



west virginia department of environmental protection

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

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

Friday, January 21, 2022
WELL WORK PERMIT
Horizontal 6A / New Drill

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

Re: Permit approval for BRECKENRIDGE S-26HM
47-051-02433-00-00

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.

A blue ink signature of James A. Martin.

James A. Martin
Chief

Operator's Well Number: BRECKENRIDGE S-26HM
Farm Name: CNX LAND LLC
U.S. WELL NUMBER: 47-051-02433-00-00
Horizontal 6A New Drill
Date Issued: 1/21/2022

Promoting a healthy environment.

01/28/2022

PERMIT CONDITIONS

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

CONDITIONS

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

PERMIT CONDITIONS

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

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-26HM Well Pad Name: Breckenridge

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

4) Elevation, current ground: 1,380' Elevation, proposed post-construction: 1,370.10'

5) Well Type (a) Gas Oil Underground Storage
Other

(b) If Gas Shallow Deep
Horizontal

6) Existing Pad: Yes or No No *MAK 12/1/2021*

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus is the target formation at a depth of 7,015' - 7,067', thickness of 51' and anticipated pressure of approx. 3800 psi.

8) Proposed Total Vertical Depth: 7,167'

9) Formation at Total Vertical Depth: Onondaga

10) Proposed Total Measured Depth: 17,335'

11) Proposed Horizontal Leg Length: 8,786.97'

12) Approximate Fresh Water Strata Depths: 70; 1,048'

13) Method to Determine Fresh Water Depths: Based on the depth of Pittsburgh Coal seam, per WVGES mapping contours

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 No
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(a) If Yes, provide Mine Info: Name: Marshall County Mine
Depth: Pittsburgh coal - 1,042'; subsea level - 328'
Seam: Pittsburgh
Owner: Marshall County Coal Resources, Inc.

18)

CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	30"	NEW	BW	BW	120'	120'	259ft ³ (CTS)
Fresh Water/Coal	13 3/8"	NEW	J55	54.5#	1,150'	1,150'	1149ft ³ (CTS)
Intermediate	9 5/8"	NEW	J55	36#	3,042'	3,042'	1010ft ³ (CTS)
Production	5 1/2"	NEW	P110	20#	17,335'	17,335'	4439ft ³ (CTS)
Tubing	2 3/8"	NEW	N80	4.7#	8,425'		
Liners							

MJK 12/1/2021

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	30"	36"	1.0	2,333	1,866	CLASS A	1.2
Fresh Water/ 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							

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PACKERS

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

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 22,000,000 lb proppant and 400,000 bbl of water. Max rate = 80 bpm; max psi = 9,000#.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 45.50 acres

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

23) Describe centralizer placement for each casing string:

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

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

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

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25) Proposed borehole conditioning procedures:

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

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*Note: Attach additional sheets as needed.

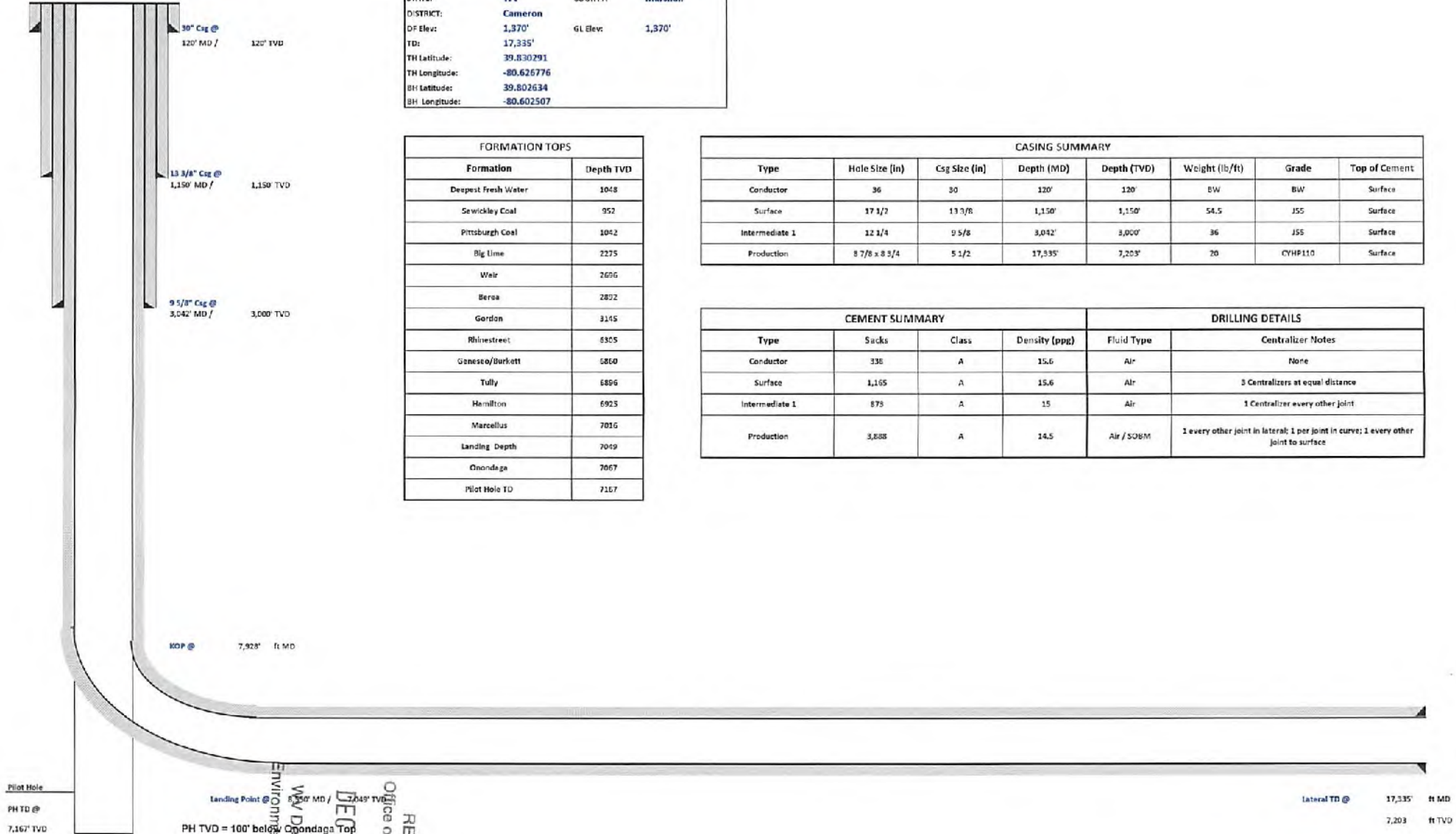


WELL NAME: Breckenridge S-26HM
STATE: WV **COUNTY:** Marshall
DISTRICT: Cameron
DF Elev: 1,370' **GL Elev:** 1,370'
TD: 17,335'
TH Latitude: 39.830291
TH Longitude: -80.626776
BH Latitude: 39.802634
BH Longitude: -80.602507

FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	1048
Sewickley Coal	952
Pittsburgh Coal	1042
Big Lime	2275
Weir	2676
Beroa	2872
Gordon	3145
Rhinestreet	6305
Genesee/Barkett	6860
Tully	6896
Hamilton	6925
Marcellus	7016
Landing Depth	7049
Onondaga	7067
Pilot Hole TD	7167

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'	8W	BW	Surface
Surface	17 1/2	13 3/8	1,150'	1,150'	54.5	J55	Surface
Intermediate 1	12 1/4	9 5/8	3,042'	3,000'	36	J55	Surface
Production	8 7/8 x 8 3/4	5 1/2	17,335'	7,203'	20	CYHP110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
Type	Sacks	Class	Density (ppg)	Fluid Type	Centralizer Notes
Conductor	336	A	15.6	Air	None
Surface	1,165	A	15.6	Air	5 Centralizers at equal distance
Intermediate 1	878	A	15	Air	1 Centralizer every other joint
Production	3,688	A	14.5	Air / SOBIM	1 every other joint in lateral; 1 per joint in curve; 1 every other joint to surface



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 PH TD = 100' below Onondaga Top

4705102493



Tug Hill Operating, LLC Casing and Cement Program

Breckenridge S-26HM

Casing

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	13 3/8"	J55	17 1/2"	1,150'	CTS
Intermediate	9 5/8"	J55	12 1/4"	3,042'	CTS
Production	5 1/2"	CYHP110	8 7/8 x 8 3/4"	17,335'	CTS

Cement

- Conductor: Premium NE-1 + 2% bwoc CaC12 + 46.5% Fresh Water – Conductor Cement mixed at 15.6 ppg, Y=1.2
- Surface: Premium NE-1 + 2% bwoc CaC12 + 46.5% Fresh Water – Surface Cement mixed at 15.6 ppg, Y=1.2
- Intermediate: Premium NE-1 + 1% bwoc CaC12 + 46.5% Fresh Water – Intermediate Cement mixed at 15 ppg, Y=1.38
- Kick Off Plug: Class H Cement + 1% CD-32 + .7% Sodium Metasilicate + .1% R-3 + .75 gal/100sk FP-13L - KOP Plug
- Production: 50:50 Poz: Premium NE-1 + .1% bwoc ASA-301 + 60lb/sk ASCA-1 + .35% bwoc BA-10A + .25% bwoc MPA-170, 44 lb sack + .5% bwoc R-3 + .75 gals/100sk FP-13L – Production Cement mixed at 14.5 ppg, Y = 1.3

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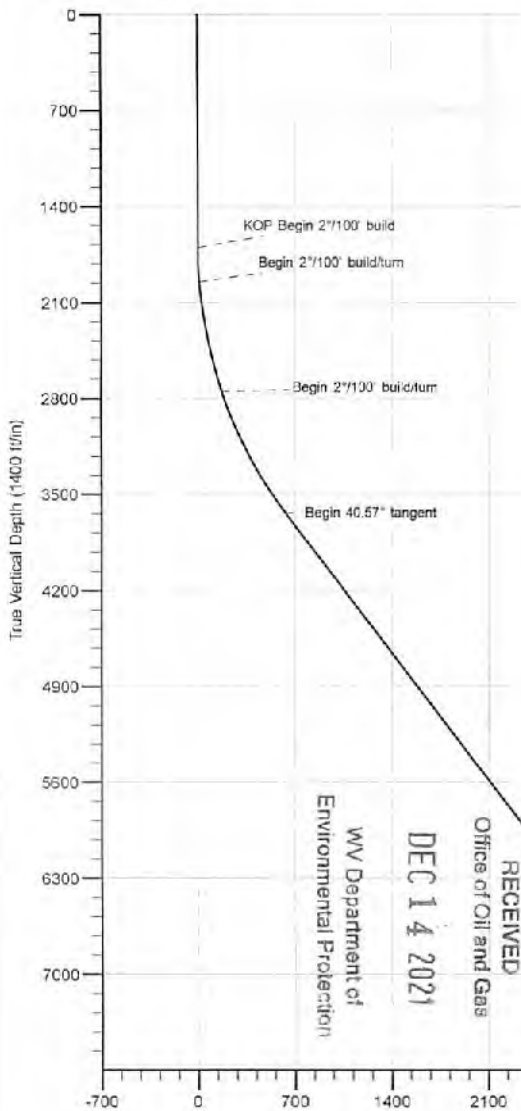
Well: Breckenridge S-26 HM (slot O)
 Site: Breckenridge (1 row)
 Project: Marshall County, West Virginia
 Design: rev0
 Rig:

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	
2	1700.00	0.00	0.00	1700.00	0.00	0.00	0.00	0.000	0.00	KOP Begin 2°/100' build
3	1950.00	5.00	160.00	1949.68	-10.24	3.73	2.00	150.000	10.56	Begin 2°/100' build/turn
4	2773.67	20.00	120.00	2752.48	-115.12	138.92	2.00	-50.831	173.42	Begin 2°/100' build/turn
5	3803.97	40.57	117.56	3637.42	-360.89	593.47	2.00	-4.618	632.72	Begin 40.57° tangent
6	7928.25	40.57	117.56	6770.13	-1601.90	2971.64	0.00	0.000	2998.80	Begin 8°/100' build/turn
7	8103.72	50.00	132.28	6893.79	-1673.88	3072.46	8.00	53.381	3115.10	Begin 10°/100' build/turn
8	8549.83	89.00	156.11	7049.00	-2009.90	3300.85	10.00	35.116	3521.39	Begin 89.00° lateral
9	17335.24	89.00	156.11	7203.00	-10041.42	6858.13	0.00	0.000	2159.94	PBHL/TD 17335.24 MD 7203.00 TVD

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Breckenridge S-26 HM LP	7049.00	-2009.89	3300.72	14463145.18	1746497.54	39.62473300	-80.61505000
- plan misses target center by 0.12ft at 8549.77ft MD (7049.00 TVD, -2009.84 N, 3300.83 E)							
Breckenridge S-26 HM PBHL	7203.00	-10041.42	6858.13	14455113.66	1752054.95	39.80263400	-80.60250700
- plan hits target center							



Geodetic System: Universal Transverse Mercator (US Survey Feet)
 Datum: NAD83 West Virginia - HARN
 Ellipsoid: GRS 1980
 Zone: Zone 17N (64 W to 78 W)

