

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

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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.

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**Additional Notice for WW-6A5
Breckenridge S-10HM**

David L. & Arianne R. Robinson
3518 New Bethel Road
Cameron, WV 26033

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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

Byrd E. White, III
Secretary of Transportation

December 14, 2020

Jimmy Wriston, P. E.
Deputy Secretary/
Acting Commissioner

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

Subject: DOH Permit for the Breckenridge Pad, Marshall County
Breckenridge S-10HM Well site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2020-0398 issued to Tug Hill Operating for access to the State Road for a well site located off Marshall County Route 62 SLS MP 3.81.

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.

Very Truly Yours,

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

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



PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION

Well No. Breckenridge S-10HM

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

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Breckenridge Well Site

Site Design, Construction Plan, & Erosion and Sediment Control Plans

Tug Hill Operating
Marshall County
Cameron District

Latitude 39.83027651°
Longitude -80.62685846°
Middle Grave Creek Watershed

Pertinent Site Information
Breckenridge Site
Emergency Number: 304-845-1920
Cameron District, Marshall County, WV
Watershed: Middle Grave Creek Watershed
Site 911 Address:
Tug Hill Contact Number: 1-817-632-1400



Property Owner Information - Breckenridge Well Site

Owner	Tract No.	Acres	Area (sq. ft.)	Area (acres)	Area (sq. ft.)	Area (acres)
State of West Virginia	10-1	1.00	136,370	1.00	136,370	1.00
Marshall County	10-2	1.00	136,370	1.00	136,370	1.00
Marshall County	10-3	1.00	136,370	1.00	136,370	1.00
Marshall County	10-4	1.00	136,370	1.00	136,370	1.00
Marshall County	10-5	1.00	136,370	1.00	136,370	1.00
Marshall County	10-6	1.00	136,370	1.00	136,370	1.00
Marshall County	10-7	1.00	136,370	1.00	136,370	1.00
Marshall County	10-8	1.00	136,370	1.00	136,370	1.00
Marshall County	10-9	1.00	136,370	1.00	136,370	1.00
Marshall County	10-10	1.00	136,370	1.00	136,370	1.00
Marshall County	10-11	1.00	136,370	1.00	136,370	1.00
Marshall County	10-12	1.00	136,370	1.00	136,370	1.00
Marshall County	10-13	1.00	136,370	1.00	136,370	1.00
Marshall County	10-14	1.00	136,370	1.00	136,370	1.00
Marshall County	10-15	1.00	136,370	1.00	136,370	1.00
Marshall County	10-16	1.00	136,370	1.00	136,370	1.00
Marshall County	10-17	1.00	136,370	1.00	136,370	1.00
Marshall County	10-18	1.00	136,370	1.00	136,370	1.00
Marshall County	10-19	1.00	136,370	1.00	136,370	1.00
Marshall County	10-20	1.00	136,370	1.00	136,370	1.00
Marshall County	10-21	1.00	136,370	1.00	136,370	1.00
Marshall County	10-22	1.00	136,370	1.00	136,370	1.00
Marshall County	10-23	1.00	136,370	1.00	136,370	1.00
Marshall County	10-24	1.00	136,370	1.00	136,370	1.00
Marshall County	10-25	1.00	136,370	1.00	136,370	1.00
Marshall County	10-26	1.00	136,370	1.00	136,370	1.00
Marshall County	10-27	1.00	136,370	1.00	136,370	1.00
Marshall County	10-28	1.00	136,370	1.00	136,370	1.00
Marshall County	10-29	1.00	136,370	1.00	136,370	1.00
Marshall County	10-30	1.00	136,370	1.00	136,370	1.00
Marshall County	10-31	1.00	136,370	1.00	136,370	1.00
Marshall County	10-32	1.00	136,370	1.00	136,370	1.00
Marshall County	10-33	1.00	136,370	1.00	136,370	1.00
Marshall County	10-34	1.00	136,370	1.00	136,370	1.00
Marshall County	10-35	1.00	136,370	1.00	136,370	1.00
Marshall County	10-36	1.00	136,370	1.00	136,370	1.00
