



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, February 17, 2023
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 ROCK HILL S-2UH
47-051-02486-00-00

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

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

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


James A. Martin
Chief

Operator's Well Number: ROCK HILL S-2UH
Farm Name: GEETA
U.S. WELL NUMBER: 47-051-02486-00-00
Horizontal 6A New Drill
Date Issued: 2/17/2023

Promoting a healthy environment.

02/17/2023

PERMIT CONDITIONS 4705102436

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.
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.

02/17/2023



west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street SE, Charleston, WV 25304
304-414-1239

Randall M. Albert, Chairman
dep.wv.gov

February 6, 2023

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

RE: Application for Deep Well Permit – API #47-051-02486

COMPANY: Tug Hill Operating, LLC

FARM: Geeta Rock Hill S-2HU

COUNTY: Marshall DISTRICT: Webster QUAD: Majorsville

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

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

1. Comments to Notice of Deviation filed? No.
2. Provided a certified copy of duly acknowledged and recorded consent and easement form from all surface owners? Yes
3. Provided a tabulation of all deep wells within one mile of the proposed location, including the API number of all deep wells: **yes
4. Provided a plat showing that the productive interval of the well meets the requirements of the Rules of the Commission W. Va. C.S.R. § 39-1-4.2.

Sincerely,

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

Susan Rose
Administrator

**Castle Black 5UH 47-051-02044; Castle Black 7UH 47-051-02119; Castle Black 9UH 47-051-02120; Castle Black 10UH 47-051-02121

02/17/2023



west virginia department of environmental protection

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

Austin Caperton, Cabinet Secretary
dep.wv.gov

**ORDER
ISSUED UNDER
WEST VIRGINIA CODE, CHAPTER 22, ARTICLE 6A**

TO: American Petroleum Partners Operating, LLC
4600 J. Barry Court Suite 310
Canonsburg, Pa 15317

DATE: September 13, 2018
ORDER NO.: 2018-W-7

INTRODUCTION

This Order (hereinafter "Order") is issued by the Office of Oil and Gas (hereinafter "OOG"), by and through its Chief, pursuant to the authority of W. Va. Code §§ 22-1-1, 22-6-1 and 22-6A-1 *et seq.* to American Petroleum Partners Operating, LLC (hereinafter "APP" or "Operator"), collectively the "Parties."

FINDINGS OF THE CHIEF

In support of this Order, the Chief hereby finds the following:

1. OOG, an office within the West Virginia Department of Environmental Protection, is the agency with the duty and authority to execute and enforce W. Va. Code §22-6-1 and §22-6A-1 *et seq.*, and the rules and regulations promulgated thereunder.
2. APP is a "person" as defined by W. Va. Code §22-6-1(n), with a corporate address as 4600 J. Barry Court Suite 310, Canonsburg, Pa 15317.
3. On May 7, 2018 APP submitted a well work permit application identified as API# 47-051-02044. The proposed well is to be located on the Castle Black Pad in Webster District of Marshall County, West Virginia.
4. On August 15, 2018 APP requested a waiver for Wetlands 1 and 2 outlined in Attachment 1, from well location restriction requirements in W. Va. Code §22-6A-12(b) for the well work permit application identified as API# 47-051-02044.

CONCLUSIONS OF LAW

1. West Virginia Code §22-1-6(d) requires, in part, that “in addition to other powers, duties and responsibilities granted and assigned to the secretary by this chapter, the secretary is authorized and empowered to... (3) Enter private lands to make surveys and inspections for environmental protection purposes; to investigate for violations of statutes or rules which the Office of Oil and Gas is charged with enforcing; to serve and execute warrants and processes; to make arrests; issue orders, which for the purposes of this chapter include consent agreements; and to otherwise enforce the statutes or rules which the Office of Oil and Gas is charged with enforcing.”
2. West Virginia Code §22-6A-2(a)(6) requires, in part, that “Concomitant with the broad powers to condition the issuance of well work permits, the secretary should also have broad authority to waive certain minimum requirements of this article when, in his or her discretion, such waiver is appropriate: *Provided*, That the secretary shall submit a written report of the number of waivers granted to the Legislature commencing January 1, 2013, and each year thereafter.”
3. West Virginia Code §22-6A-12(b) requires, in part, that “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 Office of Oil and Gas 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 Office of Oil and Gas 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.”

ORDER

West Virginia Code §22-6A-12(b) requires, in part, that “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. The Office of Oil and Gas grants the request for a waiver for Wetlands 1 and 2 from well location restriction requirements in W. Va. Code §22-6A-12(b) for the well work permit application identified as API# 47-051-02044. The Office of Oil and Gas hereby **ORDERS** that APP shall meet the following site construction and operational requirements for the Castle Black Well Pad:

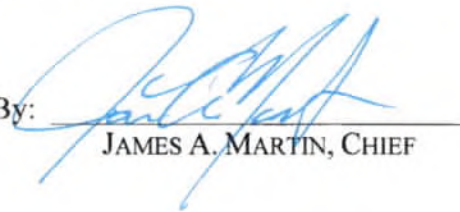
- a. A berm shall be constructed around the perimeter of the pad to contain any potential spills and storm water runoff. Berm is to be at least twenty-four inches (24”) in height;
- b. Erosion control blankets shall be installed on all slopes and down gradient locations of the pad as erosion and sediment controlling BMPs;
- c. Wetland 1 is situated at an elevation that runoff from the construction cannot impact the wetland
- d. Wetland 2 shall have a layer of twenty-four inch (24”) super silt fence and a layer of eighteen inch (18”) compost filter sock to prevent sediment from reaching the wetlands.
- e. Disturbed areas not used for operations shall be seeded and mulched per the seeding tables in the WVDEP-OOG Erosion and Sediment Control Manual;
- f. Drill cuttings and associated drilling mud shall be disposed of in a permitted landfill;
- g. Waste generated by the flowback treatment systems shall be sent to offsite disposal at a permitted landfill;
- h. Weekly site inspections shall be conducted to monitor and maintain the integrity of the BMP storm water controls;
- i. Weekly storm water and spill prevention inspections shall be conducted focusing on storm water and spill prevention BMPs and maintenance of these BMPs;
- j. Inspections of the storm water and spill prevention measures shall be conducted after any major storm event defined as a half inch (½”) rain within any twenty-four (24) hour period;
- k. Pad inspections shall be conducted no less than once a week to identify and mitigate potential deficiencies;
- l. All records from inspections shall be maintained on site for the life of the project and be available upon request.

Thus ORDERED, the 13th day of September, 2018.

IN THE NAME OF THE STATE OF WEST VIRGINIA:

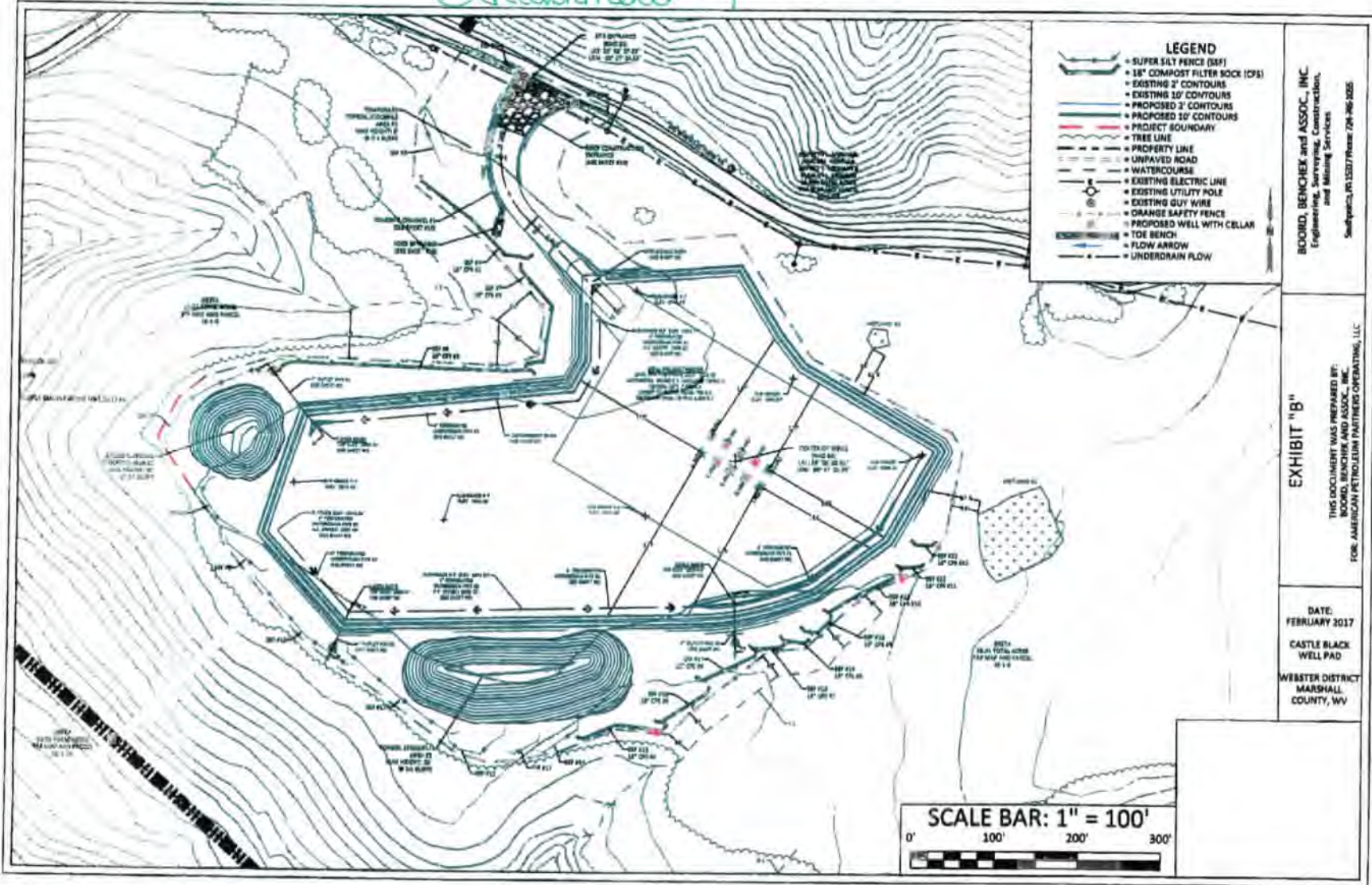
OFFICE OF OIL AND GAS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE OF WEST VIRGINIA

By: _____



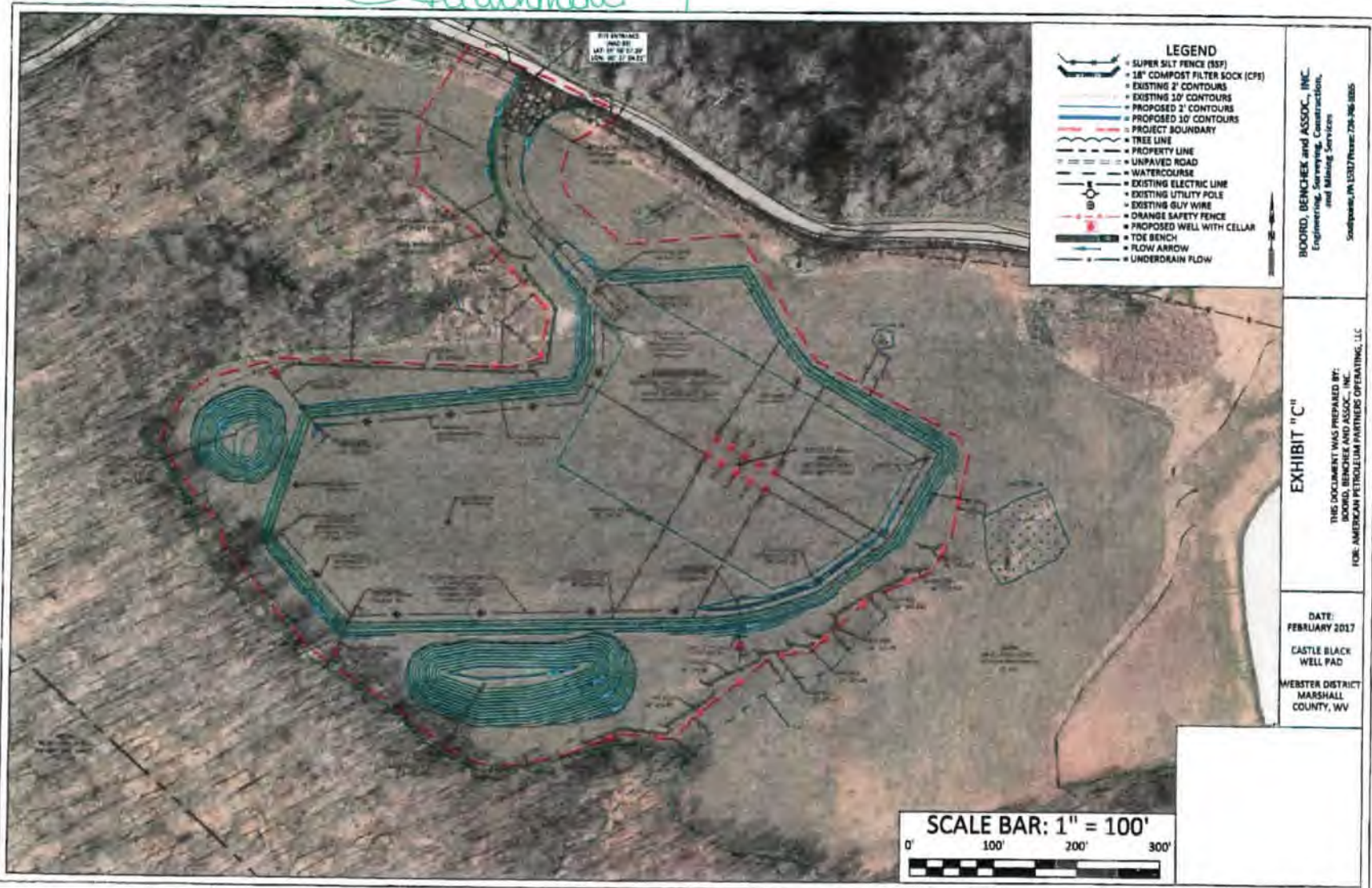
JAMES A. MARTIN, CHIEF

Attachment #1



4705102406

Attachment #1



- LEGEND**
- SUPER SILT FENCE (SSF)
 - 18" COMPOST FILTER SOCK (CFS)
 - EXISTING 2' CONTOURS
 - EXISTING 10' CONTOURS
 - PROPOSED 2' CONTOURS
 - PROPOSED 10' CONTOURS
 - PROJECT BOUNDARY
 - TREE LINE
 - PROPERTY LINE
 - UNPAVED ROAD
 - WATERCOURSE
 - EXISTING ELECTRIC LINE
 - EXISTING UTILITY POLE
 - EXISTING GUY WIRE
 - ORANGE SAFETY FENCE
 - PROPOSED WELL WITH CELLAR
 - TOE BENCH
 - FLOW ARROW
 - UNDERDRAIN FLOW

ROKORD, BENCHEK and ASSOC., INC.
 Engineering, Surveying, Construction,
 and Mining Services
 Southpark, PA 15337 Phone: 724-766-8055

EXHIBIT "C"
 THIS DOCUMENT WAS PREPARED BY:
 ROKORD, BENCHEK AND ASSOC., INC.
 FOR: AMERICAN PETROLEUM PARTNERS OPERATING, LLC

DATE:
 FEBRUARY 2017
 CASTLE BLACK
 WELL PAD
 WEBSTER DISTRICT
 MARSHALL
 COUNTY, WV

SCALE BAR: 1" = 100'
 0' 100' 200' 300'

4705102436

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 Webster Majorsville
Operator ID County District Quadrangle

2) Operator's Well Number: Rock Hill S-2HU Well Pad Name: Castle Black

3) Farm Name/Surface Owner: Geeta Public Road Access: County Route 5 - Big Wheeling Creek Road

4) Elevation, current ground: 1,042.60' Elevation, proposed post-construction: 1,042.60'

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

Other

(b) If Gas Shallow Deep X

Horizontal X

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Point Pleasant is the target formation at a depth of 11,144' - 11,264', thickness of 120' and anticipated pressure of approx. 7,500 psi.

8) Proposed Total Vertical Depth: 11,414'

9) Formation at Total Vertical Depth: Trenton

10) Proposed Total Measured Depth: 21,070'

11) Proposed Horizontal Leg Length: 9,351.53'

12) Approximate Fresh Water Strata Depths: 70; 540'

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

14) Approximate Saltwater Depths: 888'

15) Approximate Coal Seam Depths: Sewickley Coal - 439' and Pittsburgh Coal - 534'

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

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

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

Depth: Pittsburgh coal TVD - 534' and subsea level - 509'

Seam: Pittsburgh # 8

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	20"	NEW	J55	106.5#	660'	660'	1,102ft ³ (CTS)
Intermediate 1	13 3/8"	NEW	J55	54.5#	2,275'	2,275'	1,610ft ³ (CTS)
Intermediate 2	9 5/8"	NEW	HPP110	47#	10,141'	10,141'	3,289ft ³ (CTS)
Production	5 1/2"	NEW	P110	23#	21,070'	21,070'	4,999ft ³ (CTS)
Tubing	2 7/8"	NEW	P110	6.5#		10,808'	
Liners							

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	20"	26"	.5	2,410	1,928	SEE #24	1.2
Intermediate 1	13 3/8"	17 1/2"	.38	2,740	2,192	SEE #24	1.2
Intermediate 2	9 5/8"	12 1/4"	.472	10,730	6,968	SEE #24	1.33
Production	5 1/2"	8 1/2"	.415	16,510	13,208	SEE #24	1.17/1.19
Tubing	2 7/8"			14,530	11,624		
Liners							

PACKERS

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

*Kelly Kees
for Strack Group
2/15/23*

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

Drill through the Point Pleasant and TD Pilot Hole 150' into the Trenton. Log vertical section and run a solid cement plug back to proposed KOP(10,308'). 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 23,400,000 lb. proppant and 425,000 bbl of water. Max rate = 80bpm; max psi = 9,000#.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 9.54 acres

22) Area to be disturbed for well pad only, less access road (acres): 5.83 acres

23) Describe centralizer placement for each casing string:

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

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

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

25) Proposed borehole conditioning procedures:

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

*Note: Attach additional sheets as needed.