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

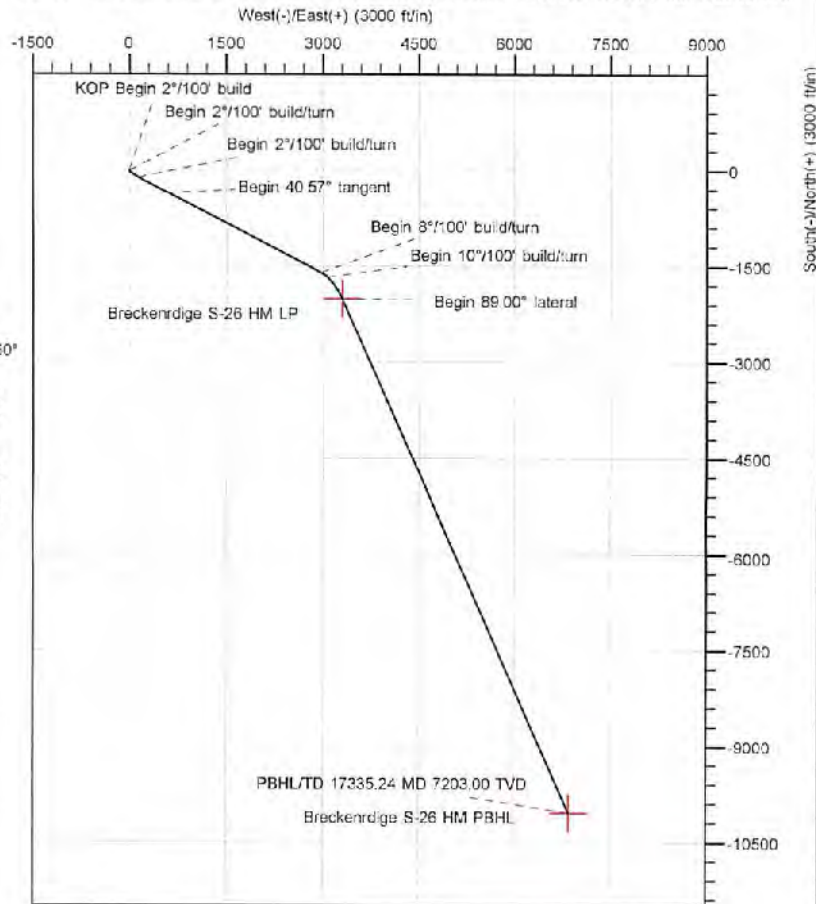
Northing	Easting	Latitude	Longitude
14465155.07	1745196.83	39.83029100	-80.62677600

Total Corr. (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.960°



Azimuths to Grid North
 True North: -9.24°
 Magnetic North: -8.96°

Magnetic Field
 Strength: 5173.0nT
 Dip Angle: 66.54°
 Date: 9/5/2021
 Model: IGRF2020



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Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Breckenridge S-26 HM (slot O)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1370.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1370.00ft
Site:	Breckenridge (1 row)	North Reference:	Grid
Well:	Breckenridge S-26 HM (slot O)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

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

Site	Breckenridge (1 row)				
Site Position:		Northing:	14,465,184.76 usft	Latitude:	39.83037401
From:	Lat/Long	Easting:	1,745,068.18 usft	Longitude:	-80.62723379
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "		

Well	Breckenridge S-26 HM (slot O)					
Well Position	+N/-S	0.00 ft	Northing:	14,465,155.07 usft	Latitude:	39.83029100
	+E/-W	0.00 ft	Easting:	1,745,198.83 usft	Longitude:	-80.62677600
Position Uncertainty	0.00 ft	Wellhead Elevation:	ft	Ground Level:	1,370.00 ft	
Grid Convergence:						

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	9/5/2021	-8.721	66.539	51,737.01467008

Design	rev0			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	145.67

Plan Survey Tool Program	Date				
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	17,335.24	rev0 (Original Hole)		

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Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Breckenridge S-26 HM (slot O)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1370.00ft
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Well:	Breckenridge S-26 HM (slot O)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,950.00	5.00	160.00	1,949.68	-10.24	3.73	2.00	2.00	0.00	160.000	
2,773.67	20.00	120.00	2,752.48	-115.12	138.92	2.00	1.82	-4.86	-50.831	
3,803.97	40.57	117.56	3,637.42	-360.89	593.47	2.00	2.00	-0.24	-4.518	
7,928.25	40.57	117.56	6,770.13	-1,601.90	2,971.64	0.00	0.00	0.00	0.000	
8,103.72	50.00	132.28	6,893.79	-1,673.88	3,072.46	8.00	5.37	8.39	53.381	
8,549.83	89.00	156.11	7,049.00	-2,009.90	3,300.85	10.00	8.74	5.34	35.116	
17,335.24	89.00	156.11	7,203.00	-10,041.42	6,858.13	0.00	0.00	0.00	0.000	Breckenridge S-26 HM

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Planning Report - Geographic

Database: DB_Dec2220_v16
Company: Tug Hill Operating LLC
Project: Marshall County, West Virginia
Site: Breckenridge (1 row)
Well: Breckenridge S-26 HM (slot O)
Wellbore: Original Hole
Design: rev0

Local Co-ordinate Reference: Well Breckenridge S-26 HM (slot O)
TVD Reference: GL @ 1370.00ft
MD Reference: GL @ 1370.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Table with 11 columns: Measured Depth (ft), Inclination (°), Azimuth (°), Vertical Depth (ft), +N-S (ft), +E-W (ft), Map Northing (usft), Map Easting (usft), Latitude, Longitude. Contains 26 rows of survey data.

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Planning Report - Geographic

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Wellbore:	Original Hole		
Design:	rev0		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
14,600.00	89.00	156.11	7,155.05	-7,540.90	5,750.61	14,457,614.19	1,750,947.43	39.80951442	-80.60641112	
14,700.00	89.00	156.11	7,156.81	-7,632.32	5,791.10	14,457,522.77	1,750,987.92	39.80926288	-80.60526837	
14,800.00	89.00	156.11	7,158.56	-7,723.74	5,831.60	14,457,431.35	1,751,028.41	39.80901133	-80.60512562	
14,900.00	89.00	156.11	7,160.31	-7,815.16	5,872.09	14,457,339.93	1,751,068.90	39.80875978	-80.60598288	
15,000.00	89.00	156.11	7,162.07	-7,906.58	5,912.58	14,457,248.51	1,751,109.39	39.80850824	-80.60584013	
15,100.00	89.00	156.11	7,163.82	-7,997.99	5,953.07	14,457,157.09	1,751,149.88	39.80825669	-80.60569739	
15,200.00	89.00	156.11	7,165.57	-8,089.41	5,993.56	14,457,065.67	1,751,190.38	39.80800515	-80.6055465	
15,300.00	89.00	156.11	7,167.32	-8,180.83	6,034.05	14,456,974.25	1,751,230.87	39.80775360	-80.60541190	
15,400.00	89.00	156.11	7,169.08	-8,272.25	6,074.54	14,456,882.84	1,751,271.36	39.80750205	-80.60526916	
15,500.00	89.00	156.11	7,170.83	-8,363.67	6,115.03	14,456,791.42	1,751,311.85	39.80725051	-80.60512642	
15,600.00	89.00	156.11	7,172.58	-8,455.09	6,155.52	14,456,700.00	1,751,352.34	39.80699896	-80.60498369	
15,700.00	89.00	156.11	7,174.34	-8,546.51	6,196.01	14,456,608.58	1,751,392.83	39.80674741	-80.60484095	
15,800.00	89.00	156.11	7,176.09	-8,637.93	6,236.50	14,456,517.16	1,751,433.32	39.80649587	-80.60469821	
15,900.00	89.00	156.11	7,177.84	-8,729.35	6,276.99	14,456,425.74	1,751,473.81	39.80624432	-80.60455548	
16,000.00	89.00	156.11	7,179.59	-8,820.76	6,317.48	14,456,334.32	1,751,514.30	39.80599277	-80.60441274	
16,100.00	89.00	156.11	7,181.35	-8,912.18	6,357.98	14,456,242.90	1,751,554.79	39.80574123	-80.60427001	
16,200.00	89.00	156.11	7,183.10	-9,003.60	6,398.47	14,456,151.49	1,751,595.28	39.80548968	-80.60412728	
16,300.00	89.00	156.11	7,184.85	-9,095.02	6,438.96	14,456,060.07	1,751,635.77	39.80523813	-80.60398455	
16,400.00	89.00	156.11	7,186.61	-9,186.44	6,479.45	14,455,968.65	1,751,676.26	39.80498658	-80.60384182	
16,500.00	89.00	156.11	7,188.36	-9,277.86	6,519.94	14,455,877.23	1,751,716.75	39.80473503	-80.60369909	
16,600.00	89.00	156.11	7,190.11	-9,369.28	6,560.43	14,455,785.81	1,751,757.25	39.80448348	-80.60355636	
16,700.00	89.00	156.11	7,191.86	-9,460.70	6,600.92	14,455,694.39	1,751,797.74	39.80423194	-80.60341363	
16,800.00	89.00	156.11	7,193.62	-9,552.12	6,641.41	14,455,602.97	1,751,838.23	39.80398039	-80.60327090	
16,900.00	89.00	156.11	7,195.37	-9,643.54	6,681.90	14,455,511.55	1,751,878.72	39.80372884	-80.60312818	
17,000.00	89.00	156.11	7,197.12	-9,734.95	6,722.39	14,455,420.14	1,751,919.21	39.80347729	-80.60298546	
17,100.00	89.00	156.11	7,198.88	-9,826.37	6,762.88	14,455,328.72	1,751,959.70	39.80322574	-80.60284273	
17,200.00	89.00	156.11	7,200.63	-9,917.79	6,803.37	14,455,237.30	1,752,000.19	39.80297419	-80.60270001	
17,300.00	89.00	156.11	7,202.38	-10,009.21	6,843.86	14,455,145.88	1,752,040.68	39.80272264	-80.60255729	
17,335.24	89.00	156.11	7,203.00	-10,041.42	6,858.13	14,455,113.67	1,752,054.95	39.80263400	-80.60250700	

PBHL/TD 17335.24 MD 7203.00 TVD

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Breckenridge S-26 HM L	0.00	0.00	7,049.00	-2,009.89	3,300.72	14,463,145.18	1,748,497.54	39.82473300	-80.56550500	
- hit/miss target										
- Shape										
- plan misses target center by 0.12ft at 8549.77ft MD (7049.00 TVD, -2009.84 N, 3300.83 E)										
- Point										
Breckenridge S-26 HM F	0.00	0.00	7,203.00	-10,041.42	6,858.13	14,455,113.67	1,752,054.95	39.80263400	-80.60250700	
- plan hits target center										
- Point										

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Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")		
1,150.00	1,150.00	Csg 13 3/8	13-3/8	17-1/2		
3,042.02	3,000.00	Csg 9 5/8	9-5/8	12-1/4		

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Breckenridge S-26 HM (slot O)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1370.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1370.00ft
Site:	Breckenridge (1 row)	North Reference:	Grid
Well:	Breckenridge S-26 HM (slot O)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,700.00	1,700.00	0.00	0.00	KOP Begin 2°/100' build
1,950.00	1,949.68	-10.24	3.73	Begin 2°/100' build/turn
2,773.67	2,752.48	-115.12	138.92	Begin 2°/100' build/turn
3,603.97	3,637.42	-360.89	593.47	Begin 40.57° tangent
7,928.25	6,770.13	-1,601.90	2,971.64	Begin 8°/100' build/turn
8,103.72	6,893.79	-1,673.88	3,072.46	Begin 10°/100' build/turn
8,549.83	7,049.00	-2,009.90	3,300.85	Begin 89.00° lateral
17,335.24	7,203.00	-10,041.42	6,858.13	PBHL/TD 17335.24 MD 7203.00 TVD

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

Contacted Adam Picard 724-485-9331, apicard@dpslandservices.com, DPS GIS (09/27/2021) to have him make maps of the wellbores with his information. DPS utilizes WVGES maps for their mapping seems it is the best publicly available. See attached map he provided.

Request maps for:

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

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

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

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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 affected by fracturing in the planned Marcellus well. Well is plugged.	Well was plugged 7/3/2008
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.	
4705102346	Tug Hill Operating, LLC	7115' TVD (proposed)	none	none	Yes, this is a proposed well in the Marcellus. Once completed the well will be within the expected fracture propagation from a Marcellus stimulation. Proper casing and cement should prevent migration of fluids between wellbores.	A Tug Hill Operating, LLC permitted well on the pad that is not drilled or perforated.
4705100754	Leatherwood, Inc.	3045' TVD	Gordon	unknown	No, the well is not deep enough to be within the expected fracture propagation from a Marcellus stimulation. Well is plugged.	Well was plugged 8/8/2008.

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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
4705101076	Consolidation Coal Co.	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Marcellus well. Well is plugged.	Well was plugged 6/17/2008.
4705170513	unknown	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Marcellus well.	State records are incomplete.
4705170514	unknown	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Marcellus well.	State records are incomplete.
4705170515	unknown	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Marcellus well.	State records are incomplete.
4705170512	Manufacturers Light & Heat Co.	unknown	Gordon	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Marcellus well.	State records are incomplete.

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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
4705101014	Consolidation Coal Co.	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Marcellus well. Well is plugged.	Well was plugged 2/24/2006.
4705101023	Consolidation Coal Co.	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Marcellus well. Well is plugged.	Well was plugged 3/23/2006.
4705100987	Consolidation Coal Co.	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Marcellus well. Well is plugged.	Well was plugged 2/15/2005.
4705100995	Consolidation Coal Co.	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Marcellus well. Well is plugged.	Well was plugged 6/29/2005.
4705101225	McElroy Coal Company	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Marcellus well. Well is plugged.	Well was plugged 5/6/2009.

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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
4705170470	unknown	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Marcellus well.	State records are incomplete.
4705100625	CNX Gas Co. LLC (North)	3092' TVD	Gordon	unknown	No, the well is not deep enough to be within the expected fracture propagation from a Marcellus stimulation.	
4705101035	Consolidation Coal Co.	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Marcellus well. Well is plugged.	Well was plugged 7/7/2006.
4705101151	Consolidation Coal Co.	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Marcellus well. Well is plugged.	Well was plugged 10/15/2008.
4705130156	Interstate Pipe & Supply	3175' TVD	Gordon	unknown	No, the well is not deep enough to be within the expected fracture propagation from a Marcellus stimulation. Well is plugged.	Well was plugged 4/16/1942.

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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
4705170461	unknown	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Marcellus well.	State records are incomplete.
4705170460	unknown	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Marcellus well.	State records are incomplete.

