



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

Wednesday, April 26, 2023
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 PENDLETON S-14HU
47-051-02459-00-00

Extended lateral length

TUG HILL OPERATING, LLC

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

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



James A. Martin
Chief

Operator's Well Number: PENDLETON S-14HU
Farm Name: ALPINE FARMS, LLC
U.S. WELL NUMBER: 47-051-02459-00-00
Horizontal 6A New Drill
Date Modification Issued: 4/26/2023

Promoting a healthy environment.

04/28/2023



west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street SE, Charleston, WV 25304
304-926-0499 Ext 41239

Randall M. Albert, Chairman
dep.wv.gov

April 6, 2023

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

RE: Application for Deep Well Permit – API #47-051-02459

COMPANY: Tug Hill Operating, LLC

FARM: Alpine Farm, LLC Pendleton S-14HU modification

COUNTY: Marshall DISTRICT: Franklin 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

**Van Winkle S-20HU 47-051-02353; Van Winkle S-21HU 47-051-02354; Pendleton N-16HU 47-051-02441; Pendleton N-8HU 47-051-02454; Pendleton N-10HU 47-051-02455; Pendleton N-11HU 47-051-02456; Pendleton S-12HU 47-051-02457; Pendleton S-13HU 47-051-02458; Pendleton S-15HU 47-051-02460; Hendrickson N-7HU 47-051-02479; Hendrickson N-8HU 47-051-02480; Hendrickson N-9HU 47-051-02481; Hendrickson S-10HU 47-051-02482; Hendrickson S-11HU 47-051-02483; Hendrickson S-12HU 47-051-02484; Hendrickson S-13HU 47-051-02485

04/28/2023

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 Franklin Glen Easton 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Pendleton S-14HU Well Pad Name: Pendleton

3) Farm Name/Surface Owner: Alpine Farm, LLC Public Road Access: Rines Ridge Road (County Route 76)

4) Elevation, current ground: 1,272.08' Elevation, proposed post-construction: 1,272.08'

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

(b) If Gas Shallow _____ Deep
Horizontal

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 11,534' - 11,651', thickness of 117' and anticipated pressure of approx. 7,500 psi.

8) Proposed Total Vertical Depth: 11,801'

9) Formation at Total Vertical Depth: Trenton

10) **Proposed Total Measured Depth:** 21,072'

11) **Proposed Horizontal Leg Length:** 8,924.79'

12) Approximate Fresh Water Strata Depths: 70; 914'

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

14) Approximate Saltwater Depths: 1,427'

15) Approximate Coal Seam Depths: Sewickley Coal - 816' and Pittsburgh Coal - 908'

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

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

(a) If Yes, provide Mine Info: Name: _____
Depth: _____
Seam: _____
Owner: _____

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MAR 15 2023

WV Department of
Environmental Protection

*Steve Gromo
STRAIGHTER WORKER
3/13/2023*

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' | FT^3(CTS) |
| Fresh Water/Coal | 20" | NEW | J55 | 106.5# | 1,040' | 1,040' | 1,674FT^3(CTS) |
| Intermediate 1 | 13 3/8" | NEW | J55 | 54.5# | 2,800' | 2,800' | 1,974FT^3(CTS) |
| Intermediate 2 | 9 5/8" | NEW | HPP110 | 47# | 10,560' | 10,560' | 3,140FT^3(CTS) |
| Production | 5 1/2" | NEW | HCP110 | 23# | 21,072' | 21,072' | 5,008FT^3(CTS) |
| Tubing | 2 7/8" | NEW | P110 | 6.5# | | 11,142' | |
| 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

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| | | | | |
|-------------|-----|--|--|-------------------------------------------|
| Kind: | N/A | | | MAR 15 2023 |
| Sizes: | N/A | | | WV Department of Environmental Protection |
| Depths Set: | N/A | | | |

Stacy Lewis
STRADDLE LOWER
3/3/2023

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 (10,642'). Drill curve and lateral per proposed well plan, run and cement production casing. Perform CBL from 60 deg to surface, make cleanout run, and stimulate.

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

Well to be completed with approximately 22,400,000 lb. proppant and 405,000 bbl of water. Max rate = 80bpm; max psi = 9,000#.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 26.23 acres

22) Area to be disturbed for well pad only, less access road (acres): 6.88 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

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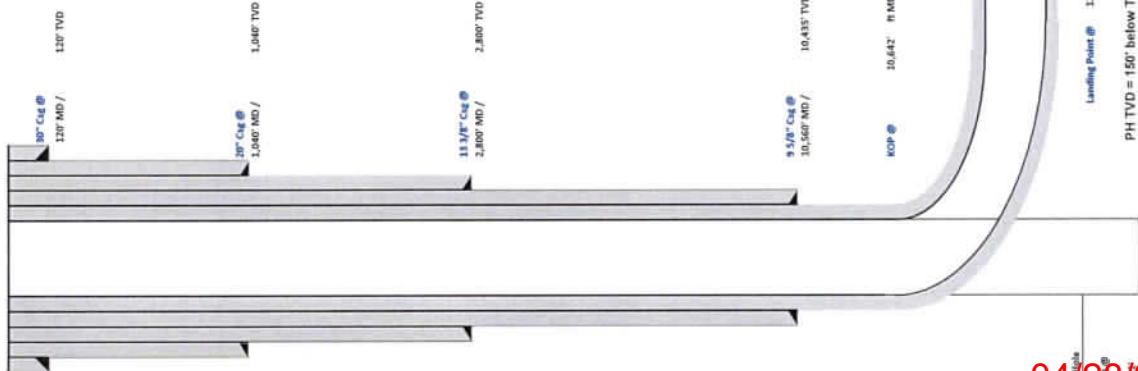
WV Department of
Environmental Protection

*Note: Attach additional sheets as needed.

Steve Gans
STRADDLE
3/8/2023



WELL NAME: Penetration S-14HU
STATE: WV
DISTRICT: Franklin
COUNTY: Marshall
DEEP: 1,272'
DL Elev: 61.8Wc
TD: 21,072'
TH Latitude: 39.753474
TH Longitude: -80.733857
BM Latitude: 39.724081
BM Longitude: -80.715087



| Formation | Depth TVD |
|---------------------|-----------|
| Deepest Fresh Water | 934' |
| Sewickley Coal | 816' |
| Pittsburgh Coal | 808' |
| Big Lime | 2,173' |
| Berea | 2,838' |
| Tully | 6,554' |
| Marcellus | 6,834' |
| Onondaga | 6,704' |
| Selina | 7,408' |
| Lockport | 8,504' |
| Utica | 11,263' |
| Point Pleasant | 11,518' |
| Landing Depth | 11,584' |
| Trenton | 11,651' |
| Pilot Hole TD | 11,801' |

| CASING SUMMARY | | | | | | |
|----------------|----------------|----------------|------------|-------------|----------------|--------|
| Type | Hole Size (in) | Csg. Size (in) | Depth (MD) | Depth (TVD) | Weight (lb/ft) | Grade |
| Conductor | 36 | 80 | 120' | 120' | 8W | BM |
| Surface | 26 | 20 | 1,040' | 1,040' | 106.5 | J55 |
| Intermediate 1 | 17 1/2 | 13 3/8 | 2,800' | 2,800' | 54.5 | J55 |
| Intermediate 2 | 12 1/4 | 9 5/8 | 10,540' | 10,435' | 47 | HPP110 |
| Production | 8 1/2 | 5 1/2 | 21,072' | 11,740' | 23 | HCP110 |

| CEMENT SUMMARY | | | | DRILLING DETAILS | |
|----------------|-------|-------|---------------|------------------|--------------------------------------------------------------------------------------|
| Type | Sacks | Class | Density (ppg) | Fluid Type | Centralizer Notes |
| Conductor | 338 | A | 15.6 | Air | None |
| Surface | 1,205 | A | 15.6 | Air | 3 Centralizers at equal distance |
| Intermediate 1 | 2,140 | A | 15.6 | Air | 1 Centralizer every other joint |
| Intermediate 2 | 3,140 | A | 14.5 | Air | 1 Centralizer every other joint |
| Production | 5,099 | A | 16.3 | Air / SOBMs | 1 every other joint in lateral; 1 per joint in curve; 1 every other joint to surface |

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Landing Point @ 12,140' MD / 11,584' TVD
 PH TVD = 150' below Trenton Top