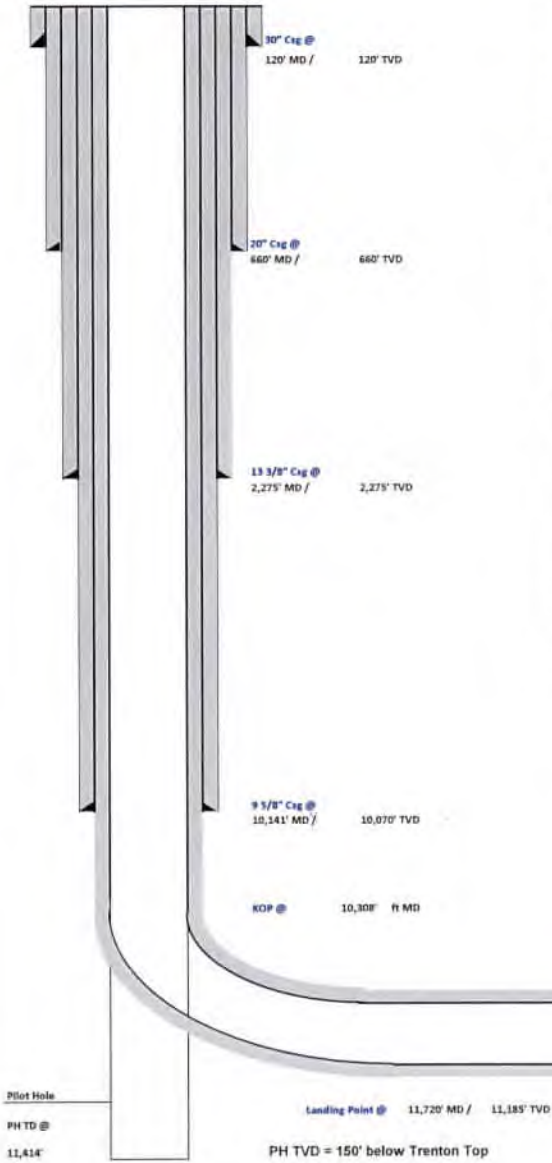


WELL NAME: Rock Hill S-2HU
STATE: WV **COUNTY:** Marshall
DISTRICT: Webster
DF Elev: 1,043' **GL Elev:** 1,043'
TD: 21,070'
TH Latitude: 39.967286
TH Longitude: -80.617562
BH Latitude: 39.945604
BH Longitude: -80.596817

FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	540'
Sewickley Coal	439'
Pittsburgh Coal	534'
Big Lime	1,513'
Berea	2,154'
Tully	6,123'
Marcellus	6,250'
Onondaga	6,300'
Salina	7,044'
Lockport	8,152'
Utica	11,050'
Point Pleasant	11,144'
Landing Depth	11,185'
Trenton	11,264'
Pilot Hole TD	11,414'

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	8W	Surface
Surface	26	20	660'	660'	106.5	J55	Surface
Intermediate 1	17 1/2	13 5/8	2,275'	2,275'	54.5	J55	Surface
Intermediate 2	12 1/4	9 5/8	10,141'	10,070'	47	HPP110	Surface
Production	8 1/2	5 1/2	21,070'	11,348'	23	HCP110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
Type	Sacks	Class	Density (ppg)	Fluid Type	Centralizer Notes
Conductor	338	A	15.6	Air	None
Surface	1,185	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	1,745	A	15.6	Air	1 Centralizer every other joint
Intermediate 2	3,031	A	14.5	Air	1 Centralizer every other joint
Production	5,101	A	16.5	Air / SOBMM	1 every other joint in lateral; 1 per joint in curve; 1 every other joint to surface



4705102436



Tug Hill Operating, LLC Casing and Cement Program

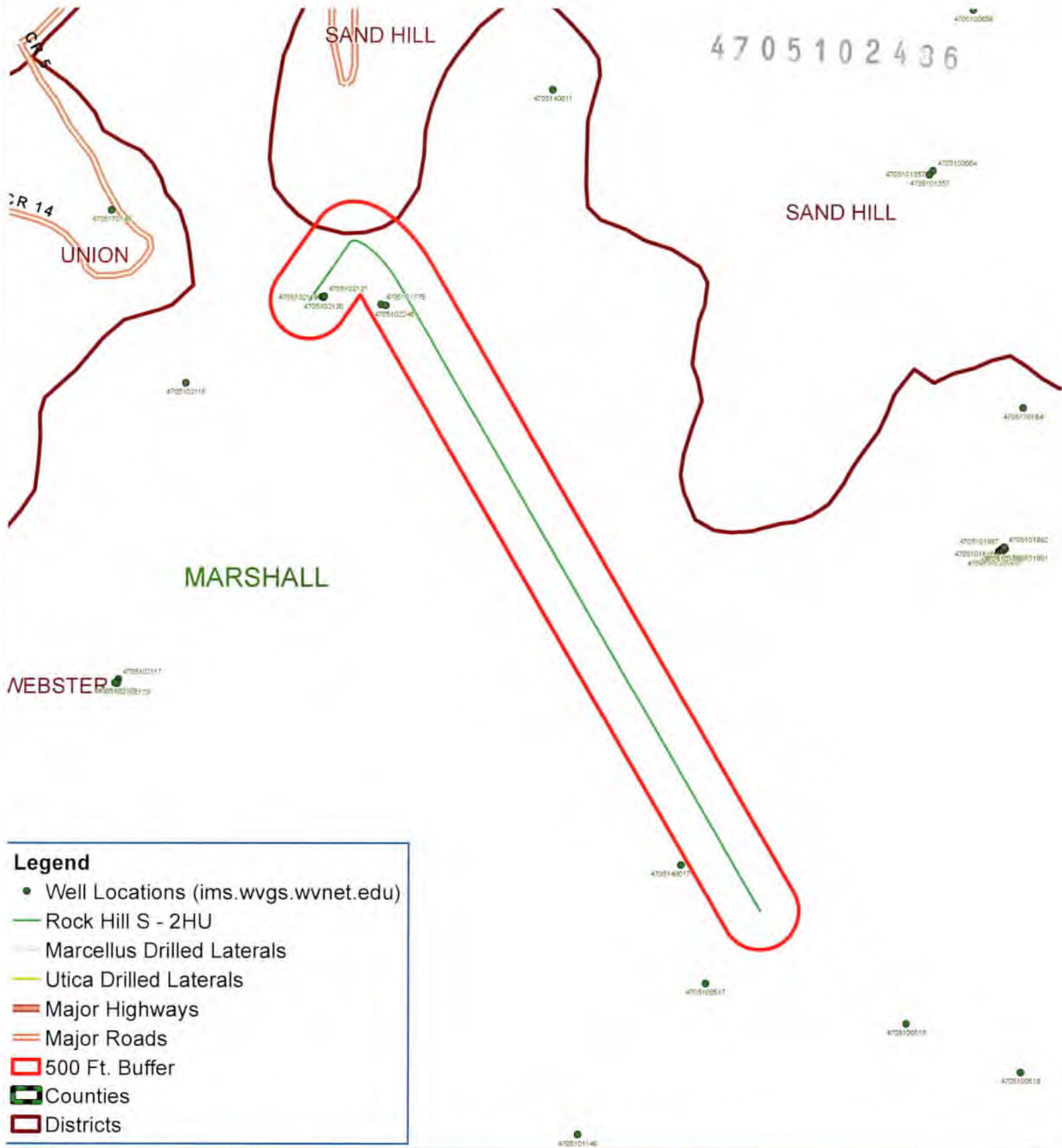
Rock Hill S-2HU

Casing

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	20"	J55	26"	660'	CTS
Intermediate 1	13 3/8"	J55	17 1/2"	2,275'	CTS
Intermediate 2	9 5/8"	HPP110	12 1/4"	10,141'	CTS
Production	5 1/2"	HCP110	8 1/2"	21,070'	CTS

Cement

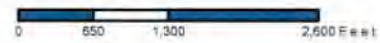
Conductor:	Premium NE-1 + 2% bwoc CaC12 + 46.5% Fresh Water – Conductor Cement mixed at 15.6 ppg, Y=1.2
Surface:	Premium NE-1 + 2% bwoc CaC12 + 46.5% Fresh Water – Surface Cement mixed at 15.6 ppg, Y=1.2
Intermediate 1:	Premium NE-1 + 1% bwoc CaC12 + 46.5% Fresh Water – Intermediate Cement mixed at 15.6 ppg, Y=1.2
Intermediate 2:	Premium NE-1 + 1% bwoc CaC12 + 46.5% Fresh Water – Intermediate Cement mixed at 14.5 ppg, Y=1.35
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 16.5 ppg, Y = 1.03



- Legend**
- Well Locations (ims.wvgs.wvnet.edu)
 - Rock Hill S - 2HU
 - Marcellus Drilled Laterals
 - Utica Drilled Laterals
 - Major Highways
 - Major Roads
 - 500 Ft. Buffer
 - Counties
 - Districts



Rock Hill S - 2HU Webster District Marshall County, WV



Map Prepared by:

02/17/2023

4705102436

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 (1/11/2023) 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

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
4705101778	Chesapeake Appalachia, LLC	6311' TVD (proposed)	Marcellus (proposed)	unknown	No, this well is not deep enough to be within the expected fracture propagation from the proposed Point Pleasant stimulation.	
4705102119	American Petroleum Partners Operating, LLC	11395' TVD (proposed)	Point Pleasant (proposed)	none	No, this well will not be drilled to the proposed depth or perforated. This is an expired permit.	Permit transferred to Tug Hill Operating.
4705102120	American Petroleum Partners Operating, LLC	11395' TVD (proposed)	Point Pleasant (proposed)	none	No, this well will not be drilled to the proposed depth or perforated. This is an expired permit.	Permit transferred to Tug Hill Operating.
4705102121	American Petroleum Partners Operating, LLC	11395' TVD (proposed)	Point Pleasant (proposed)	none	No, this well will not be drilled to the proposed depth or perforated. This is an expired permit.	Permit transferred to Tug Hill Operating.

4705102436

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
4705102246	SWN Production Company, LLC	6484' TVD (proposed)	Marcellus (proposed)	unknown	No, this well is not deep enough to be within the expected fracture propagation from the proposed Point Pleasant stimulation.	

4705102246

WV Geological & Economic Survey:

Well: County = 51 Permit = 01778 [Link to all digital records for well](#)

Report Time: Wednesday, November 30, 2022 4:37:45 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101778	Marshall	1778	Webster	Majorsville	Cameron	39.967122	-80.614245	532943.8	4424179.3

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101778	1 As Proposed	534085.3	4421935.8	-80.600996	39.946863

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
4705101778	--	Dvtd Orgnl Loc	Permitted	Getta	MSH10H		Getta			Chesapeake Appalachia, LLC	6311	Marcellus Fm	4074

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEf	G_AFT	O_BEf	O_AFT	NGL_BEf	NGL_AFT
4705101778	--	--	1070	Ground Level																		

WV Geological & Economic Survey:

Well: County = 51 Permit = 02119 [Link to all digital records for well](#)

Report Time: Wednesday, November 30, 2022 4:38:47 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102119	Marshall	2119	Webster	Majorsville	Cameron	39.967397	-80.616974	532710.6	4424208.8

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102119	1 As Proposed	534238.6	4422037.8	-80.599196	39.947776

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_ES
4705102119	--	Dvtd Orgnl Loc	Permitted	Eco-Vrindaban Inc/Gorakshya-Seva	7UH		Castle Black			Eco-Vrindaban Inc. American Petroleum Partners Operating, LLC	11395	Pt Pleasant Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEf	G_AFT	O_BEf	O_AFT	NGL_BEf	NGL_AFT
4705102119	--	--	1044	Ground Level																		

Comment: -- Additional Surface Owners: Environmental Education Trust of America Inc

4705102436

WV Geological & Economic Survey

Well: County = 51 Permit = 02120 [Link to all digital records for well](#)

Report Time: Wednesday, November 30, 2022 4:39:08 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102120	Marshall	2120	Webster	Majorsville	Cameron	39.96737	-80.616911	532715.9	4424205.9

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102120	1	As Proposed	534155.8	4422581.3	-80.600137

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	TF
4705102120	-/-	Dvtd Orgnl Loc	Permitted	Eco=Vrindaban Inc. DBA Gorakshya-Seva	9UH		Castle Black		Eco-Vrindaban Inc	American Petroleum Partners Operating, LLC	11395	Pt Pleasant Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT
4705102120	-/-	-/-	1045	Ground Level																		

Comment: -/- Additional Surface Owners: Environmental Trust of America Inc

WV Geological & Economic Survey

Well: County = 51 Permit = 02121 [Link to all digital records for well](#)

Report Time: Wednesday, November 30, 2022 4:39:21 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102121	Marshall	2121	Webster	Majorsville	Cameron	39.967423	-80.616873	532719.2	4424211.7

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102121	1	As Proposed	534129.8	4423043.5	-80.600417

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	TF
4705102121	-/-	Dvtd Orgnl Loc	Permitted	Eco=Vrindaban Inc. DBA Gorakshya-Seva	10UH		Castle Black		Eco-Vrindaban Inc	American Petroleum Partners Operating, LLC	11395	Pt Pleasant Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT
4705102121	-/-	-/-	1045	Ground Level																		

Comment: -/- Additional Surface Owners: Environmental Education Trust of America Inc

4705102121

WV Geological & Economic Survey

Well: County = 51 Permit = 02246 [Link to all digital records for well](#)

Report Time: Wednesday, November 30, 2022 4:39:35 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102246	Marshall	2246	Webster	Majorsville	Cameron	39.967085	-90.614035	532961.7	4424175.3

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102246	1 As Proposed	534666.7	4422275.6	-80.594172	39.949901

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
4705102246	-/-	Dvtd Orgnl	Loc. Permitted	Geeta	MSH410H		Geeta		Geeta	SWN Production Company, LLC	6484	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT
4705102246	-/-	-/-	1073	Ground Level																		

4705102406



TUG HILL
OPERATING

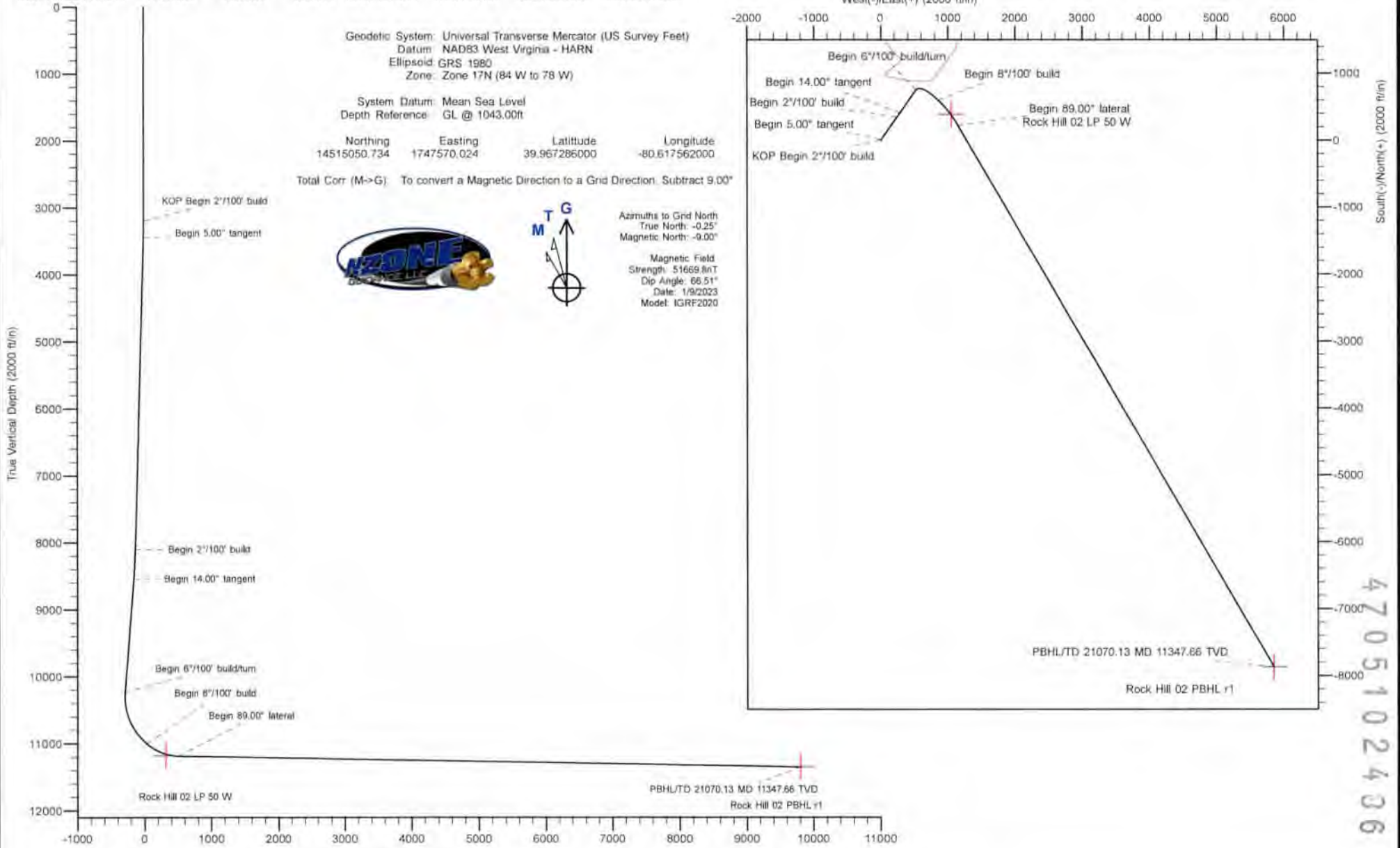
Well: Rock Hill S-02 HU (slot B)
Site: Castle Black/ Rock Hill
Project: Marshall County, West Virginia NAD83 UTM 17N
Design: rev3
Rig:

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	
2	3200.00	0.00	0.000	3200.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 2"/100' build
3	3450.00	5.00	35.000	3449.68	8.93	6.25	2.00	35.00	-3.44	Begin 5.00° tangent
4	8118.08	5.00	35.000	8100.00	342.20	239.61	0.00	0.00	-131.75	Begin 2"/100' build
5	8568.08	14.00	35.000	8543.37	402.98	282.17	2.00	0.00	-155.14	Begin 14.00° tangent
6	10308.40	14.00	35.000	10232.00	747.86	523.66	0.00	0.00	-287.92	Begin 6"/100' build/turn
7	11194.99	50.00	132.630	11003.29	594.55	859.49	6.00	108.51	35.45	Begin 8"/100' build
8	11720.38	89.00	149.850	11184.94	213.92	1152.74	8.00	26.24	515.87	Begin 89.00° lateral
9	21070.13	89.00	149.850	11347.66	-7869.69	5848.14	0.00	0.00	9804.73	PBHL/TD 21070.13 MD 11347.66 TVD

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Rock Hill 02 LP 50 W	11181.00	385.65	1053.12	14515436.386	1748623.142	39.968332595	-80.613797470
Rock Hill 02 PBHL r1	11347.66	-7869.69	5848.14	14507181.064	1753418.157	39.945604000	-80.596817000



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

System Datum: Mean Sea Level
Depth Reference: GL @ 1043.00ft

Northing	Easting	Latitude	Longitude
14515050.734	1747570.024	39.967286000	-80.617562000

Total Corr. (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 9.00°



Azimuths to Grid North
True North: -0.25°
Magnetic North: -9.00°

Magnetic Field
Strength: 51669 nT
Dip Angle: 66.51°
Date: 1/9/2023
Model: IGRF2020

4705102406

Vertical Section at 143.383° (2000 ft/in)

Database:	DB_Decv0422v16	Local Co-ordinate Reference:	Well Rock Hill S-02 HU (slot B)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1043.00ft
Project:	Marshall County, West Virginia NAD83 UTM 17N	MD Reference:	GL @ 1043.00ft
Site:	Castle Black/ Rock Hill	North Reference:	Grid
Well:	Rock Hill S-02 HU (slot B)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev3		

Project	Marshall County, West Virginia NAD83 UTM 17N		
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	Castle Black/ Rock Hill				
Site Position:		Northing:	14,515,101.985 usft	Latitude:	39.967425000
From:	Lat/Long	Easting:	1,747,718.025 usft	Longitude:	-80.617033000
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "		

Well	Rock Hill S-02 HU (slot B)					
Well Position	+N/-S	0.00 ft	Northing:	14,515,050.734 usft	Latitude:	39.967286000
	+E/-W	0.00 ft	Easting:	1,747,570.024 usft	Longitude:	-80.617562000
Position Uncertainty	0.00 ft		Wellhead Elevation:	ft	Ground Level:	1,043.00 ft
Grid Convergence:	0.25 "					

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (")	Dip Angle (")	Field Strength (nT)
	IGRF2020	1/9/2023	-8.75	66.51	51,669.81242724

Design	rev3				
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	143.383	

Plan Survey Tool Program	Date	1/10/2023			
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	21,070.13 rev3 (Original Hole)	MWD MWD - Standard		

Database:	DB_Decv0422v16	Local Co-ordinate Reference:	Well Rock Hill S-02 HU (slot B)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1043.00ft
Project:	Marshall County, West Virginia NAD83 UTM 17N	MD Reference:	GL @ 1043.00ft
Site:	Castle Black/ Rock Hill	North Reference:	Grid
Well:	Rock Hill S-02 HU (slot B)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev3		