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WV Geological & Economic Survey

Well: County = 51 Permit = 01082

Report Time: Friday, August 27, 2021 4:10:01 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101082	Marshall	1082	Cameron	Glen Easton	Cameron	39.829496	-80.627436	531880.9	4408899.7

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101082	7/3/2008	Plugging	Completed	J Richard Wayt		M-1334				Consolidation Coal Co			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AF
4705101082	7/3/2008	6/18/2008	1262	Ground Level				unclassified	unclassified	not available	unknown	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:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4705101082	Plugging	Pittsburgh coal	Well Record	946	Reasonable	5	Reasonable	1262	Ground Level

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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705101082	7/3/2008	0

There is no Sample data for this well

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WV Geological & Economic Survey

Well: County = 51 Permit = 70164

Report Time: Friday, August 27, 2021 4:11:58 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705170164	Marshall	70164	Liberty	Glen Easton	Cameron	39.829496	-80.626308	531977.5	4400900.1

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705170164	-/-	Original Loc	Completed	Elijah Williams	1	547				Hope Natural Gas Company			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT
4705170164	-/-	-/-	1420	Barometer	Big Injun (undiff)	Big Injun (undiff)		unclassified	unclassified	not available	unknown	unknown	2374					2374

WV Geological & Economic Survey

Well: County = 51 Permit = 02346

Report Time: Friday, August 27, 2021 4:12:17 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102346	Marshall	2346	Cameron	Glen Easton	Cameron	39.830284	-80.626735	531940.6	4400987.3

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102346	1	As Proposed	532233.1	4408596.4	-80.623336

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705102346	-/-	Dvtd Wrkrd Ovr	Permitted	CHX Land LLC		S-10HM	Breckenridge		Hasans Ventures et al	Tug Hill Operating, LLC		7115	Marcellus Fm

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF
4705102346	-/-	-/-	1380	Ground Level															

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WV Geological & Economic Survey:

Well: County = 51 Permit = 00754

Report Time: Wednesday, September 29, 2021 11:42:06 AM

Well Reassignment Information: Reassigned From

OLD_COUNTY	OLD_PERMIT	NEW_COUNTY	NEW_PERMIT
51	70163	51	754

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_16	LAT_DD	LONG_DD	UTME	UTMN
4705100754	Marshall	754	Liberty	Glen Easton	Cameron	39.828771	-80.627248	531897.4	4406819.3

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705100754	-/-/1928	Original Loc	Completed	J O Williams	2					Cameron Heat & Light			
4705100754	8/8/2008	Plugging	Completed	J Richard Wrayt		M-100				Leatherwood, Inc.			
4705100754	-/-	Worked Over	Permitted	J Richard Wrayt	2		J O Williams			J Richard Wrayt			Leatherwood, Inc.

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	C
4705100754	-/-/1928	-/-	1330	Ground Level	Cameron-Garner	Gordon Stray	Gordon Stray	Development Well	Development Well	Gas w/ Oil Show	Cable Tool	Shot	2999		2999		
4705100754	8/8/2008	7/9/2008	1299	Ground Level	Cameron-Garner					not available	unknown	unknown					
4705100754	-/-	-/-	1330	Ground Level	Cameron-Garner		Gordon Stray			Gas					3045		

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEF	G_AFT	O_BEF	O_AFT	WATER_QNTY
4705100754	-/-/1928	Show	Oil & Gas	Vertical			2200	Big Injun (PriceSeq)	0	0			
4705100754	-/-/1928	Pay	Gas	Vertical			2954	Gordon Stray	0	0			

Production Gas Information: (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705100754	Cameron Oil and Gas Co.	1993	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100754	Cameron Gas Co.	1994													
4705100754	Cameron Gas Co.	1995													
4705100754	Coleman, C. R.	1996													
4705100754	Mountaineer Gas Services, Inc.	1997	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100754	Mountaineer Gas Services, Inc.	2001	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100754	Mountaineer Gas Services, Inc.	2002	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100754	Mountaineer Gas Services, Inc.	2003	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100754	Mountaineer Gas Services, Inc.	2004	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100754	Leatherwood, Inc.	2006	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 Oil

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_OIL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705100754	Cameron Oil and Gas Co.	1993	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100754	Cameron Gas Co.	1994													
4705100754	Cameron Gas Co.	1995													
4705100754	Coleman, C. R.	1996													
4705100754	Mountaineer Gas Services, Inc.	1997	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100754	Mountaineer Gas Services, Inc.	2001	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100754	Mountaineer Gas Services, Inc.	2002	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100754	Mountaineer Gas Services, Inc.	2003	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100754	Mountaineer Gas Services, Inc.	2004	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100754	Leatherwood, Inc.	2006	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 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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705100754	8/8/2008	0

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WV Geological & Economic Survey:

Well: County = 51 Permit = 01076

Report Time: Wednesday, September 29, 2021 11:43:48 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101076	Marshall	1076	Cameron	Cameron	Cameron	39.829206	-80.62451	532131.4	4408868.5

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101076	6/17/2008	Plugging	Completed	J Richard Wrayt		M-109				Consolidation Coal Co.			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BE
4705101076	6/17/2008	6/2/2008	1356	Ground Level				unclassified	unclassified	not available	unknown	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:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4705101076	Plugging	Pittsburgh coal	Well Record	1044	Reasonable	6	Reasonable	1356	Ground Level

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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705101076	6/17/2008	0

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Well: County = 51 Permit = 70513

Report Time: Wednesday, September 29, 2021 11:44:36 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705170513	Marshall	70513	Cameron	Cameron	Cameron	39 827897	-80 623372	532229.5	4408723.8

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705170513	---	unknown	Prpty Map	Susanna Williams						unknown			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	
4705170513	---	---						unclassified	unclassified	not available	unknown	unknown									

WV Geological & Economic Survey

Well: County = 51 Permit = 70514

Report Time: Wednesday, September 29, 2021 11:44:54 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705170514	Marshall	70514	Cameron	Cameron	Cameron	39 828187	-80 624124	532165	4408755.5

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705170514	---	unknown	Prpty Map	Susanna Williams	2					unknown			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	
4705170514	---	---						unclassified	unclassified	not available	unknown	unknown									

WV Geological & Economic Survey

Well: County = 51 Permit = 70515

Report Time: Wednesday, September 29, 2021 11:45:11 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705170515	Marshall	70515	Cameron	Cameron	Cameron	39 829347	-80 6245	532132.3	4408884.2

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705170515	---	unknown	Prpty Map	Susanna Williams	3					unknown			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	
4705170515	---	---						unclassified	unclassified	not available	unknown	unknown									

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Well: County = 51 Permit = 70512

Report Time: Wednesday, September 29, 2021 11:45:38 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705170512	Marshall	70512	Cameron	Cameron	Cameron	39.826591	-80.619047	532600.2	4408580.2

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705170512	-/-/1899	unknown	Prpty Map	J G Crawford					unknown	Manufacturers Light & Heat Co.			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEFO	G_AFT	O_BEFO
4705170512	-/-/1899	-/-/1898	1095	Ground Level	Cameron		Gordon	unclassified	unclassified	Gas	unknown	unknown							

Comment: -/-/1899 Some info is from historical records in black notebook, and is not yet scanned into database.

There is no Pay data for this well

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

Stratigraphy Information:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4705170512	Original Loc	Pittsburgh coal	Well Record	728	Reasonable			1095	Ground Level
4705170512	Original Loc	Gordon	Well Record	2738	Reasonable			1095	Ground Level

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Well: County = 51 Permit = 01014

Report Time: Wednesday, September 29, 2021 11:45:56 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101014	Marshall	1014	Liberty	Cameron	Cameron	39 819347	-80 610589	533327.4	4407779.3

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101014	2/24/2006	Original Loc	Completed	James Timothy Hubbs		M-1320				Consolidation Coal Co			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BE
4705101014	2/24/2006	2/8/2006	1141	Ground Level				unclassified	unclassified	not available	unknown	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

There is no Stratigraphy data for this well

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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705101014	2/24/2006	0

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WV Geological & Economic Survey:

Well: County = 51 Permit = 01023

Report Time: Wednesday, September 29, 2021 11:46:15 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101023	Marshall	1023	Cameron	Cameron	Cameron	39 822537	-80 613411	533084.4	4408132.3

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101023	3/23/2006	Plugging	Completed	James Timothy Hubbs				1312		Consolidation Coal Co.			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BE
4705101023	3/23/2006	2/27/2006	1191	Ground Level			Pittsburgh coal	unclassified	unclassified	not available	unknown	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:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4705101023	Plugging	Pittsburgh coal	Well Record	919	Reasonable	6	Reasonable	1191	Ground Level

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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705101023	3/23/2006	0

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WV Geological & Economic Survey:

Well: County = 51 Permit = 00987

Report Time: Wednesday, September 29, 2021 11:46:31 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705100987	Marshall	987	Liberty	Cameron	Cameron	39.811227	-80.606894	533476.5	4406878.7

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705100987	2/15/2005	Plugging	Completed	Bernard G Frye		M-438			Consolidation Coal Co	Consolidation Coal Co			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BE
4705100987	2/15/2005	1/25/2005	1245	Ground Level				unclassified	unclassified	not available	unknown	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

There is no Stratigraphy data for this well

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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705100987	2/15/2005	0

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WV Geological & Economic Survey

Well: County = 51 Permit = 00995

Report Time: Wednesday, September 29, 2021 11:46:49 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705100995	Marshall	995	Liberty	Cameron	Cameron	39.811227	-80.606074	533717.9	4406879.8

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705100995	6/29/2005	Plugging	Completed	Bernard G Frye		M-441				Consolidation Coal Co.			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BE
4705100995	6/29/2005	6/10/2005	1286	Ground Level				unclassified	unclassified	not available	unknown	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:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4705100995	Plugging	Pittsburgh coal	Well Record	1050	Reasonable	6	Reasonable		unknown

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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705100995	6/29/2005	0

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WV Geological & Economic Survey:

Well: County = 51 Permit = 01225

Report Time: Wednesday, September 29, 2021 11:47:13 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101225	Marshall	1225	Liberty	Cameron	Cameron	39.809618	-80.608108	533544.6	4406700.5

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101225	5/6/2009	Plugging	Completed	John K & Beverly M Davis			M-375			McElroy Coal Company			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF
4705101225	5/6/2009	4/27/2009	1327	Ground Level	Cameron-Garner														

There is no Pay data for this well

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

Stratigraphy Information:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4705101225	Plugging	Pittsburgh coal	Well Record	1071	Reasonable	6	Reasonable	1327	Ground Level

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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705101225	5/6/2009	0

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WV Geological & Economic Survey:

Well: County = 51 Permit = 70470

Report Time: Wednesday, September 29, 2021 11:47:32 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_16	LAT_DD	LON_DD	UTME	UTMN
4705170470	Marshall	70470	Liberty	Cameron	Cameron	39.810628	-80.607578	533589.5	4406812.5

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705170470	-/-		unknown	Prpty Map Aaron A Porter		2				----- unknown -----			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_
4705170470	-/-	-/-						unclassified	unclassified	not available	unknown	unknown								

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Well: County = 51 Permit = 00625

Report Time: Wednesday, September 29, 2021 11:47:47 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705100625	Marshall	625	Liberty	Cameron	Cameron	39 806907	-80.606449	533686.9	4406622.1

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705100625	9/3/1901	Original Loc	Completed	William Gray		3		32329		South Penn Oil (S. Penn Nat. Gas)			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	
4705100625	9/3/1901	7/8/1901	1410	Topo	Estimation	Cameron-Garner	Hampshire Grp	Gordon	unclassified	unclassified	Oil	unknown	Nat/Open H	3092		3092		0	

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEF	G_AFT	O_BEF	O_AFT	WATER_QNTY
4705100625	9/3/1901	Pay	Oil	Vertical			3060	Gordon	0	0			

Production Gas Information: (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705100625	Pennzoil Company	1981	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100625	Pennzoil Company	1982	6	0	0	0	0	0	0	0	0	0	0	0	0
4705100625	Pennzoil Company	1983	1	0	0	0	0	0	0	0	0	0	0	0	0
4705100625	Pennzoil Company	1984	8	0	0	0	0	0	0	0	0	0	0	0	0
4705100625	Pennzoil Products Company	1989	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100625	Pennzoil Products Company	1998	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100625	Pennzoil Products Company	1999	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100625	East Resources, Inc.	2000	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100625	East Resources, Inc.	2001	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100625	East Resources, Inc.	2002	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100625	CNX Gas Co. LLC (North)	2002	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100625	CNX Gas Co. LLC (North)	2003	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100625	CNX Gas Co. LLC (North)	2004	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100625	CNX Gas Co. LLC (North)	2005	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100625	CNX Gas Co. LLC (North)	2006	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100625	CNX Gas Co. LLC (North)	2007	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100625	CNX Gas Co. LLC (North)	2008	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100625	CNX Gas Co. LLC (North)	2009	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100625	CNX Gas Co. LLC (North)	2010	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100625	CNX Gas Co. LLC (North)	2011	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100625	CNX Gas Co. LLC (North)	2012	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100625	CNX Gas Co. LLC (North)	2013	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100625	CNX Gas Co. LLC (North)	2015	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100625	CNX Gas Co. LLC (North)	2016	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100625	CNX Gas Co. LLC (North)	2017	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100625	CNX Gas Co. LLC (North)	2020	0	0	0	0	0	0	0	0	0	0	0	0	0

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Well: County = 51 Permit = 01035

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101035	Marshall	1035	Liberty	Cameron	Cameron	39 803107	-80 603251	533963 5	4405979 6

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101035	7/7/2006	Plugging	Completed	Jean Jamison		M-382			Consolidation Coal Co	Consolidation Coal Co.			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF
4705101035	7/7/2006	6/19/2006	1365	Ground Level				unclassified	unclassified	not available	unknown	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:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4705101035	Plugging	Pittsburgh coal	Well Record	1106	Reasonable	6	Reasonable	1350	Topo Estimation

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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705101035	7/7/2006	0

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Well: County = 51 Permit = 01151

Report Time: Wednesday, September 29, 2021 11:49:07 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101151	Marshall	1151	Liberty	Cameron	Cameron	39.805103	-80.602701	534009.6	4406201.4

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101151	10/15/2008	Plugging	Completed	Jean Jamison		M-381				Consolidation Coal Co.			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEFO	G_AFT	O_B
4705101151	10/15/2008	10/8/2008	1217	Ground Level				unclassified	unclassified	not available	unknown	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:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4705101151	Plugging	Pittsburgh coal	Well Record	951	Reasonable	5	Reasonable	1217	Ground Level

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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705101151	10/15/2008	0

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WV Geological & Economic Survey.