*Set (land) lower
 STRAIGHT LOWER
 3/13/2023*



Tug Hill Operating, LLC Casing and Cement Program

Pendleton S-14HU

Casing

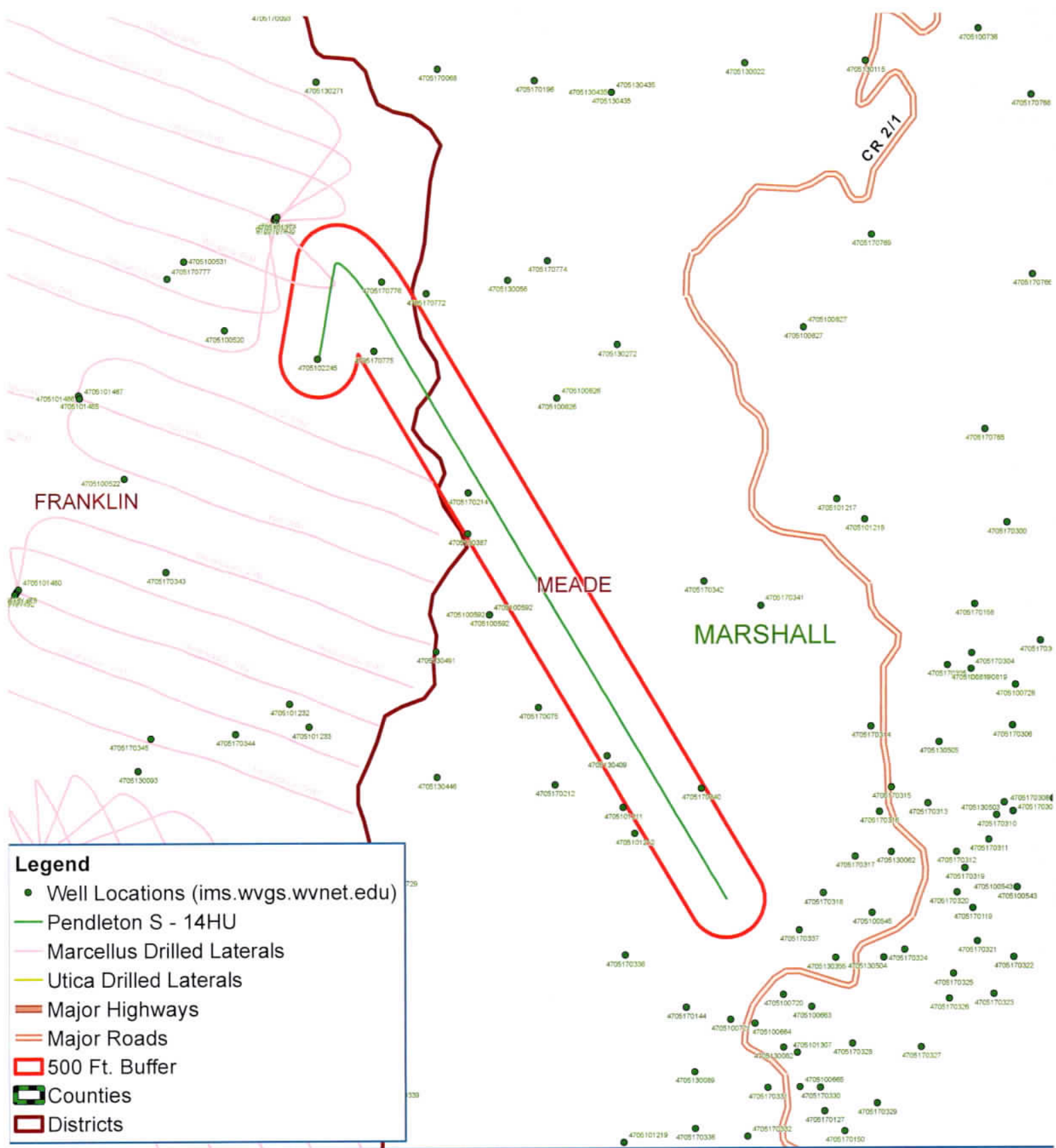
| | String | Grade | Bit Size | Depth (Measured) | Cement Fill Up |
|----------------|---------|--------|----------|------------------|----------------|
| Conductor | 30" | BW | 36" | 120' | CTS |
| Surface | 20" | J55 | 26" | 1,040' | CTS |
| Intermediate 1 | 13 3/8" | J55 | 17 1/2" | 2,800' | CTS |
| Intermediate 2 | 9 5/8" | HPP110 | 12 1/4" | 10,560' | CTS |
| Production | 5 1/2" | HCP110 | 8 1/2" | 21,072' | 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

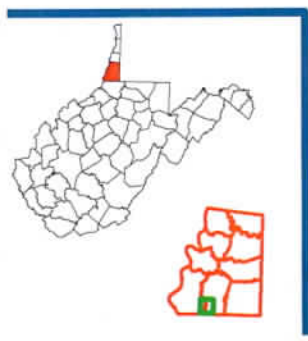
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Legend


- Well Locations (ims.wvgs.wvnet.edu)
- Pendleton S - 14HU
- Marcellus Drilled Laterals
- Utica Drilled Laterals
- Major Highways
- Major Roads
- ▭ 500 Ft. Buffer
- ▭ Counties
- ▭ Districts




Pendleton S - 14HU Franklin District Marshall County, WV



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



Map Prepared by:



04/28/2023

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 (2/17/2023) 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 |
|------------|--------------------------------|-----------------------|----------------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| 4705170775 | unknown | unknown | unknown | unknown | Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing of the proposed Point Pleasant well. | State records are incomplete. |
| 4705170776 | unknown | unknown | unknown | unknown | Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing of the proposed Point Pleasant well. | State records are incomplete. |
| 4705102245 | Tug Hill Operating, LLC. | 11787' TVD (proposed) | none | none | No, this well will not be drilled to the proposed depth or perforated. This is a canceled permit. | Permit canceled by Tug Hill Operating, LLC. |
| 4705130387 | Manufacturers Light & Heat Co. | unknown | unknown | unknown | Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing of the proposed Point Pleasant well. Well is plugged. | Well was plugged 3/28/1958. |

04/28/2023

| 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 |
|------------|--------------------------|-------------|----------------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| 4705170214 | unknown | unknown | unknown | unknown | Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing of the proposed Point Pleasant well. | State records are incomplete. |
| 4705130409 | Wilhelm & Jackson | 3034' TVD | Gordon | unknown | No, this well is not deep enough to be within the expected fracture propagation from the proposed Point Pleasant stimulation. Well is plugged. | Well was plugged 10/10/1960. |
| 4705170340 | Hope Natural Gas Company | unknown | unknown | unknown | Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing of the proposed Point Pleasant well. | State records are incomplete. |

WV Geological & Economic Survey:

Well: County = 51 Permit = 70775

Report Time: Thursday, May 26, 2022 3:16:57 PM

Location Information: [View Map](#)

| | | | | | | | | | |
|------------|----------|--------|--------------|-------------|---------|-----------|-----------|----------|-----------|
| API | COUNTY | PERMIT | TAX_DISTRICT | QUAD_75 | QUAD_16 | LAT_DD | LON_DD | UTME | UTMN |
| 4705170775 | Marshall | 70775 | Franklin | Glen Easton | Cameron | 39.753718 | -80.73127 | 523020.9 | 4400457.5 |

There is no Bottom Hole Location data for this well

Owner Information:

| | | | | | | | | | | | | | |
|------------|--------|--------|---------|--------------------------|----------|--------|-------|-----------|-------------|------------------------|---------|--------------|------------|
| API | CMP_DT | SUFFIX | STATUS | SURFACE_OWNER | WELL_NUM | CO_NUM | LEASE | LEASE_NUM | MINERAL_OWN | OPERATOR_AT_COMPLETION | PROP_VD | PROP_TRGT_FM | TFM_EST_PR |
| 4705170775 | -- | -- | unknown | Prpty Map Herbert Kelley | | | | | unknown | | | | |

Completion Information:

| | | | | | | | | | | | | | | | | | | | |
|------------|--------|---------|------|-------|-------|------------|-------------|---------------|--------------|---------------|---------|----------|-----|-----|---------|-----|-------|-------|-------|
| API | CMP_DT | SPUD_DT | ELEV | DATUM | FIELD | DEEPEST_FM | DEEPEST_FMT | INITIAL_CLASS | FINAL_CLASS | TYPE | RIG | CMP_MTHD | TVD | TMD | NEW_FTG | KOD | G_BEF | G_AFT | O_BEF |
| 4705170775 | -- | -- | -- | -- | -- | -- | -- | unclassified | unclassified | not available | unknown | unknown | | | | | | | |

WV Geological & Economic Survey:

Well: County = 51 Permit = 70776

Report Time: Thursday, May 26, 2022 3:17:15 PM

Location Information: [View Map](#)

| | | | | | | | | | |
|------------|----------|--------|--------------|-------------|---------|-----------|------------|----------|-----------|
| API | COUNTY | PERMIT | TAX_DISTRICT | QUAD_75 | QUAD_16 | LAT_DD | LON_DD | UTME | UTMN |
| 4705170776 | Marshall | 70776 | Franklin | Glen Easton | Cameron | 39.756185 | -80.730894 | 523052.3 | 4400731.4 |

There is no Bottom Hole Location data for this well

Owner Information:

| | | | | | | | | | | | | | |
|------------|--------|--------|---------|-------------------------|----------|--------|-------|-----------|-------------|------------------------|---------|--------------|------------|
| API | CMP_DT | SUFFIX | STATUS | SURFACE_OWNER | WELL_NUM | CO_NUM | LEASE | LEASE_NUM | MINERAL_OWN | OPERATOR_AT_COMPLETION | PROP_VD | PROP_TRGT_FM | TFM_EST_PR |
| 4705170776 | -- | -- | unknown | Prpty Map Herbert Alley | | 1262 | | | unknown | | | | |