Marshall County	10-37	1.00	136,370	1.00	136,370	1.00
Marshall County	10-38	1.00	136,370	1.00	136,370	1.00
Marshall County	10-39	1.00	136,370	1.00	136,370	1.00
Marshall County	10-40	1.00	136,370	1.00	136,370	1.00
Marshall County	10-41	1.00	136,370	1.00	136,370	1.00
Marshall County	10-42	1.00	136,370	1.00	136,370	1.00
Marshall County	10-43	1.00	136,370	1.00	136,370	1.00
Marshall County	10-44	1.00	136,370	1.00	136,370	1.00
Marshall County	10-45	1.00	136,370	1.00	136,370	1.00
Marshall County	10-46	1.00	136,370	1.00	136,370	1.00
Marshall County	10-47	1.00	136,370	1.00	136,370	1.00
Marshall County	10-48	1.00	136,370	1.00	136,370	1.00
Marshall County	10-49	1.00	136,370	1.00	136,370	1.00
Marshall County	10-50	1.00	136,370	1.00	136,370	1.00
Marshall County	10-51	1.00	136,370	1.00	136,370	1.00
Marshall County	10-52	1.00	136,370	1.00	136,370	1.00
Marshall County	10-53	1.00	136,370	1.00	136,370	1.00
Marshall County	10-54	1.00	136,370	1.00	136,370	1.00
Marshall County	10-55	1.00	136,370	1.00	136,370	1.00
Marshall County	10-56	1.00	136,370	1.00	136,370	1.00
Marshall County	10-57	1.00	136,370	1.00	136,370	1.00
Marshall County	10-58	1.00	136,370	1.00	136,370	1.00
Marshall County	10-59	1.00	136,370	1.00	136,370	1.00
Marshall County	10-60	1.00	136,370	1.00	136,370	1.00
Marshall County	10-61	1.00	136,370	1.00	136,370	1.00
Marshall County	10-62	1.00	136,370	1.00	136,370	1.00
Marshall County	10-63	1.00	136,370	1.00	136,370	1.00
Marshall County	10-64	1.00	136,370	1.00	136,370	1.00
Marshall County	10-65	1.00	136,370	1.00	136,370	1.00
Marshall County	10-66	1.00	136,370	1.00	136,370	1.00
Marshall County	10-67	1.00	136,370	1.00	136,370	1.00
Marshall County	10-68	1.00	136,370	1.00	136,370	1.00
Marshall County	10-69	1.00	136,370	1.00	136,370	1.00
Marshall County	10-70	1.00	136,370	1.00	136,370	1.00
Marshall County	10-71	1.00	136,370	1.00	136,370	1.00
Marshall County	10-72	1.00	136,370	1.00	136,370	1.00
Marshall County	10-73	1.00	136,370	1.00	136,370	1.00
Marshall County	10-74	1.00	136,370	1.00	136,370	1.00
Marshall County	10-75	1.00	136,370	1.00	136,370	1.00
Marshall County	10-76	1.00	136,370	1.00	136,370	1.00
Marshall County	10-77	1.00	136,370	1.00	136,370	1.00
Marshall County	10-78	1.00	136,370	1.00	136,370	1.00
Marshall County	10-79	1.00	136,370	1.00	136,370	1.00
Marshall County	10-80	1.00	136,370	1.00	136,370	1.00
Marshall County	10-81	1.00	136,370	1.00	136,370	1.00
Marshall County	10-82	1.00	136,370	1.00	136,370	1.00
Marshall County	10-83	1.00	136,370	1.00	136,370	1.00
Marshall County	10-84	1.00	136,370	1.00	136,370	1.00
Marshall County	10-85	1.00	136,370	1.00	136,370	1.00
Marshall County	10-86	1.00	136,370	1.00	136,370	1.00
Marshall County	10-87	1.00	136,370	1.00	136,370	1.00
Marshall County	10-88	1.00	136,370	1.00	136,370	1.00
Marshall County	10-89	1.00	136,370	1.00	136,370	1.00
Marshall County	10-90	1.00	136,370	1.00	136,370	1.00
Marshall County	10-91	1.00	136,370	1.00	136,370	1.00
Marshall County	10-92	1.00	136,370	1.00	136,370	1.00
Marshall County	10-93	1.00	136,370	1.00	136,370	1.00
Marshall County	10-94	1.00	136,370	1.00	136,370	1.00
Marshall County	10-95	1.00	136,370	1.00	136,370	1.00
Marshall County	10-96	1.00	136,370	1.00	136,370	1.00
Marshall County	10-97	1.00	136,370	1.00	136,370	1.00
Marshall County	10-98	1.00	136,370	1.00	136,370	1.00
Marshall County	10-99	1.00	136,370	1.00	136,370	1.00
Marshall County	10-100	1.00	136,370	1.00	136,370	1.00

Exhibit A: Final Design: Issue for Permitting



Area Breakdown

Area	Area (sq. ft.)	Area (acres)
Well Pad	136,370	1.00
Access Road	136,370	1.00
Drainage Basin	136,370	1.00
Other	136,370	1.00
Total	545,480	4.00

Disturbed Area

Category	Area (sq. ft.)	Area (acres)
Well Pad	136,370	1.00
Access Road	136,370	1.00
Drainage Basin	136,370	1.00
Other	136,370	1.00
Total	545,480	4.00