Well: County = 51 Permit = 30156

Report Time: Wednesday, September 29, 2021 11:49:28 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705130156	Marshall	30156	Liberty	Cameron	Cameron	39.802961	-80.603815	533915.3	4405963.3

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_E
4705130156	4/19/1903	Original Loc	Completed	Francis Chambers	1	118	Edward Welling Heirs		Francis Chambers	Interstate Pipe & Supply			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF
4705130156	4/19/1903	2/2/1903	1415	Ground Level	Cameron-Gamer	UDev undf Ber/LoHURN	Gordon	Development Well	unclassified	Oil	Cable Tool	unknown	3175		3175		C

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEF	G_AFT	O_BEF	O_AFT	WATER_QNTY
4705130156	4/19/1903	Pay	Oil	Vertical	3126	Gordon	3133	Gordon	0	0			

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

Stratigraphy Information:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4705130156	Original Loc	Sewickley coal	Well Record	1030	Reasonable	6	Reasonable	1415	Ground Level
4705130156	Original Loc	Pittsburgh coal	Well Record	1118	Reasonable	8	Reasonable	1415	Ground Level
4705130156	Original Loc	Bufflo Ss/1st Cow Rn	Well Record	1570	Reasonable	20	Reasonable	1415	Ground Level
4705130156	Original Loc	Mahonig Ss/Big Dunk	Well Record	1630	Reasonable	46	Reasonable	1415	Ground Level
4705130156	Original Loc	Maxton	Well Record	2190	Reasonable	50	Reasonable	1415	Ground Level
4705130156	Original Loc	Big Linte	Well Record	2220	Reasonable			1415	Ground Level
4705130156	Original Loc	Big Injun (undiff)	Well Record	2264	Reasonable	294	Reasonable	1415	Ground Level
4705130156	Original Loc	Gantz	Well Record	2680	Reasonable	20	Reasonable	1415	Ground Level
4705130156	Original Loc	Fifty-foot	Well Record	2876	Reasonable	24	Reasonable	1415	Ground Level
4705130156	Original Loc	Gordon Stray	Well Record	3086	Reasonable	11	Reasonable	1415	Ground Level
4705130156	Original Loc	Gordon	Well Record	3126	Reasonable	23	Reasonable	1415	Ground Level

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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705130156	4/16/1942	0

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WV Geological & Economic Survey:

Well: County = 51 Permit = 70460

Report Time: Wednesday, September 29, 2021 11:50:02 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705170460	Marshall	70460	Liberty	Cameron	Cameron	39.802208	-80.602126	534080.3	4405880.3

There is no Bottom Hole Location data for this well

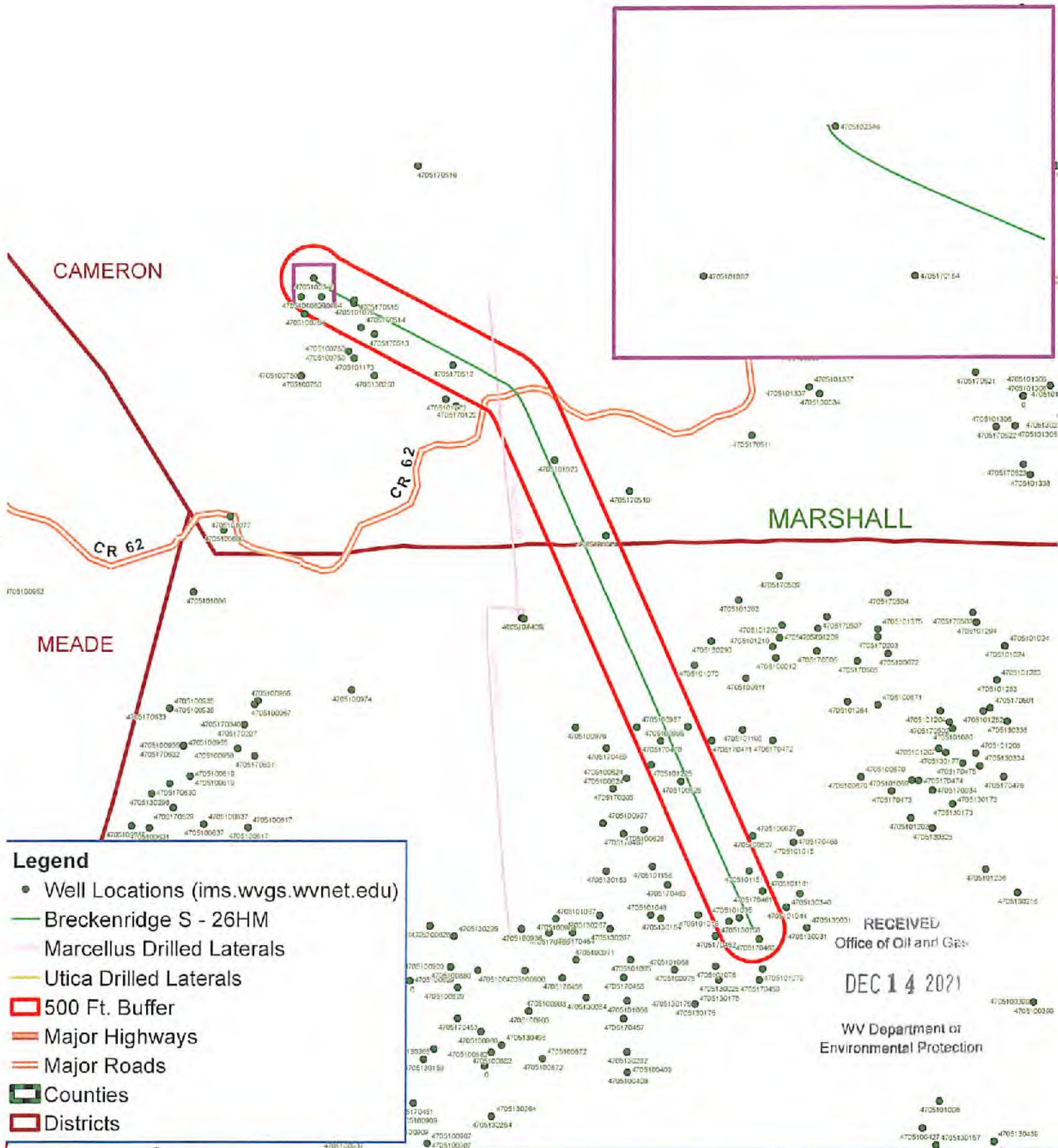
Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705170460	-/-	unknown	Prpty Map	Vincent Gorby	5					unknown			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_
4705170460	-/-	-/-						unclassified	unclassified	not available	unknown	unknown								

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- Legend**
- Well Locations (ims.wvgs.wvnet.edu)
 - Breckenridge S - 26HM
 - Marcellus Drilled Laterals
 - Utica Drilled Laterals
 - 500 Ft. Buffer
 - Major Highways
 - Major Roads
 - ▭ Counties
 - ▭ Districts

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Breckenridge S - 26HM Cameron District Marshall County, WV



Map Prepared by:
EPS
LAND SERVICES
01/28/2022

Map Created: September 27, 2021

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

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 (HUC 10) & 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 and produced water for frac

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 Drilling

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

-If oil based, what type? Synthetic, petroleum, etc. n/a

Additives to be used in drilling medium? _____

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 / WW0129185) and Westmoreland Sanitary Landfill, LLC (SAN-405 / PA DEP EC41360426), Cheekwood Valley Landfill (103412)

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 James A Pancake
Company Official (Typed Name) Jim Pancake
Company Official Title Vice President - Geosciences

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Subscribed and sworn before me this 2nd day of December, 2021

Suzanne Deliere Notary Public

My commission expires 1/15/2025

Commonwealth of Pennsylvania - Notary Seal
Suzanne Deliere, Notary Public
Washington County
My commission expires 01/15/2025
Commission number 1562332
Member, Pennsylvania Association of Notaries

Tug Hill Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 8.59 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: *Harvey J. Kuntz*

Comments:

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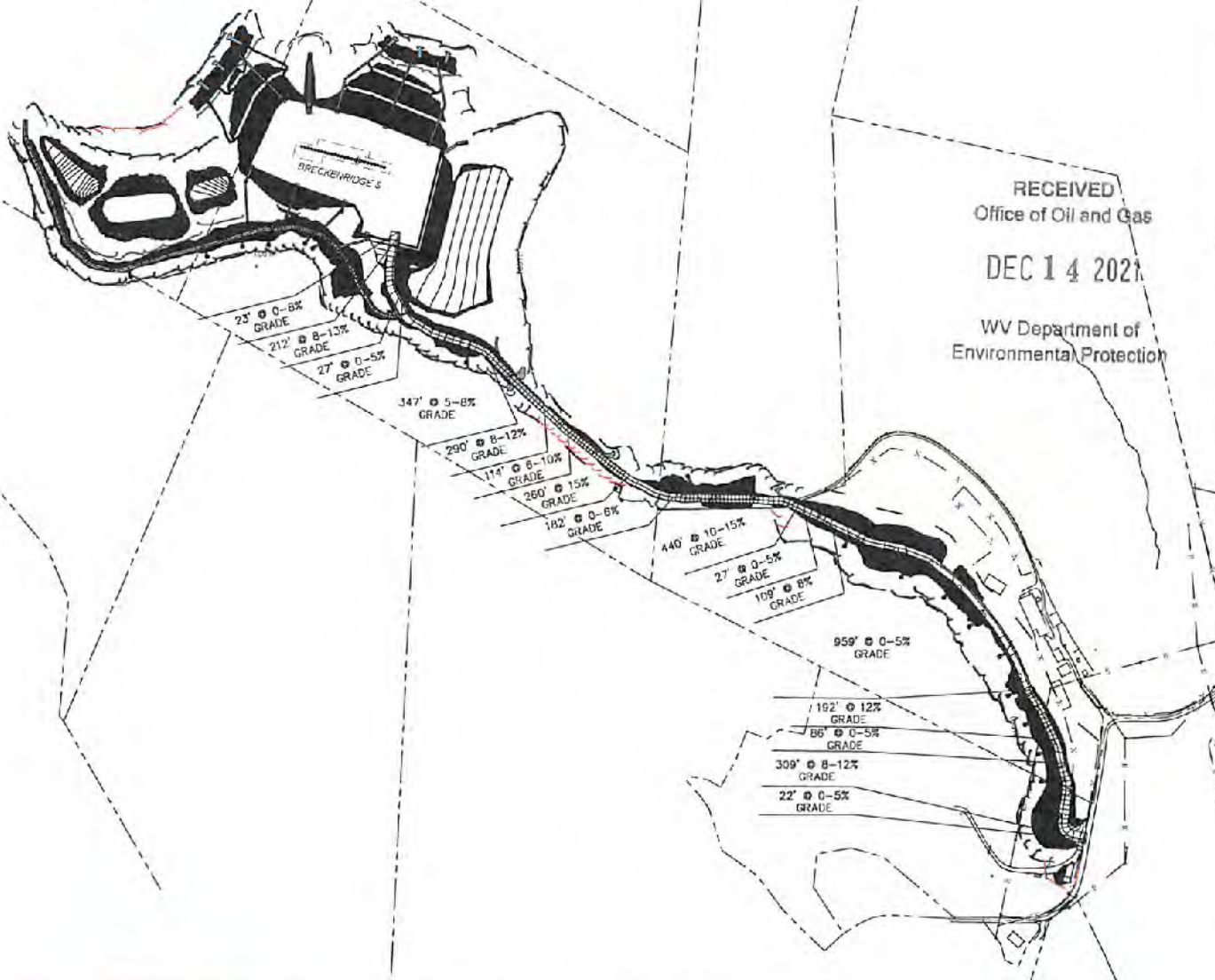
Title: Oil and Gas Inspector Date: 12/1/2021

Field Reviewed? (X) Yes () No

PROPOSED BRECKENRIDGE S - 26HM



CNX Land, Inc



- 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.

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32 Verbena Drive | P.O. Box 150 | Oliveville, WV 26351 | 304.467.5534
1632 Kanawha Boulevard, East | Charleston, WV 25301 | 304.245.2932
254 East Beckley Bypass | Beckley, WV 26801 | 304.255.0266
sllw.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.C.M.	9026	09-23-21	NONE

**TUG HILL
OPERATING**
01/28/2022



TUG HILL
OPERATING

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

Well Name: Breckenridge S-26HM

Pad Name: Breckenridge

County: Marshall

UTM (meters), NAD83, Zone 17

Northing: 4,408,988.11

Easting: 531,937.04

*Handwritten signature: Gary Ruff
12/1/2021*

**KEY CONTACT FOR WELL SITE SAFETY PLAN
DEVELOPMENT AND MAINTENANCE**

Jerry V. DeRosa, Director EH&S Affairs

(724) 338-2029 (office)

(412) 736-5767 (cellular)

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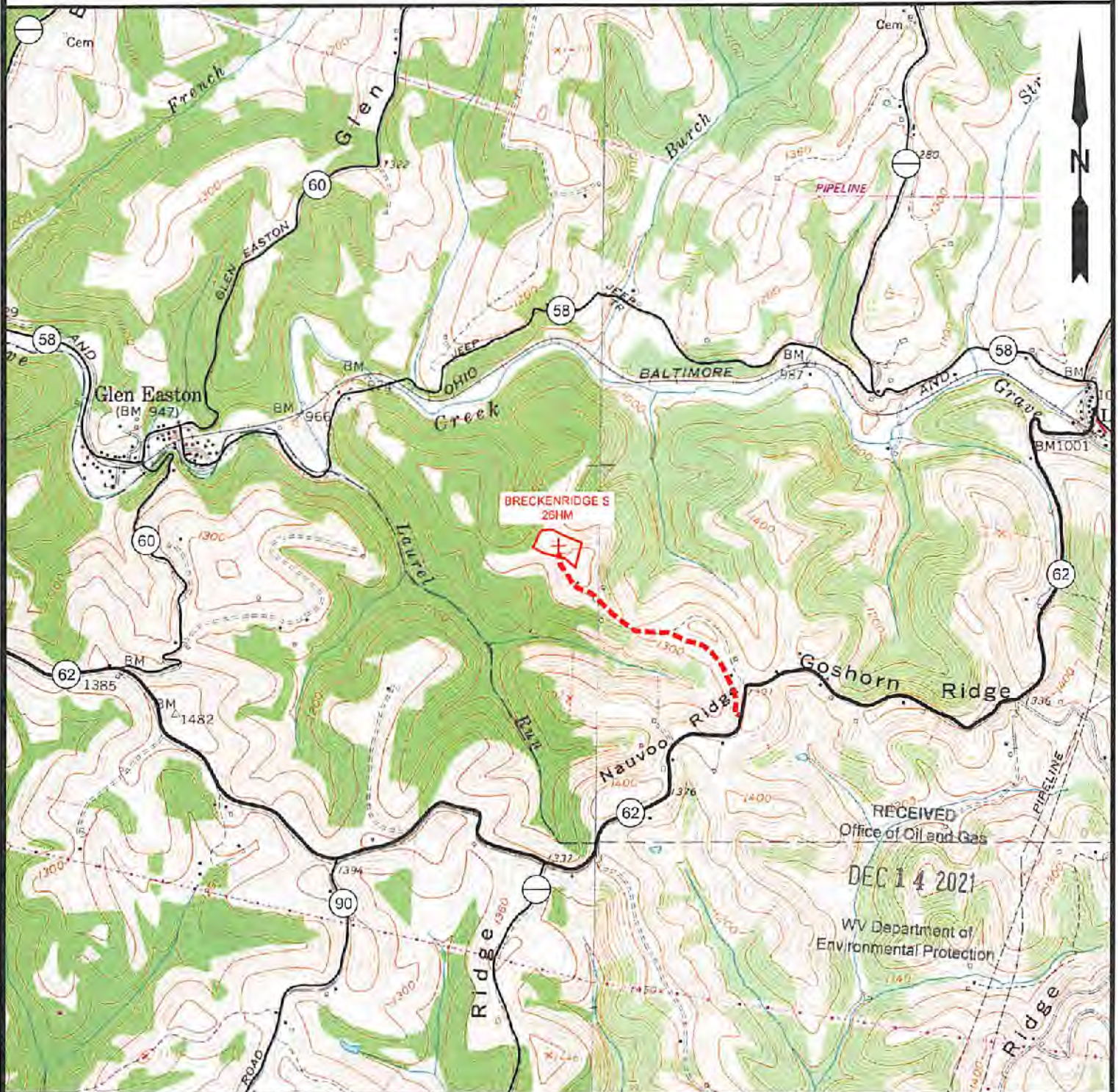
WV Department of
Environmental Protection

24-HOUR EMERGENCY PHONE NUMBER

(800) 921-9745

01/28/2022

PROPOSED BRECKENRIDGE S - 26HM



NOTE: CLOSEST WATER PURVEYOR
CITY OF CAMERON - FRANK WALKER RESERVOIR
CAMDEN, WV

LAT: 39.629865
LON: -80.573724
LOCATED: S 86°42'19" E AT 14,928.72' FROM THE CENTER OF BRECKENRIDGE S WELL PAD LOCATION.

