



west virginia department of environmental protection

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

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

Tuesday, April 13, 2021
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

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

Re: Permit Modification Approval for HUDSON S-13HU
47-051-02293-00-00

Extend Lateral 10150.66' to 11396.61'.

TUG HILL OPERATING, LLC

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

If there are any questions, please feel free to contact me at (304) 926- 0450.

A blue ink signature of James A. Martin, Chief. The signature is written in a cursive style and is positioned above the name and title.

James A. Martin
Chief

Operator's Well Number: HUDSON S-13HU
Farm Name: CNX LAND LLC
U.S. WELL NUMBER: 47-051-02293-00-00
Horizontal 6A New Drill
Date Modification Issued: 04/13/2021

Promoting a healthy environment.

04/16/2021



west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street SE, Charleston, WV 25304
304-926-0499 Ext 1274

Randall M. Albert, Chairman
dep.wv.gov

April 6, 2021

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

RE: Application for Deep Well Permit – API #47-051-02293 (modification)

COMPANY: Tug Hill Operating, LLC

FARM: CNX Land, LLC Hudson S-13HU

COUNTY: Marshall DISTRICT: Meade QUAD: Glen Easton

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,


Susan Rose
Administrator

** Hudson S-11HU 47-051-02296; Hudson S-14HU 47-051-02327; Hudson S-12HU 47-051-02292; Ten High 1N-20HU 47-051-02021, Ten High 1N-13HU 47-051-01965; Ten High 1S-17HU 47-051-02033; Fitzgerald S-18HU 47-051-02325; Fitzgerald S-19HU 47-051-02326

04/16/2021

PERMIT CONDITIONS

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

CONDITIONS

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

API Number: _____

PERMIT CONDITIONS

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.

04/16/2021



UTICA MODIFICATION – PLEASE GIVE TO SUSAN ROSE

March 24, 2021

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

VIA USPS

RE: **Hudson S-13HU API# 47-051-02293 (H6A Permit Modification)**
Meade District, Marshall County, WV

Dear Wade:

Tug Hill Operating, LLC is submitting a permit modification for its permitted well, Hudson S-13HU to add 1,245.95' to the lateral length. Therefore, enclosed please find the following:

- Modified WW-6B with changes highlighted in yellow ✓
- Updated well plat ✓
- Updated Site Safety ✓
- Updated Area of Review ✓
- Updated 500' Offset Operator List and Map ✓

WS
//

DK ✓

**Please note that no new parcels were added in the extension, therefore the WW-6A1 information did not change. ✓

If you have any questions or need any additional information, please do not hesitate to call me at (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

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MAR 25 2021

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Enclosures

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 Meade Glen Easton 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Hudson S-13HU Well Pad Name: Hudson

3) Farm Name/Surface Owner: CNX Land, LLC Public Road Access: Roberts Ridge Road (CR 21)

4) Elevation, current ground: 1346' Elevation, proposed post-construction: 1346'

5) Well Type (a) Gas Oil Underground Storage

Other

(b) If Gas Shallow Deep

Horizontal

Bary Stiles 3-22-21

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 11,676' - 11,798' - thickness of 122' and anticipated pressure of approx. 9500 psi.

8) Proposed Total Vertical Depth: 11,948'

9) Formation at Total Vertical Depth: Trenton, plug back to Reedsville

10) Proposed Total Measured Depth: 23,598'

11) Proposed Horizontal Leg Length: 11,396.61'

12) Approximate Fresh Water Strata Depths: 70' ; 980' ✓

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

14) Approximate Saltwater Depths: 1,444'

15) Approximate Coal Seam Depths: Sewickley Coal - 888' ; Pittsburgh Coal - 974'

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

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

(a) If Yes, provide Mine Info: Name: Marshall County Coal Co./Marshall County Mine
Depth: 974' TVD and 372' subsea level
Seam: Pittsburgh
Owner: Murray Energy / Consolidated Coal Co.

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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#	1070'	1070' ✓	1,719FT^3(CTS)
Intermediate 1	13 3/8"	NEW	J55	54.5#	2845'	2845' ✓	2,006FT^3(CTS)
Intermediate 2	9 5/8"	NEW	HPP110	47#	10,580'	10,580' ✓	3,452FT^3(CTS)
Production	5 1/2"	NEW	P110	23#	23,598'	23,598'	5,586FT^3(CTS)
Tubing	2 7/8"	NEW	P110	6.5#		11,249'	
Liners							

B.S. 3-22-21

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	1.99
Production	5 1/2"	8 1/2"	.415	16,510	10,864	SEE #24	1.18
Tubing	2 7/8"			11,385	11,624		
Liners							

PACKERS

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

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

Drill through the Point Pleasant and TD Pilot Hole 150' into the Trenton. Log vertical section and run a solid cement plug back to proposed KOP (10,749'). 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.

B.S. 3-22-21

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

Well to be completed with approximately 28,500,000 lb proppant and 515,000 bbl of water. Max rate = 80 bpm; max psi = 12,000#.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 22.94 acres

22) Area to be disturbed for well pad only, less access road (acres): 6.18 acres

23) Describe centralizer placement for each casing string:

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

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

*See Attachment

25) Proposed borehole conditioning procedures:

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

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*Note: Attach additional sheets as needed.

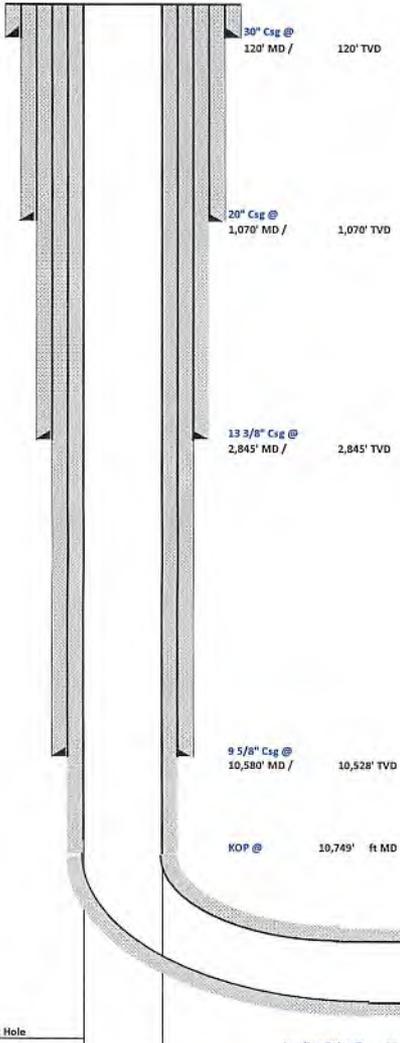


WELL NAME: Hudson S-13HU
STATE: WV **COUNTY:** Marshall
DISTRICT: Meade
DF Elev: 1,346' **GL Elev:** 1,346'
TD: 23,598'
TH Latitude: 39.828667
TH Longitude: -80.672718
BH Latitude: 39.802075
BH Longitude: -80.651587

FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	980'
Sewickley Coal	888'
Pittsburgh Coal	974'
Big Lime	2,114'
Berea	2,732'
Tully	6,678'
Marcellus	6,791'
Onondaga	6,841'
Salina	7,614'
Lockport	8,586'
Utica	11,440'
Point Pleasant	11,676'
Landing Depth	11,726'
Trenton	11,798'
Pilot Hole TD	11,948'

CASING SUMMARY							
Type	Hole Size (in)	Csg Size (in)	Depth (MD)	Depth (TVD)	Weight (lb/ft)	Grade	Top of Cement
Conductor	36	30	120'	120'	BW	BW	Surface
Surface	26	20	1,070'	1,070'	106.5	J55	Surface
Intermediate 1	17 1/2	13 5/8	2,845'	2,845'	54.5	J55	Surface
Intermediate 2	12 1/4	9 5/8	10,580'	10,528'	47	HPP110	Surface
Production	8 1/2	5 1/2	23,598'	11,925'	23	HCP110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
	Sacks	Class	Density	Fluid Type	Centralizer Notes
Conductor	338	A	15.6	Air	None
Surface	1,854	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	2,174	A	15	Air	1 Centralizer every other jt
Intermediate 2	2,890	A	14.5	Air	1 Centralizer every other jt
Production	4,948	A	15	Air / SOBM	1 every other joint in lateral; 1 per joint in curve; 1 every other jt to stc



B.S. 3-22-21

Pilot Hole
 PH TD @ 11,948'
 Landing Point @ 12,203' MD / 11,726' TVD
 PH TD = 150' below Trenton Top
 Lateral TD @ 23,598' ft MD
 11,925' ft TVD

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Tug Hill Operating, LLC Casing and Cement Program

Hudson S-13HU

Casing

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	20"	J55	26"	1,070'	CTS
Intermediate 1	13 3/8"	J55	17 1/2"	2,845'	CTS
Intermediate 2	9 5/8"	HPP110	12 1/4"	10,580'	CTS
Production	5 1/2"	HCP110	8 1/2"	23,598'	CTS

Cement

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 15.6 ppg, Y=1.99

Production: 50:50 Poz: Premium NE-1 + .1% bwoc ASA-301 + 60lb/sk ASCA-1 + .35% bwoc BA-10A + .25% bwoc MPA-170, 44 lb sack + .5% bwoc R-3 + .75 gals/100sk FP-13L – Production Cement mixed at 15.2ppg, Y = 1.18

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Area of Review

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

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

Data Sources Reviewed:

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

Contacted Adam Picard 724-485-9331, apicard@dpslandservices.com, DPS GIS (02/16/2021) to have him make maps of the wellbores with his information. DPS utilizes WVGES maps for their mapping seems it is the best publicly available. See attached map he provided.

Request maps for:

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

Discussion with Phil Dinterman WVGES GIS Department (3/12/2021)

- 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
4705102248	Tug Hill Operating, LLC	6848' TVD, proposed	none	none	No, existing Marcellus permit. The well will not be deep enough to be within the expected fracture propagation from a Point Pleasant stimulation.	A permitted well on the pad that is not drilled or perforated.
4705102249	Tug Hill Operating, LLC	6862' TVD, proposed	none	none	No, existing Marcellus permit. The well will not be deep enough to be within the expected fracture propagation from a Point Pleasant stimulation.	A permitted well on the pad that is not drilled or perforated.
4705102250	Tug Hill Operating, LLC	6870' TVD, proposed	none	none	No, existing Marcellus permit. The well will not be deep enough to be within the expected fracture propagation from a Point Pleasant stimulation.	A permitted well on the pad that is not drilled or perforated.
4705102251	Tug Hill Operating, LLC	6886' TVD, proposed	none	none	No, existing Marcellus permit. The well will not be deep enough to be within the expected fracture propagation from a Point Pleasant stimulation.	A permitted well on the pad that is not drilled or perforated.

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
4705102291	Tug Hill Operating, LLC	6914' TVD, proposed	none	none	No, existing Marcellus permit. The well will not be deep enough to be within the expected fracture propagation from a Point Pleasant stimulation.	A permitted well on the pad that is not drilled or perforated.
4705102292	Tug Hill Operating, LLC	11923' TVD, proposed	none	none	Yes, this is a proposed well in the Point Pleasant. Once completed proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	A permitted well on the pad that is not drilled or perforated.
4705102293	Tug Hill Operating, LLC	11961' TVD, proposed	none	none	Yes, this is a proposed well in the Point Pleasant. Once completed proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	A permitted well on the pad that is not drilled or perforated.
4705102296	Tug Hill Operating, LLC	11901' TVD, proposed	none	none	Yes, this is a proposed well in the Point Pleasant. Once completed proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	A permitted well on the pad that is not drilled or perforated.
4705100841	McElroy Coal Company	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Point Pleasant well. Well is plugged.	Well was plugged 4/27/1999.

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
4705100842	McElroy Coal Company	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Point Pleasant well. Well is plugged.	Well was plugged 6/30/1999.
4705170638	unknown	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Point Pleasant well.	State records are incomplete.
4705170639	unknown	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Point Pleasant well.	State records are incomplete.