Breckenridge Well Site Worksheet

Item	Area (sq. ft.)	Area (acres)
Well Pad	136,370	1.00
Access Road	136,370	1.00
Drainage Basin	136,370	1.00
Other	136,370	1.00
Total	545,480	4.00

Site Data Tables

Site	Area (sq. ft.)	Area (acres)
Site 1	136,370	1.00
Site 2	136,370	1.00
Site 3	136,370	1.00
Site 4	136,370	1.00
Site 5	136,370	1.00
Site 6	136,370	1.00
Site 7	136,370	1.00
Site 8	136,370	1.00
Site 9	136,370	1.00
Site 10	136,370	1.00
Site 11	136,370	1.00
Site 12	136,370	1.00
Site 13	136,370	1.00
Site 14	136,370	1.00
Site 15	136,370	1.00
Site 16	136,370	1.00
Site 17	136,370	1.00
Site 18	136,370	1.00
Site 19	136,370	1.00
Site 20	136,370	1.00
Site 21	136,370	1.00
Site 22	136,370	1.00
Site 23	136,370	1.00
Site 24	136,370	1.00
Site 25	136,370	1.00
Site 26	136,370	1.00
Site 27	136,370	1.00
Site 28	136,370	1.00
Site 29	136,370	1.00
Site 30	136,370	1.00
Site 31	136,370	1.00
Site 32	136,370	1.00
Site 33	136,370	1.00
Site 34	136,370	1.00
Site 35	136,370	1.00
Site 36	136,370	1.00
Site 37	136,370	1.00
Site 38	136,370	1.00
Site 39	136,370	1.00
Site 40	136,370	1.00
Site 41	136,370	1.00
Site 42	136,370	1.00
Site 43	136,370	1.00
Site 44	136,370	1.00
Site 45	136,370	1.00
Site 46	136,370	1.00
Site 47	136,370	1.00
Site 48	136,370	1.00
Site 49	136,370	1.00
Site 50	136,370	1.00
Site 51	136,370	1.00
Site 52	136,370	1.00
Site 53	136,370	1.00
Site 54	136,370	1.00
Site 55	136,370	1.00
Site 56	136,370	1.00
Site 57	136,370	1.00
Site 58	136,370	1.00
Site 59	136,370	1.00
Site 60	136,370	1.00
Site 61		

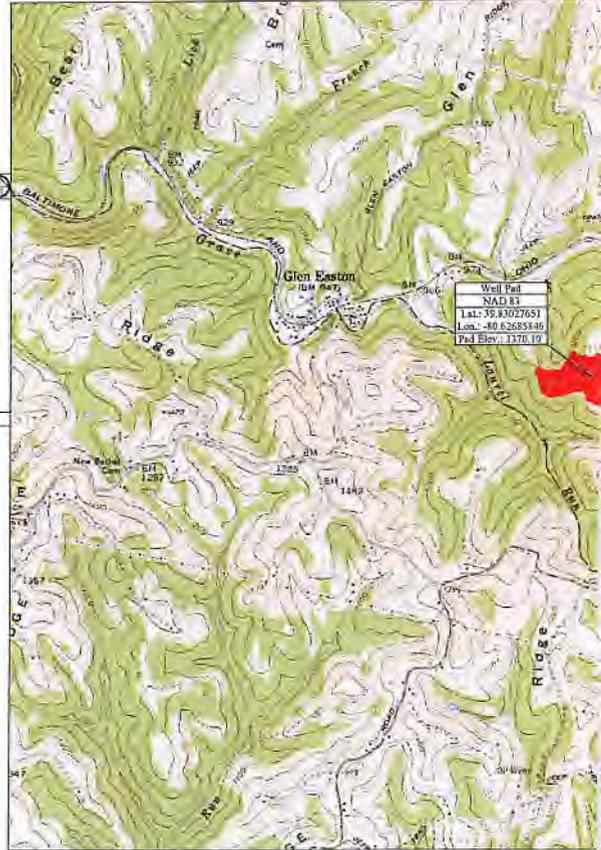
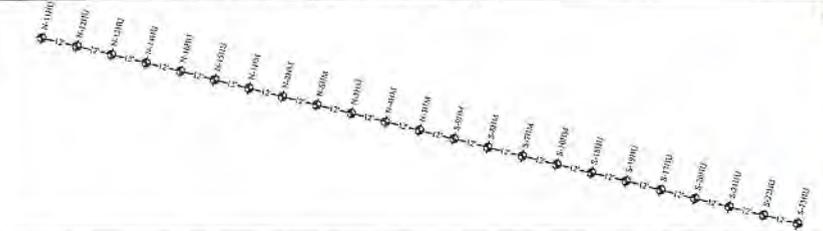
Site Design, Construction
Erosion and Sedimentation
Tug Hill
Marsh
Came
Latitude
Longitude
Middle Gray