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12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634
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:	
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	09/23/2021	1" = 2000'



**TUG HILL
OPERATING**
01/28/2022

**BRECKENRIDGE S LEASE
WELL 26HM
TUG HILL OPERATING**

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

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

NAD'83 S.P.C.(FT)	N. 486,518.87	E. 1,652,063.93
NAD'83 GEO.	LAT-(N) 39.830291	LONG-(W) 80.626776
NAD'83 UTM (M)	N. 4,406,988.08	E. 531,937.06

LANDING POINT

NAD'83 S.P.C.(FT)	N. 484,453.4	E. 1,655,331.9
NAD'83 GEO.	LAT-(N) 39.824733	LONG-(W) 80.615050
NAD'83 UTM (M)	N. 4,406,375.5	E. 532,943.2

BOTTOM HOLE

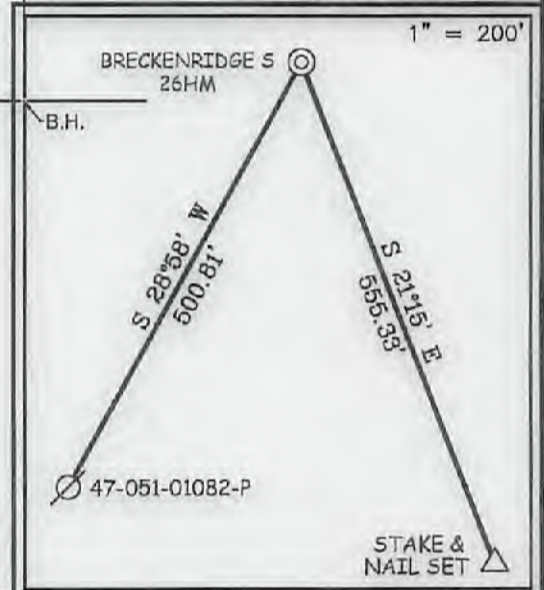
NAD'83 S.P.C.(FT)	N. 476,360.9	E. 1,653,755.5
NAD'83 GEO.	LAT-(N) 39.802634	LONG-(W) 80.602507
NAD'83 UTM (M)	N. 4,405,927.5	E. 534,027.4

T.H. LONGITUDE 80°37'30"
B.H. LONGITUDE 80°35'00"
T.H. 499'
B.H. 5,387'
11,183' B.H.

TAG	SURFACE OWNER	PARCEL	ACRES
A	CNX LAND, LLC	3-19-76	53.25
B	CNX LAND, LLC	3-18-1	30.00
C	KEVIN R. EVANS	3-18-2	63.89
D	CNX LAND, LLC	3-18-7	3.134
E	AEP WEST VIRGINIA TRANSMISSION COMPANY INC.	3-18-6.1	10.175
F	MARY L. BURGE	3-18-6	36.33
G	MOLLY KAY HUBBS COLLINS, ET AL	3-18-14	25.372
H	MOLLY KAY HUBBS COLLINS, ET AL	3-18-5	21.52
I	MOLLY KAY HUBBS COLLINS, ET AL	7-2-1	65.70
J	MOLLY KAY HUBBS COLLINS, ET AL	7-1-14	53.67
K	RICKIE GENE FRYE	7-2-3.1	37.8578
L	BEVERLY MAE DAVIS	7-2-4	58.08
M	ANTHONY SKRYPEK	7-2-5	20.915
N	JEAN JAMISON	7-7-9.1	97.896

MAP/PARCEL	ADJOINING SURFACE OWNER LIST	ACRES
3-18-8.1	DANIEL LILLEY, ET UX	1.039
3-18-8.2	KEVIN R. & SHELLY JO EVANS	2.302
3-18-12	CHARLES N. MATTHEWS JR, ET UX	1.831
3-18-13	MOLLY KAY HUBBS COLLINS & OLIVIA SUZANNE HUBBS	18.014
3-18-20	JESSE PARSONS EST.	2.02
3-18-38	OLIVIA SUZANNE HUBBS	0.433
7-2-3	BARBARA & RICKIE FRYE	11.24
7-2-3.2	RICKIE GENE FRYE, ET UX	0.9922
7-2-4.1	BEVERLY MAE DAVIS	1.00
7-2-4.2	DAVID L. FRYE	1.25
7-2-5.1	DAVID L. FRYE & MICHAEL G. SCHLIEPER	2.335
7-2-7.1	DAVID L. FRYE & MICHAEL G. SCHLIEPER	2.665
7-7-9	WILLARD JUNIOR EVANS & ROSE MARY EVANS - LIFE	2.214

REFERENCES



NOTES ON SURVEY

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



12 Vanhorn Drive | P.O. Box 156 | Glenville, WV 26031 | 304.462.5524
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.273.5296
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. 677 *Gregory A. Smith*



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
DATE OCTOBER 13, 20 21
REVISED _____, 20 ____
OPERATORS WELL NO. BRECKENRIDGE S-26HM
API WELL NO. 47 - 051 - 02433
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 9026P26HM.dwg
BRECKENRIDGE S-26HM REV0
HORIZONTAL & VERTICAL CONTROL DETERMINED BY: DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 2000'

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



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

LOCATION: GROUND = 1,384.50' ELEVATION 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 01/28/2022

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: 7,167' / TMD: 17,335'

WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DARREN BROWN - CT CORPORATION
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 ADDRESS 5098 WASHINGTON ST. W, STE 407
FORT WORTH, TX 76107 CHARLESTON, WV 25313-1561

COUNTY NAME PERMIT

**BRECKENRIDGE S LEASE
WELL 26HM
TUG HILL OPERATING**

LINE TABLE		
LINE	BEARING	DISTANCE
L1	S 09°11' W	1278.53'

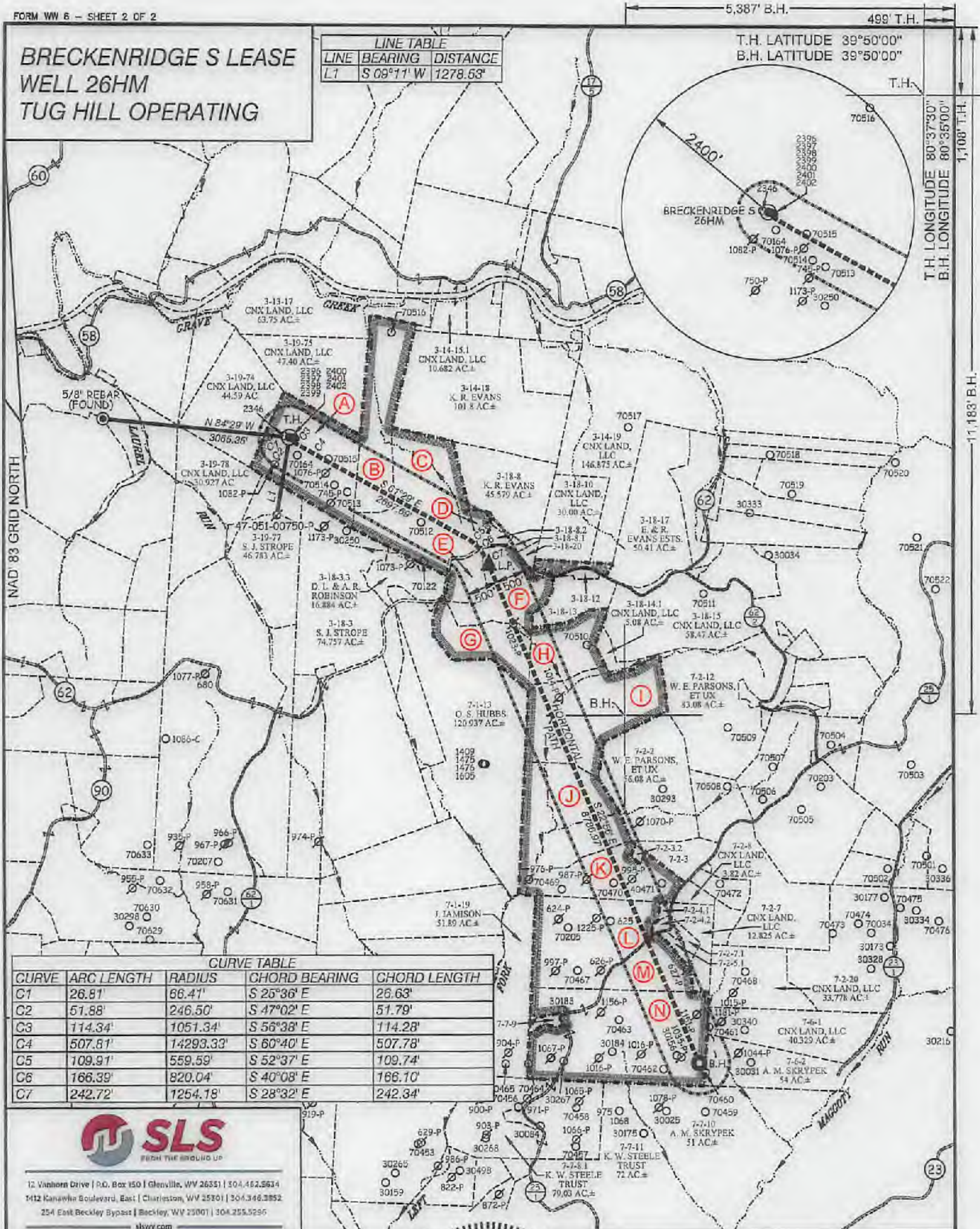
5,387' B.H. 499' T.H.
T.H. LATITUDE 39°50'00"
B.H. LATITUDE 39°50'00"

NAD 83 GRID NORTH

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

1,108' T.H.

1,183' B.H.



CURVE TABLE

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	26.81'	86.41'	S 25°36' E	26.63'
C2	51.88'	246.50'	S 47°02' E	51.79'
C3	114.34'	1051.34'	S 56°38' E	114.28'
C4	507.81'	14293.33'	S 60°40' E	507.78'
C5	109.91'	559.59'	S 52°37' E	109.74'
C6	166.39'	820.04'	S 40°08' E	166.10'
C7	242.72'	1254.18'	S 28°32' E	242.34'



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26031 | 304.462.5634
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254 East Beckley Bypass | Beckley, WV 25001 | 304.255.9295
sls.com

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)
NAD'83 S.P.C.(FT) N. 486,518.87 E. 1,652,063.98
NAD'83 GEO. LAT-(N) 39.830281 LONG-(W) 80.826778
NAD'83 UTM (M) N. 4,408,888.08 E. 531,937.06

LANDING POINT
NAD'83 S.P.C.(FT) N. 484,453.4 E. 1,555,331.9
NAD'83 GEO. LAT-(N) 39.824733 LONG-(W) 80.815050
NAD'83 UTM (M) N. 4,408,375.5 E. 532,943.2

BOTTOM HOLE
NAD'83 S.P.C.(FT) N. 476,360.9 E. 1,658,755.5
NAD'83 GEO. LAT-(N) 39.802634 LONG-(W) 80.802507
NAD'83 UTM (M) N. 4,405,827.5 E. 534,027.4



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

P.S. 677

Gregory A. Smith

LEGEND

- LEASE LINE
- SURFACE LINE
- WELL LATERAL
- OFFSET LINE
- TIE LINE
- CREEK
- ROAD
- COUNTY ROUTE
- PROPOSED WELL
- EXISTING WELL
- PERMITTED WELL
- TAX MAP-PARCEL
- SURFACE OWNER (SEE TABLE)
- LEASE # (SEE WW-6A1)

SCALE 1" = 2000' FILE NO. 9026P26HM.dwg
BRECKENRIDGE S-26HM REV0

DATE OCTOBER 13, 20 21
REVISED _____, 20 ____
OPERATORS WELL NO. BRECKENRIDGE S-26HM
API WELL NO. 47-051-02433
STATE COUNTY PERMIT

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



WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DARREN BROWN - CT CORPORATION
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 ADDRESS 5098 WASHINGTON ST. W, STE 407
FORT WORTH, TX 76107 CHARLESTON, WV 25313-1561