WV Geological & Economic Survey:

Well: County = 51 Permit = 02248

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102248	Marshall	2248	Meade	Glen Easton	Cameron	39.828765	-80.672708	528007.2	4408803.3

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD	
4705102248	1	As Proposed	528915	4405569.9	-80.662243	39.799602

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
4705102248	-/-	Dvtd Orgnl Loc	Permitted	CNX Land LLC		S-1HM	Hudson		Charlene L Barker et al	Tug Hill Operating, LLC	6848	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_BE
4705102248	-/-	-/-	1370	Ground Level															

WV Geological & Economic Survey:

Well: County = 51 Permit = 02249

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102249	Marshall	2249	Meade	Glen Easton	Cameron	39.828798	-80.672705	528007.5	4408807

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD	
4705102249	1	As Proposed	529095.5	4405714.6	-80.660128	39.800899

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
4705102249	-/-	Dvtd Orgnl Loc	Permitted	CNX Land LLC		S-2HM	Hudson		Charlene L Baker et al	Tug Hill Operating, LLC	6862	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_BE
4705102249	-/-	-/-	1370	Ground Level															

WV Geological & Economic Survey:

Well: County = 51 Permit = 02250Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102250	Marshall	2250	Meade	Glen Easton	Cameron	39.828831	-80.672702	528007.7	4408810.7

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102250	1 As Proposed	528759.9	4406752.9	-80.664003	39.810266

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_E
4705102250	-/-	Dvtd Orgnl Loc	Permitted	CNX Land LLC		S-3HM	Hudson		Charlene L Barker et al	Tug Hill Operating, LLC	6870	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
4705102250	-/-	-/-	1370	Ground Level															

WV Geological & Economic Survey:

Well: County = 51 Permit = 02251Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102251	Marshall	2251	Meade	Glen Easton	Cameron	39.828864	-80.672698	528008.1	4408814.3

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102251	1 As Proposed	528811.5	4407120.8	-80.663384	39.813579

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_E
4705102251	-/-	Dvtd Orgnl Loc	Permitted	CNX Land LLC		S-4HM	Hudson		Charlene L Baker et al	Tug Hill Operating, LLC	6886	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
4705102251	-/-	-/-	1370	Ground Level															

WV Geological & Economic Survey:

Well: County = 51 Permit = 02291

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102291	Marshall	2291	Meade	Glen Easton	Cameron	39.828761	-80.672633	528013.7	4408802.9

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102291	1 As Proposed	528013.7	4408802.9	-80.672633	39.828761

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
4705102291	-/-	Dvtd Orgnl Loc	Permitted	CNX Land LLC		S-5HM	Hudson		Charlene L Baker et al	Tug Hill Operating, LLC	6914	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_BEI
4705102291	-/-	-/-	1366	Ground Level															

WV Geological & Economic Survey:

Well: County = 51 Permit = 02292

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102292	Marshall	2292	Meade	Glen Easton	Cameron	39.828733	-80.672711	528007	4408799.8

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102292	1 As Proposed	528726.7	4406996.2	-80.66438	39.812459

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
4705102292	-/-	Dvtd Wrkd Ovr	Permitted	CNX Land LLC		S-12HU	Hudson		Charlene L Baker et al	Tug Hill Operating, LLC	11923	Pt Pleasant Fm	
4705102292	-/-	Dvtd Orgnl Loc	Permitted	CNX Land LLC		S-12HU	Hudson		C L Baker et al	Tug Hill Operating, LLC	11923	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_B
4705102292	-/-	-/-	1370	Ground Level															
4705102292	-/-	-/-	1370	Ground Level															

WV Geological & Economic Survey:

Well: County = 51 Permit = 02293

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102293	Marshall	2293	Meade	Glen Easton	Cameron	39.828667	-80.672718	528006.4	4408792.5

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102293	1 As Proposed	528974.7	4407331.6	-80.661468	39.815472

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	TFI
4705102293	-/-	Dvtd Wrkd Ovr	Permitted	CNX Land LLC		S-13HU	Hudson		Charlene L Baker et al	Tug Hill Operating, LLC	11957	Pt Pleasant Fm	
4705102293	-/-	Dvtd Orgnl Loc	Permitted	CNX Land LLC		S-13HU	Hudson		C L Baker et al	Tug Hill Operating, LLC	11961	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_B
4705102293	-/-	-/-	1370	Ground Level															
4705102293	-/-	-/-	1370	Ground Level															

WV Geological & Economic Survey:

Well: County = 51 Permit = 02296

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102296	Marshall	2296	Meade	Glen Easton	Cameron	39.8287	-80.672714	528006.8	4408796.1

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102296	1 As Proposed	529023.4	4405715.4	-80.66097	39.800909

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	TFI
4705102296	-/-	Dvtd Orgnl Loc	Permitted	CNX Land LLC		S-11HU	Hudson		C L Baker et al	Tug Hill Operating, LLC	11901	Pt Pleasant Fm	
4705102296	-/-	Dvtd Wrkd Ovr	Permitted	CNX Land LLC		S-11HU	Hudson		Charlene L Baker et al	Tug Hill Operating, LLC	11901	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_B
4705102296	-/-	-/-	1370	Ground Level															
4705102296	-/-	-/-	1370	Ground Level															

There is no Pay data for this well

WV Geological & Economic Survey.

Well: County = 51 Permit = 00841

Well Reassignment Information: Reassigned From

OLD_COUNTY	OLD_PERMIT	NEW_COUNTY	NEW_PERMIT
51	70639	51	841

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705100841	Marshall	841	Meade	Glen Easton	Cameron	39.813111	-80.660717	529039.9	4407069.7

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_I
4705100841	5/28/1999	Plugging	Completed	Wilda H Miller		M-38			Wilda H Miller	McElroy Coal Company			
4705100841	-/-	unknown	Prpty Map	John Blake			1113			----- unknown -----			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BE
4705100841	5/28/1999	4/27/1999	1291	Ground Level				unclassified	unclassified	not available	unknown	unknown					
4705100841	-/-	-/-						unclassified	unclassified	not available	unknown	unknown					

There is no Pay data for this well

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

Stratigraphy Information:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4705100841	Plugging	Pittsburgh coal	Well Record	1020	Reasonable	6	Reasonable	1291	Ground Level

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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705100841	4/27/1999	0

WV Geological & Economic Survey:

Well: County = 51 Permit = 00842

Well Reassignment Information: Reassigned From

OLD_COUNTY	OLD_PERMIT	NEW_COUNTY	NEW_PERMIT
51	70640	51	842

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705100842	Marshall	842	Meade	Glen Easton	Cameron	39.808157	-80.655639	529476.7	4406521.6