Completion Information:

| | | | | | | | | | | | | | | | | | | | |
|------------|--------|---------|------|-------|-------|------------|-------------|---------------|--------------|---------------|---------|----------|-----|-----|---------|-----|-------|-------|-------|
| API | CMP_DT | SPUD_DT | ELEV | DATUM | FIELD | DEEPEST_FM | DEEPEST_FMT | INITIAL_CLASS | FINAL_CLASS | TYPE | RIG | CMP_MTHD | TVD | TMD | NEW_FTG | KOD | G_BEF | G_AFT | O_BEF |
| 4705170776 | -- | -- | -- | -- | -- | -- | -- | unclassified | unclassified | not available | unknown | unknown | | | | | | | |

WV Geological & Economic Survey:

Well: County = 51 Permit = 02245

Report Time: Thursday, May 26, 2022 3:17:32 PM

Location Information: [View Map](#)

| | | | | | | | | | |
|------------|----------|--------|--------------|-------------|---------|-----------|------------|----------|-----------|
| API | COUNTY | PERMIT | TAX_DISTRICT | QUAD_75 | QUAD_16 | LAT_DD | LON_DD | UTME | UTMN |
| 4705102245 | Marshall | 2245 | Franklin | Glen Easton | Cameron | 39.753455 | -80.733897 | 522795.9 | 4400427.6 |

Bottom Hole Location Information:

| | | | | | |
|------------|---------|-------------|----------|-----------|------------|
| API | EP_FLAG | UTME | UTMN | LON_DD | LAT_DD |
| 4705102245 | 1 | As Proposed | 520896.4 | 4403611.2 | -80.755969 |

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 |
| 4705102245 | -- | -- | Cancelled | Alpine Farm LLC | | N-9HU | Pendleton | | Eli A & Fannie Mae Wengerd et al | Tug Hill Operating, LLC | 11787 | Pl 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 |
| 4705102245 | -- | -- | -- | -- | -- | -- | -- | 1272 | Ground Level | | | | | | | | | | |

WV Geological & Economic Survey

Well: County = 51 Permit = 30387

Report Time: Thursday, May 26, 2022 3:17:45 PM

Location Information: [View Map](#)

| | | | | | | | | | |
|------------|----------|--------|--------------|------------|-----------|-----------|------------|-----------|-----------|
| API | COUNTY | PERMIT | TAX_DISTRICT | QUAD_75 | QUAD_16 | LAT_DD | LON_DD | UTME | UTMN |
| 4705130387 | Marshall | 30387 | Meade | Wileyville | Littleton | 39.747178 | -80.726962 | 5233392.2 | 4399732.7 |

There is no Bottom Hole Location data for this well

Owner Information:

| | | | | | | | | | | | | | |
|------------|---------|--------|--------------|---------------------------------|----------|--------|-------|-----------|-------------|--------------------------------|---------|--------------|------------|
| API | CMP_DT | SUFFIX | STATUS | SURFACE_OWNER | WELL_NUM | CO_NUM | LEASE | LEASE_NUM | MINERAL_OWN | OPERATOR_AT_COMPLETION | PROP_VD | PROP_TRGT_FM | TFM_EST_PR |
| 4705130387 | --/1900 | | Original Loc | Completed James&Caroline Messey | 1 | 1243 | | 2883 | | Manufacturers Light & Heat Co. | | | |

Completion Information:

| | | | | | | | | | | | | | | | | | | | |
|------------|---------|---------|------|--------------|-------|------------|-------------|---------------|--------------|---------------|---------|----------|---------|-----|---------|-----|-------|-------|------|
| API | CMP_DT | SPUD_DT | ELEV | DATUM | FIELD | DEEPEST_FM | DEEPEST_FMT | INITIAL_CLASS | FINAL_CLASS | TYPE | RIG | CMP_MTHD | TVD | TMD | NEW_FTG | KOD | G_BEF | G_AFT | O_BI |
| 4705130387 | --/1900 | --/-- | 845 | Spirit Level | | | | unclassified | unclassified | not available | unknown | 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 |
| 4705130387 | 3/28/1958 | 0 |

WV Geological & Economic Survey

Well: County = 51 Permit = 70214

Report Time: Thursday, May 26, 2022 3:18:00 PM

Location Information: [View Map](#)

| | | | | | | | | | |
|------------|----------|--------|--------------|------------|-----------|-----------|------------|-----------|-----------|
| API | COUNTY | PERMIT | TAX_DISTRICT | QUAD_75 | QUAD_16 | LAT_DD | LON_DD | UTME | UTMN |
| 4705170214 | Marshall | 70214 | Meade | Wileyville | Littleton | 39.748628 | -80.726928 | 5233394.6 | 4399893.7 |

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 |
| 4705170214 | --/-- | | Original Loc | Completed James Mossey | 1 | | | | Oper in Min. owner fld no code assign(Orphan well proj) | | | |

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 |
| 4705170214 | --/-- | --/-- | | | | | | unclassified | unclassified | not available | unknown | unknown | | | | | | | |

WV Geological & Economic Survey:

Well: County = 51 Permit = 30409

Report Time: Thursday, May 26, 2022 3:18:16 PM

Location Information: [View Map](#)

| | | | | | | | | | |
|------------|----------|--------|--------------|------------|-----------|-----------|------------|----------|-----------|
| API | COUNTY | PERMIT | TAX_DISTRICT | QUAD_75 | QUAD_15 | LAT_DD | LON_DD | UTME | UTMN |
| 4705130409 | Marshall | 30409 | Meade | Wileyville | Littleton | 39.739203 | -80.720569 | 523942.6 | 4398849.3 |

There is no Bottom Hole Location data for this well

Owner Information:

| | | | | | | | | | | | | | |
|------------|--------|--------|------------------------|---------------------|----------|--------|-------|-----------|-------------------------------------------|------------------------|---------|--------------|------------|
| API | CMP_DT | SUFFIX | STATUS | SURFACE_OWNER | WELL_NUM | CO_NUM | LEASE | LEASE_NUM | MINERAL_OWN | OPERATOR_AT_COMPLETION | PROP_VD | PROP_TRGT_FM | TFM_EST_PR |
| 4705130409 | -- | | Original Loc Completed | Elizabeth Brinkmeir | | | | | 2815 OP=A.M Snider also Wilhelm & Jackson | | | | |

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_E |
| 4705130409 | -- | -- | 1301 Ground Level | Cameron-Garner | UDev undrf | Ber/LoHURN | Gordon | Development Well | unclassified | Gas | Cable Tool | unknown | 3034 | | | 3034 |

Pay/Show/Water Information:

| | | | | | | | | | | | | | |
|------------|--------|----------|---------|----------|-----------|--------|-----------|--------|-------|-------|-------|-------|------------|
| API | CMP_DT | ACTIVITY | PRODUCT | SECTION | DEPTH_TOP | FM_TOP | DEPTH_BOT | FM_BOT | G_BEF | G_AFT | O_BEF | O_AFT | WATER_QNTY |
| 4705130409 | -- | Pay | Gas | Vertical | | | 2968 | Gordon | 0 | 0 | | | 0 |

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

Stratigraphy Information:

| API | SUFFIX | FM | FM_QUALITY | DEPTH_TOP | DEPTH_BOTTOM | THICKNESS | THICKNESS_QUALITY | ELEV DATUM |
|------------|--------------|---------------------|-------------|-----------|--------------|-----------|-------------------|-------------------|
| 4705130409 | Original Loc | unidentified coal | Well Record | 665 | Reasonable | 2 | Reasonable | 1301 Ground Level |
| 4705130409 | Original Loc | Sewickley coal | Well Record | 865 | Reasonable | 5 | Reasonable | 1301 Ground Level |
| 4705130409 | Original Loc | Pittsburgh coal | Well Record | 963 | Reasonable | 7 | Reasonable | 1301 Ground Level |
| 4705130409 | Original Loc | Salt Sands (undiff) | Well Record | 1610 | Reasonable | 80 | Reasonable | 1301 Ground Level |
| 4705130409 | Original Loc | Big Lime | Well Record | 2016 | Reasonable | 64 | Reasonable | 1301 Ground Level |
| 4705130409 | Original Loc | Big Injun (undiff) | Well Record | 2080 | Reasonable | 314 | Reasonable | 1301 Ground Level |
| 4705130409 | Original Loc | Gordon | Well Record | 2943 | Reasonable | 25 | Reasonable | 1301 Ground Level |