COUNTY NAME

PERMIT

01/28/2022

**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

RECEIVED
Office of Oil and Gas

DEC 14 2021

WV Department of
Environmental Protection

**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

Lease ID	TMP	TAG	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment
10*31241	3-19-76	A	JAMES R. WAYT, CONVEYED ON 12/3/2013 TO MERIDIUS VENTURES, LLC AND HASAN'S VENTURES, LLC IN DB 811/494	TRANS ENERGY INC AND REPUBLIC PARTNERS VI LP	1/8+	729 40	N/A	N/A	N/A	Trans Energy Inc to Republic Energy Ventures LLC: 24/260	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII, 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, CONVEYED ON 12/3/2013 TO MERIDIUS VENTURES, LLC AND HASAN'S VENTURES, LLC IN DB 811/494	TRANS ENERGY INC AND REPUBLIC PARTNERS VI LP	1/8+	729 49	N/A	N/A	N/A	Trans Energy Inc to Republic Energy Ventures LLC: 24/260	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to TH Exploration LLC: 48/21
10*31251	3-18-1	B	GOSHORN RIDGE LLC	TRANS ENERGY INC AND REPUBLIC PARTNERS VI LP	1/8+	723 192	Trans Energy Inc to Republic Energy Ventures LLC: 24/425	Trans Energy Inc to American Shale Development Inc: 27/172	Republic Energy Ventures LLC to Republic Partners VIII, LLC: 27/638 & 28/184	American Shale Development Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to TH Exploration LLC: 48/21
10*17925	3-18-1	B	BOUNTY MINERALS LLC	TH EXPLORATION LLC	1/8+	928 393	N/A	N/A	N/A	N/A	N/A	N/A
10*31251	3-18-2	C	GOSHORN RIDGE LLC	TRANS ENERGY INC AND REPUBLIC PARTNERS VI LP	1/8+	723 192	Trans Energy Inc to Republic Energy Ventures LLC: 24/425	Trans Energy Inc to American Shale Development Inc: 27/172	Republic Energy Ventures LLC to Republic Partners VIII, LLC: 27/638 & 28/184	American Shale Development Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to TH Exploration LLC: 48/21
10*17925	3-18-2	C	BOUNTY MINERALS LLC	TH EXPLORATION LLC	1/8+	928 393	N/A	N/A	N/A	N/A	N/A	N/A
10*31251	3-18-7	D	GOSHORN RIDGE LLC	TRANS ENERGY INC AND REPUBLIC PARTNERS VI LP	1/8+	723 192	Trans Energy Inc to Republic Energy Ventures LLC: 24/425	Trans Energy Inc to American Shale Development Inc: 27/172	Republic Energy Ventures LLC to Republic Partners VIII, LLC: 27/638 & 28/184	American Shale Development Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to TH Exploration LLC: 48/21
10*39563	3-14-18	E	KEVIN R EVANS	CHEVRON USA INC	1/8+	1008 561	N/A	N/A	N/A	N/A	Chevron USA Inc to EQT Aurora LLC: 47/1	EQT Production Company to TH Exploration LLC: 50/1
10*17925	3-18-6	F	BOUNTY MINERALS LLC	TH EXPLORATION LLC	1/8+	928 393	N/A	N/A	N/A	N/A	N/A	N/A
10*31251	3-18-6	F	GOSHORN RIDGE LLC	TRANS ENERGY INC AND REPUBLIC PARTNERS VI LP	1/8+	723 192	Trans Energy Inc to Republic Energy Ventures LLC: 24/425	Trans Energy Inc to American Shale Development Inc: 27/172	Republic Energy Ventures LLC to Republic Partners VIII, LLC: 27/638 & 28/184	American Shale Development Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to TH Exploration LLC: 48/21
10*38572	3-18-6	F	EQT PRODUCTION COMPANY	SOUTHWESTERN ENERGY COMPANY	1/8+	1065 540	N/A	N/A	N/A	N/A	SWN Production Company LLC to TH Exploration LLC: 49/635	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/604
10*19995	3-18-14	G	JEFFREY L CUMPSTON AND TAMMY S CUMPSTON	TH EXPLORATION LLC	1/8+	953 280	N/A	N/A	N/A	N/A	N/A	N/A

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10*21519	3-18-14	G	KEITH D CUMPSTON AND SANDRA S CUMPSTON	TH EXPLORATION LLC	1/8+	953	277	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*21523	3-18-14	G	VICKI J DOBBS	TH EXPLORATION LLC	1/8+	953	275	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*21579	3-18-14	G	KAREN A MICKEY	TH EXPLORATION LLC	1/8+	953	283	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*21580	3-18-14	G	JAMES AND DEBRA J CUMPSTON	TH EXPLORATION LLC	1/8+	953	288	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*21609	3-18-14	G	JOHN D CUMPSTON AND DEBRA L CUMPSTON	TH EXPLORATION LLC	1/8+	953	285	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*21777	3-18-14	G	JANET L MCISAAC	TH EXPLORATION LLC	1/8+	953	291	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*22986	3-18-14	G	MICHAEL MAZIK AND DAWN MAZIK	TH EXPLORATION LLC	1/8+	977	350	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23158	3-18-14	G	PETER C KALE AND NANCY J KALE	TH EXPLORATION LLC	1/8+	983	593	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23159	3-18-14	G	KEVIN KALE	TH EXPLORATION LLC	1/8+	983	590	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23897	3-18-14	G	BELVA I PAYNTER	TH EXPLORATION LLC	1/8+	1017	594	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*27945	3-18-14	G	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1063	562	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*31230	3-18-14	G	JAMES TIMOTHY HUBBS TESTAMENTARY TRUST OF MOLLY KAY HOBBS y JAMES TIMOTHY HOBBS TRUST	REPUBLIC ENERGY VENTURES LLC	1/8+	848	6	N/A	N/A	N/A	American Shale Development Inc to Republic Energy Ventures LLC: 33/255	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*38558	3-18-14	G	EQT PRODUCTION COMPANY	SWN ENERGY COMPANY LLC & EQUINOR USA ONSHORE PROPERTIES INC	1/8+	1065	535	N/A	N/A	N/A	N/A	SWN Production Company LLC to TH Exploration LLC: 49/120	Equinor USA Onshore Properties Inc to TH Exploration LLC: 49/104	
10*38559	3-18-14	G	DOUGLAS N ERNEST	AMERICAN SHALE DEVELOPMENT INC AND REPUBLIC ENERGY VENTURES LLC	1/8+	793	79	N/A	American Shale Development Inc to Republic Energy Ventures LLC: 31/482	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 SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/120	Equinor USA Onshore Properties Inc to TH Exploration LLC: 49/104	
10*38560	3-18-14	G	GARY ERNEST	AMERICAN SHALE DEVELOPMENT INC AND REPUBLIC ENERGY VENTURES LLC	1/8+	793	78	N/A	American Shale Development Inc to Republic Energy Ventures LLC: 31/482	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 SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/120	Equinor USA Onshore Properties Inc to TH Exploration LLC: 49/104	
10*38561	3-18-14	G	EDWARD S PHILLIPS	AMERICAN SHALE DEVELOPMENT INC AND REPUBLIC ENERGY VENTURES LLC	1/8+	798	209	N/A	American Shale Development Inc to Republic Energy Ventures LLC: 31/482	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 SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/120	Equinor USA Onshore Properties Inc to TH Exploration LLC: 49/104	
10*38563	3-18-14	G	NANCY P JOHNSON	AMERICAN SHALE DEVELOPMENT INC AND REPUBLIC ENERGY VENTURES LLC	1/8+	800	323	N/A	American Shale Development Inc to Republic Energy Ventures LLC: 31/482	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 SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/120	Equinor USA Onshore Properties Inc to TH Exploration LLC: 49/104	
10*38564	3-18-14	G	DAVID L MCVVEY AND MARILYNN J MCVVEY	AMERICAN SHALE DEVELOPMENT INC AND REPUBLIC ENERGY VENTURES LLC	1/8+	800	328	N/A	American Shale Development Inc to Republic Energy Ventures LLC: 31/482	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 SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/120	Equinor USA Onshore Properties Inc to TH Exploration LLC: 49/104	

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10*38565	3-18-14	G	HAROLD D MCVEY AND JANET E MCVEY	NATURAL OIL AND GAS PUBLIC ENERGY VENTURES LLC	1/8+	800	327	N/A	American Shale Development Inc to Republic Energy Ventures LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/120	Equinor USA Onshore Properties Inc to TH Exploration LLC: 49/104
10*38566	3-18-14	G	EDWARD LEE THOMAS	AMERICAN SHALE DEVELOPMENT INC AND REPUBLIC ENERGY VENTURES LLC	1/8+	800	324	N/A	American Shale Development Inc to Republic Energy Ventures LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/120	Equinor USA Onshore Properties Inc to TH Exploration LLC: 49/104
10*39498	3-18-14	G	UNKNOWN HEIRS AND ASSIGNS OF WILLIAM WESLEY PHILLIPS ET AL.	TH EXPLORATION LLC	1/8+	1118	200	N/A	N/A	N/A	N/A	N/A	N/A
10*38568	3-18-14	G	LOVERINE M TAYLOR	AMERICAN SHALE DEVELOPMENT INC AND REPUBLIC ENERGY VENTURES LLC	1/8+	819	462	N/A	American Shale Development Inc to Republic Energy Ventures LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/120	Equinor USA Onshore Properties Inc to TH Exploration LLC: 49/104
10*38569	3-18-14	G	PATRICIA D BONDONESE	AMERICAN SHALE DEVELOPMENT INC AND REPUBLIC ENERGY VENTURES LLC	1/8+	819	461	N/A	American Shale Development Inc to Republic Energy Ventures LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/120	Equinor USA Onshore Properties Inc to TH Exploration LLC: 49/104
10*38570	3-18-14	G	CYNTHIA J PHILLIPS	AMERICAN SHALE DEVELOPMENT INC AND REPUBLIC ENERGY VENTURES LLC	1/8+	819	460	N/A	American Shale Development Inc to Republic Energy Ventures LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/120	Equinor USA Onshore Properties Inc to TH Exploration LLC: 49/104
10*17925	3-18-5	H	BOUNTY MINERALS LLC	TH EXPLORATION LLC	1/8+	928	393	N/A	N/A	N/A	N/A	N/A	N/A
10*31251	3-18-5	H	GOSHORN RIDGE LLC	TRANS ENERGY INC AND REPUBLIC PARTNERS VI LP	1/8+	723	192	Trans Energy Inc to Republic Energy Ventures LLC: 24/425	Trans Energy Inc to American Shale Development Inc: 27/172	Republic Energy Ventures LLC to Republic Partners VIII, LLC: 27/638 & 28/184	American Shale Development Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to TH Exploration LLC: 48/21
10*31230	7-2-1	I	JAMES TIMOTHY HUBBS TESTAMENTARY TRUST OF MOLI	REPUBLIC ENERGY VENTURES LLC	1/8+	848	6	N/A	N/A	N/A	American Shale Devel. Inc to Republic Partners VIII LLC: 33/255	Republic Energy ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to TH Exploration LLC: 48/21
10*31230	7-1-14	J	JAMES TIMOTHY HUBBS TESTAMENTARY TRUST OF MOLI	REPUBLIC ENERGY VENTURES LLC	1/8+	848	6	N/A	N/A	N/A	American Shale Devel. Inc to Republic Partners VIII LLC: 33/255	Republic Energy ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to TH Exploration LLC: 48/21

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10*25503	7-2-3.1	K	BEVERLY MAE DAVIS	AMERICAN PETROLEUM PARTNERS LLC	1/8+	910	270	N/A	N/A	N/A	N/A	N/A	American Petroleum Partners Operating LLC to TH Exploration LLC: 43/503
10*25507	7-2-3.1	K	DAVID LEE DAVIS AND A JANE DAVIS	AMERICAN PETROLEUM PARTNERS LLC	1/8+	910	265	N/A	N/A	N/A	N/A	N/A	American Petroleum Partners Operating LLC to TH Exploration LLC: 43/503
10*25529	7-2-3.1	K	KAREN S HOLT	AMERICAN PETROLEUM PARTNERS LLC	1/8+	930	261	N/A	N/A	N/A	N/A	N/A	American Petroleum Partners Operating LLC to TH Exploration LLC: 43/503
10*25531	7-2-3.1	K	KATHY L YOUNG AND RODNEY A YOUNG	AMERICAN PETROLEUM PARTNERS LLC	1/8+	932	142	N/A	N/A	N/A	N/A	N/A	American Petroleum Partners Operating LLC to TH Exploration LLC: 43/503
10*25535	7-2-3.1	K	RICKY J CAIN	AMERICAN PETROLEUM PARTNERS LLC	1/8+	930	295	N/A	N/A	N/A	N/A	N/A	American Petroleum Partners Operating LLC to TH Exploration LLC: 43/503
10*25537	7-2-3.1	K	SUSAN E WRIGHT	AMERICAN PETROLEUM PARTNERS LLC	1/8+	932	207	N/A	N/A	N/A	N/A	N/A	American Petroleum Partners Operating LLC to TH Exploration LLC: 43/503
10*29069	7-2-4	L	CAROLYN A POSTLETHWAITE	TH EXPLORATION LLC	1/8+	1083	548	N/A	N/A	N/A	N/A	N/A	N/A
10*30154	7-2-4	L	MICHELLE ABRAMS AND DONALD A ABRAMS	TH EXPLORATION LLC	1/8+	1104	641	N/A	N/A	N/A	N/A	N/A	N/A
10*30156	7-2-4	L	RAYMOND L MITCHELL AND JANET L MITCHELL	TH EXPLORATION LLC	1/8+	1104	637	N/A	N/A	N/A	N/A	N/A	N/A
10*30157	7-2-4	L	EDISON K MITCHELL AND MARILEE J MITCHELL	TH EXPLORATION LLC	1/8+	1104	645	N/A	N/A	N/A	N/A	N/A	N/A
10*30483	7-2-4	L	DAVID W MITCHELL	TH EXPLORATION LLC	1/8+	1105	1	N/A	N/A	N/A	N/A	N/A	N/A
10*30605	7-2-4	L	CAMMIE WILSON AND CLINT A WILSON	TH EXPLORATION LLC	1/8+	1110	529	N/A	N/A	N/A	N/A	N/A	N/A
10*30606	7-2-4	L	NEIL EDWARD WILSON	TH EXPLORATION LLC	1/8+	1110	526	N/A	N/A	N/A	N/A	N/A	N/A
10*38636	7-2-4	L	KRISTINA KOLLER	AMERICAN SHALE DEVELOPMENT INC AND REPUBLIC ENERGY VENTURES LLC	1/8+	787	131	N/A	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/635	Equinor USA Onshore Properties Inc to TH Exploration LLC: 49/604
10*38658	7-2-4	L	KYLE OWENS	AMERICAN SHALE DEVELOPMENT INC AND REPUBLIC ENERGY VENTURES LLC	1/8+	789	296	N/A	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/635	Equinor USA Onshore Properties Inc to TH Exploration LLC: 49/604
10*38602	7-2-4	L	SUSAN L CLENDENNING	TRANS ENERGY INC AND REPUBLIC PARTNERS VI LP	1/8+	761	290	Trans Energy Inc to Republic Energy Ventures LLC: 26/632	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/635	Equinor USA Onshore Properties Inc to TH Exploration LLC: 49/604
10*29069	7-2-5	M	CAROLYN A POSTLETHWAITE	TH EXPLORATION LLC	1/8+	1083	548	N/A	N/A	N/A	N/A	N/A	N/A
10*30154	7-2-5	M	MICHELLE ABRAMS AND DONALD A ABRAMS	TH EXPLORATION LLC	1/8+	1104	641	N/A	N/A	N/A	N/A	N/A	N/A
10*30156	7-2-5	M	RAYMOND L MITCHELL AND JANET L MITCHELL	TH EXPLORATION LLC	1/8+	1104	637	N/A	N/A	N/A	N/A	N/A	N/A
10*30157	7-2-5	M	EDISON K MITCHELL AND MARILEE J MITCHELL	TH EXPLORATION LLC	1/8+	1104	645	N/A	N/A	N/A	N/A	N/A	N/A
10*30483	7-2-5	M	DAVID W MITCHELL	TH EXPLORATION LLC	1/8+	1105	1	N/A	N/A	N/A	N/A	N/A	N/A
10*30605	7-2-5	M	CAMMIE WILSON AND CLINT A WILSON	TH EXPLORATION LLC	1/8+	1110	529	N/A	N/A	N/A	N/A	N/A	N/A
10*30606	7-2-5	M	NEIL EDWARD WILSON	TH EXPLORATION LLC	1/8+	1110	526	N/A	N/A	N/A	N/A	N/A	N/A