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST
4705100842	6/30/1999	Plugging	Completed	Wilda Miller		M-68			Wilda Miller	McElroy Coal Company			
4705100842	-/-	unknown	Prpty Map	John Blake						----- unknown -----			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF
4705100842	6/30/1999	6/17/1999	986	Ground Level						not available	unknown	unknown					
4705100842	-/-	-/-						unclassified	unclassified	not available	unknown	unknown					

There is no Pay data for this well

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

There is no Stratigraphy data for this well

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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705100842	6/30/1999	0

WV Geological & Economic Survey

Well: County = 51 Permit = 70638

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705170638	Marshall	70638	Meade	Glen Easton	Cameron	39.815704	-80.659964	529103.3	4407357.8

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_F
4705170638	-/-		unknown	Prpty Map John Chapman Jr				1225			-----	unknown	-----

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEFG	G_AI
4705170638	-/-	-/-						unclassified	unclassified	not available	unknown	unknown						

There is no Pay data for this well

There is no Production Gas data for this well

WV Geological & Economic Survey

Well: County = 51 Permit = 70639

Well Reassignment Information: Reassigned To

OLD_COUNTY	OLD_PERMIT	NEW_COUNTY	NEW_PERMIT
51	70639	51	841

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705170639	Marshall	70639	Meade	Glen Easton	Cameron	39.813691	-80.662222	528910.9	4407133.6

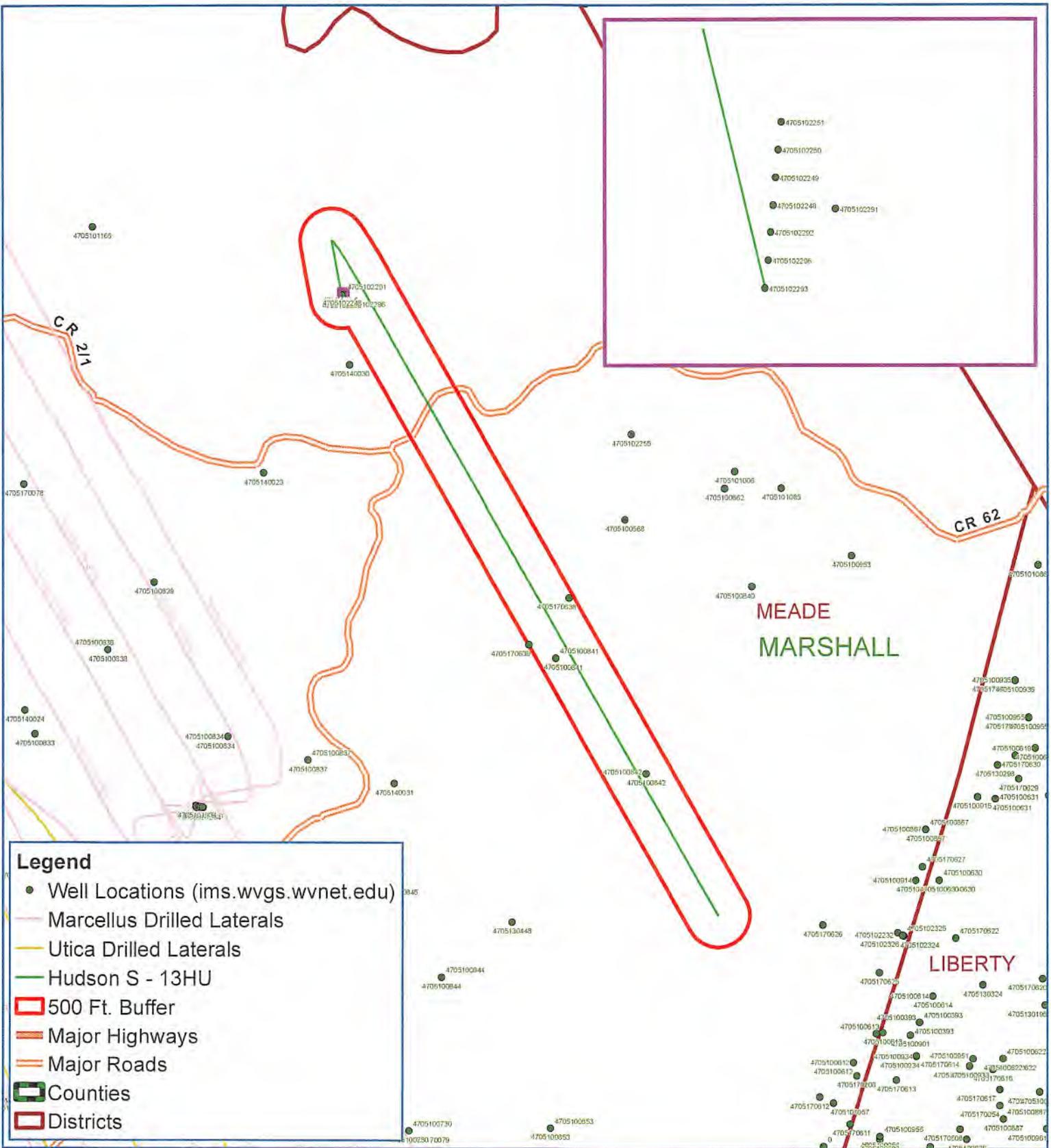
There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_F
4705170639	-/-		unknown	Reassign							-----	unknown	-----

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEFG	G_AI
4705170639	-/-	-/-						unclassified	unclassified	not available	unknown	unknown			0			0