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	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,200.00	0.00	0.000	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,450.00	5.00	35.000	3,449.68	8.93	6.25	2.00	2.00	0.00	35.00	
8,118.08	5.00	35.000	8,100.00	342.20	239.61	0.00	0.00	0.00	0.00	
8,568.08	14.00	35.000	8,543.37	402.98	282.17	2.00	2.00	0.00	0.00	
10,308.40	14.00	35.000	10,232.00	747.86	523.66	0.00	0.00	0.00	0.00	
11,194.99	50.00	132.630	11,003.29	594.55	859.49	6.00	4.06	11.01	108.51	
11,720.38	89.00	149.850	11,184.94	213.92	1,152.74	8.00	7.42	3.28	26.24	
21,070.13	89.00	149.850	11,347.66	-7,869.69	5,848.14	0.00	0.00	0.00	0.00	Rock Hill 02 PBHL rt



Planning Report - Geographic

4705102406

Database:	DB_Decv0422v16	Local Co-ordinate Reference:	Well Rock Hill S-02 HU (slot B)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1043.00ft
Project:	Marshall County, West Virginia NAD83 UTM 17N	MD Reference:	GL @ 1043.00ft
Site:	Castle Black/ Rock Hill	North Reference:	Grid
Well:	Rock Hill S-02 HU (slot B)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev3		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.00	0.00	0.000	0.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
100.00	0.00	0.000	100.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
200.00	0.00	0.000	200.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
300.00	0.00	0.000	300.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
400.00	0.00	0.000	400.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
500.00	0.00	0.000	500.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
600.00	0.00	0.000	600.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
700.00	0.00	0.000	700.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
800.00	0.00	0.000	800.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
900.00	0.00	0.000	900.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
1,000.00	0.00	0.000	1,000.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
1,100.00	0.00	0.000	1,100.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
1,200.00	0.00	0.000	1,200.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
1,300.00	0.00	0.000	1,300.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
1,400.00	0.00	0.000	1,400.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
1,500.00	0.00	0.000	1,500.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
1,600.00	0.00	0.000	1,600.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
1,700.00	0.00	0.000	1,700.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
1,800.00	0.00	0.000	1,800.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
1,900.00	0.00	0.000	1,900.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
2,000.00	0.00	0.000	2,000.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
2,100.00	0.00	0.000	2,100.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
2,200.00	0.00	0.000	2,200.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
2,300.00	0.00	0.000	2,300.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
2,400.00	0.00	0.000	2,400.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
2,500.00	0.00	0.000	2,500.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
2,600.00	0.00	0.000	2,600.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
2,700.00	0.00	0.000	2,700.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
2,800.00	0.00	0.000	2,800.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
2,900.00	0.00	0.000	2,900.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
3,000.00	0.00	0.000	3,000.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
3,100.00	0.00	0.000	3,100.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
3,200.00	0.00	0.000	3,200.00	0.00	0.00	14,515,050.734	1,747,570.024	39.967286000	-80.617562000	
KOP Begin 2"/100' build										
3,300.00	2.00	35.000	3,299.98	1.43	1.00	14,515,052.163	1,747,571.025	39.967289914	-80.617558406	
3,400.00	4.00	35.000	3,399.84	5.72	4.00	14,515,056.450	1,747,574.027	39.967301651	-80.617547627	
3,450.00	5.00	35.000	3,449.68	8.93	6.25	14,515,059.664	1,747,576.277	39.967310449	-80.617539547	
Begin 5.00" tangent										
3,500.00	5.00	35.000	3,499.49	12.50	8.75	14,515,063.233	1,747,578.777	39.967320223	-80.617530572	
3,600.00	5.00	35.000	3,599.11	19.64	13.75	14,515,070.373	1,747,583.776	39.967339770	-80.617512621	
3,700.00	5.00	35.000	3,698.73	26.78	18.75	14,515,077.512	1,747,588.775	39.967359317	-80.617494670	
3,800.00	5.00	35.000	3,798.35	33.92	23.75	14,515,084.651	1,747,593.774	39.967378864	-80.617476719	
3,900.00	5.00	35.000	3,897.97	41.06	28.75	14,515,091.791	1,747,598.773	39.967398410	-80.617458768	
4,000.00	5.00	35.000	3,997.59	48.20	33.75	14,515,098.930	1,747,603.772	39.967417957	-80.617440818	
4,100.00	5.00	35.000	4,097.21	55.34	38.75	14,515,106.070	1,747,608.771	39.967437504	-80.617422867	
4,200.00	5.00	35.000	4,196.83	62.48	43.75	14,515,113.209	1,747,613.770	39.967457051	-80.617404916	
4,300.00	5.00	35.000	4,296.45	69.61	48.74	14,515,120.348	1,747,618.769	39.967476598	-80.617386965	
4,400.00	5.00	35.000	4,396.07	76.75	53.74	14,515,127.488	1,747,623.768	39.967496145	-80.617369014	
4,500.00	5.00	35.000	4,495.69	83.89	58.74	14,515,134.627	1,747,628.767	39.967515692	-80.617351063	
4,600.00	5.00	35.000	4,595.31	91.03	63.74	14,515,141.766	1,747,633.766	39.967535239	-80.617333112	
4,700.00	5.00	35.000	4,694.93	98.17	68.74	14,515,148.906	1,747,638.765	39.967554785	-80.617315161	
4,800.00	5.00	35.000	4,794.55	105.31	73.74	14,515,156.045	1,747,643.764	39.967574332	-80.617297210	
4,900.00	5.00	35.000	4,894.17	112.45	78.74	14,515,163.184	1,747,648.763	39.967593879	-80.617279259	

Database:	DB_Decv0422v16	Local Co-ordinate Reference:	Well Rock Hill S-02 HU (slot B)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1043.00ft
Project:	Marshall County, West Virginia NAD83 UTM 17N	MD Reference:	GL @ 1043.00ft
Site:	Castle Black/ Rock Hill	North Reference:	Grid
Well:	Rock Hill S-02 HU (slot B)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev3		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
5,000.00	5.00	35.000	4,993.78	119.59	83.74	14,515,170.324	1,747,653.762	39.967613426	-80.617261308	
5,100.00	5.00	35.000	5,093.40	126.73	88.74	14,515,177.463	1,747,658.781	39.967632973	-80.617243357	
5,200.00	5.00	35.000	5,193.02	133.87	93.74	14,515,184.803	1,747,663.780	39.967652520	-80.617225406	
5,300.00	5.00	35.000	5,292.64	141.01	98.74	14,515,191.742	1,747,668.759	39.967672066	-80.617207455	
5,400.00	5.00	35.000	5,392.26	148.15	103.73	14,515,198.881	1,747,673.758	39.967691613	-80.617189504	
5,500.00	5.00	35.000	5,491.88	155.29	108.73	14,515,206.021	1,747,678.757	39.967711160	-80.617171553	
5,600.00	5.00	35.000	5,591.50	162.43	113.73	14,515,213.160	1,747,683.756	39.967730707	-80.617153802	
5,700.00	5.00	35.000	5,691.12	169.57	118.73	14,515,220.299	1,747,688.756	39.967750254	-80.617135651	
5,800.00	5.00	35.000	5,790.74	176.71	123.73	14,515,227.439	1,747,693.755	39.967769801	-80.617117700	
5,900.00	5.00	35.000	5,890.36	183.84	128.73	14,515,234.578	1,747,698.754	39.967789347	-80.617099749	
6,000.00	5.00	35.000	5,989.98	190.98	133.73	14,515,241.718	1,747,703.753	39.967808894	-80.617081798	
6,100.00	5.00	35.000	6,089.60	198.12	138.73	14,515,248.857	1,747,708.752	39.967828441	-80.617063847	
6,200.00	5.00	35.000	6,189.22	205.26	143.73	14,515,255.996	1,747,713.751	39.967847988	-80.617045896	
6,300.00	5.00	35.000	6,288.84	212.40	148.73	14,515,263.136	1,747,718.750	39.967867535	-80.617027945	
6,400.00	5.00	35.000	6,388.46	219.54	153.72	14,515,270.275	1,747,723.749	39.967887081	-80.617009994	
6,500.00	5.00	35.000	6,488.08	226.68	158.72	14,515,277.414	1,747,728.748	39.967906628	-80.616992043	
6,600.00	5.00	35.000	6,587.70	233.82	163.72	14,515,284.554	1,747,733.747	39.967926175	-80.616974092	
6,700.00	5.00	35.000	6,687.32	240.96	168.72	14,515,291.693	1,747,738.746	39.967945722	-80.616956140	
6,800.00	5.00	35.000	6,786.94	248.10	173.72	14,515,298.832	1,747,743.745	39.967965269	-80.616938189	
6,900.00	5.00	35.000	6,886.55	255.24	178.72	14,515,305.972	1,747,748.744	39.967984815	-80.616920238	
7,000.00	5.00	35.000	6,986.17	262.38	183.72	14,515,313.111	1,747,753.743	39.968004362	-80.616902287	
7,100.00	5.00	35.000	7,085.79	269.52	188.72	14,515,320.251	1,747,758.742	39.968023909	-80.616884336	
7,200.00	5.00	35.000	7,185.41	276.66	193.72	14,515,327.390	1,747,763.741	39.968043456	-80.616866385	
7,300.00	5.00	35.000	7,285.03	283.80	198.72	14,515,334.529	1,747,768.740	39.968063003	-80.616848433	
7,400.00	5.00	35.000	7,384.65	290.94	203.72	14,515,341.669	1,747,773.739	39.968082549	-80.616830482	
7,500.00	5.00	35.000	7,484.27	298.07	208.71	14,515,348.808	1,747,778.738	39.968102096	-80.616812531	
7,600.00	5.00	35.000	7,583.89	305.21	213.71	14,515,355.947	1,747,783.737	39.968121643	-80.616794580	
7,700.00	5.00	35.000	7,683.51	312.35	218.71	14,515,363.087	1,747,788.736	39.968141190	-80.616776628	
7,800.00	5.00	35.000	7,783.13	319.49	223.71	14,515,370.226	1,747,793.735	39.968160736	-80.616758677	
7,900.00	5.00	35.000	7,882.75	326.63	228.71	14,515,377.365	1,747,798.734	39.968180283	-80.616740726	
8,000.00	5.00	35.000	7,982.37	333.77	233.71	14,515,384.505	1,747,803.733	39.968199830	-80.616722775	
8,100.00	5.00	35.000	8,081.99	340.91	238.71	14,515,391.644	1,747,808.732	39.968219377	-80.616704823	
8,118.08	5.00	35.000	8,100.00	342.20	239.61	14,515,392.935	1,747,809.636	39.968222911	-80.616701578	
Begin 2°/100' build										
8,200.00	6.64	35.000	8,181.49	349.01	244.38	14,515,399.738	1,747,814.400	39.968241538	-80.616684471	
8,300.00	8.64	35.000	8,280.60	359.89	252.00	14,515,410.626	1,747,822.024	39.968271347	-80.6166657095	
8,400.00	10.64	35.000	8,379.19	373.61	261.60	14,515,424.340	1,747,831.627	39.968308895	-80.616622612	
8,500.00	12.64	35.000	8,477.12	390.13	273.17	14,515,440.865	1,747,843.197	39.968354136	-80.616581063	
8,568.08	14.00	35.000	8,543.37	402.98	282.17	14,515,453.712	1,747,852.193	39.968389311	-80.616548759	
Begin 14.00° tangent										
8,600.00	14.00	35.000	8,574.34	409.30	286.60	14,515,460.037	1,747,856.622	39.968406629	-80.616532854	
8,700.00	14.00	35.000	8,671.37	429.12	300.47	14,515,479.854	1,747,870.498	39.968450886	-80.616483026	
8,800.00	14.00	35.000	8,768.40	448.94	314.35	14,515,499.672	1,747,884.374	39.968515143	-80.616433197	
8,900.00	14.00	35.000	8,865.43	468.76	328.23	14,515,519.489	1,747,898.250	39.968569399	-80.616383369	
9,000.00	14.00	35.000	8,962.46	488.57	342.10	14,515,539.306	1,747,912.126	39.968623656	-80.616333540	
9,100.00	14.00	35.000	9,059.49	508.39	355.98	14,515,559.123	1,747,926.002	39.968677913	-80.616283711	
9,200.00	14.00	35.000	9,156.52	528.21	369.85	14,515,578.940	1,747,939.878	39.968732169	-80.616233882	
9,300.00	14.00	35.000	9,253.55	548.02	383.73	14,515,598.757	1,747,953.754	39.968786426	-80.616184053	
9,400.00	14.00	35.000	9,350.58	567.84	397.61	14,515,618.574	1,747,967.630	39.968840682	-80.616134224	
9,500.00	14.00	35.000	9,447.61	587.66	411.48	14,515,638.391	1,747,981.506	39.968894939	-80.616084395	
9,600.00	14.00	35.000	9,544.64	607.48	425.36	14,515,658.208	1,747,995.382	39.968949195	-80.616034566	
9,700.00	14.00	35.000	9,641.67	627.29	439.23	14,515,678.025	1,748,009.258	39.969003452	-80.615984737	
9,800.00	14.00	35.000	9,738.70	647.11	453.11	14,515,697.842	1,748,023.134	39.969057708	-80.615934907	

Database:	DB_Decv0422v16	Local Co-ordinate Reference:	Well Rock Hill S-02 HU (slot B)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1043.00ft
Project:	Marshall County, West Virginia NAD83 UTM 17N	MD Reference:	GL @ 1043.00ft
Site:	Castle Black/ Rock Hill	North Reference:	Grid
Well:	Rock Hill S-02 HU (slot B)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev3		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,900.00	14.00	35.000	9,835.73	666.93	466.99	14,515,717.659	1,748,037.010	39.969111964	-80.615885078
10,000.00	14.00	35.000	9,932.76	686.74	480.86	14,515,737.476	1,748,050.886	39.969166221	-80.615835249
10,100.00	14.00	35.000	10,029.79	706.56	494.74	14,515,757.293	1,748,064.763	39.969220477	-80.615785419
10,200.00	14.00	35.000	10,126.82	726.38	508.62	14,515,777.110	1,748,078.639	39.969274733	-80.615735589
10,308.40	14.00	35.000	10,232.00	747.86	523.66	14,515,798.592	1,748,093.681	39.969333549	-80.615681572
Begin 6°/100' build/turn									
10,350.00	13.41	45.253	10,272.42	755.38	529.97	14,515,806.112	1,748,099.994	39.969354124	-80.615658922
10,400.00	13.30	58.258	10,321.08	762.49	538.98	14,515,813.221	1,748,109.005	39.969373540	-80.615626652
10,450.00	13.83	70.868	10,369.69	767.47	549.52	14,515,818.206	1,748,119.545	39.969387106	-80.615588958
10,500.00	14.95	82.090	10,418.13	770.32	561.56	14,515,821.054	1,748,131.584	39.969394783	-80.615545945
10,550.00	16.54	91.498	10,466.26	771.02	575.07	14,515,821.756	1,748,145.090	39.969396550	-80.615497729
10,600.00	18.47	99.150	10,513.95	769.58	590.00	14,515,820.310	1,748,160.026	39.969392403	-80.615444443
10,650.00	20.65	105.320	10,561.07	765.99	606.33	14,515,816.721	1,748,176.351	39.969382353	-80.615386234
10,700.00	23.01	110.318	10,607.49	760.27	624.00	14,515,810.997	1,748,194.020	39.969366427	-80.615323260
10,750.00	25.49	114.411	10,653.07	752.42	642.96	14,515,803.156	1,748,212.984	39.969344670	-80.615255695
10,800.00	28.07	117.810	10,697.71	742.49	663.17	14,515,793.219	1,748,233.192	39.969317140	-80.615183723
10,850.00	30.72	120.672	10,741.27	730.48	684.57	14,515,781.211	1,748,254.569	39.969283913	-80.615107542
10,900.00	33.43	123.117	10,783.63	716.44	707.09	14,515,767.168	1,748,277.115	39.969245080	-80.615027361
10,950.00	36.18	125.233	10,824.69	700.39	730.69	14,515,751.127	1,748,300.709	39.969200749	-80.614943399
11,000.00	38.95	127.087	10,864.32	682.40	755.28	14,515,733.131	1,748,325.306	39.969151039	-80.614855887
11,050.00	41.76	128.730	10,902.42	662.50	780.82	14,515,713.231	1,748,350.839	39.969096088	-80.614765064
11,100.00	44.59	130.202	10,938.88	640.75	807.21	14,515,691.481	1,748,377.238	39.969036046	-80.614671180
11,150.00	47.43	131.533	10,973.60	617.21	834.41	14,515,667.940	1,748,404.430	39.968971077	-80.614574492
11,194.99	50.00	132.630	11,003.29	594.55	859.49	14,515,645.280	1,748,429.516	39.968908549	-80.614485307
Begin 8°/100' build									
11,200.00	50.36	132.860	11,006.49	591.94	862.32	14,515,642.670	1,748,432.340	39.968901349	-80.614475268
11,250.00	53.97	135.034	11,037.16	584.53	890.73	14,515,615.258	1,748,460.751	39.968825738	-80.614374289
11,300.00	57.62	137.016	11,065.28	534.76	919.42	14,515,585.496	1,748,489.446	39.968743664	-80.614272335
11,350.00	61.30	138.843	11,090.67	502.79	948.26	14,515,553.528	1,748,518.284	39.968655531	-80.614169903
11,400.00	65.00	140.546	11,113.25	468.78	977.10	14,515,519.508	1,748,547.125	39.968581768	-80.614067493
11,450.00	68.72	142.149	11,132.90	432.87	1,005.81	14,515,483.605	1,748,575.828	39.968462830	-80.613965603
11,500.00	72.45	143.673	11,149.51	395.26	1,034.23	14,515,445.992	1,748,604.255	39.968359201	-80.613864730
11,550.00	76.20	145.135	11,163.02	356.12	1,062.24	14,515,406.852	1,748,632.265	39.968251385	-80.613765365
11,600.00	79.95	146.551	11,173.36	318.84	1,089.70	14,515,366.377	1,748,659.723	39.968139906	-80.613667992
11,650.00	83.71	147.934	11,180.46	274.03	1,116.47	14,515,324.763	1,748,686.495	39.968025309	-80.613573086
11,700.00	87.47	149.297	11,184.31	231.48	1,142.43	14,515,282.213	1,748,712.450	39.967908152	-80.613481109
11,720.38	89.00	149.850	11,184.94	213.92	1,152.74	14,515,264.649	1,748,722.765	39.967859797	-80.613444564
Begin 89.00° lateral									
11,800.00	89.00	149.850	11,186.32	145.08	1,192.73	14,515,195.811	1,748,762.750	39.967670281	-80.613302921
11,900.00	89.00	149.850	11,188.06	58.62	1,242.95	14,515,109.353	1,748,812.970	39.967432257	-80.613125026
12,000.00	89.00	149.850	11,189.80	-27.84	1,293.17	14,515,022.895	1,748,863.189	39.967194233	-80.612947132
12,100.00	89.00	149.850	11,191.54	-114.30	1,343.39	14,514,936.437	1,748,913.409	39.966956209	-80.612769239
12,200.00	89.00	149.850	11,193.28	-200.75	1,393.61	14,514,849.980	1,748,963.628	39.966718184	-80.612591347
12,300.00	89.00	149.850	11,195.02	-287.21	1,443.83	14,514,763.522	1,749,013.847	39.966480180	-80.612413456
12,400.00	89.00	149.850	11,196.76	-373.67	1,494.05	14,514,677.064	1,749,064.067	39.966242135	-80.612235567
12,500.00	89.00	149.850	11,198.50	-460.13	1,544.27	14,514,590.606	1,749,114.286	39.966004109	-80.612057679
12,600.00	89.00	149.850	11,200.25	-546.59	1,594.48	14,514,504.149	1,749,164.506	39.965766084	-80.611879792
12,700.00	89.00	149.850	11,201.99	-633.04	1,644.70	14,514,417.691	1,749,214.725	39.965528058	-80.611701906
12,800.00	89.00	149.850	11,203.73	-719.50	1,694.92	14,514,331.233	1,749,264.945	39.965290032	-80.611524022
12,900.00	89.00	149.850	11,205.47	-806.96	1,745.14	14,514,244.775	1,749,315.164	39.965052005	-80.611346139
13,000.00	89.00	149.850	11,207.21	-892.42	1,795.36	14,514,158.318	1,749,365.383	39.964813979	-80.611168257
13,100.00	89.00	149.850	11,208.95	-978.88	1,845.58	14,514,071.860	1,749,415.603	39.964575952	-80.610990378
13,200.00	89.00	149.850	11,210.69	-1,065.33	1,895.80	14,513,985.402	1,749,465.822	39.964337925	-80.610812497