Exhibit A: Final Design

WEST VIRGINIA COUNTY MAP



Site Entrance	Center of Well Pad	Center of Production Pad
WV-NAD 83 N: 484141.42 WV-NAD 83 E: 1659833.23 WV-NAD 27 N: 4841384.27 WV-NAD 27 E: 1666669.34 Lat. NAD 83: 39.827385277 Lon. NAD 83: -80.617322956 Lat. NAD 27: 39.827374222 Lon. NAD 27: -80.617771994 UTM 17 NAD 83 N: 4408276.86 UTM 17 NAD 83 E: 532731.90	WV-NAD 83 N: 486537.88 WV-NAD 83 E: 1653248.75 WV-NAD 27 N: 4865475.75 WV-NAD 27 E: 1653478.89 Lat. NAD 83: 39.83027651 Lon. NAD 83: -80.62985346 Lat. NAD 27: 39.83019627 Lon. NAD 27: -80.62765512 UTM 17 NAD 83 N: 4408586.44 UTM 17 NAD 83 E: 531980.01 Pad Elev: 1370.10'	WV-NAD 83 N: 486220.14 WV-NAD 83 E: 1652408.96 WV-NAD 27 N: 486192.00 WV-NAD 27 E: 1683885.10 Lat. NAD 83: 39.82959825 Lon. NAD 83: -80.62546355 Lat. NAD 27: 39.82942996 Lon. NAD 27: -80.62560625 UTM 17 NAD 83 N: 4409051.68 UTM 17 NAD 83 E: 532049.75 Pad Elev: 1401.88'



Well Table			
WV-NAD 83 N: 486537.88 WV-NAD 83 E: 1653248.75 WV-NAD 27 N: 4865475.75 WV-NAD 27 E: 1653478.89 Lat. NAD 83: 39.83027651 Lon. NAD 83: -80.62985346 Lat. NAD 27: 39.83019627 Lon. NAD 27: -80.62765512 UTM 17 NAD 83 N: 4408586.44 UTM 17 NAD 83 E: 531980.01	WV-NAD 83 N: 486220.14 WV-NAD 83 E: 1652408.96 WV-NAD 27 N: 486192.00 WV-NAD 27 E: 1683885.10 Lat. NAD 83: 39.82959825 Lon. NAD 83: -80.62546355 Lat. NAD 27: 39.82942996 Lon. NAD 27: -80.62560625 UTM 17 NAD 83 N: 4409051.68 UTM 17 NAD 83 E: 532049.75	WV-NAD 83 N: 486537.88 WV-NAD 83 E: 1653248.75 WV-NAD 27 N: 4865475.75 WV-NAD 27 E: 1653478.89 Lat. NAD 83: 39.83027651 Lon. NAD 83: -80.62985346 Lat. NAD 27: 39.83019627 Lon. NAD 27: -80.62765512 UTM 17 NAD 83 N: 4408586.44 UTM 17 NAD 83 E: 531980.01	WV-NAD 83 N: 486220.14 WV-NAD 83 E: 1652408.96 WV-NAD 27 N: 486192.00 WV-NAD 27 E: 1683885.10 Lat. NAD 83: 39.82959825 Lon. NAD 83: -80.62546355 Lat. NAD 27: 39.82942996 Lon. NAD 27: -80.62560625 UTM 17 NAD 83 N: 4409051.68 UTM 17 NAD 83 E: 532049.75

Well ID	Well Type	Well Depth (ft)	Well Status
WV-NAD 83 N: 486537.88	Production	486537.88	Active
WV-NAD 83 E: 1653248.75	Production	1653248.75	Active
WV-NAD 27 N: 4865475.75	Production	4865475.75	Active
WV-NAD 27 E: 1653478.89	Production	1653478.89	Active

Project Contacts

Tug Hill Operating
Jonathan White - Regulatory Analyst
724-485-2000 OIR, 304-699-7576 Cell
817-632-3200 OIR

Geoff Rastler - V.P. Production
817-632-3200 OIR

Tug Hill Operating, LLC
380 Southpointe Blvd
Southpointe Plaza II, Suite 200
Censusburg, PA 15317

Survey and Engineer

Kenneth Kelly
304-538-4985 OIR

John P. See
304-442-0220 OIR

Zachary Summerford
304-458-6087 OIR

Geotechnical Engineer
Civil & Environmental
Consultants, Inc
304-933-3119 OIR

Environmental

Wetland Delineations as provided by Afflor Ecology dated June 26, 2020

Topographic Information

The topographic information shown herein is based on aerial photography by Blue Mountain Aerial Mapping, Boone, WV

MISS UTILITY OF WEST VIRGINIA
1-800-245-4848
West Virginia State Law Section XIV, Chapter 24-C requires that you call before you dig in the state of West Virginia.
IT'S THE LAW



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

The WV Mines Website was consulted. Current mining activities are within the AOI.