Hudson S - 13HU Meade District Marshall County, WV



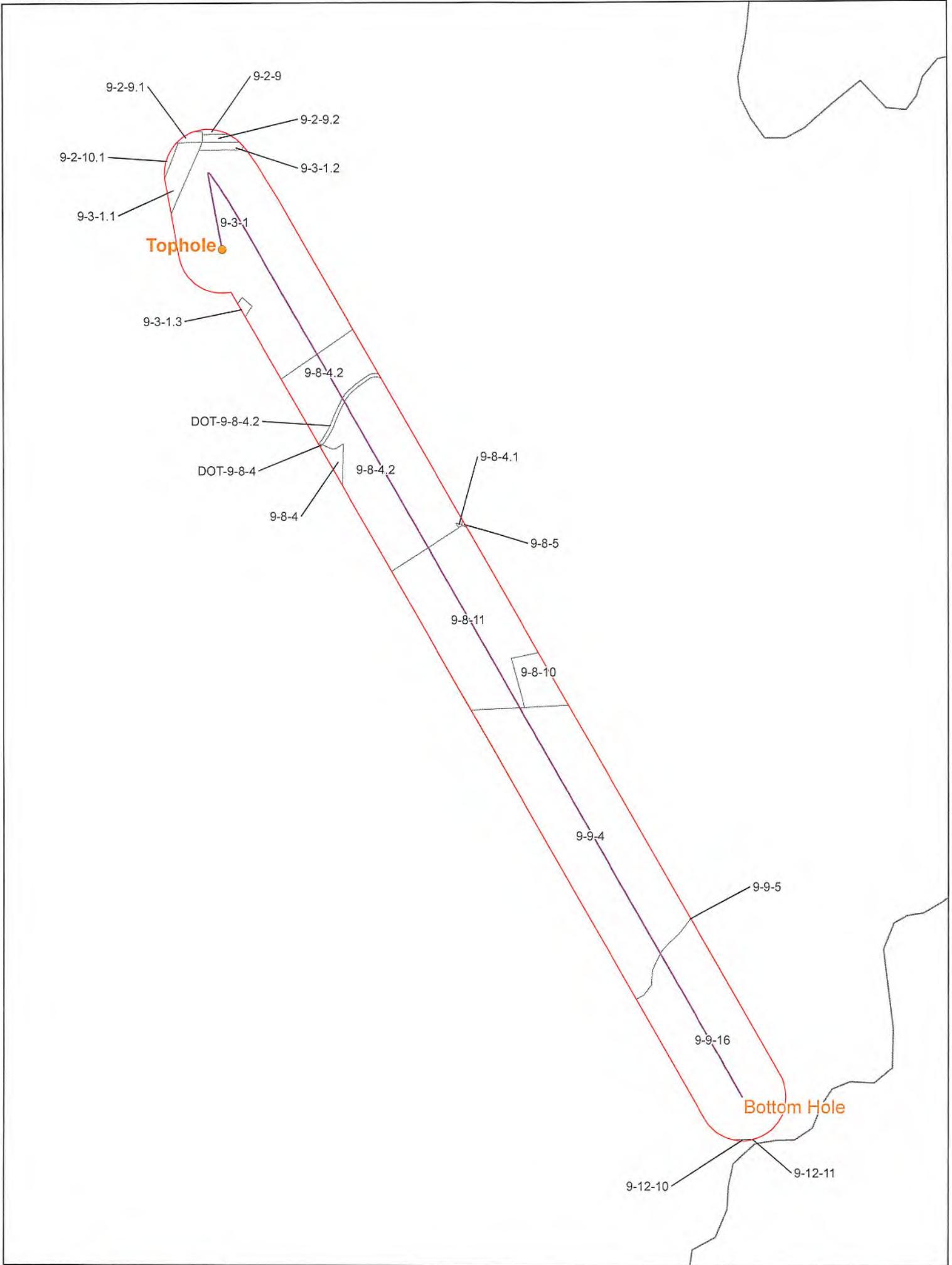
Notes:
All locations are approximate and are for visualization purposes only.

Map Prepared by:

04/16/2021

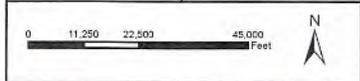
Map Created: March 12, 2021
Map Current As Of: March 12, 2021

Hudson S-13HU



Coordinate System: NAD 1983 UTM Zone 17N
 Projection: Transverse Mercator
 Datum: North American 1983
 False Easting: 1640416.6667
 False Northing: 0.0000
 Central Meridian: -81.0000
 Scale Factor: 0.9999
 Latitude Of Origin: 37.0000
 Units: Feet US

CONFIDENTIAL



- Utica Well
- 500' Buffer

Hudson S-13HU
 Operators within 500 Feet of Well Borehole



**Offset Operators within 500'
Hudson S - 13HU**

County	District	Parcel	Owner	Address
MARSHALL	MEADE	9-2-9	CHEVRON USA INC	700 Cherrington Pkwy Moon, PA 15108
MARSHALL	MEADE	9-2-9.1	CHEVRON USA INC	700 Cherrington Pkwy Moon, PA 15108
MARSHALL	MEADE	9-2-9.2	CNX GAS COMPANY	1000 Consol Energy Drive Canonsburg, PA 15317
MARSHALL	MEADE	9-2-9.2	CHEVRON USA INC	700 Cherrington Pkwy Moon, PA 15108
MARSHALL	MEADE	9-2-10.1	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
MARSHALL	MEADE	9-3-1	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
MARSHALL	MEADE	9-3-1.1	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
MARSHALL	MEADE	9-3-1.1	CHEVRON USA INC	700 Cherrington Pkwy Moon, PA 15108
MARSHALL	MEADE	9-3-1.2	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
MARSHALL	MEADE	9-3-1.2	CHEVRON USA INC	700 Cherrington Pkwy Moon, PA 15108
MARSHALL	MEADE	9-3-1.2	CNX GAS COMPANY	1000 Consol Energy Drive Canonsburg, PA 15317
MARSHALL	MEADE	9-3-1.3	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
MARSHALL	MEADE	9-8-4	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
MARSHALL	MEADE	9-8-4.1	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
MARSHALL	MEADE	9-8-4.2	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
MARSHALL	MEADE	9-8-5	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107

MARSHALL	MEADE	9-8-10	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
MARSHALL	MEADE	9-8-11	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
MARSHALL	MEADE	9-9-4	CHEVRON USA INC	700 Cherrington Pkwy Moon, PA 15108
MARSHALL	MEADE	9-9-5	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
MARSHALL	MEADE	9-9-16	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
MARSHALL	MEADE	9-12-10	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
MARSHALL	MEADE	9-12-11	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107



Well Site Safety Plan

Tug Hill Operating, LLC

Bang Stille 3-24-21

Well Name: Hudson S-13HU

Pad Location: Hudson Pad

Wetzel County, West Virginia

UTM (meters), NAD83, Zone 17:

Northing: 4,408,792.45

Easting: 528,006.42

Updated 3/2021

04/16/2021

**HUDSON S LEASE
UTICA UNIT - 366.42 AC ±
WELL 13HU
TUG HILL OPERATING**

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

T.H. LONGITUDE 80°40'00"
B.H. LONGITUDE 80°37'30"

MAP/PARCEL	ADJOINING SURFACE OWNER LIST	ACRES
9-2-9.1	CONSOLIDATION COAL CO.	1.00
9-2-9.2	CONSOLIDATION COAL CO.	1.00
9-3-1.2	CONSOLIDATION COAL CO.	1.00
9-3-19	CNX LAND CO. LLC	45 SQ. RODS & 3280 SQ. FT
9-5-13	SHELLY ANN JORDAN	5.51
9-7-9	CNX LAND CO. LLC	2.00
9-7-10	DONALD M. & THERESA L. HARRIS	3.00
9-8-1	CNX LAND CO. LLC	PT. OF 1 AC.
9-8-2	CNX LAND CO. LLC	6000 SQ. FT.
9-8-4.1	CNX LAND RESOURCES, INC.	0.333
9-8-5.1	CNX LAND LLC	1.040

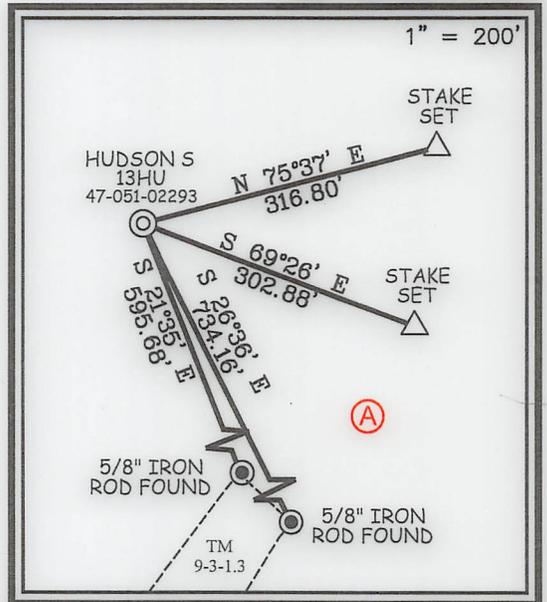
(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

NAD'83 S.P.C.(FT)	N. 486,092.49	E. 1,639,154.94
NAD'83 GEO.	LAT-(N) 39.828667	LONG-(W) 80.672718
NAD'83 UTM (M)	N. 4,408,792.45	E. 528,006.42
LANDING POINT		
NAD'83 S.P.C.(FT)	N. 486,294.8	E. 1,639,434.0
NAD'83 GEO.	LAT-(N) 39.829232	LONG-(W) 80.671734
NAD'83 UTM (M)	N. 4,408,855.5	E. 528,090.4
BOTTOM HOLE		
NAD'83 S.P.C.(FT)	N. 476,330.2	E. 1,644,964.9
NAD'83 GEO.	LAT-(N) 39.802075	LONG-(W) 80.651587
NAD'83 UTM (M)	N. 4,405,847.9	E. 529,826.2

NOTES ON SURVEY

- NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
- WELL SPOT CIRCLE & TOPO MARK SCALE ARE 1"=2000'
- PROPOSED LATERAL OR TOP HOLE OF HUDSON S-13HU (47-051-02293) IS WITHIN 3000' OF THE TOP HOLES OR LATERALS OF HUDSON S-11HU (47-051-02296), HUDSON S-12HU (47-051-02292), HUDSON S-14HU (47-021-02327), HUDSON S-15HU (47-051-02328), HUDSON S-16HU (47-051-02329), FITZGERALD S-17HU (47-051-02324), FITZGERALD S-18HU (47-051-02325), FITZGERALD S-19HU (47-051-02326).
- WV DOT/DOH OWNERSHIP WITHIN UNIT SET FORTH IN WW-6A1.

REFERENCES

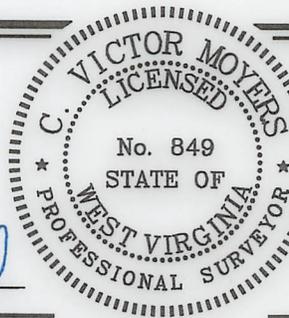


12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296
slsvw.com

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

P.S.
849

C. Victor Moyers



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

DATE AUGUST 23, 20 19

REVISED 10/22/19, 03/18/20, 07/14/20, 7/16/20, 08/07/20, 03/24/21

OPERATORS WELL NO. HUDSON S-13HU

API WELL NO. 47 - 051 - 02293 MOD 2
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8911P13HUR6.dwg HUDSON S-13HU REV8
HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 2000'

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



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

LOCATION: GROUND = 1,370.20' ELEVATION PROPOSED = 1,344.81' WATERSHED GRAVE CREEK (HUC 10)

DISTRICT MEADE COUNTY MARSHALL QUADRANGLE GLEN EASTON 7.5'