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

Plugging Information:

| | | |
|------------|------------|-----------|
| API | PLG_DT | DEPTH_PBT |
| 4705130409 | 10/10/1960 | 0 |

WV Geological & Economic Survey

Well: County = 51 Permit = 70340

Report Time: Thursday, May 26, 2022 3 16:30 PM

Location Information: [View Map](#)

| | | | | | | | | | |
|------------|----------|--------|--------------|------------|-----------|-----------|------------|----------|-----------|
| API | COUNTY | PERMIT | TAX_DISTRICT | QUAD_75 | QUAD_15 | LAT_DD | LON_DD | UTME | UTMN |
| 4705170340 | Marshall | 70340 | Meade | Wileyville | Littleton | 39.738032 | -80.716214 | 524316.3 | 4398720.5 |

There is no Bottom Hole Location data for this well

Owner Information:

| | | | | | | | | | | | | | |
|------------|--------|--------|---------|--------------------|----------|--------|-------|-----------|-------------|--------------------------|---------|--------------|------------|
| API | CMP_DT | SUFFIX | STATUS | SURFACE_OWNER | WELL_NUM | CO_NUM | LEASE | LEASE_NUM | MINERAL_OWN | OPERATOR_AT_COMPLETION | PROP_VD | PROP_TRGT_FM | TFM_EST_PR |
| 4705170340 | -/- | | unknown | Prply Map AJ Stein | | 270 | | | | Hope Natural Gas Company | | | |

Completion Information:

| | | | | | | | | | | | | | | | | | | | |
|------------|--------|---------|------|-------|-------|------------|-------------|---------------|--------------|---------------|---------|----------|-----|-----|---------|-----|-------|-------|-------|
| API | CMP_DT | SPUD_DT | ELEV | DATUM | FIELD | DEEPEST_FM | DEEPEST_FMT | INITIAL_CLASS | FINAL_CLASS | TYPE | RIG | CMP_MTHD | TVD | TMD | NEW_FTG | KOD | G_BEF | G_AFT | O_BEF |
| 4705170340 | -/- | | | | | | | unclassified | unclassified | not available | unknown | unknown | | | | | | | |



TUG HILL
OPERATING

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

Well Name: Pendleton S-14HU

Pad Name: Pendleton

County: Marshall

UTM (meters), NAD83, Zone 17

Northing: 4,400,429.70

Easting: 522,799.35

**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

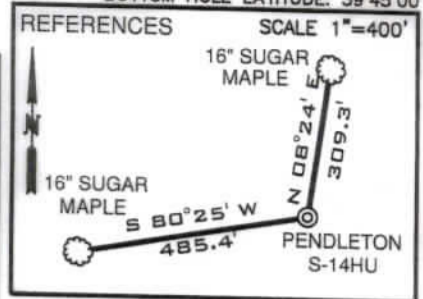
(800) 921-9745

John Strader
STRADER
12-14-2022

04/28/2023

**PENDLETON S-14HU
UTICA UNIT - 288.5447± ACRES
TUG HILL OPERATING**

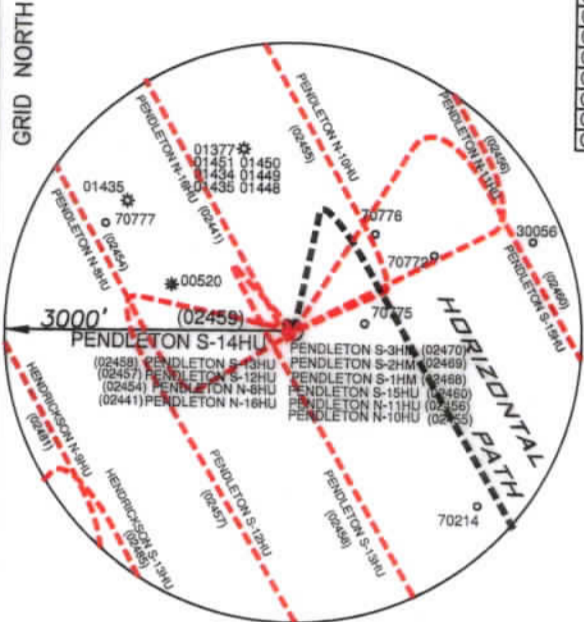
| LINE | BEARING | DISTANCE |
|------|------------|-----------|
| L1 | N 01°15' E | 2,838.95' |
| L2 | N 76°44' W | 2,383.47' |
| L3 | N 11°36' E | 330.36' |
| L4 | N 10°33' E | 806.30' |



| CURVE | CHORD BEARING | CHORD LENGTH | RADIUS | ARC LENGTH |
|-------|---------------|--------------|----------|------------|
| C1 | N 10°49' E | 85.62' | 6471.62' | 85.62' |
| C2 | N 25°59' E | 32.12' | 51.27' | 32.67' |
| C3 | N 75°40' E | 26.16' | 32.55' | 26.93' |
| C4 | S 85°22' E | 55.92' | 123.11' | 56.41' |
| C5 | S 48°03' E | 117.84' | 562.07' | 118.06' |
| C6 | S 39°03' E | 248.95' | 1818.41' | 249.14' |
| C7 | S 33°57' E | 181.35' | 2058.22' | 181.41' |
| C8 | S 31°00' E | 196.28' | 4105.22' | 196.30' |

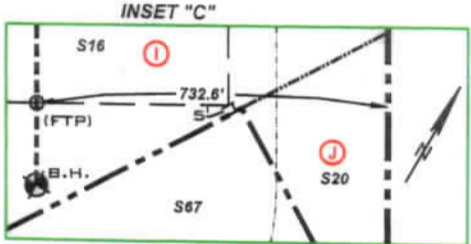
Deep Wells Within 2400' of Proposed Well's Surface Location and/or 500' of Well Lateral

| API | OPERATOR |
|--------------|-------------------------|
| 47-051-02441 | Tug Hill Operating, LLC |
| 47-051-02454 | Tug Hill Operating, LLC |
| 47-051-02455 | Tug Hill Operating, LLC |
| 47-051-02456 | Tug Hill Operating, LLC |
| 47-051-02457 | Tug Hill Operating, LLC |
| 47-051-02458 | Tug Hill Operating, LLC |
| 47-051-02460 | Tug Hill Operating, LLC |



NOTES

- BORE PATH BASED ON GRID NORTH.
- NO WATER WELLS WITHIN 250' OF WELL WERE FOUND, NO DWELLINGS WITHIN 625' OF PAD CENTER WERE FOUND.
- OWNERSHIP TAKEN FROM PUBLIC RECORDS OF MARSHALL COUNTY, WV IN FEBRUARY, 2023. COORDINATES AND WELL TIES BASED UPON DIFFERENTIAL GPS MEASUREMENTS.
- WELL LOCATION REFERENCES ARE BASED UPON THE MAGNETIC MERIDIAN.
- ALL DEEP WELLS SHOWN ON THIS PLAT.
- L.P. 1 AND (L.T.P.) ARE AT THE SAME POINT.
- THE FTP IS OVER 500' PERPENDICULAR TO THE BOUNDARY.



LEGEND

- LEASE TRACTS
- WELL LATERAL
- POINT PLEASANT LEGS
- UNIT BOUNDARY
- LEASE # (SEE 6A1 FORM)
- 400' BORE PATH OFFSET
- 500' WELL BORE OFFSET
- (FTP) PROPOSED FIRST TAKE POINT
- (LTP) PROPOSED LAST TAKE POINT

SURFACE HOLE
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,400,429.70
 E) 522,799.35

LANDING POINT 1
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,400,622.98
 E) 523,029.94

BOTTOM HOLE
 UTM. NAD83, ZONE 17
 IN METERS
 N) 4,398,282.29
 E) 524,414.18

FILE NUMBER _____
 DRAWING NUMBER: **PENDLETON S-14HU REV 5**
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/200
 PROVEN SOURCE OF ELEVATION: **SUBMETER MAPPING**
GRADE GPS

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 RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION



David L Jackson

JACKSON SURVEYING INC.
 P.O. Box 1480
 Clarksburg, WV 26302
 304-623-5851

WVDEP
 OFFICE OF OIL & GAS
 601 57TH STREET, SE
 CHARLESTON, WV 25304

DATE: MARCH 13, 2023
 OPERATORS WELL NO. PENDLETON S-14HU
 API WELL NO. 47-051-02459
 STATE COUNTY PERMIT

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

LOCATION ELEVATION 1271.82' WATERSHED (HUC 10) FISH CREEK
 DISTRICT FRANKLIN COUNTY MARSHALL
 QUADRANGLE GLEN EASTON 7.5' LEASE NUMBER SEE WW-6A1 Form

SURFACE OWNER ALPINE FARM, LLC ACREAGE 249.07
 OIL & GAS ROYALTY OWNER ELI A. & FANNIE MAE WENGERD, ET AL LEASE ACREAGE 249.07
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE (SPECIFY) _____

TARGET FORMATION POINT PLEASANT PLUG & ABANDON CLEAN OUT & REPLUG
 ESTIMATED DEPTH TVD: 11,801' TMD: 21,072'

WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DARREN BROWN, CT CORP
 ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107 ADDRESS 5098 WASHINGTON STREET WEST, SUITE 407 CHARLESTON, WV 25313-1561