Database: DB_Decv0422v16
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia NAD83 UTM 17N
 Site: Castle Black/ Rock Hill
 Well: Rock Hill S-02 HU (slot B)
 Wellbore: Original Hole
 Design: rev3

Local Co-ordinate Reference: Well Rock Hill S-02 HU (slot B)
 TVD Reference: GL @ 1043.00ft
 MD Reference: GL @ 1043.00ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
13,300.00	89.00	149.850	11,212.43	-1,151.79	1,946.02	14,513,898.945	1,749,516.042	39.964099897	-80.610634618
13,400.00	89.00	149.850	11,214.17	-1,238.25	1,996.24	14,513,812.487	1,749,566.261	39.963861869	-80.610456741
13,500.00	89.00	149.850	11,215.91	-1,324.71	2,046.46	14,513,726.029	1,749,616.461	39.963623841	-80.610278866
13,600.00	89.00	149.850	11,217.65	-1,411.17	2,096.68	14,513,639.571	1,749,666.700	39.963385813	-80.610100991
13,700.00	89.00	149.850	11,219.39	-1,497.62	2,146.90	14,513,553.114	1,749,716.919	39.963147784	-80.609923118
13,800.00	89.00	149.850	11,221.13	-1,584.08	2,197.12	14,513,466.656	1,749,767.139	39.962909755	-80.609745246
13,900.00	89.00	149.850	11,222.87	-1,670.54	2,247.34	14,513,380.198	1,749,817.358	39.962671726	-80.609567375
14,000.00	89.00	149.850	11,224.61	-1,757.00	2,297.56	14,513,293.740	1,749,867.578	39.962433697	-80.609389505
14,100.00	89.00	149.850	11,226.35	-1,843.45	2,347.78	14,513,207.283	1,749,917.797	39.962195667	-80.609211637
14,200.00	89.00	149.850	11,228.09	-1,929.91	2,398.00	14,513,120.825	1,749,968.016	39.961957637	-80.609033769
14,300.00	89.00	149.850	11,229.83	-2,016.37	2,448.22	14,513,034.367	1,750,018.236	39.961719607	-80.608855903
14,400.00	89.00	149.850	11,231.57	-2,102.83	2,498.44	14,512,947.909	1,750,068.455	39.961481576	-80.608678039
14,500.00	89.00	149.850	11,233.31	-2,189.29	2,548.66	14,512,861.452	1,750,118.675	39.961243545	-80.608500175
14,600.00	89.00	149.850	11,235.05	-2,275.74	2,598.88	14,512,774.994	1,750,168.894	39.961005514	-80.608322313
14,700.00	89.00	149.850	11,236.79	-2,362.20	2,649.09	14,512,688.536	1,750,219.114	39.960767483	-80.608144452
14,800.00	89.00	149.850	11,238.53	-2,448.66	2,699.31	14,512,602.079	1,750,269.333	39.960529451	-80.607966592
14,900.00	89.00	149.850	11,240.27	-2,535.12	2,749.53	14,512,515.621	1,750,319.552	39.960291419	-80.607788733
15,000.00	89.00	149.850	11,242.01	-2,621.58	2,799.75	14,512,429.163	1,750,369.772	39.960053387	-80.607610876
15,100.00	89.00	149.850	11,243.76	-2,708.03	2,849.97	14,512,342.705	1,750,419.991	39.959815355	-80.607433020
15,200.00	89.00	149.850	11,245.50	-2,794.49	2,900.19	14,512,256.248	1,750,470.211	39.959577322	-80.607255165
15,300.00	89.00	149.850	11,247.24	-2,880.95	2,950.41	14,512,169.790	1,750,520.430	39.959339289	-80.607077311
15,400.00	89.00	149.850	11,248.98	-2,967.41	3,000.63	14,512,083.332	1,750,570.649	39.959101258	-80.606899459
15,500.00	89.00	149.850	11,250.72	-3,053.87	3,050.85	14,511,996.874	1,750,620.869	39.958863222	-80.606721608
15,600.00	89.00	149.850	11,252.46	-3,140.32	3,101.07	14,511,910.417	1,750,671.088	39.958625188	-80.606543758
15,700.00	89.00	149.850	11,254.20	-3,226.78	3,151.29	14,511,823.959	1,750,721.308	39.958387154	-80.606365909
15,800.00	89.00	149.850	11,255.94	-3,313.24	3,201.51	14,511,737.501	1,750,771.527	39.958149120	-80.606188061
15,900.00	89.00	149.850	11,257.68	-3,399.70	3,251.73	14,511,651.043	1,750,821.747	39.957911085	-80.606010215
16,000.00	89.00	149.850	11,259.42	-3,486.16	3,301.95	14,511,564.586	1,750,871.966	39.957673050	-80.605832370
16,100.00	89.00	149.850	11,261.16	-3,572.61	3,352.17	14,511,478.128	1,750,922.185	39.957435015	-80.605654526
16,200.00	89.00	149.850	11,262.90	-3,659.07	3,402.39	14,511,391.670	1,750,972.405	39.957196979	-80.605476684
16,300.00	89.00	149.850	11,264.64	-3,745.53	3,452.61	14,511,305.212	1,751,022.624	39.956958943	-80.605298842
16,400.00	89.00	149.850	11,266.38	-3,831.99	3,502.83	14,511,218.755	1,751,072.844	39.956720907	-80.605121002
16,500.00	89.00	149.850	11,268.12	-3,918.44	3,553.05	14,511,132.297	1,751,123.063	39.956482871	-80.604943163
16,600.00	89.00	149.850	11,269.86	-4,004.90	3,603.27	14,511,045.839	1,751,173.282	39.956244834	-80.604765325
16,700.00	89.00	149.850	11,271.60	-4,091.36	3,653.49	14,510,959.382	1,751,223.502	39.956006797	-80.604587489
16,800.00	89.00	149.850	11,273.34	-4,177.82	3,703.70	14,510,872.924	1,751,273.721	39.955768760	-80.604409654
16,900.00	89.00	149.850	11,275.08	-4,264.28	3,753.92	14,510,786.466	1,751,323.941	39.955530723	-80.604231820
17,000.00	89.00	149.850	11,276.82	-4,350.73	3,804.14	14,510,700.008	1,751,374.160	39.955292685	-80.604053987
17,100.00	89.00	149.850	11,278.56	-4,437.19	3,854.36	14,510,613.551	1,751,424.380	39.955054647	-80.603876155
17,200.00	89.00	149.850	11,280.30	-4,523.65	3,904.58	14,510,527.093	1,751,474.599	39.954816609	-80.603698325
17,300.00	89.00	149.850	11,282.04	-4,610.11	3,954.80	14,510,440.635	1,751,524.818	39.954578570	-80.603520496
17,400.00	89.00	149.850	11,283.78	-4,696.57	4,005.02	14,510,354.177	1,751,575.038	39.954340531	-80.603342668
17,500.00	89.00	149.850	11,285.53	-4,783.02	4,055.24	14,510,267.720	1,751,625.257	39.954102492	-80.603164841
17,600.00	89.00	149.850	11,287.27	-4,869.48	4,105.46	14,510,181.262	1,751,675.477	39.953864453	-80.602987016
17,700.00	89.00	149.850	11,289.01	-4,955.94	4,155.68	14,510,094.804	1,751,725.696	39.953626413	-80.602809192
17,800.00	89.00	149.850	11,290.75	-5,042.40	4,205.90	14,510,008.346	1,751,775.916	39.953388373	-80.602631369
17,900.00	89.00	149.850	11,292.49	-5,128.86	4,256.12	14,509,921.889	1,751,826.135	39.953150333	-80.602453547
18,000.00	89.00	149.850	11,294.23	-5,215.31	4,306.34	14,509,835.431	1,751,876.354	39.952912292	-80.602275726
18,100.00	89.00	149.850	11,295.97	-5,301.77	4,356.56	14,509,748.973	1,751,926.574	39.952674252	-80.602097907
18,200.00	89.00	149.850	11,297.71	-5,388.23	4,406.78	14,509,662.516	1,751,976.793	39.952436211	-80.601920089
18,300.00	89.00	149.850	11,299.45	-5,474.69	4,457.00	14,509,576.058	1,752,027.013	39.952198169	-80.601742272
18,400.00	89.00	149.850	11,301.19	-5,561.15	4,507.22	14,509,489.600	1,752,077.232	39.951960128	-80.601564457
18,500.00	89.00	149.850	11,302.93	-5,647.60	4,557.44	14,509,403.142	1,752,127.451	39.951722086	-80.601386642
18,600.00	89.00	149.850	11,304.67	-5,734.06	4,607.66	14,509,316.685	1,752,177.671	39.951484044	-80.601208829



Planning Report - Geographic

Database:	DB_Decv0422v16	Local Co-ordinate Reference:	Well Rock Hill S-02 HU (slot B)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1043.00ft
Project:	Marshall County, West Virginia NAD83 UTM 17N	MD Reference:	GL @ 1043.00ft
Site:	Castle Black/ Rock Hill	North Reference:	Grid
Well:	Rock Hill S-02 HU (slot B)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev3		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
18,700.00	89.00	149.850	11,306.41	-5,820.52	4,657.88	14,509,230.227	1,752,227.890	39.951246001	-80.601031017	
18,800.00	89.00	149.850	11,308.15	-5,906.98	4,708.10	14,509,143.769	1,752,278.110	39.951007958	-80.600653207	
18,900.00	89.00	149.850	11,309.89	-5,993.43	4,758.31	14,509,057.311	1,752,328.329	39.950769915	-80.600675397	
19,000.00	89.00	149.850	11,311.63	-6,079.89	4,808.53	14,508,970.854	1,752,378.549	39.950531872	-80.600497589	
19,100.00	89.00	149.850	11,313.37	-6,166.35	4,858.75	14,508,884.396	1,752,428.768	39.950293829	-80.600319782	
19,200.00	89.00	149.850	11,315.11	-6,252.81	4,908.97	14,508,797.938	1,752,478.987	39.950055785	-80.600141976	
19,300.00	89.00	149.850	11,316.85	-6,339.27	4,959.19	14,508,711.480	1,752,529.207	39.949817741	-80.599964172	
19,400.00	89.00	149.850	11,318.59	-6,425.72	5,009.41	14,508,625.023	1,752,579.426	39.949579696	-80.599786368	
19,500.00	89.00	149.850	11,320.33	-6,512.16	5,059.63	14,508,538.565	1,752,629.646	39.949341652	-80.599608566	
19,600.00	89.00	149.850	11,322.07	-6,598.64	5,109.85	14,508,452.107	1,752,679.865	39.949103607	-80.599430765	
19,700.00	89.00	149.850	11,323.81	-6,685.10	5,160.07	14,508,365.649	1,752,730.084	39.948865562	-80.599252966	
19,800.00	89.00	149.850	11,325.55	-6,771.56	5,210.29	14,508,279.192	1,752,780.304	39.948627516	-80.599075168	
19,900.00	89.00	149.850	11,327.30	-6,858.01	5,260.51	14,508,192.734	1,752,830.523	39.948389470	-80.598897371	
20,000.00	89.00	149.850	11,329.04	-6,944.47	5,310.73	14,508,106.276	1,752,880.743	39.948151424	-80.598719575	
20,100.00	89.00	149.850	11,330.78	-7,030.93	5,360.95	14,508,019.819	1,752,930.962	39.947913378	-80.598541781	
20,200.00	89.00	149.850	11,332.52	-7,117.39	5,411.17	14,507,933.361	1,752,981.182	39.947675331	-80.598363987	
20,300.00	89.00	149.850	11,334.26	-7,203.85	5,461.39	14,507,846.903	1,753,031.401	39.947437285	-80.598186195	
20,400.00	89.00	149.850	11,336.00	-7,290.30	5,511.61	14,507,760.445	1,753,081.620	39.947199237	-80.598008404	
20,500.00	89.00	149.850	11,337.74	-7,376.76	5,561.83	14,507,673.988	1,753,131.840	39.946961190	-80.597830614	
20,600.00	89.00	149.850	11,339.48	-7,463.22	5,612.05	14,507,587.530	1,753,182.059	39.946723142	-80.597652825	
20,700.00	89.00	149.850	11,341.22	-7,549.68	5,662.27	14,507,501.072	1,753,232.279	39.946485094	-80.597475038	
20,800.00	89.00	149.850	11,342.96	-7,636.14	5,712.49	14,507,414.614	1,753,282.498	39.946247046	-80.597297252	
20,900.00	89.00	149.850	11,344.70	-7,722.59	5,762.71	14,507,328.157	1,753,332.718	39.946008998	-80.597119467	
21,000.00	89.00	149.850	11,346.44	-7,809.05	5,812.92	14,507,241.699	1,753,382.937	39.945770949	-80.596941683	
21,070.13	89.00	149.850	11,347.66	-7,869.69	5,848.14	14,507,181.064	1,753,418.157	39.945604000	-80.596817000	

PBHL/TD 21070.13 MD 11347.66 TVD

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Rock Hill 02 LP 50 W - hit/miss target - Shape - Point	0.00	0.000	11,181.00	385.65	1,053.12	14,515,436.385	1,748,623.142	39.968332595	-80.613797469	
- plan misses target center by 26.62ft at 11526.62ft MD (11157.10 TVD, 374.60 N, 1049.20 E)										
Rock Hill 02 PBHL r1 - plan hits target center - Point	0.00	0.000	11,347.66	-7,869.69	5,848.14	14,507,181.064	1,753,418.157	39.945604000	-80.596817000	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment	
3,200.00	3,200.00	0.00	0.00	KOP Begin 2°/100' build	
3,450.00	3,449.68	8.93	6.25	Begin 5.00' tangent	
8,118.08	8,100.00	342.20	239.61	Begin 2°/100' build	
8,568.08	8,543.37	402.98	282.17	Begin 14.00' tangent	
10,308.40	10,232.00	747.86	523.66	Begin 6°/100' build/turn	
11,194.99	11,003.29	594.55	859.49	Begin 8°/100' build	
11,720.38	11,184.94	213.92	1,152.74	Begin 89.00° lateral	
21,070.13	11,347.66	-7,869.69	5,848.14	PBHL/TD 21070.13 MD 11347.66 TVD	



TUG HILL

4705102436

DEEP WELL SUBMISSION – PLEASE DELIVER TO SUSAN ROSE

December 14, 2022

CHARLES T. BREWER
WV DEP OFFICE OF OIL & GAS
601 57TH STREET SE
CHARLESTON, WV 25304-2345

VIA FEDEX

**RE: Rock Hill S-2HU (New H6A Drilling Permit Application)
Webster District, Marshall County, WV**

Dear Taylor:

Tug Hill Operating, LLC is submitting a new well drilling permit application for its proposed well, Rock Hill S-2HU, to explore for Point Pleasant Shale potential; it is located in Marshall County, WV. Therefore, enclosed please find the following:

- Check – Application Fee of \$5,150
- Permit Application Package
- CD with Site Safety Plan and MSDS
- CD with Construction and E&S Plans
- Consent and Easement
- Map and list of names / addresses or all operators within 1,500 feet of entire well borehole
- Proposed Voluntary Pooling and Unitization Letter

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

Sincerely,

AMY MORRIS
PERMIT SPECIALIST-APPALACHIA REGION
TUG HILL OPERATING, LLC

RECEIVED
Office of Oil and Gas

DEC 20 2022

WV Department of
Environmental Protection

Enclosures

02/17/2023

4705102436

WW-9
(4/16)

API Number 47 - 051 - _____
Operator's Well No. Rock Hill S-2HU

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) Wheeling Creek Quadrangle Majorsville

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 with proper containment

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? West Virginia Sundry Landfill (BWP-1021) (BWP-1021) or West Virginia Sundry Landfill, LLC (BWP-1021) or DEP ECR136000, Chesapeake Valley Landfill (100415)

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

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

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

Company Official Signature [Signature]
Company Official (Typed Name) Jim Pancake
Company Official Title Vice President - Geosciences

Subscribed and sworn before me this 5th day of December, 2022

[Signature]

Notary Public

Commonwealth of Pennsylvania - Notary Seal
Susanne Deliere, Notary Public
Washington County
My commission expires January 15, 2025
Co. 02/17/2023 382332
Member, Pennsylvania Association of Notaries

My commission expires 1/15/2025

Tug Hill Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 9.54 acres 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
Annual Ryegrass	40
Spring Oats	96

Seed Type	lbs/acre
Orchard Grass	12
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: *Steve Grewer* STRADER COVER 12-1-2022

Comments: _____

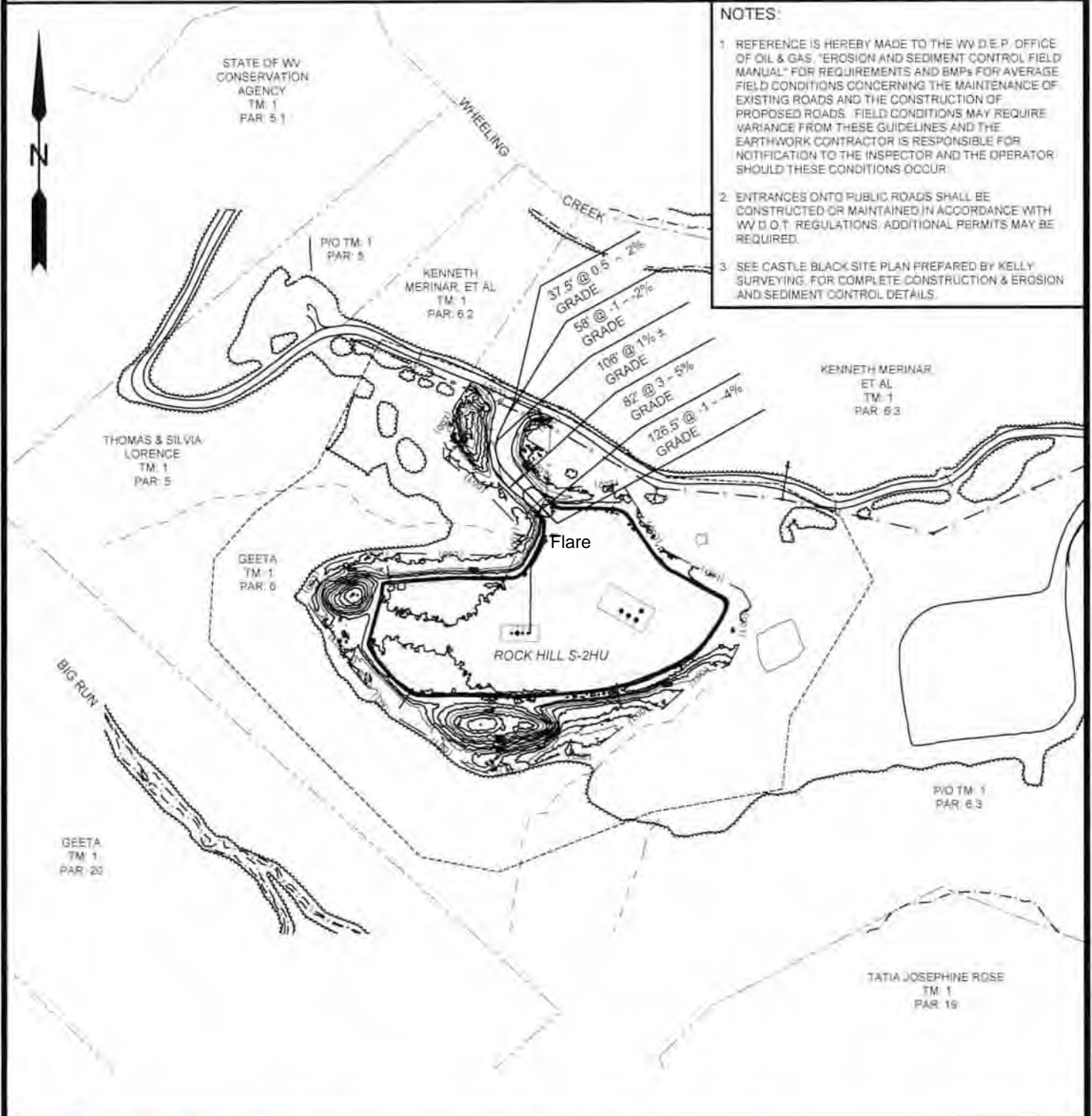
Title: Oil and Gas Inspector Date: _____

Field Reviewed? () Yes () No

CASTLE BLACK PAD PROPOSED WELL ROCK HILL S - 2HU

NOTES:

- 1 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.
- 2 ENTRANCES ONTO PUBLIC ROADS SHALL BE CONSTRUCTED OR MAINTAINED IN ACCORDANCE WITH WV D.O.T. REGULATIONS. ADDITIONAL PERMITS MAY BE REQUIRED.
- 3 SEE CASTLE BLACK SITE PLAN PREPARED BY KELLY SURVEYING FOR COMPLETE CONSTRUCTION & EROSION AND SEDIMENT CONTROL DETAILS.