SURFACE OWNER CNX LAND LLC ACREAGE 106.935±

ROYALTY OWNER CHARLENE L. BAKER, ET AL ACREAGE 106.935±

PROPOSED WORK: LEASE NO. SEE WW-6A1

DRILL CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___ OTHER ___

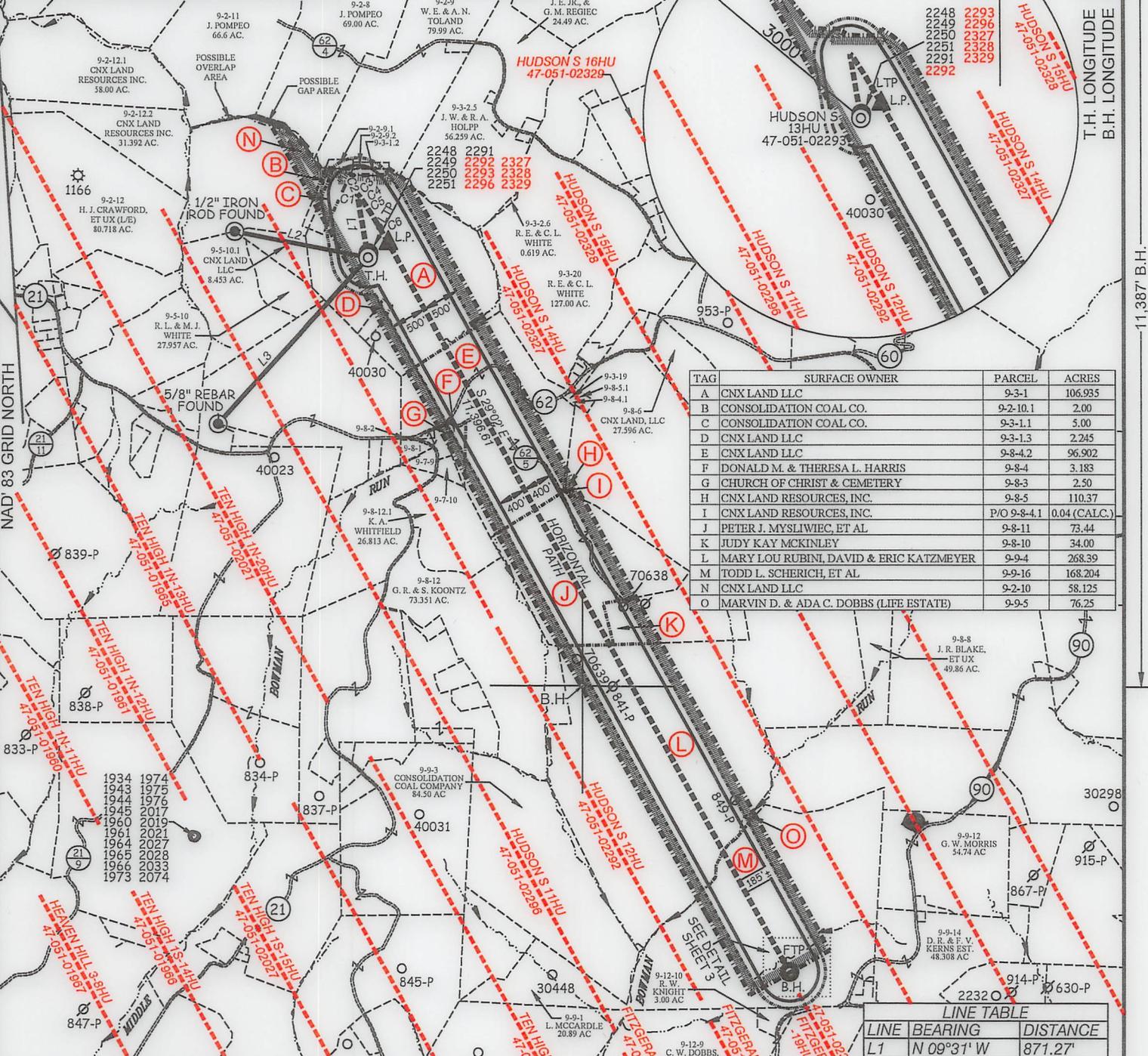
PHYSICAL CHANGE IN WELL (SPECIFY) TARGET FORMATION POINT PLEASANT ESTIMATED DEPTH TVD: 11,948' / TMD: 23,598'

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

COUNTY NAME PERMIT

04/16/2021

**HUDSON S LEASE
UTICA UNIT - 366.42 AC ±
WELL 13HU
TUG HILL OPERATING**



TAG	SURFACE OWNER	PARCEL	ACRES
A	CNX LAND LLC	9-3-1	106.935
B	CONSOLIDATION COAL CO.	9-2-10.1	2.00
C	CONSOLIDATION COAL CO.	9-3-1.1	5.00
D	CNX LAND LLC	9-3-1.3	2.245
E	CNX LAND LLC	9-8-4.2	96.902
F	DONALD M. & THERESA L. HARRIS	9-8-4	3.183
G	CHURCH OF CHRIST & CEMETERY	9-8-3	2.50
H	CNX LAND RESOURCES, INC.	9-8-5	110.37
I	CNX LAND RESOURCES, INC.	P/O 9-8-4.1	0.04 (CALC.)
J	PETER J. MYSLIWIEC, ET AL	9-8-11	73.44
K	JUDY KAY MCKINLEY	9-8-10	34.00
L	MARY LOU RUBINI, DAVID & ERIC KATZMEYER	9-9-4	268.39
M	TODD L. SCHERICH, ET AL	9-9-16	168.204
N	CNX LAND LLC	9-2-10	58.125
O	MARVIN D. & ADA C. DOBBS (LIFE ESTATE)	9-9-5	76.25

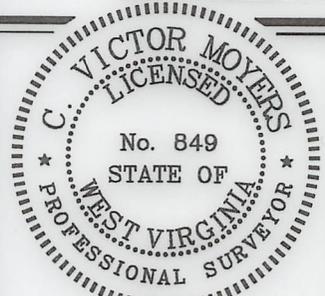
LINE	BEARING	DISTANCE
L1	N 09°31' W	871.27'
L2	N 79°05' W	1867.59'
L3	S 42°07' W	3085.21'

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	8.32'	31.50'	N 01°12' W	8.29'
C2	7.74'	3.55'	N 65°42' E	6.29'
C3	13.41'	54.45'	S 50°51' E	13.38'
C4	56.36'	462.35'	S 38°50' E	56.33'
C5	299.37'	4275.49'	S 32°46' E	299.31'
C6	420.06'	11921.20'	S 29°59' E	420.03'

SLS
FROM THE GROUND UP

12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296
slswv.com

P.S. 849 *C. Victor Moyers*



(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)			
NAD'83 S.P.C.(FT)	N. 486,092.49	E. 1,639,154.94	
NAD'83 GEO.	LAT-(N) 39.828667	LONG-(W) 80.672718	
NAD'83 UTM (M)	N. 4,408,792.45	E. 528,006.42	
LANDING POINT			
NAD'83 S.P.C.(FT)	N. 486,294.8	E. 1,639,434.0	
NAD'83 GEO.	LAT-(N) 39.829232	LONG-(W) 80.671734	
NAD'83 UTM (M)	N. 4,408,855.5	E. 528,090.4	
BOTTOM HOLE			
NAD'83 S.P.C.(FT)	N. 476,330.2	E. 1,644,964.9	
NAD'83 GEO.	LAT-(N) 39.802075	LONG-(W) 80.651587	
NAD'83 UTM (M)	N. 4,405,847.9	E. 529,826.2	