04/28/2023

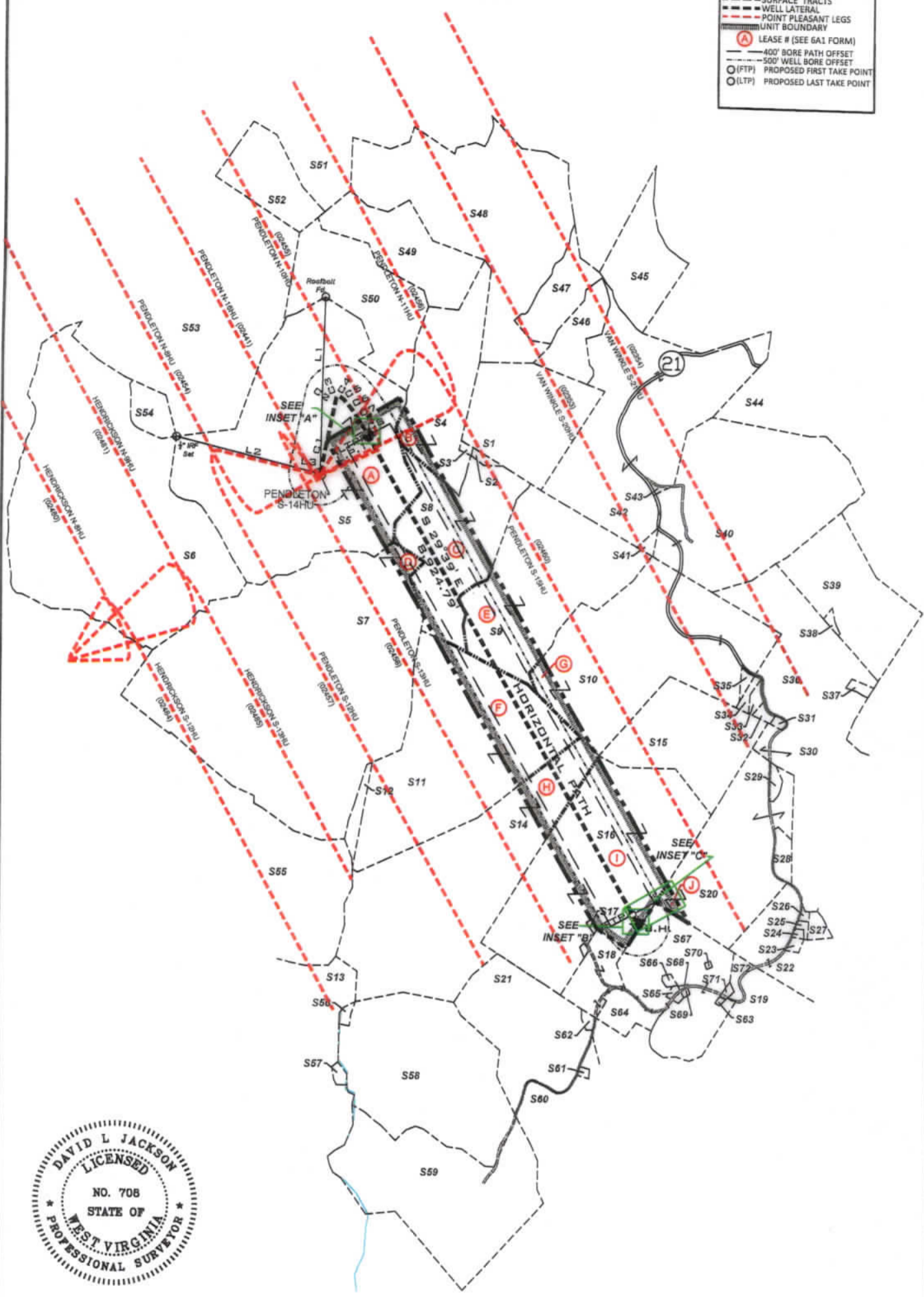
COUNTY NAME
 PERMIT

form: wv6

PENDLETON S-14HU
UTICA UNIT - 288.5447± ACRES
TUG HILL OPERATING

LEGEND

- LEASED TRACTS
- - - SURFACE TRACTS
- - - WELL LATERAL
- - - POINT PLEASANT LEGS
- UNIT BOUNDARY
- (A) LEASE # (SEE GA1 FORM)
- 400' BORE PATH OFFSET
- 500' WELL BORE OFFSET
- (FTP) PROPOSED FIRST TAKE POINT
- (LTP) PROPOSED LAST TAKE POINT



P.S. 708 *David L Jackson*

04/28/2023



TUG HILL
OPERATING

OPERATOR'S
WELL #: PENDLETON S-14HU
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV
API #: 47-051-02459

WELL PLAT
PAGE 2 OF 4
DATE: 3/13/2023

form .wv6

**PENDLETON S-14HU
UTICA UNIT - 288.5447± ACRES
TUG HILL OPERATING**

| Parcels Within Unit Boundary | | | | |
|------------------------------|-----------------|-----------------------------------------------|------------------------------------|------------|
| Tags | Number | Tax Map -Parcel | Surface Owner | Acres |
| A | S5 | 05-17-06 | ALPINE FARM, LLC | 249.07 |
| B | S4 | 09-16-03 | BERTHA L. KLUG | 71 |
| C | S8 | 09-18-01 | THERESA MAE LONG THOMAS, ET AL | 58.66 |
| D | S7 | 05-24-02 | ROY FRIEND YOHO | 316.80 |
| E | S9 | 09-18-02 | BRIAN T. KLUG | 85 |
| F | S11 | 09-20-02 | MICHAEL JAMES PEKULA | 138 |
| G | S10 | 09-18-18 | JAMES D. FROHNAPFEL, ET UX (| 154.03 |
| H | S14 | 09-20-04 | SHELLIE J. PEKULA, HRS | 171 |
| I | S16 | 09-20-05 | GERALD A. FROHNAPFEL ET UX - TRUST | 164.143 |
| J | S20 | 09-20-07 | SONNY M & LINDA L. TAGG | 72.828 |
| Number | Tax Map -Parcel | Adjoining Parcels | | Acres |
| S1 | 09-16-04 | BERTHA L. KLUG | | 73.39 |
| S2 | 09-18-03 | BERTHA L. KLUG | | 1.33 |
| S3 | 09-18-04 | BERTHA L. KLUG | | 1 |
| S6 | 05-17-08 | ROGER H. HALL, JR | | 257.50 |
| S12 | 09-20-01 | MICHAEL JAMES PEKULA | | 5 |
| S13 | 05-25-03 | S.D. & SUSAN SMITH FERTITTA | | 181.548 |
| S15 | 09-20-06 | KEITH & KRISTY FERRELL REVOCABLE LIVING TRUST | | 64.75 |
| S17 | 09-20-5.2 | WHEELING CATHOLIC DIOCESE | | .447 |
| S18 | 09-22-04 | WHEELING CATHOLIC DIOCESE | | 20 |
| S19 | 09-20-17 | MARTIN L. KLUG | | 49.78 |
| S21 | 09-22-3.2 | MARK H. MILLER | | 75 |
| S22 | 09-20-9 | JOHN G. JR & MARILYN S. WEIGAND | | 48.131 |
| S23 | 09-20-9.4 | HELEN B. SHUTLER - LIFE | | .78 |
| S24 | 09-20-10 | JAMES MILLER, ET UX | | .50 |
| S25 | 09-20-9.3 | JAMES MILLER, ET UX | | .804 |
| S26 | 09-20-9.5 | JAMES MILLER, ET UX | | .666 |
| S27 | 09-20-9.6 | JAMES MILLER, ET UX | | 2.919 |
| S28 | 09-20-7.1 | DAVID PAUL FROHNAPFEL | | 4.930 |
| S29 | 09-20-7.2 | MICKEY R. DULANEY, JR | | 2.242 |
| S30 | 09-18-15 | KEITH & KRISTY FERRELL REVOCABLE LIVING TRUST | | 29.5 |
| S31 | 09-18-15.1 | NICHOLAS C. FROHNAPFEL, ET UX | | 0.68 |
| S32 | 09-18-16.1 | NICHOLAS C. FROHNAPFEL, ET UX | | 1.50 |
| S33 | 09-18-16.3 | BERNARD A. KLUG ET UX ESTS. | | 1.818 |
| S34 | 09-18-16.2 | JOHN F. WAYMAN, EST | | 2.17 |
| S35 | 09-18-18.1 | JOHN F. WAYMAN, EST | | 1.1 |
| S36 | 09-18-16 | ROBERT F. VILLERS | | 62.893 |
| S37 | 09-18-16.4 | ROBERT F. & APRIL L. VILLERS | | 1.509 |
| S38 | 09-18-17.1 | VINCENT JOHN WAYMAN | | 1.010 |
| S39 | 09-18-17 | VINCENT J. WAYMAN | | 68.99 |
| S40 | 09-18-06 | LOUIS FOX | | 141.75 |
| S41 | 09-18-5.1 | LOUIS FOX | | 1.583 |
| S42 | 09-18-05 | BERTHA L. KLUG | | 122.437 |
| S43 | 09-18-5.2 | LOUIS FOX | | 0.933 |
| S44 | 09-16-20 | LOUIS T. FOX | | 86.174 |
| S45 | 09-16-11 | JAMES G. RICHMOND | | 67.882 |
| S46 | 09-16-07 | BERTHA L. KLUG | | 26.105 |
| S47 | 09-16-06 | ROBERT M. & NANCY R. MCCARDLE | | 31 |
| S48 | 09-16-05 | ROBERT M. & NANCY R. MCCARDLE | | 133 |
| S49 | 09-16-02 | ROBERT M. & NANCY MCCARDLE | | 53.40 |
| S50 | 05-17-05 | ALPINE FARM, LLC | | 76.96 |
| S51 | 09-16-01 | ROBERT M. & NANCY R. MCCARDLE | | 46.80 |
| S52 | 05-16-13 | DAVID ALAN RUBCICH, ET AL | | 33.31 |
| S53 | 05-17-04 | ALPINE FARM, LLC | | 212 |
| S54 | 05-17-07 | ALPINE FARM, LLC | | 10.8 |
| S55 | 05-24-3.3 | CHARLES E. & DEBRA K. BERTRAND | | 120.433 |
| S56 | 09-22-1.1 | CNG TRANSMISSION CO | | 1.43 |
| S57 | 05-25-3.2 | CONSOL ENERGY HOLDINGS, LLC., XVI | | 1.43 |
| S58 | 09-22-01 | LOUIS T. FOX | | 124.57 |
| S59 | 09-22-02 | MARK H. J. MILLER, ETAL | | 124.80 |
| S60 | 09-22-03 | MARK HILARY MILLER | | 63.73 |
| S61 | 09-22-3.3 | MARY C. WRIGHT | | .617 |
| S62 | 09-22-3.1 | MARGARET ANN MYSLIWIEC - LIFE | | 1.1 |
| S63 | 09-20-22.6 | MARY MARGARET STINE | | 0.1185 |
| S64 | 09-22-5.1 | HILARY G. MILLER, EST | | 10.62 |
| S65 | 09-20-22.7 | JOAN L. KLUG | | 1.06 |
| S66 | 09-20-22.8 | JOAN LOUISE KLUG | | .80 |
| S67 | 09-20-22 | CHARLES DILLON BLAKE & ALLISON R. KLUG | | 70.2398 |
| S68 | 09-20-22.4 | CHARLES DILLON BLAKE & ALLISON R. KLUG | | 0.165 |
| S69 | 09-20-22.5 | CHARLES DILLON BLAKE & ALLISON R. KLUG | | .3767 |
| S70 | 09-20-22.3 | GRANDVIEW-DOOLIN PSD | | 0.23 |
| S71 | 09-20-22.1 | MARY MARGARET STINE | | 04/28/2023 |
| S72 | 09-20-21 | MARY MARGARET STINE | | 3.25 |