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

Approach Routes

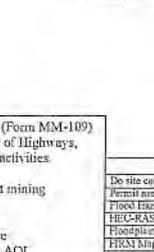
From the intersection of WV Rt 2 and OH Rt 7 in New Martinsville, WV. Travel North on WV Rt 2 for 21.2 mi. Turn Right onto WV Alt Rt 2 (Round Bottom Hill). Follow WV Alt Rt 2 for 1.5 mi. Turn Right onto Co Rt 88/5 (Lindsay Lane). Follow Co Rt 88/5 for 1.8 mi. Turn Right onto Co Rt 21 (Roberts Ridge). Follow Co Rt 21 for 9.1 mi. Turn Left onto Co Rt 62 (New Bethel). Follow Co Rt 62 for 3.7 mi. The site entrance will be on the Left (West) side of the road.

Floodplain Conditions

Do site construction activities take place in a floodplain:	NO
Permit needed from county floodplain coordinator:	NO
Flood Hazard Zone:	X
Flood Hazard Scale/extent/depth:	N/A
Floodplain shown on drawings:	N/A
FRM Map Number(s) for site:	5493610000 & 5493610200
Accesses per construction in floodplain:	N/A

Site Locations (NAD 27)

Structure	Latitude (DD)	Longitude (DD)
Site Entrance	39.83019627	-80.62765512
Center of Well Pad	39.83019627	-80.62765512
Center of Production Pad	39.82942996	-80.62560625



Large Well Site

Construction Plan, &
 Erosion Control Plans
 Operating
 All County
 in District
 39.83027651°
 80.62685846°
 Middle Grave Creek Watershed

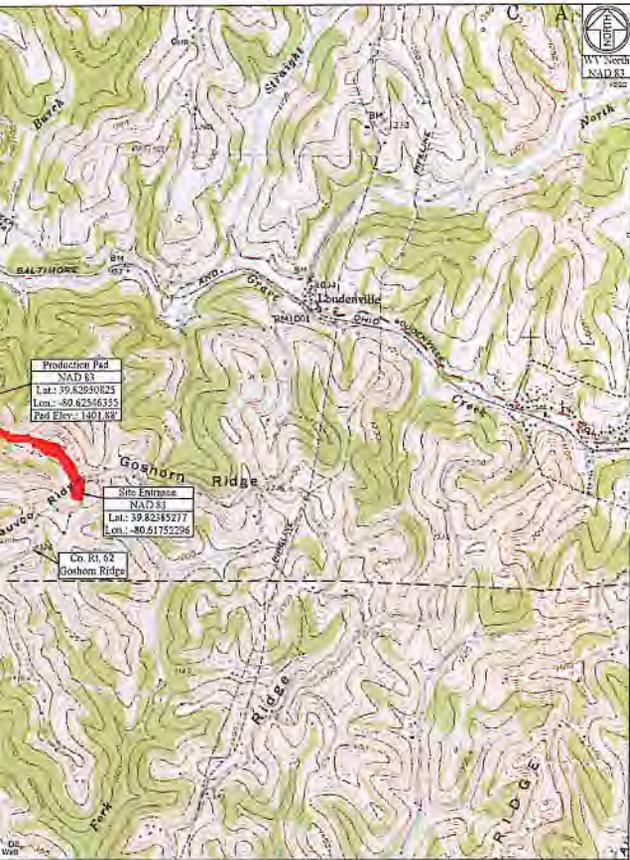
Design: Issue for Permitting

Pertinent Site Information
Breckenridge Site
 Emergency Number: 304-845-1920
 Cameron District, Marshall County, WV
 Watershed: Middle Grave Creek Watershed
 Site 911 Address:

 Tug Hill Contact Number: 1-817-632-3400

Property Owner Information - Breckenridge Well Site

Owner	TM - Parcel	Well Pad	Prod. Pad	Access Road	Topsoil/Excav	Add. Clearing	Total Disturbed
David & Arnette Robinson	18-33	0.00	0.00	0.75	0.00	0.75	1.38
Kevin Evans	18-2	0.00	0.00	2.96	0.00	4.63	7.59
CNX Land, LLC	18-1	0.00	0.00	0.69	0.00	0.94	1.63
CNX Land, LLC	19-76	7.50	2.69	3.36	0.07	10.27	24.09
CNX Land, Inc	19-74	0.71	0.00	0.67	2.84	6.02	10.64
CNX Land, LLC	19-79	0.00	0.00	0.22	0.00	0.42	0.67
Site 10th(Ac)	8.21	2.59	8.85	2.71	22.94	45.40	