4150 Kanawha Street, Suite 100 | Charleston, WV 25301 | 304.481.6611
 110 Kanawha Boulevard, Suite 100 | Charleston, WV 25301 | 304.481.6611
 154 East Barclay Street | Weirton, WV 26060 | 254.239.1200

TOPO SECTION:		OPERATOR:	
MAJORSVILLE 7.5'		PREPARED FOR: TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317	
COUNTY	DISTRICT		
MARSHALL	WEBSTER		
DRAWN BY	JOB NO.	DATE	SCALE
J.D.R.	9262	12/01/2022	1" = 300'



**TUG HILL
OPERATING**

02/17/2023



TUG HILL
OPERATING

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

Well Name: Rock Hill S-2HU

Pad Name: Castle Black

County: Marshall

UTM (meters), NAD83, Zone 17

Northing: 4,424,196.26

Easting: 532,660.38

**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)

24-HOUR EMERGENCY PHONE NUMBER

(800) 921-9745

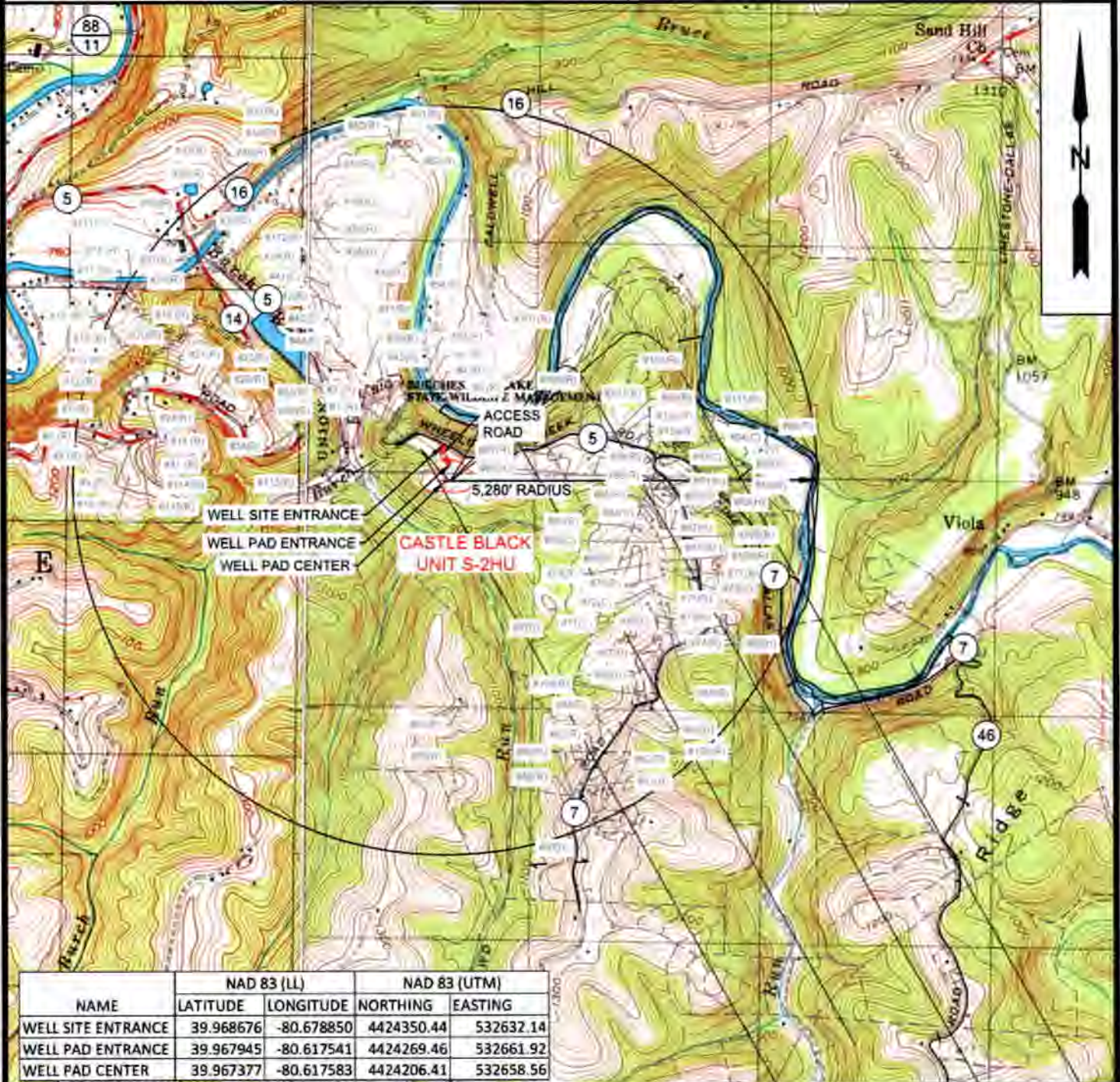
SK
12-1-2022

02/17/2023

CASTLE BLACK PAD ROCK HILL S - 2HU

EXHIBIT 2

4705102406



NAME	NAD 83 (LL)		NAD 83 (UTM)	
	LATITUDE	LONGITUDE	NORTHING	EASTING
WELL SITE ENTRANCE	39.968676	-80.678850	4424350.44	532632.14
WELL PAD ENTRANCE	39.967945	-80.617541	4424269.46	532661.92
WELL PAD CENTER	39.967377	-80.617583	4424206.41	532658.56

NOTE: THERE APPEARS TO BE NINETY-EIGHT (98) RESIDENCES, ELEVEN (11) BUSINESS OR COMMERCIAL LOCATIONS, FIVE (5) CHURCHES AND ONE (1) INDUSTRIAL FACILITY WITHIN 5,280'.



18 Summit Street | P.O. Box 988 | Canonsburg, PA 15317
 724.838.2222 | www.sls.com | 724.838.2222
 724.838.2222 | www.sls.com | 724.838.2222
 slswc.com

TOPO SECTION:		OPERATOR:	
MAJORSVILLE 7.5'		PREPARED FOR:	
COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
MARSHALL	WEBSTER	380 SOUTHPOINTE BLVD	
		SUITE 200	
		CANONSBURG, PA. 15317	
DRAWN BY	JOB NO.	DATE	SCALE
J.D.R.	9262	01/31/2023	1" = 2000'



TUG HILL
OPERATING

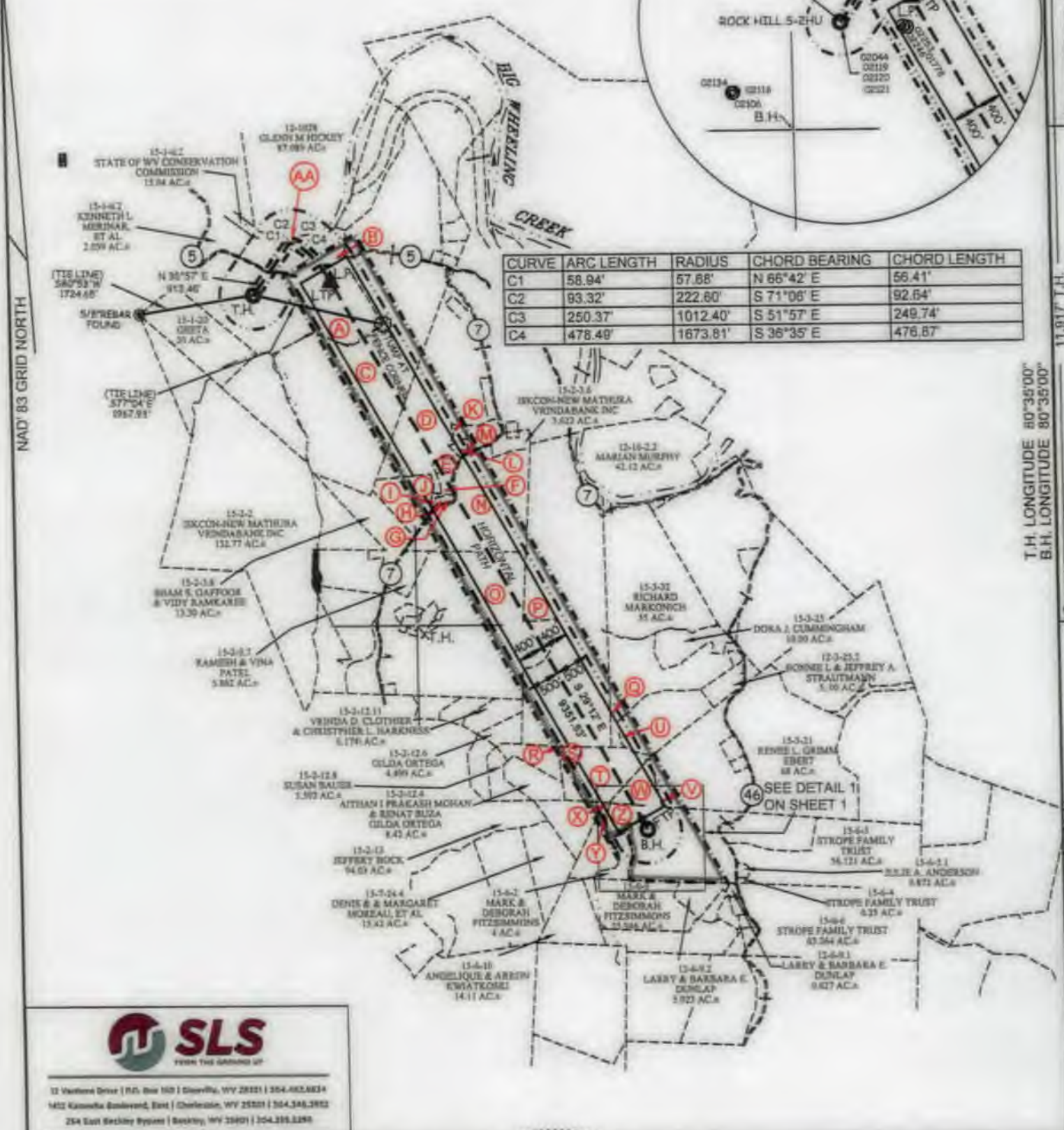
02/17/2023

ROCK HILL S-2HU
UTICA UNIT-308.57 ACRES±
TUG HILL OPERATING

T.H. LATITUDE 40°00'00"
 B.H. LATITUDE 39°57'30"



CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	58.94'	57.68'	N 66°42' E	56.41'
C2	93.32'	222.60'	S 71°06' E	92.64'
C3	250.37'	1012.40'	S 51°57' E	249.74'
C4	478.40'	1673.81'	S 36°35' E	476.87'



12 Veterans Drive | Rt. Box 160 | Clarksburg, WV 26301 | 304.623.8834
 1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.348.2852
 254 East Beckley Square | Beckley, WV 26001 | 304.358.8280



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

P.S. 677 *Gregory A. Smith*

LEGEND

LEASE LINE	-----
SURFACE LINE	-----
WELL LATERAL	-----
400' OFFSET LINE	-----
500' OFFSET LINE	-----
TIE LINE	-----
CREEK	-----
ROAD	-----
COUNTY ROUTE	-----
PROPOSED WELL	○
EXISTING WELL	○
PERMITTED WELL	○
FIRST TAKE POINT/LAST TAKE POINT (FTPL/LP)	●
TAX MAP-PARCEL	00-00
SURFACE OWNER (SEE TABLE)	(A)
LEASE # (SEE WV-6A1)	

SCALE 1" = 2000' FILE NO. 9262P2HUR3.dwg
 ROCK HILL S-2HU REV 3
 DATE JANUARY 4 20 23
 REVISED JANUARY 11 20 23
 OPERATORS WELL NO. ROCK HILL S-2HU
 API WELL NO. 47 - 051 - 02486
 NO. 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

02/17/2023

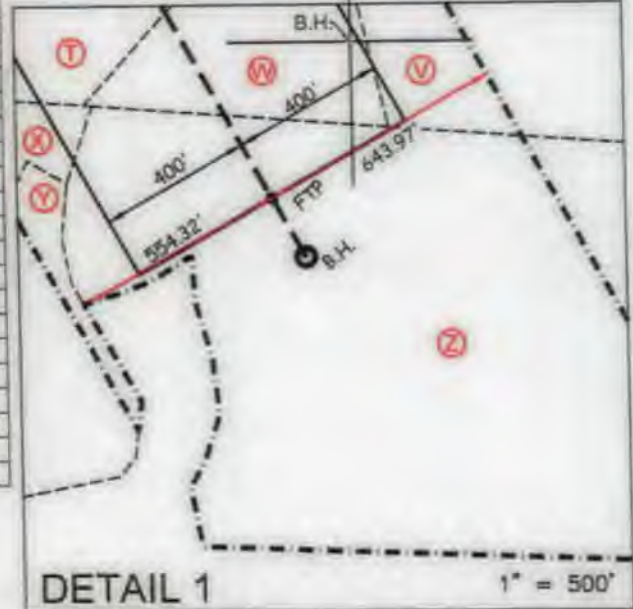
COUNTY NAME PERMIT

**ROCK HILL S-2HU
UTICA UNIT-308.57 ACRES±
TUG HILL OPERATING**

T.H. LATITUDE 40°00'00"
B.H. LATITUDE 39°57'30"

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)
 NAD83 S.P.C.(FT) N. 536,384.64 E. 1,655,272.11
 NAD83 GEO. LAT-(N) 39.967266 LONG-(W) 80.617582
 NAD83 UTM (M) N. 4,424,196.26 E. 532,660.38
LANDING POINT
 NAD83 S.P.C.(FT) N. 536,579.5 E. 1,658,428.8
 NAD83 GEO. LAT-(N) 39.967860 LONG-(W) 80.613445
 NAD83 UTM (M) N. 4,424,261.5 E. 533,011.8
BOTTOM HOLE
 NAD83 S.P.C.(FT) N. 528,415.7 E. 1,680,989.6
 NAD83 GEO. LAT-(N) 39.945804 LONG-(W) 80.598817
 NAD83 UTM (M) N. 4,421,797.6 E. 534,442.9

TAG	SURFACE OWNER	PARCEL	ACRES
A	GEETA	15-1-6	89.01
B	KENNETH L. MERINAR, ET AL.	15-1-6.3	16.961
C	TATIA J. ROSE	15-1-19	151.503
D	ISKCON - NEW MATHURA VRINDABAN, INC	15-1-16	99.08
E	ISKCON - NEW MATHURA VRINDABAN, INC	15-1-16.3	1.594
F	ISKCON - NEW MATHURA VRINDABAN, INC	15-2-3.3	1.363
G	ANDY & RUTH FRAENKEL	15-2-3.4	0.453
H	ANDY & RUTH FRAENKEL	15-2-3.2	0.292
I	ANDY & RUTH FRAENKEL	15-2-3.7	0.435
J	ELICIA N. HELLER	15-2-3.9	11.825
K	JOHN H. MOWEN, JR. OR SCOTT M. BIEDERMAN	15-1-18.1	2.321
L	ISKCON - NEW MATHURA VRINDABAN, INC	15-1-18.2	1.153
M	ISKCON - NEW MATHURA VRINDABAN, INC	15-1-18	3.709
N	GEETA	15-2-3.5	44.882
O	ISKCON - NEW MATHURA VRINDABAN, INC	15-2-5	113.88
P	SARA J. ANDERSON	15-2-4	116.89
Q	ROBERT A. & PARTICIA A. BENNETT	15-3-25.5	35.132
R	VANESSA MARCELO	15-2-12.9	6.324
S	CLARENCE COFFIELD	15-3-29	2
T	JAMES S. SHIPLEY	15-3-27	17
U	BONNIE & JEFF STRAUTMANN	15-3-25.4	19.875
V	JOYCE E. GRIMM	15-3-24	39.111
W	JAMES S. SHIPLEY	15-3-26	8
X	JASPER N GIVENS	15-3-28	7.68
Y	O.H. GALL & FRANK P. LAUTAR	15-6-1	3
Z	JOYCE E. GRIMM	15-6-3	51.07
AA	STATE OF W.V. (BIG WHEELING CREEK)	N/A	N/A



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

11,917' T.H.

COUNTY NAME

PERMIT

REFERENCES

1" = 200'

NOTES ON SURVEY
 1. NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS 2. 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
 2. WELL SPOT CIRCLE & TOP MARK SCALE IS 1"=2000'



12 Vestshore Drive | P.O. Box 750 | Glenville, WV 26031 | 204.482.8834
 1413 Kanawha Boulevard, East | Charleston, WV 25301 | 204.348.2832
 294 East Hackley Avenue | Beckley, WV 26001 | 204.295.6296
 WWW.SLS.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.