P.S. 708 *David L Jackson*



**TUG HILL
OPERATING**

OPERATOR'S
WELL #1: PENDLETON S-14HU
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV
API #: 47-051-02459

WELL PLAT
PAGE 3 OF 4
DATE: 3/13/2023

**PENDLETON S-14HU
 UTICA UNIT - 288.5447± ACRES
 TUG HILL OPERATING**

| Lease ID | TMP | Tag | Grantor, Lessor, Etc. | Deed Book/Page | |
|----------------|---------|-----|--------------------------------------|----------------|-----|
| 10*14114 | 5-17-6 | A | ELI & FANNIE MAE WENGERD | 671 | 323 |
| 10*19638 | 9-16-3 | B | GREGORY J HALL, ET AL | 944 | 461 |
| 10*28262 | 9-18-1 | C | JAMES W MESSEY ET AL | 67 | 487 |
| 10*14024 | 5-24-2 | D | ROY FRIEND AND DARLENE J YOHO, ET AL | 665 | 508 |
| 10*28262 | 9-18-2 | E | JAMES W MESSEY ET AL | 67 | 487 |
| 10*39661 | 9-20-2 | F | SHELLIE J AND MICHAEL PEKULA | 1126 | 542 |
| 10*47051.047.1 | 9-18-18 | G | JAMES E BLATT, ET AL | 869 | 587 |
| 10*31101 | 9-20-4 | H | ELIZABETH BRINKMEIER ET AL | 103 | 183 |
| 10*19555 | 9-20-5 | I | MARY JEAN FROHNAPFEL | 936 | 525 |
| 10*19343 | 9-20-7 | J | SONNY M TAGG AND LINDA L TAGG | 936 | 521 |



P.S.
708

David L Jackson

04/28/2023



TUG HILL
OPERATING

OPERATOR'S
 WELL #: PENDLETON S-14HU
 DISTRICT: Franklin
 COUNTY: Marshall
 STATE: WV
 API #: 47-051-02459

WELL PLAT
PAGE 4 OF 4
DATE: 3/13/2023

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

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

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

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

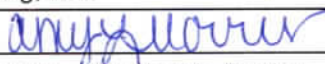
*See attached pages

**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 
 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 | | |
|----------|--------|-----|------------------------------|----------------------------|---------|----------------|------------|--------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------|-----------------------------------------------|
| 10*14114 | 5-17-5 | A | ELI & FANNIE MAE WENGERD | GASTAR EXPLORATION USA INC | 1/8+ | 671 | N/A | N/A | N/A | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Merger of Gastar Exploration USA Inc with and into Gastar Exploration Inc: 21/41 | Gastar Exploration Inc to TH Exploration II LLC: 36/9 | Atinum Marcellus I LLC to TH Exploration II LLC: 48/67 | | |
| 10*28262 | 9-18-1 | C | JAMES W MESSEY ET AL | ECLIPSE OIL COMPANY | 1/8+ | 67 | 487 | Wheeling Natural Gas Company to Manufacturers Light & Heat Company: DB 148/389 | The Manufacturers Light & Heat Company to A.M. Snider & Duane M Snider dba Hundred Gas Company: AB 4/489 | Eclipse Oil company to C.H. Stolzebach: DB 68/507 | AM Snider, Duane M Snider & Kathleen Rinehart dba Hundred Gas Company to Hundred Gas Company: DB 256/189 | Hundred Gas Company to Carl D Perkins: DB 451/132 | Amendment - Hundred Gas Company to Carl D Perkins: DB 451/418 | Perkins Oil & Gas Inc to TH Exploration LLC: AB 45/87 | |
| 10*28262 | 9-18-2 | E | JAMES W MESSEY ET AL | ECLIPSE OIL COMPANY | 1/8+ | 67 | 487 | Wheeling Natural Gas Company to Manufacturers Light & Heat Company: DB 148/389 | The Manufacturers Light & Heat Company to A.M. Snider & Duane M Snider dba Hundred Gas Company: AB 4/489 | Eclipse Oil company to C.H. Stolzebach: DB 68/507 | AM Snider, Duane M Snider & Kathleen Rinehart dba Hundred Gas Company to Hundred Gas Company: DB 256/189 | Hundred Gas Company to Carl D Perkins: DB 451/132 | Amendment - Hundred Gas Company to Carl D Perkins: DB 451/418 | Perkins Oil & Gas Inc to TH Exploration LLC: AB 45/87 | |
| 10*39661 | 9-20-2 | F | SHELLIE J AND MICHAEL PEKULA | TH EXPLORATION LLC | 1/8+ | 1126 | 542 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | |
| 10*31101 | 9-20-4 | H | ELIZABETH BRINKMEIER ET AL | HOPE NATURAL GAS CO | 1/8+ | 103 | 183 | Consolidated Gas Supply Corp to Consolidated Gas Transmission Corp: 505/406 | Consolidated Gas Transmission Corp to CNG Development Company: 515/88 | Hope Natural Gas Company to Consolidated Gas Supply Corp: 374/234 | CNG Development Company merged with/into CNG Producing Company on 3/13/1991 - Wyoming Bureau of Land Management | CNG Producing Company merged with/into Dominion Exploration & Production Inc on 6/2/2000 - WV Secretary of State | Dominion Exploration & Development Inc Merged with/into CONSOL Gas Company: CB 19/546 | CONSOL Gas Company merged with/into CNX Gas Company LLC: MB 11/415 | CNX Gas Company to TH Exploration LLC: 46/210 |
| 10*19555 | 9-20-5 | I | MARY JEAN FROHNAPEL | TH EXPLORATION LLC | 1/8+ | 936 | 525 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | |

04/28/2023

STATE OF WEST VIRGINIA §
 §
COUNTY OF MARSHALL §

ASSIGNMENT, BILL OF SALE AND CONVEYANCE

THIS ASSIGNMENT, BILL OF SALE AND CONVEYANCE (this "*Assignment*"), dated effective as of 7:00 A.M., local time, where the respective Assets are located, on July 1, 2020 (the "*Effective Time*"), is between **Atinum Marcellus I, LLC**, a Delaware limited liability company ("*Assignor*"), whose mailing address is One Riverway, Suite 710, Houston, TX 77056-1988, and **TH Exploration II, LLC**, a Texas limited liability company, whose mailing address is 1320 S. University Drive, Suite 500, Fort Worth, Texas 76107 ("*Assignee*"). Assignor and Assignee are each, individually, referred to herein as a "*Party*" and, collectively, as the "*Parties*."