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10*38636	7-2-5	M	KRISTINA KOLLER	AMERICAN SHALE DEVELOPMENT INC AND REPUBLIC ENERGY VENTURES LLC	1/8+	787	131	N/A	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/635	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/604
10*38658	7-2-5	M	KYLE OWENS	AMERICAN SHALE DEVELOPMENT INC AND REPUBLIC ENERGY VENTURES LLC	1/8+	789	296	N/A	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/635	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/604
10*38602	7-2-5	M	SUSAN L CLENDENNING	TRANS ENERGY INC AND REPUBLIC PARTNERS VI LP	1/8+	761	290	Trans Energy Inc to Republic Energy Ventures LLC: 26/632	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/635	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/604
10*28335	7-7-9.1	N	DENNIS H TEDROW AND LINDA S TEDROW	TH EXPLORATION LLC	1/8+	1070	442	N/A	N/A	N/A	N/A	N/A	N/A
10*28336	7-7-9.1	N	DUSTIN K TEDROW AND JENNIFER M TEDROW	TH EXPLORATION LLC	1/8+	1070	440	N/A	N/A	N/A	N/A	N/A	N/A
10*29038	7-7-9.1	N	CONSTANCE L LINT TRUST CONSTANCE LINT TRUSTEE	TH EXPLORATION LLC	1/8+	1083	369	N/A	N/A	N/A	N/A	N/A	N/A
10*29069	7-7-9.1	N	CAROLYN A POSTLETHWAITE	TH EXPLORATION LLC	1/8+	1083	548	N/A	N/A	N/A	N/A	N/A	N/A
10*29114	7-7-9.1	N	TERRY WITHEROW AND JAY WITHEROW	TH EXPLORATION LLC	1/8+	1084	396	N/A	N/A	N/A	N/A	N/A	N/A
10*29138	7-7-9.1	N	DEBORAH ANN GORBY	TH EXPLORATION LLC	1/8+	1085	180	N/A	N/A	N/A	N/A	N/A	N/A
10*29513	7-7-9.1	N	TRACY J WEGENDT	TH EXPLORATION LLC	1/8+	1096	292	N/A	N/A	N/A	N/A	N/A	N/A
10*29766	7-7-9.1	N	STEWART TEDROW	TH EXPLORATION LLC	1/8+	1100	260	N/A	N/A	N/A	N/A	N/A	N/A
10*29939	7-7-9.1	N	DONALD E SHANOR AND BETSY SHANOR	TH EXPLORATION LLC	1/8+	1103	547	N/A	N/A	N/A	N/A	N/A	N/A
10*30154	7-7-9.1	N	MICHELLE ABRAMS AND DONALD A ABRAMS	TH EXPLORATION LLC	1/8+	1104	641	N/A	N/A	N/A	N/A	N/A	N/A
10*30155	7-7-9.1	N	CHARLES WAYNE GORBY, BY ATTORNEY IN FACT, CHARLES	TH EXPLORATION LLC	1/8+	1104	633	N/A	N/A	N/A	N/A	N/A	N/A
10*30156	7-7-9.1	N	RAYMOND L MITCHELL AND JANET L MITCHELL	TH EXPLORATION LLC	1/8+	1104	637	N/A	N/A	N/A	N/A	N/A	N/A
10*30157	7-7-9.1	N	EDISON K MITCHELL AND MARILEE J MITCHELL	TH EXPLORATION LLC	1/8+	1104	645	N/A	N/A	N/A	N/A	N/A	N/A
10*30483	7-7-9.1	N	DAVID W MITCHELL	TH EXPLORATION LLC	1/8+	1105	1	N/A	N/A	N/A	N/A	N/A	N/A
10*30604	7-7-9.1	N	JANICE CAROLYN HETRICK AND RICHARD HETRICK	TH EXPLORATION LLC	1/8+	1107	108	N/A	N/A	N/A	N/A	N/A	N/A
10*30605	7-7-9.1	N	CAMMIE WILSON AND CLINT A WILSON	TH EXPLORATION LLC	1/8+	1110	529	N/A	N/A	N/A	N/A	N/A	N/A
10*30606	7-7-9.1	N	NEIL EDWARD WILSON	TH EXPLORATION LLC	1/8+	1110	526	N/A	N/A	N/A	N/A	N/A	N/A
10*38536	7-7-9.1	N	JOHN SAMUEL TEDROW	TRANS ENERGY INC AND REPUBLIC PARTNERS VI LP	1/8+	757	276	Trans Energy Inc to American Shale Development Inc: 27/172	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/121	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/105
10*38537	7-7-9.1	N	JAMES W RAYMOND	AMERICAN SHALE DEVELOPMENT INC AND REPUBLIC ENERGY VENTURES LLC	1/8+	789	299	N/A	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/635	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/604
10*30157	7-7-9.1	N	EDISON K MITCHELL AND MARILEE J MITCHELL	TH EXPLORATION LLC	1/8+	1104	645	N/A	N/A	N/A	N/A	N/A	N/A
10*38542	7-7-9.1	N	MARILYN D HOGAN	TRANS ENERGY INC AND REPUBLIC PARTNERS VI LP	1/8+	750	490	Trans Energy Inc to American Shale Development Inc: 27/172	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/120	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/104

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10*38543	7-7-9.1	N	CHARLES ROBERT TEDROW	TRANS ENERGY INC AND REPUBLIC PARTNERS VI LP	1/8+	757	277	Trans Energy Inc to American Shale Development Inc: 27/172	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/120	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/104
10*30156	7-7-9.1	N	RAYMOND L MITCHELL AND JANET L MITCHELL	TH EXPLORATION LLC	1/8+	1104	637	N/A	N/A	N/A	N/A	N/A	N/A
10*38549	7-7-9.1	N	ROBERT TEDROW	TRANS ENERGY INC AND REPUBLIC PARTNERS VI LP	1/8+	750	491	Trans Energy Inc to American Shale Development Inc: 27/172	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/120	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/104
10*38551	7-7-9.1	N	BONNIE LOU SELLERS MURPHY	EQT PRODUCTION COMPANY	1/8+	961	572	N/A	N/A	N/A	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/635	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/604
10*38553	7-7-9.1	N	THOMAS E MITCHELL	TRANS ENERGY INC AND REPUBLIC PARTNERS VI LP	1/8+	747	91	Trans Energy Inc to American Shale Development Inc: 27/172	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/120	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/104
10*38554	7-7-9.1	N	JACK E DILLE AND MELISSA DILLE	TRANS ENERGY INC AND REPUBLIC PARTNERS VI LP	1/8+	757	267	Trans Energy Inc to Republic Energy Ventures LLC: 26/632	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/120	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/104
10*38557	7-7-9.1	N	DEBBIE DEGROFF	TRANS ENERGY INC AND REPUBLIC PARTNERS VI LP	1/8+	750	508	Trans Energy Inc to American Shale Development Inc: 27/172	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/120	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/104
10*38571	7-7-9.1	N	EQT PRODUCTION COMPANY	SWN ENERGY COMPANY LLC & EQUINOR USA ONSHORE PROPERTIES INC	1/8+	1065	545	N/A	N/A	N/A	N/A	SWN Production Company LLC to TH Exploration LLC: 49/635	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/604
10*38574	7-7-9.1	N	JANET L BURA AND MARK BURA	TRANS ENERGY INC AND REPUBLIC PARTNERS VI LP	1/8+	757	266	Trans Energy Inc to Republic Energy Ventures LLC: 26/632	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/120	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/104
10*38578	7-7-9.1	N	LLOYD TEDROW	TRANS ENERGY INC AND REPUBLIC PARTNERS VI LP	1/8+	754	18	Trans Energy Inc to American Shale Development Inc: 27/172	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/120	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/104
10*38581	7-7-9.1	N	GUY DILLE AND DOROTHY DILLE	TRANS ENERGY INC AND REPUBLIC PARTNERS VI LP	1/8+	758	613	Trans Energy Inc to Republic Energy Ventures LLC: 26/632	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/635	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/604

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10*38587	7-7-9.1	N	CAROLE A SIMMONS	TRANS ENERGY INC AND REPUBLIC PARTNERS VI LP	1/8+	759	596	Trans Energy Inc to Republic Energy Ventures LLC: 26/632	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/635	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/604
10*38599	7-7-9.1	N	MARY LOU HARRISON	TRANS ENERGY INC AND REPUBLIC PARTNERS VI LP	1/8+	759	598	Trans Energy Inc to Republic Energy Ventures LLC: 26/632	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/635	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/604
10*38601	7-7-9.1	N	KIMBERLY J DURENDA AND LARRY K DURENDA	TRANS ENERGY INC AND REPUBLIC PARTNERS VI LP	1/8+	754	10	Trans Energy Inc to American Shale Development Inc: 27/172	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/120	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/104
10*38602	7-7-9.1	N	SUSAN L CLENDENNING	TRANS ENERGY INC AND REPUBLIC PARTNERS VI LP	1/8+	761	290	Trans Energy Inc to Republic Energy Ventures LLC: 26/632	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/635	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/604
10*38612	7-7-9.1	N	CHARLES F MARTIN JR	AMERICAN SHALE DEVELOPMENT INC AND REPUBLIC ENERGY VENTURES LLC	1/8+	777	592	N/A	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/635	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/604
10*38617	7-7-9.1	N	GARY L TEDROW, JR.	TH EXPLORATION LLC	1/8+	1120	160	N/A	N/A	N/A	N/A	N/A	N/A
10*38621	7-7-9.1	N	BEVERLY L DILLE ET AL.	AMERICAN SHALE DEVELOPMENT INC AND REPUBLIC ENERGY VENTURES LLC	1/8+	777	593	N/A	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/635	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/604
10*38630	7-7-9.1	N	MARJORIE HARTMAN	TRANS ENERGY INC AND REPUBLIC PARTNERS VI LP	1/8+	750	493	Trans Energy Inc to American Shale Development Inc: 27/172	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/120	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/104
10*38632	7-7-9.1	N	RHEA M TEDROW	AMERICAN SHALE DEVELOPMENT INC AND REPUBLIC ENERGY VENTURES LLC	1/8+	784	189	N/A	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/635	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/604
10*38636	7-7-9.1	N	KRISTINA KOLLER	AMERICAN SHALE DEVELOPMENT INC AND REPUBLIC ENERGY VENTURES LLC	1/8+	787	131	N/A	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/635	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/604

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10*38648	7-7-9.1	N	BONNIE S MORRIS AND RONALD E MORRIS	TRANS ENERGY INC AND REPUBLIC PARTNERS VI LP	1/8+	577		Trans Energy Inc to American Shale Development Inc: 27/172	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/120	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/104
10*38649	7-7-9.1	N	B PAUL DILLE AND SHERRY DILLE	TRANS ENERGY INC AND REPUBLIC PARTNERS VI LP	1/8+	648		Trans Energy Inc to American Shale Development Inc: 27/172	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/120	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/104
10*38653	7-7-9.1	N	SANDRA LINT	AMERICAN SHALE DEVELOPMENT INC AND REPUBLIC ENERGY VENTURES LLC	1/8+	787	130	N/A	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/635	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/604
10*38658	7-7-9.1	N	KYLE OWENS	AMERICAN SHALE DEVELOPMENT INC AND REPUBLIC ENERGY VENTURES LLC	1/8+	789	296	N/A	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/635	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/604
10*38689	7-7-9.1	N	ROBERT J RAYMOND	AMERICAN SHALE DEVELOPMENT INC AND REPUBLIC ENERGY VENTURES LLC	1/8+	789	295	N/A	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	SWN Production Company LLC to TH Exploration LLC: 49/635	Equinore USA Onshore Properties Inc to TH Exploration LLC: 49/604
10*39020	7-7-9.1	N	MARCIE WITHEROW	TH EXPLORATION LLC	1/8+	1110	515	N/A	N/A	N/A	N/A	N/A	N/A
10*39051	7-7-9.1	N	SUZANNE TAYLOR	TH EXPLORATION LLC	1/8+	1104	635	N/A	N/A	N/A	N/A	N/A	N/A
10*39054	7-7-9.1	N	CANDY SUE DELANEY AND LESLIE R DELANEY	TH EXPLORATION LLC	1/8+	1110	533	N/A	N/A	N/A	N/A	N/A	N/A
10*39057	7-7-9.1	N	CHARLES WAYNE VARNER	TH EXPLORATION LLC	1/8+	1110	536	N/A	N/A	N/A	N/A	N/A	N/A
10*39255	7-7-9.1	N	TRUDY D FERNANDEZ AND MICHAEL FERNANDEZ	TH EXPLORATION LLC	1/8+	1111	580	N/A	N/A	N/A	N/A	N/A	N/A
10*39283	7-7-9.1	N	ALICE FAYE VARNER	TH EXPLORATION LLC	1/8+	1114	38	N/A	N/A	N/A	N/A	N/A	N/A
10*39337	7-7-9.1	N	FAMILY TREE CORPORATION	TH EXPLORATION LLC	1/8+	1117	57	N/A	N/A	N/A	N/A	N/A	N/A
10*39338	7-7-9.1	N	FAMILY TREE CORPORATION	TH EXPLORATION LLC	1/8+	1117	55	N/A	N/A	N/A	N/A	N/A	N/A
10*39384	7-7-9.1	N	JOYCE LYNNE LOWRY AND STEVE LOWRY	TH EXPLORATION LLC	1/8+	1114	314	N/A	N/A	N/A	N/A	N/A	N/A
10*39403	7-7-9.1	N	JEFFREY LINN DILLE	TH EXPLORATION LLC	1/8+	1114	512	N/A	N/A	N/A	N/A	N/A	N/A
10*39408	7-7-9.1	N	WILLIAM GUY DILLE	TH EXPLORATION LLC	1/8+	1118	263	N/A	N/A	N/A	N/A	N/A	N/A

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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:

ARTICLE I
DEFINED TERMS

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

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ASSIGNMENT AND CONVEYANCE

This Assignment and Conveyance (this "*Assignment*") is from EQUINOR USA ONSHORE PROPERTIES, INC., a Delaware corporation ("*Assignor*"), to TH Exploration, LLC, a Texas limited liability company ("*Assignee*"), and is executed on October 18, 2021 (the "*Effective Date*"). Assignor and Assignee may be referred to herein collectively as the "*Parties*," or individually as a "*Party*." Capitalized terms used herein but not otherwise defined herein (including in Section 3.7) shall have the meanings given such terms in that certain Acreage Trade Agreement between the Assignor and the Assignee dated June 15, 2021 (the "*Acreage Trade Agreement*").