WV State Plane Coordinate System
 North Zone, NAD 83
 Elevations Based on NAVD 83
 Established By Survey Grade GPS
 and OPUS Post-Processing

Access Road

Surface Owner	TM - Parcel	Road Length	Type
David & Arnette Robinson	18-33	232.05'	New Access Road Construction
Kevin Evans	18-2	1,095.09'	New Access Road Construction
CNX Land, LLC	18-1	410.25'	New Access Road Construction
CNX Land, LLC	19-76	3,161.73'	New Access Road Construction
CNX Land, Inc	19-74	723.04'	New Access Road Construction
CNX Land, LLC	19-79	252.15'	New Access Road Construction

Disturbed Area

Well Pad Construction	8.21 Ac
Production Pad Construction	2.59 Ac
Access Road Construction	8.85 Ac
Topsoil/Excav Material	2.71 Ac
Additional Clearing	22.94 Ac
Total Disturbed Area	45.40 Ac

Additional Information

Total Wooded Acres Disturbed	20.12 Ac
Total Linear Feet of Access Road	6,335.49'

Breckenridge Well Site Quantities

Description	Cut (CY)	Fill (CY)	Spoil (CY)	Borrow (CY)	Max. Slope	Length of Slope
Well Pad	115,440.99	105,822.77	9,618.22	-	N/A	N/A
Production Pad	33,077.96	2,457.99	30,619.97	-	N/A	N/A
Well Pad Access Road	18,900.50	38,119.13	-	20,262.53	15.00%	280.00'
Production Pad Access Road	588.99	307.47	271.52	-	15.00%	203.21'
Connector Access Road	441.17	324.79	-	83.62	20.00%	139.02'
Landowner Access Road #1	3,325.87	3,572.87	-	249.20	20.00%	158.06'
Landowner Access Road #2	1.28	512.21	-	510.93	26.70%	174.54'
Level Spreader #1	658.85	618.30	47.55	-	N/A	N/A
Level Spreader #2	658.11	463.29	192.82	-	N/A	N/A
Topsoil Stockpile #1	-	7,008.11	-	7,008.11	N/A	N/A
Topsoil Stockpile #2	-	20,050.03	-	20,050.03	N/A	N/A
Topsoil Stockpile #3	-	3,000.26	-	3,000.26	N/A	N/A
Totals	178,218.62	182,521.22	-10,702.98	24,156.64		(Excess Spoil Capacity)

Revision
 Design
 Date
 11-19-2020



THIS DOCUMENT
 PREPARED FOR
 TUG HILL
 OPERATING



Handwritten signature and date:
 11/19/2020

RECEIVED
 Office of Oil and Gas

DEC 18 2020

WV Department of
 Environmental Protection

Breckenridge Well Site
 Cameron District
 Marshall County, WV

Site Locations (NAD 83)

Structure	Latitude (DD)	Longitude (DD)
Site Entrance	39.8335277	-80.61752296
Center of Well Pad	39.83027651	-80.62685846
Center of Production Pad	39.82950825	-80.62546335



Well Location Restrictions
 All Pad construction complies with the following restrictions:

- *230' from an existing well or developed spring used for human or domestic animals
- *625' from an occupied dwelling or barn greater than 2,500 SF used for poultry or dairy measured from the center of the pad.
- *100' from the edge of disturbance to wetlands, perennial streams, nature or artificial lake, pond or reservoir.
- *300' from the edge of disturbance to a naturally reproducing trout stream.
- *1,000' of a surface or ground water intake to a public water supply.