Capitalized terms used but not defined herein shall have the respective meanings set forth in that certain Asset Purchase Agreement dated as of November 13, 2020, by and among Assignor and Assignee (the "*Purchase Agreement*").

Section 1. Assignment. The conveyance and assignment herein shall be deemed effective as of the Effective Time.

For Ten Dollars (\$10.00) and other good and valuable consideration (the receipt and sufficiency of which are hereby acknowledged), Assignor does hereby forever GRANT, BARGAIN, SELL, CONVEY, ASSIGN, TRANSFER, SET OVER AND DELIVER unto Assignee, and Assignee does hereby acquire, the undivided interests in the Leases (as defined below) set forth on Exhibit A-1, and all other of Assignor's right, title and interest in and to the interests and properties described in subsections (a) through (k) of this Section 1 (without duplication) (such right, title and interest, less and except the Excluded Assets, collectively, the "*Assets*");

(a) The oil and gas leases, mineral leases and Royalties located in the Covered Counties (which Covered Counties include, for the avoidance of doubt, the county in which this Assignment is filed of record), including those described on Exhibit A-1 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 instrument creating such rights or interests or on Exhibit A-1 (such leases, Royalties, and mineral interests, collectively, the "*Leases*"), together with any related interest in the lands covered by the Leases or lands unitized, pooled, communitized or consolidated therewith (the "*Lands*");

(b) All of the oil and/or gas wells identified on Exhibit A-2 hereto (the "*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;

(c) All rights, titles and interests arising under any unitization, pooling and/or communitization agreements, declarations or designations for drilling, spacing and/or production units related to any of the Leases, Wells or Lands, including the units described on Exhibit A-4;

ASSIGNMENT OF OIL AND GAS LEASES

This **ASSIGNMENT OF OIL AND GAS LEASES** (hereinafter, "**Assignment**"), made the 2nd day of November, 2020 (hereinafter, "**Effective Date**"), is by and between **CNX GAS COMPANY LLC**, a Virginia limited liability company, whose address is 1000 CONSOL Energy Drive, Suite 400, Canonsburg, Pennsylvania 15317 (hereinafter "**Assignor**") and **TH EXPLORATION, LLC**, a Texas limited liability company, whose address is 1320 S. University Drive, Suite 500, Fort Worth, Texas 76107 (hereinafter "**Assignee**"). All references in this Assignment to "**Party**" shall be deemed at all times to mean Assignor or Assignee and to "**Parties**" shall be deemed to mean both Assignor and Assignee. Capitalized terms used but not defined herein shall have the meaning given such terms in the Acreage Trade Agreement, by and between Assignor and Assignee dated June 19, 2020, as amended, (the "**Trade Agreement**").

WHEREAS, Assignor desires to assign all of Assignor's right, title and interest in and to the Assigned Rights (as defined below), as more particularly described in this Assignment.

NOW, THEREFORE, for and in consideration of TEN AND NO/100 DOLLARS (\$10.00) and other valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignor does hereby **GRANT, BARGAIN, ASSIGN, TRANSFER, AND CONVEY** unto Assignee the following "**Assigned Rights**" expressly excluding the Retained Rights (as defined below):

- (a) All of Assignor's right, title, and interest in and to the oil and gas leases described on Exhibit A attached hereto and made a part hereof located in Marshall County, West Virginia ("**Leases**"); and
- (b) all rights expressly granted under the Leases including rights related to, or necessary in connection with, the ownership, exploration, drilling, development, or operation of the Leases, including, without limitation, any pooling or unitization, any ability to shut-in a well(s), and the non-exclusive access rights to conduct seismic, geophysical, and other investigations, install pipelines, roadways, surface locations, water and/or power lines, impoundments, structures, tanks, gas gathering and/or metering facilities, and all other related facilities.

TO HAVE AND TO HOLD the Assigned Rights unto Assignee, its respective successors and assigns, subject to the terms of this Assignment and subject to and burdened by the contracts set forth on Exhibit B.

"Retained Rights" means: (i) any and all existing oil and/or gas wells currently in, on, or pertaining to the Leases ("**Retained Wells**"), (ii) all rights relating to, or necessary in connection with, the ownership, exploration, drilling, development, or operation of the Retained Wells, including, without limitation, any pooling or unitization, any ability to shut-in any Retained Wells, and the non-exclusive access rights to conduct seismic, geophysical, and other investigations, install pipelines, roadways, surface locations, water and/or power lines, impoundments, structures, tanks, gas gathering and/or metering facilities, and all other related facilities, and (iii) any and all assets not expressly being conveyed, assigned or leased, as applicable, by Assignor to Assignee at Closing pursuant to the Trade Agreement.

This Assignment is further made subject to the following:

1. **TRANSFER TAXES / RECORDING FEES**. Assignee agrees to pay any and all fees and taxes (including recording, real estate transfer, excise, and documentary) in connection with the filing



March 13, 2023

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

RE: Pendleton S-14HU

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-hillop.com.

Sincerely,

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

Amy L. Morris
Permitting Specialist – Appalachia Region
Tug Hill Operating

CERTIFICATE OF CONSENT AND EASEMENT

The undersigned, for valuable consideration, the receipt and sufficiency of which is hereby acknowledged, being the owner of the surface of that certain lot, tract or parcel of land located in Franklin District, Marshall County, State of West Virginia, shown on the attached plat or survey, hereby consents and grants 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 Conservation Commission, to TH Exploration, LLC, its successors or assigns, for the drilling and operation of a deep well for the production of oil or gas at the location shown on the attached plat or survey.

Executed this 1 day of July, 2019.

Marshall County
Jan Pest, Clerk
Instrument 1456384
07/12/2019 @ 12:25:33 PM

ALPINE FARM, LLC.

By: [Signature]
Name: Ell A. Wengerd
Title: Member

STATE OF OHIO

SS:

COUNTY OF HOLMES

RIGHT OF WAY W/O CONSIDERATION
Book 1052 @ Page 490
Pages Recorded 2
Recording Cost \$ 11.00

On this, the 1st day of July, 2019, before me, a notary public, the undersigned officer, personally appeared Ell A. Wengerd, who acknowledged himself/herself to be the Owner of Alpine Farm, LLC and that he/she 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/herself as Owner.

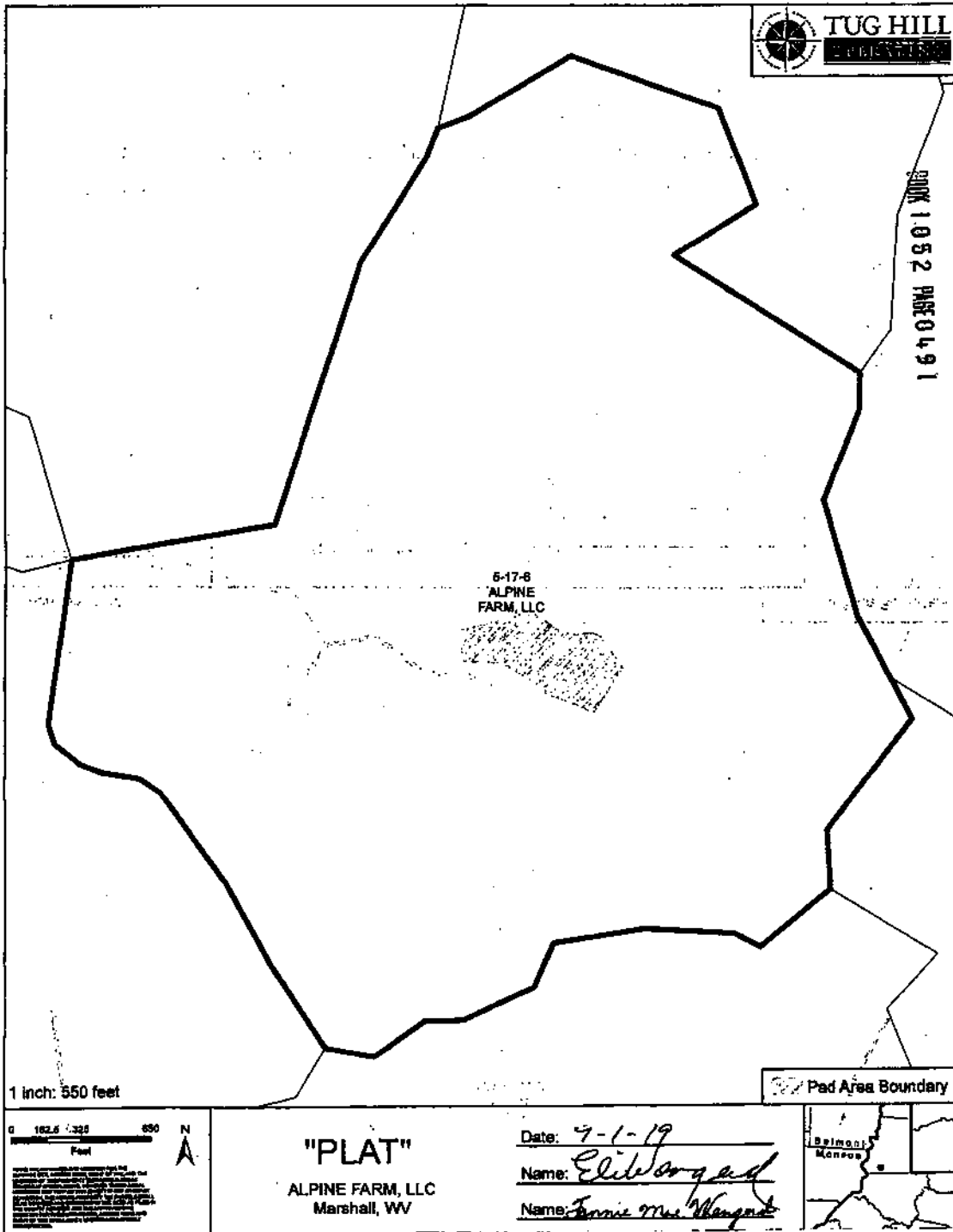
IN WITNESS WHEREOF, I hereunto set my hand and official seal.