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 DATE JANUARY 4 20 23
 REVISED JANUARY 11 20 23
 OPERATORS WELL NO. ROCK HILL S-2HU
 API WELL NO. 47 - 051 - 02486
 STATE COUNTY PERMIT

P.S. Gregory A. Smith
 677

MINIMUM DEGREE OF ACCURACY 1 / 2500
 HORIZONTAL & VERTICAL CONTROL DETERMINED BY: DGPS (SURVEY GRADE TIE TO CORS NETWORK)
 FILE NO. 9262P2HUR3.dwg
 SCALE 1" = 2000'
 ROCK HILL S-2HU REV 3

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

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

LOCATION:
 ELEVATION 1042.60' WATERSHED BIG WHEELING CREEK
 DISTRICT WEBSTER COUNTY MARSHALL QUADRANGLE MAJORSVILLE
 SURFACE OWNER GEETA ACREAGE 89.017±
 ROYALTY OWNER ECO-VRINDABAN, INC. ACREAGE 89.017±
 PROPOSED WORK:
 DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER
 PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION POINT PLEASANT
 ESTIMATED DEPTH TVD: 11,414' TMD: 21,070'

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

02/17/2023

705102435

**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
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*See attached pages

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

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

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

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 *[Signature]*
 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	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment			
10*35098	15-1-6	A	ECO-VRINDABAN INC	FOSSIL CREEK OHIO, LLC	1/8+	827 144	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Fossil Creek Ohio, LLC to Gulfport Energy Corp.: AB 32/192	Fossil Creek Ohio, LLC to Gulfport Energy Corp.: Correction - AB 34/389	Gulfport Energy Corp & Fossil Creek Ohio LLC to American Petroleum Partners Operating LLC: AB 36/588	Name Change - American Petroleum Partners Operating LLC to High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*35267	15-1-8-3	B	GLENN M HICKEY	AMERICAN PETROLEUM PARTNERS LLC	1/8+	930 172	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*35734	15-1-6-3	B	CALVIN C MERINAR ET AL	TRIENERGY HOLDINGS, LLC	1/8+	711 377	TriEnergy Holdings LLC to NPAR LLC: AB 24/430	AB Resources LLC & NPAR LLC to Chief Exploration & Development LLC and Radler 2000 Ltd Partnership: AB 24/466	Chief Expl. & Devt. LLC, Chief Oil & Gas LLC, Radler 2000 Ltd Partnership to Enplus Resources (USA) Corp: AB 25/1 & 25/105	NPAR LLC to Chevron USA Inc: DB 756/392	TriEnergy Holdings LLC & TriEnergy Inc to Chevron USA Inc: AB 28/356	Chevron USA Inc to Statoil USA Onshore Properties Inc: AB 30/494	Chevron USA Inc to Chesapeake Appalachia LLC: AB 30/532	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: AB 33/424	Merger - SWN Exchange Titleholder LLC with/into SWN Production Company LLC: CB 19/624	SWN Production Company LLC to Statoil USA Onshore Properties Inc: AB 34/637	Statoil USA Onshore Properties Inc to American Petroleum Partners Operating LLC: 43/437	SWN Production Company LLC to American Petroleum Partners Operating LLC: 41/445	Name Change - American Petroleum Partners Operating LLC to High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249		
10*35846	15-1-19	C	TATIA JOSEPHINE ROSE	CHEVRON USA INC	1/8+	820 167	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chesapeake Appalachia LLC to SWN Production Properties Inc: AB 32/235	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: AB 33/424	SWN Production Company LLC to American Petroleum Partners Operating LLC: CB 19/624	Name Change - American Petroleum Partners Operating LLC to High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35096	15-1-16	D	ISKCON NEW VRINDARBAN INC	FOSSIL CREEK OHIO, LLC	1/8+	827 480	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Fossil Creek Ohio, LLC to Gulfport Energy Corp.: AB 32/192	Fossil Creek Ohio, LLC to Gulfport Energy Corp.: Correction - AB 34/389	Gulfport Energy Corp & Fossil Creek Ohio LLC to American Petroleum Partners Operating LLC: AB 36/588	Name Change - American Petroleum Partners Operating LLC to High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*35096	15-1-16-3	E	ISKCON NEW VRINDARBAN INC	FOSSIL CREEK OHIO, LLC	1/8+	827 480	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Fossil Creek Ohio, LLC to Gulfport Energy Corp.: AB 32/192	Fossil Creek Ohio, LLC to Gulfport Energy Corp.: Correction - AB 34/389	Gulfport Energy Corp & Fossil Creek Ohio LLC to American Petroleum Partners Operating LLC: AB 36/588	Name Change - American Petroleum Partners Operating LLC to High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*35096	15-2-3-3	F	ISKCON NEW VRINDARBAN INC	FOSSIL CREEK OHIO, LLC	1/8+	827 480	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Fossil Creek Ohio, LLC to Gulfport Energy Corp.: AB 32/192	Fossil Creek Ohio, LLC to Gulfport Energy Corp.: Correction - AB 34/389	Gulfport Energy Corp & Fossil Creek Ohio LLC to American Petroleum Partners Operating LLC: AB 36/588	Name Change - American Petroleum Partners Operating LLC to High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*35090	15-2-3-5	N	ECO-VRINDIBAN INC	FOSSIL CREEK OHIO, LLC	1/8+	827 144	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Fossil Creek Ohio, LLC to Gulfport Energy Corp.: AB 32/192	Fossil Creek Ohio, LLC to Gulfport Energy Corp.: Correction - AB 34/389	Gulfport Energy Corp & Fossil Creek Ohio LLC to American Petroleum Partners Operating LLC: AB 36/588	Name Change - American Petroleum Partners Operating LLC to High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*35096	15-2-5	O	ISKCON NEW VRINDARBAN INC	FOSSIL CREEK OHIO, LLC	1/8+	827 480	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Fossil Creek Ohio, LLC to Gulfport Energy Corp.: AB 32/192	Fossil Creek Ohio, LLC to Gulfport Energy Corp.: Correction - AB 34/389	Gulfport Energy Corp & Fossil Creek Ohio LLC to American Petroleum Partners Operating LLC: AB 36/588	Name Change - American Petroleum Partners Operating LLC to High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*35354	15-2-4	P	SARA JO ANDERSON	CNX GAS COMPANY LLC	1/8+	696 242	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	CNX Gas Company LLC to American Petroleum Partners Operating LLC: 40/115	Name Change - American Petroleum Partners Operating LLC to High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	

10*35195	15-3-27	T	NANCY C BECKETT	AMERICAN PETROLEUM PARTNERS LLC	1/8+	912	594	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC. MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35196	15-3-27	T	KAREN A SHIPLEY AND DANIEL SHIPLEY	AMERICAN PETROLEUM PARTNERS LLC	1/8+	912	591	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC. MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35202	15-3-27	T	PAUL E SHIPLEY AND DEBRA J SHIPLEY	AMERICAN PETROLEUM PARTNERS LLC	1/8+	912	601	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC. MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35206	15-3-27	T	MASTER MINERAL HOLDINGS I LP	AMERICAN PETROLEUM PARTNERS LLC	1/8+	913	395	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC. MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35210	15-3-27	T	SUELLEN COX & ANDY P COX	AMERICAN PETROLEUM PARTNERS LLC	1/8+	914	7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC. MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35217	15-3-27	T	CHARLES W & SARA JANE LUKENS	AMERICAN PETROLEUM PARTNERS LLC	1/8+	914	413	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC. MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35227	15-3-27	T	JAMES W & ERLINE M LUKENS	AMERICAN PETROLEUM PARTNERS LLC	1/8+	916	78	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC. MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35228	15-3-27	T	JOHN R MCCABE & SHEEREN S MCCABE	AMERICAN PETROLEUM PARTNERS LLC	1/8+	917	17	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC. MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35240	15-3-27	T	NYLA J BELL	AMERICAN PETROLEUM PARTNERS LLC	1/8+	924	225	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC. MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35245	15-3-27	T	KAREN K OLFIELD	AMERICAN PETROLEUM PARTNERS LLC	1/8+	926	109	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC. MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249

10*35256	15-3-27	T	DONALD R REYNOLDS AND DIANE K REYNOLDS	AMERICAN PETROLEUM PARTNERS LLC	1/8+	927	331	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35266	15-3-27	T	ANGELA L OLDFIELD AND KENNETH W OLDFIELD	AMERICAN PETROLEUM PARTNERS LLC	1/8+	929	174	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35923	15-3-27	T	PATRICK WILLIAM SHIPLEY	AMERICAN PETROLEUM PARTNERS LLC	1/8+	934	329	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35951	15-3-27	T	STAR DUPUIOR AND ALLAN J DUPUIOR	AMERICAN PETROLEUM PARTNERS LLC	1/8+	942	244	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35952	15-3-27	T	RAYMOND L KACHERMEYER	AMERICAN PETROLEUM PARTNERS LLC	1/8+	977	511	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35953	15-3-27	T	SHANE A AND CHRISTINA M MURAVSKY	AMERICAN PETROLEUM PARTNERS LLC	1/8+	942	248	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35961	15-3-27	T	DIANNA GALLOVITCH	AMERICAN PETROLEUM PARTNERS LLC	1/8+	938	71	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35962	15-3-27	T	VENURI HOME & GARDEN LLC	AMERICAN PETROLEUM PARTNERS LLC	1/8+	939	582	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35963	15-3-27	T	KAREN SUE SHIPLEY	AMERICAN PETROLEUM PARTNERS LLC	1/8+	939	578	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35668	15-3-27	T	JANE DRIVER-LINT AND TIMOTHY C LINT	AMERICAN PETROLEUM PARTNERS LLC	1/8+	965	400	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249

10*35693	15-3-27	T	ORLAN J KACHERMEYER	AMERICAN PETROLEUM PARTNERS LLC	1/8+	968	58	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*35695	15-3-27	T	DAVID J KACHERMEYER	AMERICAN PETROLEUM PARTNERS LLC	1/8+	969	526	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*35697	15-3-27	T	CHAD M SIMONS	AMERICAN PETROLEUM PARTNERS LLC	1/8+	969	548	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*35701	15-3-27	T	KEITH J BURNS AND RACHEL E BURNS	AMERICAN PETROLEUM PARTNERS LLC	1/8+	973	373	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*35714	15-3-27	T	EDWARD J AND PAMELA KACHERMEYER	AMERICAN PETROLEUM PARTNERS LLC	1/8+	976	499	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*35740	15-3-27	T	BLACK GOLD GROUP LTD	AMERICAN PETROLEUM PARTNERS LLC	1/8+	979	275	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*35747	15-3-27	T	PATRICK WILLIAM SHIPLEY	CHESAPEAKE APPALACHIA LLC	1/8+	839	281	N/A	N/A	N/A	N/A	N/A	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 33/47	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	Merger - SWN Exchange Titleholder LLC with/into SWN Production Company LLC: CB 19/624	Name Change - Statoil USA Onshore Properties Inc to Equinor USA Onshore Properties Inc: 2/427	SWN Production Company LLC to American Petroleum Partners Operating LLC: 42/340	Equinor USA Onshore Properties Inc to American Petroleum Partners Operating LLC: 42/357	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35752	15-3-27	T	LOIS JEAN ZUESY	CHESAPEAKE APPALACHIA LLC	1/8+	837	40	N/A	N/A	N/A	N/A	N/A	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 34/330	Chesapeake Appalachia LLC to SWN Production Company LLC: 35/32	Merger - SWN Exchange Titleholder LLC with/into SWN Production Company LLC: CB 19/624	Name Change - Statoil USA Onshore Properties Inc to Equinor USA Onshore Properties Inc: 2/427	SWN Production Company LLC to American Petroleum Partners Operating LLC: 42/340	Equinor USA Onshore Properties Inc to American Petroleum Partners Operating LLC: 42/357	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*35756	15-3-27	T	BRIAN K AND SHELLEY L KACHERMEYER	AMERICAN PETROLEUM PARTNERS LLC	1/8+	979	30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*35830	15-3-27	T	LOIS JEAN ZUESY	CHESAPEAKE APPALACHIA LLC	1/8+	837	35	N/A	N/A	N/A	N/A	N/A	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 33/4/330	Chesapeake Appalachia LLC to SWN Production Company LLC: 35/32	Merger - SWN Exchange Titleholder LLC with/into SWN Production Company LLC: CB 19/624	Name Change - Statoil USA Onshore Properties Inc to Equinor USA Onshore Properties Inc: 2/427	SWN Production Company LLC to American Petroleum Partners Operating LLC: 42/340	Equinor USA Onshore Properties Inc to American Petroleum Partners Operating LLC: 42/357	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	

10*36048	15-3-27	T	NANCY L MCCABE - DAY	AMERICAN PETROLEUM PARTNERS LLC	1/8+	1014	606	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*36051	15-3-27	T	SUSANNAH V STERN	AMERICAN PETROLEUM PARTNERS LLC	1/8+	1014	602	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*36063	15-3-27	T	SARA JANE LIKENS	AMERICAN PETROLEUM PARTNERS LLC	1/8+	1020	39	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*36064	15-3-27	T	CHARLOTTE L GRAY	AMERICAN PETROLEUM PARTNERS LLC	1/8+	1018	51	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*36104	15-3-27	T	JOHN R MCCABE	AMERICAN PETROLEUM PARTNERS LLC	1/8+	1021	50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*36170	15-3-27	T	MANAGER ENTERPRISES LLC	AMERICAN PETROLEUM PARTNERS LLC	1/8+	1099	231	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*36389	15-3-27	T	MONICA R ROBINSON	AMERICAN PETROLEUM PARTNERS LLC	1/8+	1061	527	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*36958	15-3-27	T	SHIRLEY MAY BENNINGTON	SWN PRODUCTION COMPANY LLC	1/8+	1077	547	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	SWN Production Company LLC & Equator USA Onshore Properties Inc to American Petroleum Partners Operating LLC: 985/609	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35195	15-3-26	W	NANCY C BECKETT	AMERICAN PETROLEUM PARTNERS LLC	1/8+	912	594	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*35196	15-3-26	W	KAREN A SHIPLEY AND DANIEL SHIPLEY	AMERICAN PETROLEUM PARTNERS LLC	1/8+	912	591	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	

10*35202	15-3-26	W	PAUL E SHIPLEY AND DEBRA J SHIPLEY	AMERICAN PETROLEUM PARTNERS LLC	1/8+	912	601	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35205	15-3-26	W	MASTER MINERAL HOLDINGS I LP	AMERICAN PETROLEUM PARTNERS LLC	1/8+	913	132	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35210	15-3-26	W	SUELLEN COX & ANDY P COX	AMERICAN PETROLEUM PARTNERS LLC	1/8+	914	7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35217	15-3-26	W	CHARLES W & SARA JANE LUKENS	AMERICAN PETROLEUM PARTNERS LLC	1/8+	914	413	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35227	15-3-26	W	JAMES W & ERLINE M LUKENS	AMERICAN PETROLEUM PARTNERS LLC	1/8+	916	78	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35228	15-3-26	W	JOHN R MCCABE & SHEEREN S MCCABE	AMERICAN PETROLEUM PARTNERS LLC	1/8+	917	17	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35240	15-3-26	W	NYLA J BELL	AMERICAN PETROLEUM PARTNERS LLC	1/8+	924	225	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35245	15-3-26	W	KAREN K OLDFIELD	AMERICAN PETROLEUM PARTNERS LLC	1/8+	926	109	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35256	15-3-26	W	DONALD R REYNOLDS AND DIANE K REYNOLDS	AMERICAN PETROLEUM PARTNERS LLC	1/8+	927	331	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35266	15-3-26	W	ANGELA L OLDFIELD AND KENNETH W OLDFIELD	AMERICAN PETROLEUM PARTNERS LLC	1/8+	929	174	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249

10*35373	15-3-26	W	PATRICK WILLIAM SHIPLEY	AMERICAN PETROLEUM PARTNERS LLC	1/8+	934	329	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC. 49/249
10*35351	15-3-26	W	STAR DUPUIR AND ALLAN J DUPUIR	AMERICAN PETROLEUM PARTNERS LLC	1/8+	942	264	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC. 49/249
10*35352	15-3-26	W	RAYMOND L KACHERMEYER	AMERICAN PETROLEUM PARTNERS LLC	1/8+	972	511	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC. 49/249
10*35353	15-3-26	W	SHANE A AND CHRISTINA M MURAVSKY	AMERICAN PETROLEUM PARTNERS LLC	1/8+	947	248	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC. 49/249
10*35361	15-3-26	W	DIANNA GALLOVITCH	AMERICAN PETROLEUM PARTNERS LLC	1/8+	938	74	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC. 49/249
10*35362	15-3-26	W	VENURI HOME & GARDEN LLC	AMERICAN PETROLEUM PARTNERS LLC	1/8+	939	582	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC. 49/249
10*35363	15-3-26	W	KAREN SUE SHIPLEY	AMERICAN PETROLEUM PARTNERS LLC	1/8+	939	578	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC. 49/249
10*35668	15-3-26	W	JANE DRIVER LINT AND TIMOTHY C LINT	AMERICAN PETROLEUM PARTNERS LLC	1/8+	965	400	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC. 49/249
10*35693	15-3-26	W	ORLAN J KACHERMEYER	AMERICAN PETROLEUM PARTNERS LLC	1/8+	968	68	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC. 49/249
10*35695	15-3-26	W	DAVID J KACHERMEYER	AMERICAN PETROLEUM PARTNERS LLC	1/8+	969	526	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC. 49/249

10*35697	15-3-26	W	CHAD M SIMONS	AMERICAN PETROLEUM PARTNERS LLC	1/8+	969	548	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35702	15-3-26	W	KEITH J BURNS AND RACHEL E BURNS	AMERICAN PETROLEUM PARTNERS LLC	1/8+	973	373	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35714	15-3-26	W	EDWARD J AND PAMELA KACHERMEYER	AMERICAN PETROLEUM PARTNERS LLC	1/8+	976	499	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35740	15-3-26	W	BLACK GOLD GROUP LTD	AMERICAN PETROLEUM PARTNERS LLC	1/8+	979	275	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35747	15-3-26	W	PATRICK WILLIAM SHIPLEY	CHESAPEAKE APPALACHIA LLC	1/8+	839	281	N/A	N/A	N/A	N/A	N/A	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 33/47	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	Merger - SWN Exchange Titleholder LLC with/into SWN Production Company LLC: CB 19/624	Name Change - Statoil USA Onshore Properties Inc to Equinor USA Onshore Properties Inc: 2/427	SWN Production Company LLC to American Petroleum Partners Operating LLC: 42/340	Equinor USA Onshore Properties Inc to American Petroleum Partners Operating LLC: 42/357	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35752	15-3-26	W	LOIS JEAN ZUESY	CHESAPEAKE APPALACHIA LLC	1/8+	837	40	N/A	N/A	N/A	N/A	N/A	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 34/330	Chesapeake Appalachia LLC to SWN Production Company LLC: 35/32	Merger - SWN Exchange Titleholder LLC with/into SWN Production Company LLC: CB 19/624	Name Change - Statoil USA Onshore Properties Inc to Equinor USA Onshore Properties Inc: 2/427	SWN Production Company LLC to American Petroleum Partners Operating LLC: 42/340	Equinor USA Onshore Properties Inc to American Petroleum Partners Operating LLC: 42/357	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*35756	15-3-26	W	BRIAN K AND SHELLEY L KACHERMEYER	AMERICAN PETROLEUM PARTNERS LLC	1/8+	979	30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*35830	15-3-26	W	LOIS JEAN ZUESY	CHESAPEAKE APPALACHIA LLC	1/8+	837	35	N/A	N/A	N/A	N/A	N/A	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 334/330	Chesapeake Appalachia LLC to SWN Production Company LLC: 35/32	Merger - SWN Exchange Titleholder LLC with/into SWN Production Company LLC: CB 19/624	Name Change - Statoil USA Onshore Properties Inc to Equinor USA Onshore Properties Inc: 2/427	SWN Production Company LLC to American Petroleum Partners Operating LLC: 42/340	Equinor USA Onshore Properties Inc to American Petroleum Partners Operating LLC: 42/357	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*36048	15-3-26	W	NANCY L MCCABE - DAY	AMERICAN PETROLEUM PARTNERS LLC	1/8+	1014	606	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*36051	15-3-26	W	SUSANNAH V STERN	AMERICAN PETROLEUM PARTNERS LLC	1/8+	1014	602	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249

10*36063	15-3-26	W	SARA JANE LIKENS	AMERICAN PETROLEUM PARTNERS LLC	1/8+	1020	39	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*36064	15-3-26	W	CHARLOTTE L GRAY	AMERICAN PETROLEUM PARTNERS LLC	1/8+	1018	51	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*36104	15-3-26	W	JOHN R MCCABE	AMERICAN PETROLEUM PARTNERS LLC	1/8+	1021	50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*36170	15-3-26	W	MANGER ENTERPRISES LLC	AMERICAN PETROLEUM PARTNERS LLC	1/8+	1099	211	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*36389	15-3-26	W	MONICA R ROBINSON	AMERICAN PETROLEUM PARTNERS LLC	1/8+	1061	627	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249	
10*36958	15-3-26	W	SHIRLEY MAY BENNINGTON	SWN PRODUCTION COMPANY LLC	1/8+	1077	547	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	SWN Production Company LLC & Equinor USA Onshore Properties Inc to American Petroleum Partners Operating LLC: 985/609	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249
10*36456	15-6-3	Z	JOYCE E GRIMM	CHESAPEAKE APPALACHIA LLC	1/8+	682	129	N/A	N/A	N/A	N/A	N/A	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 22/290	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	Merger - SWN Exchange Titleholder LLC with/into SWN Production Company LLC: CB 19/624	Name Change - Statoil USA Onshore Properties Inc to Equinor USA Onshore Properties Inc: 2/427	SWN Production Company LLC to American Petroleum Partners Operating LLC: 42/140	Equinor USA Onshore Properties Inc to American Petroleum Partners Operating LLC: 42/357	Name Change - American Petroleum Partners Operating LLC to High Road Operating LLC: MB 44/254	High Road Operating LLC, High Road Minerals LLC & High Road Midstream LLC to TH Exploration LLC: 49/249

ASSIGNMENT AND BILL OF SALE

STATE OF WEST VIRGINIA §
COUNTY OF MARSHALL §

KNOW ALL MEN BY THESE PRESENTS:

This Assignment and Bill of Sale ("Assignment") is made and entered this the 26th day of August, 2021 (the "Effective Date"), by and among High Road Operating, LLC, a Delaware limited liability company, High Road Minerals, LLC, a Delaware limited liability company and High Road Midstream, LLC, a Delaware limited liability company (collectively, "Assignor") and TH Exploration, LLC, a Texas limited liability company, with an address of 1320 South University Drive, Suite 500, Fort Worth, TX 76107 ("Assignee"). Assignor and Assignee may be referred to herein together as "Parties", and each individually as a "Party".