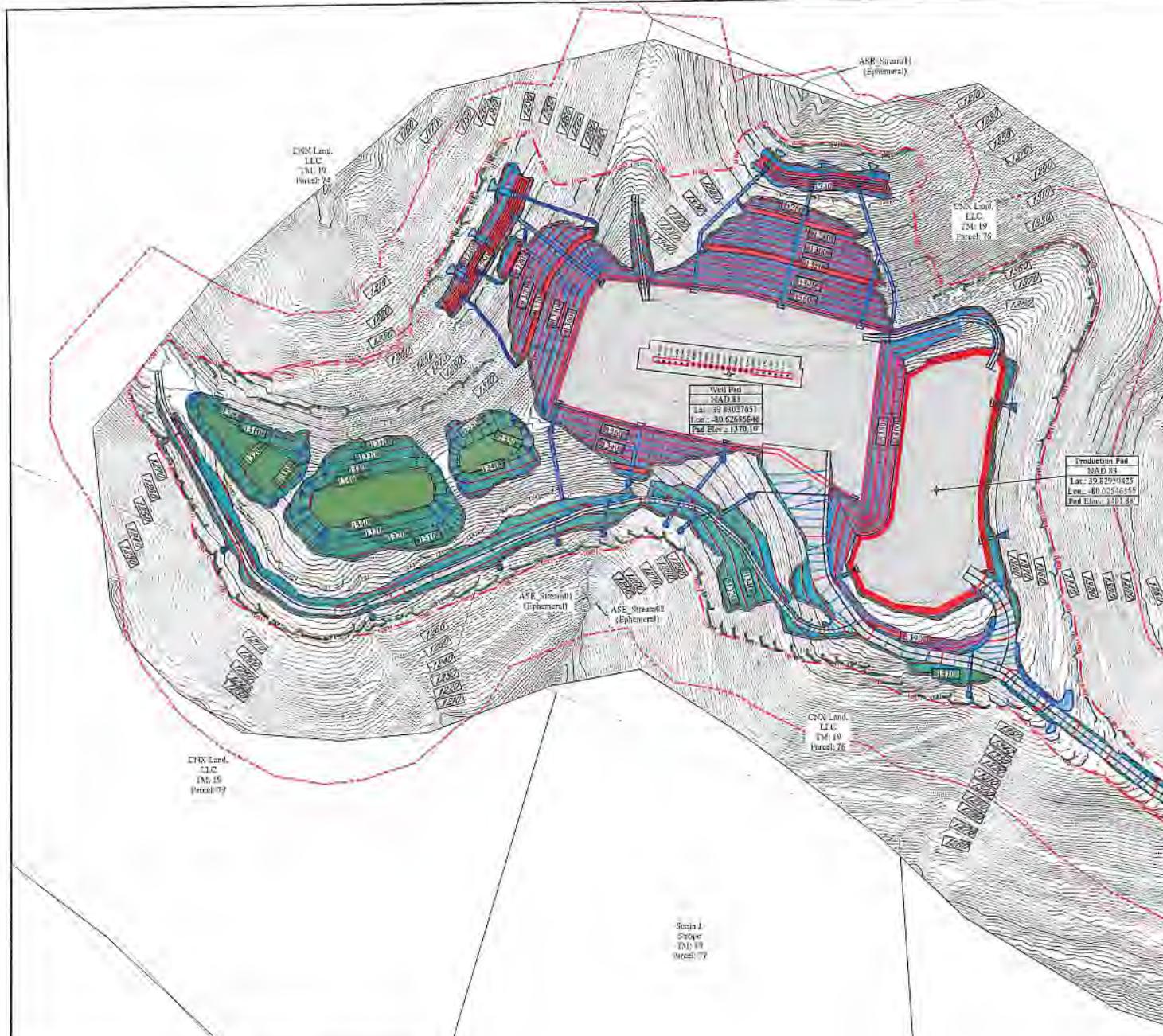
(Well Location Restrictions of WV Code 22-6A-12)



Design Certification
 The drawings, construction notes and reference diagrams attached herein have been prepared in accordance with the West Virginia Code of State Rules, Division of Environmental Protection, Office of Oil and Gas.
 All Plans, Sheets, and Reference Diagrams included in this design constitute a complete set of plans. A complete set of plans is necessary to construct this site in accordance with the design.
 Zackary C. Sumner
 Registered Professional Engineer
 Kelly Surveying, PLLC
 COA: C0472576
 Date: 11-19-2020

Sheet	Description
1	Cover Sheet
V1	Schedule of Quantities
N1-N4	Site Notes
2	Pre-Construction Site Conditions
3	Site Soil Map
4	Clearing Exhibit
5	Overall Plan View
6-9	E&S Plan View
10	Tree Key Exhibit
11-14	Plan View
15-20	Cross Sections - Well Pad
21-24	Cross Sections - Access Road
25-26	Cross Sections - Landowner Access Road
G1-G4	Geotechnical Exhibit
L1	Landowner Disturbed Area Exhibit
S1	Site Reclamation
M1-M3	Production Exhibit
D1-D2	Erosion and Sediment Control Details
R1	Access Road Details
P1	Pad Details
F1-F2	Fence Layout