ARTICLE 1
ASSIGNMENT OF ASSETS

Section 1.1 Assignment. For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignor hereby GRANTS, BARGAINS, ASSIGNS, CONVEYS AND TRANSFERS unto Assignee all of Assignor's right, title and interest in and to (i) the oil and gas leases described in more detail on Exhibit A attached hereto (the "*Leases*") IN SO FAR AND ONLY IN SO FAR as they cover those lands described on Exhibit A and Exhibit A-1 (the "*Leasehold Rights*") and (ii) any surface use agreements that relate to such Leasehold Rights (collectively with the Leasehold Rights, the "*Conveyed Assets*").

TO HAVE AND TO HOLD the Conveyed Assets, together with all and singular the rights, privileges, contracts and appurtenances, in any way appertaining or belonging thereto, unto Assignee, its successors and assigns, forever, subject, to the terms and conditions of this Assignment.

Section 1.2 Assignment Subject to Acreage Trade Agreement. This Assignment is made in accordance with and is subject to the terms, covenants and conditions contained in that certain Acreage Trade Agreement. In the event of a conflict between the provisions of the Acreage Trade Agreement and this Assignment, the provisions of the Acreage Trade Agreement shall control. The execution and delivery of this Assignment by Assignor, and the execution and acceptance of this Assignment by Assignee, shall not operate to release or impair any surviving rights or obligations of either Party with respect to the other under the Acreage Trade Agreement.

ARTICLE 2
SPECIAL WARRANTY OF TITLE AND DISCLAIMERS

Section 2.1 Special Warranty of Title. Assignor hereby agrees to warrant and defend Defensible Title to the Leases unto Assignee, its successors and assigns, against every Person whomsoever lawfully claiming or to claim the same or any part thereof by, through or under Assignor or any of its Affiliates, but not otherwise.

Section 2.2 Disclaimers of Warranties and Representations.

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STATE OF WEST VIRGINIA §
§
COUNTY OF MARSHALL §

Marshall County
Jan Pest, Clerk
Instrument 1453305
04/24/2019 @ 11:51:22 AM
ASSIGNMENTS
Book 43 @ Page 503
Pages Recorded 10
Recording Cost \$ 17.00

ASSIGNMENT AND CONVEYANCE

THIS ASSIGNMENT AND CONVEYANCE (the "Assignment") is made and entered into this 23rd day of April, 2019 (the "Effective Date"), by and between AMERICAN PETROLEUM PARTNERS OPERATING, LLC, (hereinafter "Assignor") and TH EXPLORATION, LLC (hereinafter "Assignee") pursuant to the terms of that certain Acreage Trade Agreement between the Assignor and the Assignee dated November 15, 2018 (the "Acreage Trade Agreement"). Capitalized terms used but not defined herein and defined in the Acreage Trade Agreement shall have the meanings given to such terms in the Acreage Trade Agreement.

WITNESSETH:

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

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

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

1. Assignment. Assignor does hereby grant, bargain, sell, convey, deliver, assign, set over and transfer, as of the Effective Date, to Assignee, its respective successors and assigns, forever, all of Assignor's right, title and interest in and to the Leases, and the lands covered thereby, together with all rights incident thereto and appurtenances thereon.

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

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

Assignor represents and warrants that Assignor has paid any and all bonuses, rentals, royalties, overriding royalties, and other payments required by the Leases which were due for the period in which Assignor held its interests in the Leases, and that Assignor has fully performed all conditions necessary to maintain the Leases in full force and effect during such period, free and clear of all Encumbrances, except for and subject only to Permitted Encumbrances.

3. Successors and Assigns. The terms of this Assignment shall be binding upon and inure to the benefit of the parties hereto and each of their respective successors

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01/28/2022



December 13, 2021

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

RE: Breckenridge S-26HM

Subject: Road Crossing Letter

Dear Taylor:

Tug Hill Operating, LLC (THO) hereby submits this letter as confirmation that THO has obtained the right to drill, extract and produce the minerals under Marshall County Route 62 and 25/1 in the area reflected on the Breckenridge S-26HM well plat. THO has conducted a full title search in the relevant Court House to confirm its ownership under said County Route and is not currently aware of any recorded document that would suggest an ownership other than THO.

If your office has any questions or concerns regarding the contents of this letter, please do not hesitate to contact me directly at 304-376-0111, or by email at amorris@tug-hilop.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: 12/03/2021

API No. 47- 051 -
Operator's Well No. Breckenridge S-26HM
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>531,937.04</u>
County: <u>Marshall</u>		Northing: <u>4,408,988.11</u>
District: <u>Cameron</u>	Public Road Access: <u>County Route 62</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.

Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following: *PLEASE CHECK ALL THAT APPLY <input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED <input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED <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 <input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH) <input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION <input checked="" type="checkbox"/> 5. PUBLIC NOTICE <input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION		OOG OFFICE USE ONLY <input type="checkbox"/> RECEIVED/ NOT REQUIRED <input type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED/ NOT REQUIRED RECEIVED Office of Oil and Gas DEC 14 2021 WV Department of Environmental Protection <input type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED
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Required Attachments:

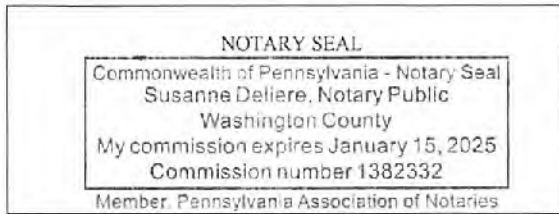
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication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

4705102433

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-hilop.com</u>



Subscribed and sworn before me this 20th day of December, 2021
Susanne Deliere Notary Public
 My Commission Expires 1/15/2025

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at 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: 12/3/2021 **Date Permit Application Filed:** 12/6/2021

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: _____

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(s) (Impoundments or Pits)

Name: _____
 Address: _____

COAL OWNER OR LESSEE

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

COAL OPERATOR

Name: Marshall County Coal Resources, Inc. Attn: Steve Blair
 Address: 46226 National Road
St. Clairsville, OH 43950

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

Name: *see attached
 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.depwv.gov/oil-and-gas/pages/default.aspx.

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Well Location Restrictions

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

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

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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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WW-6A
(8-13)

API NO. 47-051 - 02433
OPERATOR WELL NO. Breckenridge S-26HM
Well Pad Name: Breckenridge

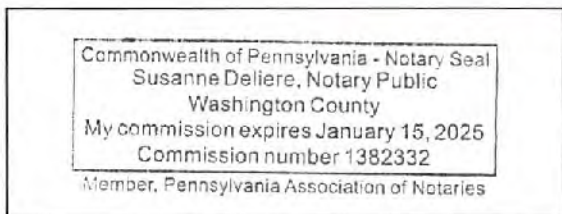
Notice is hereby given by:

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 depprivacyofficer@wv.gov.



Subscribed and sworn before me this 20th day of December, 2021
Susanne Deliere Notary Public
My Commission Expires 1/15/2025

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Exhibit WW-6A

Supplement Pg. 1A

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

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

Well: Breckenridge S – 26HM
District: Cameron
State: WV

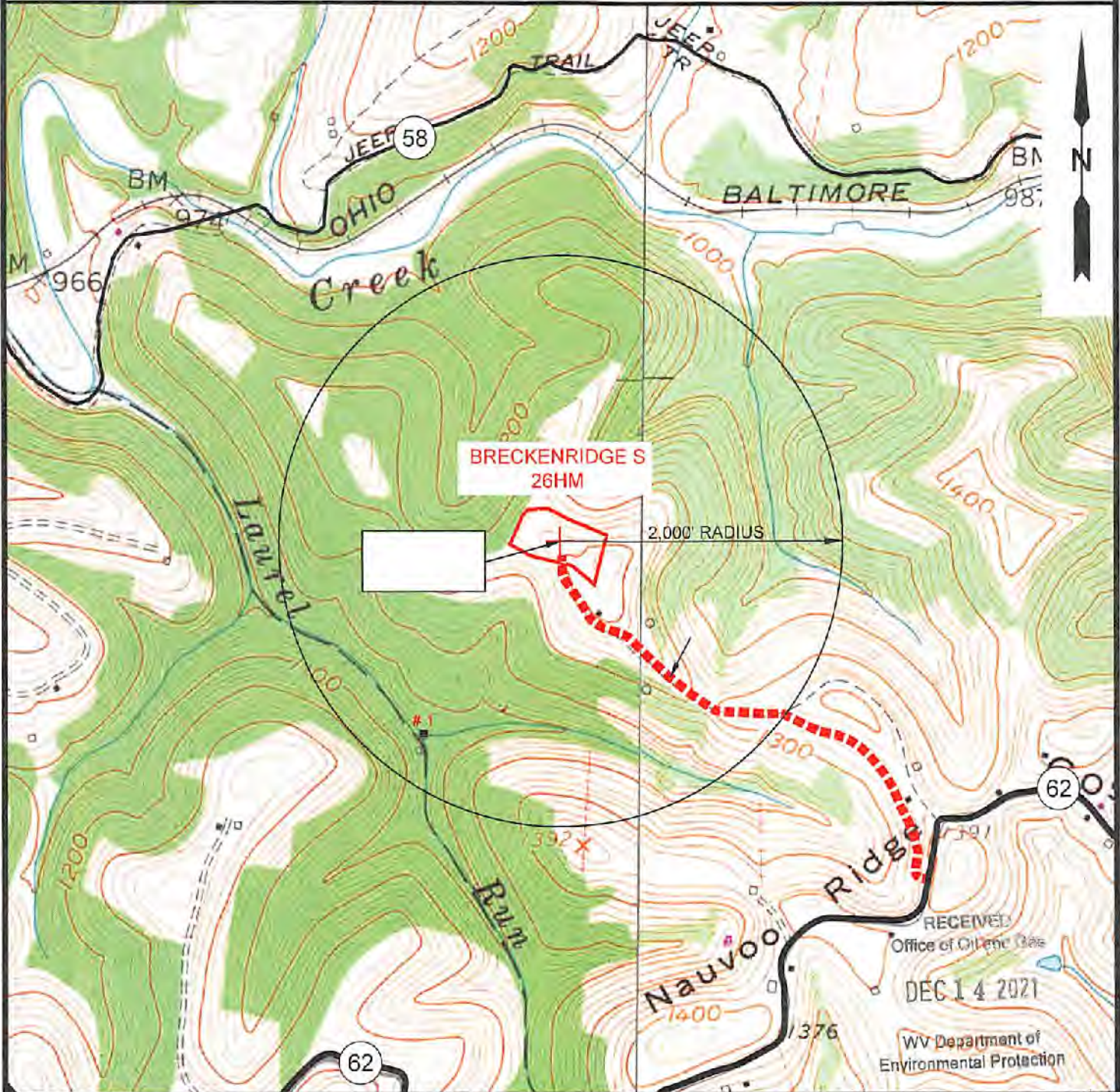
There is one (1) residence, no business or commercial sites, no churches, no schools or no emergency facilities within two-thousand feet (2,000') of the above referenced well location.

<p>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</p>

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PROPOSED BRECKENRIDGE S - 26HM



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



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26551 | 304.462.5654
 1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
 254 East Rockley Bypass | Beckley, WV 25801 | 304.255.5290
 siswv.com

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR:	
COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
MARSHALL	CAMERON	300 SOUTHPOINTE BLVD	
		SUITE 200	
		CANONSBURG, PA 15317	
DRAWN BY	JOB NO.	DATE	SCALE
K.G.M.	9026	09/23/2021	1" = 1000'



TUG HILL
OPERATING

01/28/2022

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: Orward E. Burge

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

*please attach additional forms if necessary

Notice is hereby given:

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

State: <u>West Virginia</u>	Approx. Latitude & Longitude: <u>39.83027651; -80.52685946</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.

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Notice is hereby given by:

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: 724-338-2020

WV Department of
Environmental Protection

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.

01/28/2022

**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: 12/03/2021 **Date Permit Application Filed:** 12/06/2021

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 Jo 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>531,937.04</u>
County:	<u>Marshall</u>		Northing:	<u>4,408,988.11</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.deprwv.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 of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

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Additional Notice for WW-6A5

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

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

Jimmy Wriston, P. E.
 Secretary of Transportation
 Commissioner of Highways

November 17, 2021

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-26HM Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2020-0398 which has been issued to Tug Hill Operating LLC 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 STATEWIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated October 1, 2018. This letter is valid for permitting purposes for one year from the date of this letter.

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 LLC
 CH, OM, D-6
 File

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PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION

Breckenridge Wells

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 Coal Exhibit 1705102433



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