My Commission Expires: July 14 2019
Signature/Notary Public: [Signature]
Name/Notary Public (print): Amber K Bramek

This instrument prepared by:
WV Oil and Gas Conservation Commission
601 57th Street
Charleston, WV 25304



AMBER K BRAMEK
Notary Public, State of Ohio
My Comm. Expires 07/14/2019



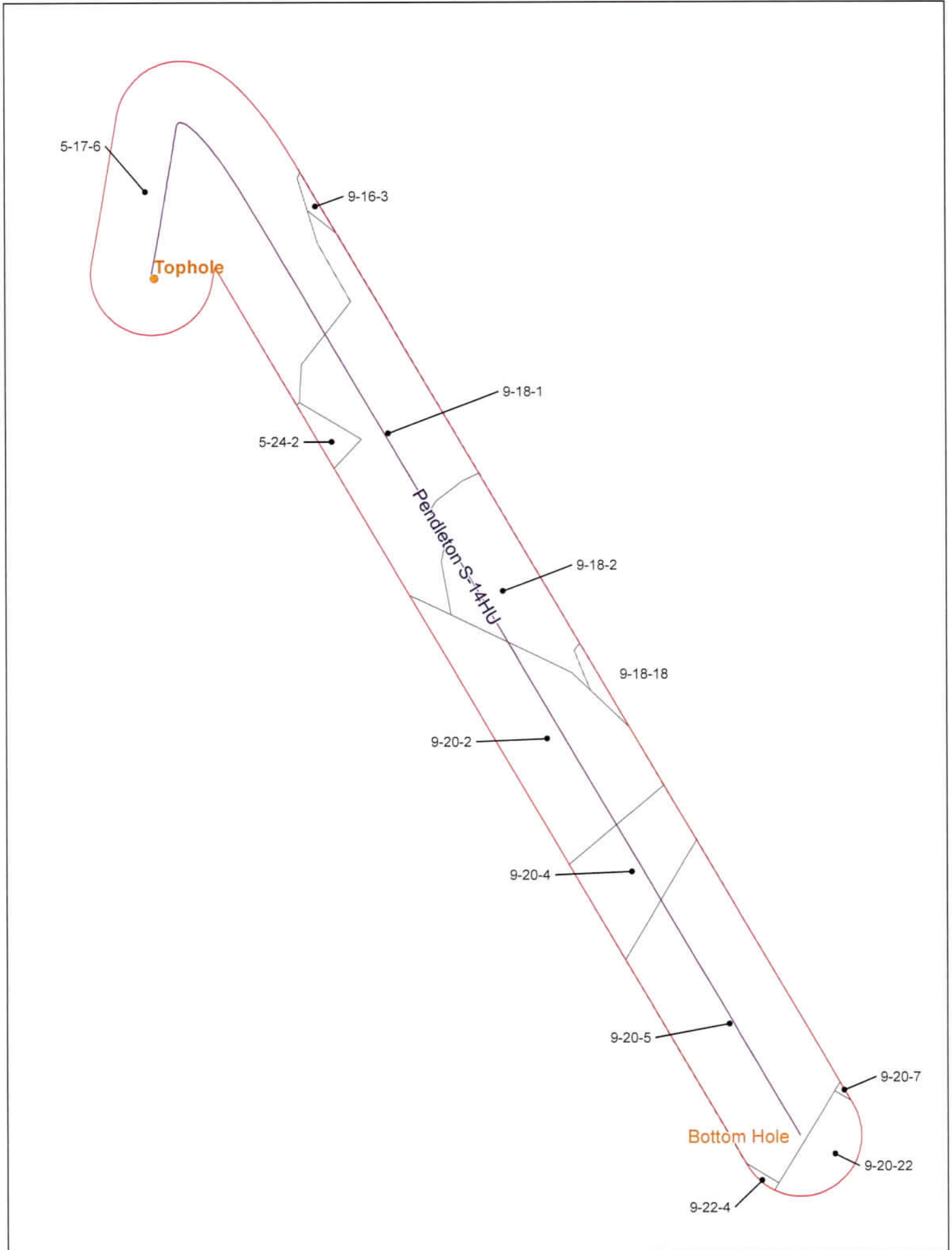
STATE OF WEST VIRGINIA, MARSHALL COUNTY, SCT.:

I, JAN PEST, Clerk of the County Commission of said County, do hereby certify that the annexed writing, bearing date on the 1st day of July, 2019, was presented for and by me, admitted to record in my office upon the above certificate as to the parties therein named this 12th day of July, 2019 at 12:25 o'clock P. M.

TESTE: Jan Pest Clerk

04/28/2023




Pendleton S-14HU



Coordinate System: NAD 83, 1983 UTM Zone 17N
 Projection: Transverse Mercator
 Datum: North American 1983
 False Easting: 1,602,413.8881
 False Northing: 0.0000
 Central Meridian: -81.0000
 Scale Factor: 0.9998
 Latitude Of Origin: 33.0000
 Units: Feet US

CONFIDENTIAL



-  Utica Well
-  500' Buffer
-  Force Pool

Pendleton S-14HU
 Operators within 500 Feet of Well Borehole



Operators within 500' of Well Bore
Pendleton S - 14HU

| COUNTY | DISTRICT | TMP | MINERAL OWNER/LESSEE | ADDRESS |
|----------|----------|---------|---------------------------------------|-----------------------------------------------------------|
| MARSHALL | FRANKLIN | 5-17-6 | TH EXPLORATION II, LLC | 1320 S. University Dr. Suite 500 FT Worth, TX 76107 |
| MARSHALL | FRANKLIN | 5-24-2 | TH EXPLORATION II, LLC | 1320 S. University Dr. Suite 500 FT Worth, TX 76107 |
| MARSHALL | MEADE | 9-16-3 | TH EXPLORATION, LLC | 1320 S. University Dr. Suite 500 FT Worth, TX 76107 |
| MARSHALL | MEADE | 9-18-1 | TH EXPLORATION, LLC | 1320 S. University Dr. Suite 500 FT Worth, TX 76107 |
| MARSHALL | MEADE | 9-18-18 | TH EXPLORATION, LLC | 1320 S. University Dr. Suite 500 FT Worth, TX 76107 |
| MARSHALL | MEADE | 9-18-2 | TH EXPLORATION, LLC | 1320 S. University Dr. Suite 500 FT Worth, TX 76107 |
| MARSHALL | MEADE | 9-20-2 | TH EXPLORATION, LLC | 1320 S. University Dr. Suite 500 FT Worth, TX 76107 |
| MARSHALL | MEADE | 9-20-4 | TH EXPLORATION, LLC | 1320 S. University Dr. Suite 500 FT Worth, TX 76107 |
| MARSHALL | MEADE | 9-20-5 | TH EXPLORATION, LLC | 1320 S. University Dr. Suite 500 FT Worth, TX 76107 |
| MARSHALL | MEADE | 9-20-7 | TH EXPLORATION, LLC | 1320 S. University Dr. Suite 500 FT Worth, TX 76107 |
| MARSHALL | MEADE | 9-20-22 | EQT CORPORATION | 625 Liberty Avenue Pittsburgh, PA 15222 |
| MARSHALL | MEADE | 9-20-22 | JOAN L. KLUG | RD 1, Box 178 Proctor, WV 26055 |
| MARSHALL | MEADE | 9-22-4 | SWN PRODUCTION COMPANY | 10000 Energy Drive Spring, TX 77389 |
| MARSHALL | MEADE | 9-22-4 | EQUINOR USA ONSHORE PROPERTIES INC | 2107 City West Blvd. Suite 100 Houston, TX 77042 |

04/28/2023