WHEREAS, Assignor desires to assign to Assignee, and Assignee desires to receive from Assignor, all of Assignor's right, title and interest in and to certain assets and associated agreements located in Marshall County, West Virginia; and

WHEREAS, TH Exploration IV, LLC acquired the equity interests of Assignor in that certain Membership Interest Assignment Agreement dated July 9, 2021 made pursuant to that certain Purchase and Sale Agreement dated June 21, 2021, and, as a result, is the Sole Member of Assignor.

NOW THEREFORE, for and in consideration of the mutual promises contained herein, and other good and valuable consideration not recited herein, the receipt and sufficiency of which are hereby acknowledged, Assignor, subject to the terms and conditions of this Assignment, does hereby ASSIGN, TRANSFER and DELIVER to Assignee, and Assignee hereby acquires, all of Assignor's right, title and interest in and to the following assets, leases, wells, properties, contracts, agreements, permits (such rights, title and interest collectively, the "Assets"):

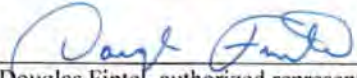
- (a) All oil, gas and mineral leases and royalties located in Marshall County, WV, including those described in Exhibit A, together with any and all other right, title and interest in and to the leasehold estates created thereby, subject to the terms, conditions, covenants and obligations set forth in such leases or other instruments creating such right or interests (such leases, royalties and mineral interests, collectively, the "Leases"), together with any related interest in the lands covered by the Lease or lands unitized, pooled or consolidated therewith (the "Lands");
(b) All of the oil and/or gas wells identified on Exhibit B hereto ("Wells"), and any other oil, gas, or other wells located on any of the Leases or the Lands in each case, whether producing, non-producing, shut-in, temporarily or permanently abandoned or otherwise, including all Hydrocarbons produced therefrom;
(c) All equipment, machinery, fixtures and other personal, movable and mixed property, operational or nonoperational, primarily attributable to or used in connection with the Wells, including the constructed pads and equipment more fully identified, but not limited to, Exhibit C;
(d) All contracts and agreements to which Assignor is a party or is bound insofar as such contracts and agreements relate to the Leases, Lands and Wells identified herein, including, but limited to, those contracts identified on Exhibit D;
(e) All governmental permits, licenses, and authorizations, as well as any applications for the same, as more fully described, but not limited to those, identified in Exhibit E;
(f) All of Assignor's files, records and data to the extent related to the Assets, including: (i) land and title records (including abstracts of title, title opinions and title curative documents); (ii) all geophysical and other seismic and related technical data and information relating to the Assets; (iii) related contract files; (iv) correspondence; (v) operations, environmental, production and accounting records; and (vi) facility and well records; and
(g) Any and all assets not previously assigned by Assignor, whether or not specifically enumerated herein, which the Assignor may hold any right, title and interest, in Marshall County, WV. For the avoidance of doubt, this Agreement is intended to convey all of the

West Virginia Oil and Gas Conservation Commission
Certificate of Consent and Easement

4705102406

We, the undersigned, for valuable consideration, the receipt and sufficiency of which is hereby acknowledged, being all of the owners of the surface of that certain lot, tract or parcel of land located in Webster District, Marshall County, State of West Virginia, parcel #15-1-6, shown on the attached plat or survey, do hereby consent and grant an easement, pursuant to West Virginia Code, Section 22C-9-7(b)(4) and Operating Rule 4.4 of the Rules and Regulations of the West Virginia Oil and Gas Commission, to American Petroleum Partners Operating LLC, its successors or assigns, for the drilling and operation of a deep well(s) for the production of oil, gas and/or other associated hydrocarbons at the location shown on the attached plat or survey.

Executed this 24th day of January, 2018.



Douglas Fintel, authorized representative
ECO-Vrindaban Inc.

ACKNOWLEDGMENT

COMMONWEALTH / STATE OF WEST VIRGINIA §

COUNTY OF Marshall §

On this 24th day of January, 2018, before me, the undersigned officer, personally appeared Douglas Fintel, who acknowledged himself to be the Sec./Treas. of ECO-Vrindaban, Inc., and that he as such, being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of the company by himself as Sec./Treas.

In witness thereof, I hereunto set my hand and affixed my official seal.

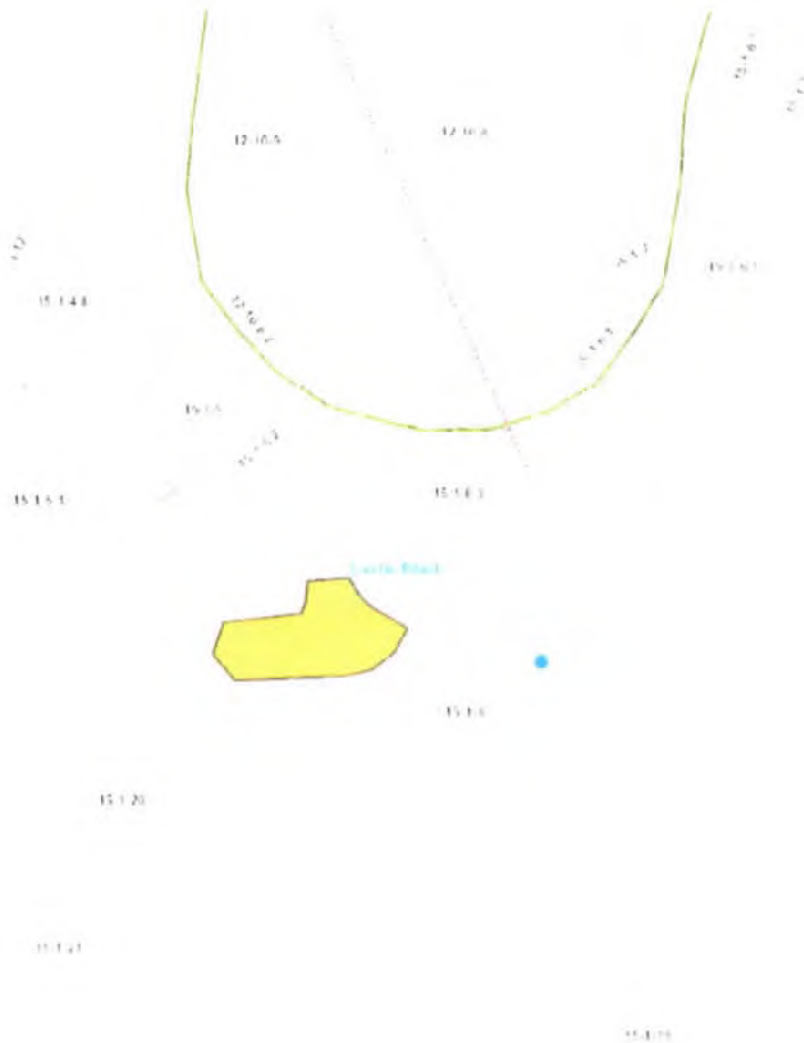
MY COMMISSION EXPIRES:
April 3, 2024





Marshall County
Jan Pest, Clerk
Instrument 1439486
04/02/2018 @ 03:05:56 PM
RIGHT OF WAY W/O CONSIDERATIO
Book 965 @ Page 119
Pages Recorded 2
Recording Cost \$ 11.00

Plat Map



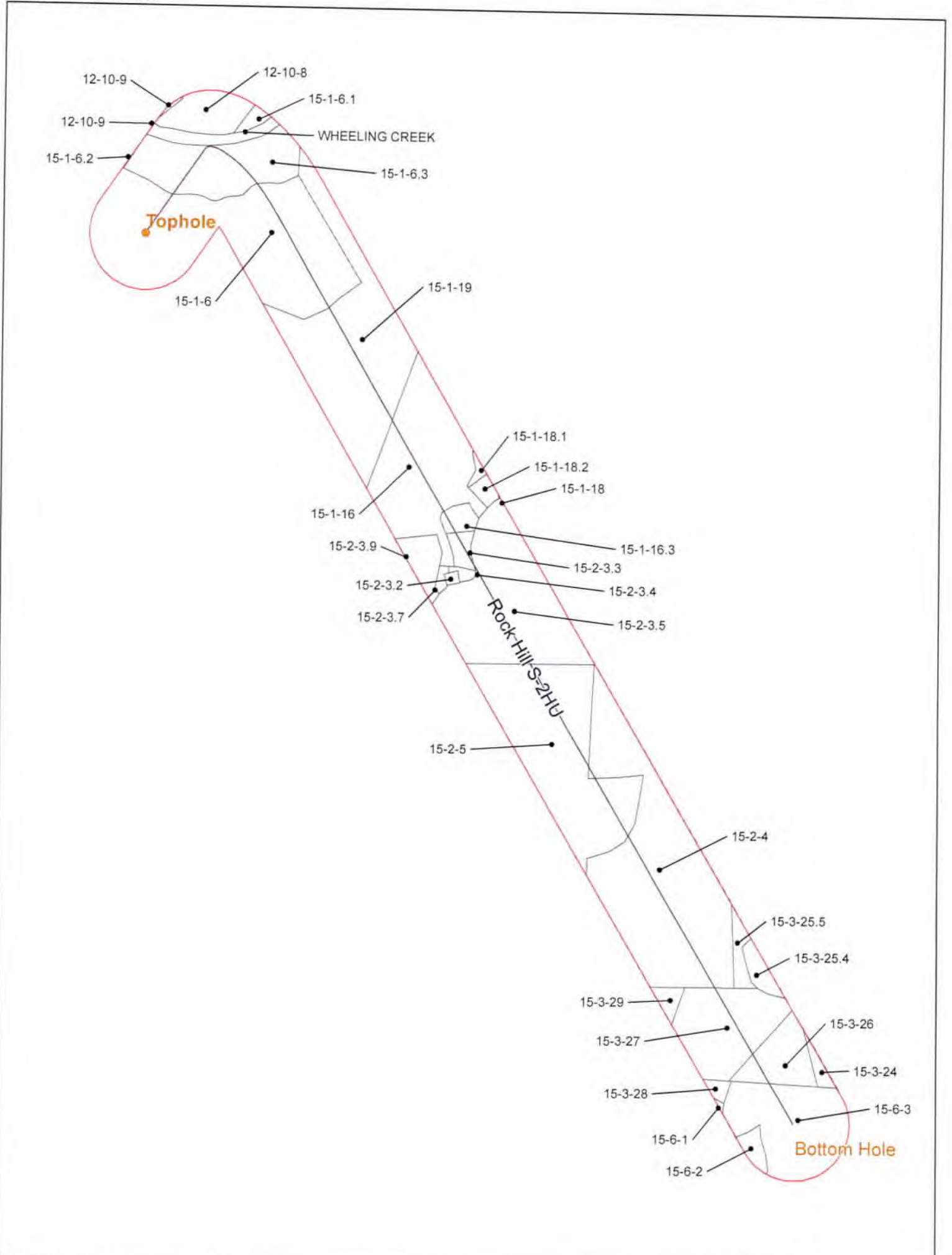
ECO-Vrindaban, Inc. parcel 15-1-6 with Pad Location

STATE OF WEST VIRGINIA, MARSHALL COUNTY, SCT.:

I, JAN PEST, Clerk of the County Commission of said County, do hereby certify that the annexed writing, bearing date on the 24th day of January, 2018, was presented for and by me, admitted to record in my office upon the above certificate as to the parties therein named this 2nd day of April, 2018 at 3.05 o'clock P. M.

TESTE: Jan Pest 02/17/2023 Clerk.

Rock Hill S-2HU



CONFIDENTIAL

Coordinate System: NAD 83
 Projection: UTM
 Datum: North American 1983
 False Easting: 100,000
 False Northing: 0
 Central Meridian: -81
 Scale Factor: 0.9996
 False Origin: 0
 Units: Feet



500' Buffer
 Utica Well

Rock Hill S-2HU
 Operators within 500 Feet of Well Borehole



02/17/2023

Offset Operators within 500' Rock Hill S - 2HU				
COUNTY	DISTRICT	TMP	OWNER	ADDRESS
Marshall	Sandhill	12-10-8	SOUTHWESTERN ENERGY COMPANY	10000 Energy Drive Spring, TX 77389
Marshall	Sandhill	12-10-8	EQUINOR USA ONSHORE PROPERTIES INC	2107 Citywest Blvd. Suite 100 Houston, TX 77042
Marshall	Sandhill	12-10-8	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Sandhill	12-10-9	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	15-1-6	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	15-1-6.1	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	15-1-6.2	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	15-1-6.3	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	15-1-16	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	15-1-16.3	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	15-1-18	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	15-1-18.1	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	15-1-18.2	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	15-1-19	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	15-2-3.2	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	15-2-3.3	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	15-2-3.4	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	15-2-3.5	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	15-2-3.7	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107

02/17/2023

COUNTY	DISTRICT	TMP	OWNER	ADDRESS
Marshall	Webster	15-2-3.9	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	15-2-4	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	15-2-5	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	15-3-24	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	15-3-25.4	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	15-3-25.5	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	15-3-26	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	15-3-27	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	15-3-28	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	15-3-29	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	15-6-1	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	15-6-2	SOUTHWESTERN ENERGY COMPANY	10000 Energy Drive Spring, TX 77389
Marshall	Webster	15-6-2	EQUINOR USA ONSHORE PROPERTIES INC	2107 Citywest Blvd. Suite 100 Houston, TX 77042
Marshall	Webster	15-6-2	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	15-6-3	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Webster	HEELING CR	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107

02/17/2023



December 15, 2022

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

RE: Rock Hill S-2HU

Subject: Proposed Voluntary Pooling and Unitization

Dear Susan:

Tug Hill Operating, LLC is authorized through, either lease or other agreement, to unitize and pool all lands falling within the boundaries of the proposed voluntary unit included with this submission.

If your office has any questions or concerns regarding the contents of this letter, please do not hesitate to contact me directly at 724-749-8388, or by email at amorris@tug-hilop.com.

Sincerely,

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

Amy L. Morris
Permitting Specialist
Tug Hill Operating

RECEIVED
Office of Oil and Gas

DEC 20 2022

WV Department of
Environmental Protection

4705102486



RECEIVED
Office of Oil and Gas

DEC 20 2022

WV Department of
Environmental Protection

December 15, 2022

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

RE: Rock Hill S-2HU

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 Routes 7/13 and 7 in the area reflected on the Rock Hill S-2HU 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

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

RECEIVED
Office of Oil and Gas

DEC 20 2022

Date of Notice Certification: 12/19/2022

API No. 47- 051

Operator's Well No. Rock Hill S-2HU

Well Pad Name: Castle Black

WV Department of
Environmental Protection

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	Eastings:	<u>532,660.38</u>
County:	<u>Marshall</u>		Northing:	<u>4,424,196.26</u>
District:	<u>Webster</u>	Public Road Access:	<u>County Route 5 - Big Wheeling Creek Road</u>	
Quadrangle:	<u>Majorsville</u>	Generally used farm name:	<u>Geeta</u>	
Watershed:	<u>Wheeling Creek</u>			

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

Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following: *PLEASE CHECK ALL THAT APPLY		OOG OFFICE USE ONLY <input type="checkbox"/> RECEIVED/ NOT REQUIRED <input checked="" type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED/ NOT REQUIRED <input checked="" type="checkbox"/> RECEIVED <input checked="" type="checkbox"/> RECEIVED <input checked="" type="checkbox"/> RECEIVED
<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 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		

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.

02/17/2023

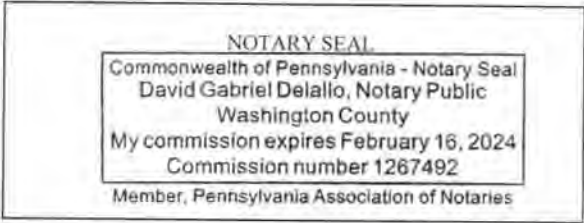
4705102438

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: Tug Hill Operating, LLC
By: Amy L. Morris *Amy Morris*
Its: Permitting Specialist - Appalachia Region
Telephone: 724-749-8388

Address: 380 Southpointe Boulevard, Plaza II, Suite 200
Canonsburg, PA 15317
Facsimile: _____
Email: amorris@tug-hilop.com



Subscribed and sworn before me this 19 day of December, 2022
David Gabriel Delallo Notary Public
My Commission Expires 2/16/24

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.



WW-6A
(9-13)

4705102406
API NO: 47-051
OPERATOR WELL NO. Rock Hill S-2HU
Well Pad Name: Castle Black

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: 12/19/2022 **Date Permit Application Filed:** 12/20/2022

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: ECO-Windaban, Inc., dba Gorskahy-Seva and Environmental Education Trust of America ✓
Address: 164 Surabhi Lane
Moundsville, WV 26003

Name: _____
Address: _____

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

Name: *same as above
Address: _____

Name: _____
Address: _____

SURFACE OWNER(S) (Impoundments or Pits)

Name: _____
Address: _____

COAL OWNER OR LESSEE

Name: CNX Land, LLC Attn: Casey Saunders ✓
Address: 275 Technology Drive, Suite 101
Canonsburg, PA 15317-9565

COAL OPERATOR

Name: Marshall County Coal Resources, Inc. Attn: Rick Bair ✓
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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WW-6A
(8-13)

API NO. 47-051
OPERATOR WELL NO. Rock Hill S-2HU
Well Pad Name: Castle Black

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.**

02/17/2023

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 -
OPERATOR WELL NO. Rock Hill S-2HU
Well Pad Name: Castle Black

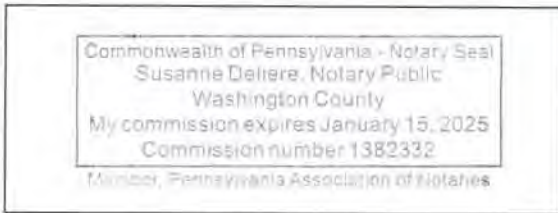
Notice is hereby given by:

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

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

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 14th day of December 2022
Susanné 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
 Canonsburg, PA 15137

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

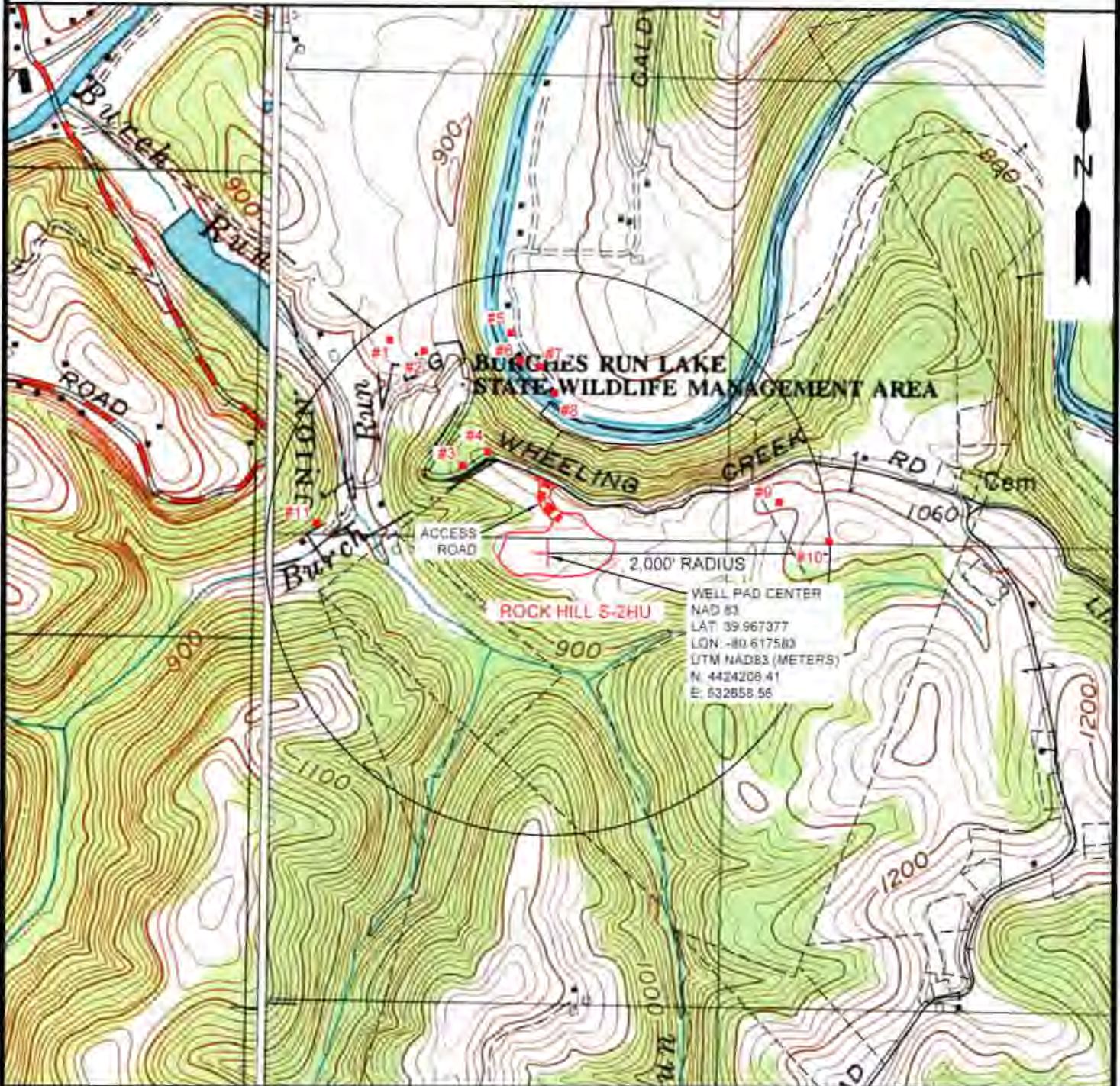
Well: Rock Hill S-2HU
 District: Sandhill District (Taxmap 10), Webster District (Taxmap 1)
 State: West Virginia (WV)

There are ten (10) residences, and no: business or commercial sites, church or religious buildings, Industrial facilities, or schools or emergency facilities within two-thousand feet (2,000') of the above referenced well location.