Date: 11/19/2020
 Scale: As Shown
 Designed By: ZS
 File No.
 Sheet 1 of 26



CONSTRUCTION SEQUENCE

- A: Make utility sure-calls.
 B: Erect sign at entrance and ensure copy of EIS Plan is present in mailbox.
 C: Construct according to on-site EIS Plan:
- 1.) Install Stabilized Construction Entrance at beginning of Access Road.
 - 2.) Install all temporary/permanent erosion and sedimentation controls that do not require cleanup and/or grubbing to install. Seed and mulch all disturbed areas around the installed erosion and sedimentation controls.
 - 3.) Clear the proposed Well Pad, Production Pad, and Access Roads (Clearing is defined as the removal of trees, brush, down timber, rotten wood, rubbish, and other objectionable material at or above the original ground elevation not designated to be retained. Clearing also includes the removal of fences, posts, signs and demarcations or removal of other obstructions interfering with the proposed work).
 - 4.) Install the remaining temporary/permanent erosion and sedimentation controls that require clearing/grubbing. Seed and mulch all disturbed areas around the installed erosion and sedimentation controls. Install Temporary and Permanent Fence where feasible.
 - 5.) Grub the Proposed Access Roads (Grubbing is defined as the removal of soil below the original ground elevation of stumps, roots, stumps, brush, organic materials, and debris as well as concrete and brick and other obstructions interfering with the proposed work). (Grubbing shall be kept to a minimum to reduce the amount of exposed soil prior to immediate construction).
 - 5.) Construct the Proposed Access Roads
 Install Top Keys and Bonding Benches
 - 7.) Seed and mulch and install erosion control blankets on all disturbed areas along the Proposed Access Roads. Prior to the placement of erosion control blankets, the surface shall be prepared and seeded. Seeding and mulching will be performed as the Proposed Access Roads are constructed to a minimum required level.
 - 8.) Grub the Proposed Well Pad and Production Pad and place topsoil in topsoil stockpiles (Grubbing shall be kept to a minimum to reduce the amount of exposed soil prior to immediate construction)
 Topsoil stockpiles shall have top keys
 - 9.) Construct the Proposed Well Pad and Production Pad
 Install Top Keys and Bonding Benches
 Install Well Pad Barn
 Install erosion control blankets on all disturbed areas along the Proposed Well Pad and Production Pad, including gully slopes (prior to the placement of the erosion control blankets, the slopes shall be prepared and seeded)
 - 11.) Seed and mulch and install erosion control blankets on all disturbed areas along the Proposed Well Pad, including Tank Pad slopes (prior to the placement of erosion control blankets, the slopes shall be prepared and seeded).
 - 12.) Keep all erosion and sedimentation controls in place until there is 70% growth over the entire site.
- The contractor shall not deviate from the above listed construction sequence without the written consent of the design engineer. The contractor shall provide a written explanation and provide an updated construction sequence when requesting permission to deviate from the construction sequence.

Disturbed Area

Well Pad Construction	8.21 Ac
Production Pad Construction	2.69 Ac
Access Road Construction	8.85 Ac
Topsoil / Excess Material	2.21 Ac
Additional Clearing	22.94 Ac
Total Disturbed Area	45.90 Ac

Additional Information

Total Wellpad Access Disturbance	33.42 Ac
Total Linear Feet of Access Road	6,345.49'

Access Road

Surface Owner	TM - Parcel	Row Length	Type
David & Arlene Robinson	18-3-3	202.65'	New Access Road Construction
Kevin Evans	18-2	1,493.09'	New Access Road Construction
CNS Land, LLC	19-1	470.38'	New Access Road Construction
CNS Land, LLC	19-76	2,161.78'	New Access Road Construction
CNS Land, Inc	19-74	721.84'	New Access Road Construction
CNS Land, LLC	19-79	235.18'	New Access Road Construction

Property Owner Information - Breckenridge Well Site

Cameron District - Marshall County

Owner	TM - Parcel	Well Pad	Access Road	Topsoil Excess	Add. Clearing	Total Disturbed
David & Arlene Robinson	18-3-3	0.00'	0.00'	0.75'	0.00'	1.75'
Kevin Evans	18-2	0.00'	0.00'	2.36'	0.00'	4.21'
CNS Land, LLC	18-1	0.00'	0.00'	0.00'	0.00'	0.00'
CNS Land, LLC	19-76	7.50'	2.69'	3.36'	0.00'	10.27'
CNS Land, Inc	19-74	0.71'	0.00'	0.00'	2.64'	6.02'
CNS Land, LLC	19-79	0.00'	0.00'	0.22'	0.00'	0.22'

Legend

	Original Ground 2' Contour		24' Compact Filler Soak		PEM Wetland
	Original Ground 10' Contour		Super Silt Fence		POW Wetland
	Design 10' Contour		Ephemeral Stream		Perennial Stream
	Design 10' Contour		Ephemeral Stream		Perennial Stream
	Center of Structure		Existing Utility Pole/Line		Top Key
	Fence - Existing		Gully Road		Erosion Control Blanket Slope Area
			Gully Road		TBM Slope Area
			Gully Road		Silt Check Dam

NOTE: All surface boundary lines shown herein are evidence collected with mapping grade GPS.

0 100 200