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



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

LEGEND

- UNIT BOUNDARY
- LEASED TRACTS INSIDE UNIT BOUNDARY
- SURFACE LINE
- PROPOSED UTICA
- WELL LATERAL
- 400' OFFSET LINE
- 500' OFFSET LINE
- TIE LINE
- CREEK
- ROAD
- PROPOSED FIRST TAKE POINT
- PROPOSED LAST TAKE POINT
- COUNTY ROUTE
- PROPOSED WELL
- EXISTING WELL
- PERMITTED WELL
- SURFACE OWNER (SEE TABLE)
- LEASE # (SEE ADDITIONAL SHEETS)

SCALE 1" = 2000' FILE NO. 8911P13HUR6.dwg
HUDSON S-13HU REV8

DATE AUGUST 23, 20 19

REVISED 10/22/19, 03/18/20, 07/14/20, 7/16/20, 08/07/20, 03/24/21

OPERATORS WELL NO. HUDSON S-13HU MOD 2

API WELL NO. 47 - 051 - 02293

NO. STATE COUNTY PERMIT

WELL OPERATOR TUG HILL OPERATING, LLC ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107

DESIGNATED AGENT DIANNA STAMPER CT CORPORATION SYSTEM ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

04/16/2021

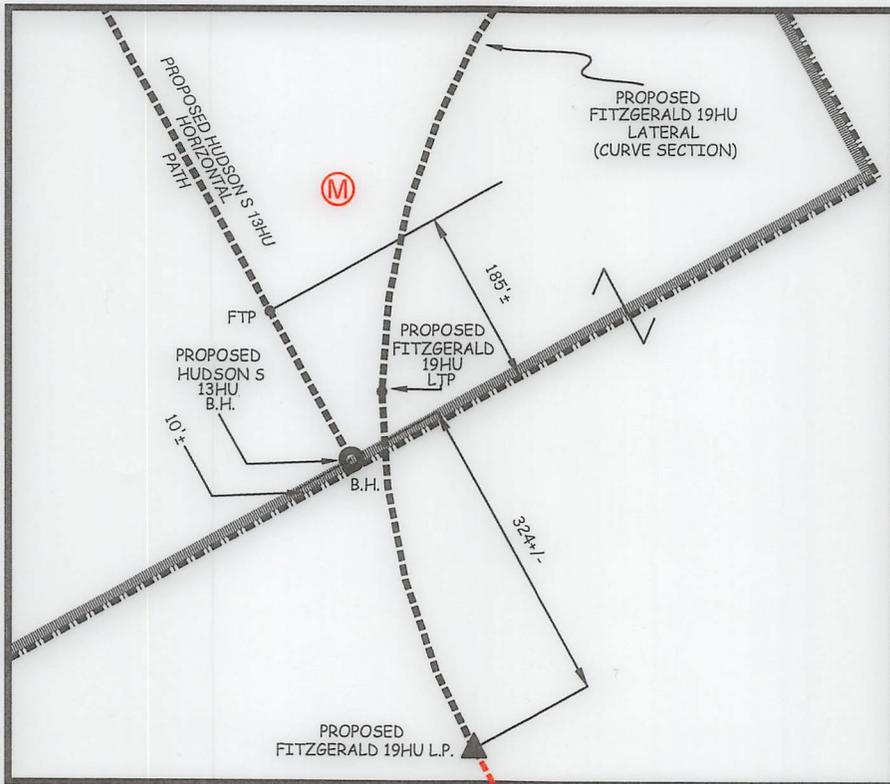
**HUDSON S LEASE
UTICA UNIT -366.42 AC±
WELL 13HU
TUG HILL OPERATING**



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NO.	Lease ID	Parcel	Tags	Grantor, Lessor, Etc.	Deed Book/Page	
1	10*26041	9-3-1	A	FREDDIE C WHITE AND VIOLET L WHITE, ET AL	728	527
2	10*26711	9-2-10.1	B	CNX GAS COMPANY LLC	1074	593
3	10*26044	9-3-1.1	C	JOYCE A WALLACE, ET AL	863	296
4	10*26018	9-3-1.3	D	NANCY L WEST, ET AL	737	248
5	10*47051.109.0	9-8-4.2	E	DONALD M AND THERESA L HARRIS	859	440
6	10*47051.109.0	9-8-4	F	DONALD M AND THERESA L HARRIS	859	440
7	10*26113	9-8-3	G	ELDWIN OTIS RINE AND MARY L RINE, ET AL	880	434
8	10*23739	9-8-5	H	APPALACHIAN BASIN MINERALS LP, ET AL	1011	538
9	10*22760	9-8-4.1	I	DONALD M AND THERESA L HARRIS, ET AL	968	294
10	10*22745	9-8-11	J	BONNIE J JENKINS, ET AL	968	288
11	10*21246	9-8-10	K	THE ESTATE OF THERESA M ROGERSON CHARLES J ROGERSON EXECUTOR, ET AL	952	422
12	10*31001	9-9-4	L	ERIC KATZMEYER, ET AL	791	226
13	10*19987	9-9-16	M	LESLEY D BALLA, ET AL	955	103
14	10*26001	9-2-10	N	FREDDIE C WHITE AND VIOLET L WHITE	655	555
15	10*28244	9-9-5	O	MICHAEL D DOBBS AND STEPHANIE J DOBBS, ET AL	1068	569

DETAIL
SCALE: 1" = 200'



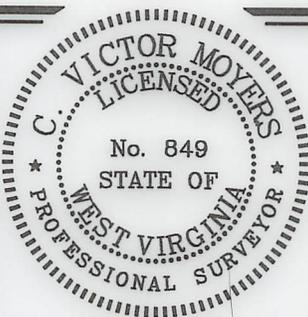
FILE NO. 8911P13HUR6.dwg
HUDSON S-11HU REV8

DATE AUGUST 23, 20 19

REVISED 10/22/19, 03/18/20, 07/14/20, 7/16/20, 08/07/20, 03/24/21

OPERATORS WELL NO. HUDSON S-13HU

API WELL NO. 47 — 051 — 02293
STATE COUNTY PERMIT



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COUNTY NAME
PERMIT