Residence 1 TM 15-1-4.12 Sheldon Terry Ray ✓ Phone: 304-243-5990 Physical Address 6121 Big Wheeling Creek Wheeling, WV 26003 Tax Address 6121 Big Wheeling Creek Rd Wheeling, WV 26003	Residence 2 TM 15-1-4.8 Robson Gerald H & Theodora J ✓ Phone: 304-242-8958, 781-289-4683 Physical Address 6187 Big Wheeling Creek Rd Wheeling, WV 26003 Tax Address 6187 Big Wheeling Creek Rd Wheeling, WV 26003	Residence 3 TM 15-1-5 Lorence Thomas & Silvia Lau ✓ Phone: 304-242-7057 Physical Address 6494 Big Wheeling Creek Wheeling, WV 26003 Tax Address 6494 Big Wheeling Creek Rd Moundsville, WV 26041
Residence 4 TM 15-1-5 Lorence Thomas & Silvia Lau ✓ Phone: 304-242-7057 Physical Address 6494 Big Wheeling Creek Wheeling, WV 26003 Tax Address 6494 Big Wheeling Creek Rd Moundsville, WV 26041	Residence 5 TM 12-10-9 Merinar Kenneth L ET AL ✓ Phone: 304-232-2777 Physical Address 553 Merinar Lane Wheeling, WV 26003 Tax Address 138 Log Cabin Lane Wheeling, WV 26003	Residence 6 TM 12-10-9 Merinar Kenneth L ET AL ✓ Phone: 304-232-2777 Physical Address 553 Merinar Lane Wheeling, WV 26003 Tax Address 138 Log Cabin Lane Wheeling, WV 26003-7695
Residence 7 TM 12-10-9 Merinar Kenneth L ET AL ✓ Phone: 304-232-2777 Physical Address 553 Merinar Lane Wheeling, WV 26003 Tax Address 138 Log Cabin Lane Wheeling, WV 26003-7695	Residence 8 TM 12-10-8.2 Merinar Jeffrey T ✓ Phone: 304-242-9855 Physical Address 613 Merinar LN Wheeling, WV 26003 Tax Address 553 Merinar Lane Wheeling, WV 26003	Residence 9 TM 15-1-19 Rose Tatia Josephine ✓ Phone: 304-242-5022 Physical Address 119 Tatia Lane Moundsville, WV 26041 Tax Address 2716 Westwood Drive Nashville, TN 37204-2712



<p>Residence 10 TM 15-1-19 Rose Tatia Josephine ✓ Phone: 304-242-5022 Physical Address 119 Tatia Lane Moundsville, WV 26041 Tax Address 2716 Westwood Drive Nashville, TN 37204-2712</p>	<p>Residence 11 TM 15-1-4.3 Melinda Dawn Wiselka ✓ Phone: 724-334-4575, 724-335-5635 Physical Address Park Forest Road 802 Cameron, WV 26033 Tax Address 3305 Ward Street Pittsburgh, PA 15213</p>	

PROPOSED ROCK HILL S - 2HU



WELL PAD CENTER
 NAD 83
 LAT 39.967377
 LGN -80.617583
 UTM NAD83 (METERS)
 N 4424208.41
 E 632658.56

NOTE: THERE APPEARS TO BE ELEVEN (11) POSSIBLE WATER SOURCES WITHIN 2,000'

 SLS SURVEYING & CONSULTING 12 VAN DYKE DRIVE (PO) BOX 152 GAITHERSBURG, MD 20878 (301) 463-3374 1403 LANTANA DRIVE CHANTLERY, WV 26024 (204) 282-0972 204 COTTONWOOD STREET BURLINGAME, WV 25001 (204) 283-3336 WWW.SLSURV.COM	TOPO SECTION: MAJORSVILLE 7.5'		OPERATOR: PREPARED FOR: TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317	
	COUNTY MARSHALL	DISTRICT WEBSTER		
	DRAWN BY J.D.R.	JOB NO. 9262		
	DATE 12/15/2022		SCALE 1" = 1000'	

02/17/2023

4705102406

**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: 11/17/2022 **Date of Planned Entry:** 11/24/2022

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: ECO-Vision, Inc. (a Big Oil/Coal/Lease-Save and Environmental Education Trust of America, Inc.)

Address: 164 Surabhi Lane Moundsville, WV 26003

Name: _____

Address: _____

Name: _____

Address: _____

COAL OWNER OR LESSEE

Name: GNX Land, LLC Attn: Casey Saunders

Address: 275 Technology Drive, Suite 101
Canonsburg, PA 15317-9565 **See attached

MINERAL OWNER(s)

Name: ECO-Vision, Inc. (a Big Oil/Coal/Lease-Save and Environmental Education Trust of America, Inc.)

Address: 164 Surabhi Lane Moundsville, WV 26003

*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>39.9673770, -80.6175831</u>
County:	<u>Marshall</u>	Public Road Access:	<u>County Route 5 - Big Wheeling Creek Road</u>
District:	<u>Webster</u>	Watershed:	<u>Wheeling Creek</u>
Quadrangle:	<u>Majorsville</u>	Generally used farm name:	<u>Geeta</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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Office of Oil and Gas

Notice is hereby given by:

Well Operator: Tug Hill Operating, LLC

Telephone: 724-749-8388

Email: amorris@tug-hilop.com

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

Facsimile: _____

DEC 20 2022
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.

02/17/2023

4705102480

Casterly Rock Pad – Rock Hill Wells

Rock Hill S-1HU

Rock Hill S-2HU

Rock Hill S-3HU

Rock Hill S-4HU

Additional Party to Notice

Coal Lessee

Marshall County Coal Resources, Inc.

46226 National Road

St. Clairsville, OH 43950

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4705102406

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

December 8, 2022

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 Castle Black Pad, Marshall County
Rock Hill S-2HU Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2017-0611 which has been transferred to Tug Hill Operating LLC for access to the State Road for a well site located off Marshall County Route 5 SLS MP 0.60.

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

Very Truly Yours,

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

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

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PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION

Rock Hill S-2HU

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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OPERATOR: Tug Hill Operating, LLC

WELL NO: Rock Hill S-2HU

PAD NAME: Castle Black

REVIEWED BY: Amy L. Morris

SIGNATURE: *Amy L. Morris*

WELL RESTRICTIONS CHECKLIST

HORIZONTAL 6A WELL

Well Restrictions

At Least 100 Feet from Pad and LOD (including any E&S Control Feature) to any Perennial Stream, Lake, Pond, Reservoir or Wetland; OR

DEP Waiver and Permit Conditions

At Least 300 Feet from Pad and LOD (including any E&S Control Feature) to any Naturally Producing Trout Stream; OR

DEP Waiver and Permit Conditions

At Least 1000 Feet from Pad and LOD (including any E&S Control Feature) to any Groundwater Intake or Public Water Supply; OR

DEP Waiver and Permit Conditions

At Least 250 Feet from an Existing Water Well or Developed Spring to Well Being Drilled; OR

Surface Owner Waiver and Recorded with County Clerk, OR

DEP Variance and Permit Conditions

At Least 625 Feet from an Occupied Dwelling Structure to Center of the Pad; OR

Surface Owner Waiver and Recorded with County Clerk, OR

DEP Variance and Permit Conditions

At Least 625 Feet from Agricultural Buildings Larger than 2500 Square Feet to the Center of the Pad; OR

Surface Owner Waiver and Recorded with County Clerk, OR

DEP Variance and Permit Conditions

Division of Oil and Gas
DEC 30 2022
Department of Environmental Protection

02/17/2023

WEST VIRGINIA COUNTY MAP



Site Entrances	Center of Well Pad
WV-N AD 27 N 534830.12	WV-N AD 27 N 534219.84
WV-N AD 27 E 1685187.86	WV-N AD 27 E 1685236.88
WV-N AD 27 N 534831.29	WV-N AD 27 E 1685181.20
WV-N AD 27 E 1686623.04	WV-N AD 27 E 1686701.83
Lat. NAD 83 39 3646757	Lat. NAD 83 39 3647770
Long. NAD 83 -80 6178482	Long. NAD 83 -80 6179833
Lat. NAD 27 39 3646807	Lat. NAD 27 39 3647820
Long. NAD 27 -80 6180841	Long. NAD 27 -80 6177940
UTM 17 N AD 83 N 422130.44	UTM 17 N AD 83 N 424206.41
UTM 17 N AD 83 E 512632.11	UTM 17 N AD 83 E 512638.56
	Pad Elev: -1042.68



Well Table			
Rock Hill 5-101	Rock Hill 5-201	Rock Hill 5-301	Rock Hill 5-401
WV-N AD 27 N 534834.74	WV-N AD 27 N 534834.68	WV-N AD 27 N 534834.53	WV-N AD 27 N 534834.48
WV-N AD 27 E 1685246.11	WV-N AD 27 E 1685272.11	WV-N AD 27 E 1685284.11	WV-N AD 27 E 1685296.11
WV-N AD 27 N 534835.18	WV-N AD 27 E 1685187.86	WV-N AD 27 N 534835.18	WV-N AD 27 N 534835.18
WV-N AD 27 E 1686623.04	WV-N AD 27 E 1686701.23	WV-N AD 27 E 1686710.23	WV-N AD 27 E 1686720.23
Lat. NAD 83 39 3647281	Lat. NAD 83 39 3647281	Lat. NAD 83 39 3647281	Lat. NAD 83 39 3647281
Long. NAD 83 -80 6179621	Long. NAD 83 -80 6179621	Long. NAD 83 -80 6179621	Long. NAD 83 -80 6179621
Lat. NAD 27 39 3647214	Lat. NAD 27 39 3647215	Lat. NAD 27 39 3647215	Lat. NAD 27 39 3647215
Long. NAD 27 -80 6179660	Long. NAD 27 -80 6179613	Long. NAD 27 -80 6177944	Long. NAD 27 -80 6179775
UTM 17 N AD 83 (m) N 424198.23	UTM 17 N AD 83 (m) N 424198.26	UTM 17 N AD 83 (m) N 424198.29	UTM 17 N AD 83 (m) N 424198.32
UTM 17 N AD 83 (m) E 512636.71	UTM 17 N AD 83 (m) E 512640.38	UTM 17 N AD 83 (m) E 512644.04	UTM 17 N AD 83 (m) E 512647.70
Castle Black 5-111	Castle Black 5-112	Castle Black 5-113	Castle Black 5-114
WV-N AD 27 N 534831.13	WV-N AD 27 N 534831.18	WV-N AD 27 N 534831.23	WV-N AD 27 N 534831.28
WV-N AD 27 E 1685272.11	WV-N AD 27 E 1685284.11	WV-N AD 27 E 1685296.11	WV-N AD 27 E 1685308.11
WV-N AD 27 N 534831.13	WV-N AD 27 N 534831.18	WV-N AD 27 N 534831.23	WV-N AD 27 N 534831.28
WV-N AD 27 E 1686623.04	WV-N AD 27 E 1686701.23	WV-N AD 27 E 1686710.23	WV-N AD 27 E 1686720.23
Lat. NAD 83 39 3647281	Lat. NAD 83 39 3647281	Lat. NAD 83 39 3647281	Lat. NAD 83 39 3647281
Long. NAD 83 -80 6179621	Long. NAD 83 -80 6179621	Long. NAD 83 -80 6179621	Long. NAD 83 -80 6179621
Lat. NAD 27 39 3647214	Lat. NAD 27 39 3647215	Lat. NAD 27 39 3647215	Lat. NAD 27 39 3647215
Long. NAD 27 -80 6179660	Long. NAD 27 -80 6179613	Long. NAD 27 -80 6177944	Long. NAD 27 -80 6179775
UTM 17 N AD 83 (m) N 424198.23	UTM 17 N AD 83 (m) N 424198.26	UTM 17 N AD 83 (m) N 424198.29	UTM 17 N AD 83 (m) N 424198.32
UTM 17 N AD 83 (m) E 512636.71	UTM 17 N AD 83 (m) E 512640.38	UTM 17 N AD 83 (m) E 512644.04	UTM 17 N AD 83 (m) E 512647.70



Project Contacts	
The Hill Operating	Survey and Engineer
Jonathan White - Registrar, AGA 91 724-485-2000 (Ext. 1) 304-486-7976 Cell	Kenneth Kelly 364-338-4961 (Ext. 1)
Chad Dabbs - Construction Manager 364-215-5487	Bill P. Day 364-442-4220 (Ext. 1)
Becky Smith - Construction Manager 364-364-1323	Justin J. Starnes/Field 364-338-4987 (Ext. 1)
The Hill Operating, LLC 181 Beckham Blvd Southport Plaza B, Suite 201 Farmington, PA 15117	
Environmental: Written Deliverables as provided by IREL Compliance Services, Inc. Issued January 2013	
Topographic Information: The topographic information (contour lines) is based on aerial photographs by Blue Mountain Aerial Mapping, Farmington, WV	

Site Locations (NAD 27)		
Direction	Latitude (DD)	Longitude (DD)
Site Entrance	39 3646757	-80 6178482
Center of Well Pad	39 3647770	-80 6179840

Approach Routes:
Traveling West on I-470 near Bethlehem, WV. Take Exit 2 towards Bethlehem. Turn Right onto W. Bethlehem Blvd (Co Rt 911). Follow W. Bethlehem Blvd for 0.5 mi. Turn Right onto WV Rt 88 South. Follow WV Rt 88 South for 0.2 mi. Turn Left onto US Rt 230 South. Follow US Rt 230 South for 1.3 mi. Turn Left onto Co Rt 44, McCree's Ridge Rd. Follow Co Rt 44 for 0.25 mi. Turn Left onto Co Rt 7, McCree's Ridge Rd. Follow Co Rt 7 for 3.7 mi. Turn Left onto Co Rt 5, Big Wheeling Creek Rd. Follow Co Rt 5 for 0.6 mi. The site entrance will be on the Left (South) side of the road.



MISS UTILITY OF WEST VIRGINIA
1-800-245-4848
West Virginia State Law
Requires All Utility Work to be Done by Licensed Professionals
Call before you dig.
IT'S THE LAW

Know what's below. Call before you dig.

The Hill Operating will obtain an Encroachment Permit (Form MM-109) from the WV Department of Transportation, Division of Highways, prior to the commencement of any construction activities.
The WV Mines Website was consulted. Previous mining activities are not within the AOI.
WVDEP Website files show that there are no active and/or abandoned gas wells within the AOI.

Floodplain Conditions	
Do site construction activities take place in a floodplain?	NO
Final ground elevations comply with floodplain conditions?	NO
Flood Hazard Code	X
REC-AES Block category	NA
Floodplain depth or flowage	0.0
PRM Map Number(s) for site	140718, 07231
Agency of jurisdiction on floodplain	NA

02/17/2023

Castle Black Well Site

Construction Plan, &
 Sediment Control Plans
 for an Operating
 Well in
 Marshall County
 Webster District
 39.9673770°
 -80.6175831°
 Wheeling Creek Watershed

RECEIVED
 Office of Oil and Gas
 DEC 20 2022

WV Department of
 Environmental Protection

Pertinent Site Information

Castle Black Well Site
 Emergency Number: 304-843-1130
 Webster District, Marshall County, WV
 Watershed: Wheeling Creek Watershed
 Site 911 Address:
 6583 Big Wheeling Creek
 Moundsville, WV 26003
 Tug Hill Contact Number: 1-817-652-3400

Property Owner Information - Castle Black Well Site

Owner	CVI - Parcel	Well Pad	Access Road	Topsoil Excavation	Add. Clearcut	Total Disturbed
Goetz	1.4	0.83	0.53	1.14	2.04	6.94
Total (Goetz) (Ac)						
	1.4	0.83	0.53	1.14	2.04	6.94

A: As-Built



WV State Plane Coordinate System
 North Zone (NAD 83)
 Elevations Based on NAVD83
 Established By Survey Grade 0170
 and 0171 9/20/2000

Material Name	TM - Parcel	Road Length	Type
Gravel	1.4	0.83	New Access Road Construction

Disturbed Area	
Well Pad Construction	0.83 Ac
Access Road Construction	0.53 Ac
Topsoil Excavation	1.14 Ac
Additional Clearcut	2.04 Ac
Total Disturbed Area	6.94 Ac
Additional Information	
Total Wooded Area Disturbed	1.00 Ac
Total Linear Feet of Access Road	125.5'

Revision
 Design
 Design
 Revised Well

Date
 08-23-2022
 08-11-2022

TUG HILL
 OPERATING



THIS DOCUMENT
 PREPARED FOR
 TUG HILL
 OPERATING

Kelly Surrency
 P.E. and
 Geotechnical Engineer

Castle Black Well Site
 Webster District
 Marshall County, WV

Cover Sheet

Site Locations (NAD 83)		
Structure	Easting (EOD)	Northing (NOD)
Site Entrance	195940757	484178452
Center of Well Pad	195927776	484175811



- Well Location Restrictions**
- Well construction complies with the following restrictions:
 - *250' from an existing well or developed spring used for human or domestic animals
 - *825' from an unexcavated dwelling or barn greater than 2,000 SF used for poultry or dairy, measured from the center of the pad.
 - *500' from the edge of a ditch or a naturally occurring stream channel.
 - *1,000' of a surface or ground water table to a public water supply.
- (Well Location Restrictions of WV Code 22-6A-12)



I, the undersigned, a duly licensed Professional Engineer, do hereby certify that the design and construction details shown on these drawings were prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer in the State of West Virginia.

Zachary C. Summerfield
 No. 22214
 Kelly Surrency, P.E.
 Title: Geotechnical Engineer

John Goetz
 STRAVER GROUP
 12-1-22

Sheet	Description
1	Cover Sheet
V1	Schedule of Quantities
N1-N4	Site Notes
2	Pre-Construction Site Conditions
3	Site Soil Map
4	Plan View
5-6	Cross Sections - Well Pad
7	Cross Sections - Access Road
G1-G2	Geotechnical Exhibit
L1	Landsownr Disturbed Area Exhibit
S1	Site Reclamation
M1-M3	Production Exhibit
D1-D2	Erosion and Sediment Control Details
R1	Access Road Details
P1	Pad Details

02/17/2023

Date: 08/25/2022
 Scale: As Shown
 Designed By: JS
 File No: 7